



**Information document dated November 13, 2023**

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## FORWARD-LOOKING STATEMENTS

This document (this “**Document**”) contains various forward-looking statements that reflect the views of the management of ams-OSRAM AG (the “**Company**”) with respect to future events and anticipated financial and operational performance. Forward-looking statements as a general matter are all statements other than statements as to historical facts or present facts or circumstances. In some cases, these forward-looking statements can be identified by the use of forward-looking terminology or subjective assessments, including the words “aim,” “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “forecast,” “guidance,” “intend,” “may,” “plan,” “potential,” “predict,” “projected,” “targeted,” “should” or “will” or, in each case, their negative or similar expressions. Other forward-looking statements can be identified in the context in which the statements are made. Forward-looking statements appear in a number of places throughout this Document, including, without limitation, in the sections entitled “*Risk Factors*,” “*Management’s Discussion and Analysis of Financial Condition and Results of Operations*,” and “*Business*.”

Although the Company’s management believes that the expectations reflected in these forward-looking statements are reasonable, the Company and its consolidated subsidiaries (the “**Group**”) can give no assurance that they will materialize or prove to be correct. By their nature, forward-looking statements involve known and unknown risks, uncertainties and other factors because they relate to events and depend on circumstances that may or may not occur in the future. The Group cautions you that forward-looking statements are not guarantees of future performance and are based on numerous assumptions and that Group’s actual results of operations, including its financial condition and liquidity and the development of the industry in which it operates, may differ materially from (and be more negative than) those made in, or suggested by, the forward-looking statements contained in this Document. Because these statements are based on assumptions or estimates and are subject to risks and uncertainties, the actual results or outcome could differ materially from those set out in the forward-looking statements as a result of many factors, including, among others:

- Failure by the Group to drive innovation through research and development (“**R&D**”), timing issues in bringing new technologies to market, lack of market adoption of its products or applications in which its products are used, or technological shifts may harm the future growth, competitiveness and financial performance of the Group.
- The Group’s business operations are capital intensive, and it is required to make significant capital expenditures to maintain its competitive position even though it may not have received commitments from its customers to utilize the new or enhanced capacity.
- The Group has significant borrowings and other financial liabilities, the amount and terms of which limit its financial and operational flexibility, including its ability to refinance indebtedness and pay dividends. If the Group is unable to comply with the financial and other restrictive covenants in its financing agreements and/or is unable to obtain adequate financing in the future for the purpose of refinancing its existing indebtedness, there could be a default or event of default under such financing agreements.
- The Group’s obligations to OSRAM shareholders under the DPLTA represent significant other liabilities, the timing for payment of which is uncertain and if the Group does not have sufficient available liquidity or is unable to obtain adequate financing to repurchase the OSRAM shares when the shareholders’ rights to sell are exercised, it may not be able to meet such obligations as they become due.

- The Group derives a large proportion of its revenue from its top customers, and the loss of, or significant reduction in business or margin from, its top customers could have a material adverse effect on its business, results of operations, financial condition and prospects.
- The Group's financial performance may be negatively affected by developments in the end-user markets where it and its customers operate.
- The Group may not realize any or all of the estimated cost-savings and synergies from the re-establish the base program and may not successfully implement other aspects of the program which would have a negative effect on its results of operations.
- The end-market demand for many of the Group's products is cyclical and dependent on the product lifecycles of the relevant end-products, some of which are characterized by short product lifecycles, which may impact demand for, and prices of, the Group's products; longer product lives of OEM parts may also impact demand for the Group's products.
- Changes to existing foreign policy, trade agreements and any resulting changes in international trade relations may have an adverse effect on the Group's business, results of operations, financial condition and prospects.
- Failure to attract and retain key employees by the Group may impair its ability to operate its business effectively.
- The international scope of the Group's operations exposes it to a number of global and regional economic, political, legal, regulatory and other risks.
- The Group risks harming its business and competitive position if it is not able to protect its intellectual property, including its proprietary technology and its development and manufacturing know-how from competitors or public disclosure.
- Assertions by third parties of infringement of their intellectual property rights by the Group may result in damage claims and litigation costs, force the Group to modify its products or processes or prevent it from selling its products.
- Some of the Group's technologies, software and know-how are licensed from third parties and the termination of such licenses may materially and adversely affect the Group's business.
- Current or future legal, administrative and arbitration proceedings or investigations against the Group could adversely affect its reputation and harm its business and financial condition.
- Compliance by the Group with various environmental, health and safety as well as other applicable regulations in the jurisdictions in which it operates may be expensive and the Group's failure to comply may result in adverse publicity, potentially significant monetary damages and fines and suspension of its business operations.

See "*Risk Factors*" for additional risks resulting from such forward-looking statements.

This list of important factors is not exhaustive. You should carefully consider the foregoing factors and other uncertainties and events, especially in light of the regulatory, political, economic, social and legal environment in which the Group operates.

The forward-looking statements contained herein speak only as of the date of this Document. Accordingly, the Company does not undertake any obligation to update or revise any of them, whether as a result of new information, future events or otherwise. The Company does not make any

representation, warranty or prediction that the results anticipated by such forward-looking statements will be achieved, and such forward-looking statements represent, in each case, only one of many possible scenarios and should not be viewed as the most likely or standard scenario.

## DEFINITIONS

In this Document, the following words and expressions have the following meanings, unless the context otherwise requires or unless otherwise so defined.

“**ams-OSRAM**” and “**Group**” means ams-OSRAM AG together with its consolidated subsidiaries;

“**CAGR**” refers to compound annual growth rate;

“**Continental**” means Continental AG;

“**DPLTA**” refers to a domination and profit and loss transfer agreement, which provided OSRAM Licht AG shareholders with a time-limited right to sell OSRAM Licht AG shares to ams Offer GmbH in return for a cash settlement;

“**EEA**” refers to the European Economic Area;

“**EU**” refers to the European Union;

“**euro**,” “**euros**,” “**€**” or “**EUR**” refers to the single currency of the member states of the European Union participating in the third stage of the economic and monetary union pursuant to the Treaty on the Functioning of the European Union, as amended or supplemented from time to time;

“**GDPR**” means Regulation 2016/679, also known as the General Data Protection Regulation;

“**IFRS**” refers to International Financial Reporting Standards;

“**Company**” refers to ams-OSRAM AG, a stock corporation (*Aktiengesellschaft*) established under Austrian law, having its registered office at Tobelbader Straße 30, 8141 Premstätten, Austria and being registered with the companies register (*Firmenbuch*) under FN 34109 k, and not any of its subsidiaries;

“**LED**” means light-emitting diode;

“**LiDAR**” means light detection and ranging;

“**MYR**” or “**Malaysian Ringgit**” refers to the lawful currency for the time being of Malaysia;

“**NIR**” means near infrared;

“**OEM**” means original equipment manufacturer;

“**OSRAM**” means OSRAM Licht AG;

“**OSRAM Acquisition**” refers to the acquisition of 69% of the shares of OSRAM by ams AG on July 9, 2020;

“**Shareholder(s)**” means existing shareholder(s) of the Company;

“**U.S. dollars**,” “**\$**,” “**USD**,” or “**dollars**” means the legal currency of the United States.

## RISK FACTORS

### Risks Related to the Group's Business and Industry

***Failure by the Group to drive innovation through research and development, timing issues in bringing new technologies to market, lack of market adoption of its products or applications in which its products are used, or technological shifts may harm the future growth, competitiveness and financial performance of the Group***

The Group designs, develops and manufactures high-performance sensor solutions, lighting and non-lighting solutions and other semiconductor-based technologies and systems that are used by customers that operate in various markets including the automotive, industrial and medical and consumer markets. The Group's customers, particularly original OEMs and tier 1 solution providers to OEMs (for example, component and system manufacturers that supply parts to automotive manufacturers) ("**Tier 1**") and automotive aftermarket customers, operate in market segments that are characterized by technologically advanced products—such as autonomous vehicle driving systems, home and building automation products, mobile and wearables devices and AR or virtual reality VR headsets. These markets are subject to evolving industry standards, rapid introduction of new products or multiple competing technological approaches and potential average unit price erosion. If the Group is unable to develop new, innovative and differentiated products, product generations and technology platforms with improved accuracy, reliability, durability, cost-effectiveness and other critical features to respond to evolving customer demands and requirements, or to do so on a scalable and cost-effective basis, the Group's products may become obsolete or less competitive and may fail to achieve continued market acceptance. Also, products or technologies developed by others may render the Group's products obsolete or non-competitive.

There is also the risk that changes in market and customer requirements are not or cannot be considered early enough or to a sufficient extent for the Group to be able to adapt. For example, in the Group's "Lamps & Systems" segment, the Group offers automotive aftermarket products and there is a risk that it will not be able to commercialize or adapt these products to meet the evolving demand of end-customers. Furthermore, the lighting industry is undergoing a far-reaching technological shift toward semiconductor-based lighting. Moreover, many lighting markets are experiencing a clear increase in networked and intelligent lighting solutions. This shift is changing the market, which may have a material impact on the competitive position as the Group faces the risk of a strong decline in demand for traditional lighting especially in the automotive business, which would have a particularly significant impact on the Lamps & Systems segment.

In the case of the introduction of new products or technologies, such as microLED technology, the Group is exposed to the risk that the development, production or ramp-up of such new technologies and products based on these new technologies could be delayed, halted or take materially longer than initially anticipated resulting in uncertainty as to when and to what extent sales will be generated from products based on these new technologies. In particular, the Group's ability to generate revenues from its microLED technology is also subject to numerous factors outside the Group's control, including, but not limited to, decisions by the Group's customers regarding the development, production and ramp-up of products incorporating microLED technology-based components, delays caused by the inability of other suppliers of the Group's customers to meet the customers' specification requirements or decisions by the Group's customers to incorporate lower-cost or alternative components in their products. As with many new technologies, the extent of sales that will be generated from this new technology and the ramp-up time are difficult to predict with certainty. If

the Group's customers are slower than expected to adopt and launch products incorporating the Group's technology or decide to not use such technology in their products at all or to produce such technology themselves, the Group may not generate revenue from such products until a later time than planned or at all, which could result in a material adverse effect on its business, results of operations, financial condition and prospects. In addition, the development of such new technologies involves the formation of a brand new value chain involving multiple suppliers, all of which must reach maturity and technical viability in order for such products to achieve large-scale industrialization. The Group's ability to generate revenues from the sale of such products is therefore also subject to the risk of delay along the entire value chain. Additionally, the development and production of new products or technologies could be more complex and expensive than anticipated and there is a risk that such cost increases may only be partially compensated, or not compensated at all, under the terms of the commercial agreements with customers for these products, which could also have material adverse effect on the Group's results of operations.

It is also possible that the actual adoption of new and highly innovative technologies by existing and potential customers will deviate from expectations. In addition, market demand for certain technologies may differ across different product categories and end-markets and there is a risk that the Group's development efforts with respect to new and innovative technologies may not be focused on the product categories where significant demand eventually develops. As a result, the Group's investments made in R&D or in fixed assets may not be recovered through sales until later than expected or at all and the Group may need to recognize significant impairments.

Further, even after products incorporating microLED technology begin to be commercialized, the Group's results could be negatively impacted if the demand for such products is lower than its expectations and industry projections. As a result, the Group may not be able to achieve a cash break-even point on its investment until later than originally projected or at all. In addition, the Group may not be successful in ramping up production and may face difficulties in achieving targeted yields as planned. This could lead to claims by customers if the Group is unable to achieve output in line with its commercial agreements. The occurrence of any of these events could have a material impact on the Group's reputation, financial results and prospects.

In addition, during the periods under review, an increasing portion of the Group's research and development expenditure has been capitalized annually due to a shift in the Group's development priorities. The carrying value of the capitalized development costs in the Group's balance sheet is therefore dependent upon the future profitability of the related investments, and if such projects fail to deliver the anticipated results in line with the Group's estimates and assumptions, then it may be required to write-down capitalized development costs or incur impairment or other charges. Further, the Group may not be able to capitalize research and development expenditure in future periods in line with current expectations. The occurrence of these events could have a material adverse effect on the Group's results of operations.

Any failure by the Group to consistently drive innovation and develop commercially successful products or developments outside its control, such as shifting end-market demand or the introduction of new products or technologies by others, may damage the Group's competitive position and result in a material adverse effect on its business, results of operations, financial condition and prospects.

***The Group's business operations are capital intensive, and it is required to make significant capital expenditures to maintain its competitive position even though it may not have received commitments from its customers to utilize the new or enhanced capacity***

The operation and expansion of the Group's business require substantial capital expenditures, and from time to time the Group may also undertake significant capital expenditures to respond to evolving customer demands and maintain a competitive position before having received purchase orders from customers. However, the Group's results could be negatively impacted if the demand for the technology the Group is developing is lower than its expectations.

The feasibility and commercial success of a product, product generation or technology platform may only become apparent after several years, and it can be difficult to anticipate when and, in some circumstances, whether the Group's OEMs and end-market users will demand these advances. The Group's ability to accurately predict these timing and adoption trends can be difficult in each of its segments, and it may differ from the Group's expectations and industry projections included in this Document. As a result, the Group's design and development activities and the build-out of manufacturing capacity often require the Group to expend significant resources, based on projected market demand, before market demand for the Group's products or technologies has fully developed. Any such expenditure may be significant, and in amounts higher than projected by the Group. For example, a significant portion of the Group's capital expenditures for the year ended December 31, 2022 and for the nine months ended September 30, 2023 was related to the construction of the new LED focused semiconductor production facility for microLEDs in Kulim, Malaysia. If the Group's customers were to delay or limit the roll-out of products containing these new technologies or if they were to choose to incorporate alternatives to such technology in their new products, the Group could be left with significant unutilized production capacity and could be forced to write down some or all of the value of the related assets or incur impairment or other charges, which could have a material impact on its profitability and cash generation.

The risk of delayed adoption of a new technology may also arise when working with customers in the context of their product design and roll-out cycle. For OEM customers to embed the products into their applications, the Group is typically required to obtain a "design-win" (*i.e.* the process by which a customer chooses a supplier, which involves demonstrating the Group's ability to meet the customer's requirements and providing the customer with a competitively priced solution) through a competitive bid selection process, which can be costly and time-consuming, may not result in winning new customers or increased order volumes, or may require capital expenditures to increase the Group's manufacturing capacity. Certain of the Group's manufacturing capacity and other capital expenditure is therefore purpose-built to customer specifications or to be compatible with specific customers' technologies, and, as a result, if order volumes from the relevant customers are lower than projected, or if the Group fails to win new business from such customers, it may not be able to recoup its investment, which could have a material adverse effect on the Group's business, results of operations, financial condition and prospects. The typical customer design cycle can be from six months to two years or longer, depending on the market, the customer's proficiency, the end-market cycle time, product complexity and industry certification requirements.

In addition, The Group's structured approach to R&D expenditure is organized around internally-led developments and, when available, takes advantages of applicable government funding programs, receipt of which can be tied to certain conditions, and the Group may not receive some or all of the funding if it is not able to meet the requirements to spend a certain proportion of the funds on the designated programs.

Any failure by the Group to accurately time its product development and capital expenditure with market demand or to accurately predict adoption trends may prevent the Group from recouping or realizing a return on its investment in R&D, marketing, capital expenditures or capitalizing on market opportunities and thereby result in a material adverse effect on the Group's business, results of operations, financial condition and prospects.

***The Group's obligations to OSRAM shareholders under the DPLTA represent significant other liabilities, the timing for payment of which is uncertain and if the Group does not have sufficient available liquidity or is unable to obtain adequate financing to repurchase the OSRAM shares when the shareholders' rights to sell are exercised, it may not be able to meet such obligations as they become due***

The DPLTA provides OSRAM shareholders with a time-limited right to sell OSRAM shares to ams Offer GmbH in return for a cash settlement, equal to €45.54 per share (plus pro rata interest of 5 percentage points above the applicable benchmark figure, net of any dividends recognized) and fixed dividend on the shares while they remain outstanding. The amount of the cash settlement is subject to a challenge by OSRAM shareholders and as a result, the put right will remain outstanding until two months after publication of the court's final decision, which the Group expects to take place in 2025 or 2026. See "*Business—Legal Proceedings—OSRAM appraisal proceedings (Spruchverfahren)*." As of September 30, 2023, the total amount of outstanding non-financial liabilities of the Group pursuant to the DPLTA amounted to €675 million, including €616 million in connection with the put right of OSRAM shareholders. The timing of the exercise of the put right by the outstanding OSRAM shareholders is uncertain and if the Group does not have sufficient available liquidity or is unable to obtain adequate financing to repurchase the OSRAM shares when exercised, it may not be able to meet such obligations as they become due, which could affect its business, results of operations, financial condition and prospects.

***The Group derives a large proportion of its revenue from its top customers, and the loss of, or significant reduction in business or margin from, its top customers could have a material adverse effect on its business, results of operations, financial condition and prospects***

The Group is exposed to significant customer concentration risk. For the years ended December 31, 2021 and 2022, the Group's top ten customers accounted for 35% and 33%, respectively, of the Group's revenue. For the same period, the Group's top three customers accounted for 25% and 22%, respectively, of the Group's revenue and a significant portion of this was the top customer in the Semiconductors segment, which accounted for 18% of the Group's revenues in 2022 (down from 20% in 2021). For the nine months ended September 30, 2022 and 2023, the Group's top ten customers accounted for 33% and 33%, respectively, of its revenue and the Group's top three customers accounted for 22% and 19%, respectively, of its revenue. The Group may not be able to mitigate its financial dependence on its top customers to a sufficient extent to eliminate the risk of loss of a key customer. In addition, certain of the new technologies that the Group is developing are being designed for, or to be compatible with, products sold by some of the Group's key customers and as a result, successful commercialization of such new technologies may result in increased dependence on the Group's top customers. In addition, with respect to certain of the technologies that the Group develops specifically for or in partnership with certain of its key customers, it may be required to seek consents in order to use the relevant technologies in applications for other customers or market them more broadly.

The current agreements with its top customers do not require customers to commit to minimum order quantities and, therefore, do not provide for any guaranteed minimum revenue and the Group is, thus,

subject to the risk that order quantities may be reduced or that orders may be delayed or canceled. The Group may experience a reduction in revenue if its top customers change production quantities, delay production or cancel purchase orders, which they may do at will and for various reasons. In such a case, it may be impossible to recoup investments already made in R&D or to sufficiently utilize customer-specific production capacities. While the Group has long-term exclusive contracts in the automotive market with its top customers in the North America business of the Group's Lamps & Systems segment, the Group is subject to the risk that these contracts will not be extended in accordance with their terms or otherwise renewed when they expire in the coming years. The Group's customers may decide to use other suppliers, introduce dual sourcing for large programs, or to insource certain of their supply needs, and accordingly there is no guarantee that the Group's top customers will continue to use the Group as a supplier of their existing products or at all when developing a new product, including the new generation of an existing product. This risk is higher for products in the consumer market that do not leverage any of the Group's proprietary process technologies during the fabrication process, as they may be able to switch providers more easily than customers that utilize highly specialized technologies. There is also the risk that customer-specific product adaptations for significant orders from key accounts could lead to higher development costs and higher production costs in serial production, and that the additional costs incurred are not recouped through price adjustments. The Group also may not be able to divert excess customer-specific manufacturing capacity in the event that such customers were to change production quantities or cancel orders.

Furthermore, the Group's customers may consolidate or merge from time to time. Consolidation among the Group's customers could result in an increasingly concentrated client base of large customers, which could, among others, increase the bargaining power of the Group's current and future customers and reduce market opportunities. Mergers of the Group's customers with entities that are not the Group's customers could also materially impact its financial position and results of operations, if following any such merger, the customers were to decide not to continue their relationship with the Group.

In addition, the Group is also subject to the risk that its customers may default, either due to insolvency or otherwise, or that the Group would need to initiate legal action to recover unpaid invoices. While the Group has processes in place to assess credit and counterparty risk, such processes may not be sufficient to prevent all such occurrences.

The loss of some or all product sales to one or more of the Group's top customers, significant reductions in sales volumes to or prices paid by the Group's top customers, or material delays or defaults on the Group's top customers' payment obligations, could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.

***The Group's financial performance may be negatively affected by developments in the end-user markets where it and its customers operate***

The Group faces risks arising from developments in the end-user markets where the Group and its customers operate. In particular, broader industry and end-user trends, including consumer confidence, and other economic factors, may negatively affect demand for the Group's products, including if these markets and preferences do not develop as expected, which may result in lower levels of demand for a given product than the Group currently anticipates or in end-user demand for a given application developing more slowly than the Group expects. Furthermore, the Group's growth is reliant on the growth of its customers and OEMs, and slower growth, stagnation or a decline in their businesses may adversely affect the Group's growth prospects and financial performance.

For example, in the coming years, the Group expects growth in driver-assisted and autonomous driving to trigger demand for sensing solutions that support the relevant applications for OEMs and Tier 1 customers in the automotive industry. However, if projected end-user market demand for vehicles with driver-assisted and autonomous driving features does not develop as fast as expected, customer demand for the Group's products may be significantly lower than expected. Similarly, the Group's development and operational efforts currently include a significant focus on microLEDs, as the Group anticipates a future market shift toward microLED-based display technologies. As a result, the Group's operating and financial performance may be negatively impacted if such a transition is delayed or fails to materialize or if the Group fails to execute its strategy to capture demand for microLED and other technologically complex semiconductor technologies.

In addition, adoption by the Group's customers of new technologies, such as microLED, may result in cannibalization of the Group's existing product offering. While the Group believes the current exposure (through its existing product offering) to markets directly affected by the shift toward microLED-based displays, such as LEDs or mini-LEDs for liquid-crystal display ("**LCD**") backlighting, is limited, the overlap could be more significant than anticipated, which could negatively affect the Group's results of operations. For example, this may have an indirect impact on sensors for display management, including ambient light sensors, as microLED-based displays may require different sensor architectures. Failure to adjust the Group's product roadmaps accordingly could have a material adverse effect on its business, financial condition, results of operations, and prospects.

The Group's financial performance is also influenced by consumers' demand sensitivity to broader economic and social conditions. These can include wide-ranging factors from domestic and global geopolitical events to macroeconomic and health conditions in countries where the Group has significant operations or customers or globally. See "*—As a global supplier for various sectors, the Group is exposed to substantial risks associated with global macroeconomic factors, political uncertainty, the performance of the economies of the regions in which the Group operates and other factors outside the Group's control.*" For example, demand in the horticulture lighting end-market is significantly impacted by macroeconomic factors, regional dynamics in China and energy costs, which in turn impacts demand from customers for lighting applications. Demand for certain sensor components in the medical market, for example those used in COVID-19 antibody digital rapid tests, has been negatively impacted by slow regulatory approval of customer's products and shifting end-user demand. Demand for some of the Group's historic consumer end-market products has also decreased over recent years, including smartphones and wearable devices, due to various factors such as customers introducing multi-sourcing for components and specific events including lack of demand recovery in China and COVID-19 related lockdowns and in the Android mobile phone market, which has led to the decision to reorient the Group's portfolio away from certain low-growth and volatile consumer applications. In addition, supply constraints related to COVID-19 have resulted in inventory adjustments in the automobile end-market that have negatively impacted demand for applications. There is also a risk of slower growth in the production and sales of automobiles, which can also have a negative impact on the demand for the Group's products.

Demand in the Group's end-user markets can also be affected by other factors. For example, the global semiconductor shortage significantly impaired automobile production, resulting in significant inventory adjustments by automobile manufacturers, particularly in the second half of 2021, in 2022 and in the first half of 2023, which has also had a significant negative impact on demand for the Group's products.

The Group's business is very capital intensive and characterized by high fixed costs. On the one hand, the Group risks overcapacity at its facilities if demand in the markets in which it operates

declines. Overcapacity at the Group's facilities could result in idle capacity costs, write-offs of inventories and losses on products due to falling average sale prices, which could lead the Group to close or sell a facility or a part of it. For instance, in Singapore, the Group closed two facilities (in Tampines and Woodlands) and a part of its facility in Ang Mo Kio to address overcapacity concerns at these facilities following a loss of market share for certain consumer applications in the consumer business of the Group's Semiconductors segment. The Group may have to close additional facilities in case of a stronger decline in demand for traditional lighting, particularly in the automotive business. Furthermore, falling production volumes may cause declines in revenues and earnings. On the other hand, the Group risks having insufficient capacity to meet customer demand if the markets in which it operates grow faster than anticipated and thus may lose market share. Fluctuations in demand also make it difficult for the Group to predict the working capital requirements, which could adversely affect the Group's cash flows and liquidity. Regional shifts in demand could also require the Group to relocate production facilities, which could result in disruptions in production, higher cost or capital expenditure requirements, or require the Group to record impairment charges.

If demand trends in the end-user markets where the Group and its customers operate do not develop as anticipated, or demand continues to be negatively affected by macroeconomic factors, it may continue to suppress demand for the Group's products from the relevant end markets, which could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.

***The Group may not realize any or all of the estimated cost-savings and synergies from the re-establish the base program and may not successfully implement other aspects of the program, which would have a negative effect on its results of operations***

The Group is targeting a positive contribution to its Result From Operations (EBIT) (Adjusted) from the re-establish the base program on an annual end of year run rate basis amounting to €75 million between December 31, 2023 and December 31, 2024 and €150 million between December 31, 2023 and December 31, 2025. These are on top of the annual synergies and savings created during the Group's existing synergy creation cycle, now in its final phase, which followed the OSRAM Acquisition. The Group's ability to realize the expected cost savings and synergies depends, in part on, factors outside the Group's control, such as operating difficulties, increased operating costs, competition, delays in implementing initiatives and general economic and industry conditions. In addition, the cost savings and synergies that the Group expects to realize in connection with the Re-Establish the Base Program are based on various assumptions and estimates by the Group's management regarding the future impact of the program that the Group intends to implement, such as the development of the competitive environment, the overall economic outlook and development of the Group's business. If one or more of the Group's underlying assumptions regarding these initiatives proves to have been incorrect, these efforts could lead the Group to incur substantially higher costs than planned and it may not be able to realize fully or at all such synergies and cost savings in the anticipated timeframe.

In addition, the cost-savings and synergies underlie, in part, the Group's updated strategy of refocusing its business on a streamlined base in line with the re-establish the base program. In particular, through the Group's re-establish the base program, the Group intends to exit certain non-core semiconductor lower-performing businesses and implement and streamline its organization and the infrastructure to the new base through cost reduction measures, including an overall adjustment of the Group's operating footprint, company overhead, infrastructure and organizational set up. However, the Group may not be successful in identifying buyers for relevant components of its portfolio at an acceptable value or at all, or such disposals may take longer than anticipated to

implement, or may not be implemented at all, due to regulatory or customer approvals or other conditions. In addition, if the Group is not able to successfully execute such divestments it may not be able to implement some or all of the efficiency programs and resulting cost savings and synergies envisioned, which could have a negative effect on its results of operations. If the Group is not able to execute its strategy or realize such cost savings and synergies, either in the amount or in the timeframe the Group currently anticipates, or if the costs of achieving these cost savings and synergies are higher than anticipated, the Group's financial performance could be adversely impacted, and its future financial performance may differ significantly from the adjusted financial information set forth herein.]

***The end-market demand for many of the Group's products is cyclical and dependent on the product lifecycles of the relevant end-products, some of which are characterized by short product lifecycles, which may impact demand for, and prices of, the Group's products; longer product lives of OEM parts may also impact demand for the Group's products***

The products and solutions the Group sells are primarily used in applications focusing on the automotive, industrial and medical and consumer end markets. The average useful life of parts, particularly in the end products of OEMs, has increased in recent years due to innovations in products and technologies. Longer product lives generally lead to less frequent replacement of parts over the lifespan of the equipment, leading in turn to decreased aftermarket sales of the relevant products. Further increases in average useful lives of parts could also further adversely affect aftermarket demand for certain of the Group's products and lower demand for its products due to longer product lives of OEM parts and could have a material adverse effect on aftermarket revenue.

In addition, the Group's OEM customers regularly face pressure to reduce the prices of their products over the course of a product's lifecycle and especially towards the end of it. As a result of the pressure this puts on their margins, OEMs, many of which have substantial bargaining power, seek to demand price reductions from their component suppliers. The Group typically agrees prices with its customers on the basis of specific volumes and is therefore subject to regular price discussions. As a result, these customers may ask the Group to reduce prices for such products, which could negatively impact profitability if the Group is unable to manage the cost base to protect its margins. In dual source situations, where the customer can source a similar product from two suppliers for an existing design, this pricing pressure may be particularly significant.

Other factors that affect end-market customer demand, including rising inflation and the resulting cost-of-living crisis and component and material shortages such as those experienced in connection with the global SARS-CoV-2 coronavirus pandemic (the "COVID-19" pandemic), could create pricing pressure for the Group's customers that they seek to address through price reductions on component parts, including those supplied by the Group. If the Group is unable to offer competitive prices, it could result in customers reducing the volume of products that they order.

With respect to the applications aimed at the automotive end-market, the Group has significantly longer design cycles, and, once the Group's technology or product has been selected by a customer, there is a longer lifecycle, which can be up to or more than five years. While demand for automotive lighting, where safety and differentiation are key considerations for the Group's customers, continues to remain strong, automotive demand tends to be cyclical and the general macroeconomic environment, high energy prices, high unemployment rates, reduced consumer confidence, tighter credit conditions and government policies all have an influence on sales of cars by OEMs and the Group's results are impacted accordingly. There is also a very large difference in feature acceptance by region. The automotive market is not uniform across the globe or the regions in which the Group

operates, and this requires different design development and emphasis on features. The inability to meet design requirements, or volatility in demand for the Group's products in Europe and China or other markets, could lead to a reduction in the Group's automotive end-market revenue and adversely affect the Group's operating results.

With respect to the industrial and medical end markets, while the global pandemic put a spotlight on the need for sanitization in many forms, the UV-C market is projected to experience slower growth due to the markets exploring the right application areas and targeting the most viable solutions. In addition, with respect to horticulture solutions, the rising energy costs, increasing interest rates, greater economic uncertainty and technology stagnation has led to slower market growth in 2023 overall for this area.

At the same time, the end-market demand for many of the Group's products or technologies, especially for those contained in consumer electronics, such as mobile phones, tablet and computing devices, wearables, smart-home devices and other products that utilize sensing and illumination applications, is cyclical in nature and volatile due to rapid product innovation and short product lifecycles. These markets are also sensitive to significant price erosion due to fierce competition.

Given the often short lifecycles of consumer end-user products, the Group's revenue generated from sales of products that are included in these devices can change significantly and, at times, rapidly. The product lifecycle for mobile phones can be as short as four to six quarters, after which next generations are introduced for these mobile phones. Towards the end of each consumer product generation, the relevant customer's sales (and, as a result, demand for the Group's products) slow significantly and the decline in sales accelerates once a next generation model is released. For each product generation, the Group's customers can decide whether they continue to buy a specific component from the Group or select a similar product from one of the Group's competitors. The Group may thus not be able to retain the business that it has with current consumer OEM customers or fail to win new business with either current or new customers. The Group's ability to continue to predict changes in end-market consumer preferences and related next generation product features, and subsequently develop the technologies required to deliver these features in time for the next product introduction window, determines whether the Group will be selected as supplier for their next generation platform. Should the Group fail to do so, it will not generate revenues with the product it developed and thus not recoup the R&D investment it made for the product.

The Group's sales levels are also significantly dependent on the success that its customers have in their respective end-markets, especially in light of the Group's high customer concentration. See “—*The Group derives a large proportion of the revenue from its top customers, and the loss of, or significant reduction in business or margin from, its top customers could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.*” Should a customer's product not sell well, which could occur for a variety of reasons (for example, because it misjudged the features of its product, introduced the product too late versus competitors' similar products, or set prices too high), the Group's revenues from this customer could suffer. In particular, this impact can be severe where a customer introduces only a small number of high-volume models.

Extended periods of volatility or low end-user demand in markets where its customers operate, for example during an economic recession, may negatively impact sales levels and demand for the Group's products. This may result in lower revenues or create margin pressure and have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

***As a global supplier for various sectors, the Group is exposed to risks associated with global macroeconomic factors, political uncertainty, the performance of the economies of the regions in which the Group operates and other factors outside the Group's control***

The Group is a global supplier in various end-markets and is thus exposed to risks associated with the performance of the global economy. In general, demand in the automotive, industrial and consumer markets, and to a lesser extent medical markets, which impacts the Group's results of operations, is directly related to the strength of the global economy and the economic development in the regions and markets where the end products are sold. Rising inflation, the recent move towards more restrictive monetary and fiscal policy, particularly in the European Union ("EU") and the United States of America (the "United States" or the "U.S."), geopolitical conflicts, deglobalization and the associated decoupling of global supply chains, persistent supply shortages in raw materials, intermediate products and transport capacities, decreased energy availability, high energy prices and changes to energy policies, natural disasters or the spread of infectious diseases (such as COVID-19) can result in shocks to the global economy and declines in demand for the Group's products and services.

The Group's business is subject to risks from international conflicts, and other geopolitical tensions and uncertainties, such as the war in Ukraine the increased tensions in the Middle East, in particular resulting from the Hamas-Israel war, the rising tensions between Russia and NATO nations and any potential increase in geopolitical tensions in Asia, particularly between China and Taiwan. The war in Ukraine and the related evolving and increasingly severe economic sanctions and export controls imposed on Russia and certain Russian companies, individuals, and allies as well as related Russian countermeasures such as decreasing gas exports, have severely restricted the level of economic activity in Russia and Ukraine, increased volatility and uncertainty in the global financial markets, disrupted supply chains, resulted in price slumps for the Group's products and significant increases in the prices of many raw materials and energy and adversely affected the Group's results of operations and those of some of the Group's customers. As a result of sanctions and export controls imposed following the Russian invasion of Ukraine, the Group was required to seek out alternative suppliers for some of its materials. However, it is possible that the Group will be unable to develop a long-term business relationship with some of such alternative suppliers and in some cases the terms the Group agrees with alternative suppliers may not be as favorable as previous arrangements, which could have an impact on the Group's cost base and margins.

Moreover, the ongoing war in Ukraine has impacted and may continue to impact energy policies in Europe, accelerating the shift towards a more sustainable and resilient energy transition. This led to increased efforts in expanding renewable energy capacities, reducing dependence on fossil fuels, and promoting energy efficiency, in Europe. The accelerated transition to new and emerging technologies may lead to increased shifts in market demand, and regulatory challenges. A failure to adapt to these changing circumstances may materially and adversely impact the Group's results of operations.

Rising inflation in many countries has resulted in higher costs of energy, raw materials, labor, and other essential resources required for the Group's operations. As a result, the Group may face challenges in sourcing materials and energy at affordable prices and increased labor costs. This can lead to increased costs of the Group's products, which the Group may be unable to pass on to its customers, thereby adversely affecting the Group's margins. See "*—Prices of many of the Group's materials and costs of energy and personnel have increased significantly and may rise further, including as a result of geographical conflict or macroeconomic factors, thus adversely impacting the Group's results of operations.*" The inflationary environment and resulting wage and production cost

pressure and price increases combined with rising interest rates, may also lower purchasing power and result in declining customer demand particularly for non-essential products, including many automotive and consumer products and applications that include the Group's products, and significantly impact the Group's results of operations. A failure to accurately anticipate and factor rising inflation into the Group's product pricing assumptions may result in the Group not being able to maintain its cost base in line with its competitors or result in mispricing of the Group's products, which could materially and adversely impact the Group's results of operations.

Additionally, the Group's results of operations are impacted by changes in monetary and fiscal policy. See "*—Changes in monetary or fiscal policies may negatively impact the Group's results of operations.*" Global credit and financial markets have recently experienced extreme volatility and disruptions, including diminished liquidity and credit availability, declines in consumer confidence and economic growth, high inflation in Europe and other foreign markets, increases in unemployment rates and uncertainty about economic stability. In response to inflationary pressure, central banks in major economies started increasing benchmark interest rates and/or curtailed quantitative easing policies in 2022, a process that may continue throughout this year and beyond. Rising interest rates are likely to have a dampening effect on overall economic activity, the financial condition of the Group's customers and the financial condition of the end customers who ultimately create demand for the products the Group supplies, all of which could negatively affect demand for the Group's products. Rising interest rates were also among the factors that contributed to recent bank failures and liquidity problems faced by banks that triggered government interventions in the United States and Europe. Bank failures, events involving limited liquidity, defaults, non-performance and other adverse developments that impact financial institutions, or concerns or rumors about such events, may have significant and short-, mid- and long-term effects on the stability of global, regional and local financial markets and may impact the Group's and its customers' ability to obtain financing on favorable terms or at all. Additionally, higher interest rates increase the Group's debt burden and if the current equity and credit markets deteriorate, it may make any necessary debt or equity financing more difficult to complete, more expensive or more dilutive. Failure to secure any necessary financing in a timely manner and on favorable terms could have a material adverse effect on the Group's growth strategy and financial performance.

The outlook for the world economy remains subject to uncertainty, particularly in light of the war in Ukraine, increased tensions in the Middle East, in particular resulting from the Hamas-Israel war, rising inflation and central bank measures seeking to contain inflation, which may lead to prolonged periods of slower or negative economic growth in many of the Group's regions. The materialization of any of the risks described above could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.

***Prices of many of the Group's materials and costs of energy and personnel have increased significantly and may rise further, including as a result of geographical conflict or macroeconomic factors, thus adversely impacting the Group's results of operations***

The Group uses raw materials, such as copper, steel, aluminum, titanium, silicon, silver and gold as well as other commodities in its manufacturing processes, and its cost base is heavily affected by energy costs, particularly electricity and an increase in energy prices would therefore result in an increase in its production costs. The global economy is witnessing a period of historical volatility in commodity and energy prices due to a combination of different factors, including high energy demand in the context of the economic recovery following the COVID-19 pandemic, the ongoing military conflict between Russia and Ukraine, increased tensions in the Middle East, in particular resulting from the Hamas-Israel war, as well as prolonged geopolitical and trade-related tensions. As a

consequence of the Russia-Ukraine conflict, electricity and natural gas prices rose to unprecedented levels in 2022 and have remained elevated, increasing the Group's production costs. Significant fluctuations in the cost of the commodities used in products the Group uses as a part of the services that it delivers may adversely affect the Group's results of operations and financial condition.

The Group's personnel costs also increased for the year ended December 31, 2022, and have continued to increase in the first nine months of 2023 including, in part, as a result of inflation, and may continue to rise in the future due to global macroeconomic conditions. If personnel costs increase further, and the Group cannot recover these costs from its customers through increased selling prices, the Group's operating costs will increase, which could have a material adverse effect on the Group's business, results of operations and financial condition.

The Group is not always able to quickly or effectively react to price increases by its suppliers or pass-through its other increased costs to its customers and in many cases, the Group only agrees prices with its customers on an annual basis (including for OEMs and Tier 1 suppliers in the automotive end market). In addition, the Group enters into forward sale hedging arrangements only for its most expensive raw materials, such as gold, platinum and silver. Therefore, rapid fluctuations in the cost of specific components included in the Group's products may adversely affect the production costs. In addition, if prices decrease for commodities, the Group may have inventories purchased at prices higher than prevailing market prices. Any delay in the Group's ability to, or inability to, pass on material price increases to its customers could adversely impact the Group's business, results of operations, financial condition and cash flows.

***The COVID-19 pandemic may continue to adversely impact the Group's business, financial condition and results of operations, or it may be impacted by future pandemics***

In December 2019, COVID-19 spread globally and created significant macroeconomic uncertainty, volatility and disruption including declining economic growth, business insolvencies, increased unemployment, supply chain disruptions and the reduction of mobility and business activity due to mandated lockdowns. The most severe global effects of the COVID-19 pandemic were felt in 2020 and 2021. By the second quarter of 2023, all local restrictions in the regions in which the Group operates were lifted. However, any possible future outbreaks or recurrences, or actual or perceived occurrences of epidemics or pandemics (including pandemics other than the COVID-19 pandemic), could have an adverse effect on the Group's business. This could include, but is not limited to, decreases in consumer demand, extended work stoppages and travel restrictions at the Group's facilities and those of its customers and suppliers, delays or disruptions in the Group's production schedules, supply chain disruptions and shortages, postponement or cancellation of the Group's capital expenditure projects and other adverse global economic impacts. This may adversely affect the Group's ability to source component parts utilized in its production activities or, in certain instances, require the Group to temporarily shut down its operations. The Group continues to be impacted to some extent by the supply chain disruptions that commenced during the COVID-19 pandemic.

Additionally, if circumstances were to require lengthy interruptions to the Group's production activities or significantly limit its capacity, whether due to supply shortages or restrictions on operating activities being put in place in the regions where the Group operates, it could negatively impact its ability to meet customer orders. For instance, a significant portion of the Group's production occurs at its production facilities in China, and therefore any developments affecting production in or export of the Group's products from China could impact the Group's results of operations. The lockdowns imposed by the Chinese government in response to COVID-19 until January 2023 have resulted in supply chain disruptions and affected the Group's production and the re-implementation of these or similar

measures as a result of a recurrence of COVID-19 or another pandemic could similarly adversely affect its production in China.

Any future pandemic outbreak can also significantly impact demand for the Group's products and thus its profitability. For example, the spread of COVID-19 and associated responsive measures also negatively impacted demand for the products of certain of the Group's customers, in particular in the automotive and industrial sectors and to a limited extent in the consumer and communications markets, which in turn resulted in muted demand for the Group's products in these areas.

Any continued deterioration of the economy in the Group's core markets and other knock-on effects from future pandemic outbreaks and subsequent restrictive measures and macroeconomic volatility may frustrate the attainment of the Group's strategic goals, which could have a material adverse effect on the Group's business activities, results of operations, financial position and prospects.

***The Group faces risks resulting from its reliance on a limited number of outsourced, third-party manufacturers for wafer production and key suppliers for certain products and services used in its design and manufacturing activities***

The Group outsources various manufacturing and some testing services to third parties (such as Taiwan Semiconductor Manufacturing Company, Hana, Amkor and ASE), in particular a significant share of the manufacturing of wafers that are used in the production of integrated circuits ("ICs") and application-specific integrated circuits ("ASICs"), and almost all of the packaging of these ICs and ASICs are outsourced. The Group currently relies on a limited number of outsourced wafer manufacturers. The short-term volume shift between these manufacturers is limited as the manufacturing processes used by each differ. Although it maintains a significant level of in-house wafer manufacturing, because wafers form a critical part of the Group's manufacturing process, this production is limited to lagging CMOS nodes of 300 nanometer and larger today, and 180 nanometer and larger in the mid-term. The Group therefore faces risks related to manufacturing capacity delivery schedules, quality assurance, manufacturing yields and production costs at these outsourced manufacturing facilities. The Group also faces risks in forecasting the supply that it will require, because these foundries generally take between two and four months and may occasionally take up to a year or longer, to fulfill its orders, and therefore accurate forecasting of the Group's customers' demands is important.

In addition, for certain raw materials and components utilized in the Group's production activities, it relies on a single source of supply. These single supply sources may be unable to meet the Group's demand, experience production disruptions (including due to catastrophic events, utilities outages, social events, pandemics, geopolitical events or other matters) or may afford preferential capacity allocation to other customers that are larger or better financed, or to the production of their own products. If the Group is unable to source these raw materials and components from existing suppliers, it may be forced to locate new suppliers, and it may not be able to do so on commercially acceptable terms or at all. This risk is particularly relevant for components supplied to the automotive market, due to the stringent certification requirements these customers have before qualifying new manufacturing sites and lines. Additionally, the Group may be unable to change suppliers without certain customers' prior consent.

Supplier concentration also makes the Group more susceptible to supply shocks and disruptions on a macro scale, including more recently due to geopolitical events. See "*—As a global supplier for various sectors, the Group is exposed to substantial risks associated with global macroeconomic factors, political uncertainty, the performance of the economies of the regions in which the Group operates and other factors outside the Group's control.*" For example, due to the war in Ukraine and

subsequent sanctions on Russia, the Group had to find alternatives for its Russian suppliers in 2022. The Group continues to depend substantially, however, on its Taiwan-based suppliers and the number of suitable suppliers who provide foundry services is extremely limited. The worsening of geopolitical tensions between Russia and the rest of Europe and the United States and between China and Taiwan and the United States can impact the Group's ability to maintain relationships with key suppliers in these countries. Furthermore, the Group cannot ensure that any alternative suppliers that the Group contracts with will be able to produce goods and services with a similar price and quality to those of the existing key suppliers, and the Group may not be able to develop long-term business relationships with some of the alternative suppliers, in particular those with whom the Group has relatively limited order volumes, or the Group may need to replace them in short order. In addition, due to geopolitical and other factors, some of the Group's supply chains may experience periods of volatility and delay, or there may be shortages in raw materials. Continuing imbalances in the semiconductor and other supply chains continued to affect its procurement position in 2022. Any prolonged disruptions of the Group's supply chains and an inability to find attractive alternative suppliers can lead to delays in its production cycles and a negative impact on the Group's results of operations.

The Group has also historically outsourced significant aspects of its information technology infrastructure and compliance services to third-party partners. As a result, its information technology capabilities significantly rely on the systems of these service providers. Should the Group's information technology partners be unable to provide these services in the future, the Group may be required to find new information technology services providers, which could lead to disruptions in the Group's operations, be costly to replace, and consume significant management time during the migration to new systems.

Any failure by the Group to obtain adequate materials, components or services in a timely manner or on acceptable terms could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

***The Group's business, operating results and prospects could be negatively affected by existing or emerging competitors***

The Group designs, develops and manufactures differentiated, intelligent sensors and emitter components with a focus on sensing, illumination and visualization technologies, and the Group expects to continue to experience competitive pressure from a large number of existing competitors as well as new entrants in this industry. The Group competes with sensor, LED and laser component vendors, traditional semiconductor companies and lamp and lighting solution manufacturers. The Group's competitors range from multinational companies with integrated R&D, manufacturing and sales organizations, to 'fabless' companies and companies focused on a single application, market segment or product. New market entrants include various Asian and government-funded and/or subsidized competitors, which often operate with low overheads and at low margins to allow them to offer components at a lower price in order to win customers based on price competition. For example, in the lighting industry, consolidation and commoditization have resulted from slow market growth and strong competition, which may require manufacturers of LED components and products to increasingly attempt to differentiate themselves based on price, leading to a price war between competitors who want to fully utilize their production capacity and are pursuing a strategy of gaining market share. As the Group has significant capacity for production of these products, including at facilities in Kulim (Malaysia), the Group may face pricing pressure in the future in order to maintain utilization levels. The Group already faces increasing competition from LED suppliers in China, some of which may be subsidized by the Chinese government. In addition, the Group has shifted significant

resources to the development of microLED for small structure sizes (*i.e.*, below 10 micrometers (“ $\mu\text{m}$ ”)) in recent years and the Group believes that it is at the forefront of development and industrialization of this new technology for such small structure sizes. However, despite the Group’s developmental efforts, other players competing with the Group may capture a larger portion of demand for these products than anticipated or may develop production capacity for other types of microLEDs (*i.e.*, larger format than those produced by the Group or specially adapted for products that do use the Group’s technology), which may be adopted by customers in the relevant end-markets instead of the Group’s product offerings. The Group is therefore subject to the risk that demand for microLED develops faster or in greater volume for products or applications not currently covered by the Group’s development efforts, which could result in the Group not being in a position to capture the share of such demand it currently anticipates.

Additionally, because of the semiconductor shortage, made particularly severe over the past few years by the COVID-19 pandemic, the Group is experiencing a period of worldwide expansions of production capacity for semiconductors in general, some with substantial government subsidies. The Group also competes with emerging companies that develop optimized solutions for niche markets with very specific product requirements. Also, some of its larger customers may develop in-house capabilities to design and manufacture products currently offered by the Group.

The Group’s competitors may be able to develop innovative or competing products, adopt aggressive pricing policies and/or devote greater resources to the marketing, development, manufacturing and sale of their products, which may allow them to respond more quickly to emerging market opportunities or changes in customer demands and requirements. In addition, opening up competitive tenders to e-bidding has allowed and could continue to allow lower-cost competitors to gain a foothold with the Group’s customers. The Group’s competitors may also strategically leverage their existing customer relationships, for example by using bundled selling or cross-category volume-based discounting practices. This may discourage OEMs from purchasing the Group’s products, or cause OEMs to replace its products with competitors’ products. Competitors may also be able to influence industry acceptance of their products better than the Group does, to realize technological innovations sooner or to deliver products with performance comparable or superior to that of the Group’s products at a lower cost. Any consolidation among competitors could enhance their manufacturing capabilities and efficiency, innovation capabilities, product and service offerings and financial and other resources, which would strengthen their competitive position.

Additionally, customers incur significant cost, time, effort and risk when replacing suppliers, which may make it difficult for the Group to win new customers. The Group’s inability to retain customers and win new customers could result in a reduction of customers’ purchasing volumes, or slower sales growth than anticipated, which could lead to sales price erosion and lower revenues.

Due to the recent drop in demand for the Group’s products due to the macroeconomic climate, there is an increased risk that the Group will have to differentiate itself on price to a greater extent than expected given the competitive pressures it is exposed to in order to fully utilize its production capacity, which could negatively impact the Group’s strategy, as well as have a material adverse effect on its business, results of operations, financial condition and prospects.

***The Group may be unable to adequately forecast demand for its products due to the unpredictability of the market and sales cycle***

The Group’s customer contracts are typically structured as master or framework agreements, under which the customer may place purchase orders over a specified time period. In the Group’s Semiconductors segment, these contracts do not generally include minimum order commitments.

While lead times vary by product, they are typically 12 to 16 weeks from start to finish for packaged semiconductors. Customers provide a forecast to plan for production, and typically provide four months of orders as backlog, but these can usually be rescheduled up to 90 days before delivery, and, sometimes, up to 30 days. In the automotive aftermarket business, it is predominantly a 'make to stock' business where the Group anticipates market demand to achieve the needed inventory levels to serve its customers. Orders in this aftermarket business are usually placed for the next day. Consequently, the Group's order book provides only relatively short-term visibility and customers may change production quantities, cancel orders or delay or accelerate production for various reasons, which can make it difficult to schedule production and procurement commitments, optimize utilization of its manufacturing capacity and personnel needs and efficiently manage its working capital.

In the automotive market, project lifecycles are longer than in the consumer market, for instance, with standard projects typically lasting three or four years before first updates are required. The Group's customers usually nominate suppliers for the full lifetime of the project, which can be further extended in the event of platform redesigns. However, demand remains cyclical within the projects, for example due to fluctuating OEM sales volume to end customers and their take-rate of certain optional products. While the Group continuously engages with the OEMs and their Tier 1 suppliers, the Group faces the risk that the Group will not be able to drive innovation through research and development which may impact its market position and the demand for its products or technologies. See "*—Failure by the Group to drive innovation through research and development ("R&D") timing issues in bringing new technologies to market, lack of market adoption of its products or applications in which its products are used, or technological shifts may harm the future growth, competitiveness and financial performance of the Group.*"

The Group plans the manufacturing of its products in advance of receiving purchase orders, based on the contractual terms with its customers, existing purchase orders, ongoing dialogues with and forecasts provided by the Group's customers and other available information regarding the amount and timing of expected future purchase orders to ensure the availability of the products, but manufacturing based on forecasts exposes the Group to the risk of underestimating or overestimating product demand. For example, demand for sensors used in consumer products, such as mobile phones, is typically closely aligned with new product releases, which are often in the fall ahead of the Christmas shopping season. Although the Group (and its OEM customers) can plan for these market and sales cycles, if consumer demand does not support projected sales levels of the new mobile phone, the Group's OEM customers may reduce order volumes or place smaller orders than the Group had anticipated. Because customers can experience difficulty predicting end-product demand, and customer agreements generally do not contain minimum purchase orders, actual order volumes may differ significantly from forecasts. For example, in 2020, the Group's order and sales volume in its automotive and industrial businesses and, to a limited extent, in the consumer and communications markets was adversely affected by lower-than-expected order volume as a result of COVID-19.

In addition, the Group generally places orders with third-party suppliers based on its forecasts of the customer order book. Accordingly, if the Group inaccurately forecasts demand for its products, the Group may be unable to obtain adequate foundry or assembly capacity from third-party suppliers to meet its customers' delivery requirements in a timely manner or at all.

Customers may occasionally require rapid increases in production, which can challenge the Group's resources. The Group may be unable to increase its production capacity in a timely and efficient manner in order to meet an increase in customer demand and obtaining additional supply in the face of product shortages may be costly or impossible with regard to raw materials, components, wafers and other sub-assemblies that the Group sources from third parties. Conversely, rapid reductions in

customer orders, for example as a result of the discontinuation of one of the Group's customers' applications or operations or the end-products in which its products are embedded, may cause the Group's production facilities to be underutilized and may lead to reduced profit margins in light of its substantial fixed costs, as well as an increased risk of product obsolescence.

Incorrect forecasts have in the past resulted and may in the future result in high inventory carrying costs and inventory write-downs, which could result in unexpected expenses or increases in the Group's reserves, which could have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

***The Group has recognized significant impairments of goodwill, and may in the future be required to recognize losses if developments do not match expectations***

The Group has a significant amount of intangible assets, including goodwill, on its consolidated balance sheet, often related to historical acquisitions, including the acquisition of 69% of the shares of OSRAM by ams AG in 2020 (the "**OSRAM Acquisition**"). Apart from goodwill, the Group's intangible assets consist mainly of intangible customer base assets and technologies, as well as patents and licenses. The Group tests goodwill and other intangible assets with an indefinite useful life or not yet available for use (such as R&D projects) for impairment at least annually or when there is a clear intermediate indication that an impairment may be required. Other intangible assets with a determinable useful life are amortized on a straight-line basis over the period of their useful economic life. Depreciation on property, plant and equipment is recognized on the basis of estimates of the useful lives of such assets. Determination of the expected useful lives of such assets and the depreciation patterns is based on estimates of the period during which they will generate cash flows. An impairment test is performed if there is an indication of possible impairment. As the Group utilizes a discounted cash flow methodology to calculate the fair value of its cash-generating units and groups of cash-generating units, any prolonged weakness in demand for a specific product line or business could result in an impairment.

In the first half of 2023, the Group conducted impairment testing following a reassessment of the long-term business outlook for the Group's business and in particular the Semiconductors' consumer business, which resulted in recognition of an impairment charge on goodwill of €1,313 million in the reporting period ending June 30, 2023. Nevertheless, as of September 30, 2023, goodwill remains significant at €1,490 million and if the Group's assumptions regarding the future performance and discounted future cash flows of the core business are not accurate, the Group may be required to recognize additional impairment charges. In addition, in the year ended December 31, 2022, following a review of their useful lives, an impairment loss was recognized in the previous fiscal year in respect of certain production facilities due to a loss of market share for certain consumer applications in the semiconductor consumer business. In addition, during the year ended December 31, 2022, the Group reported impairment losses on property, plant and equipment amounting to €102 million related to a reorganization of manufacturing sites.

Although the Group believes the estimates of the useful lives of its assets, assumptions concerning the macroeconomic environment and developments in the industries in which the Group operates, and estimates of the discounted future cash flows, are appropriate, changes in assumptions or circumstances could require changes in the analysis. This could lead to the recognition of additional impairment losses in the future if developments are contrary to expectations, which could have a negative impact on the financial reputation and stock market value of the Group and result in a material adverse impact on the Group's business, results of operations, financial condition and prospects.

***Defects and errors in the Group's products may result in a loss of customers, decreased revenue and reputational damage, require product recalls and expose it to contractual, warranty and product liability claims***

The design, development and manufacturing processes for the Group's products and technologies are highly complex and subject to stringent quality requirements because even small defects can negatively affect performance of the product and, as a result, the Group's customer's end-market product. Especially when a new product is first introduced, the Group may manufacture products that contain defects or errors, do not meet customer specifications, or are otherwise unsuitable for their intended use due to a variety of issues, including design flaws, defects in materials or components, manufacturing difficulties, or software and hardware flaws. If product defects or errors remain undiscovered after the product has been delivered to the customer, the Group may be required to replace the product and/or be subject to contractual liabilities, such as warranty claims. The Group is currently subject to various claims and legal proceedings seeking damages for allegedly defective products provided by it. The Group may be liable to an end-user if a defective product causes damage following its use in the manufacturing of an end-market product, particularly where the relevant end-product is sold to consumers or in areas in which personal injury and/or property damage could result, such as in the automotive end-market or the medical end-market. Besides damages directly related to a faulty product, these events could lead to reputational damage, which in turn could impact existing customer relationships and the Group's ability to win new customers.

As a result, any defects and errors in the Group's products could result in loss of revenue or customers, long-term damage to the Group's customer relationships with diversion of development resources, significant delay in delivery, or substantial shortage of its products, reputational damage, increases in customer service and warranty or insurance costs or claims against the Group, which could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.

***Any inability of the Group to deliver products on time or at all may expose it to contractual liability and harm the Group's business***

The Group may be unable to satisfy product orders, to the required specifications, to its customers in a timely manner or at all. Delays could occur for a variety of reasons, including reasons beyond the Group's control, such as the delays in production and delivery that the Group experienced in the periods of the COVID-19 pandemic. Any delay in fulfilling customers' purchase orders or inability to deliver its products may lead to customer dissatisfaction, loss of revenue and customers or cancellation of orders, as well as reputational damage, in particular where the Group is the single source of supply or where its products are critical to the functioning or assembly of its customers' end-product. Furthermore, any inability to deliver the Group's products on time or at all may subject the Group to significant contractual liability claims, including consequential damages. Currently, substantially all of the Group's customer contracts include a cap or limitations on liability. However, there is no guarantee that the Group can continue to negotiate a cap on liability in its customer contracts in the future. The Group's failure to successfully negotiate an appropriate cap on liability could have a material adverse effect on the Group's business, reputation, results of operations, financial condition and prospects.

***The Group could be adversely affected by property losses and unforeseen business interruptions***

Damage and loss caused by fire, accidents, natural disasters, terrorism, severe weather or other disruptions of the Group's production process at its facilities or within its supply chain, with respect to its customers and suppliers, can be severe. At the same time, the Group's continuous optimization

and focus on an integrated production environment has increased dependence on individual production locations, thereby increasing the risk that an incident at one of the Group's facilities could have a significant impact on its overall operations and result in an inability to produce or deliver products on schedule. Such risks arising from business interruption and loss of production are insured at levels considered economically reasonable and on standard market terms by the Group, but its insurance coverage could prove insufficient in individual cases. Furthermore, such events could injure or kill individuals or damage or destroy third-party property or the environment, which could, among other things, lead to considerable financial costs for the Group. In addition, the Group's manufacturing processes are dependent on critical pieces of equipment and machines which may, on occasion, be out of service as a result of unanticipated failures, which may result in production bottlenecks and breakdowns, particularly where a manufacturing site only operates a single unit of a particular type of equipment, which is the case at several production locations. The materialization of any of the risks described above could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.

***Reduced yields or a material disruption at one of the Group's, or the Group's customers' production facilities could have a material adverse effect on its business, results of operations, financial condition and prospects***

The Group develops and manufactures its products using precise processes that are highly complex, require advanced and costly equipment and are regularly modified and refined to improve yields and performance, including processes performed in a tightly controlled clean room environment. Any difficulties in the manufacturing process, even minute impurities in a production step, can result in a substantial percentage of a product batch (of semi-finished goods, such as semiconductor chips, or finished goods) falling short of required quality levels, resulting in reduced yields. The Group may experience problems in achieving acceptable yields in the manufacture of its products, in particular in connection with new products, during rapid increases of production, any future overhaul of the Group's manufacturing chain, the introduction of new manufacturing processes, the expansion of the Group's manufacturing capacities or the components that the Group outsources to third parties since the Group relies on the supply of these components, in sufficient quantities and meeting the quality requirement, to manufacture its products. As a result of such problems, the Group may on occasion not be able to deliver products to its customers in a timely and cost-effective manner, or at all.

The Group is also subject to the risk of unexpected disruption at its design and production facilities. A disruption could be caused by a number of events, including events that could impact any of the Group's facilities, such as a maintenance outage, prolonged power failure, equipment failure, fires, floods, or other natural disasters, severe weather conditions, social unrest or terrorist activity, labor difficulties, public health concerns, including as a result of the spread of COVID-19 or other pandemics, or other operational problems, or natural disasters more likely to impact the Group's Asia/Pacific facilities, such as earthquakes and volcanoes. The risk of certain of these events could be amplified, or their frequency increased, due to climate change. Damage and loss caused by such events at its facilities can be severe and may exceed the amounts recoverable under its insurance policies.

Reduced yields or a material disruption at one of the Group's facilities may impair its ability to meet development or production targets and customer specifications, or may cause the Group to incur significant additional costs to meet the production targets and customer specifications, and could result in a significant delay in delivery, or substantial shortage of its products, which could lead to customer dissatisfaction, loss of revenue and customers, as well as reputational damage, any of which could have a material adverse effect on the Group's business, results of operations, financial

condition and prospects. Also, disruptions at its customers' production facilities, including for the reasons described above, could result in delays or cancellations of customer orders, which could adversely affect the Group's business and results of operations.

***Work stoppages or strikes could adversely affect the Group's business, and it may incur additional costs as a result of industry-wide collective bargaining agreements applicable to employees***

The Group is required to comply with local labor law requirements (including in respect of minimum salary levels as well as employee conditions) in the jurisdictions where the Group's employees perform their work. Changes with regard to labor laws in any of the jurisdictions in which the Group operates could restrict its ability to utilize employees away from their home jurisdiction, result in increased labor costs, including increases due to healthcare reforms or minimum wage increase, all of which could have a material adverse effect on the Group's business, results of operation and financial condition. The Company and certain of its subsidiaries in Austria and Germany are subject to co-determination laws, providing for employee representation on the Supervisory Board of the Company ("**Supervisory Board**"). Therefore, the Group depends on positive relationships with its employees and their representatives.

In several countries where the Group operates (Austria, Germany, the Netherlands, Italy, France and Singapore), collective bargaining agreements with trade unions are in place. These agreements are the result of negotiations between unions and employer associations, in which the Group generally does not participate. In Germany, the Group currently has a long-term agreement in place with the German Metalworkers' Union IG Metall (until September 2024). The Group may encounter strikes or other disturbances, or threats of strikes or disturbances occasioned by the unionized labor force and, upon the expiry of existing collective bargaining agreements, the Group may be unable to reach new collective bargaining agreements on satisfactory terms or without work stoppages, strikes or similar industrial actions. The Group's inability to negotiate satisfactory terms for new agreements would likely cause labor costs to increase, which would negatively affect profit margins if the Group is unable to pass the additional costs on to its customers. The occurrence of any such event could have a material adverse impact on the Group's business, results of operations, financial condition and prospects.

***The Group is subject to risks associated with the OSRAM Acquisition, divesting non-core businesses and potential future acquisitions or disposals***

The Group completed the acquisition of a controlling stake in OSRAM on July 9, 2020. Although the Group is in the final phase of its synergy creation cycle, the Group may not be able to realize all of the integration synergies as of March 31, 2024 (which the Group estimates will amount to approximately €350 million). As of September 30, 2023, the Group estimates that it has realized 94% of the integration synergies that it anticipated following the OSRAM Acquisition. Additionally, this final phase focuses mainly on further manufacturing synergies and footprint optimization and if further unforeseen factors arise or if this phase takes longer or is more expensive than currently anticipated, the overall costs of integration may increase, which could have an adverse impact on the Group's business, results of operations and financial condition.

In addition, following the OSRAM Acquisition, the Group commenced a strategic realignment of its portfolio which entailed the disposal of several businesses and assets in the former OSRAM's Digital (DI) division as well as certain other non-core automotive Lamps & Systems businesses and assets and which was completed during the third quarter of 2023 following the closing of the sale of AMLS Italy and of the Digital Systems Eurasia business. Further, in connection with the strategic update

announced in July 2023, the Group announced plans to realign its business with a focus on the core semiconductor portfolio with smart sensor and emitter components and the exit of certain non-core semiconductor lower-performing businesses, including passive optical components, which businesses were expected to produce total revenues of between €300 million and €400 million on a run-rate basis through the end of 2024. However, the Group may not be successful in identifying buyers for the relevant assets at an acceptable value or at all, or such disposals may take longer than anticipated to implement, or may not be implemented at all, due to regulatory or customer approvals or other conditions. In addition, while such disposals are aimed at aligning the Group's business portfolio following the OSRAM Acquisition, reorienting its business in line with the Group's strategic update announced in July 2023 and a focus on profitability through cost-savings and the creation of synergies, such cost savings and synergies may not be realized in the time frames expected to the full extent anticipated or at all. In addition, the Group's assets that are the subject of such disposals represent cash flows that will no longer be available to the Group following those disposals and the Group may experience a decline in revenue from the sale of these businesses. Further, even following a successful disposal, the Group faces the risk of potential claims by the purchasers of the assets pursuant to liability guarantees typically provided during asset sales. There can be no assurance that planned acquisitions or disposals will be completed on the expected timeframes or at all. Moreover, all or any of these initiatives may fail to improve performance (or may advance performance at a slower pace than planned) and consequently, materially and adversely affect the Group's business, operating results, financial condition or prospects.

From time to time, the Group may also pursue other acquisitions or disposals, both of which involve numerous risks that could have an adverse impact on its business. In addition to difficulties associated with integrating the acquired businesses' operations, business culture, technology and personnel into the Group, acquisitions and disposals carry, among others, the risk of failure to realize the anticipated benefits or synergies of a transaction, failure to identify all of the problems, expenses, liabilities of an acquired business, potential loss of key employees, customers and suppliers or inability to generate sufficient net sales to offset acquisition costs, any of which could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.

***The Group is exposed to the risk of economic and/or industrial espionage***

There is a risk of loss of sensitive business information, other data or tangible and intangible expertise due to an ineffective protection of confidential information, in particular as a result of any possible form of offence such as economic and/or industrial espionage. See "*—The Group's operations rely on complex information technology systems and networks, and any disruptions in such systems or networks, or data breaches, could negatively impact its operations and reputation.*" The Group's key employees and officers have access to sensitive confidential information relating to its business, such as insights about strategic developments, business case planning and core technology. In the event that competitors, third parties or the general public gain access to such confidential information in spite of the protective measures (such as in-person compliance training), be it on purpose or by accident, the Group's market position could be materially weakened.

The realization of any of these risks could have a material adverse effect on the Group's business, financial condition and results of operations.

***The Constant Perimeter Financial Information included in the Document has been compiled from non-IFRS financial data based on certain assumptions, adjustments and estimates made by management and is unaudited and unreviewed by the auditors of the Group***

This Document includes “**Constant Perimeter Financial Information**”, which is certain financial information that management of the Group has prepared on a ‘constant perimeter’ basis, which excludes the historical results from operations of the businesses disposed or held for sale, as applicable, in connection with certain disposals undertaken by the Group in the period following the OSRAM Acquisition (the “**Portfolio Re-Alignment Transactions**”). The Constant Perimeter Financial Information has neither been audited nor reviewed by independent auditors or any other third party. The Constant Perimeter Financial Information has been prepared by management based on a compilation of financial data from the Group’s audited consolidated financial statements, the unaudited interim consolidated financial statements and management accounts. Due to the nature of such Constant Perimeter Financial Information, management has made certain adjustments, assumptions and estimates in the preparation of such information. The Constant Perimeter Financial Information does not purport to represent pro forma financial information and has not been prepared in accordance with IFRS, any other generally accepted accounting principles and has not been audited or reviewed under any generally accepted auditing standards.

The Constant Perimeter Financial Information is not intended to represent or to be indicative of the consolidated results that the Group would have reported had the Portfolio Re-Alignment Transactions occurred prior to the period for which such information is presented.

## **Risks Related to the Group’s General Operations**

***Changes to existing foreign policy, trade agreements and any resulting changes in international trade relations may have an adverse effect on the Group’s business, results of operations, financial condition and prospects***

Trade policy or changes in the political and regulatory environment in the regional markets in which the Group does business can impact the Group’s business and results of operations. The Group is exposed to the risk of countries adopting measures with the aim of trying to protect or improve their competitiveness on the global market or to enhance technological sovereignty, and that other countries may institute corresponding countermeasures. Such policies could result in market access barriers, which can range from higher import duties or more complicated certification processes in order to reduce imports, all the way up to an international trade war. Due to the current increase in protectionist tendencies around the world, there is a risk of additional or higher tariffs or the imposition of other regulatory restrictions, in some of the end-user markets, such as the automobile and consumer products markets, and on products, components and raw materials that the Group or its customers supply or purchase. Trade and export barriers have already impacted the Group’s ability to sell to and service systems for certain customers and are likely to continue to impact the Group’s business going forward.

Some of the Group’s and its customers’ sales markets are in the United States and China and political, economic and regulatory developments in these regions have a substantial impact on the Group’s business activities. For example, additional export control restrictions have already been imposed against China by the United States in 2022. Additionally, the current coalition government in Germany has signaled a shift in foreign policy that could lead to increased trade tensions between Germany and China. The risk of further restrictions on exports or investments is high, and as a consequence, global trade is shifting from globalization to regionalization as China, the U.S. and many other

countries strive for technological sovereignty. In particular, the tensions between China and the U.S. may lead to a decoupled economic system, which in the longer term may result in overcapacity. Given the important role that both countries play in the semiconductor supply chain, this can have a significant impact on the Group's industry. Additionally, an escalation of trade tensions between the U.S. and China or Germany and/or Europe and China, including if China is, or is perceived to be, supporting Russia in the war in Ukraine or circumventing economic sanctions against Russia and its allies, may result in further uncertainty in the global economy and may jeopardize economic growth in China, which is also an important end market for the Group's customers and thus the Group's results of operations. If these disputes intensify, for example, if regulatory changes (including export controls) were to limit the Group's ability to sell products to large customers or to customers in high-demand jurisdictions such as China, and no exemptions to continue trading were available, they could lead to a significant reduction in sales. Additionally, the Group's customers may seek to de-risk their supply chain from the geopolitical uncertainty caused by these disputes and tensions, either by asking their suppliers not to have production in China or by finding suppliers with no production in China, which could negatively impact the Group's results of operations.

Starting from August 1, 2023, China imposed export control restrictions on some gallium and germanium products. The Chinese exporters of these gallium and germanium products need to apply for export licenses for items and technologies that have potential military and civil applications. As of the date of this Document, this has a limited impact on the Group's business as it has several suppliers for these products, including in Japan and Germany, the Group has a recycling strategy for used products. Additionally, the Group's current suppliers have obtained the licenses required to export these products. However, changes to this policy, or other newly imposed foreign trade policies, may have a greater impact on the Group's business, results of operations, financial condition and prospects.

***Failure to attract and retain key employees by the Group may impair its ability to operate its business effectively***

The Group is highly dependent on its ability to attract and retain a qualified workforce with the technical skills critical to the effective operation of the Group's business, including in manufacturing, design, testing, application and project management roles. In particular, to develop, produce, and sell its high-tech products and solutions, the Group requires, in some cases, highly qualified employees in the engineering sciences and other technical areas, as well as executives with international experience. There is tough competition for such talent and experts, as well as for executives, particularly in the semiconductor industry and in the regions where the Group is active. In addition, reorganizations and realignment of the Group's business following the OSRAM Acquisition has resulted in the departure of employees and in some cases the Group has not been able to retain certain key personnel to the desired extent. The Group may be unable to attract and retain qualified personnel, and the Group competes with other companies that may provide better working conditions for skilled personnel, including with respect to compensation, which could negatively affect attractiveness as an employer and may impede retention and hiring efforts. Even if the Group is successful in attracting talent, the Group may be required to offer outsized compensation, resulting in increased personnel costs, which in turn may impact the Group's margins.

Any inability to successfully recruit and retain personnel and executive management with relevant technical skills and experience could be significantly detrimental to its product development programs and could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.

***The international scope of the Group's operations exposes it to a number of global and regional economic, political, legal, regulatory and other risks***

The Group conducts a substantial portion of its business with respect to operations, customers and third-party suppliers outside Europe. In 2022, 70% of the Group's revenue was derived from customers located outside of Europe, the Middle East and Africa region ("EMEA"), in particular, customers in Asia/Pacific and the North and South America region (the "Americas"). Across the Group, operations rely on a global network of distributors, including production facilities in Asia/Pacific and partnerships, including its minority-owned joint-venture for environmental sensors with global private equity firm Wise Road Capital Ltd. ("Wise Road"), which enlarge the Group's global footprint.

This international diversification of the Group's business exposes it to a number of risks, both globally and regionally. These include economic, political, legal or social instability or volatility, interference or unexpected changes by government authorities in the Group's business or regulatory environment, sanctions and penalties, as well as changes to trade global relationships and agreements, including the imposition of trade barriers (including export controls specifically targeted at the semiconductor and high tech industries) and ongoing uncertainty to trade relations, in particular between the United States and China, as well as other protectionist measures globally, in recent years. See "*—Changes to existing foreign policy, trade agreements and any resulting changes in international trade relations, may have an adverse effect on the Group's business, results of operations, financial condition and prospects.*"

The Group also faces risks in some of its regional markets related to underdeveloped or otherwise insufficient legal and administrative systems, including, with respect to the enforcement of contracts, governmental restrictions on foreign investment or the transfer or repatriation of funds, prohibitions or restrictions on acquisitions or joint ventures, difficulties in enforcing patents or adequately protecting the Group's intellectual property, sudden or unexpected increases in wages and national and regional labor strikes, difficulty ascertaining the creditworthiness of new customers and in collecting on accounts receivable, bribery and corruption as well as crime and fraud or the potential nationalization of enterprises or other expropriations. These and other risks related to the international nature of the Group's business may often be impossible to predict. The Group's inability to manage these and other risks could have a material adverse effect on the Group's business, results of operations, financial position and prospects.

***The Group's operations rely on complex information technology systems and networks, and any disruptions in such systems or networks, or data breaches, could negatively impact its operations and reputation***

The Group relies heavily on information technology systems and networks to support manufacturing and business processes as well as internal and external communications. The consistent, efficient and secure operation of the Group's information technology systems, including computer hardware, software and networks, is critical to the successful performance of the Group's operations and its reputation. Computer systems are important to, among other business-critical processes, the Group's manufacturing processes, production planning, inventory management, customer service and order fulfillment. Additionally, the Group collects, stores and processes certain data, including proprietary business information, as well as customer and employee data, and may have access to confidential or personal information that is subject to privacy and data security laws, regulations or customer-imposed controls.

The Group's internal information technology systems and networks are susceptible to malfunctions and interruptions from a variety of sources, including due to unauthorized access, cyber-attacks,

equipment damage, deficient data base design, power outages, computer viruses and a range of other hardware, software and network problems, and from time to time the Group experiences intermittent malfunctions and interruptions. In 2020, certain critical systems and data were impacted by a cyber security incident. The Group's information technology team was able to recover critical systems and data, but some supporting information was lost. The Group's information technology personnel may not be able to resolve similar issues that arise in the future in a timely manner or at all.

Some potential causes that can lead to a malfunction or interruption of the Group's information technology systems or networks are difficult to detect and may only be detected once the risk has already materialized. A significant or large-scale malfunction or interruption, whether malicious or otherwise, of one or more of its information technology systems or networks could adversely affect the Group's ability to keep its operations running efficiently and affect manufacturing processes, production planning, inventory management, customer service and order fulfillment, particularly in the country or region in which the malfunction occurs. Moreover, an extended outage at a telecommunications network utilized by the Group's information technology systems or networks or a similar event outside its control could lead to an extended unanticipated interruption of the information technology systems or production activities.

Attacks upon information technology systems are increasing in their frequency, levels of persistence, sophistication and intensity, and are being conducted by sophisticated and organized groups and individuals with a wide range of motives and expertise. Furthermore, because the technologies used to obtain unauthorized access to, or to sabotage or disrupt, systems change frequently and often are not recognized until launched against a target, the Group may be unable to anticipate these techniques or implement adequate preventative measures. The Group may also experience security breaches that may remain undetected for an extended period. Even if identified, the Group may be unable to adequately investigate or remediate incidents or breaches due to attackers increasingly using tools and techniques that are designed to circumvent controls, to avoid detection, and to remove or obfuscate forensic evidence.

Significant disruptions to the Group's information technology systems could lead to manufacturing delays, difficulty communicating with customers or loss of customer or other data, any of which could have a material adverse effect on the Group's business, results of operations, financial position and prospects.

***The Group's financial results may be affected by fluctuations in exchange rates***

Due to the broad scope of the Group's international operations, significant portions of its revenues, expenses and financial liabilities are denominated in currencies other than the Euro, the Group's reporting currency. As a result, the Group's business is exposed to exchange rate fluctuations, including, in particular, with respect to the U.S. dollar and currencies linked to the U.S. dollar and, as a result of its investments in Malaysia in significant manufacturing operations, to the Malaysian Ringgit.

The functional currency of many of the Group's operating subsidiaries is the applicable local currency, except in Singapore where the functional currency is the U.S. dollar. Functional currency exchange rates for these operating subsidiaries have in the past fluctuated, and may in the future fluctuate, significantly against the Euro. In addition, fluctuations in foreign exchange rates could increase or minimize fluctuations in the prices of raw materials, since the Group purchases a considerable part of the raw materials, which the Group sources in foreign currencies. Because the Group prepares its consolidated financial statements in Euro, these fluctuations may have an effect both on the Group's

results of operations and on the reported value of the Group's assets, liabilities, revenue and expenses as measured in Euro, which in turn may significantly affect reported earnings, and the comparability of period-to-period results of operations.

External and internal transactions involving the delivery of products and services to and/or by third parties result in cash inflows and outflows which are denominated in currencies other than the functional currency of the respective group member. The Group is particularly exposed to fluctuations of net inflows in U.S. dollars. In addition, the Group is exposed to fluctuations in Malaysian Ringgit. With respect to both the U.S. dollar and the Malaysian Ringgit, cash outflows of any of the respective Group members in any one foreign currency are offset to the extent possible by cash inflows resulting from operational business in such currency. The Group also hedges the remaining U.S. dollar exposure in line with its existing hedging strategy, using derivative financial instruments, and in particular forward exchange contracts. In relation to the Malaysian Ringgit, it should be noted that the availability of such currency, and the ability to hedge this currency, are only available through a licensed onshore bank under the Financial Services Act 2013 or the Islamic Financial Services Act 2013.

However, the future use of derivative hedging instruments is generally dependent on the availability of adequate credit lines with appropriate financial institutions. As a result, the Group may be unable to use derivative financial instruments in the future, to the extent necessary, and its hedging strategy could therefore ultimately be adversely affected. Furthermore, while the Group generally accounts for such operations using hedge accounting, any hedging transactions executed in the form of derivative financial instruments in order to hedge forecasted transactions against a currency risk may adversely affect profit due to changes in the mark-to-market valuation if hedge accounting is not applied.

The Group's inability to manage the foreign exchange risk could have a material adverse effect on the Group's business, results of operations, financial position and prospects.

## **Legal, Regulatory and Tax Risks**

### ***The Group risks harming its business and competitive position if it is not able to protect its intellectual property, including its proprietary technology and its development and manufacturing know-how from competitors or public disclosure***

The Group's success also depends on its ability to protect the Group's intellectual property. The Group has obtained and applied for a significant number of intellectual property rights, including patents. The process of seeking patent protection can be lengthy and expensive. Also, the Group cannot be certain that patents will be issued as a result of the Group's pending or future applications, nor can the Group be certain that any issued patents would be sufficient in scope or strength to provide the Group with meaningful protection or commercial advantage, despite the significant time and expense involved in seeking patent protection. The Group's existing and future patents may be circumvented or challenged, and declared invalid or unenforceable, and may therefore not prevent unauthorized use, misappropriation or disclosure. Monitoring such unauthorized use, misappropriation or disclosure is difficult and, despite the Group's efforts, unauthorized parties may or may attempt to copy or otherwise obtain and use proprietary technology, trade secrets, know-how or other proprietary information.

A majority of the Group's know-how and industrial secrets are not patented and cannot be protected by intellectual property rights. The Group therefore also relies on contractual restrictions on disclosure and use (such as confidentiality agreements or licenses) of its intellectual property with various parties. However, the Group cannot be certain that trade secrets, know-how or other proprietary

information will not become known or that the Group's competitors will not independently develop proprietary technology or effective competing technologies. Consequently, disputes may arise concerning the ownership of intellectual property, the use of proprietary technology, trade secrets, know-how or other proprietary information or the applicability of confidentiality agreements. The Group may be forced to initiate legal proceedings to enforce intellectual property rights or its ability to exploit proprietary technology, which may be costly and divert the efforts and attention of the Group's management.

Any failure to protect, maintain and enforce intellectual property and other proprietary information could impair the Group's competitiveness, which could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.

***Assertions by third parties of infringement of their intellectual property rights by the Group may result in damage claims and litigation costs, force the Group to modify its products or processes or prevent it from selling its products***

The Group is subject to the risk that competitors or other companies may assert claims that the Group's products infringe their intellectual property rights and that its customers will claim indemnification resulting from infringements of intellectual property rights. Such litigation may involve patent holding companies or other adverse patent owners who have no relevant product revenue. For example, the Group is currently subject to a claim filed against its U.S. subsidiary ams Sensors Inc. that alleges infringement of certain U.S. patents related to semiconductor devices. See "*Business—Legal Proceedings—Claims by Greenthread.*" In addition, as the Group seeks to develop and implement new products, technologies and processes, the Group may not always be in the position to adequately identify such third-party rights or assess the scope and validity of these third-party rights due to the large and complex international intellectual property landscape. In addition, there is also a "black-out period" between the priority date of a patent and the subsequent publication, and during this "black-out period" the Group may not be aware of any infringement of intellectual property. Claims for infringement of intellectual property rights may also result from joint R&D projects, where it is unclear as to who owns the resulting technology.

Any action to determine the validity of claims alleging infringement of patents and other intellectual property rights, whether or not with merit, may subject the Group to protracted and expensive litigation, which could divert the attention and resources of the Group's management and technical personnel from operating the Group's business. If these claims are successfully asserted against the Group, it could be required to pay substantial damages and could be prevented from selling some of its products. The Group may also be obligated to indemnify its customers or other business partners in any such litigation. The Group may also become involved in claims and legal proceedings for infringement of intellectual property rights for products purchased from suppliers, and the Group may not be able to obtain reasonable support or indemnification from such suppliers. Furthermore, the Group may need to obtain licenses from third parties alleging infringement or substantially re-engineer or rename its products in order to avoid infringement, which the Group may not be capable of doing on commercially acceptable terms or at all. Furthermore, in the course of such infringement claims, trade secrets, know-how or other proprietary information could be compromised.

If the Group is prevented from selling some of its products, the Group may be subject to a loss of revenue and customers as well as reputational damage, which could negatively affect the Group's business, results of operations, financial condition and prospects.

***Some of the Group's technologies, software and know-how are licensed from third parties and the termination of such licenses may materially and adversely affect the Group's business***

The Group's design, development and manufacturing activities also utilize third-party applications and technologies, and the Group enters into licensing agreements for the use of these intellectual property rights. For example, the Group is a party to licensing agreements with major software providers and with third-party designers of component technology, in particular for wafers used in the production of products designed by the Group. If such third-party licensors were to terminate, limit the scope of, or increase the fees of the relevant licenses, if the Group cannot extend licenses or if the Group is found not to be in compliance with certain licensing requirements under the respective agreement, or if the Group is not able to obtain certain licenses in the future, the Group may be forced to re-engineer certain products or be prevented from selling products which include the relevant third-party technology. This may lead to a loss of revenue and customers, as well as reputational damage and could negatively affect the Group's business, results of operations, financial condition and prospects.

***Current or future legal, administrative and arbitration proceedings or investigations against the Group could adversely affect its reputation and harm its business and financial condition***

From time to time the Group becomes involved in various actual or threatened legal, administrative and arbitration proceedings and investigations arising out of or in connection with the Group's ordinary course of business (including potential proceedings related to antitrust matters). For further details on ongoing claims, see "*Business—Legal Proceedings.*" Regardless of the merits of the claims, and whether the matter or amount subject to the claim is individually material, the cost of pursuing or defending current and future legal, administrative and arbitration proceedings or investigations may be significant, and such matters can be time-consuming and divert management's attention and resources. The results of litigation and other legal proceedings are inherently uncertain, and adverse judgments or settlements in legal disputes may result in substantial monetary damages, penalties and fines or injunctive relief against the Group, as well as reputational damage.

Following entry into the DPLTA with OSRAM, which provided OSRAM shareholders with a time-limited right to sell OSRAM shares to ams Offer GmbH in return for a cash settlement, certain minority shareholders filed applications for a court review of the valuation of the compensation payment (*Abfindung*) and fixed dividend (*Ausgleichszahlung*) provided in relation to their holdings of OSRAM Licht AG shares under the agreement. On June 30, 2023, the court rejected the OSRAM shareholders' request for an increase of the compensation payment and fixed dividend under the DPLTA. A first appeal was filed in July 2023 and the shareholders' rights under the DPLTA will therefore remain in place until two months after publication of the court's final decision, which the Group expects to take place in 2025 or 2026. See "*Business—Legal Proceedings—OSRAM appraisal proceedings (Spruchverfahren).*" Furthermore, the non-controlling shareholders of OSRAM will be granted a guaranteed compensation payment provided they have not exercised their right to sell the shares. For these obligations the Group has recorded other liabilities of €675 million as of September 30, 2023 in its unaudited interim consolidated financial statements. However, if this claim against the Group is successful and if the liability recorded for these obligations in the Group's audited consolidated financial statements is not sufficient, it could adversely affect its business, results of operations, financial condition and prospects.

On June 26, 2020, in an effort to create transparency following rumors in the media, the Group announced that it had approached the Austrian authorities on its own initiative with regard to

investigations into trading in the Shares by the Group's management, as alleged in media reports on June 25, 2020. In October 2021, the Group was informed by the Austrian authorities that an investigation against a former member of the management board and two former employees was ongoing. As of the date hereof, the Group is not under investigation, and the Group is fully cooperating with the Austrian authorities in connection with the investigation. Any further allegations of unlawful activities by the Company or its management, or media speculation related thereto, could also have a negative impact on the Group and result in reputational damage.

The Group records a provision for litigation risks when the Group believes that a liability is likely to materialize, and the associated amount can be reasonably estimated. While the Group maintains liability insurance for certain legal risks at levels that the Group believes to be appropriate and consistent with industry practice, the Group may incur losses relating to litigation beyond the scope or limits of such insurance coverage, and its provisions for litigation-related losses may not be sufficient to cover its ultimate loss or expenditure.

An unfavorable outcome in any litigation investigation, administrative proceeding or other material dispute, or reputational damage resulting from a dispute, could adversely affect the Group's business, results of operations, financial condition and prospects.

***Compliance by the Group with various environmental, health and safety as well as other applicable regulations in the jurisdictions in which it operates may be expensive and the Group's failure to comply may result in adverse publicity, potentially significant monetary damages and fines and suspension of its business operations***

The Group is subject to numerous regulations in the jurisdictions in which the Group operates, governing the way the Group operates the facilities, concerning, among other things, occupational health and safety, air and noise emissions, wastewater discharges, the management and disposal of hazardous substances and waste, the investigation and remediation of soil and ground water contamination. Site-specific permits must be obtained and maintained (by complying with the obligations set forth therein).

The Group has, in the past, conducted environmental remediation activities at some of its sites and the Group is currently conducting remediation activities in Germany, the United States and Brazil. Additional impacts to soil and groundwater may be discovered or reported as a result of changes in environmental legislation at the Group's facilities in the future, which could result in substantial unanticipated costs for the Group.

Furthermore, the products that the Group sells are subject to specific product regulations, which refer to product compliance standards established by quasi-governmental and industrial standards organizations. Prominent examples are Directive 2011/65/EU of the European Parliament and of the Council of June 8, 2011, as last amended by Commission Delegated Directive (EU) 2022/1632, on the restriction of the use of hazardous substances in electrical and electronic equipment (the "**RoHS Directive**") and Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of December 18, 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals ("**REACH**") which applies to manufacturers and importers of chemical substances based in the European Economic Area ("**EEA**"). These requirements are complex, change frequently and have become more stringent over time. REACH is continuously being revised, which may lead to more stringent requirements in relation to certain hazardous chemicals and pose a significant risk to the Group's European operations. Similar legislation is also evolving in other jurisdictions in which the Group operates. Climate change laws (including cap and trade systems and carbon taxes) are also rapidly changing, and new or modified climate change laws may impose additional material

environmental liability. Such laws include those directly regulating climate change impacts and those which regulate the climate change impacts of companies with which the Group does business, such as utilities providing electricity to the Group's facilities.

Failure to comply with applicable laws and regulations may result in fines or penalties, liability for personal injury and/or property damage, the suspension of the Group's business operations as well as product recalls and sales bans, any of which could have a material adverse effect on the Group's business, results of operations, financial situation and prospects. As a result, the Group is required to invest efforts and such resources to comply with these laws and regulations when developing and manufacturing its products. Costs incurred are likely to increase in the future given the industry in which the Group operates and as demand for its products increases. The occurrence of any such event could have a material adverse impact on the Group's business, results of operations and financial condition.

***Climate change, and the regulatory and legislative developments related to climate change, may adversely affect the business and financial condition of the Group***

Extreme weather events such as hurricanes, floods, wildfires, heat waves and convective storms could directly impact its production facilities, supply chain, and distribution networks and result in increased costs of raw materials, components, and other inputs critical to the Group's manufacturing processes due to supply chain imbalances, its production being disrupted or damage to other infrastructure.

Additionally, climate change is driving technological change by encouraging the substitution of existing products and processes with more energy-efficient or lower-emission solutions and solutions with a lower environmental footprint. The Group must therefore keep a close watch on technological developments in the sector and the Group is continually optimizing its processes, and the production footprint. These efforts can, however, result in increased costs (including, for example, R&D costs, production processes and/or equipment costs), obsolescence of or declining demand for its products and potential loss of revenue.

Climate change can also alter customer behavior and demand patterns, impacting the market in which the Group operates. Increased awareness of environmental issues may drive a continued shift towards sustainable products, such as energy-saving or eco-friendly alternatives. Failure by the Group to further adapt its product offerings to meet evolving market demands could lead to lower demand, decreased sales and market share.

The Group also faces significant regulatory risks associated with climate change, which can impact its business operations, financial performance, and long-term viability. For instance, the European Union adopted the so-called European Green Deal to, *inter alia*, combat climate change. This strategy, which aims at making Europe the first climate-neutral continent by 2050, will have a considerable impact on the industry throughout all sectors, including on the Group's business. The European Green Deal involves revisions of a large number of regulations, in particular in the field of environmental and product regulations. While some revisions have already been adopted and entered into force, some are still in the legislative process, with an outcome that cannot yet be predicted. However, overall, the European Green Deal will make the Group subject to a considerably stricter regulatory framework in many respects going forward. In addition, governments and regulatory bodies worldwide are implementing stricter energy efficiency standards and regulations to reduce greenhouse gas emissions and combat climate change. These regulations may require higher energy efficiency levels for optical solutions and may require the Group to make its production processes and the operation of the Group's real estate more energy efficient. Although the Group is

currently not subject to national or EU-wide emission trading systems, this could change if production capacity increases in Austria or Germany or if the European or national regulations in this regard change. Failure to comply with evolving standards could result in penalties, fines, legal actions, recalls, sales bans and reputational damage. Additionally, meeting these standards may require the Group to make substantial investments in research and development, product redesign, and manufacturing processes.

Additionally, regulatory initiatives aimed at reducing energy consumption and carbon emissions often involve the phasing out of traditional lighting technologies, such as incandescent bulbs or fluorescent lamps, in favor of more energy-efficient alternatives such as LEDs. Changes in regulations and market demands may require the Group to adapt its product portfolio and manufacturing processes to align with the shift towards energy-efficient lighting solutions. Failure to anticipate and respond to these changes may result in product obsolescence and a loss of market share. The occurrence of any such event could have a material adverse impact on the Group's business, results of operations and financial condition.

***The Group is subject to certain anti-corruption, anti-money laundering, anti-bribery, export control, sanctions, and other trade laws and regulations with respect to its operations and noncompliance with such laws and regulations may subject it to criminal and/or civil liability and harm the Group's business and reputation***

The Group is subject to certain anti-corruption, anti-money laundering, anti-bribery, export control, sanctions, and other trade laws and regulations, including in the European Union, the United States, the United Kingdom, China, Malaysia and other foreign jurisdictions, in which the Group conducts the operations. Anti-corruption laws are often interpreted broadly and may prohibit companies, their employees as well as their third-party partners, such as agents, clinical research organizations, legal counsels, accountants, consultants, contractors and other partners, from authorizing, promising, offering, providing, soliciting or receiving, directly or indirectly, corrupt or improper payments or anything else of value to or from recipients in the public or private sector. The Group and their third-party partners may have direct and/or indirect interactions with officials and employees of government agencies, universities and other organizations, including in connection with obtaining necessary permits, licenses, patent registrations and other regulatory approvals. The Group could, depending on the circumstances, be held liable for the corrupt or other illegal activities of its personnel and third-party partners. Any of the foregoing could not only harm the Group's business, but also the Group's reputation. These risks could be significant if the Group's controls and procedures to monitor exposure and compliance are not successful.

The Group has adopted a worldwide risk management and compliance management system that is aimed, among other things, at preventing corruption, fraud, money laundering, financing of terrorism and other criminal or unauthorized behavior by managers, employees, consultants, agents and business partners. Although the Group's global compliance organization continuously seeks to improve the effectiveness and efficiency of this system, the compliance management system could fail to prevent or detect willful illegal, in particular collusive, behavior circumventing existing safeguards and controls. Similarly, the Group's risk management function could fail to identify, mitigate or manage relevant risk exposures. Furthermore, it is possible that violations of existing law could occur despite careful observance of such legal requirements.

Export control, sanctions, and other trade laws and regulations restrict the Group's business dealings with certain sanctioned countries, persons and/or organizations. The Group has implemented compliance procedures to ensure that its operations comply with all applicable sanctions. However, if other persons and entities with whom the Group currently or in the future transacts become subject

to sanctions, or the countries in which the Group currently operates become subject to restrictive sanctions in the future, it could result in reputational damage, fines or other censure to the Group, or limit the Group's operations, any of which could have a material adverse effect on its business, results of operations, financial position and prospects. If the Group fails to comply with economic sanctions and export control laws applicable to it, the Group may be subject to fines, monetary assessments, and other penalties. Governments may also seek to impose modifications to compliance management systems, or implement new compliance legislation, which may increase the Group's compliance costs further. New economic sanctions and export controls, like those issued by the U.S., EU, and the UK in response to the war in Ukraine, may evolve quickly and unpredictably, with new requirements or prohibitions potentially coming into force with little or no notice and with immediate effect. These rapidly evolving and increasingly severe economic sanctions and export controls have impacted, and are expected to continue to impact, the Group's operations, and may increase compliance costs.

In addition, in 2021 the U.S. adopted the Uyghur Forced Labor Prevention Act, which significantly restricts imports from the Xinjiang Uyghur Autonomous Region, China ("**Xinjiang**") into the U.S., and heightens the risk of regulatory enforcement for businesses with connections to Xinjiang through their supply chains. The U.S. government has also taken several recent actions connected to the situation in Xinjiang, including supply chain advisories and sanctions on specific entities tied to Xinjiang forced labor. In addition, the German Act on Corporate Due Diligence in Supply Chains (*Gesetz über die unternehmerischen Sorgfaltspflichten zur Vermeidung von Menschenrechtsverletzungen in Lieferketten*) entered into force on January 1, 2023. This Act imposes due diligence and reporting obligations on companies with respect to the compliance of their supply chains with human rights and certain environmental standards. On February 23, 2022, the European Commission issued a proposal for a Directive on Corporate Sustainability Due Diligence that also contains human rights and environmental due diligence obligations. The directive will likely impose more extensive obligations on in-scope companies, including, among others, due diligence obligations concerning downstream activities and a civil liability regime to hold companies liable for damages related to non-compliance with its due diligence requirements. An expansion of economic sanctions programs, embargoes, and other trade restrictions in the future, or modifications in how existing economic sanctions are interpreted or enforced, may adversely affect the Group's business operations. The European Council, the European Parliament and the EU Commission are currently negotiating the directive's final text, which is not likely to be applicable before 2025.

The materialization of any of the risks described above could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.

***The Group's material compliance management system may fail to prevent the Group from distributing products in the market in violation of the law or in non-compliance with customer specifications***

The Group uses a material compliance management system and processes to help the Group meet its commitment to use only components and raw materials that comply with applicable laws and regulations and to deliver products that meet all customer specifications. For instance, under the contracts with the Group's main customers, the Group is required to comply with the applicable conflict minerals regulation. To that end, there is a risk that changes in requirements relating to materials are not identified in time or not taken into account during production, which could result in products being distributed in the market in violation of the law or products being delivered to customers that do not meet a customer's specifications. In case of violations of laws and regulations or delivery of products that do not meet a customer's specification, the Group could be subject to

administrative or criminal fines or other sanctions. The Group could also be exposed to civil damage claims from direct or indirect purchasers of the affected products. Finally, potential violations could also lead to product recalls and sales bans and damage the Group's reputation or negatively impact the perception of the Group's products.

The materialization of any of the risks described above could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.

***The Group is subject to increasingly stringent regulations regarding data privacy and data security***

In the conduct of its business, the Group collects, uses, stores and otherwise processes personal data. Consequently, the Group's business is subject to a number of laws and regulations governing data privacy and data security, including with respect to the processing, collection, storage, use, transmission, sharing, and protection of personal information and other consumer data.

Such laws and regulations may be inconsistent among countries or conflict with other rules and become increasingly comprehensive and complex. There has also been a significant trend towards more stringent enforcement of requirements regarding the protection and confidentiality of personal data. In the EU, the European Union General Data Protection Regulation (EU) 2016/679 ("**GDPR**"), in particular, imposes strict requirements on controllers and processors of personal data including, for example, high standards for obtaining consent from individuals to process their personal data, a strong data rights regime for individuals, and short timelines for data breach notifications. In addition, the GDPR requires companies to implement a number of formal processes and policies to review and document the privacy implications of the development, acquisition, or use of new products, technologies or types of data. The law, as well as the application of the law in practice by courts and supervisory authorities, is also developing rapidly. For example, in July 2020, in its Schrems II judgment, the Court of Justice of the European Union limited how organizations could lawfully transfer personal data from the EU to other jurisdictions by invalidating the so-called "EU-US Privacy Shield", which has since been replaced by the so-called "Trans-Atlantic Data Privacy Framework" that was agreed in 2022 and passed by the European Commission in 2023.

Data protection authorities from the different member states of the EU may interpret or enforce the legislation differently, which adds to this complexity, and data protection is a dynamic field where guidance is often revised, sometimes with limited, if any, regard to legacy equipment or systems in use. Should the Group be found to be not in compliance with data protection rules and regulations across the European Union, including the GDPR, the Group could in particular be subject to substantial monetary forfeitures, a ban on processing data or other penalties. In particular, infringements of EU or EU member state data protection laws or related laws referring to personal data may, depending on the nature of the infringed provision, in particular trigger civil liabilities such as damage claims, criminal sanctions and/or administrative fines. Administrative fines under the GDPR may, for each violation, amount up to €20 million or up to 4% of the Group's total worldwide annual turnover of the preceding financial year, whichever is higher. In addition to these regulatory risks, infringement of the GDPR can lead to reputational risk and significantly undermine customers' trust in the Group's business.

Furthermore, based on its digital, data and cyber strategies, the European Union is comprehensively further revising the legal framework for handling both personal and non-personal data. For example, the European Commission has proposed the "e-Privacy Regulation" (COM(2017) 10 final), which would entail additional and stricter rules than those established under the GDPR in respect of the use of personal data from electronic communications. These laws would establish fines similar to those

included in GDPR. These regulations may affect the development of innovative services that would draw on consumer and other data, potentially creating a competitive disadvantage for undertakings subject to both the GDPR and the further data and digital laws, including the proposed e-Privacy Regulation and the Artificial Intelligence Act (COM(2021) 206 final).

Moreover, the increasing number of laws relating to the security of personal and non-personal data is a challenge. Overall, implementing steps to comply with and complying with laws such as, for example, Directive EU 2022/2557 on the resilience of critical entities (so-called NIS2 Directive) may lead to the Group incurring higher costs or having to change its business practices in this respect. Infringements of such laws or the national laws transposing them may also trigger various negative consequences, including administrative fines similar to the ones established by the GDPR.

In addition, regulations with a comparable scope and similar risks of sensitive penalties by the respective authorities are enacted in different economic areas such as the China Cybersecurity and China Privacy Law. Any unauthorized access to information stored by the Group or by a third party, intentionally or accidentally, including failure to detect such access or to notify a supervisory authority or data subjects in a timely manner, may cause damage to the Group's reputation, constitute infringement of administrative and criminal law and grant the affected persons a right to damage claims against the Group. The occurrence of any such event could have a material adverse impact on the Group's business, results of operations and financial condition.

***Applicable labor laws and customs in Europe may prevent the Group from reducing its personnel costs on short notice***

During the year ended December 31, 2022, the Group had an average of 23,322 employees (based on FTEs), of whom approximately 32.7% worked at locations in Austria, Germany, France, Italy and the Netherlands. Labor laws in these countries are generally more stringent and employee-friendly than in other countries, and in Austria and Germany employees have certain rights to participate in the management under applicable co-determination laws. As a result, in the event that the Group was to face a need to restructure or downsize its operations on a greater scale (5% or more affected employees on a site), it may not be possible for the Group to quickly implement reductions in the workforce as the Group would have to find an agreement with its employee representatives, which can take several months. While the Group has social plans in place that enable it to estimate labor-related restructuring costs to a certain extent, any costs associated with such labor-related restructuring could exceed the Group's expectations and have a material adverse effect on the Group's business, results of operations, financial position and prospects.

***The Group is exposed to risks in connection with its pension obligations, which may lead to unexpected funding obligations***

Almost all employees in Germany and many employees in other countries have defined benefit and defined contribution pension entitlements based on contractual arrangements and statutory requirements, most of which are funded with assets in segregated entities. The Group provides defined benefit pension plans in Germany, the United States (to the employees who joined OSRAM SYLVANIA INC. before December 31, 2006), and certain other countries where required by law. As of December 31, 2022, the Group's defined benefit obligations for funded and unfunded plans amounted to €936 million using an average discount rate of 4%. The Group reduces the volatility of the proportion of commitments covered by plan assets through liability driven investing and achieved a funding ratio for funded plans of 98% as of December 31, 2022. Overall pension plans were funded with €795 million plan assets as of December 31, 2022. The total liabilities recognized for these

commitments on the Group's balance sheet amounted to €166 million, while the Group recorded non-current assets of €21 million for overfunded pension plans, in each case as of December 31, 2022.

The amount of the Group's total provisions for pension obligations depends on the development of the present value of its defined benefit obligations and the fair value of the assets available to fund such obligations. The present value of the Group's a pension obligations and other long-term benefit obligations is significantly influenced by the discount rate used. Furthermore, inflation, pension adjustment rate (in Germany), the longevity and actuarial profile of plan participants may have a negative impact on pension obligations. Pension obligations and other long-term benefit obligations may also be affected by legal and regulatory developments and changes in case law. The amount determined is based on various assumptions, and any change in legal requirements or in the interpretation thereof with regard to the calculation of pension obligations or other long-term benefit obligations may have a material impact on the amount of the Group's pension and benefit obligations and on future pension plans expansions. Additionally, other economic factors such as foreign exchange rates may impact pension liabilities.

The Group's externally invested pension plan assets are funded through externally managed investment funds. While the Group prescribes the general investment strategies applied by these funds, the Group does not determine their individual investment alternatives. The assets are invested in different asset classes including fixed income securities as well as stocks and commodities. The values attributable to the externally invested pension plan assets are subject to capital markets fluctuations that are beyond the Group's influence. Unfavorable developments in the capital markets could result in a substantial coverage shortfall for these pension obligations, resulting in an increase in the Group's net liability for defined benefit plans. As part of an integrated risk management approach for assets and liabilities and to reduce risk, the Group also uses derivatives, designated either to reduce the fluctuations in the value of plan assets or to reduce volatility in the proportion of commitments covered by a plan but there can be no assurance that such risk mitigation approach will be successful.

Any increase in the amount of the Group's defined benefit obligations or a decline in the value of plan assets could adversely affect the Group's financial condition due to additional outflow of funds to finance these obligations or could lead to a depreciation of the Group's equity.

Furthermore, certain of the Group's U.S.-based subsidiaries have entered into obligations to make contributions to healthcare costs of their former employees. Accordingly, the Group is exposed to the risk that these costs will increase in the future (for example, due to the longevity of the Group's obligations and interest rate changes).

The occurrence of any such event could have a material adverse impact on the Group's business, results of operations and financial condition.

The materialization of any of the risks described above could have a material adverse effect on the Group's business, results of operations, financial condition and prospects.

***Changes in monetary or fiscal policies may negatively impact the Group's results of operations***

The demand for the Group's services is impacted by monetary policies adopted by central banks and other government policies in each of the countries in which the Group operates, including long-term interest rates, tax policies and policies that impact the availability of financing or subsidies. Interest rate changes, for example, affect the Group's ability to obtain financing for capital expenditures and research and development. In addition to changing interest rates, central banks and other policy arms

of many countries take actions to vary the amount of liquidity and credit available to such country. For example, during the COVID-19 pandemic, governments globally stepped up monetary and fiscal policies to fight the economic effects of lockdowns and containment measures, lowering interest rates and undertaking monetary stimulus on a large scale. Due to various factors, including rising inflation, such measures are now being unwound and major central banks started raising interest rates in 2022. See “—As a global supplier for various sectors, the Group is exposed to risks associated with global macroeconomic factors, political uncertainty, the performance of the economies of the regions in which the Group operates and other factors outside of the Group’s control”. Changes in liquidity and credit policies, including the reduction or elimination of favorable tax or other stimulus programs and reversing of monetary policy measures and sustained rises in interest rates, could adversely impact the Group’s ability to secure financing, and may impact its customers, markets and suppliers, any of which could have a material adverse effect on the Group’s business, results of operations, financial condition and prospects.

***The Group may be exposed to changes in tax laws and regulations as well as to tax and social security contribution risks***

The Group is subject to income taxes in Austria and the various foreign jurisdictions where the Group operates and are therefore subject to various tax laws and regulations. Changes in applicable tax laws and regulations or their interpretation in countries in which the Group operates could result in a higher effective tax rate on its earnings, expose the Group to increased tax liabilities or reduce or even eliminate its deferred tax assets (resulting, for example, from its existing tax loss carry forwards). Applicable tax laws include direct and indirect taxes, such as income tax, import and excise duties or value-added tax, and withholding tax. Increases in indirect taxes could affect the Group’s products’ affordability and may result in falling demand for its products.

Further, the Group may be exposed to certain adverse tax consequences as a result of changes in tax law or applicable double taxation treaties across the jurisdictions in which the Group operates.

Additionally, the Group is subject to the risk of having to pay certain taxes as a result of the Group not meeting specific requirements in connection with tax benefits that are granted by the governments in certain countries where the Group operates.

The Group is from time to time subject to tax audits by the competent tax authorities in the various jurisdictions where the Group operates. In the event that the Group anticipates potential tax liabilities arising from future or pending tax audits, the potential risks are accounted for in its financial statements according to applicable laws. Accounting for such tax liabilities and tax risks may prove to be insufficient. In the course of a tax audit, the competent authorities may challenge the positions taken by the Group when filing the tax returns and/or may take views that are different from those reflected in such returns. Similarly, liabilities related to social security contributions and payroll-related taxes may be increased as a result of future audits.

Significant changes in existing tax laws could result in increases to the effective tax rate or the Group’s tax liabilities in future periods, or the outcome of tax audits that result in any additional taxable amounts due in respect of past periods, could have a material adverse effect on the Group’s business, results of operations, financial position and prospects.

***The Group’s insurance coverage may be insufficient, and the Group may be unable to insure certain risks or obtain sufficient insurance coverage in the future***

The Group’s insurance policies may not adequately cover all material risks the Group faces. The Group has taken out insurance coverage for a number of risks, including public-, product- and

environmental-liability insurance, directors' and officers' liability insurance, property and business interruption insurance, transport and marine cargo insurance, fidelity/crime insurance, corporate travel insurance, collective accident insurance and legal protection insurance, but some risks cannot be insured, and for certain risks and in certain locations, insurance may not be available or may be available only at costs that are not economically viable.

For some risks, the Group may not obtain insurance if the cost of available insurance is excessive relative to the risk presented. As a result of market conditions, premiums and deductibles for insurance policies can increase substantially, and, in some instances, certain insurance policies may no longer be available, may be available but not economically viable or may be available only for reduced amounts of coverage. Any significant uninsured liability may require the Group to pay substantial amounts, which would have a material adverse effect on the Group's business, financial condition, results of operations and cash flows.

## MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

*The following is a discussion and analysis of the Company's financial condition and results of operations based on the Group's audited consolidated financial statements and the Group's unaudited interim consolidated financial statements, in each case prepared in accordance with IFRS.*

*The following discussion contains forward-looking statements based on assumptions about the Group's future performance. Those statements are subject to risks, uncertainties and other factors that could cause the Group's future results of operations or cash flows to differ materially from those expressed or implied in such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed below and elsewhere in this Document, particularly under "Risk Factors" and "Forward-Looking Statements."*

### Overview

Headquartered in Austria and Germany, the Group is a developer and manufacturer of differentiated, intelligent sensors and emitter components with a focus on sensing, illumination and visualization technologies for use in a wide range of applications primarily in the automotive, industrial and medical end markets and selected high volume applications for the consumer market. The Group concentrates on technologically complex intelligent sensor and emitter components in order to offer differentiated solutions to its customers. The Group has a strong mixed signal and analog semiconductor design capability, which it can produce in its own full service foundry as well as with outsourced manufacturing partners. It pursues market leadership across its sharpened portfolio.

The Group's extensive product and technology portfolio ranges from individual components integrated micro-modules in its Semiconductor business, and full lamps and more complex systems in its Lamps & Systems, which are used in a wide range of applications in the Group's end markets. In the twelve months ended September 30, 2023, the Group generated revenues of €3,859 million, of which 66% and 34% were attributable to the Semiconductors and Lamps & Systems segments, respectively and EBITDA (Adjusted) of €647 million. At group level, 49%, 31% and 20% of the Group's revenues during the twelve months ended September 30, 2023 were attributable to servicing customers across the automotive, industrial and medical and consumer end markets, respectively.

The Group's operating activities are presented in two segments:

- **Semiconductors** (accounting for €2,562 million, or 66% of the Group's total revenue, in the twelve months ended September 30, 2023): the Group offers LED, laser, sensor, and CMOS IC with embedded software solutions for automotive, industrial and medical applications (including, for example, automotive dynamic forward and signal lighting, lasers for LiDAR, LED ambient lighting and in-cabin sensing, horticulture lighting, LED and laser projection, and medical imaging including x-ray photon counting), as well as select solutions for the consumer markets, including display management solutions including ambient light sensing and camera enhancement applications. For the twelve months ended September 30, 2023, 25%, 20% and 21% of the Group's revenues were attributable to products for the automotive, industrial/medical and consumer end markets in the Semiconductors segment, respectively.
- **Lamps & Systems** (accounting for €1,297 million, or 34% of the Group's total revenue, in the twelve months ended September 30, 2023): the Group offers traditional lighting and other solutions for automotive (lamps and fixtures, LED retrofit products, exchangeable LED light source solutions as well as car accessories), entertainment, medical and industrial

applications. For the twelve months ended September 30, 2023, 23% and 10% of the Group's revenues were attributable to products for the automotive and industrial/medical end markets in the Lamps & Systems segment, respectively.

The Group has long-standing, close relationships with many of its core customers, across highly-diverse industries. These customers are primarily OEMs (including distributors that sell on to OEMs) producing automotive, industrial and medical and consumer products that integrate the Group's solutions in their products. The Group provides its customers with differentiated solutions and application engineering support to integrate its products into their solutions to ensure the customers get the best system performance.

The Group undertakes its R&D and manufacturing activities in a global network of 18 facilities across Europe, Asia/Pacific and North America. Worldwide, the Group's main facilities are located in Austria, Germany, Belgium, Slovakia, Czech Republic, China, the Philippines, Malaysia, Singapore and the United States. Across its global operations, the Group had 21,053 employees based on full-time equivalent employees ("FTEs") for the twelve months ended September 30, 2023.

Innovation is at the core of the Group's development and manufacturing offering and the Group invests significantly in R&D. The average number of employees working in R&D was 3,453 in 2022, working from 41 locations globally, compared to 3,445 in 2021 and 3,732 in 2020, based on FTEs. The Group holds more than 14,000 issued and pending patents and it currently has approximately 450 R&D projects in progress (which include both product and technology developments), which add to the approximately 500 R&D projects completed in the past two years.

## **Key Factors Affecting Financial Results**

### ***Trends in the Markets for End-User Products***

The Group's intelligent sensors and emitter components are used in cars, medical equipment and industrial systems as well as everyday consumer products such as mobile phones and wearables. The overall market for most of the Group's products is therefore determined both by the number of end-user products sold in the addressed end-user product category and the penetration of the specific feature that the Group's product enables within that end-user product category. For example, new applications in the automotive sector are typically first introduced in the flagship models of a brand, and when successful, those applications may be included in the brand's high-end and then mid-end cars. Similarly, new features in a mobile phone are typically first introduced in the flagship models of a brand, and when successful, the feature may be included in the mid-range mobile phones, and when the cost is low enough, eventually may also be included in the lower-end models.

In automotive applications, the Group believes that dynamic forward lighting and signal lighting, lasers for light detection and ranging ("**LiDAR**"), specialty sensors for in-cabin sensing and LED ambient lighting are major growth drivers. In industrial and medical applications, the Group believes that growth drivers are UV-C disinfection which can be used in a variety of applications (air, surface and water disinfection), horticulture solutions, LED and laser projection (for enterprise and education projectors) and medical imaging applications including x-ray photon counting and customers specific sensors and sensor interfaces. In consumer applications, the Group believes that key mid-term growth drivers are 3D sensing and camera enhancement applications across various devices, display management solutions including ambient light sensing, and vital signs monitoring for new product categories with challenging sensor requirements like smart watches and fitness wearables. The Group further believes that long-term growth drivers in consumer applications are AR/VR glasses and microLED displays. However, as with many technologies, the extent of sales that will be generated

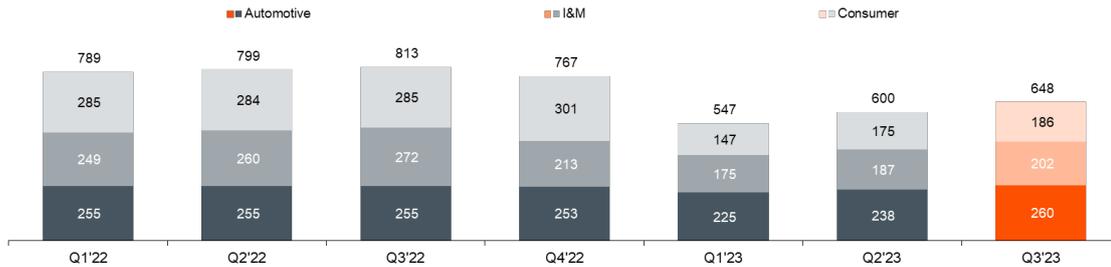
from the products based on these new technologies and their ramp-up time are difficult to predict with certainty. See “*Risk Factors—Risks Related to the Group’s Business and Industry—Failure by the Group to drive innovation through research and development, timing issues in bringing new technologies to market, lack of market adoption of its products or applications in which its products are used, or technological shifts may harm the future growth, competitiveness and financial performance of the Group.*” The Group is focused on driving the development of innovative features in existing product categories and enabling the development of new product categories with the market leaders across each major application market.

Product development trends in the Group’s end markets also have an impact on its results and are driven by a number of factors, including general societal trends, such as environmental consciousness and increasing focus on health or increasing regulations and safety standards, such as vehicle safety regulations that require car manufacturers to equip their vehicles with advanced driver assistance systems (“**ADAS**”). For example, as consumers have become more attuned to environmental and sustainability issues, demand for energy efficient and sustainable products has increased, causing a shift in development priorities for customers. The trend towards more eco-friendly and energy-saving products drives demand for the Group’s product portfolio that focuses on energy-saving technologies. Also, car OEMs, of EVs in particular, have increased their focus on lighting and lighting applications (including interior lighting) to differentiate themselves from competitors.

Beyond product development trends, business cycles in the automotive, industrial and medical technology and consumer markets and general economic conditions in the countries, regions and localities in which the Group and its OEM customers operate impact the OEM customers’ production requirements and consequently impact the volume of purchases of its products by the Group’s OEM customers. These cycles are correlated with general global macroeconomic conditions and depend on factors such as GDP growth, consumer confidence and the various macroeconomic factors that influence consumer spending, such as developments in unemployment rates, tax rates and the availability of consumer credit and financing. See “—*Macroeconomic and Geopolitical Developments.*” With respect to automotive markets, additional factors that influence automotive production include changing demographics (including, for example, population growth, increase of median age, urbanization), consumer preferences, levels of disposable income, regulations and government policies (such as increasingly strict standards for CO2 emissions), replacement rates of old vehicles and affordability of new ones. Despite ongoing market disruptions, the global automotive industry has continued to recover after a decline in the automotive production related to the COVID-19 pandemic and the supply chain volatility (particularly in Asia, one of the Group’s important end-markets). With respect to medical markets, changing demographics and improving health care systems in developing countries positively impact demand for medical technology. Industrial end-markets are influenced by the trend towards higher automation (including, for example, a wide range of sensors will be used with Industry 5.0, which focuses on robots and smart machine working). With respect to consumer electronics, such as mobile devices and wearables, additional factors influence demand, including changing demographics, consumer preferences and consumer confidence.

Within the Semiconductors segment, the chart below shows the balance of the Group’s Semiconductors revenues by the Group’s end-markets quarter-over-quarter from the period from January 1, 2022 to September 30, 2023:

Revenue split per end market (€m)



The revenues of the Group's Semiconductors segment decreased by 3.4% for the year ended December 31, 2022 compared to the year ended December 31, 2021 as a result of (i) supply chain volatility and inventory adjustments in the automotive and industrial and medical markets, (ii) less favorable demand trends in consumer market given lower smartphone volumes year-on-year caused by the inflationary environment resulting in a decreased purchasing power and as a result of increasing product life, and (iii) the impact of a market share loss in the consumer market. The Group addresses a total available market ("TAM") of €20.5 billion as of 2022 (Source: ams OSRAM Internal Market Model). The Semiconductor TAM represented €16.8 billion in 2022 and is forecast to grow at a CAGR of 7.4% between 2022-2026 (Source: ams OSRAM Internal Market Model). The Lamps & Systems TAM represented €3.7 billion in 2022 and is forecast to grow at a CAGR of 0.7% between 2022-2026 (Source: ams OSRAM Internal Market Model).

### **Macroeconomic and Geopolitical Developments**

During the periods under review, the Group's financial results were impacted by various macroeconomic and geopolitical developments, which affected the Group's customers and end-market users of products and devices that utilize the Group's technologies. Geopolitical tensions, including but not limited to trade disputes, increased tensions in the Middle East, in particular resulting from the Hamas-Israel war, the current tensions resulting from Russia's invasion of Ukraine and the ongoing war, the tensions between China and the United States as well as rising inflation, the recent move towards more restrictive monetary and fiscal policy, particularly in the EU and the United States and the impacts of and governmental responses to the COVID-19 pandemic have adversely affected and could continue to negatively affect international economic conditions.

The war in Ukraine has had significant knock-on effects on the global economy. For example, significant cuts to European energy supplies from Russia have increased uncertainty about potential energy shortages and led to a spike in the region's energy prices, particularly for gas, and have disrupted supply chains, resulting in price slumps for certain products and significant increases in the prices of many raw materials. As the reality of a protracted war in Ukraine sinks in, the long-term economic consequences for the global economy remain uncertain. Increases in energy prices resulting in part from shocks caused by the war in Ukraine have increased the Group's production costs and therefore negatively impact the Group's profitability. In addition, as a result of sanctions and export controls imposed in connection with the war, the Group was required to seek out alternative suppliers for some of its materials.

Price increases, including energy prices, have also pushed inflation to double-digit levels not seen since the 1980s, which resulted in central banks of the major world economies, including the U.S. Federal Reserve and the European Central Bank, significantly increasing their policy rates in a very short timeframe, ending a lengthy period of low interest rates. This adversely affected consumer and business confidence that is impacting the post-pandemic recovery and in turn negatively impacted demand for some of the consumer products that utilize the Group's technologies. These conditions also materially increase the risk of a stagflation scenario taking hold.

Rising interest rates were among the factors that contributed to the collapse of Silicon Valley Bank, one of the largest U.S. banks in the technology sector, the winding up by U.S. regulators of Signature Bank in March 2023, the government brokered-sale of Credit Suisse to UBS shortly thereafter to avert a failure of Credit Suisse and further systemic repercussions and the U.S. government intervention in First Republic bank to arrange a sale to J.P. Morgan in April 2023. Bank failures, events involving limited liquidity, defaults, non-performance or other adverse developments that affect financial institutions, or concerns or rumors about such events, may have significant short, mid- and long-term effects on the stability of global financial markets and potentially impact the Group's ability to, or the Group's customers' ability to, obtain financing.

Also, geopolitical risks concerning China's claims of sovereignty over Taiwan could negatively affect the Group's Taiwan-based suppliers, who the Group depends upon substantially, and may, under certain circumstances, also lead to business interruptions. See "*Risk Factors—Risks Related to the Group's Business and Industry—The Group faces risks resulting from its reliance on a limited number of outsourced, third-party manufacturers for wafer production and key suppliers for certain products and services used in its design and manufacturing activities.*"

Over the past years, the macroeconomic development, the semiconductor industry, the Group's end markets and the Group's financial results were also significantly affected by the outbreak of the COVID-19 pandemic in 2020 and the far-reaching measures taken by governments to contain it. While the swift pace of vaccination led to a strong rebound in global economic activity during 2021 and 2022, the Group's results of operations for the years ended December 31, 2020 and December 31, 2021 and, to a lesser extent, the year ended December 31, 2022, were marked by the impact of the COVID-19 pandemic, as governments of certain countries in the Asia/Pacific region maintained restrictions through much of 2022 and into 2023 (including, for instance, the lockdowns imposed by the Chinese government in response to COVID-19 until January 2023). The COVID-19 pandemic and related lockdowns had knock-on effects on the global supply chain starting in 2020, disrupting deliveries in many of the Group's important end-markets, including automotive and consumer electronics. More generally, the pandemic exposed and intensified previous tensions in supply chains, particularly in the automotive end market, where bottlenecks and shortage of components severely impacted production levels.

### ***Price of materials, energy costs and personnel costs***

Since 2022, general inflation has risen to levels not experienced in recent decades. The impact of, and government responses to, general inflation, which has resulted in currency volatility, rising interest rates, higher wages and higher material prices, has had, and may continue to have, negative impacts on the Group's business, in particular by increasing the Group's cost of sales and costs to borrow and may also lower purchasing power and result in declining demand for customers' products and, therefore, the Group's products. In 2022, the Group experienced wage and production cost pressure and expects this will also continue to affect its expenses, including, but not limited to, increased employee compensation expenses and costs for materials and energy in the foreseeable future.

A significant part of the Group's cost base consists of materials purchases, the prices of which are variable in nature. The primary purchased materials used in the production processes are materials for the front-end semiconductor production such as precious metals or raw wafers, as well as wafers manufactured by third parties. The prices of materials affect the Group's revenue and costs and therefore its profit margins. The Group seeks to minimize the impact of such fluctuations by entering into hedging contracts for the most expensive raw materials such as gold. A large portion of gold is not used up in the Group's semiconductor's manufacturing process and can be recycled. This portion

is not purchased by the Group but lent by banks in order to limit the capital commitment and mitigate the impact of price increases. The lending transactions are performed on a rolling basis with three-month terms. The Group enters into hedging contracts for the gold that is purchased by it. The Group's liabilities from precious metal lending transactions were €53 million and €55 million for the years ended December 31, 2022 and 2021, respectively. The remaining aggregated commodity price risk for precious metals is hedged primarily using commodity derivatives (swaps and forwards). For instance, for the remaining part of gold, which goes into the Group's products, the Group hedges the price risk up to twelve months on a quarterly rolling basis with decreasing hedge ratios. In addition, the Group successfully enhanced the yields of its major products and optimized production costs by strategically consolidating loading at a single location or allocating loading in low-cost countries to maximize economies of scale. Despite the Group's effort to mitigate the impact of materials price increases, overall cost savings achieved through hedging, price negotiations and productivity projects in 2022, it was not possible to fully compensate for price increases with respect to contract manufacturers for the year ended December 31, 2022.

In addition, fluctuations in energy purchase prices impact the Group's profitability. As a consequence of the COVID-19 pandemic, high energy prices, supply chain issues and the war in Ukraine, energy prices increased significantly during the financial year ended December 31, 2022. The Group monitors the mix between electricity and gas used to run its facilities to optimize energy costs, by using more electricity than gas, and protect its cost base from price swings. In some countries, such as Germany and Austria, the Group has a hedged share and a spot share strategy. Additionally, the Group has established fall back solutions (which consist of, for instance, using electricity to power the heating system or oil for heating) to keep the production running in case of further lack of gas supply due to supply chain issues and the war in Ukraine. The Group can also use a small amount of gas via its block-type thermal power station (*Blockheizkraftwerk*) to produce electricity.

In general, the increase in costs of materials and energy is reflected in the cost of the applications the Group sells to its customers, which are negotiated on a periodic basis, and certain of their contracts include explicit price pass-through provisions pursuant to which the Group is able to pass increased, or may be required to pass decreased, costs on to its customers.

In line with the inflationary trend, the Group's personnel costs also increased, particularly since 2022. However, the Group seeks to limit the impact of inflation on its personnel costs including through adjustments to its variable compensation system and by limiting wage increases in line with government requirements.

### **Research and Development**

As an innovation-driven business, the Group's R&D spending, which is mainly related to R&D activities in connection with intelligent sensors and emitter components for sensing applications involving sensors, illumination and visualization applications, is both a significant cost and an essential driver of the Group's ability to grow revenues and develop and manufacture high-quality sensing, illumination and visualization technologies for use in products such as mobile devices, automotive lighting, industrial applications and medical diagnostic technology. As a result, the Group aims to maintain a high proportion of R&D spending as a percentage of its revenue. Gross research and development expenditure (including capitalized development costs) for the year ended December 31, 2022 amounted to €717 million, or 15% of revenues, compared to €747 million (15% of revenues) and €483 million (14% of revenues) for the years ended December 31, 2021 and 2020, respectively. During the nine months ended September 30, 2023, the Group's gross research and development expenditure (including capitalized development costs) were €446 million (17% of revenues), as compared to €538 million (15% of revenues) during the nine months ended September

30, 2022. The Group's structured approach to R&D expenditure is organized around internally-led developments and, when available, takes advantages of applicable government funding programs and customer-focused developments, which are based on customers' specific sensing, illumination and visualization needs. Certain aspects of product development may be outsourced to third-party R&D partners.

For selected projects, the Group receives funding from government sponsors. For example, on September 29, 2023, the Group received a grant agreement from the German federal government and the Free State of Bavaria to provide funding to the Group under the program for Important Project of Common European Interest ("**IPCEI**"). The aggregate amount of the funding is expected to be in excess of €300 million over the next five years. The funds are expected to be invested in activities for the research and development of innovative optoelectronic semiconductors and their manufacturing processes, with the intention of creating up to 400 new high-tech jobs. The funding will support the Group's own investments in research and development of optoelectronic components at its Regensburg location. In addition, the Group expects to use some of the funding to invest in new clean room and laboratory facilities for research, development and pilot production-equipped for working on various innovative applications (e.g., UV-C LEDs for disinfection and near-infrared emitters for LiDAR for autonomous driving), as well as on fields of application in the context of Industry 4.0. The Group further expects to take advantage of the funding in connection with development of microLEDs for use in an all-new type of display. The public funding is subject to certain conditions and the Group may not receive some or all of the funding if it is not able to meet the requirements to spend a certain proportion of the funds on the designated programs.

In addition, on September 11, 2023, the Group announced an agreement with the Malaysian Investment Development Authority ("**MIDA**") to continue collaboration and support for advanced LED manufacturing in Malaysia. The agreement solidifies the Group's investment in Malaysia and provides for continued cooperation relating to the creation of new employment opportunities for Malaysians in the science and technical field in the region. It also facilitates and supports the Group to carry out innovation programs in the field of technology.

Customer relationships have formed a key aspect of the Group's growth in recent years and are expected to be a key aspect of the Group's anticipated operating and financial performance in the future. As a result, the Group's R&D strategy and expenditure is closely focused on projected customer needs and end-user market trends. Nevertheless, the allocation of R&D resources towards the development of a certain product or solution may not yield the expected return on the investment. See "*Risk Factors—Risks Related to the Group's Business and Industry—Failure by the Group to drive innovation through research and development, timing issues in bringing new technologies to market, lack of market adoption of its products or applications in which its products are used, or technological shifts may harm the future growth, competitiveness and financial performance of the Group.*"

In addition, in accordance with IAS 38, the Group recognizes annual expenses arising from research expenditures that target new scientific or technical knowledge. The Group capitalizes development costs if the expenditure can be measured reliably, the product or process is technical and commercially feasible, future economic benefits are probable and the Group intends to and have sufficient resources to complete development and to use or sell the asset. During the periods under review, an increasing portion of the Group's research and development expenditure was capitalized annually due to a shift in the Group's development priorities. If the relevant projects fail to deliver results in line with the Group's estimates and assumptions when the expenditure was capitalized, the Group may be required to recognize impairment charges related to such expenditure, which would

negatively impact the Group's results of operations. See "*Risk Factors—Risks Related to the Group's Business and Industry—Failure by the Group to drive innovation through research and development, timing issues in bringing new technologies to market, lack of market adoption of its products or applications in which its products are used, or technological shifts may harm the future growth, competitiveness and financial performance of the Group.*"

### **Capital Expenditure**

The Group's capital expenditures are primarily related to investments in production facilities (including the acquisition, construction and refurbishment of facilities) and the purchase of equipment for new and existing production facilities with the balance being related to R&D activities (both in terms of equipment and capitalized R&D) as described in "*—Research and Development*" above.

Capital expenditures on non-current assets amounted to €537 million, or 11% of the Group's revenue, for the year ended December 31, 2022. These capital expenditures were primarily related to the construction of the new LED focused semiconductor production facility for microLEDs in Kulim, Malaysia. This construction of the facility was responsible for the significant increase of capital expenditures in 2022 compared to €310 million, or 6% of the Group's revenue, in 2021 and €177 million, or 5% of the Group's revenue, in 2020, reflecting the Group's focus on investment in production capacity and R&D on future technologies.

For the twelve months ended September 30, 2023, capital expenditure amounted to €1,060 million. These capital expenditures primarily related to the continuation of the Group's development of the microLED facility in Kulim, Malaysia. In addition, the Group commenced the extension of the Premstätten production facility to increase its internal complementary metal oxide semiconductors ("**CMOS**") production line with optical filter and TSV (Through Silicon Via) capacities, in order to enable it to respond faster to increased demand and to reduce the risk of dependence on third party producers allowing the Group to strengthen its manufacturing processes. The Group has also commenced the expansion of its Regensburg facility, by investing in a new clean room and laboratory facilities for research, development and pilot production—equipped for working on various innovative applications (e.g., UV-C LEDs for disinfection and near-infrared emitters for LiDAR for autonomous driving), as well as on fields of application in the context of Industry 4.0. In total, the Group expects the combined initial investment in Premstätten and Singapore to amount to approximately €200 million. The Group expects the investment in Regensburg to amount to approximately €200 million in 2023 and 2024. Additionally, the Group expects the investment in its Berlin, Herbrechtigen and Schwabmünchen facilities to amount to €11 million in 2023. These capital expenditures are expected to be funded through a combination of operating cash flows, existing cash, loans and other asset-level financings. Although the Group plans its capital expenditures in advance, as aligned with the Group's broader strategic objectives, these expenditure plans may change for a variety of reasons, including new customer needs and others described in "*Risk Factors.*"

As of September 30, 2023, the Group's commitments to acquire fixed assets amounted to €243 million. These commitments mainly relate to the expansion investments in the Malaysian facility. The Group has otherwise streamlined its investments to reflect the current market environment. Following the peak of the Group's capital expenditures as a result of the significant investment in the Malaysian facility, the Group expects its capital expenditures to begin to decrease as a proportion of revenue in 2024 and to return to historical levels of approximately 10% of its revenues over the cycle beginning in 2025. Reflecting this, capital expenditure in the three months ended September 30, 2023 amounted to €262 million, down slightly from €263 million for the three months ended June 30, 2023. However, in line with the ongoing capital expenditure program, cash flows from operating activities was down slightly in the third quarter, amounting to €199 million for the three months ended September 30,

2023, compared to €232 million for the three months ended June 30, 2023 and Free Cash Flow remained negative in the third quarter, amounting to €(63) million for the three months ended September 30, 2023, compared to €(31) million for the three months ended June 30, 2023.

During the year ended December 31, 2022, depreciation and amortization amounted to €1,018 million (including on purchase price allocations of €127 million) and included €446 million of non-recurring impairment related to a loss of market share for certain consumer applications in the Semiconductors consumer business. During the nine months ended September 30, 2023, depreciation and amortization amounted to €1,772 million (including on purchase price allocations of €88 million) and included €1,401 million of impairment related to (i) goodwill (€1,313 million), (ii) the consolidation of production capacity in Singapore (€65 million), and (iii) the discontinuation of capitalized development costs (€23 million).

The Group's historical capital expenditures have been funded through a combination of proceeds from operating cash flow and borrowings. The Group may also, from time to time, enter into arrangements with its customers to finance capital expenditure and R&D for customer specific projects, including pre-payments or advances on future sales, in each case in line with industry practice. Any such arrangements with customers may include conditions relating to the achievement of certain milestones.

### ***Foreign Exchange Rates***

Due to the broad scope of the Group's international operations, a significant portion of the Group's revenues and expenses are denominated in currencies other than its reporting currency, the Euro. In 2022, 59.9% of the Group's revenues were earned in U.S. dollar and a similar percentage was earned in U.S. dollar in 2021.

Because the Group prepares its consolidated financial statements in Euro, these fluctuations may affect reported earnings and the comparability of period-to-period results of operations.

In particular, the Group has historically been exposed to movements in the Euro against the U.S. dollar, since that is the currency of a majority of the Group's sales and expenses, including certain materials the Group purchases. The value of the Euro relative to the U.S. dollar decreased in the first half of 2020 before increasing again during the second half of 2020 and throughout the first half of 2021, before decreasing again during the second half of 2021 and the first nine months of 2022. The value of the Euro relative to the U.S. dollar increased in the last three months of 2022 and throughout the first half of 2023, before decreasing again until end of September 2023. The net currency risk exposure against the U.S. dollar from the Group's operating business, even taking into account the Group's financial activities, is a long position. The Group's net currency risk before hedging was \$83 million and \$31 million after hedging as of December 31, 2022 (compared to \$(247) million and \$(402) million, respectively, as of December 31, 2021). To reduce this risk, the Group hedges part of its U.S. dollar exposure in line with its hedging strategy using derivative financial instruments, primarily forward exchange contracts. The Group usually hedges for a period of up to twelve months on a rolling basis. The hedging transactions are made exclusively in marketable instruments and are not made for speculative purposes. As of December 31, 2022, the net balance of the cumulative change in the fair values of the hedging instruments was €15 million compared to a negative net balance of €12 million as of December 31, 2021, whereas the fair values of the hedged items decreased by €15 million compared to an increase of €12 million as of December 31, 2021. As of September 30, 2023, the net balance of the cumulative change in the fair values of the hedging instruments was a negative net balance of €6 million, whereas the fair values of the hedged items increased by €6 million.

In addition, during the periods under review, the Group recognized exchange differences that significantly impacted the Group's net financial result primarily related to its U.S. dollar monetary balance sheet items with countereffects from derivative financial instruments used for hedging. In 2022, exchange differences increased the Group's net financial result by €2 million. In 2021, exchange differences decreased the Group's net financial result by €70 million. In 2020, exchange differences decreased the Group's net financial result by €6 million. In the nine months ended September 30, 2023, exchange rate differences increased the Group's net financial result by €51 million.

### ***Operational improvements and cost-saving measures***

For the periods under review, the Group's results have been positively affected by certain operational improvements and cost savings measures the Group has undertaken following the OSRAM Acquisition and in connection with the realignment of the Group's portfolio as described under "*—Key Factors Affecting Comparability of Financial Results—The OSRAM Acquisition and the Portfolio Re-Alignment Transactions.*" These actions were designed to improve the Group's productivity, concentrate resources on higher margin applications, generally decrease the Group's costs and align its operating platform for the combined business. Specifically, the Group has taken the following actions, in 2021 and 2022:

- Personnel cost optimization measures, including reduction of overhead overlap and rationalization actions in connection with the OSRAM Acquisition and Portfolio Re-Alignment Transactions. For instance, the Group has decreased its headcount from 29,753 as of December 31, 2020 to 22,461 as of December 31, 2022.
- Manufacturing footprint optimization and consolidation of production networks in Singapore where the Group closed two facilities (in Tampines and Woodlands) and a part of the facility in Ang Mo Kio, intended to adapt its capacity to the current consumer market demand and optimize capacity utilization;
- Consolidation of the R&D department and IT systems following the OSRAM Acquisition;
- Procurement initiatives, in 2021, following the OSRAM Acquisition, which allowed the Group to successfully realize the synergy potentials resulting from the combination of the Group's businesses as well as purchasing savings; and
- Optimization of the Group's portfolio (including, for example discontinuing products with low gross margins such as general lighting).

As of September 30, 2023 the Group estimates that the synergies and savings created amounted to €330 million.

The Group is now in the final phase of the synergy creation cycle following the OSRAM Acquisition. The Group is mainly focusing on further manufacturing synergies and footprint optimization. Once this synergy creation is completed, the Group estimates that the annual synergies and savings created, as of March 31, 2024, will amount to approximately €350 million (which is higher than the €300 million annual pre-tax run rate cost savings and synergies targeted at the time of the OSRAM Acquisition). One-off integration costs, estimated at approximately €390 million at the time of the acquisition, have been reduced to an estimated €220 million for the three-year synergy creation cycle upon full integration. These costs include the transformation costs related to the consolidation of the Group's manufacturing footprint (including, for example the consolidation of production networks in Singapore in the Semiconductors segment in 2022). As of September 30, 2023, costs already

incurred amount to €207 million. The Group is also implementing additional cost mitigation measures in light of the current difficult market situation. These initiatives include reductions in global operating expenses including streamlining and efficiency improvements for certain R&D programs as well as various efficiency improvements in production activities.

In addition, in connection with the Group's July 2023 strategic update, the Group announced a strategic realignment of the Group to focus on profitability and on monetizing innovation, leveraging structural growth and its strong positions in key markets. Through the Group's re-establish the base program, the Group intends to (1) optimize its portfolio by exiting certain non-core semiconductor lower-performing businesses, starting with the passive optical components business (with other parts of the affected portfolio to follow), and (2) adjust and streamline its organization and the infrastructure to the new base through cost reduction measures, such as an overall adjustment of the Group's operating footprint, company overhead, infrastructure and organizational set up. The Group is targeting a positive contribution to its Result From Operations (EBIT) (Adjusted) from this program on an annual end of year run rate basis amounting to €75 million between December 31, 2023 and December 31, 2024 and €150 million between December 31, 2023 and December 31, 2025. Such savings are on top of the annual synergies and savings created during the Group's existing synergy creation cycle, now in its final phase, which followed the OSRAM Acquisition. See "*Business—Corporate History*." The Group expects the impact to result from portfolio effects related to the divestment of certain lower-margin or unprofitable business in addition to cost savings and synergies adopted in connection with the program.

### ***Degree of Capacity Utilization***

The Group's results of operations are affected by the degree of utilization of available capacity at its production facilities. High capacity utilization at its production facilities results in a reduction in its production costs per unit and its fixed costs are spread across larger volumes, resulting in higher profitability. Conversely, if the degree of capacity utilization at its production facilities declines, the production costs per unit increase and the Group may have to adjust its production outcome, resulting in lower profitability. The degree of capacity utilization is in turn impacted by demand from its OEM customers for its applications. In 2020, the Group experienced decreased capacity utilization at its facilities due to a lower demand and production interruptions related to the COVID-19 pandemic. In 2021, the Group's capacity utilization at its facilities recovered to historical levels, but was lower in fiscal year 2022 due to lower demand in the Semiconductors segment.

To address concerns of overcapacity at its facilities the Group has taken actions including the consolidation of production networks in Singapore where the Group closed two facilities (in Tampines and Woodlands) and a part of its facility in Ang Mo Kio. At the same time, the Group aims to manage production capacity by implementing flexible production processes to the extent possible (resulting from the use of multi-function machinery that enables management to optimize production cycles by adjusting quickly to the relevant market changes). The Group also aims to leverage its knowledge of its markets and customers to allow it to adjust to changes in demand for its applications and to optimize capacity utilization.

### ***Changes in product mix***

The Group's results of operations are affected by changes in the product mix from period to period. The Group's products have average selling prices and profit margins that differ depending on a variety of factors, including their use and application, quality, innovation, shifts in customer preferences, market dynamics and the regional market in which they are sold.

One significant change in the Group's product mix was the shift toward semiconductor based lighting. Conversely, the Group also observed a decline in demand of certain traditional lighting products, especially in the automotive business. This decline can be attributed to market saturation, regulatory phase-outs, and the adoption of more energy-efficient alternatives. While these products continue to generate revenue, the decline in their sales has impacted the Group's overall product mix, leading to a shift in focus towards semiconductor based technology. In the OEMs automotive lighting business, this has a positive impact on the Group's product margins.

The Group also expects that increasing demand for smart lighting solutions will result in a significant change in its product mix. As customers increasingly prioritize energy efficiency, automation, and connectivity, the Group strategically focuses on developing and offering smart lighting solutions that integrate advanced control systems and sensors (such as the Eviyos technology, see "*Business—Markets and Applications—Illumination, Visualization and further Applications for the Automotive Market—Dynamic forward light*"). Smart lighting solutions have comparable product margins to those of more traditional semiconductor based lighting products while allowing the Group to capture a higher share of its customers' product spend.

The Group plans to continue to actively implement actions aimed at improving the Group's product mix and incorporating new and innovative products into its portfolio.

## **Key Factors Affecting Comparability of Financial Results**

### ***The OSRAM Acquisition and the Portfolio Re-Alignment Transactions***

The Group completed its acquisition of a controlling stake in OSRAM on July 9, 2020 and the financial information of the OSRAM business was fully consolidated in the Group's audited consolidated financial statements from July 1, 2020. As a result, the Group's audited consolidated financial statements for the year ended December 31, 2020 are not directly comparable with the audited consolidated financial statements for the year ended December 31, 2021.

Between the OSRAM Acquisition date and December 31, 2020, OSRAM contributed €1,578 million to consolidated revenues and a loss of €133 million to net result (including purchase price adjustments and consolidation effects). If the OSRAM Acquisition had taken place on January 1, 2020, it is estimated that the OSRAM Acquisition would have contributed an additional €931 million to consolidated revenues and additional losses of €269 million to consolidated net result after tax. See Note 1(c) to the 2020 audited Consolidated Financial Statements.

Following the OSRAM Acquisition, ams Offer GmbH entered into the DPLTA, which granted legacy OSRAM shareholders a time-limited right to sell OSRAM shares to ams Offer GmbH in return for a cash settlement of €45.54 per share (plus pro-rata interest of 5 percentage points above the applicable benchmark figure, net of any dividends recognized). Under the terms of the DPLTA, the right was set to expire two months following publication of the entry of the DPLTA in the commercial register, however owing to legal objections brought by a number of non-controlling shareholders, the right remains in place until two months after publication of the final decision in the court proceedings. Such judicial appraisal proceedings (*Spruchverfahren*) in connection with a DPLTA are a common occurrence in Germany in the context of takeover transactions. Oral hearings were held on June 23, December 1 and December 2, 2022. On June 30, 2023, the court rejected the OSRAM shareholders' request for an increase of the compensation payment and fixed dividend under the DPLTA. A first appeal was filed in July 2023 and the shareholders put right under the DPLTA will therefore remain in place until two months after publication of the court's final decision, which the Group expects to take place in 2025 or in 2026 See "*Business—Legal Proceedings—OSRAM appraisal proceedings*

(*Spruchverfahren*).” Furthermore, the non-controlling OSRAM shareholders will be granted a guaranteed compensation payment of €2.57 (gross) or €2.24 (net) per share per year from fiscal year 2021 (reduced pro rata in short fiscal years), provided they have not exercised their right to sell the shares. For these obligations the Group has recorded other liabilities of €675 million as of September 30, 2023 in its unaudited interim consolidated financial statements.

In addition, following the OSRAM Acquisition, the Group commenced a strategic realignment of its portfolio, which entailed the disposal of several businesses and assets in the former OSRAM's Digital (DI) division as well as certain other non-core automotive Lamps & Systems businesses and assets.

In particular, during the periods under review in this Document, the Group undertook the following disposals (unless otherwise stated, dates below refer to the closing of the relevant disposals) (collectively, the “**Portfolio Re-Alignment Transactions**”):

- During the year ended December 31, 2021:
  - In July 2021, the sale of the North American Digital Systems (DS) business to Acuity.
  - In September 2021, the sale of the Connected Building Applications (CBA) business to Skyview Capital.
  - In October 2021, the dissolution of the automotive lighting systems joint venture between OSRAM and Continental AG.
  - The Group also completed disposals of certain non-core production sites in Plovdiv, Bulgaria and Berlin, Germany.
- During the year ended December 31, 2022, the Group substantially completed the following disposals:
  - In May 2022, the sale of the Fluence Bioengineering horticulture lighting systems business to Signify.
  - In July 2022, the sale of the automotive lighting systems (AMLS) business to Plastic Omnium.
  - In December 2022, the sale of the Traxon Technologies architectural lighting business to Prosperity Group as well two funds, held by the Group's venture capital business to DES Holdings.
- During the nine months ended September 30, 2023, the Group completed the following disposals:
  - In March 2023, the sale of the Clay Paky entertainment lighting business to ARRI AG.
  - In April 2023, the sale of the Digital Systems business in Europe and Asia to Inventronics.
  - In August 2023, the sale of AMLS Italy (automotive production site in Treviso) to Flex-n-Gate Group.

The aggregate proceeds from the Portfolio Re-Alignment Transactions, net of cash and cash equivalents disposed, amounted to €715 million as of September 30, 2023.

In addition to the Portfolio Re-Alignment Transactions, in May 2023, the Group signed an agreement to sell OOO OSRAM, Moscow, Russia. The sale is expected to be concluded by the end of 2023, subject to regulatory approvals and customary closing conditions.

The results of the disposed business are included in the Group's consolidated financial statements only up to the date of the closing of the relevant disposal and as a result the Group's consolidated financial statements for the period during which such disposals occurred are not directly comparable with the prior period. For further discussion of the impact on the Group's consolidated financial statements of the Portfolio Re-Alignment Transactions, see Note 27 of the 2021 and 2022 audited consolidated financial statements.

The Portfolio Re-Alignment Transactions resulted in an aggregate net gain of €170 million (a net gain of €65 million and €99 million for the years ended December 31, 2021 and 2022, respectively, and a net gain of €6 million for the nine months ended September 30, 2023), which was excluded in the presentation of the Constant Perimeter Financial Information.

For purposes of the discussion below, the Group has presented certain information that the Group's management has prepared on a "constant perimeter" basis, which excludes the historical Result from Operations of the Portfolio Re-Alignment Transactions. See "*Risk Factor—Risks Related to the Group's Business and Industry—The Constant Perimeter Financial Information included in the Document has been compiled from non-IFRS financial data based on certain assumptions, adjustments and estimates made by management and is unaudited and unreviewed by the auditors of the Group.*"

## Key Operational and Financial Measures

The Group monitors a number of key operational and financial measures as indicators of the Group's operating performance. As some of these measures are not determined in accordance with generally accepted accounting principles, including IFRS, and are susceptible to varying calculations, they may not be comparable with other similarly titled measures of performance of other companies.

The following table shows selected line items of the Group's consolidated statement of income, non-IFRS measures and other important data from the periods stated:

	For the years ended December 31,			For the nine months ended September 30,	
	2020	2021	2022	2022	2023
	(Unaudited, unless otherwise indicated)			(Unaudited)	
	(€ millions, unless otherwise stated)				
Revenues* .....	3,504	5,038	4,819	3,642	2,682
Gross profit* .....	1,035	1,449	1,258	1,001	615
Gross Profit (Adjusted).....	1,160	1,714	1,470	1,134	771
Gross Margin (%).....	30%	29%	26%	27%	23%
Gross Margin (Adjusted) (%).....	33%	34%	31%	31%	29%
Research & Development expenses*.....	(423)	(692)	(630)	(484)	(373)

	For the years ended December 31,			For the nine months ended September 30,	
	2020	2021	2022	2022	2023
	(Unaudited, unless otherwise indicated)			(Unaudited)	
	(€ millions, unless otherwise stated)				
Research & Development expenses as percentage of revenue .....	12%	14%	13%	13%	14%
Result From Operations (EBIT)* .....	138	197	(161)	(71)	(1,426)
Result From Operations (EBIT) Margin (%) .....	4%	4%	(3)%	(2)%	(53)%
Result From Operations (EBIT) (Adjusted).....	463	502	407	321	171
Result From Operations (EBIT) Margin (Adjusted) (%).....	13%	10%	8%	9%	6%
Net Result.....	(87)	(32)	(444)	(297)	(1,531)
EBITDA.....	718	957	857	714	347
EBITDA Margin (%) .....	20%	19%	18%	20%	13%
EBITDA (Adjusted).....	921	958	853	660	454
EBITDA Margin (Adjusted) (%) .....	26%	19%	18%	18%	17%
Cash flows from operating activities.....	707	792	599	397	594
Free Cash Flow .....	531	482	62	93	(234)
Capital expenditures* .....	(177)	(310)	(537)	(304)	(827)
Total assets* .....	9,963	9,644	8,832	9,388	6,964
Equity ratio (%) <sup>(1)</sup> .....	30%	33%	32%	35%	18%
Employees (average based on FTEs).....	30,031	26,130	23,322	23,708	20,683

Notes:

\* Audited (as of and for the years ended December 31, 2020, 2021 and, 2022)

(1) Equity ratio is calculated by dividing the total equity attributable to shareholders of ams-OSRAM AG by the total assets of the Group.

## Description of Key Line Items

### Revenue

Revenue is principally derived from the manufacture and supply of high-performance sensor solutions, lighting and non-lighting solutions and other semiconductor-based technologies and systems and, to a lesser extent, from licenses and development services.

### Cost of Sales

Cost of sales consists of direct and indirect production costs, including variable costs, such as material costs (raw materials, wafers, other components and sub-assemblies), energy and

packaging, and fixed costs, such as personnel expenses, maintenance costs, depreciation and other overhead costs.

### ***Research and Development Expenses***

Research and development expenses generally comprise all costs resulting from R&D activities, except for development costs that are capitalized under certain conditions, as described in Notes 1 and 12 to the 2022 audited consolidated financial statements. This includes personnel costs related to the employees in R&D functions and material costs. It also includes contractor and related costs, office facilities, depreciation and amortization and license fees where necessary for use in R&D activities.

### ***Selling, General and Administrative Expenses***

Selling expenses are expenses that do not increase the value of manufactured products but that are necessary to support and ensure the sales of these products. General and administrative expenses are related to governance and business unit expenses.

Selling, general and administrative expenses consist primarily of costs for personnel (sales, support and product management and personnel costs related to executive management), contractor and related costs, office facilities, travel, marketing events, agent commissions and other professional fees, financial, accounting, human resources, quality control and administrative functions, together with associated overhead costs. In addition, administrative and general expenses include professional fees, insurance costs, facilities costs, litigation costs and depreciation and amortization costs.

### ***Other Operating Income***

Other operating income during the periods under review primarily related to gains from disposal of businesses, disposals of property, plant and equipment and intangible assets, grants and subsidies from governmental authorities, gains and losses related to reclassification of investments, reclassification of positive currency differences previously recognized in equity, compensation payments and other items.

### ***Other Operating Expense***

Other operating expense during the periods under review primarily related to impairments on goodwill and assets held for sale, reclassification of negative currency differences previously recognized in equity, allowances for bad debts, losses from disposal of businesses and losses on sales of property, plant and equipment and intangible assets.

### ***Financial Income***

Finance income primarily includes interest income, income recognized as exchange rate differences, amounts received from sale of financial assets and any revaluation of financial assets (at the fair value as at period-end).

### ***Financial Expenses***

Finance expenses primarily include interest expense, expenses recognized as exchange rate differences, and any revaluation of financial assets (at the fair value as at period-end).

### ***Income Taxes***

Income taxes comprises current and deferred tax and is recognized in the statement of income except to the extent that it relates to a business combination or items recognized directly in equity or in other comprehensive income. Current tax comprises the tax payable or receivable on the taxable income

or loss for the period and any adjustment to tax payable or receivable in respect of previous years. It is measured using tax rates enacted or substantively enacted at the reporting date. Deferred tax is recognized in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes.

## Overview of Financial Results

The following table sets out the Group's consolidated statement of income data for the years ended December 31, 2022, 2021 and 2020 and for the nine-month periods ended September 30, 2023 and 2022:

	For the years ended December 31,			For the nine months ended September 30,	
	2020	2021	2022	2022	2023
	(Audited)			(Unaudited)	
	(€ millions)				
Revenues.....	3,504	5,038	4,819	3,642	2,682
Cost of sales.....	(2,469)	(3,589)	(3,561)	(2,641)	(2,067)
<b>Gross profit.....</b>	<b>1,035</b>	<b>1,449</b>	<b>1,258</b>	<b>1,001</b>	<b>615</b>
Research and development expenses....	(423)	(692)	(630)	(484)	(373)
Selling, general and administrative expenses.....	(527)	(697)	(608)	(456)	(363)
Other operating income.....	73	212	179	178	55
Other operating expenses.....	(16)	(43)	(357)	(308)	(1,345)
Results from investments accounted for using the equity method, net.....	(5)	(33)	(4)	(1)	(15)
<b>Result from operations.....</b>	<b>138</b>	<b>197</b>	<b>(161)</b>	<b>(71)</b>	<b>(1,426)</b>
Financial income.....	24	66	25	125	83
Financial expenses.....	(242)	(264)	(225)	(283)	(175)
<b>Net financial result.....</b>	<b>(217)</b>	<b>(198)</b>	<b>(201)</b>	<b>(158)</b>	<b>91</b>
<b>Result before income taxes.....</b>	<b>(80)</b>	<b>(1)</b>	<b>(361)</b>	<b>(229)</b>	<b>(1,517)</b>
Income taxes.....	(10)	(31)	(82)	(68)	(14)
Result from discontinued operations, net of tax.....	3	—	—	—	—
<b>Net result.....</b>	<b>(87)</b>	<b>(32)</b>	<b>(444)</b>	<b>(297)</b>	<b>(1,531)</b>

## Results of Operations for the Nine Months ended September 30, 2023 and 2022

### Revenues

Revenues decreased by €959 million, or 26%, to €2,682 million for the nine months ended September 30, 2023 from €3,642 million for the nine months ended September 30, 2022. This decrease was primarily driven by the reduction of revenues due to the Portfolio Re-Alignment Transactions and the lower demand for semiconductor products, especially in the consumer market. The following tables set out the Group's consolidated revenue, by segment and by end market, for the nine months ended

September 30, 2023 and 2022. Revenues increased by €53 million, or 6.2%, to €904 million for the three months ended September 30, 2023 from €851 million for the three months ended June 30, 2023, driven by growth across end-markets, and particularly strong demand in the automotive business.

#### *Revenues by segment*

	<b>For the nine months ended September 30,</b>	
	<b>2022</b>	<b>2023</b>
	<b>(Unaudited)</b>	
	<i>(in € millions)</i>	
Semiconductors .....	2,400	1,796
Lamps & Systems .....	1,241	887
<b>Total</b> .....	<b>3,642</b>	<b>2,682</b>

#### *Semiconductors*

Revenues decreased by €604 million, or 25%, to €1,796 million for the nine months ended September 30, 2023 from €2,400 million for the nine months ended September 30, 2022. This revenue decrease in the Group's Semiconductors segment was primarily driven by the lower demand for semiconductor products, especially in the consumer market. Revenues in the Group's Semiconductors segment increased by €48 million, 8%, to €648 million for the three months ended September 30, 2023 from €600 million for the three months ended June 30, 2023 due to improved order patterns in the automotive business in particular in China, relatively low industrial and medical as well as consumer business due to weak macro economic environment.

#### *Lamps & Systems*

Revenues decreased by €354 million, or 29%, to €887 million for the nine months ended September 30, 2023 from €1,241 million for the nine months ended September 30, 2022. This revenue decrease in the Group's Lamps & Systems segment was primarily driven by a revenue decrease of revenues due to the Portfolio Re-Alignment Transactions. Revenues in the Group's Lamps & Systems Segment increased by €5 million, or 2%, to €256 million for the three months ended September 30, 2023 from €251 million for the three months ended June 30, 2023 due to strong automotive aftermarket sales offset by lower revenues in industrial and entertainment applications.

#### *Revenues by end market*

	<b>For the nine months ended September 30,</b>	
	<b>2022</b>	<b>2023</b>
	<b>(Unaudited)</b>	
	<i>(in € millions)</i>	
Automotive .....	1,466	1,359
Industrial and Medical .....	1,312	807
Consumer .....	847	505

	<b>For the nine months ended September 30,</b>	
	<b>2022</b>	<b>2023</b>
	<b>(Unaudited)</b>	
	<i>(in € millions)</i>	
Other.....	16	11
<b>Total</b> .....	<b>3,642</b>	<b>2,682</b>

#### *Automotive*

Revenues decreased by €108 million, or 7.3%, to €1,359 million for the nine months ended September 30, 2023 from €1,466 million for the nine months ended September 30, 2022. This decrease was primarily due to the reduction of inventory levels of Tier 1 automotive customers.

#### *Industrial and Medical*

Revenues decreased by €505 million, or 38.5%, to €807 million for the nine months ended September 30, 2023 from €1,312 million for the nine months ended September 30, 2022. This decrease was primarily due to the Portfolio Re-Alignment Transactions.

#### *Consumer*

Revenues decreased by €342 million, or 40.4%, to €505 million for the nine months ended September 30, 2023 from €847 million for the nine months ended September 30, 2022. This decrease was primarily due to weak macro-economic environment.

#### *Revenues by Region*

The Group has customers in a number of countries worldwide. The following table sets out the Group's consolidated revenues, by region, for the nine months ended September 30, 2023 and 2022.

Revenues are allocated to regions based on the regional billing location of each customer. As a result, the Group's regional revenue trends are not representative of end-user demand for products that utilize the Group's technologies globally, or in any particular country or region.

Geographically, the Group divides its business into three regions: EMEA, the Americas and Asia/Pacific.

	<b>For the nine months ended September 30,</b>	
	<b>2022</b>	<b>2023</b>
	<b>(Unaudited)</b>	
	<i>(in € millions)</i>	
EMEA.....	1,286	802
Americas.....	752	567
Asia/Pacific.....	1,603	1,314
<b>Total</b> .....	<b>3,642</b>	<b>2,682</b>

The Group's regional revenues are weighted toward the Asia/Pacific region, due to the number of distributors and OEM customers that operate from the region. Revenue in EMEA decreased by €484 million, or 38%, to €802 million for the nine months ended September 30, 2023 from €1,286 million for the nine months ended September 30, 2022 as a result of the deconsolidation of the Digital Systems business and lower demand for semiconductor products, especially in the consumer market. Revenues in the Americas decreased by €185 million, or 25%, to €567 million for the nine months ended September 30, 2023, from €752 million for the nine months ended September 30, 2022 as a result of the deconsolidation of Fluence Bioengineering, Inc. Revenues in Asia/Pacific decreased by €289 million, or 18%, to €1,314 million for the nine months ended September 30, 2023 from €1,603 million for the nine months ended September 30, 2022. This decrease in its Asia/Pacific revenues was primarily driven by the deconsolidation of the Digital Systems business and lower demand for semiconductor products, especially in the consumer market.

### ***Cost of Sales***

Cost of sales decreased by €574 million, or 22%, to €2,067 million for the nine months ended September 30, 2023 from €2,641 million for the nine months ended September 30, 2022. This decrease was due to a lower demand for semiconductor products, especially in the consumer market, and the reduction of revenues due to the Portfolio Re-Alignment Transactions as well as cost reduction and productivity measures.

### ***Gross Profit***

The Group's gross profit decreased by €386 million, or 39%, to €615 million for the nine months ended September 30, 2023 from €1,001 million for the nine months ended September 30, 2022. This decrease was principally due to the reduction of revenues in relation to the Portfolio Re-Alignment Transactions and lower demand for semiconductor products, especially in the consumer market.

The Group's Gross Profit (Adjusted) increased by 11% to €263 million for the three months ended September 30, 2023 from €237 million for the three months ended June 30, 2023 in part driven by increased revenues resulting from better utilization of the Group's manufacturing facilities in line with typical seasonality.

### ***Research and Development Expenses***

The Group's research and development expenses decreased by €111 million, or 23%, to €373 million for the nine months ended September 30, 2023 from €484 million for the nine months ended September 30, 2022. This decrease was primarily due to the recognition of government grants by the Group, lower personnel costs as well as outsourced activities to R&D partners.

Average R&D personnel decreased to 3,167 employees (based on FTEs) for the nine months ended September 30, 2023 from 3,487 employees (based on FTEs) for the nine months ended September 30, 2022.

As a percentage of revenue, research and development expenses were 14% for the nine months ended September 30, 2023 and 13% for the nine months ended September 30, 2022.

### ***Selling, General and Administrative Expenses***

The Group's selling, general and administrative expenses decreased by €94 million, or 21%, to €363 million for the nine months ended September 30, 2023 from €456 million for the nine months ended September 30, 2022. This decrease was primarily due to a one-time integration and carve-out costs in 2022 for the Group's disposal activities and integration measurements. As a percentage of revenue,

selling, general and administrative expenses were 14% for the nine months ended September 30, 2023 and 13% for the nine months ended September 30, 2022.

### **Result From Operations (EBIT)**

The following table sets out the Group's Result From Operations by segment:

	<b>For the nine months ended September 30,</b>	
	<b>2022</b>	<b>2023</b>
	<b>(Unaudited)</b>	
	<i>(in € millions)</i>	
Semiconductors .....	(248)	(1,503)
Lamps & Systems .....	176	78
<b>Total</b> .....	<b>(71)</b>	<b>(1,426)</b>

Result From Operations (EBIT) decreased by €1,355 million to €(1,426) million for the nine months ended September 30, 2023 from €(71) million for the nine months ended September 30, 2022, primarily as a result of goodwill impairment of €1,313 million following a reassessment of the long-term business outlook for the Group's business and in particular the semiconductors consumer business.

On a Constant Perimeter basis, Result From Operations (EBIT) (Adjusted) decreased by €182 million or 53% to €162 million for the nine months ended September 30, 2023 from €343 million for the nine months ended September 30, 2022.

The Group's Result From Operations (EBIT) (Adjusted) increased by €21 million, or 42%, to €71 million for the three months ended September 30, 2023 from €50 million for the three months ended June 30, 2023, due to recognition of IPCEI funding for the Company's development of disruptive LED technologies at its site in Regensburg, Germany amounting to €13 million and from the first results of the strategic initiatives undertaken in connection with our re-establish the base program.

For the Semiconductors segment, Result From Operations (EBIT) Adjusted increased by €23 million to €36 million for the three months ended September 30, 2023 from €13 million for the three months ended June 30, 2023 due to increased revenues in the automotive business as well as one-time catch up effects, related to the recently approved IPCEI funding for the Company's development of disruptive LED technologies at its site in Regensburg, Germany.

For the Lamps & Systems segment, Result From Operations (EBIT) Adjusted decreased by €2 million from €37 million for the three months ended June 30, 2023 to €35 million for the three months ended September 30, 2023. The quarter-on-quarter decrease was mainly due to seasonal effects, while Result From Operations (EBIT) Adjusted Margin remained stable at 14%, reflecting the strength of the streamlined portfolio following the Portfolio Re-Alignment Transactions in the segment.

### **Net Financial Result**

The Group recorded net financial result of €(91) million for the nine months ended September 30, 2023, a €67 million decrease as compared to net financial result of €(158) million for the nine months ended September 30, 2022. Financial expenses decreased from €(283) million for the nine months ended September 30, 2022 to €(175) million for the nine months ended September 30, 2023. This

decrease was particularly due to reduced negative foreign currency effects during the nine months ended September 30, 2023, compared to the nine months ended September 30, 2022.

### **Income Tax**

The Group recognized income taxes of €(14) million for the nine months ended September 30, 2023, as compared to income taxes of €(68) million for the nine months ended September 30, 2022.

### **Net Result**

The Group's net result was a loss of €(1,531) million for the nine months ended September 30, 2023 from a loss of €(297) million for the nine months ended September 30, 2022, as a result of the factors discussed above.

## **Results of Operations for the Years ended December 31, 2022 and 2021**

### **Revenues**

Revenues decreased by €219 million, or 4.3 %, to €4,819 million in 2022 from €5,038 million in 2021. This decrease was primarily due to portfolio effects related to the Portfolio Re-Alignment Transactions during the period. On a Constant Perimeter basis, revenues increased by €7 million, or 0.2%, to €4,233 million in 2022 from €4,226 million in 2021. The increase was primarily related to positive results in the automotive aftermarket business despite supply chain volatility and inventory adjustments (*i.e.*, excess inventory at the Group's customers that led customers to wait until they reduced their inventory before ordering new products), offset by lower demand in the consumer market, particularly a decrease in smartphone volumes year-on-year as a result of, among other factors, decreasing purchasing power caused by the inflationary environment.

The following tables set out the Group's consolidated revenue, by segment and by end market, for the years ended December 31, 2022 and 2021.

#### **Revenues by segment**

	<b>For the years ended December 31,</b>	
	<b>2021</b>	<b>2022</b>
	<b>(Audited)</b>	
	<i>(in € millions)</i>	
Semiconductors .....	3,279	3,167
Lamps & Systems .....	1,760	1,652
<b>Total</b> .....	<b>5,038</b>	<b>4,819</b>

#### **Semiconductors**

Revenues decreased by €112 million, or 3.4%, to €3,167 million in 2022 from €3,279 million in 2021. This revenue decrease in the Semiconductors segment was particularly driven by lower demand in the consumer end market in China as a result of the impact of COVID-19 and related government measures and in the Android mobile phone market caused by the inflationary environment resulting in a decreased purchasing power, which was only partially offset by resilient performance in the automotive end market.

### *Lamps & Systems*

Revenue decreased by €108 million, or 6.1%, to €1,652 million in 2022 from €1,760 million in 2021. This revenue decrease in the Lamps & Systems segment was primarily due to the Portfolio Re-Alignment Transactions during the period. Excluding those effects, revenue increased by €118 million, on a Constant Perimeter basis. The portfolio effects were partially offset by the post-COVID-19 recovery of the automotive business and entertainment and industry lamps (ENI) business and by positive foreign currency effects.

### *Revenues by end market*

	For the years ended December 31,	
	2021	2022
	(Unaudited)	
	<i>(in € millions)</i>	
Automotive.....	2,011	1,975
Consumer.....	1,364	1,146
Industrial and Medical.....	1,664	1,681
Other.....	—	18
<b>Total</b> .....	<b>5,038</b>	<b>4,819</b>

### *Automotive*

Revenues decreased by €36 million, or 1.8%, to €1,975 million in 2022 from €2,011 million in 2021. On a Constant Perimeter basis, revenues increased by €73 million, or 4.1%. This increase was primarily due to the post-COVID-19 recovery of the automotive lamps business.

### *Consumer*

Revenues decreased by €218 million, or 16.0%, to €1,146 million in 2022 from €1,364 million in 2021. This decrease was primarily due to the decrease of 9.9% of the shipments in the global smartphone market which was caused by lower demand in the consumer end market in China and in the Android mobile phone market.

### *Industrial and Medical*

Revenues increased by €17 million, or 1.0%, to €1,681 million in 2022 from €1,664 million in 2021. On a Constant Perimeter basis, revenues increased by €133 million, or 12.3%. The increase was mainly driven by the medical imaging solutions for computed tomography and digital X-ray systems, in which the Group is a global leader. Furthermore, the demand in a number of industrial markets, including entertainment, developed positively during 2022.

### *Revenues by Region*

The Group has customers in a number of countries worldwide. The following table sets out the Group's consolidated revenues, by region, during the years ended December 31, 2022 and 2021.

Revenues are allocated to regions based on the regional billing location of each customer. As a result, the Group's regional revenue trends are not representative of end-user demand for products that utilize its technologies globally, or in any particular country or region.

Geographically, the Group divides its business into three regions: EMEA, the Americas and Asia/Pacific.

	For the years ended December 31,	
	2021	2022
	(Audited)	
	<i>(in € millions)</i>	
EMEA.....	1,413	1,455
Americas.....	962	849
Asia/Pacific.....	2,663	2,515
<b>Total</b> .....	<b>5,038</b>	<b>4,819</b>

The Group's regional revenues are weighted toward the Asia/Pacific region, due to the number of distributors and OEM customers that operate from the region. Revenue in EMEA increased by €42 million, or 3.0%, to €1,455 million in 2022 from €1,413 million in 2021 and was supported by positive demand in the automotive business. Revenues in the Americas decreased by €113 million, or 11.7%, to €849 million in 2022 from €962 million in 2021 mainly as a result of the impact of business disposals in connection with the Portfolio Re-Alignment Transactions. Revenues in Asia/Pacific decreased by €148 million, or 5.6% to €2,515 million in 2022 from €2,663 million in 2021. This decrease in the Asia/Pacific revenues was primarily driven by low demand in the Semiconductors segment's consumer business resulting from a lower demand in the consumer end market in China, in general caused in part by COVID-19 related lockdowns, and especially in the Android mobile phone market.

#### **Cost of Sales**

Cost of sales decreased by €28 million, or 0.8%, to €3,561 million in 2022 from €3,589 million in 2021. This decrease was principally due to portfolio effects related to the Portfolio Re-Alignment Transactions during the period, partially offset by an increase in raw material prices and lower capacity utilization at the semiconductor production facilities in 2022 as compared to the prior year.

#### **Gross Profit**

The Group's gross profit decreased by €191 million, or 13.2%, to €1,258 million in 2022 from €1,449 million in 2021. This decrease was principally due to a change in product mix and the revenue decrease being only partially offset by lower cost of sales. Between 2021 and 2022, the Group's Gross Margin declined from 29% to 26%. This was influenced by lower capacity utilization at the semiconductor production facilities in 2022 as compared to the prior year and was further impacted by impairment losses on property, plant, and equipment in the amount of €102 million (compared to €151 million in 2021 recognized in connection with the loss of market share for certain consumer applications), which were incurred as a result of reorganizing the Group's manufacturing sites.

#### **Research and Development Expenses**

The Group's research and development expenses decreased by €62 million, or 9.0%, to €630 million in 2022 from €692 million in 2021. This decrease was in the Lamps & Systems segment and was primarily due to the unwinding of the JV OSRAM Continental GmbH in 2021 and the deconsolidation of the remaining automotive lighting systems (AMLS) business in 2021. Research and development expenses for the Semiconductors segment remained constant year-over-year.

Average R&D personnel increased slightly to 3,453 employees (based on FTEs) in 2022 from 3,445 employees (based on FTEs) in 2021, despite changes to the operating perimeter, reflecting the Group's realignment towards technologically complex applications requiring sustained investment in R&D.

As a percentage of revenue, research and development expenses were 13% in 2022 and 14% in 2021.

### **Selling, general and administrative expenses**

Selling, general and administrative expenses decreased by €89 million, or 13%, to €608 million in 2022 from €697 million in 2021. This decrease was principally due to a headcount reduction as a result of the Portfolio Re-Alignment Transactions. As a percentage of revenue, selling, general and administrative expenses were 13% in 2022 and 14% in 2021, as revenue during this period also decreased.

### **Result From Operations (EBIT)**

The following table sets out Result From Operations by segment:

	For the years ended December 31,	
	2021	2022
	(Audited)	
	(in € millions)	
Semiconductors .....	65	(305)
Lamps & Systems .....	132	145
<b>Total</b> .....	<b>197</b>	<b>(161)</b>

Result From Operations (EBIT) decreased by €358 million to €(161) million in 2022 compared to a positive result of €197 million in 2021, primarily as a result of impairment losses on goodwill of €277 million and on other intangible assets and property, plant and equipment totalling €102 million. The goodwill impairment was mainly related to business units within the Semiconductors segment, namely Opto Semiconductors (€230 million) and Advanced Optical Sensors (AOS) (€47 million). The impairment on other intangible assets and property, plant and equipment was mainly related to the optimization of the Group's manufacturing footprint and lower capacity utilization at its semiconductor production facilities. A positive non-recurring effect of €151 million was realized from the sale of Fluence Bioengineering, Inc.

### **Net Financial Result**

The Group recorded net financial result of €(201) million in 2022, a €3 million increase as compared to net financial result of €(198) million in 2021. Interest expenses increased from €179 million in 2021 to €198 million in 2022. This increase was particularly due to the greater use of supply chain financing programs in 2022 and a higher interest rate level. The increase was partially offset by higher interest income.

### **Income Taxes**

The Group recognized income taxes of €82 million in 2022, as compared to income taxes of €31 million in 2021. Current taxes in 2022 amounted to €84 million, compared to €48 million in 2021,

mainly resulting from foreign companies that were profitable due to the global transfer pricing system and non-recurring tax expenses of €32 million in 2022 related to the disposal of Fluence. Current taxes were offset by deferred taxes with a net positive effect totaling €2 million in 2022, compared to €17 million for the prior year.

### **Net Result**

Net result for the year was a loss of €444 million in 2022 from a loss of €32 million in 2021, as a result of the factors discussed above.

### **Results of Operations for the Years ended December 31, 2021 and 2020**

The Group completed the acquisition of a controlling stake in OSRAM on July 9, 2020 and the financial information of the OSRAM business was fully consolidated in the audited Consolidated Financial Statements from July 1, 2020. As a result, the audited consolidated financial statements for the year ended December 31, 2020 are not directly comparable with the audited Consolidated Financial Statements for the year ended December 31, 2021. See “—Key Factors Affecting Comparability of Financial Results—The OSRAM Acquisition and the Portfolio Re-Alignment Transactions.”

### **Revenues**

Revenues increased by €1,534 million, or 43.8%, to €5,038 million in 2021 from €3,504 million in 2020. This increase was primarily due to the fact that OSRAM was consolidated for the full twelve months for the first time in fiscal year 2021. If the OSRAM Acquisition had taken place on January 1, 2020, it is estimated that consolidated revenues for 2020 would have been €4,931 million, which would have resulted in an increase of €107 million in 2021 compared to 2020.

The increase in revenues not attributable to the OSRAM Acquisition was primarily driven by positive performance in the automotive business compared to 2020 despite a continued challenging supply environment in the automotive end market even though supply chain disruptions for semiconductors eased during the period. The year ended December 31, 2020 was impacted to a significant extent by disruptions caused by the COVID-19 pandemic. The results were partially offset by decreased sales volume in the semiconductor consumer business as a result of a loss of market share for certain consumer applications.

The following tables set out the Group’s consolidated revenue, by segment and by end market, for the years ended December 31, 2021 and 2020:

#### *Revenues by segment*

	<b>For the years ended December 31,</b>	
	<b>2020</b>	<b>2021</b>
	<b>(Audited)</b>	
	<i>(in € millions)</i>	
Semiconductors .....	2,605	3,279
Lamps & Systems .....	900	1,760
<b>Total</b> .....	<b>3,504</b>	<b>5,038</b>

### *Semiconductors*

Revenues increased by €674 million, or 25.9%, to €3,279 million in 2021 from €2,605 million in 2020. The revenue increase in the Semiconductors segment was primarily due to the fact that OSRAM was consolidated for the full twelve months for the first time in fiscal year 2021 and increased demand in the industrial and automotive markets which offset a lower demand in the consumer business.

### *Lamps & Systems*

Revenues increased by €860 million, or 95.6%, to €1,760 million in 2021 from €900 million in 2020. The revenue increase in the Lamps & Systems segment was primarily due to the fact that OSRAM was consolidated for the full twelve months for the first time in fiscal year 2021 and to the increased demand post COVID-19 especially in the automotive market which offset the impact of the Portfolio Re-Alignment Transactions in 2021.

### *Revenues by end market*

	<b>For the years ended December 31,</b>	
	<b>2020</b>	<b>2021</b>
	<b>(Unaudited)</b>	
	<i>(in € millions)</i>	
Automotive.....	929	2,011
Industrial and Medical.....	886	1,664
Consumer.....	1,689	1,364
Other.....	—	—
<b>Total.....</b>	<b>3,504</b>	<b>5,038</b>

### *Automotive*

Revenues increased by €1,082 million, or 116.4%, to €2,011 million in 2021 from €929 million in 2020. This increase was primarily due to the fact that OSRAM was consolidated only for six months in 2020 and for the full twelve months for the first time in fiscal year 2021 and to the post-COVID-19 recovery of the automotive business in 2021.

### *Consumer*

Revenues decreased by €325 million, or 19.2%, to €1,364 million in 2021 from €1,689 million in 2020. This decrease was primarily due to lower market share in the consumer market.

### *Industrial and Medical*

Revenues increased by €778 million, or 87.8%, to €1,664 million in 2021 from €886 million in 2020. This increase was primarily due to OSRAM was consolidated only for six months in 2020 and for the full twelve months for the first time in fiscal year 2021 and to the post-COVID-19 market recovery in 2021.

### Revenues by Region

The following table sets out the Group's consolidated revenues, by region, during the years ended December 31, 2021 and 2020.

	For the years ended December 31,	
	2020	2021
	(Audited)	
	(in € millions)	
EMEA.....	765	1,413
Americas.....	521	962
Asia/Pacific .....	2,218	2,663
<b>Total</b> .....	<b>3,504</b>	<b>5,038</b>

Revenue in Asia/Pacific increased by €445 million, or 20.0% to €2,663 million in 2021 from €2,218 million in 2020. Revenue in EMEA increased by €648 million, or 84.7% to €1,413 million in 2021 from €765 million in 2020. Revenue in Americas increased by €441 million, or 84.6% to €962 million in 2021 from €521 million in 2020. These revenue increases resulted primarily from the fact that OSRAM was consolidated for the full twelve months for the first time in fiscal year 2021.

### Cost of Sales

Cost of sales increased by €1,120 million, or 45.4%, to €3,589 million in 2021 from €2,469 million in 2020. This increase was primarily due to the fact that OSRAM was consolidated for the full twelve months for the first time in fiscal year 2021 as well as impairment losses on property, plant and equipment in the amount of €151 million, which were incurred in connection with the loss of market share for certain consumer applications. This increase in cost of sales was partially offset by cost savings related to consolidation of the manufacturing footprint.

### Gross Profit

The Group's gross profit increased by €414 million to €1,449 million in 2021 from €1,035 million in 2020, primarily due to the fact that OSRAM was consolidated for the full twelve months for the first time in fiscal year 2021. This increase was partially offset by the impact of lower overall capacity utilization at the Group's facilities in 2021. Between 2020 and 2021, the Group's Gross Margin declined from 30% to 29%.

### Research and Development Expenses

Research and development expenses increased by €269 million, or 63.6%, to €692 million in 2021 from €423 million in 2020. This increase was primarily due to the fact that OSRAM was consolidated for the full twelve months for the first time in fiscal year 2021. The increase related primarily to the Semiconductors segment.

Average R&D personnel decreased to 3,445 employees (based on FTEs) in 2021 from 3,732 employees (based on FTEs) in 2020.

As a percentage of revenue, research and development expenses were 13.7% in 2021 and 12.1% in 2020.

### **Selling, General and Administrative Expenses**

Selling, general and administrative expenses increased by €170 million, or 32.3%, to €697 million in 2021 from €527 million in 2020. This increase was primarily due to the fact that OSRAM was consolidated for the full twelve months for the first time in fiscal year 2021.

As a percentage of revenue, selling, general and administrative expenses were 13.8% in 2021 and 15.0% in 2020. The decrease of selling, general and administrative expenses as a percentage of revenue was impacted by the synergies generated by the OSRAM Acquisition.

### **Result From Operations (EBIT)**

Result From Operations increased by €59 million to €197 million in 2021 from €138 million in 2020, primarily due to the fact that OSRAM was consolidated for the full twelve months for the first time in fiscal year 2021. The following table sets out Result From Operations by segment:

	<b>For the years ended December 31,</b>	
	<b>2020</b>	<b>2021</b>
	<b>(Audited)</b>	
	<i>(in € millions)</i>	
Semiconductors .....	275	65
Lamps & Systems .....	(137)	132
<b>Total</b> .....	<b>138</b>	<b>197</b>

### **Net Financial Result**

The Group recorded net financial loss of €198 million in 2021, as compared to net financial loss of €217 million in 2020. This change was related to the impact in 2020 of non-recurring transaction costs of €114 million in connection with the funding of the OSRAM Acquisition, and was offset by higher interest expenses in 2021, resulting from the increased average debt for the year and from currency translation effects caused, in particular, by the appreciation of the U.S. dollar against the Euro.

### **Income Tax**

The Group recognized income taxes of €31 million (on a negative result before taxes of €1 million) in 2021, as compared to €10 million (on a negative result before taxes of €80 million) in 2020. In 2021, the current taxes of €48 million mainly resulted from foreign companies that were profitable due to the global transfer pricing system and was offset by deferred taxes with a total net effect of €17 million that included, in particular, income of €25 million from the reversal of deferred tax liabilities resulting from acquisitions.

### **Profit for the Year**

Net result for the year was a loss of €32 million in 2021 compared to a loss of €87 million in 2020, as a result of the factors discussed above.

### **Liquidity and Capital Resources**

The Group has historically generated adequate cash from sales of its products to meet its cash requirements, supplemented by borrowing to support capital investment expenditure and

acquisitions. The Group may also, from time to time, enter into arrangements with its customers to finance capital expenditure and R&D for customer specific projects, including pre-payments or advances on future sales, in each case in line with industry practice. Any such arrangements with customers may include conditions relating to the achievement of certain milestones. The Group also benefits from government grants in connection with the Group's research activities.

Net cash provided by operating activities is variable, even in an environment of stable production with stable revenues and costs, since it depends on the timing of payments (typically between 30-60 days for customers in the Semiconductors segment, but can be longer and up to eighteen months for customers of traditional lighting applications, especially in the United States) and seasonality. The Group also enters into factoring and reverse factoring arrangements in the ordinary course of business or supply chain financing programs to manage the impact of timing of payments on the Group's net working capital.

As at September 30, 2023, the Group's cash and cash equivalents were €691 million, compared to €1,243 million as at September 30, 2022. In addition, as at September 30, 2023, the Group had €800 million available under its Revolving Credit Facility. As at December 31, 2022, the Group's cash and cash equivalents were €1,087 million.

## Cash Flows

	For the years ended December 31,			For the nine months ended September 30,	
	2020	2021	2022	2022	2023
	(Audited)			(Unaudited)	
	<i>(in € millions)</i>				
Cash flows from operating activities .....	707	792	599	397	594
Cash flows from investing activities .....	(1,495)	(560)	(183)	53	(894)
Cash flows from financing activities.....	1,951	(534)	(726)	(688)	(82)
Effects of changes in foreign exchange rates on cash and cash equivalents .....	(55)	33	69	147	(25)
Cash and cash equivalents at beginning of period .....	500	1,609	1,339	1,339	1,098
<b>Cash and cash equivalents at the end of period.....</b>	<b>1,609</b>	<b>1,339</b>	<b>1,098</b>	<b>1,248</b>	<b>691</b>
Less: Cash and cash equivalents of assets held for sale at end of period.....	12	8	12	5	0
<b>Cash and cash equivalents at end of period .....</b>	<b>1,597</b>	<b>1,331</b>	<b>1,087</b>	<b>1,243</b>	<b>691</b>

### **Cash Flow from Operating Activities**

The Group generated €594 million of cash flow from operating activities during the nine months ended September 30, 2023, as compared to €397 million of cash flow from operating activities in the nine months ended September 30, 2022. This increase in cash flow from operating activities was principally due to a release of funds bound by inventories and trade receivables. Moreover, the cash flow from operating activities was impacted by a supply-chain financing program initiated by ams

OSRAM for trade payables with an impact of €167 million. The program, which was first used in the first quarter of fiscal year 2023, includes EUR and USD liabilities. A further positive effect on operating cash flow of €31 million was derived from the replacement of funds for partial retirement coverage in a trust fund in Germany by a bank guarantee.

The Group generated €599 million of cash flow from operating activities in 2022, as compared to €792 million of cash flow from operating activities in 2021. This decrease in cash flow from operating activities was principally due to a lower result from operations, and an outflow from net working capital activities, based on payments for integration activities and bonus payments for employees based on the 2021 performance and the impact of the Portfolio Re-Alignment Transactions.

The Group generated €792 million of cash flow from operating activities in 2021, as compared to €707 million of cash flow from operating activities in 2020. This increase in cash flow from operating activities was principally due to a decrease in working capital of €57 million in 2021, compared to an increase of €30 million in 2020.

### ***Cash Flow used in Investing Activities***

Cash flow from investing activities during the nine months ended September 30, 2023 was an outflow of €894 million, a change of €947 million as compared to an inflow of €53 million during the nine months ended September 30, 2022. This development was principally due to capital expenditures that increased by €523 million, including investments related to the construction of the new LED focused semiconductor manufacturing facility for microLEDs in Kulim, Malaysia, the production facility in Premstätten, Austria as well as in Regensburg, Germany. Moreover, the cash outflow for the acquisition of OSRAM shares increased by €220 million and the cash inflows from disposals of businesses decreased by €201 million.

Cash flow from investing activities in 2022 was an outflow of €183 million, as compared to an outflow of €560 million in 2021. This decrease was principally due to lower payments for additional purchases of OSRAM Licht AG shares which amounted to an outflow of €19 million in 2022 compared to an outflow of €452 million in 2021.

Cash flow from investing activities in 2021 was an outflow of €560 million, as compared to an outflow of €1,495 million in 2020. Cash flow from investing activities in 2021 included an outflow of €310 million of investments in intangible assets and property, plant and equipment, an increase compared to an outflow of €177 million of investments in intangible assets and property, plant and equipment in 2020, which were offset by significantly lower cash used in connection with acquisitions, net of cash and cash equivalents acquired (outflow of €524 million in 2021, compared to an outflow of €920 million in 2020), and cash used for purchases of investments of €442 million in 2020, notably in connection with the OSRAM Acquisition. In 2021, the cash outflows included cash payments totaling €452 million related to the purchases of OSRAM Licht AG shares under the DPLTA.

### ***Cash Flow from Financing Activities***

Cash flow from financing activities was €(82) million during the nine months ended September 30, 2023, an increase of €606 million as compared to cash flow from financing activities of €(688) million in the nine months ended September 30, 2022. This increase in cash outflow from financing activities was principally due to a net cash inflow from loans of €132 million in the nine months ended September 30, 2023 compared to a net cash outflow from loans of €98 million in the nine months ended September 30, 2022. Moreover in the nine months ended September 30, 2022, convertible bonds were repaid or repurchased leading to a cash outflow of €334 million.

Cash flow from financing activities was an outflow of €726 million in 2022, an increase of €192 million as compared to an outflow of €534 million in 2021. This increase was mainly due to the repayment of the convertible bonds denominated in USD at maturity.

Cash flow from financing activities was an outflow of €534 million in 2021, compared to a cash outflow of €1,951 million in 2020, which was primarily related to the capital increase and issuance of the existing notes and convertible bonds to finance the OSRAM Acquisition in 2020. This was offset by the repayment of promissory notes and bank loans, as well as higher interest payments (which increased in 2021 as this was the first full fiscal year for the payment of interests for the existing notes).

## Capital Expenditures

The following table shows the capital expenditures for the periods indicated:

	For the years ended December 31,			For the nine months ended September 30,	
	2020	2021	2022	2022	2023
	(Audited)			(Unaudited)	
	<i>(in € millions)</i>				
Capital expenditures .....	(177)	(310)	(537)	(304)	(827)

For a more detailed description of the Group's capital expenditures, see "*—Key Factors Affecting Financial Results—Capital Expenditure.*"

## Pension Plans and Similar Commitments

During the periods under review, the Group maintained a number of pension plans to cover almost all of employees in Germany and many employees in other countries, with defined benefit and defined contribution pension plans based on contractual arrangements and/or statutory requirements. The Group regularly reviews the design of its pension plans, which historically have been predominately based on defined benefit obligations. The majority of the Group's pension obligations are funded with assets in segregated entities.

The total liabilities recognized for these commitments under the Group's balance sheet amounted to €166 million, while the Group recorded non-current assets of €21 million for overfunded pension plans, in each case as of December 31, 2022. For more additional details see Note 21 of the 2022 audited consolidated financial statements and "*Risk Factors—Legal, Regulatory and Tax Risks—The Group is exposed to risks in connection with its pension obligations, which may lead to unexpected funding obligations.*"

## Quantitative and Qualitative Disclosures of Market Risk

The Group's activities expose the Group to a variety of financial risks: interest rate risk; foreign currency risk; credit risk; and liquidity risk. The Group has established objectives, formal policies and guidelines to manage these financial risks. For a description of the Group's financial risks and financial risk management objectives, see Note 25 to the 2022 audited consolidated financial statements.

## **Off-Balance Sheet Arrangements**

As of September 30, 2023, the Group did not have any material off-balance sheet arrangements.

## **Principal Accounting and Valuation Policies**

The Group reported financial condition and results of operations are sensitive to the accounting principles, methods and assumptions that are the basis for the Group's consolidated financial statements. The Group's accounting policies, the judgments management makes in the creation and application of these policies, and the sensitivities of reported results to changes in accounting policies and assumptions are factors to be considered along with the audited consolidated financial statements. For a detailed discussion of the Group's significant accounting policies and estimates, see Note 1 to the 2022 audited consolidated financial statements.

The preparation of the audited consolidated financial statements requires the Group's management to make estimates and assumptions that affect the reported amounts of income, expenses, assets, liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements. While the Group bases these estimates and judgments on historical experience and other factors that it believes to be reasonable under the circumstances and review all estimates and judgments continually, many factors may cause actual results to materially differ from these estimates. See "*Risk Factors*" and "*Forward-Looking Statements*".

## BUSINESS

### Overview

Headquartered in Austria and Germany, the Group is a developer and manufacturer of differentiated, intelligent sensors and emitter components with a focus on sensing, illumination and visualization technologies for use in a wide range of applications primarily in the automotive, industrial and medical end markets and selected high volume applications for the consumer market. The Group concentrates on technologically complex intelligent sensor and emitter components in order to offer differentiated solutions to its customers. The Group has a strong mixed signal and analog semiconductor design capability, which it can produce in its own full service foundry as well as with outsourced manufacturing partners. It pursues market leadership across its sharpened portfolio.

The Group's extensive product and technology portfolio ranges from individual components integrated micro-modules in its Semiconductor business, and full lamps and more complex systems in its Lamps & Systems, which are used in a wide range of applications in the Group's end markets. In the twelve months ended September 30, 2023, the Group generated revenues of €3,859 million, of which 66% and 34% were attributable to the Semiconductors and Lamps & Systems segments, respectively and EBITDA (Adjusted) of €647 million. At group level, 49%, 31% and 20% of the Group's revenues during the twelve months ended September 30, 2023 were attributable to servicing customers across the automotive, industrial and medical and consumer end markets, respectively.

The Group's operating activities are presented in two segments:

- *Semiconductors* (accounting for €2,562 million, or 66% of the Group's total revenue, in the twelve months ended September 30, 2023): the Group offers LED, laser, sensor, and CMOS IC with embedded software solutions for automotive, industrial and medical applications (including, for example, automotive dynamic forward and signal lighting, lasers for light detection and ranging ("**LIDAR**"), light-emitting diode ("**LED**") ambient lighting and in-cabin sensing, horticulture lighting, LED and laser projection, and medical imaging including x-ray photon counting), as well as select solutions for the consumer markets, including display management solutions including ambient light sensing and camera enhancement applications. For the twelve months ended September 30, 2023, 25%, 20% and 21% of the Group's revenues were attributable to products for the automotive, industrial/medical and consumer end markets in the Semiconductors segment, respectively.
- *Lamps & Systems* (accounting for €1,297 million, or 34% of the Group's total revenue, in the twelve months ended September 30, 2023): the Group offers traditional lighting and other solutions for automotive (lamps and fixtures, LED retrofit products, exchangeable LED light source solutions as well as car accessories), entertainment, medical and industrial applications. For the twelve months ended September 30, 2023, 23% and 10% of the Group's revenues were attributable to products for the automotive and industrial/medical end markets in the Lamps & Systems segment, respectively.

The Group has long-standing, close relationships with many of its core customers, across highly-diverse industries. These customers are primarily original equipment manufacturers ("**OEMs**") (including distributors that sell on to OEMs) producing automotive, industrial and medical and consumer products that integrate the Group's solutions in their products. The Group provides its

customers with differentiated solutions and application engineering support to integrate its products into their solutions to ensure the customers get the best system performance.

The Group undertakes its R&D and manufacturing activities in a global network of 18 facilities across Europe, Asia/Pacific and North America. Worldwide, the Group's main facilities are located in Austria, Germany, Belgium, Slovakia, Czech Republic, China, the Philippines, Malaysia, Singapore and the United States. Across its global operations, the Group had 21,053 employees based on full-time equivalent employees ("**FTEs**") for the twelve months ended September 30, 2023.

Innovation is at the core of the Group's development and manufacturing offering and the Group invests significantly in research and development ("**R&D**"). The average number of employees working in R&D was 3,453 in 2022, working from 41 locations globally, compared to 3,445 in 2021 and 3,732 in 2020, based on FTEs. The Group holds more than 14,000 issued and pending patents and it currently has approximately 450 R&D projects in progress (which include both product and technology developments), which add to the approximately 500 R&D projects completed in the past two years.

## **Competitive Strengths**

### ***Global leader in optical semiconductor technologies with effective barriers to entry and strong competitive moat***

Currently, the Group is a top two player in the optoelectronics components business in terms of revenue (Source: OMDIA Optoelectronic Report) and in the view of the Group is one of the few industry players with scale. The Group is a provider of solutions comprising optical emitters (LED, microLED, vertical cavity surface-emitting lasers ("**VCSEL**"), edge-emitting lasers ("**EEL**"), detectors and intelligent sensors (for instance, x-ray sensors, medical imaging, spectral imaging, ambient light and proximity sensors)) and integrated circuits ("**ICs**"), including mixed signal and analog ICs, which are used as power management and sensor interface and sensor processor ICs for mobile devices and wearables, smart homes and buildings, digital health and as high-precision battery sensor interfaces for electric vehicles ("**EVs**").

The Group's strong market position is reflected in its leadership across its three key end-markets (automotive, industrial and medical and consumer) and key product areas such as light sensors.

The Group's total addressable market had a value of €20.5 billion as of 2022 (source: ams OSRAM Internal Market Model). The TAM of the Group's Semiconductor segment represented €16.8 billion in 2022 and is forecast to grow at a CAGR of 7.4% between 2022-2026 (source: ams OSRAM Internal Market Model). The Lamps & Systems segment's TAM represented approximately €3.7 billion in 2022 and is forecast to grow at a compound annual growth rate ("**CAGR**") of 0.7% between 2022-2026 (Source: ams OSRAM Internal Market Model).

Within the automotive sector, the Group is ranked first in automotive emitters based on 2022 market share (Source: TrendForce Infrared), first in automotive light sensors based on 2021 market share (Source: OMDIA Light Sensor Report 2022) and sixteenth in automotive semiconductors based on 2022 market share with a total market of approximately \$64 billion (Source: OMDIA).

Within the industrial and medical end-markets, the Group is a leading supplier in niche categories such as photon-counting for computed tomography and is a key supplier to eight out of the ten leading CT scanner OEMs (Source: YOLE Digital X-Ray 2022). The Group focuses on markets with challenging requirements, allowing differentiation through innovation. Market segments served

include, among others, horticulture, medical sensing such as CT scanning and digital X-ray imaging and high-performance outdoor/industry lighting.

Within the consumer end-market, the Group believes it is a leading player in select technologically complex consumer segments across multiple categories of devices. For instance, the Group ranks second among light sensor suppliers in smartphones based on 2021 market share (Source: OMDIA Light Sensor Report 2022) and third among sensor and actuator suppliers in wearables based on 2022 market share (Source: YOLE Sensors and Actuators for Wearables 2023). Market segments served include, among others, display management, ambient light sensors and camera enhancements sensing applications.

The Group believes its leadership in these markets is underpinned by strategic long-term customer relationships, through which it supplies many of the world's largest OEMs (in terms of revenues) that operate in the end-markets for automotive, industrial and medical and consumer devices (Source: ams OSRAM Internal Market Model). The long-standing and trusted relationships the Group has with most of its core customers average over ten years in length.

Many of the products the Group designs for its largest customers are customer specific. In many cases the Group is the sole supplier to its customers for certain technologies, potentially creating high switching costs and promoting customer retention. Furthermore, the Group believes its technology-led approach leads to early partnerships with customers during the design phase of their products, allowing the Group to gain a detailed understanding of the customer's requirements and specifications, which the Group believes enables it to identify new products and applications for both existing and potential customers. In addition, given that development activities for applications used by consumer customers are often undertaken in close connection with the relevant customer, the Group believes it is able to better predict commercial viability in addition to gathering insightful feedback as to development potential, usage in future designs and end-user demand. The Group believes its innovative solutions make it the partner of choice for its largest customers when developing new features and applications to be introduced in such customers' new flagship models. The Group's products are therefore often included in those customers' end-products for subsequent product generations (typically at least two to three), supporting the longevity and depth of such relationships.

The Group believes this approach has allowed it to remain among the forefront of new technologies and is supported by the Group through intensive research and development activities. In order to help secure and strengthen the Group's position as a leader in various markets, it invests significantly in R&D. For example, the Group's focused R&D, IP and know-how, combined with dedicated capital expenditure (including, for example, the Group's purpose-built manufacturing facility in Malaysia, which the Group believes will be the first full scale 200-mm LED focused semiconductor production facility for microLEDs when it is completed) underlie the Group's positioning in emerging high performance microLED technologies, where the Group believes it is well-positioned to become a market leader. Research and development expenses for the year ended December 31, 2022, amounted to €630 million, or 13% of revenues, compared to €692 million (14% of revenues) and €423 million (12% of revenues) for the years ended December 31, 2021 and 2020, respectively. Research and development expenses for the twelve months ended September 30, 2023, amounted to €519 million, or 13% of revenues. The Group holds more than 14,000 issued and pending patents worldwide, including in China, Germany, Japan, South Korea, Taiwan and the United States.

The Group believes its customer-focused development model is a significant strength, as the technologically advanced products the Group provides are often viewed by customers as mission critical and can provide high value to them relative to their cost. Further, the Group believes

investments made in products that deliver solutions to the Group’s customers that are innovators of new end-market applications provide the Group with a first-mover advantage (buttressed by the Group’s mature know-how and capacity) to potentially win new business when other market participants later adopt such innovations.

**Strategically positioned with exposure to supportive growth trends across end-markets**

The Group believes it is ideally positioned to benefit from long-term growth trends in its end markets due to the combination of the technological and go-to-market strength of its broad product offering. The Group is targeting technology leadership by aiming to supply differentiated solutions for light emission and optical and image sensing for the automotive, industrial and medical and consumer end-markets, which end-markets are themselves propelled by societal megatrends (Source: ams OSRAM Internal Market Model).

Key societal megatrends that are driving demand for the Group’s products include digitalization, smart living (Internet of Things, “IoT”), as well as energy efficiency and sustainability, with each megatrend expected to create a broad spectrum of opportunities across the Group’s different end-markets (Source: ams OSRAM Internal Market Model). The Group expects growth in the automotive market to be underpinned by applications in dynamic forward and signal lighting, LiDAR and in-cabin sensing, among others. For the industrial and medical segments, the Group expects the main growth vectors to be horticulture, ultra-violet (“UV”) C (“UV-C”) disinfection, LED and laser projection, medical imaging applications including x-ray photon counting and customers specific sensors and sensor interfaces. Lastly, for consumer applications, the Group expects the main growth drivers to be camera enhancement applications across various devices, display management solutions including ambient light sensing, vital signs monitoring, consumer augmented reality (“AR”)/virtual reality (“VR”), and mid to longer-term microLED displays. The below chart shows the potential opportunities the Group views as provided by the key societal megatrends across its end markets.

	Automotive	Industrial	Medical	Consumer
Digitalization	<ul style="list-style-type: none"> <li>Projected lighting</li> <li>Smart surfaces</li> <li>Advanced displays (incl. microLED)</li> </ul>	<ul style="list-style-type: none"> <li>Industrial automation</li> <li>Robotics</li> </ul>	<ul style="list-style-type: none"> <li>Medical imaging</li> </ul>	<ul style="list-style-type: none"> <li>Camera enhancement</li> <li>Spectral &amp; light sensing</li> </ul>
Smart Living (IoT)	<ul style="list-style-type: none"> <li>Dynamic forward &amp; signal lighting</li> <li>In-cabin sensing</li> <li>ADAS/AD (LIDAR)</li> </ul>	<ul style="list-style-type: none"> <li>Home Automation</li> <li>Building Automation</li> <li>Outdoor lighting</li> <li>Industrial lighting</li> </ul>	<ul style="list-style-type: none"> <li>Personal &amp; home care</li> </ul>	<ul style="list-style-type: none"> <li>AR/VR glasses sensing &amp; visualization</li> <li>Vital signs monitoring</li> </ul>
Energy efficiency & sustainability	<ul style="list-style-type: none"> <li>Ambient lighting, UV-C* disinfection</li> </ul>	<ul style="list-style-type: none"> <li>Horticulture</li> <li>LED + laser projection</li> <li>UV-C* disinfection</li> </ul>	<ul style="list-style-type: none"> <li>UV-C* disinfection</li> </ul>	<ul style="list-style-type: none"> <li>Enhanced display management</li> <li>Next generation displays (microLED)</li> </ul>

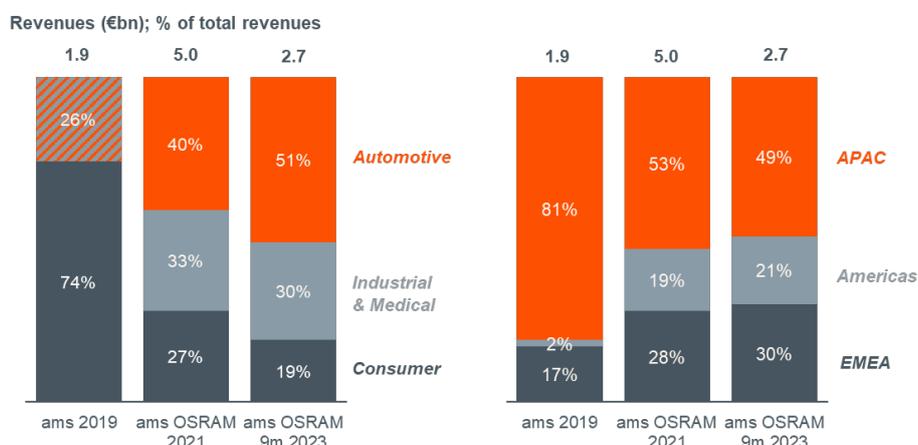
Notes:

\*Ultraviolet light at 200 – 280 nm wavelength

**Well diversified and differentiated product offering across various technologically advanced applications and end-markets**

The Group’s product portfolio provides diversified exposure to a broad set of applications and end-markets. In addition, as a result of the OSRAM Acquisition and the measures implemented by the Group to capitalize on synergy opportunities provided by the combination, including the Portfolio Re-Alignment Transactions, the Group now has an even and well-diversified exposure across end

markets and geographies. The charts below compare the historic ams group's revenue split by end-market and by geography for the year ended December 31, 2019, immediately prior to the OSRAM Acquisition with the Group's revenue by end-markets and geographies for the year ended December 31, 2021 and the nine months ended September 30, 2023:



Within the Semiconductors segment, the Group has further balanced its portfolio, and through the re-establish the base program aims to continue the trend, with a view towards reducing concentration in disruptive, custom technologies in the consumer device arena that opens the Group to industrialization, execution and market adoption risk, delays in the adoption of new markets or disruptive technologies, highly sensitivity to macro-economic shocks such as pandemics and geopolitical issues and a re-prioritization of structural growth opportunities in core markets including automotive, industrial and medical.

Demand for the Group's products is linked to demand in the relevant end markets, which is in turn subject to societal megatrends, business cycles in the automotive, industrial and medical and consumer end-markets and general macroeconomic factors. The Group's diverse exposure across various sectors therefore helps provide protection against demand shifts in any particular end-market or application. In addition, seasonality and product life cycles vary across these markets – with design cycles of ten years or more in the automotive aftermarket business, three to six years in the automotive OEM business and industrial sectors and five to ten years in the medical sectors, as compared to six months to two years in the consumer sector generally and one to one and a half years for mobile devices. Having exposure to multiple sectors helps enable the Group to smooth development expenses (R&D and capex) and revenues across these products.

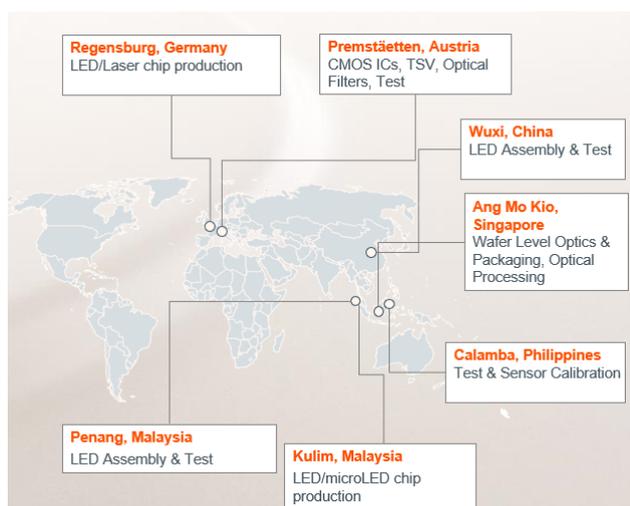
In terms of applications, the Group's diverse portfolio is exposed to both established and disruptive semiconductor technologies. For example, the Group is a technology leader in the established LED market (Source: ams OSRAM Internal Market Model), where it focuses on high-performance products, for example in light conversion, through leading epitaxy expertise (process of growing thin films of crystals), chip and packaging. This enables the Group to develop products for many demanding applications. At the same time, the Group believes it is at the forefront of the emerging microLED market, with the Group aiming to offer a differentiated approach focused on the smallest microLED dimensions and structure sizes. The Group believes it is the only player worldwide investing in a leading-edge 200-mm LED facility with very high levels of automation, which is intended to support high-volume microLED production. In addition, the Group has a stable, highly cash generative and resilient Lamps & Systems segment (with, in the Group's view, significant aftermarket exposure and a very strong market position). The Group AMSP lamps business covers automotive, entertainment and industry lamps (for the year ended December 31, 2022 automotive and

entertainment and industry lamps represented approximately 80% and approximately 20% of the Group AMSP lamps business, respectively). More generally, the Group believes its deep next-generation technology portfolio comprising light sources & sensors, detectors, driver ICs and software/algorithms helps enable it to provide differentiated products and integrated solutions across the value chain.

**Vertically integrated device manufacturing (“IDM”) capabilities with unique manufacturing and innovation footprint**

The Group’s position as a market leader is supported by its state-of-the-art global manufacturing footprint with front-end, assembly and test capabilities, across filters, mixed signal ICs, emitters (LED, microLED, lasers), and lamps & systems. As of September 30, 2023, the Group’s manufacturing footprint comprised 18 production sites worldwide (9 for Semiconductors and 9 for Lamps & Systems). The Group has in-house manufacturing capacity with, in the Group’s view, differentiated process technologies (e.g., epitaxy, wafer manufacturing, wafer post-processing, assembly, calibration and testing).

The Group employs a hybrid approach of combining an IDM strategy with selective outsourced support for the Semiconductor business, largely related to manufacturing steps where it does not differentiate through its manufacturing technology. For some high volume outsourced products it also maintains an in-house manufacturing capability to allow it more flexibility to react to changes in demand. This approach is intended to allow the Group to retain the operational flexibility to respond to fluctuations in order intake and, crucially, preserve manufacturing control over the key processing steps in the technology value chain, while at the same time allowing it to benefit from economies of scale by outsourcing production of commoditized and standardized manufacturing services to third-party contract manufacturers. This in turn can enable the Group to provide its customers with an attractive price to performance ratio and to efficiently manage its own capital expenditures with a view to maintaining resilient profit margins. An overview of the Group’s key manufacturing sites across modules, ICs, emitters (LED, microLED, lasers) at the end of the current investment cycle, is set forth below:



Note:

- (1) Excludes small materials production sites for phosphors, platelets, etc.

In addition, over the past two years, the Group has undertaken a targeted capital expenditure program intended to significantly expand its manufacturing platform, and in particular to support its ambitions in next generation and technologically complex manufacturing. For example, in 2022, the Group

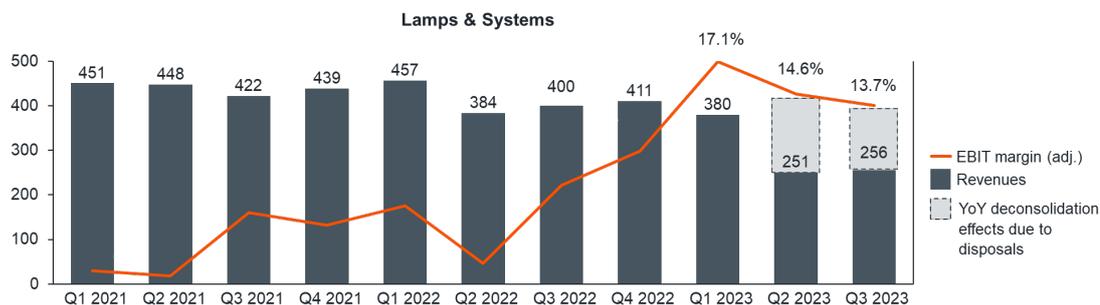
began to expand its capacity at its Kulim, Malaysia facility in order to create what the Group believes will be the industry's first 200-mm LED focused semiconductor production facility for microLEDs, with work expected to continue into 2024. In addition, in 2023 the Group initiated an expansion of its facility in Premstätten, Austria as part of a program to increase its internal complementary metal oxide semiconductors ("**CMOS**") production line with optical filter and TSV (Through Silicon Via) capacities, in order to enable it to respond faster to increased demand and to reduce the risk of dependence on third party producers allowing the Group to strengthen its manufacturing processes. The Group is also undertaking an expansion of its Regensburg, Germany facility by investing in a new clean room and laboratory facilities for research, development and pilot production—equipped for working on various innovative applications (e.g., UV-C LEDs for disinfection and near-infrared emitters for LiDAR for autonomous driving), as well as on fields of application in the context of Industry 4.0. Given the Group's growth capital expenditure spend over the past several years, the Group views its manufacturing footprint as, on the whole, being relatively new and state-of-the-art. This manufacturing footprint is expected to allow the Group to capture future growth opportunities and to better manage maintenance capital expenditures.

***Track record of successful portfolio adjustments, with streamlined Lamps & Systems portfolio and fully integrated OSRAM laying a stable foundation to execute adjusted business model and capture future growth and cash flow generation opportunities***

The Group completed its acquisition of a controlling stake in OSRAM Licht AG ("**OSRAM**") on July 9, 2020 (the "**OSRAM Acquisition**"). Following the acquisition, the Group undertook an integration process with a view to capturing operational improvements and cost-savings. As of September 30, 2023, the Group estimates that it has realized approximately 94% of the expected integration synergies, amounting to €330 million of gross and pre-tax run-rate synergies, with the remainder of expected synergies expected to be realized by March 2024. One-off integration costs, estimated at approximately €390 million at the time of the acquisition, have been reduced to an estimated €220 million upon full integration.

In connection with the acquisition, the Group also embarked on a re-evaluation of its portfolio intended to improve its productivity, concentrate resources on higher margin applications in the Semiconductors business, generally decrease the Group's costs and align its operating platform for the combined business. The portfolio re-evaluation resulted in a program of disposals of non-core business activities in the Lamps & Systems segment. The Group has completed all previously announced disposals and as of September 30, 2023 the aggregate proceeds from the Portfolio Re-Alignment Transactions, net of cash and cash equivalents disposed, amounted to €715 million. These disposals were accretive to pro-forma Group margins, as reflected by the increase in the Result from Operations (EBIT) Margin (Adjusted) for the Lamps & Systems segment to 15% for the nine months ended September 30, 2023, compared to 5% for the same period in 2022.

The chart below demonstrates the evolution of the Group's Result from Operations (EBIT) Margin (Adjusted) for the Lamps & Systems Segment quarter-over-quarter from the period from January 1, 2021 to September 30, 2023:



Following the implementation of the portfolio transactions in the Group's Lamps & Systems segment, the Group has initiated the re-establish the base program to apply a similar approach to the Semiconductors segment by exiting certain non-core semiconductor lower-performing businesses, thereby orienting the segment towards structural growth from the reduced base. In addition to serving as an example of the Group's track record of successful portfolio transaction, the Group believes the Portfolio Re-Alignment Transactions' impact on the Group's margins, the resulting cost savings and synergies, provide a robust platform to support the Group's growth ambitions and re-focus of the business on its core and profitable base through the Re-Establish the Base Program.

### Strong ESG and sustainability focus

The Group believes it has a strong ESG tradition, as represented by a focus on the responsible use of resources, environmental protection, attractive working conditions, occupational safety and compliance with human rights across the Group's value chain. The Group pursues these goals in part through product development and believes it is a pioneer in the development of energy efficient and lower profile solutions. The Group views its LED products and applications as helping to directly address one of the most pressing sustainability challenges – energy efficiency. For example, the Group's horticulture LEDs are intended to enable lower CO2 output per crop yield. The Group is also working on what it views as fundamentally new technologies, such as microLEDs, the diminutive size of which means that substantially fewer materials are needed to manufacture them compared with conventional LEDs and miniLEDs.

The Group's pursuit of ESG leadership is further supported by what the Group views as ambitious ESG-related targets. The Group's ESG strategy is based on the principle "avoid, reduce, compensate." The Group has committed to achieving carbon neutrality in its own operations (Scope 1 and 2) by 2030, to resource-conserving environmental management and to the development of innovative and energy-efficient products. The Group also has long-term targets for science-based reductions of other indirect emissions (Scope 3). The Group has further committed to attaining a 25% representation of women in management by 2026. Finally, the Group aims to increase its responsible resource use, including by expanding its wafer substrate recycling programs and implementing plastic-free packaging for aftermarket. The Group's efforts have been recognized by its selection in S&P's Global Corporate Sustainability Assessment yearbook (Source: S&P's Global Corporate Sustainability Assessment yearbook – 2023 Rankings).

For further details, see "*Business—Sustainability.*"

### ***Experienced management team of industry veterans with in-depth sector knowledge***

The Group has a highly experienced management team with deep industry knowledge and management experience in similar roles at large listed companies. In recent years, members of the Group's management team have supported significant growth in the business, playing an instrumental role in developing and maintaining key customer relationships, managing the integration of OSRAM and streamlining the combined Group's activities and processes following the acquisition. The Group's leadership was recently bolstered by the arrival of two industry veterans to steer its renewed strategy. Aldo Kamper joined as CEO in April 2023, having previously served in various roles at OSRAM from 1994 to 2018, before taking up the post of president and CEO of Leoni AG between 2018 and 2023. The Group's new CFO Rainer Irle, who joined in July 2023, is a long-time veteran of the semiconductor industry, having previously held the position of CFO of Siltronic AG ("**Siltronic**") from 2013 to 2023. He also held various finance executive management roles within Siltronic and Wacker Chemie AG. The management team has significant C-level industry experience, including at industry peers such as NXP Semiconductors N.V., Infineon Technologies AG, Siltronic, Siemens AG, Philips N.V. and Nexperia B.V..

## **Strategy**

### ***Focus on the Group's core semiconductors business by providing differentiated, intelligent sensor and emitter components as the base for sustainable and profitable growth***

The Group intends to focus its portfolio on differentiated intelligent sensors and emitters, with an increased commitment towards the structurally attractive automotive and industrial and medical end-markets as a key component of the re-establish the base program. The TAM for the Group's Semiconductors segment, for example, is expected to grow at a combined CAGR of 7.4% (Source: ams OSRAM Internal Market Model) over the 2022-2026 period. The Group's strategy entails investing in structural growth opportunities in high-performance LEDs and lasers, analog mixed-signal ICs and sensors, in particular through adding additional intelligence features intended to drive system performance. The refocusing of the Group's portfolio also entails exiting certain non-core and lower-performing semiconductor businesses, including passive optical components, which were expected to produce total revenues of between €300 million and €400 million on a run-rate basis through the end of 2024 to provide a new base for profitable growth in the Semiconductors segment. The disposal program in the Semiconductors business follows the Group's successful implementation of the Portfolio Re-Alignment Transactions to realign the Group's Lamps & System's segment following the OSRAM Acquisition. At the same time, the Group intends to continue to pursue specific opportunities in the consumer markets where it believes it can sustainably differentiate itself through investment in disruptive innovations, such as microLED technology.

### ***Maintain leading positions in profitable Lamps & Systems segment, leveraging high-quality products and long-term relationships with OEMs***

The Group aims to maintain and strengthen its leadership position in the automotive and specialty lamps business under the Group's Lamps & Systems segment, where it currently holds the first position in traditional automotive lamps in 2022 based on market share by revenue (Source: ams OSRAM Internal Market Model). Following the OSRAM Acquisition, the Group underwent a portfolio re-alignment of the Lamps & Systems segment intended to focus its activities on high margin products where the Group believes it is among the market leaders. The Group believes this re-alignment was the main driver behind margins for this segment increasing period on period from a Result From Operations (EBIT) Margin (Adjusted) of 5% for the nine months ended September 30, 2022 to 15% for the same period in 2023.

***Further increase profitability and operational efficiency through streamlining the Group's organization and infrastructure***

The Group intends to continue to focus on increasing its profitability and is targeting continued improvement in its margins. As part of the re-establish the base program, the Group expects to exit certain non-core semiconductors lower performing businesses in the consumer sector and capitalize on the operational efficiencies afforded by a more streamlined business portfolio. This is expected to entail an adjustment of the Group's operating footprint, overhead, infrastructure and a new organizational set up in line with the updated business model. Additionally, a new streamlined organizational set-up was implemented within the Semiconductors segment by going from three to two business units (one focusing on emitters and the other focusing on sensors and analogue mixed-signal chips) with full end-to-end ownership and responsibility. While one-time costs to implement the re-establish the base program are expected to amount to an estimated €50 million, the Group is targeting a positive contribution to its Result From Operations (EBIT) (Adjusted) from these measures on an annual end of year run rate basis amounting to €75 million between December 31, 2023 and December 31, 2024 and €150 million between December 31, 2023 and December 31, 2025, on top of the annual synergies and savings created during the Group's synergy creation cycle, now in its final phase, which followed the OSRAM Acquisition. The Group expects the impact to result from portfolio effects related to the divestment of certain lower-margin or unprofitable business in addition to cost savings and synergies adopted in connection with the program.

***Continue to be a leader in innovation through focused research and development***

The Group believes that its products are at the forefront of innovation, and it aims to optimize its operational set-up to enable the Group to fully monetize this innovation. As of September 30, 2023, the Group employed 3,096 FTEs in R&D across 41 development sites worldwide, enabling close strategic coordination between its business units and collaboration with its customers and other third parties.

Backed by more than 35 years of intensive research and development activities, the Group remains focused on designing and developing highly complex and differentiated technologies which align with the key global trends impacting its end-markets. The Group aims to adapt to these trends by continuously improving its existing technology to anticipate its customers' needs related to their development of new applications and products. The Group is an innovation-driven business and R&D spending is an essential driver of its ability to develop new technologies. Consequently, gross research and development expenditures (including capitalized development costs) for the year ended December 31, 2022, amounted to €717 million, or 15% of revenues, compared to €747 million (15% of revenues) and €483 million (14% of revenues) for the years ended December 31, 2021 and 2020, respectively. For the nine months ended September 30, 2023, the gross research and development expenditures (including capitalized development costs) amounted to €446 million. See "*Management's Discussion and Analysis of Financial Condition and Results of Operations—Research and Development.*"

The Group believes its unified R&D strategy and innovation leadership positions it to be the partner of choice for its internationally active customer base. The Group further continuously seeks to increase the cooperation with its existing customers by leveraging its knowledge of their products and its technical capabilities, including by creating tailored solutions for particular customers.

## Corporate History

With over 110 years of combined history, the Group's core is defined by deep engineering expertise and the ability to provide global industrial capacity in sensor and light technologies. In 1981, the Group was incorporated as American Micro Systems Incorporated-Austria GmbH as a joint venture between American Micro Systems and Voestalpine AG, headquartered in Premstätten, Austria. By 1991, the Group had become one of the 25 fastest growing businesses in Europe, according to Semiconductor International U.S.A., and in 1992 the Group was selected as "Top Fab" of the year. The Group expanded in Asia by opening its first branch in 1994.

In subsequent years, the Group grew its platform and expanded its geographic reach through various acquisitions, including, among others, Texas Advanced Optoelectronic Solutions Inc., in 2011, a light sensor technology company and Heptagon Advanced Micro-Optics Pte. Ltd ("**Heptagon**"), a global innovator in high-performance optical packaging and micro-optics in 2017.

More recently, on July 9, 2020, the Group completed its acquisition of 69% of the shares of OSRAM, a leading photonics company, marketing its products across more than 120 countries and with 26 production facilities worldwide. The Group has since increased its shareholding in OSRAM to 85.65% as of September 30, 2023. The OSRAM Acquisition has allowed the Group to pursue a leadership position in sensor solutions and photonics while creating significant value through cost and revenue synergies and delivering innovative, differentiated optical application solutions to its customers.

Following the OSRAM Acquisition, the Group has pursued a strategic realignment by making certain planned disposals as the Group has integrated the OSRAM business. This included the disposal of several businesses which belonged to the former OSRAM Digital (DI) division as well as certain other non-core automotive businesses in the Lamps & Systems segment. As part of this portfolio realignment, two businesses were disposed of in 2021, Digital Systems North America (which produces electronic lighting components such as drivers and ballast) and Connected Building Applications (which produces products for building automation). The Group also disposed of its production site in Bulgaria (which mainly produces components for the digital systems business) and a plot of land in Berlin. In addition, the joint venture between OSRAM and Continental AG for automotive lighting systems, which the Group had designated as non-strategic, was dissolved in the fourth quarter 2021. The realignment of the Group's portfolio has continued in 2022 and 2023 and the Group has made several additional disposals, including Fluence, the Group's horticulture lighting systems business, AMLS, the Group's automotive lighting systems business which represented the re-integrated part of the former OSRAM Continental JV, and Traxon Technologies, which includes the Group's dynamic lighting controls 'e:cue' and Digital Systems Eurasia, which produces lighting electronics and LED drivers. The Group has also disposed of certain other non-core businesses, including Clay Paky, a leading global supplier and worldwide reference brand for professional high-end entertainment lighting, and the Group's investments in two funds, Unternehmertum VC Fonds II GmbH & Co. KG and Partech Entrepreneur Fund III FPCI, which were held by the Group's venture capital business. See "*Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Factors Affecting Comparability of Financial Results—The OSRAM Acquisition and the Portfolio Re-Alignment Transactions.*"

In July 2023, following the completion of an operational review led by the Group's new management team headed by CEO Aldo Kamper, who took up the role in April 2023, and CFO Rainer Irle, who took up the role in July 2023, the Group announced plans to realign the business with a focus on the core semiconductor portfolio with smart sensor and emitter components and the exit of certain non-core semiconductor lower-performing businesses.

Further, in October 2023, the Group announced balance sheet financing transactions aimed at strengthening the Group's balance sheet by addressing existing debt maturities and other financing needs to support the Group's growth strategy in order to secure a long-term stable financial base for structural growth.

## **Products**

The Group offers, a broad portfolio of products, including various types of LEDs, lasers, photodetectors, sensors, mixed signal and analog integrated circuits, lamps and lighting systems and related software, which are used in a wide range of applications primarily in the automotive, industrial, medical and consumer industries.

### **LEDs**

LEDs are semiconductors that emit light when electricity is applied to them.

The Group's portfolio comprises white LEDs, color LEDs, multi-color-LEDs, UV-C LEDs, infrared ("IR") LEDs and LED modules and accessories. In the Group's view it is at the forefront of the development and industrialization of microLED technology. The Group's LED lighting products are highly efficient, long lasting and environmentally friendly and are used in a variety of everyday applications in the automotive, industrial, medical and consumer end-markets, including, automotive lighting applications such as static and dynamic forward light, static signaling, display backlighting and industrial applications such as horticulture lighting and UV-C disinfection. See "*Markets and Applications.*"

The Group ranks second among LED suppliers with a market share of 13% based on 2022 market share (Source: TrendForce 2023 LED Player Revenue and Capacity).

The Group is an IDM, with vertically integrated LED production. The Group carries out key value added activities in house, including LED chip technology development, LED product design, wafer and chip manufacturing and LED chip packaging. This enables the Group to have better control over the production process, allows it to be cost-competitive and reduces the Group's dependence to third-party suppliers.

The Group's product portfolio was expanded in 2022 to include various new products, including, among others:

- intelligent conventional red-green-blue ("**RGB**") LED solutions for dynamic automotive interior lighting, which open up a number of design possibilities for automotive manufacturers;
- new LED applications in agricultural crop production, which support uniform and efficient crop lighting; and
- new solutions for display management and ambient light measurement for the consumer end-market, including behind-display technology and infrared LED lighting for 2D authentication.

### **MicroLEDs**

MicroLEDs are components which have the potential to drive a significant leap in display technology. They are based on tiny LED devices which act as light emitting color pixels. Together with the Group's customers, the Group is involved in pioneering display solutions using microLEDs and the Group believes that it is well positioned to become a leader in the development of this technology, particularly following the ongoing expansion of the Group's Kulim facility in Malaysia, which is expected to be the first full scale 200mm LED production facility in the world. MicroLEDs offer significant advantages

over LCD and OLED displays in key performance aspects such as brightness, brilliance of colors, power consumption, contrast, viewing angle, higher reliability in a wide range of temperatures, fast response times and display form-factor flexibility. Depending on the application, the use of microLEDs can result in an enhanced viewing experience, lower power consumption and longer battery life. MicroLED based displays have the potential to enable novel display use cases such as transparency which allows the display to also act as a window. MicroLEDs also allow for the integration of sensors and infrared LEDs, in the display as opposed to behind it, to enable touch, brightness and motion sensing. In the view of the Group, it has the capabilities (*i.e.*, in R&D and manufacturing) and a focused multi-year roadmap to deliver this complex technology for increasingly smaller structures. However, as with many technologies, the extent of sales that will be generated from the products based on this new technology and their ramp-up time are difficult to predict with certainty.

### **Lasers**

The Group offers a broad portfolio of lasers (edge-emitting lasers with visible or infrared wavelengths and infrared vertical cavity surface emitting lasers), which are light-emitting devices like LEDs that generate a more bundled light beam as opposed to more diffuse emitting LEDs.

The Group believes it is a leading producer of visible and infrared EELs for sensing, visualization and material processing applications (Source: ams OSRAM Internal Market Model). For instance, the Group is ranked first in the automotive emitters and light sensors markets (Source: TrendForce Infrared).

Single mode lasers are used in a variety of applications such as laser levelling, particle detection, scanning, ranging, spectroscopy and pico-projection, while high-powered multi-mode lasers can be used for engraving materials or welding metals and applications requiring high luminance light sources.

The Group's portfolio of near-infrared ("**NIR**") edge-emitting laser diodes includes high-power continuous wave laser diodes, which can be used to weld or cut metal sheets, and laser diodes designed for pulse operation, which enable LiDAR or Time-of-Flight ("**ToF**") technology to provide distance information and 3D imaging. They can be used in applications for autonomous driving vehicles and mobile phones. LiDAR and ToF are remote sensing technologies that measure distance by illuminating a target with a laser and analyzing the reflected light. They enable highly accurate distance measurement and 3D mapping and imaging.

The Group's VCSEL portfolio enables applications in the 3D sensing market. For example, they can be used to unlock smartphones with facial recognition and assist robots with detecting their surroundings, as well as driver monitoring in automotive in-cabin sensing solutions.

For more details, see "*—Technologies—Emitters.*"

### **Photodetectors**

The Group's photodetectors include photodiodes and phototransistors and cover the spectral range from UV to near-infrared. A photodiode is a light-sensitive semiconductor diode which produces a current when it absorbs photons while phototransistors are activated when the photons make contact with the transistor. The Group offers broadband detectors and detectors designed to filter-out specific wavelengths of light or that mimic the response characteristics of the human eye. The Group's standalone photodetector products are typically used in industrial and medical applications, and vital signs monitoring in wearables. For example, the Group's sensing solutions for x-ray and computed tomography ("**CT**") enable crystal clear images with low doses of radiation. Photodetectors are also integrated in light sensing solutions like ambient light, spectral and proximity sensors.

## Sensors

The Group offers optical and imaging sensors, magnetic, capacitive and inductive position sensors, and temperature sensors.

The Group believes it is a leading producer of optical sensors (Source: ams OSRAM Internal Market Model). For instance, the Group ranks second among light sensor suppliers in smartphones based on 2021 market share (Source: OMDIA Light Sensor Report 2022) and third among sensor and actuator suppliers in wearables based on 2022 market share (Source: YOLE Sensors and Actuators for Wearables 2023).

The Group's optical sensors portfolio includes ambient light sensors and combined ambient light and proximity sensors, which are used, among other things, in smartphones, tablets, wearables, medical diagnostics, in home assistants, touchscreen control and industrial process control; color sensors and combined color and proximity sensors; intelligent sensors and spectral sensors, which are used in various applications such as product authentication, document verification, chemical analysis and skin tone measurements. The Group's optical sensor spectrum coverage ranges from ultraviolet radiation levels, in the UV-C 100-280nm, UV-B 280-315nm and UV-A 315-400nm range, to the visible light spectrum covering violet to red, and short wave length invisible light spectrum of infrared and beyond. For more details, see "*—Technologies—Sensors—Optical sensors.*"

The Group's CMOS imaging sensors feature high frame rates for demanding professional and industrial applications like factory automation and are used in consumer applications such as in AR/VR headsets. The Group's 3D sensors utilize stereoscopic imaging, to provide solutions for 3D sensing cameras and include dot-pattern illuminators.

The Group's precise and miniaturized sensors for vital signs monitoring in wearables enable applications like blood pressure and heart rate monitoring.

The Group also offers application solutions by providing the Group's customers with advanced application algorithm software to deliver an end-to-end experience when integrating ICs into their products. This software portfolio forms a key part of the Group's sensing offering, and the Group continues to develop its software capabilities alongside advances in its sensing technology.

Additionally, the Group offers innovative products and solutions to support the Group's end-market OEM customers across their advanced optical sensor product requirements, such as the following:

- *Behind-OLED sensing* – The Group's behind-OLED solution enables smartphone OEMs to achieve high-ratio display-to-body designs, while ensuring high quality display adjustment and proximity detection.
- *TrueColor spectral sensing* – The Group's TrueColor spectral sensing products provide OEMs with a highly precise sensing application that aims to copy the light perception of the human eye, which enables for a high-quality paper-like display on an electronic device. The wide dynamic range allows operation in short-distance detection applications behind dark glass. For example, this is used in mobile phones and tablet devices.
- *Intelligent light sensors* – The Group also produces intelligent light sensors, such as gesture products, which perform advanced gesture detection, proximity detection, digital ambient light sensing and color sensing, for use in a variety of barcode and remote-control applications, as well as complete system-on-chip sensor-integrated IoT smart lighting managers for color-tunable white lighting applications.

The Group's position sensors are primarily used in automotive and industrial motor control and angle sensing applications, and its highly accurate temperature sensors are applied in industrial, EV battery management and wearable vital signs monitoring applications.

### ***Mixed Signal & Analog Integrated Circuits***

The Group offers high-performance mixed signal and analog ICs. In mobile phones and wearables, its products are in charging and sensor interface solutions and AR/VR eye tracking solutions, in automotive as lighting drivers for dynamic forward lighting and intelligent RGB ambient lighting solutions, and used in industrial in various sensors interface applications such as industrial measurement and control. The Group's sensor interface ICs enable a system to read out information from the input signal generated by complex sensors, providing a suitable output signal that is easy for a host system to display or process.

### ***Automotive & Specialty Lamps***

In the Group's Lamps & Systems segment, the Group offers lighting and other solutions for automotive (exterior and interior lighting, traditional and solid-state lighting lamps and fixtures, LED retrofit products as well as care and equipment products) and specialty lamps for entertainment, medical and industrial applications.

## **Markets and Applications**

The Group's extensive range of products are utilized in a variety of everyday applications in the automotive, industrial and medical and consumer end-markets.

### ***Automotive***

The Group supplies products covering visible, infrared and ultra-violet light. In the view of the Group, it addresses most lighting and optical sensing applications required by the automotive industry, as well as selective position sensing applications.

New technologies and innovative mobility concepts are making vehicles continually safer and smarter, transforming the car interior into a living space. As such, high-resolution displays, smart surfaces, seamless human-machine interaction and adaptable ambient lighting solutions are gaining importance. The Group's intelligent sensors and emitter components enable a high level of comfort and a more attractive user experience, while also supporting ADAS which protect passengers and traffic participants and are essential for automated and autonomous driving.

For the twelve months ending September 30, 2023, the automotive market accounted for 49% of the Group's revenue.



Static & Dynamic Forward Lighting



Static & Dynamic Signalling



Ambient Lighting



In Cabin Sensing



Functional illumination



Smart Surface



Trad. & LED Lamps



Car Accessories



Fixtures

### *Illumination, Visualization and further Applications for the Automotive Market*

The Group's lighting solutions enable a range of applications in the automotive market, including among others static forward lighting, dynamic forward lighting, signal lighting, interior functional and ambient lighting, projections, display backlighting and smart surface.

The Group believes that it is a leading player among automotive lighting manufacturers for forward lighting, signaling and interior functional illumination and in display backlighting, in each case, by market share in terms of revenue (Source: ams OSRAM Internal Market Model). For instance, the Group is ranked first in traditional auto lamps (Source: ams OSRAM Internal Market Model) and in automotive emitters based on 2022 market share (Source: TrendForce 2023 LED Player Revenue and Capacity).

- *Static forward light* – In car headlights, traditional lamps are increasingly being replaced by LEDs. The Group supplies halogen and high-intensity discharge lamps and LED solutions to leading automotive OEMs and utilizes other products within the Group's portfolio to enhance its offering. For example, the Group has been able to increase the distance of the beam of light produced by a vehicle's headlamps by using the Group's laser light technology, and its blue multi-mode laser diodes currently have a range of 600 meters (which is more than double the range of previous LED solutions). Driving at dusk or at night can put great strain on the driver's eyes and reduce the driver's ability to concentrate. The Group's laser lighting makes driving at night safer when used as an auxiliary high beam as it illuminates the road further than a conventional high beam. The Group's laser diodes also allow car lights to be designed and built smaller than ever before without compromising on light output. In the aftermarket, the Group also sells LED retrofit lamps that can be used to replace halogen and HID lamps in existing cars. In several key countries, these LED retrofit lamps need to be certified, which creates a barrier to entry for pure low-cost competitors.
- *Dynamic forward light* – Intelligent dynamic forward lighting enhances car safety. Multifunctional intelligent headlamps that illuminate the road while communicating with the surrounding environment by using dynamic or moving light are expected to become more prevalent as the technology improves and production costs decline. The Group's Eviyos LED technology demonstrates the Group's innovation leadership in highly pixelated light sources with low energy and space needs. Its more than 25,000 individually controllable pixels make it possible to adapt the light beam to the driving situation, with optimum illumination of the road and without any glare. The Group's Eviyos LED technology also beams HD-quality projections directly onto the road's surface. Car-to-driver communication, such as projections of warning signals or welcome messages, can be realized with a single LED light source.
- *Static signaling* – The Group offers a broad and highly diversified portfolio of LEDs and traditional lighting components covering the special requirements of all exterior static signaling applications. For instance, the Group offers yellow LEDs, which are used for indicating the vehicle's direction of travel (turn indicators), LEDs for position lights and daytime running lights,

rear lights (which cover a whole range of lights including rear combination lights, tail light, stop light or reverse light), exterior ambient lighting and car body illumination, which enables car owners to individually design the car body according to their preferences or license plate lights that light up the area so that people can always see the license plate clearly.

- *Dynamic signaling* – This refers to turn indicators, door open warnings, back-up guidelines and pixelated animations projected on the street around the car. Dynamic turn indicators are becoming the new standard as they ensure optimal safety through highly visible and awareness-capturing signaling, preventing potentially dangerous traffic situations. The Group's micro-lens array (“**MLA**”) projection technology enables automotive manufacturers to implement compact, small-footprint projected lighting which can cast bright and crisp images on to flat surfaces.
- *Functional illumination* – The Group's LED portfolio covers the requirements of functional illumination, which plays a key role in illuminating controls and buttons in a vehicle's interior. New areas of automotive interior lighting, such as ambient and material illumination and even smart surfaces, are evolving with new applications and enable backlighting small switches and buttons (sometimes in stacks and clusters), black surfaces and light integration into interior materials.
- *Projections* – The Group's LED, RGB and laser portfolio covers the requirements of various projection applications, which are an integral feature of the future of automotive interiors and allow images to be projected in the windscreen (known as head-up displays), on the street when the door is open, or onto interior surfaces such as dashboards, windows or ceilings. The Group is also developing, with automotive OEMs, new applications in augmented and mixed reality which it expects will require the development of new light sources. So-called “window-and logo-projection” are expected to transform the car interior into an extended surface displaying relevant information or visuals.
- *Smart surfaces* – In the view of the Group, it has a leading and complete portfolio of RGB modules, LEDs, sensors and intelligent controllers to support the Group's customers in the development of smart surfaces. Smart surfaces are overcoming display areas' limitations (*i.e.*, they suffer from reflections, do not allow freeform geometries, and can be expensive) by revolutionizing driver and passenger interfaces in the middle console, center stack, overhead consoles and door panels.
- *Display backlighting* – The Group offers a portfolio of LEDs that enable display backlighting. Displays are the interface between owners and their vehicle. Increasing display sizes, resolution and color gamut requirements drive the development of ever more efficient LEDs with optimized spectral properties as well as the penetration of new solutions, such as direct display backlighting, which enable a higher contrast.
- *Accessories for the automotive aftermarket* – The Group offers specific accessories for cars (for example, products to control and adjust tire pressure, control the status of the car battery or EV cables to enable charging wherever necessary).

#### *Sensing Applications for the Automotive Market*

The Group's sensor and emitter products assist with a range of applications for the automotive market, including in-cabin sensing, position sensing, temperature sensing, rain light tunnel sensing LiDAR and other exterior sensing.

The Group holds a top position in sensing applications for the automotive industry. For instance, the Group is ranked first in automotive light sensors based on 2021 market share (Source: OMDIA Light Sensor Report 2022).

- *In cabin sensing* – The Group offers a broad portfolio for in-cabin sensing from what it views as industry-leading IR illumination solutions based on LED and VCSEL technologies to capacitive sensors that detect hands on the steering wheel for automated driving. Driver monitoring systems (“**DMS**”) are rapidly emerging to ensure road safety and enhance the driver experience. Regulatory bodies, such as the European Union and the US National Highway Traffic Safety Administration (“**NHTSA**”), require car manufacturers to include DMS in vehicles to support autonomous driving systems. From 2023, the European New Car Assessment Program also requires DMS for a 5-star safety rating. Besides the safety enhancing aspects, DMS can support comfort-related features such as driver identification and authentication and adjust augmented-reality heads-up displays for an improved driving experience.
- *Position sensing* – The Group’s position sensors offer stray field immunity and durability, and they comply with the requirements of the most stringent safety standards. Key focus applications are motor control and angle sensing.
- *Temperature sensing* – The Group offers highly accurate temperature sensors that upon automotive qualification can be used in EV battery management.
- *Rain light tunnel sensors* – Automatic windscreen wipers are ubiquitous in modern vehicles. Rain sensors can also be used to control the speed and frequency of the wipers which ensure good visibility. The rain light tunnel sensor is an opto-electronic system that generally consists of LEDs, photodiodes, ambient light sensors and a microcontroller. The Group offers a complete portfolio of opto-electronic components for rain light tunnel sensors, including a variety of photodiodes, ambient light photodiodes and ICs as well as IR-LEDs.
- *LiDAR and other exterior sensing* – The Group’s LiDAR infrared lasers (EEL and VCSEL) are used by the Group’s customers to produce a high-resolution map of the vehicle’s surroundings. The Group’s LiDAR technology can be used in applications for autonomous driving vehicles. As sensors and data processing become more advanced, exterior sensors can be used to assist with highway pilot or city pilot. The Group also supplies products that support active night vision systems for vehicles, which use infrared emitters to illuminate the scene at night. These systems rely on infrared light, invisible to the human eye.

### **Industrial & Medical**



### **Industrial**

The Group provides miniaturized solutions that enable precise and safe industrial processes and smart human-machine interaction.

Digitalization and 5G are revolutionizing industrial automation by enabling machines to interact with each other as well as with humans. For machines to sense their environment, they need high-performance sensor and light-emitting solutions. The Group's products help make industrial production faster and more efficient by enabling innovations ranging from advanced machine vision to predictive maintenance and secure human-machine interaction.

### *Sensing Applications for the Industrial Market*

The Group's sensor products assist with a range of applications for the industrial market, including home and building automation, robotics, factory automation and imaging.

The Group believes that it is a leading player for LiDAR emitters (in the automotive and industrial markets), by market share in terms of revenue (Source: ams OSRAM Internal Market Model).

- *Home and building automation* – The digitization of buildings is continuously progressing, leading to increased comfort, safety, security, and less energy consumption. Combined lighting and sensing technologies are key enablers for a broad range of automated functions, such as differentiated smoke detection, smart keyless access, advanced human-centric lighting (HCL), and condition monitoring or predictive maintenance for fail-safe operation of critical infrastructure and equipment. The Group's next-generation smoke detectors utilize its multi-spectral sensor and white LED emitter to distinguish between different types of fire and smoke. Advanced access control and reliable monitoring solutions are crucial for security in buildings and sensitive working environments. The Group's 3D technologies allow for secure authentication via facial recognition as well as security access to buildings or company car parks. Critical environments are protected by the Group's high-performance X-ray sensors that scan luggage or packaged objects.
- *Factory automation* – The level of automation in factories continues to increase. The Group has a well-established offering in high-resolution global shutter image sensors, which can capture sharp images of very fast moving objects in production lines.
- *Robotics* – Smart robots play an increasingly important role in industrial automation as well as in private homes. They can take over repetitive as well as dangerous tasks, allowing for time and cost savings, safety and flexibility. Robotics are now ubiquitous and are found on production lines, in warehouse logistics in the form of AGVs (automated guided vehicles) or AMRs (autonomous mobile robots), and in households in the form of vacuum cleaners and lawnmowers. The Group's miniaturized sensing and illumination solutions increase the performance and precision of robots. The Group's lighting and sensing technology includes ToF distance measurement sensors (1-/2-/3-D), LiDAR systems (EEL, VCSEL) and 3D sensing solutions including illuminators for flood- and dot-illumination in combination with the Group's high-performance imagers. These make industry and service robots more intelligent, easier to use and enable safer human-machine interfaces. For example, the Group's green lasers help vacuum cleaners to detect objects and dust while the Group's spectral sensors identify materials, such as carpets or wet surfaces. With robots and humans increasingly working together in collaborative environments, sensor solutions become ever more important, whether to avoid collisions, enable gesture recognition or facilitate AR-based human-machine interaction.
- *Imaging* – The Group offers a wide range of sensing solutions for security and industrial X-ray applications that enable high-precision and fast image acquisition, reliability, high-sensitivity, low noise and power consumption. This allows X-ray imaging at the lowest possible doses, which significantly reduces possible stress on exposed materials. Customers choose the

Group's advanced sensing solutions for CT and flat panel detectors as well as large scale CMOS sensors for direct or indirect conversions.

### *Illumination and Visualization Applications for the Industrial Market*

The Group's lighting solutions assist with a range of applications for the industrial market, including horticulture and smart farming, outdoor and industry lighting, and UV-C disinfection.

The Group believes that it is the leading player among LED manufacturers for red LEDs in horticulture lighting and that it is among the top two producers of outdoor and industry lighting, in each case in terms of market share by revenue (Source: ams OSRAM Internal Market Model).

- *Horticulture and smart farming* – Horticultural lighting offers an innovative way of producing food in a controlled environment, often close to large markets in urban centers. The Group supplies optimal lighting solutions for plant growth in indoor and vertical farming. The Group combines pioneering wavelength-optimized LEDs across the relevant color spectrum with spectral sensing technologies for cutting-edge growth stimulation and precise condition monitoring. Targeted lighting solutions also minimize fertilizer use and reduce energy costs.
- *Outdoor and industry lighting* – High quality outdoor lighting provides important benefits to society. Designed to give clear visibility without discomfort, good street lighting contributes to the safety of pedestrians, cyclists, and drivers at night. Architectural and façade lighting highlights the design of buildings and physical structures – illuminating objects for aesthetic and functional appeal, creating an emotional attachment while fulfilling its core function. The Group has a broad portfolio of LEDs and spectral sensors for all professional outdoor lighting requirements, delivering high quality, cost-effective solutions while providing more sustainable lighting-design choices. The Group's LED solutions are designed to withstand harsh outdoor conditions. With the Group's ambient light sensors as well as time-of-flight sensors for presence detection, the Group also enables new lighting solutions which optimize energy savings. For industrial lighting, the quality of the light is crucial for consistent high performance and precise working processes. The Group's products offer uniform distribution of light, high efficiency and constant intensity and color.
- *UV-C disinfection* – UV-C technology is changing the way disinfection is performed of air, surfaces and water in industrial, consumer and automotive applications. The Group's portfolio combines highly efficient UV-C emitters and spectral sensors with highly accurate presence detectors. The Group's advanced UV-C solutions make purification easy and accessible, for private, business and public spaces. Miniaturization enables the integration of UV-C LEDs and presence detectors in public and home appliances, with UV-C LEDs embedded in standard light sources to sanitize public spaces, in purification boxes to purify handheld devices or in taps to purify water. Intelligent air filter systems use the Group's UV-C LEDs together with matching spectral sensors which enable advanced predictive maintenance solutions for filter replacement and detection of contamination levels.

### *Medical*

The Group develops key technologies supporting the increasing digitization of professional and personal healthcare and for accessible, precise, and efficient diagnostics and healthcare systems. The Group's advanced sensing and lighting products offer high levels of accuracy, simplify processes and create new use cases.

The Group also brings together innovative light-emitting and optical sensor solutions for advanced fitness tracking and health data capture. As a leading supplier of vital sign monitoring solutions, the

Group pioneers technologies spanning from innovative biometric optical sensor solutions to components for fitness and health monitoring, with and without medical supervision.

The Group believes that it is a leading player in medical and industrial applications for X-Ray and CT medical imaging components and infrared vision LEDs, in each case, by market share in terms of revenue (Source: ams OSRAM Internal Market Model). For instance, the Group is a leading supplier in niche categories such as photon-counting for computed tomography and is a key supplier to eight out of the ten leading CT scanner OEMs (Source: YOLE Digital X-Ray 2022).

#### *Sensing, Illumination and Visualization Applications for the Medical Market*

- *Medical imaging equipment* – The Group views itself as a leader in CT and digital X-ray sensors for medical imaging. The Group designs and manufactures medical image sensing with the aim of providing precision, high acquisition speeds, low noise and power consumption. This enables manufacturers of scanning equipment to produce sharp images while exposing patients to the lowest possible doses of radiation. Digital X-ray equipment is widely used in general radiography, mammography and interventional radiology. The Group's solutions for flat panel detectors help digital X-ray equipment manufacturers to produce accurate images and increase scanning rates.
- *Disposable endoscope*– An endoscope inserted into the body enables a medical practitioner to examine the inside of the patient. The camera at the tip of the endoscope must be as small as possible, to minimize the patient's discomfort. The Group's NanEye miniature camera module (a complete digital camera-on-chip including its required interfaces for system integration) has tip that has an area less than 0.5mm<sup>2</sup>. The endoscope market is moving towards disposable endoscopes to eliminate the expensive and time consuming sterilization process, which helps bring down the cost of the healthcare system. This trend significantly increases the market for the Group's micro-camera modules that go into these endoscopes.
- *Digital diagnostic devices* – Monitoring vital signs is a key feature of the wellness movement, digital health and telemedicine industries. Vital signs are measurements of the body's basic functions and can be used to assess the general physical health of a person. These signals, which vary with age, weight, gender, and physical condition, are useful in monitoring actual and long-term health and indicate potential deviations from known good medical health state for early detection of potential problems. The Group has a wide range of technologies that support the development of products to measure vital signs. For example, the Group's hyper-accurate digital temperature sensor measures body temperature within 0.09°C of accuracy. The Group believes that providing patients with point-of-care diagnostics can lead to higher quality of care. Many tests today require large, expensive diagnostic instruments, with the samples being sent to a laboratory. If diagnostic services are administered locally, advantages include shorter waiting times for results and reduced costs. The Group's optical sensor technologies support the development of point-of-care diagnostics systems, including light detectors, light sources, on-wafer filter technologies and micro-cameras. Those sensors are available as chips and as optical modules and can be easily integrated into end-product designs.
- *UV-C disinfection* – The Group's UV-C technology also has applications for the medical market. UV lamps can significantly reduce infection and cross-contamination risks, while conserving energy and improving indoor air quality. The Group's lamps are used at systems in hospitals and elsewhere in the medical market to support disinfection, reducing prevalence of viruses and bacteria and preventing them from multiplying.

For the twelve months ending September 30, 2023, the industrial & medical market accounted for 31% of the Group's revenue.

### **Consumer**

The Group has a portfolio of products used in consumer applications, including sensors and sensor interface products that can include software algorithms, emitters and analog mixed signal ASICs and application-specific standard products (ASSPs).

For the twelve months ending September 30, 2023, the consumer market accounted for 20% of the Group's revenue.

The Group ranks third among sensor and actuator suppliers in wearables based on 2022 market share (Source: YOLE Sensors and Actuators for Wearables 2023).

In connection with the strategic update announced in July 2023, the Group announced plans to realign the business with a focus on the core semiconductor portfolio with intelligent sensor and emitter components and the exit of certain non-core semiconductor lower-performing businesses which were expected to produce total revenues of between €300 million and €400 million on a run-rate basis through the end of 2024, including certain lower margin businesses in the consumer portfolio such as passive optical components.



- **Mobile Phones** – The Group's products are used by many of the market-leading smartphone OEMs for applications that require advanced ambient light, spectral, and proximity sensing as well as flicker noise compensation and distance measurement for display management and camera enhancement. The Group also supplies special infrared LEDs and VCSELs alongside image sensors for biometric recognition systems for the mobile industry. These systems are used to ensure reliable identification and authentication.
- **Wearables** – The Group's products are widely used for proximity sensors in headsets, and optical sensor solutions in wrist bands and smart watches. Small form factors, in particular low height, very high signal to noise ratios, and very low power consumption, are key design features for this market segment.
- **Smart-home, security and appliances** – The Group's products are used in a number of IoT applications, which utilize optical sensors in smart-home and automation devices that are reliant on advanced optical sensing applications, to enable energy efficient environmental control applications, and personalization features, such as daylight and interior lighting controls. Smaller devices, such as household robotics, also utilize spatial sensing applications to enable autonomous movement.
- **Entertainment and gaming** – The Group's products have become increasingly important to a number of AR, VR, gesture recognition and other advanced movement and smart-optics applications. Advances in augmented and mixed reality capabilities have supported growth in video gaming and entertainment industries, including morphing and avatar capabilities.

- *MicroLED Displays* – The Group believes it is at the forefront of the industrialization of microLEDs for next generation displays. MicroLEDs that are smaller than 50µm are expected to be one of key growth drivers for the display industry. The Group views microLED displays as offering significant advantages over LCD and OLED displays in key performance aspects such as brightness, contrast, viewing angle and energy efficiency. The Group views itself as well positioned to become a leader in the development of this technology, particularly following the ongoing expansion of the Group’s Kulim production facility in Malaysia, which the Group believes will create the industry’s first 200-mm LED production facility for microLEDs worldwide.

#### *Sensing, Illumination and Visualization Applications for the Consumer Market*

The Group’s extensive range of sensing and light-emitting technologies assist with a range of applications for the consumer market, including display management, camera enhancement, authentication, vital sign monitoring, and body tracking.

The Group believes that it is a leading player among consumer sensor manufacturers in light sensors for display management and camera enhancement and that it is among the top three producers of vital signs monitoring components, in each case, by market share in terms of revenue. (Source: ams OSRAM Internal Market Model). The Group ranks second among light sensor suppliers in smartphones based on 2021 market share (Source: OMDIA Light Sensor Report 2022).

- *Display management* – The mobile and computing markets continue to follow the industrial-design trend of maximizing screen-to-body ratios. Display size and quality are key buying considerations, as people use their devices throughout the day and in lighting conditions that can challenge even the best display management solutions. The Group develops and delivers industry-leading sensor solutions with a focus on image quality and display performance that support OEM requirements for bezel-less or small frame designs. The Group’s technology leadership enables accurate ambient light, color, and proximity sensing solutions to operate behind OLED displays used in next-generation display technologies such as LTPO Gen 2.0. The Group’s innovative packaging and silicon design allow the Group to deliver sensing solutions that fit the industry’s smallest aperture size behind the display. The Group’s color sensors enable emissive (paper-like) displays by measuring multiple ambient colors to adjust the white balance of the screen – making text and images appear as if they were printed on paper. An infrared proximity sensor in a mobile phone is used to turn on/off the display when the phone is raised to the user’s ear for a voice call. The Group’s proximity sensors operate through a very small aperture which keeps optical crosstalk to extremely low levels, almost eliminating the risk of false detection events and adhering to difficult corner cases. The Group’s small aperture optical sensing devices are based on a refined analog front-end, digital circuitry that runs complex sensor algorithms and innovative package design techniques, producing the lowest possible noise floor.
- *Camera enhancement* – As a leading supplier of camera enhancement technologies, such as multi-channel spectral color sensing, flicker detection, auto white-balancing (AWB), light-source detection, auto-focus and background blur assist (bokeh) the Group provides smartphone manufacturers with a way to differentiate themselves at a time when camera quality is often a critical factor in the purchase of a new device. The Group offers both RGB and high-accuracy XYZ color sensors with dedicated infrared channels for high-end mobile phone cameras and camera-based consumer devices.

- *Authentication* – With personal authentication now essential for accessing many services, the Group expects more and more systems will rely on biometric features to identify authorized users. The Group supplies special infrared LEDs and VCSELs alongside image sensors for biometric recognition systems. These systems are used to illuminate the target area, enabling the sensor to detect high-quality images, and ensure reliable identification and authentication.
- *Vital sign monitoring* – Healthcare is becoming more accessible as an integrated element of smart phones and wearables. Digitalization helps to individualize and optimize fitness levels and the monitoring of medical conditions. Devices are getting smaller, smarter and ever more accurate. These devices and the technologies they utilize require accurate and reliable data, optimum quality, miniaturized components and high energy efficiency. The Group brings together innovative light-emitting and optical sensor solutions for advanced fitness tracking and health monitoring applications.
- *Body tracking* – Eye tracking is becoming a critical feature of the latest VR and AR headsets. New interactive experiences are enabled by using eye gaze as a user interface and including it in photorealistic avatars. Eye tracking can also be used to reduce system power through foveated rendering (i.e. rendering which uses eye tracking to lower the computing workload by greatly reducing the image quality in the peripheral vision – outside of the zone gazed at by the eye’s fovea), and eye movements are also a potential new vital sign. High accuracy, fast update rates, minimum power consumption, and a tiny form factor are critical to fitting eye tracking into VR and AR glasses. The Group offers a wide range of components to make this possible. Social and professional interactions between photorealistic avatars are expected to become a key feature of VR and AR systems. Reproducing realistic facial expressions may be crucial to enabling natural human interactions in these VR and AR systems. The Group offers a range of tiny, efficient emitters and sensors to enable precise sensing of facial movements. In addition, the Group expects hand tracking to be an essential feature for intuitive and interactive experiences, whether for a user interface or a photorealistic avatar. The Group’s compact and low power emitters and sensors are ideally suited for multiple hand tracking implementations.

## **Technologies**

The Group’s technological innovations result from the Group’s deep knowledge, extensive experience and significant investments in its R&D capabilities.

### ***Emitters***

#### ***LEDs***

The Group has a wide in-house portfolio of LED technologies (from wafer epitaxy and LED chip to conversion materials and LED packages). The addressed wavelength spectrum of the Group’s inhouse chips ranges from UV-C for disinfection, across the visible light spectrum (blue, red and green) (for instance for illumination applications in automotive and industry and visualization applications), to the near infrared for sensing applications. The Group has a broad portfolio of different package technologies for a wide range of applications with specific requirements. The Group’s portfolio covers different power classes from low-power to high-power and has technologies with different complexities, from very simple packages to highly sophisticated smart packages with integration of silicon-based intelligent components, such as drivers or ASICs. See “—Products—LEDs.”

### *EELs*

The EELs that the Group offers use nanostack technology (such as “triple-junction” technology where three light-emitting surfaces are stacked one on top of the other), which has the main advantage of delivering high power within a small area, making it the technology of choice for long-range LiDAR, visualization, illumination and material processing.

The infrared laser diodes for sensing (LiDAR applications) with a light wavelength of 905 nanometers (“nm”) that the Group offers have the highest efficiency on the market. The laser diodes can operate with very short pulses (down to 2 nanoseconds), while delivering outstanding power.

The visible indium gallium nitride laser diodes for laser projection and illumination that the Group offers have a great optical output power also at high operating temperatures. Single-mode laser diodes can operate at a higher temperature range without active cooling and have excellent efficiency, which helps extend their life time.

### *VCSELs*

VCSEL technology utilizes a vertical semiconductor structure that emits the laser beam perpendicular to the top surface, unlike conventional edge-emitting lasers structures which use a lateral structure and emit the laser beam parallel to the top surface. The VCSEL structure provides greater design flexibility, which allows for a broader range of applications, and delivers the increased data capture capabilities required to operate 3D applications. VCSEL dies can more easily be packaged and tested which generally translates into a cost advantage.

Multiple VCSEL laser emitters can be included in a die to form a VCSEL array, which is needed in particular applications like for example LIDAR. VCSEL-based sensing solutions can provide higher optical power at a lower cost and with less distortion than alternative solutions, which in combination with its slim packaging and thus small footprint will help enable the introduction of 3D applications in mainstream mobile phone and automotive applications. The Group’s VCSELs are rated for operation at ambient temperatures as high as 150°C, allowing them to operate efficiently with accurate beam control to maintain peak performance in complex and energy-intensive applications.

### *Infrared LEDs*

The Group has a long history in developing infrared LEDs and offers a range of products to match the varying requirements of each application area, such as wall-plug efficiencies above 50% using the Group’s thin-film technology; low operation voltage and high-power ratings/low thermal resistance; wavelengths of 850nm and 940nm; various beam angles; and single- and dual junction (stack) chips. Infrared illumination plays a significant role in applications for products required by the automotive and consumer markets, including security cameras, biometric identification, driver monitoring and machine vision.

### **Sensors**

Sensors are customized devices capable of translating physical stimuli into electric signals for use by electronic processors or computer-based control systems, enabling systems to sense, learn, respond to and communicate with their surroundings. Many of these physical stimuli can be optically converted to electric signals, for transmission to the relevant product.

The Group also offers application reference designs including advanced application algorithm software so that customers can use to more easily integrate the Group’s sensors and ICs into their products. This software algorithm portfolio forms a key part of the Group’s sensing offering, and the Group continues to develop its software capabilities alongside advances in the Group’s sensing technology.

### *Optical Sensors*

The Group's optical sensor applications efficiently, quickly and accurately measure and translate external light stimuli (including color and intensity changes in light) into electronic signals for use in a wide range of end-market products and devices.

The core elements of optical sensors are highly sensitive photodiodes that are fully integrated in CMOS ICs. These are combined with other components, such as optical filters and diffusers manufactured in a thin-film process. The combination of high-sensitivity photodiodes with hybrid optical filter technologies and chip-scale packaging solutions in small form factors supports smartphone, wearable, and automotive applications.

The Group's advanced optical sensing portfolio also includes 3D sensing technologies which can translate 3D light stimuli by capturing image and spatial data, including depth information, and process resulting data across four dimensions for use by the relevant product or device.

The Group's new 0.16M to 2M pixel global shutter CMOS image sensors combine high performance with low power consumption and offer greater design flexibility to device manufacturers thanks to their small footprint. In medical imaging, the Group's fast and ultra-low-noise sensor solutions provide unprecedented image quality and allow for reduced radiation exposure thanks to their greater sensitivity. They also form the basis for the upcoming photon-counting technology that will enable even greater resolution in CT scanners, where the Groups believes itself to be the technology leader.

### *Light Sensors*

Light sensors convert light waves (e.g., as they pass through or reflect off objects) into electrical signals. Light sensors are used in both analog and digital electronic imaging devices, which include digital cameras, camera modules, and medical imaging equipment.

The Group offers light sensors with capabilities from basic RGB features to multi-or hyper-spectral sensing capabilities. The Group's portfolio aims to provide features that OEMs can match with their own particular requirements, from low-energy sensor capabilities that provide limited spectral information to high-specification solutions that require energy efficient and advanced processing capabilities.

*Multi-spectral spot sensors* – The Group's multi-spectral spot imaging sensors are based on a tiled architecture, using an interference or Fabry-Perot filter across 9-64 channels. These sensors have high spectral capabilities, but they are only capable of taking spot-measurement information. These sensors are used in applications such as optical remote satellite applications.

*Multi-spectral 2D sensors* – The Group's multi-spectral 2D imaging sensors are based on a mosaic architecture, using an interference or Fabry-Perot filter across 9-25 channels. These sensors provide spatial resolution and have full video capability, although they are able to collect more limited spectral information than spot sensors. These sensors are used in applications such as agriculture, material spectral characteristics sensing or inspection.

### *Imaging Sensors*

Imaging sensors are specialized arrays of lights sensor which capture images with the help of an optical imaging system located in proximity to the sensor. The Group's imaging sensors include area scan sensors, line scan sensors and miniature camera modules. Area scan sensors are chips for high-frame-rate photography, which are used for example in document scanners, image processing, 3D images, motion imaging, barcode scanners and biometric devices. Line scan sensors are used in inspection systems such as cameras installed in the food industry for industrial sorting which allow a

faster readout of the images. Miniature camera modules are used in products with a minimal space for sensors, including sensors that measure only one millimeter by one millimeter. These are used primarily for endoscopic devices in the medical industry, industrial endoscopy, robotics or eye-tracking products such as eye-tracking glasses. Lower resolution ultra-high sensitivity image sensors and sensor interfaces are used for CT and X-ray applications.

**RGB sensors** – The Group’s RGB imaging sensors are based on Bayer filter array architecture and use an organic RGB filter across three channels, where no spectral information is required. These sensors use a snapshot approach to acquire pixels at a moment in time and also feature video capability. These sensors are used in applications such as visible-range photo and video.

**NIR sensors** – The Group’s NIR imaging sensors offer NIR light sensing on a single IC. Like RGB sensors, these sensors use a snapshot approach to acquire pixels at a moment in time and also feature video capability, with the additional capability to capture spectral information using a NIR camera. These sensors are used in applications such as surveillance cameras, eye-tracking and 2D/3D applications such as face recognition and in-cabin automotive cameras.

In January 2023, the Group released a 0.5Mpixel global shutter CMOS image sensor (“**Mira050**”). The Mira050 is highly sensitive to both visible and NIR light and enables engineering designers to save space and power in wearable and mobile devices. The Mira050 is suitable for applications such as eye tracking, gesture tracking and contextual awareness in AR/VR/MR headsets, object detection in robots and 3D depth sensing for face recognition in smart door locks.

### ***Chip-Packaging Technologies***

The Group’s chip-packaging technologies help its optical devices and sensor products to achieve high precision, low noise performance and reduced system costs. The Group’s advanced packaging technologies include: through-silicon vias, which reduce the height of an optical IC package and eliminate the need for wire bonds; system-in-package (“**SiP**”) technology, which integrates complete sensor assemblies into a single SiP to save space and eliminate a board assembly process for the Group’s customers; and stacked dual die technology, which offers two of the same sensor dies in a single IC package.

### ***Position Sensing Technologies***

The Group has developed technology that protects the Group’s position sensors from interfering magnetic stray fields and reduces angle error so that they operate with accuracy and reliability even in harsh environments.

- ***Stray-field immunity*** – The Group’s position sensors feature technology which protects them against interference from magnetic stray fields. The sensors overachieve International Organization for Standardization (“**ISO**”) 11452-8, which specifies tests for the electromagnetic immunity of electronic components from the magnetic fields created by passenger cars and commercial vehicles regardless of the propulsion system.
- ***Dynamic angle error compensation (DAEC™)*** – DAEC™ is a recent technology that yields almost zero output latency and ultra-fast refresh rates in high-speed motor control systems.
- ***Coil design*** – This inductive position sensor technology is based on measuring the coupling between the coil (excitation and receiver coil) via a rotating target. Due to its flexibility, easy adaption and low overall system costs, inductive position sensing can replace resolvers and can be used for on-axis as well off-axis applications.

- *PSI5 interface* – PSI5 is a standard bus interface which enables communication between devices in an automotive system over a twisted-pair cable.

### **Micro-Lens Arrays**

MLAs operate as ultra-small projectors which have images integrated into the micro-optic lens, producing sharp images in brilliant color. Micro-lenses offer a long focal depth, which means that an array can project a focused image on to a parallel, slanted or curved surface.

MLAs may be configured to provide a bright output in an extremely low-profile form factor. In conventional projector technology, the higher the brightness required, the larger the projector. By contrast, MLAs can be arranged next to each other so that their images overlap to create a brighter picture, while the thickness of the projector, typically 3mm, remains the same.

### **Lamps & Systems technology platforms**

In the Group's Lamps & Systems segment, the Group has developed industry-leading traditional lamps based on halogen, high-intensity discharge and incandescent technologies and the Group is enhancing its design capabilities with leading industrialization, testing and process capabilities. The Group's technology and process capabilities cover all steps of the production process, leading to a vertically integrated supply chain that also covers essential prematerial technologies (including, for example wires, electrodes, glass and basing) and process technologies (such as coatings). This also makes the Group ideally suited for design and industrialization of LED retrofits, including the development of legal halogen retrofit solutions.

In addition, the Group maintains the capability to design and manufacture custom LED modules with a focus on tight tolerance light emitting surface placement and vacuum reflow, which is necessary for high power and forward lighting matrix/array based solutions. The Group is active on standardized laser solutions (such as  $\mu$ LARP), LED matrix solutions (such as SMARTRIX) and regulated LED solutions (such as XLS), which can be utilized across car manufacturers and set-makers in forward lighting or signal lighting applications.

The Group also has the design, industrialization and testing capabilities for automotive lighting fixtures, particularly in the area of working lights.

### **Foundry Manufacturing Services**

The Group assists its customers with the design and development of their own products and applications. The Group's foundry services include design support, state-of-the-art manufacturing services, process customization, packaging and IC integration, and wafer probing and final testing for analog and mixed signal ICs.

- *Design services* – The Group provides design-related product and support services as part of the Group's comprehensive foundry services offering. This service offering includes design coordination and support through the Group's benchmark design application "hitkit," an analog/mixed signal high performance interface tool kit, supports various design platforms and interfaces and allows designs to be effectively prepared and placed into production by utilizing third-party software and qualified building block libraries. Higher support levels are available, for a one-time fee or through royalty arrangements, for the design of more advanced solutions.
- *Customized wafer solutions* – The Group's foundry services include high-quality wafer manufacturing, advance packaging and wafer sort options, package assembly utilizing known good dyes to reduce yield risks, and final test, qualification and packing utilizing custom

processes. The Group offers a comprehensive portfolio of packaging options, including standard technologies and advanced customized packaging options.

The Group offers foundry services mainly focusing on wafer manufacturing- and testing operations at its European production facility in Unterpremstaetten, Austria, but also offering assembly and final test services performed by the Group's assembly partners in East Asia and at the Group's own production facility in Calamba, Philippines. This multi-source approach enables a scalable manufacturing model to support customer needs.

In addition, the Group has been creating ASIC solutions in partnership with the Group's customers for over 30 years. The size and cost of electronic components is significantly reduced by using customized ASICs compared to off the shelf discrete components. They also benefit from ultra-low power, ultra-low noise, improved reliability and high-performance properties.

### **Investments in associates**

In March 2019, the Group signed an agreement with Wise Road Capital, a global private equity firm focusing on the semiconductor industry and other emerging high-tech industries, to create ScioSense, in which the Group indirectly holds a 45.22% interest. Through ScioSense, the Group aims to advance the development and sales of its environmental, flow and pressure sensor solutions business for the global market.

Under the Group's agreement with Wise Road Capital, the Group contributes all employees, intellectual property, sensor products and solutions, as well as existing customers of its environmental, flow and pressure sensor solutions business to the business, while Wise Road Capital provides its expert guidance, deep market knowledge and strength in channel and customer relationships, especially in China.

The Group has transferred its environmental sensor solution portfolio to ScioSense. These sensors cover air quality, relative humidity and temperature sensing and are used in automotive, smart building and air quality monitoring infrastructure applications. The portfolio also includes the Group's ultrasound-based flow sensor solutions and pressure sensors. Wise Road Capital provides ScioSense with advisory services and gives it access to its extensive network and resources from well-known global industry partners, covering automotive, telecommunication, industrial control and home appliance companies. The Group's environmental, flow and pressure sensor solutions were carved out to ScioSense in January 2020.

ScioSense is headquartered in the Netherlands and has operations in Germany, Italy and China.

In 2021, the Group acquired 20.38% of Bolb Inc., a manufacturer of high-efficiency UV-C LEDs, with the goal of accelerating the industrialization of highly efficient, high-performance UV-C LEDs through research collaboration with that company. Bolb Inc. is headquartered in the United States.

### **Customers**

In the Semiconductors segment, the Group sells intelligent sensors and emitter components including analog mixed-signal ICs primarily to OEMs (including through distributors that sell on to OEMs) that participate in end-product markets which focus on automotive, industrial and medical and consumer applications. In the Lamps & Systems segment, the Group sells traditional and solid-state lighting lamps and lighting systems with a focus on the automotive, industrial and entertainment end markets,

to OEMs (including through distributors that sell on to OEMs) and through the aftermarket channel (such as retail outlets and trade and e-commerce platforms).

The Group has a global footprint to serve customers that operate worldwide. The following table sets out the Group's revenue by regions based on the billing location of each customer as shown in the audited consolidated financial statements:

	<b>For the years ended December 31,</b>		
	<b>2020</b>	<b>2021</b>	<b>2022</b>
		<b>(Audited)</b>	
		<i>(in € millions)</i>	
EMEA.....	765	1,413	1,455
Americas .....	521	962	849
Asia/Pacific.....	2,218	2,663	2,515
<b>Total</b> .....	<b>3,504</b>	<b>5,038</b>	<b>4,819</b>

In recent years, the Group's sales engagement with customers located in Asia/Pacific has increased considerably, primarily due to advances of technology companies in the Group's applications areas.

The Group has long-standing and trusted relationships with most of its core customers that average over ten years. In the Group's Lamps & Systems automotive aftermarket business specifically, the Group has strong relationships and long-term exclusive contracts with its major U.S. retail accounts.

For the years ended December 31, 2021 and 2022, the Group's top ten customers accounted for 35% and 33%, respectively, of the Group's revenue. For the same period, the Group's top three customers accounted for 25% and 22%, respectively, of the Group's revenue and a significant portion of this was the Group's top customer in the Semiconductors segment, which accounted for 18% of the Group's revenues in 2022 (down from 20% in 2021). For the nine months ended September 30, 2022 and 2023, the Group's top ten customers accounted for 33% and 33%, respectively, of its revenue and the Group's top three customers accounted for 22% and 19%, respectively, of its revenue. For the period 2017-2019, the ams Group's top customer accounted for between 50% and more than 60% of the ams Group's consolidated revenue, increasing during this period. The Group has worked to mitigate and reduce financial dependence on its top customers by broadening the Group's portfolio and customer base through a combination of measures aimed at growing its mid-tier direct customer and mass market distributor revenues, mainly with customers in the automotive and industrial market to complement the top customers' project-based revenue peak with other long-term, stable business growth. External factors such as the easing of COVID-19 related market supply constraints for the Group's large automotive OEM customers also contributed to the decline in customer concentration. Furthermore, the loss of market share for certain applications in the consumer business of the Group's Semiconductors segment also contributed to the decline in customer concentration. See "*Risk Factors—Risks Related to the Group's Business and Industry—The Group derives a large proportion of its revenue from its top customers, and the loss of, or significant reduction in business or margin from, its top customers could have a material adverse effect on its business, results of operations, financial condition and prospects.*"

The Group regularly receives positive scores and awards during the customer audit process of the Group's facilities and processes. In addition, the Group has regularly been nominated for key supplier awards from globally known brands (such as the Huawei Golden Supplier Award).

## **Sales and Marketing**

Customer proximity is critical to the Group's success. Leveraging the Group's reputation for quality, innovation and reliability, the Group continually seeks to deepen its relationships with existing customers and develop new customer relationships, particularly with market or technology leaders in the Group's target end-markets. The Group applies its expertise in a broad range of sensing, illumination and visualization applications. The Group offers its customers focused account management and dedicated field application support functions in addition to the Group's customer-centric R&D approach which puts a specific focus on current and potential customer requirements.

In the Semiconductors business, the Group's sensor and lighting products are not sold directly to end-market consumers, but are rather embedded as components in applications developed and sold by the Group's OEM customers. The Group's sales team works closely with its innovators, R&D team and operations to coordinate the significant R&D and engineering efforts required to succeed in competitive bid selection processes, known as "design-wins," which are typically required before customers can embed the Group's products into their applications. The Group also collaborates directly with its customers' design teams to gain a detailed understanding of their requirements and specifications and to identify new sensor and lighting products and applications for both existing and potential customers. In the Lamps & Systems business, the Group produces solid-state lighting and traditional lighting solutions for OEMs as well as for customers in the automotive aftermarket. The Group's aftermarket products are mainly sold via third-party distributors, such as retail outlets or e-commerce platforms, and in some of the Group's sales regions, directly to end-market customers.

The Group's sales and marketing capabilities are spread across the Group's global footprint, operating from its 65 sales offices worldwide (where the Group employed an average of 338 employees, based on FTEs, in 2022) which allows the Group to be close to its customers wherever they operate. The Group's Semiconductor marketing and business development activities are centrally coordinated, ensuring that the Group's advanced offering is presented consistently across the Group's operations. Central resources utilize regional application marketing and business development resources to deploy strategy. Lamps & Systems operates its own sales force, selling its products directly to its automotive, industrial and entertainment OEM customers and serving the aftermarket through its channel partners.

For the Group's Semiconductors segment, the Group's sales organization includes key account managers, field sales engineers, business development personnel and as field application engineers, which in the Group's view are all experienced, technologically proficient and possess extensive know-how of the Group's target end-markets and key applications for its products. A high proportion of the Group's key account managers have experience in the engineering field. This allows the Group's sales team to better understand customers' requirements and explain the benefits of the Group's technological solutions and application expertise. The Group's sales team is organized by geographical area, and set-up according to application, market and customer demand, with local end-customer focused key account managers, as well as distributor account managers. This facilitates both demand creation and demand fulfilment for defined end-customers and for the market in general. In addition, the Group has dedicated global account managers who are directly assigned to the Group's top customers. Key account managers are also responsible for forecasting revenue, utilizing their knowledge of customer project roadmaps and the probability of their success. The Group's sales

organization works very closely with its business line product managers who have specific knowledge of the sensors and lighting products. The Group's field sales engineers and business line marketeers present the Group's products and applications to customers and its field application engineers assist the regional and strategic account teams with the definition of products, specifications and design-in activities and they provide technical support to the customers.

For the Group's Lamps & Systems OEM sales force sells lamps and exchangeable LED-based lights sources (XLS) directly to automotive OEM customers, and specialty lamps to industrial and entertainment OEMs, for which it mainly maintains a key account sales force close to its customers in the regions as the number of new design-ins is limited due to the maturity of the product portfolio. Aftermarket sales also follow a regional approach with approximately 40 sales offices globally. The Group's sales teams work closely with regional aftermarket and product management marketing teams who are responsible for helping their counterparts meet the needs of their respective markets and channels, as well as the requirements of local customers. The Group's Lamps & Systems specialty lamps sales organization follows a global approach. To support aftermarket sales, the Group also invests significantly in end-consumer oriented advertising and marketing campaigns using the Sylvania brand in the United States and the OSRAM brand in the rest of the world. Given that the products the Group sells go to the end-consumers through its channel partners, product packaging design plays an important role in successfully selling its products to aftermarket customers.

## **Research and Development**

The Group's 41 development sites are globally positioned, with LED development in Germany and Malaysia, VCSEL technology in the U.S, packaging development in Malaysia, China, Singapore, and Germany, micro-optics in Switzerland and Singapore, the development of conversion solutions, optical coatings and filter technology, image and color sensor development in the US and Europe, and IC design and development in India, the U.S., Italy, Spain, Austria, and Switzerland.

The Group's pursuit of technological leadership in the development and manufacture of high-quality sensing and lighting technologies for use in products such as mobile devices, automotive lighting, industrial applications, and medical diagnostic technology is based on intensive R&D activities. To secure and strengthen the Group's strong market positions, the Group invests significantly in R&D. Research and development expenditure for the year ended December 31, 2022, amounted to €630 million, or 13% of revenues, compared to €692 million (14% of revenues) and €423 million (12% of revenues) for the years ended December 31, 2021 and 2020, respectively. The average number of employees working in R&D was 3,453 in 2022 compared to 3,445 in 2021 and 3,732 in 2020, based on FTEs; see "*Management's Discussion and Analysis of Financial Condition and Results of Operations – Key Factors Affecting Comparability of Financial Results.*")

The Group's R&D activities mainly comprise optical and semiconductor technologies for applications involving sensors, illumination, and visualization. The Group's broad technology portfolio serves the automotive, consumer, industrial, and medical end-markets. Furthermore, the development of software and algorithms and leveraging machine learning and artificial intelligence in its products and operations are also an integral part of the Group's R&D activities.

One current focus of development is microLED technology, which is characterized by microscopically small LEDs that form individual light points/pixels and can be combined to form high-resolution displays. Future areas of application for microLEDs are expected to include televisions, automotive head-up displays, and wearables. MicroLED technology allows for more vibrant colors, a high

contrast ratio, improved display performance in unfavorable lighting conditions, and lower relative energy consumption for improved efficiency.

Close strategic coordination between the Group's business units and strategy department seeks to ensure continuous improvement of the Group's innovation processes and determines its strategic decisions on technology and product development. Collaboration with third parties takes place, for example, through research programs, such as those funded by the European Commission, as well as local funding programs around the world. For example, the CAVIAR project, co-funded by the EU and involving nine partners, received the PENTA Innovation award in 2022. The CAVIAR project developed sensor components and technologies for CMOS image sensors. As part of the Group's approach to working with strategic partners, the Group also collaborates globally with leading research institutes, universities and other companies. One current focus of development is microLED technology, which is characterized by microscopically small LEDs that form individual light points/pixels and can be combined to form high-resolution displays. MicroLED displays are expected to be adopted in high-end televisions, automotive displays, and wearables. MicroLED technology allows for more vibrant colors, a high contrast ratio, improved display performance in unfavorable lighting conditions, and lower relative energy consumption for improved efficiency. MicroLED displays can also have more flexible form factors, which is a significant benefit in automotive applications.

Long-term technology and product roadmaps are defined by the Group's business units in closing collaboration with the corporate strategy and research departments to ensure the Group focuses on the most promising innovations both in terms of potential financial returns as well as the highest likelihood to win based on differentiation versus competitors. Collaboration with third parties takes place, for example, through research programs, such as those funded by the European Commission, as well as local funding programs around the world. For example, the CAVIAR project, co-funded by the EU and involving nine partners, received the PENTA Innovation award in 2022. The CAVIAR project developed sensor components and technologies for CMOS image sensors. As part of the Group's approach to working with strategic partners, the Group also collaborates globally with leading research institutes, universities and other companies.

The creation, maintenance, enforcement and use of patents, trademarks, and other intellectual property rights is an important aspect of the Group's strategy to differentiate itself in the marketplace and to protect and monetize the Group's R&D investments. See "*—Intellectual Property Rights.*"

## **Intellectual Property Rights**

The Group relies on a combination of international patents, copyrights, trademarks, trade secrets and documented know-how to protect the Group's intellectual property. As of December 31, 2022, the Group had approximately 5,700 patent families with active members in various jurisdictions, totaling approximately 14,000 issued and pending patents worldwide, including in China, Germany, Japan, South Korea, Taiwan, and the United States.

The Group's intellectual property department is responsible for managing its intellectual property processes, with the objective of further strengthening its intellectual property portfolio. The Group carefully benchmarks its patent position against those of its peers in accordance with industry practice. The Group's patent portfolio covers, among other areas, key technologies that are used in the Group's sensor, illumination and visualization application technologies. The Group's most important copyrights include those relating to the algorithms and software used in these applications. In addition to the Group's own proprietary technology, which also includes trademarks, the Group relies on certain license and technology transfer relationships.

## Production Network and Facilities

As of September 30, 2023, the Group had 9 production sites worldwide for Semiconductors and 9 for Lamps & Systems. The Group's production key sites are located in Premstätten (Austria), Berlin, Regensburg, Herbrechtingen and Schwabmünchen (Germany), Singapore, Wuxi, Foshan and Kunshan (China), Penang and Kulim (Malaysia), Nové Zámky (Slovakia), Bruntál (Czech Republic), Hillsboro and Exeter (New Hampshire, USA), Warren (Pennsylvania, USA) and Calamba City (Philippines).

The Group manufactures its semiconductor products using a "hybrid" manufacturing model, based on advanced in-house capabilities and selective outsourced support. Under this model, the Group retains operational flexibility to respond to fluctuations in order intake and, in particular, manufacturing control over the key processing steps in the technology value chain, which offers increased protection with regards to the Group's proprietary technologies. At the same time, it allows the Group to benefit from third-party contract manufacturers' economies of scale, by outsourcing production of commoditized and standardized manufacturing services to third-party contract manufacturers (such as Taiwan Semiconductor Manufacturing Company and X-Fab for front-end production (wafer) and Hana, Amkor and ASE for assembly and test services). This in turn enables the Group to provide its customers with an attractive price/performance ratio and better supply security and to efficiently manage the Group's own capital expenditures with a view to deliver an attractive return on invested capital.

The Group's key production facilities are located in Austria, Germany, Malaysia, China, Slovakia, United States and Singapore. These locations also include the relevant testing activities. However, where possible, testing of packed components and, to a lesser extent, wafers, which are largely shipped from Asia, is undertaken in Calamba (Philippines) to allow for economy of scale in a cost-effective environment.

- *Austria* – The Group undertakes a significant portion of the Group's in-house manufacturing activities at its facility in Premstätten, Austria. These activities include the production of 200mm wafers, with a focus on front-end CMOS production. The Group's Premstätten facility is equipped with advanced production capabilities which allow the Group to produce CMOS/specialty analog ICs down to 180nm, as well as a high-volume optical filter deposition line. The Group is currently expanding the Group's production facility in Premstätten to increase its internal CMOS production line with optical filter and TSV (Through Silicon Via) capacities, in order to enable it to respond faster to increased demand and to reduce the risk of dependence on third party producers allowing the Group to strengthen its manufacturing processes. The Group expects that some of the additional new capacity will begin to come online during the second half of this year with full capacity from the expansion expected during next year. This facility has a total building space of approximately 66,000 square meters ("m<sup>2</sup>").
- *Germany* – The Group's Regensburg facility is the Group's main production facility for red LED wafers used in the automotive and horticulture (illumination) industries. In addition, the Group produces blue and green LED wafers as well as laser products at the Group's Regensburg facility. The wafers produced are also used in the visualization and other illumination products. The wafer geometries produced range from 2" to 8" with the smaller sizes mainly used for laser production. As a front-end LED and laser location, the Group's manufacturing process includes also epitaxy. In this critical process, multiple layers are grown on a substrate using metalorganic chemical vapor deposition. The Group's Regensburg production facility is directly connected to the Group's R&D department and laboratories. This facility has a total building space of

approximately 85,000 m<sup>2</sup> and is currently being expanded by approximately 1,750 m<sup>2</sup>. The Group's Berlin facility is its main production site and global center of competence for various high-intensity discharge lamps for automotive, entertainment and industry applications. This facility has a total building space of approximately 45,000 m<sup>2</sup>.

The Group's Herbrechtingen facility is its production site and global center of competence for automotive products in both the traditional halogen lamp as well as XLS LED modules (exchangeable light source) technologies. This facility has a total building space of approximately 31,000 m<sup>2</sup>.

The Group's Schwabmünchen facility is its production site of pre-materials in the fields of chemicals, metal (wires, electrodes) LED phosphors and ceramic converters. The Group has decided to phase out production of ceramic converters in Schwabmünchen and to transfer the volume to the Exeter facility. This facility has a total building space of approximately 27,000 m<sup>2</sup>.

- *Slovakia* – The Group's core technology center for the production of traditional auxiliary lamps is located in Nové Zámky, it is also the Group's core location for aftermarket packaging and mechanical and plant engineering serving internal and external customers. This facility has a total building space of approximately 35,000 m<sup>2</sup>.
- *Malaysia* – Penang is the Group's primary site for the packaging and assembly of its LED products. In Kulim (Kulim I), the Group produces blue LED chips for automotive and illumination applications. In 2022, the Group began to expand its front-end capacity at its Kulim facility (Kulim II) in order to create what the Group believes will be the industry's first 200-mm LED focused semiconductor production facility for microLEDs. This was one of the Group's most important investments in 2022 and 2023 and is intended to support the expected growth in microLED and advanced LED solutions and to allow the Group to shape many different applications with this facility over the next 10 to 20 years. The facility is expected to be operational in 2024 and construction has so far progressed in line with expectations, despite rising costs and supply chain constraints. See "*Management's Discussion and Analysis of Financial Condition and Results of Operations – Capital Expenditure.*"
- *United States* – The Group is manufacturing halogen lamps and auxiliary lamps in the Group's Hillsboro (New Hampshire) facility. It is also the Group's U.S. headquarters and logistics hub for the Lamps & Systems segment. In Warren (Pennsylvania), the Group produces pre materials in the context of plastic casting, stamp and metal parts. The Exeter facility produces ceramic converters for LED products. The Group's U.S. facilities have a total building space of approximately 55,000 m<sup>2</sup>.
- *China* – The Group's Foshan production site is the Asian production hub for the Lamps & Systems segment. The Group manufactures traditional halogen and LED retrofit lamps. In the Group's Kunshan facility, the Group assembles projection lamps for entertainment and industrial applications. Wuxi site is the key packaging and assembly site next Penang for LED components for both the China as well as other markets. The Group's Chinese facilities have a total building space of approximately 202,000 m<sup>2</sup>.
- *Singapore* – The Group's Singaporean facility is home to the Group's in-house optical component and optical module production. The facility offers innovative high-end optical packaging, for 3D and optical sensing applications, and it specializes in wafer level optics ("WLO"). The Group consolidated its production networks in Singapore where the Group closed two facilities (in Tampines and Woodlands) and a part of the Group's facility in Ang Mo

Kio to adapt its capacity to lower consumer market demand. The Group's remaining Ang Mo Kio facility has a total building space of approximately 51,000 m<sup>2</sup>.

- *In-house testing* – The Group undertakes its in-house testing activities for CMOS and optics products at the Group's facilities in Austria, Singapore and the Philippines. These activities include trial manufacturing processes for newly developed IC and ASICs products, including new-specification and integrated-feature designs. The component test for the Group's LED products is performed in its assembly and test facilities in Wuxi, China and Malaysia.

The manufacturing cycle for the Group's sensor products can be typically divided into the following stages: (i) wafer production; (ii) wafer post-processing; (iii) assembly and packaging; and (iv) calibration and testing.

- *Wafer production* – The Group produces wafers in-house at its production facilities in Premstätten, Austria and Regensburg, Germany. The Group also outsources a portion of standard CMOS high-volume wafer production to third-party semiconductor foundries, which produce wafers for the Group's digital and analog/mixed signal ASICs designs.
- *Wafer post-processing* – Post-processing manufacturing includes a number of processes and techniques that enable advanced IC and ASICs capabilities. These include the Group's optical coating capabilities to deposition optical filters used in light sensors, which are undertaken at the Group's facility in Premstätten. Our facilities in Singapore have capabilities to enable the design and production of small optical lens elements at the wafer surface, which support the development of smaller form factor components for use in small cameras utilized in mobile devices.
- *Assembly and packaging* – Assembly and packaging are decisive factors for the durability, reliability and size of a sensor product. Allowing the sensor to interact with its environment without ambient environmental interference with its measurements requires specialized packaging. The Group designs and develops innovative packaging solutions tailored to the individual sensor product and application. Where standardized and manufacturing services are readily available, and provided that no proprietary technology or know-how is involved, the Group outsources the manufacturing of the packaging to third-party contract manufacturers. For LEDs, Lasers and Optical Modules almost all assembly and packaging is done in-house, while for CMOS ICs and integrated light sensors almost all assembly and packaging is outsourced.
- *Testing* – The Group's highly automated processes allow the Group to test large volumes of sensors simultaneously, thereby maintaining cost-efficiency by producing high yields at lower costs. The Group's sensor products are fully adapted to the needs of each customer, and therefore the customer no longer has to perform expensive testing in-house.

## **Real Estate**

The Group's corporate headquarters are located at Premstätten near Graz, Austria and in Munich, Germany. The Premstätten location has a total building area of approximately 66,000 m<sup>2</sup>, of which approximately 13,800 m<sup>2</sup> is a production area. The Munich location has a total building area of approximately 7,000 m<sup>2</sup> and exclusively consists of office space. The Group owns the Premstätten location and leases the Munich location.

The Group operates 18 production facilities around the world and is represented in almost 50 countries (including the Group's R&D, sales and administrative facilities). The following table lists the Group's main production facilities (based on total building area) and certain of their characteristics.

<b>Production facility</b>	<b>Country</b>	<b>Business segment</b>	<b>Total building space (m<sup>2</sup>) (approx.)</b>	<b>Ownership</b>
Wuxi.....	China	Semiconductors	118,000	leased
Foshan.....	China	Lamps & Systems	76,000	owned leased/
Penang .....	Malaysia	Semiconductors	121,000	owned leased/
Kulim.....	Malaysia	Semiconductors	168,000	owned leased/
Regensburg .....	Germany	Semiconductors	85,000	owned
Singapore .....	Singapore	Semiconductors	51,000	leased
Premstätten .....	Austria	Semiconductors	66,000	owned

The Group's production facilities in Penang, Kulim and Regensburg consist of several production areas; the Group owns some of them and leases the rest.

The Group also began to expand its capacity at the Group's Kulim facility in 2022, in order to create what the Group believes will be the industry's first 200-mm LED focused semiconductor production facility for microLEDs. See "*—Production Network and Facilities.*"

## **Suppliers**

The Group purchases various components and raw materials for use in its manufacturing processes such as precious metals (such as gold, palladium, platinum and silver), chemicals (photo-chemicals, organic solvents, wet process chemicals, inorganic cleaning agents and chemicals for opto-semi production) or substrates (over molded PLCC lead-frames, SI-wafers, gallium arsenide wafers, sapphire wafers and germanium wafers). The Group also outsources various standardized and readily available manufacturing services to third parties (such as Taiwan Semiconductor Manufacturing Company, X-fab Hana, Amkor and ASE), in particular the manufacturing of wafers that are used in its production of ICs. To reduce its dependence on a particular supplier for key materials or services, the Group generally relies on at least one secondary source in addition to the main supplier, where possible. The Group currently relies on a limited number of wafer manufacturers. For some dedicated customer products, the Group is bound to use suppliers chosen by its customers and in such cases, the Group is not entitled to select its suppliers. See "*Risk Factors—Risks Related to the Group's Business and Industry—The Group faces risks resulting from its reliance on a limited number of outsourced, third-party manufacturers for wafer production and key suppliers for certain products and services used in its design and manufacturing activities.*"

The Group has defined a set of rules for selecting supplier based on quality and environmental management system standards (such as ISO 13485, ISO 9001, IATF 16949 and ISO 14001). The Group conducts regular monitoring to control the performance of its suppliers and set up supplier

development activities (such as supplier evaluation and feedback or supplier training) to the extent needed for some suppliers.

## **Employees**

### ***Employees***

The Group had an average of 30,031, 26,130 and 23,322 employees for the years ended December 31, 2020, 2021 and 2022, respectively, based on FTEs. The decrease (despite the figure for the year ended December 31, 2020 only reflecting OSRAM employees for six months) was mainly due to the Portfolio Re-Alignment Transactions.

Certain of the Group's employees in Austria, the Netherlands, Italy, France, Germany and Singapore, are members of unions, and most employees in these countries are employed under a collective bargaining agreement with the trade union representing employees at the Group's sites in these countries. Employees may have individual employment contracts, which may include specifically negotiated terms (for example, with regard to salaries or bonuses), but generally members of these organizations are bound by the respective collective bargaining agreements.

The Group's German, Austrian and Dutch operations are required to maintain a works council (*Betriebsrat*) in accordance with the local labor regulations in those countries. Works councils have numerous rights relating to the notification and co-determination in personnel, social and economic matters. Under the German Works Constitution Act (*Betriebsverfassungsgesetz—BetrVG*), for example, works councils are required to be notified in advance of any proposed employee termination, and must confirm hiring and relocations and similar matters. They also have a right to co-determine social matters such as work schedules and compensation matters.

The Group is committed to providing a working environment in which the human rights of workers are especially upheld, and employees are treated with dignity and respect. As such, the Group has a Labor and Ethics Policy in place which applies to all of the Group's employees and suppliers worldwide and is implemented in accordance with applicable local labor laws. The Group believes that it has an excellent relationship with the Group's employees as demonstrated by its high employee retention rate, and the Group is proud of its corporate culture.

The Group is also committed to providing a safe and healthy working environment to its employees, which includes minimizing the risk of occupational illnesses and accidents at work. For instance, the Group's facilities in Ang Mo Kio (Singapore), Wuxi, Kunshan DO and Foshan (China), Penang and Kulim (Malaysia) and Calamba (Philippines) as well as the Group's co-headquarters in Munich (Germany) are externally certified according to the ISO 45001 standard for occupational health and safety management.

The Group's internal requirements oblige the other production facilities to maintain a management system for occupational health and safety in accordance with the ISO 45001 standard. The Group has formed committees for occupational health and safety, either in line with local legal requirements or on a voluntary basis. The Group also aims to continuously improve the parameters that impact on occupational health and safety, including recording work-related injury data at the Group's locations as a basis for calculating the internationally recognized key metrics Lost Time Injury Frequency Rate ("**LTIFR**") and Severity Rate ("**SR**"). The Group's global LTIFR and global SR decreased from 0.31 in 2020 to 0.27 in 2022 and from 5.0 in 2020 to 4.7 in 2022. The LTIFR represents the number of accidents at work resulting in at least one day lost in relation to the total number of working hours during the fiscal year. The SR represents the total number of days lost in relation to the total number of working hours during the fiscal year. LTIFR and SR are scaled to 200,000 working hours, excluding

commuting accidents. The number of accidents resulting in absences from work also decreased from 87 in 2020 to 64 in 2022. Additionally, the Group voluntarily offers health insurance for its employees in most countries in which the Group operates and where such insurance is not legally mandated.

### **Defined Benefit Obligations**

Almost all of the Group's employees in Germany and many employees in other countries have defined benefit or defined contribution pension entitlements based on contractual or collective arrangements and statutory requirements. The Group regularly reviews the design of the pension plans, which are predominantly based on defined benefit obligations for historical reasons. The majority of the Group's pension obligations are funded with assets in segregated entities.

The Group's principal pension plans and similar commitments relate to Germany and the USA.

In Germany, the Group provides pension benefits predominantly through the Beitragsorientierte OSRAM Altersversorgung ("**BOA**") defined benefit plan launched in fiscal year 2004, legacy defined benefit plans, and deferred compensation plans. The BOA is a pension plan in which the benefits are predominantly based on contributions made by the Group and the returns earned on such contributions, subject to a minimum return guaranteed by the Group. The obligations under this plan are mainly affected by the life expectancy of plan participants, inflation adjustments, and salary increases, and the plan is therefore recognized as a defined benefit plan in accordance with IAS 19.

In the USA, the majority of the Group's employees working for OSRAM SYLVANIA INC., Wilmington (USA) who joined the company before December 31, 2006, are members of two closed defined benefit pension plans. The benefits for most of the employees under these plans are largely linked to final salary on retirement, although the benefits for a small group of employees are based on fixed amounts.

Unfunded commitments predominantly relate to a pension plan and similar commitments in the USA, the severance payment obligations of ams-OSRAM AG in Austria, and other similar commitments in a number of countries. As of December 31, 2022, the funded status of the Group's defined benefit obligations for funded and unfunded plans amounted to €(145) million.

The Group's defined contribution plans are structured in such a way that the Group pays contributions to public or private institutions on the basis of statutory or contractual provisions or on a voluntary basis, without assuming any obligation to provide further benefits to employees. In 2022, contributions to defined contribution plans amounted to €9 million (2021: €11 million).

For further information, see Note 21 to the Group's 2022 audited consolidated financial statements.

### **Work Standstills**

During the last three financial years, the Group has not experienced any major industrial unrest, such as strikes or work standstills (defined as those lasting more than two days). The Group believes that it has a good relationship with its employees, works councils, and trade unions worldwide.

### **Information Technology Systems**

The Group outsources its information technology ("**IT**") infrastructure services to a strategic third-party partner, but the Group keeps its IT architecture and engineering capabilities internally. This hybrid model is set up to ensure efficient governance, engineering design, knowledge and third-party management for the Group's network, servers, clients, backup, redundancy and disaster recovery systems. The Group's systems are primarily hosted in cloud solutions within Germany and Austria; however, the Group's manufacturing data centers are strategically positioned locally to maintain and

support business continuity. The Group's existing information technology infrastructure and application landscape is regularly evaluated to ensure that the Group continues to fulfill business needs with investments and improvements to further enhance the systems' effectiveness and efficiency. See "*Risk Factors—Risks Related to the Group's Business and Industry—The Group's operations rely on complex information technology systems and networks, and any disruptions in such systems or networks, or data breaches, could negatively impact its operations and reputation.*"

## **Insurance**

The Group has taken out insurance policies that the Group considers appropriate for the industry such as but not limited to public-, product- and environmental-liability insurance, directors' and officers' liability insurance, property and business interruption insurance, transport and marine cargo insurance, fidelity/crime insurance, corporate travel insurance, collective accident insurance, and legal protection insurance.

## **Sustainability**

The Group aims to ensure the responsible use of resources, environmental protection, attractive working conditions, occupational safety and compliance with human rights along the Group's value chain. With its products, the Group seeks to address global challenges such as climate change, resource shortages and urbanization, and aims to improve the quality of life in various areas such as health, safety and mobility. The Group has released its sustainability strategy, based on five focus areas (climate, human rights, labor and diversity, circularity and integrity).

### ***Environment***

As an industrial company in the technology sector, the Group consumes natural resources and also causes greenhouse gas emissions through its production. To meet its responsibilities, the Group has committed to carbon neutrality of its own operations by 2030, to resource-conserving environmental management and the development of innovative and energy-efficient products. During 2021, the Group harmonized its environmental management system into one system for the whole group. For example, the Group's global production sites and its headquarters in Premstätten maintain a certified environmental management system in accordance with the international ISO 14001 standard. All former OSRAM sites in Germany also maintain a certified energy management system in accordance with ISO 50001. As part of the Group's environmental reporting, the Group collects data on energy consumption, greenhouse gas emissions, water usage and waste generation. The Group has assessed that this data reflects more than 99% of its environmental impact.

### ***Energy consumption and greenhouse gas emissions***

All of the Group's production sites that consistently exceed the threshold of annual consumption of 1,400 megawatt-hours ("**MWh**") are certified to ISO 14001 and thus also pursue energy efficiency programs and measures. This helps the Group to reduce the impact on the environment and make its production costs more competitive. During the year ended December 31, 2022, energy consumption in absolute terms decreased by 6.9% as compared to the year ended December 31, 2021 (energy consumption was around 1.6% lower taking into account to the sale of locations in 2021 and 2022).

In order to achieve the Group's 2030 carbon neutrality target, in addition to implementing energy efficiency measures, the Group is prioritizing green electricity, which it plans to increasingly use in its operations. For instance, the Group's Austrian and German production facilities as well as the

headquarters in Premstätten and the co-headquarters in Munich are already supplied with CO<sub>2</sub>-neutral electricity, mainly from hydroelectric power. Since sources of renewable energy are not currently available at all locations, the Group also uses renewable energy certificates to offset emissions. For the year ended December 31, 2022, the Group obtained 249,100 MWh (217,500 MWh for the previous year) of electricity from renewable energy sources. This represents 39% share of the Group's entire electricity consumption (32% for the previous year). Additionally, the Group reduced its emissions by 9% during the year ended December 31, 2022 compared to the year ended December 31, 2021.

### *Resources*

The Group's objective is to reduce the resources used by its products across their various life cycle phases and the Group is continuously seeking ways to reduce its resource consumption through new approaches to recycling and reuse. For example, the Group has developed ways of reusing wafer substrates and made preparations to implement this in mass production. The Group has been recycling germanium for a few years already and has recycled one type of sapphire wafers since the last quarter of 2023. Depending on the performance of the first shipments of recycled sapphire wafers, other wafer types will be considered. The Group is also considering to upgrade its waste water filtering and collection to enable the capability of future gallium recycling.

The Group's product portfolio also requires the use of materials that could potentially be classed as conflict minerals due to their origin. In order to fulfill the Group's human rights responsibilities in the area of conflict minerals, the Group has put in place appropriate due diligence processes for procurement. The Group strives for full transparency with regard to conflict mineral across the Group's procurement function. The Group is committed to the OECD "Due Diligence Guidance for Responsible Mineral Supply Chains" guideline. To fulfill its requirements in regard to conflict minerals in the Group's supply chain, it uses automated tools designed to verify compliance by the Group's suppliers. This helps enable the Group to identify suppliers from whom a declaration is required.

### *Waste*

The Group pursues the aim at all of its locations of avoiding waste in production or reusing the waste, or – if neither is possible – ensuring its professional disposal. The Group therefore ensures that valuable materials are recycled and negative effects on the environment are minimized or avoided entirely. The Group has reduced the amount of waste disposed of in 2022 (approximately 6,000 metric tons) compared to 2020 (approximately 6,800 metric tons).

The Group's water usage has also decreased in 2022 (approximately 4.0 million cubic meters) compared to 2021 (approximately 4.1 million cubic meters).

The table below provides an overview of the Group's ESG-related ratings, as of October 2023.

INSTITUTION		RATING	COMMENT
 <b>CDP</b>		<b>C B-</b>	Climate Change Water Security
 <b>ecovadis</b>	ecovadis	<b>Gold</b>	Improvement from silver to <b>gold</b>
 <b>SUSTAINALYTICS</b>		<b>21.0 66.1</b>	ESG Risk Rating <i>low</i> medium risk, +30% ESG Risk Management
 <b>ISS</b>		<b>Score B-</b>	improvement +25%, PRIME 
 <b>MSCI</b>		<b>BBB</b>	
 <b>S&amp;P Global CSA</b>		<b>Score 66</b>	decrease -8%, position in 1 <sup>st</sup> quartile

The Group takes part in the annual survey by CDP Climate Change. According to CDP, a CDP score provides a snapshot of a company's disclosure and environmental performance. CDP awarded the Company a score C/B-, where the first C-score reflects the awareness of the company on how environmental issues intersect with its business, and the second B- score reflects the extent to which the company manages its environmental impact. The C awareness score indicates room for improvement in how comprehensively the company evaluates the environmental issues driven by its business, and how its operations affect people and ecosystems. The B- score indicates that the company is showing some evidence of managing its environmental impact, but is not undertaking sufficient actions that distinguish it as a leader in its field, which would result in an A-score. The Company has been awarded a gold score by EcoVadis, which means the Company scored between 70 and 77 (top 5% of the scores published). EcoVadis overall score (0- to 100) reflects the quality of a company's sustainability management system at the time of the assessment.

The Company has been awarded by SUSTAINALYTICS a score of 21.0 as its ESG Risk Rating, which indicates a medium risk (20-30), and 66.1 for ESG Risk Management, which indicated the Company has strong risk management practices in place for its operations from an ESG perspective. These scores measure a company's exposure to industry-specific material ESG risks and how well a company is managing those risks.

The Company has been awarded ISS (Institutional Shareholder Services) Prime status, which is awarded to companies with an ESG performance that are above average for the specific sector. The Company has a B- ISS score (A to D-), which indicates a good sustainability performance.

The Company has a BBB MSCI score (AAA to CCC), which indicates an average performance related to the Company's management of financially relevant ESG risks and opportunities.

The Company has been awarded a score of 66 by S&P Global Corporate Sustainability Assessment (0 to 100), which indicates the Company has good corporate social responsibility practices in place, with a room for improvement.

### Regulation

The Group is subject to a variety of laws and regulations regarding the environment and health and safety, including those governing wastewater discharges, air emission of pollutants, the management and disposal of hazardous substances and wastes, the investigation and remediation of soil and ground water contamination, as well as the health and safety of the Group's employees and labor

and wage practices. The Group is also required to obtain certain environmental and labor law-related authorizations for the Group's operations.

In order to ensure the Group's environmental product stewardship, the Group also complies with the following standards across its manufacturing operations and its R&D activities:

- compliance to the RoHS Directive;
- free of substances of very high concern ("**SVHC**") in compliance with the REACH Regulation;
- compliance to Directive 2008/98/EC, as last amended by Directive EU 2018/851, which stipulates the legal framework on waste treatment within the EU (including the Substances of Concern in Products);
- compliance to Regulation (EU) 2019/1021 ("**POP Regulation**"), restricting or prohibiting, in some cases, the production, release and use of certain persistent organic pollutants; and
- compliance to the Minamata Convention on Mercury, adopted in 2013, and the national implementation.

For further information on these regulations, see "*Regulation.*"

The Group's products are compliant with the RoHS Directive, and China RoHS, banning the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Hexavalent Chromium (Cr 6), Polybrominated Biphenyl (PBB), Polybrominated Diphenyl Ether (PBDE), and RoHS Phthalates as Bis(2-Ethylhexyl) Phthalate (DEHP), Benzyl Butyl Phthalate (BBP), Dibutyl Phthalate (DBP), and Disobutyl Phthalate (DIBP).

### **Society**

The Group respects and adheres to internationally recognized human rights standards and is committed to the principles of the United Nations Charter on Human Rights, which the Group actively supports as a member of the UN Global Compact. The Group has a human rights policy in place. The Group assumes responsibility within its supply chain by enforcing the principles of its code of conduct ("**Code of Conduct**"), using standardized risk analyzes, tools and processes, including the Group's human rights due diligence on conflict minerals based on conflict mineral policies. The Group believes in providing its employees with fair pay and a respectful and safe working environment in which they are able to grow and learn. Occupational health is key to the Group; therefore, the Group's health and safety reporting covers 95% of its employees. It is important to the Group to foster sustainable development in the societies in which it operates. As part of the Group's corporate citizenship efforts, the Group is involved in local initiatives in a number of different countries that promote a prosperous environment. As part of the Group's diversity and inclusion strategy, the Group aspires to further increase the proportion of women in management positions. The Group's Management Board set a target for the proportion of women in the first two management levels of the Group as a whole at 25% which is to be achieved by the end of 2026. In 2022, the proportion of women in the first two management levels of the Group as a whole was 21%.

### **Governance**

The Group aims to strengthen the trust of its stakeholders through responsible corporate governance, its values and effective control systems. The Group's actions are guided by the principles of the UN Global Compact and respect for international rights and laws. The Group relies on strategic, ambitious thinking and actions, and encourage trust, integrity, and diversity in it. The Group's business activities are based on a binding set of principles and procedures for all its business functions intended to

ensure consistent, responsible and accountable practices. They are enshrined in the Group's Code of Conduct and also determine how the Group conducts itself as a business partner.

The Group is committed to preventing corruption and bribery and to behaving fairly in tenders and other competitive processes. For this purpose, the Group has implemented a Group-wide compliance management system in line with the regulatory framework and data protection requirements. The Group's Code of Conduct contains mandatory requirements for employees to combat corruption, anticompetitive behavior and money laundering. Violations can be reported worldwide, by employees and third parties, via the Group's "Tell ams OSRAM" whistle-blower system. Reports can also be made via the usual internal company channels (to the compliance organization or the line manager).

The Group is exposed to a multiplicity of risks in the context of its global activities, which are inextricably linked to the Group's corporate activity. To identify, assess and manage risks, the Group undertakes systematic risk management ("**ERM**"). Risks that could jeopardize the Group's continuity or the achievement of the Group's strategic, operational, financial and compliance-related goals must be identified at the earliest possible opportunity and risk-mitigating measures taken. As part of the Group's ERM process, non-financial risks such as transition and physical climate risks are also taken into account. The Group is continually refining its risk management system to satisfy changing internal and external requirements.

## **Legal Proceedings**

As a global company with a diverse business portfolio, the Group was named as a defendant in various governmental, legal and arbitration proceedings in connection with the Group's business activities. Some of these actions include claims for indeterminate amounts of damages and/or punitive damages claims. In light of the number of legal disputes and other proceedings in which the Group is involved, there is a possibility that some of these proceedings could result in rulings against the Group that may have a material adverse effect on its business, financial condition, results of operations and prospects. For certain cases, the Group has set up provisions in an amount the Group considers appropriate.

### *Claims by EBV Elektronik*

On January 20, 2016, ams-OSRAM International GmbH ("**AOI**") was joined in the case pending before the commercial court in Nanterre (France), between EBV Elektronik SAS ("**EBV**") and Société Provence D'Electronique et Cabelage ("**SPEC**") by means of an action in warranty. SPEC is suing EBV for damages relating to the supply of allegedly faulty AOI LEDs in SPEC passenger information boards. EBV brought AOI into the action in order to seek recourse from AOI as the supplier of the allegedly defective products. Following the clarification of preliminary procedural issues, the commercial court in Nanterre was declared as the court competent to hear the case. In its pronouncement of the judgment/ruling on February 26, 2020, the commercial court ordered that technical and financial expert proceedings shall take place. These proceedings have been pending since May 2020. See Note 18 to the Group's 2022 audited consolidated financial statements.

### *OSRAM appraisal proceedings (Spruchverfahren)*

Following entry into the DPLTA with OSRAM, which provided OSRAM shareholders with a time-limited right to sell OSRAM shares to ams Offer GmbH in return for a cash settlement, certain minority shareholders of OSRAM filed applications for a court review of the valuation of the compensation payment (*Abfindung*) and fixed dividend (*Ausgleichzahlung*) provided in relation to their holdings of OSRAM Licht AG shares under the agreement. The right to sell the shares at the specified price expires two months after the entry of the DPLTA in the commercial register, however owing to legal

objections, this right remains in place until two months after publication of the final decision in the court proceedings.

On June 30, 2023, the court rejected the OSRAM shareholders' request for an increase of the compensation payment and fixed dividend under the DPLTA. A first appeal was filed in July 2023 and the shareholders' rights under the DPLTA will therefore remain in place pending the court's final decision, which the Group expects to take place in 2025 or 2026.

#### *Claims by Greenthread*

On April 19, 2023, Greenthread LLC filed a complaint against ams Sensors Inc., the Company and OSRAM GmbH in the Eastern District of Texas. In the complaint Greenthread LLC alleges infringement of six U.S. patents related to semiconductor devices and seeks, among others, injunctive relief and unspecified damages. This case is still in its preliminary stages with the first trial date set for March 2025.

#### *Claim Against Renesas*

ams Sensors USA Inc. originally commenced an action for breach of a confidentiality agreement, misappropriation of trade secrets, and other claims against Intersil Inc. (now Renesas Electronics America Inc.) in 2008. In 2015, the appellate court affirmed liability but considered the damage calculation improper so that it referred the case to a new trial. On March 7, 2022, a second final judgment at first instance was issued awarding \$52.3 million (including lawyers' fees), to ams OSRAM. On August 15, 2022, Renesas filed their notice of appeal, and ams Sensors USA Inc. cross-appealed seeking an additional \$11 million for trade-secret misappropriation. The opening appellate brief was filed on January 6, 2023. It is estimated that the appellate proceedings could last up to two years.

The outcome of any current or future proceedings cannot normally be predicted. In addition, in some instances (such as those regarding product liability claims) the Group is covered by insurance, subject to deductibles. For further information on the risks involved in legal proceedings, see "*Risk Factors*."

In addition, the Group is also subject to various legal proceedings arising in the ordinary course of business such as claims by customers or suppliers, none of which, in the Group's opinion, if adversely decided, are likely to have a material adverse effect on the Group's business, financial condition, results of operations and prospects.

# **Condensed Consolidated Interim Financial Statements as of September 30, 2023**

(in accordance with IAS 34 – unaudited)

## Consolidated Statement of Income

(unaudited)

in EUR million (except earnings per share)	Q3 2023	Nine Months until September 30, 2023	Q3 2022	Nine Months until September 30, 2022
Revenues	904	2,682	1,213	3,642
Cost of sales	-699	-2,067	-945	-2,641
<b>Gross profit</b>	<b>205</b>	<b>615</b>	<b>268</b>	<b>1,001</b>
Research and development expenses	-108	-373	-171	-484
Selling, general and administrative expenses	-113	-363	-144	-456
Other operating income	13	55	15	178
Other operating expenses	-4	-1,345	-294	-308
Results from investments accounted for using the equity method, net	-6	-15	-1	-1
<b>Result from operations</b>	<b>-12</b>	<b>-1,426</b>	<b>-327</b>	<b>-71</b>
Financial income	30	83	123	125
Financial expenses	-64	-175	-181	-283
<b>Net financial result</b>	<b>-34</b>	<b>-91</b>	<b>-58</b>	<b>-158</b>
<b>Result before income taxes</b>	<b>-46</b>	<b>-1,517</b>	<b>-385</b>	<b>-229</b>
Income taxes	-9	-14	14	-68
<b>Net result</b>	<b>-55</b>	<b>-1,531</b>	<b>-370</b>	<b>-297</b>
<b>Attributable to:</b>				
Non-controlling interests	0	1	0	1
Shareholders of ams-OSRAM AG	-55	-1,531	-370	-297
Basic earnings per share (in EUR)	-0.21	-5.87	-1.42	-1.14
Diluted earnings per share (in EUR)	-0.21	-5.87	-1.42	-1.14

## Consolidated Statement of Comprehensive Income

(unaudited)

in EUR million	Q3 2023	Nine Months until September 30, 2023	Q3 2022	Nine Months until September 30, 2022
<b>Net result</b>	<b>-55</b>	<b>-1,531</b>	<b>-370</b>	<b>-297</b>
Remeasurements of defined benefit plans	13	16	-68	19
<i>therein income tax effect</i>	-2	-2	4	-3
Fair value measurements of equity instruments (FVOCI)	15	-5	-1	-1
<i>therein income tax effect</i>	-	-	0	0
<b>Items that will not be reclassified to profit or loss</b>	<b>29</b>	<b>11</b>	<b>-69</b>	<b>18</b>
Currency translation differences	45	-53	179	407
Fair value measurement of debt instruments (FVOCI)	-1	0	-1	-2
<i>therein income tax effect</i>	0	0	-	1
Derivative financial instruments for hedging purposes	-10	-17	2	-7
<i>therein income tax effect</i>	2	5	-1	3
<b>Items that may be reclassified subsequently to profit or loss</b>	<b>34</b>	<b>-69</b>	<b>180</b>	<b>398</b>
<b>Other comprehensive income (loss), net of tax</b>	<b>63</b>	<b>-59</b>	<b>111</b>	<b>416</b>
<b>Total comprehensive income (loss)</b>	<b>8</b>	<b>-1,590</b>	<b>-260</b>	<b>120</b>
<b>Attributable to:</b>				
Non-controlling interests	1	0	0	1
Shareholders of ams-OSRAM AG	7	-1,590	-260	119

## Consolidated Balance Sheet

(unaudited)

in EUR million	September 30, 2023	December 31, 2022
<b>ASSETS</b>		
Cash and cash equivalents	691	1,087
Current financial investments	8	21
Trade receivables	421	533
Inventories	784	864
Other current receivables and assets	282	223
Assets held for sale	27	157
<b>Total current assets</b>	<b>2,212</b>	<b>2,884</b>
Property, plant, and equipment	2,082	1,856
Intangible assets	2,256	3,645
Right-of-use assets	208	230
Investment in associates	21	35
Deferred tax assets	82	69
Other non-current assets	50	54
Non-current financial investments	53	59
<b>Total non-current assets</b>	<b>4,752</b>	<b>5,948</b>
<b>Total assets</b>	<b>6,964</b>	<b>8,832</b>
<b>LIABILITIES AND EQUITY</b>		
<b>Liabilities</b>		
Current interest-bearing loans and borrowings	399	169
Trade payables	649	811
Income tax payables	75	87
Current provisions	243	256
Other current liabilities	1,229	1,345
Liabilities associated with assets held for sale	0	50
<b>Total current liabilities</b>	<b>2,595</b>	<b>2,717</b>
Non-current interest-bearing loans and borrowings	2,561	2,635
Employee benefits	147	179
Deferred tax liabilities	75	105
Non-current provisions	45	45
Other non-current liabilities	271	318
<b>Total non-current liabilities</b>	<b>3,100</b>	<b>3,281</b>
<b>Equity</b>		
Issued capital	274	274
Additional paid-in capital	2,060	2,036
Treasury shares	-120	-121
Other components of equity	228	280
Retained earnings	-1,180	358
<b>Total equity attributable to shareholders of ams-OSRAM AG</b>	<b>1,262</b>	<b>2,826</b>
Non-controlling interests	7	7
<b>Total equity</b>	<b>1,269</b>	<b>2,833</b>
<b>Total liabilities and equity</b>	<b>6,964</b>	<b>8,832</b>

## Consolidated Statement of Cash Flows

(unaudited)

in EUR million	Nine Months until September 30, 2023	Nine Months until September 30, 2022
<b>Operating activities</b>		
Net result	-1,531	-297
Reconciliation between net result and cash flows from operating activities		
Amortization, depreciation, and impairment	1,772	784
Expenses from stock option plans (acc. to IFRS 2)	25	33
Income taxes	14	68
Net financial result	91	158
Result from sales of businesses, intangible assets, and property, plant, and equipment	-8	-161
Result from sale of financial investments	-	0
Result from fair value measurement and sale of financial assets	0	-11
Result from investments in associates	15	1
Other adjustments for non-cash items	0	13
Change in current assets and current liabilities		
Inventories	42	-134
Trade receivables	89	47
Other current assets	15	-57
Trade payables	-4	-46
Current provisions	-20	-53
Other current liabilities	155	108
Change in other assets and liabilities	-10	-3
Income taxes paid	-72	-63
Dividends received	0	1
Interest received	19	8
<b>Cash flows from operating activities</b>	<b>594</b>	<b>397</b>

in EUR million	Nine Months until September 30, 2023	Nine Months until September 30, 2022
<b>Investing activities</b>		
Additions to intangible assets and property, plant, and equipment	-827	-304
Acquisitions of subsidiaries, net of cash and cash equivalents acquired <sup>1</sup>	-227	-7
Acquisition of financial investments	-1	-1
Proceeds from sales of investments, intangibles and property, plant, and equipment	26	29
Proceeds and payments from sales of businesses, net of cash and cash equivalents disposed	135	336
<b>Cash flows from investing activities</b>	<b>-894</b>	<b>53</b>
<b>Financing activities</b>		
Payments from transactions with former non-controlling shareholders	-	-3
Acquisition of treasury shares	0	-1
Sale of treasury shares	0	1
Proceeds from loans	377	32
Repayment of loans	-245	-130
Repayment/repurchase of convertible bonds	-	-334
Repayment of lease liabilities	-43	-89
Interest paid	-134	-110
Dividends paid to shareholders of OSRAM Licht AG	-37	-53
Dividends paid to non-controlling interests	-	-2
<b>Cash flows from financing activities</b>	<b>-82</b>	<b>-688</b>
Change in cash and cash equivalents	-407	-91
Effects of changes in foreign exchange rates on cash and cash equivalents	-25	147
Cash and cash equivalents at the beginning of the period	1.098	1.339
<b>Cash and cash equivalents at the end of the period</b>	<b>691</b>	<b>1.248</b>
Less: Cash and cash equivalent of assets held for sale at end of period	0	5
<b>Cash and cash equivalents at the end of the period</b>	<b>691</b>	<b>1.243</b>

<sup>1)</sup> Contained therein EUR -227 million (2022: EUR 0 million) for additional purchases of OSRAM Licht AG shares

## Consolidated Statement of Changes in Equity

(unaudited)

in EUR million	Issued capital	Additional paid-in capital	Treasury shares	Other components of equity	Retained earnings	Total equity attributable to share-holders of ams-OSRAM AG	Non-controlling interests	Total equity
<b>Balance as of January 1, 2022</b>	<b>274</b>	<b>1,997</b>	<b>-122</b>	<b>115</b>	<b>877</b>	<b>3,142</b>	<b>8</b>	<b>3,150</b>
Net result	-	-	-	-	-297	-297	1	-297
Other comprehensive income (loss), net of tax	-	-	-	407	9	416	0	416
<b>Total comprehensive income (loss)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>407</b>	<b>-288</b>	<b>119</b>	<b>1</b>	<b>120</b>
Share based payments	-	33	-	-	-	33	-	33
Purchase of treasury shares	-	-	1	-	-	1	-	1
Non-Controlling interests - annual cash compensation	-	-	-	-	-	-	-2	-2
<b>Total equity as of September 30, 2022</b>	<b>274</b>	<b>2,030</b>	<b>-121</b>	<b>522</b>	<b>589</b>	<b>3,294</b>	<b>7</b>	<b>3,301</b>
<b>Balance as of January 1, 2023</b>	<b>274</b>	<b>2,036</b>	<b>-121</b>	<b>280</b>	<b>358</b>	<b>2,826</b>	<b>7</b>	<b>2,833</b>
Net result	-	-	-	-	-1,531	-1,531	1	-1,531
Other comprehensive income (loss), net of tax	-	-	-	-52	-6	-58	-1	-59
<b>Total comprehensive income (loss)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-52</b>	<b>-1,537</b>	<b>-1,590</b>	<b>0</b>	<b>-1,590</b>
Share based payments	-	24	-	-	-	24	-	24
Sale of treasury shares	-	-	1	-	-	1	-	1
<b>Total equity as of September 30, 2023</b>	<b>274</b>	<b>2,060</b>	<b>-120</b>	<b>228</b>	<b>-1,180</b>	<b>1,262</b>	<b>7</b>	<b>1,269</b>

## Selected notes on the Condensed Consolidated Interim Financial Statements as of September 30, 2023

(unaudited)

### 1. Basis of preparation

The condensed consolidated interim financial statements as of September 30, 2023, were prepared in accordance with IAS 34. In line with IAS 34 (Interim Financial Reporting) the condensed consolidated interim financial statements do not include all information and disclosures that are required for a full set of financial statements and should be read in conjunction with the Group's last annual consolidated financial statements as at and for the year ended December 31, 2022. The condensed consolidated interim consolidated financial statements have been prepared in millions of euros (in EUR million). Due to rounding, differences may arise when individual amounts or percentages are added together.

### 2. Accounting policies as well as estimates and uncertainties

The accounting policies applied in these condensed consolidated interim financial statements are essentially the same as those applied in the Group's consolidated financial statements as of December 31, 2022, except for the changes described below.

On May 23, 2023, the International Accounting Standards Board (IASB) issued "International Tax Reform - Pillar-2 Model Rules (Amendments to IAS 12)". The amendments introduce an additional clarifying rule that any income taxes arising from the national implementation of Pillar-2 are generally within the scope of IAS 12, as well as a temporary exemption from accounting for deferred taxes arising from the implementation of the global tax rules on Pillar-2 by the respective countries. Additional disclosures are also required in the notes to help users of financial statements better understand an entity's exposure to income taxes in connection with the implementation of the Pillar 2 rules:

- Disclosure that the deferred tax accounting exception applies,
- Separate disclosure of current income tax expense due to the application of Pillar 2 rules,
- To the extent that Pillar 2 rules have been adopted but are not yet effective: Qualitative disclosure of the significant jurisdictions in which the company is affected by Pillar 2 rules and how, and Indicative quantitative disclosure of which components of income are additionally taxed under Pillar 2 and the average effective tax rate for those components of income or indicative quantitative disclosure of how the average effective tax rate would have changed had Pillar 2 rules already been in effect.

The exemption and the requirement to disclose that the exemption shall be applied immediately after the amendments to IAS 12 have been published. The other new disclosure requirements must be met for the first time in annual reporting periods beginning on or after January 1, 2023. For interim periods ending in 2023, the disclosures are not yet mandatory.

Moreover, ams OSRAM has early applied amendments to IAS 7 and IFRS 7 issued by the IASB on May 25, 2023, with respect to Supplier Finance Arrangements and made additional disclosures about a supply-chain financing program, see note 5. Financial instruments.

Both amendments have not yet been endorsed by the EU Commission.

New standards or amendments effective from January 1, 2023, have no material effect on the Group's condensed consolidated interim financial statements.

A description of the main judgments made in applying accounting rules and the assumptions with a not insignificant risk that they could lead to changes in the value of assets and liabilities, is included in the Annual Report 2022, Notes to the Consolidated Financial Statements in note 1. Contingencies and Main Judgments.

The income tax expense/income to be recognized during interim periods is determined based on the expected effective tax rate for the fiscal year for each significant tax jurisdiction, taking into account special effects that are attributable to a particular interim period. Income taxes recognized in other comprehensive income during an interim period is determined on the basis of the tax rates applicable to the significant individual components of other comprehensive income.

### 3. Segment reporting

Segment information is presented on the basis of the internal reporting structure for the segments 'Semiconductors' and 'Lamps & Systems' and determined in accordance with the IFRS accounting policies. The segment "Semiconductors" focuses on semiconductor-based products and solutions (incl. LEDs) targeting the automotive, consumer, industrial and medical markets. The segment "Lamps & Systems" comprises the traditional lamps and illumination business focusing on the end markets automotive and industrial.

The geographic regions are structured by the three regions in which sales occur: "EMEA" (Europe, Middle East, and Africa), "Americas" (includes North and South America) and "Asia/Pacific". Revenues by geographical regions are based on the geographical billing location of customers.

The highest amount of revenue came from a customer in the Semiconductors segment and accounted for more than 10% of revenues (2022: less than 20%).

Segment result comprises gross profit, research and development expenses, administrative and selling expenses, other operating income and expenses, and the result from investments in associates.

Segment assets include only those assets that are directly attributable to the segment, such as segment-specific property, plant, and equipment, intangible assets, and right-of-use assets under leases.

## Business Segments

in EUR million						
Nine Months until September 30, 2023 / 2022						
Business Segments	Semiconductors		Lamps & Systems		Total	
	2023	2022	2023	2022	2023	2022
Consolidated revenues	1,796	2,400	887	1,241	2,682	3,642
Research and development	346	425	26	59	373	484
Depreciation, Amortization and Impairment	1,710	714	61	71	1,772	784
<b>Segment result</b>	<b>-1,503</b>	<b>-248</b>	<b>78</b>	<b>176</b>	<b>-1,426</b>	<b>-71</b>

in EUR million						
Q3 2023 / 2022						
Business Segments	Semiconductors		Lamps & Systems		Total	
	2023	2022	2023	2022	2023	2022
Consolidated revenues	648	813	256	400	904	1,213
Research and development	100	154	7	17	108	171
Depreciation, Amortization and Impairment	134	467	20	20	154	486
<b>Segment result</b>	<b>-42</b>	<b>-350</b>	<b>30</b>	<b>23</b>	<b>-12</b>	<b>-327</b>

## Segment Assets

in EUR million						
September 30, 2023 / December 31, 2022						
Business Segments	Semiconductors		Lamps & Systems		Total	
	2023	2022	2023	2022	2023	2022
<b>Segment assets</b>	<b>3,878</b>	<b>5,009</b>	<b>668</b>	<b>722</b>	<b>4,546</b>	<b>5,731</b>
Reconciliation to consolidated financial statements						
Inventories					784	864
Cash and cash equivalents					691	1,087
Trade receivables					421	533
Deferred taxes					82	69
Financial Investments					61	80
Assets held for sale					27	157
Investments in associates					21	35
Other unallocated assets					333	277
<b>Total assets</b>					<b>6,964</b>	<b>8,832</b>

## Revenues by Region

in EUR million						
Nine Months until September 30, 2023 / 2022						
	Semiconductors		Lamps & Systems		Total	
	2023	2022	2023	2022	2023	2022
EMEA	512	795	290	491	802	1,286
Americas	185	320	382	432	567	752
Asia / Pacific	1,098	1,285	215	318	1,314	1,603
<b>Total</b>	<b>1,796</b>	<b>2,400</b>	<b>887</b>	<b>1,241</b>	<b>2,682</b>	<b>3,642</b>

in EUR million	Q3 2023 / 2022					
	Semiconductors		Lamps & Systems		Total	
	2023	2022	2023	2022	2023	2022
EMEA	177	370	73	164	250	533
Americas	63	176	121	147	184	323
Asia / Pacific	408	267	62	89	470	356
<b>Total</b>	<b>648</b>	<b>813</b>	<b>256</b>	<b>400</b>	<b>904</b>	<b>1,213</b>

#### Non-current assets by Region

in EUR million	September 30, 2023	December 31, 2022
EMEA	2,581	2,668
Americas	472	836
Asia / Pacific	1,493	2,228
<b>Total</b>	<b>4,546</b>	<b>5,731</b>
thereof Austria	421	317
thereof Germany	1,518	1,941

#### 4. Seasonality - economic cycles

Results may vary from quarter to quarter as revenues are derived from a number of end markets which may display different seasonal demand patterns over the course of a calendar year. The ams OSRAM Group also records substantial revenues in the automotive market area which can show cyclical developments. In addition, general economic cycles may have an additional impact on demand for the company's products across end markets. The ams OSRAM Group also derives a significant portion of its revenues from the consumer electronics market, which has in the past displayed significant cyclical and seasonal influences due to factors such as consumer acceptance of technologies, changes in buying behavior and seasonal demand such as before Christmas.

## 5. Financial Instruments

in EUR million		September 30, 2023		December 31, 2022	
	Category according to IFRS 9 <sup>1)</sup>	Carrying amount	Fair value	Carrying amount	Fair value
<b>Financial assets</b>					
Cash and cash equivalents	FAaC	691	691	1,087	1,087
Trade receivables	FAaC	355	355	464	464
Trade receivables that are to be held/sold under a factoring agreement	FVOCI	49	49	61	61
Trade receivables that are to be sold under a factoring agreement	FVTPL	18	18	8	8
Other receivables and assets					
Derivatives not designated in a hedge accounting relationship	FVTPL	7	7	5	5
Derivatives in connection with cash flow hedges	n.a.	1	1	16	16
Other financial assets	FAaC	78	78	51	51
Other non-current assets	FAaC	3	3	4	4
Financial investments					
Equity instruments	FVOCI	53	53	59	59
Assets held for sale					
Receivables and other assets	FAaC	0	0	-	-
Shares in investment funds	FVTPL	-	-	10	10
<b>Financial liabilities</b>					
Interest-bearing loans	FLaC	2,960	2,940	2,803	2,785
Trade payables	FLaC	649	649	811	811
Other current liabilities <sup>2) 3)</sup>					
Derivatives not designated in a hedge accounting relationship	FVTPL	6	6	25	25
Derivatives in connection with cash flow hedges	n.a.	7	7	1	1
Obligation to acquire the non-controlling interests in OSRAM Licht AG	n.a.	616	616	843	843
Other financial liabilities	FLaC	374	374	239	239
Other non-current liabilities <sup>3)</sup>	FLaC	185	185	252	252
Liabilities associated with assets held for sale	FLaC	0	0	14	14

<sup>1)</sup> FAaC - Financial assets measured at amortized cost  
FVOCI - Financial assets measured at fair value through other comprehensive income; for equity instruments without recycling to profit or loss  
FVTPL - Financial assets or financial liabilities measured at fair value through profit or loss  
FLaC - Financial liabilities measured at amortized cost

<sup>2)</sup> Derivatives are forward exchange contracts.

<sup>3)</sup> As of September 30, 2023, other current liabilities and other non-current liabilities include lease liabilities totaling EUR 196 million (December 31, 2022: EUR 217 million), which are accounted for in accordance with IFRS 16.

The fair value of current financial assets and current financial liabilities essentially corresponds to their carrying amount due to their short maturities.

The following table shows, for the financial assets and liabilities measured at fair value, the level of fair value measurement hierarchy applicable to their fair value measurement. The levels have the following meaning:

Level 1: Quoted prices (unadjusted) in active markets for identical assets and liabilities.

Level 2: inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).

Level 3: inputs for the asset or liability that are not based on observable market data (unobservable inputs).

September 30, 2023 in EUR million	Level 1	Level 2	Level 3	Total
Current financial assets	0	74	0	74
Non-current financial assets	0	0	53	53
Current financial liabilities	0	13	0	13
Non-current financial liabilities	0	0	0	0

December 31, 2022 in EUR million	Level 1	Level 2	Level 3	Total
Current financial assets	0	100	0	100
Non-current financial assets	0	0	59	59
Current financial liabilities	0	26	0	26
Non-current financial liabilities	0	0	0	0

The change in the carrying amount of non-current financial assets of Level 3 during the reporting period is mainly due to changes in the fair values of the investments in LeddarTech Inc. (reduction by EUR 14 million to EUR 36 million) and Recogni, Inc. (increase by EUR 10 million to EUR 16 million), which were recognized through other comprehensive income.

The increase in other current financial liabilities from EUR 239 million to EUR 374 million was mainly due to the use of a supply-chain financing program in the amount of EUR 167 million. This resulted in the derecognition of the original trade payables and the recognition of other financial liabilities to the payment service provider of EUR 167 million each. The program, which was first used in the first quarter of fiscal year 2023, includes EUR and USD liabilities. It has a maximum volume of EUR 130 million and USD 45 million. There is a debt-discharging payment of the original trade payables by the payment service provider. The payments to the payment service provider are reported in the consolidated statement of cash flows within operating activities. By using the supply-chain financing program, the original payment terms for ams OSRAM are extended by 60 days. Payment terms to suppliers are usually between 45 and 90 days.

The liability from the obligation to acquire the non-controlling interests in OSRAM Licht AG decreased by EUR 227 million following the acquisition of 4,993,097 shares in OSRAM Licht AG. The current liabilities from the guaranteed dividend to shareholders of OSRAM Licht AG amounted to EUR 30 million (December 31, 2022: EUR 41 million).

Non-current financial liabilities include lease liabilities of EUR 155 million (December 31, 2022: EUR 172 million) and the non-current portion of liabilities from the guaranteed dividend to shareholders of OSRAM Licht AG of EUR 30 million (December 31, 2022: EUR 81 million).

A positive effect on operating cash flow of EUR 31 million was derived from the replacement of funds for partial retirement coverage in a trust fund in Germany by a bank guarantee.

### 6. Goodwill

Detailed information on the amount and development of goodwill and other intangible assets can be found in the Annual Report 2022, 12. Intangible assets.

Goodwill is allocated to a cash-generating unit (CGU) or a group of CGUs if the CGU is expected to benefit from the synergies of the business combination. The Business Units (BU) represent the CGUs or groups of CGUs for the consolidated ams OSRAM Group at the level of which goodwill is monitored by the Management Board.

At the beginning of the reporting period, the Optical Components (OPC) business was reclassified from the Optical Semiconductors (OS) BU to the Image Sensor Solutions (ISS) BU. As a result, the goodwill of EUR 17 million allocated to the OPC business was reclassified from BU OS to BU ISS. In addition, after the disposals within the BU Digital (DI), this BU was dissolved, and the remaining business was integrated into the new BU Automotive & Specialty Lamps (AMSP).

In the first half of fiscal year 2023, ams OSRAM assessed whether there were any indications of potential impairment. The business plans were updated for all BUs. In particular for OS and AOS the plans were adjusted downwards regarding long-term market expectations. In addition, the market capitalization of ams OSRAM remained below the book value of equity. Impairment tests were therefore carried out for all BUs.

Based on the updated business plans, an impairment loss attributable to goodwill of EUR 1.019 million for BU OS and EUR 294 million for BU AOS was recognized.

A long-term growth rate of 1.3% (31.12.22: 1.2%) was used for the BU OS and of 1.2% (31.12.22: 1.1%) for the BU AOS. A discount rate (before taxes) of 12.1% (31.12.22: 12.4%) was used for BU OS and 12.2% (31.12.22: 12.7%) for BU AOS. The long-term EBITDA margin is 28.8% for OS (31.12.22: 31.0%), for AOS it is 21.7% (31.12.22: 23.3%).

The recoverable amount of the BU OS and BU AOS was determined based on its value in use (fair value hierarchy level 3).

The recoverable amount of the BU AMSP exceeded its book value by EUR 29 million. The underlying pre-tax discount rate was 14.4%. The underlying long-term EBITDA margin was 16.2%. If the discount rate increased by 0.3% or the long-term EBITDA margin decreased by 0.7%, the recoverable amount would roughly correspond to the book value.

The goodwill impairment recognized in the reporting period ending June 30, 2023, has no impact on the expected income tax expense and therefore results in a significant change in the effective tax rate compared to the last reporting year ending December 31, 2022.

As of September 30, 2023, ams OSRAM assessed whether there were any indications of a potential impairment. The market capitalization of ams OSRAM remained below the book value of equity and

decreased with the announcement of the rights issue. Impairment tests were therefore carried out for all BUs. The impairment test did not result in an impairment.

The recoverable amount of the BU OS exceeded its book value by 121 million EUR. The underlying pre-tax discount rate was 12.4%. The underlying long-term EBITDA margin was 28.8%. If the discount rate was increased by 0.3% or the long-term EBITDA margin decreased by 0.9%, the recoverable amount would roughly have corresponded to the book value.

The recoverable amount of the BU AOS exceeded its book value by 99 million EUR. The underlying pre-tax discount rate was 12.3%. The underlying long-term EBITDA margin was 21.7%. If the discount rate was increased by 1.6% or the long-term EBITDA margin decreased by 2.7%, the recoverable amount would roughly have corresponded to the book value.

### **7. Property, plant & equipment, other intangible assets and grants**

As of September 30, 2023, commitments to acquire fixed assets amounted to EUR 243 million (December 31, 2022: EUR 516 million), which will be cash-effective in the current and future fiscal years. These commitments are mainly due to the planned expansion investments in an 8-inch front-end production site for LED and MicroLED in Malaysia.

Investments in property, plant and equipment and intangible assets amounted to EUR 827 million in the first nine months of fiscal year 2023 (nine months 2022: EUR 304 million) and mainly relate to technical equipment and machinery, down payments for expansion investments in the production site in Malaysia and capitalized development costs, particularly in connection with MicroLED technology.

In the first nine months of fiscal year 2023, the consolidation of production capacity in Singapore led to an impairment of EUR 65 million in the segment semiconductors that mainly affected technical machinery and equipment. The discontinuation of capitalized development projects in the first nine months 2023 resulted in impairment losses of EUR 23 million in the semiconductors segment.

In the third quarter 2023, ams OSRAM recognized a receivable for grants in the amount of EUR 31 million related to the IPCEI funding project on microelectronics and communications technologies. EUR 18 million thereof are recognized as a cost reduction of capitalized development costs and EUR 13 million as a reduction of research and development expenses.

### **8. Disposals of Business Activities and Assets and Liabilities Classified as Held for Sale**

#### **Disposal of Business Activities and Shares in Investment Funds**

##### *Clay Paky S.p.A.*

On March 1, 2023, ams OSRAM sold its entertainment lighting business to ARRI AG, Munich, Germany, as part the strategic realignment following the acquisition of OSRAM. Prior to the sale, this business was reported in the segment "Lamps & Systems". On classification as held for sale in December 2022, an impairment loss of EUR 44 million was recognized for the non-current tangible and intangible assets, as well as on inventories. On completion of the sale in March 2023, a loss on disposal amounting to EUR 2 million was recognized in other operating expenses. Cash inflows from

the disposal less the cash disposed of amounted to EUR 17 million and were recorded under cash flows from investing activities.

in EUR million	March 1, 2023
Cash and cash equivalents	3
Trade receivables and other current assets	24
Inventories	5
Non-current assets	1
<b>Assets</b>	<b>32</b>
Current liabilities	8
Employee benefits	3
<b>Liabilities</b>	<b>11</b>
<b>Net assets</b>	<b>21</b>

#### *Automotive Lighting Systems Italy (AMLS Italy)*

On August 1, 2023, ams OSRAM sold its Italian Automotive Lamps Manufacturing Business to Flex-n-Gate Group, Urbana, USA. Prior to the sale, the business was allocated to the segment "Lamps & Systems". This transaction concludes the disposal of Automotive Lighting business remaining from the unwinding of the OSRAM Continental joint venture in 2021. On classification as held for sale, an impairment test was carried out resulting in an impairment loss of EUR 10 million on goodwill which was included in other operating expenses. The purchase consideration was virtually equal to the carrying amounts of the net assets sold resulting in an insignificant loss on disposal. Cash inflows from the disposal were recorded under cash flows from investing activities.

in EUR million	August 1, 2023
Cash and cash equivalents	3
Trade receivables and other current assets	5
Inventories	24
Non-current assets	24
<b>Assets held for sale</b>	<b>56</b>
Current liabilities	9
Employee benefits	4
Long-term liabilities and provisions	0
<b>Liabilities associated with assets held for sale</b>	<b>14</b>
<b>Net assets</b>	<b>42</b>

#### *Digital Systems (DS) Europe and Asia*

On April 4, 2023, ams OSRAM completed the disposal of the DS business in Germany, Italy and China through a share deal to Inventronics Inc., Hangzhou, China. The entire transaction was completed by September 1, 2023, by transferring the remaining assets and employees in other countries to Inventronics. Prior to the sale, this business was reported in the segment "Lamps & Systems". This transaction represents another milestone in the implementation of ams OSRAM's strategy to focus on core technologies and to sell businesses that are not part of the core corporate strategy. Until full completion of the sale in September 2023, a total gain on disposal amounting to EUR 7 million was recognized in other operating income. Cash inflows from the disposal less the cash

disposed of amounted to EUR 74 million and were recorded under cash flows from investing activities. The final purchase price is subject to customary adjustments on finalization of the closing accounts.

in EUR million	September 1, 2023
Cash and cash equivalents	12
Trade receivables and other current assets	35
Inventories	75
Non-current assets	32
<b>Assets</b>	<b>153</b>
Current liabilities	53
Employee benefits	2
Long-term liabilities and provisions	10
<b>Liabilities</b>	<b>66</b>
<b>Net assets</b>	<b>88</b>

#### *Fund investments*

On January 27, 2023, ams OSRAM completed the sale of investments in two funds – Unternehmertum VC Fonds II GmbH & Co. KG and Partech Entrepreneur Fund III FPCI – that were held by the Group's Venture Capital business, Fluxunit GmbH. The sales price of EUR 10 million equaled the carrying amount of the investments. The proceeds from the disposal were recorded under cash flows from investing activities.

#### **Assets and Liabilities Classified as Held for Sale**

##### *OSRAM Russia*

On May 25, 2023, ams OSRAM signed an agreement on sale of the shares in OOO OSRAM, Moscow, Russia. The sale is expected to be concluded by the end of the current fiscal year, subject to local regulatory approvals. OSRAM Russia was primarily a distributor for the automotive market ("Lamps & Systems" segment), however all operations ceased upon the start of the war in Ukraine.

On classification as held for sale, an impairment test was carried out resulting in an impairment loss of EUR 3 million which was included in other operating expenses. As of September 30, 2023, net assets of the company amounted to EUR 3 million.

##### *Others*

At the end of September 2023 ams Osram agreed on the termination of the lease contract of property and buildings of a phased-out manufacturing facility located in Asia and the sale of the respective built-in equipment. The corresponding net assets amounted to EUR 24 million and were classified as held for sale in the financial statements as of September 30, 2023. The transaction was closed on October 13, 2023 and the proceeds amounted to EUR mid double-digit millions.

### 9. Treasury shares

The Group acquired no treasury shares during the nine months ended September 30, 2023, nor during the same period of the previous year. 147,484 treasury shares have been sold to fulfill obligations from employee stock option plans (prior year: 81,446).

ams OSRAM intends to sell its entire self-held 12.86 million of treasury shares prior to the start of the rights issue (see 13. Subsequent events). Under Austrian corporate law, the company's treasury shares are not entitled to subscription rights in the event of a capital increase. Essentially, the sale is a technical measure to avoid automatic dilution. Consequently, ams OSRAM intends to repurchase treasury shares in the market after successful execution of the rights issue to cover outstanding obligations under its long-term incentive programs.

### 10. Dividends

ams-OSRAM AG has not distributed any dividend during the reporting periods 2023 and 2022.

### 11. Employees and share-based compensation

On February 10, 2023, an amendment to the Long-Term Incentive Plan 2019 became effective. The amendment changes retrospectively the target achievement criteria for Performance Share Units (PSU) stock options to the benefit of the entitled employees. For this purpose, achievement of the earnings per share (EPS) target is sufficient to bring about vesting of half of the PSUs granted in a tranche. For the remaining half of the PSUs granted in a tranche, the performance criteria remain unchanged. The plan amendment does not take effect for PSUs granted in fiscal 2019 and forfeited in fiscal 2022 but applies only to grants (tranches) in the years 2020, 2021 and 2022. The Management Board members are not affected by this plan amendment.

The plan amendment resulted in an additional expense of EUR 6 million in the reporting period.

### 12. Related parties

Effective March 31, 2023, Alexander Everke has retired from his position as Chairman of the Executive Board and resigned from the Company's Executive Board. The Supervisory Board has appointed Aldo Kamper as a member and Chairman of the Executive Board with effect from April 1, 2023. He had been CEO of Leoni AG, Nuremberg, a global provider in the field of energy and data management for the automotive industry, since 2018. Prior to that, he held various management positions at OSRAM for more than 15 years, including General Manager of the Opto Semiconductors business unit.

Ingo Bank resigned from the Company's Management Board with effect from April 30, 2023. The Supervisory Board has appointed Rainer Irle as a member and Chief Financial Officer of the Executive Board with effect from July 1, 2023. He has been CFO of Siltronic AG, one of the world's largest manufacturers of high-purity silicon wafers for the semiconductor industry, since 2013. Rainer Irle has many years of knowledge of the semiconductor industry as well as strong operational skills.

In line with the strengthening of responsibility and the entrepreneurial approach in the business units, ams OSRAM is moving away from a functional management model on the Managing Board and will reduce the Group's Managing Board to the CEO and CFO with effect from January 1, 2024.

Dr. Thomas Stockmeier has already resigned from his position as a member of the Managing Board with effect from September 30, 2023.

During the reporting period, ams-OSRAM AG held new elections for the workers' works council and the salaried employees' works council. Following the expiry of the mandate of the previous employee representatives, Ms. Sabine Radesey, Mr. Andreas Pein, Mr. Ing. Mag. Günter Kneffel, and Mr. Patrick Reinisch, the following employee representatives were newly appointed to the Supervisory Board of ams-OSRAM AG by the newly elected works council bodies:

- Dipl. Ing. Dr. Nadine Raidl
- Ing. Dipl. Ing. (FH) Wolfgang Koren
- Dipl. Ing. Michael Krainz
- Patrick Reinisch

With regard to the capital representatives on the Supervisory Board, the Company's Annual General Meeting on June 23, 2023, confirmed Ms. Yen Yen Tan in her office and elected Mr. Andreas Walter Mattes as a new member of the Supervisory Board. Mr. Mattes succeeds Mr. Brian Krzanich, whose term of office ended as scheduled at the 2023 Annual General Meeting. The term of office of Yen Yen Tan and Andreas Mattes lasts approximately four years and ends with the Annual General Meeting that decides on the ratification of the actions of the members of the Supervisory Board for the fiscal year 2026. Dr. Wolfgang Leitner resigned from his position as a member of the Supervisory board with effect from September 7, 2023.

### 13. Subsequent events

#### *Financial Covenant*

Under the Revolving Credit Facility Agreement, ams OSRAM must comply with a consolidated net leverage ratio, which is tested quarterly on a rolling last 12-month basis by reference to the Company's consolidated financial statements. On October 18, 2023, the lenders under the Group's Revolving Credit Facility consented to an amendment under the Revolving Credit Facility, such that for the quarter ending December 31, 2023 and for each subsequent quarter through the quarter ending December 31, 2024, the applicable consolidated net leverage ratio under the financial covenant will be 4.5:1 with a step down to 4.25:1 for the quarter ending March 31, 2025. A further step down of the applicable consolidated net leverage ratio under the financial covenant to 4.0:1 will apply for the quarter ending June 30, 2025 and the applicable consolidated net leverage ratio under the financial covenant will remain at that level for the remaining term of the Revolving Credit Facility Agreement.

#### *Extraordinary General Meeting (EGM)*

The Extraordinary General Meeting of ams OSRAM, which was held on October 20, 2023, approved with a large majority the proposed rights issue in the amount of EUR 800 million, which is a centerpiece of the recently presented financing plan, covering the expected financing needs until 2025/26. The respective rights issue is expected to take place this fall/winter 2023/24, subject to market conditions.

The EGM also elected Arunjai Mittal as a new member of the Supervisory Board. He has over 30 years of experience in the industry and will further strengthen the technology and industry expertise of the Supervisory Board.

## *Sale and leaseback*

On October 30, 2023, ams OSRAM signed a sale and leaseback agreement totaling up to around EUR 400 million in gross proceeds. The Sale and Leaseback transaction is part of the previously announced financing plan and limited to the newly constructed 8-inch semiconductor facility's primary and secondary structures in Kulim, Malaysia. The Lease Financing transaction is expected to close in winter 2023/2024 and runs for a term of 10 years, subject to certain conditions.

## *Treasury Shares*

Until October 31, 2023, ams OSRAM sold 1.87 million own shares out of a total of 12.85 million shares. The company has decided to terminate its program to sell treasury shares.

Premstaetten, October 31, 2023

Handwritten signature of Aldo Kamper in blue ink.

Aldo Kamper  
Chairman of the  
Management Board  
CEO

Handwritten signature of Rainer Irle in blue ink.

Rainer Irle  
Member of the  
Management Board  
CFO

Handwritten signature of Mark Hamersma in blue ink.

Mark Hamersma  
Member of the  
Management Board  
CBO

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All figures are unaudited.