Fourth Quarter and Fiscal Year 2023 results

Aldo Kamper, CEO
Rainer Irle, CFO
Dr Juergen Rebel, SVP Investor Relations

09 February 2024
Chapter 1 – Our Story
Investment Hypothesis

Our path to 15% adjusted EBIT and strong positive cash flow

- Strong technology & innovation leader in its field of semiconductor emitters (led and lasers) and sensors; undisputed leader in auto lamps
- Leading market positions in structurally growing semi-markets (~17bn EUR TAM) in automotive, industrial, medical and selected consumer applications driven by the mega-trends digitalization, energy efficiency, sustainability and smart living.
- Globally diversified business (50% Asia, 29% EMEA, 21% Americas), balanced customer exposure with top 10 customers representing ~34% of the business (~80% automotive customers amongst top 10) and top-3 19%
- Traditional Lamps & Systems segment (~80% automotive halogen lamps) at target margin of around 15% adj. EBIT generating strong cash flow and pursuing 'last-man-standing' strategy
- Semiconductor segment (~40% automotive, ~30% industrial/medical, ~30% consumer) currently at low single digit adj. EBIT margin due to a few non-core business with low margin, cyclical underutilization, and pre-investment in disruptive microLED technology
- ‘Re-establish-the-Base’ turnaround program to exit non-core semiconductor business and adjust infrastructure & overhead to lower base, delivering EUR ~150m run-rate savings by end of 2025 bringing semiconductor segment to double-digit adj. EBIT margin
- Structural growth model of 6 – 10% CAGR (relative to 2023 w/o non-core portfolio) primarily based on BoM expansion and some cyclical recovery in end-markets, underpinned by very strong design-win basis in automotive, industrial, medical and selected consumer projects will deliver further improvement to profitability for delivering ~15% adj. EBIT by 2026
- Strongest growth from automotive, then mobile phone sensors, Kulim-8-inch products, and broad applications in industrial & medical
- After completion of pre-investment into world’s first 8-inch led facility, return to around 10% CAPEX-to-sales
- Strengthened balance sheet after EUR 2.25 bn re-financing completed in Q4/2023
- Fully committed to sustainability - carbon-neutrality targeted by 2030
ams OSRAM at a glance

A company in transition to structural growth in automotive, industrial/medical & selected consumer applications with 110+ years of combined company history

Our segments & technologies

- **Semiconductors**
  - Sensors & ICs
  - LED & lasers

  ~2.4 bn€

- **Automotive & Specialty Lamps**

  ~1.1 bn€

Revenues by application¹ & Market positions

- **Automotive:**
  - #1 Auto LED & lasers
  - #1 in traditional lamps

- **Industrial & medical:**
  - #1 horticulture led lighting
  - #1 in CT medical imaging

- **Consumer:**
  - #2 in light sensors

Key Figures¹ & Semiconductor TAM

- **Revenues** 3.6 bn€
- **Adj. EBIT** 233 m€ / 6.5%
- **Customers:** >10k
- **Employees:** ~20k
- **Engineers:** ~5k
- **Patents:** >15k

Return to structural growth – value proposition

- **Target operating model 2026:**
  - 6-10% revenue CAGR, ~15% adj. EBIT, ~10% CAPEX to sales

- ‘Re-establish the base’ program to achieve profit improvement of ~150m€ by E-2025

- **Positive Free Cash Flow²** starting in 2024

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¹ Fiscal Year 2023 (Jan – Dec)

² Defined as Operating Cashflow – Capital expenditures + proceeds from divestments
Our segments - overview of business units and applications

**AUT** = Automotive, **I&M** = Industrial & Medical, **CON** = Consumer

<table>
<thead>
<tr>
<th>Emitters (LED &amp; Laser)</th>
<th>Sensors + ICs</th>
<th>Automotive &amp; Specialty Lamps</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AUT</strong></td>
<td><strong>I&amp;M</strong></td>
<td><strong>CON</strong></td>
</tr>
<tr>
<td>Forward Lighting (FWL)</td>
<td>In-Cabin Sensing</td>
<td>Classic halogen &amp; Xenon lamps</td>
</tr>
<tr>
<td>High pixelated FWL</td>
<td>Medical imaging (e.g. CT Sensors)</td>
<td>LED replacement lamps</td>
</tr>
<tr>
<td>Signaling</td>
<td>1D/2D/3D sensing</td>
<td>LED standard lamps</td>
</tr>
<tr>
<td>Display &amp; HUD</td>
<td>Flicker Detection</td>
<td>Semiconductors</td>
</tr>
<tr>
<td>Hyper-red LEDs</td>
<td>Camera enhancement Sensing &amp; Ambient Light Sensing</td>
<td>Cinema</td>
</tr>
<tr>
<td>Industrial &amp; Outdoor</td>
<td>Display Proximity Sensing</td>
<td></td>
</tr>
<tr>
<td>Sensing illumination</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

~1.4 bn€ ~1.0 bn€ ~1.1 bn€
Structural growth in semiconductor core portfolio is driven by mega-trends and leading market positions

Growing from the core of sensor & emitter components by increasingly adding intelligence to drive system performance

Megatrends | TAM1 – 17 bn Euro | Core Semiconductor Portfolio | Functional Applications
---|---|---|---
Digitalization |  |  | Sensing
Energy efficiency & sustainability |  |  | Illumination
Smart Living (IoT) |  |  | Visualization

**TAM1 – 17 bn Euro 2022 / CAGR2**

<table>
<thead>
<tr>
<th>Segment</th>
<th>TAM</th>
<th>CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive</td>
<td>EUR 4 bn</td>
<td>13%</td>
</tr>
<tr>
<td>Industrial / Medical</td>
<td>EUR 9 bn</td>
<td>4%</td>
</tr>
<tr>
<td>Selected high-volume Consumer applications</td>
<td>EUR 4 bn</td>
<td>9%</td>
</tr>
</tbody>
</table>

**Megatrends**

1. Digitalization
2. Energy efficiency & sustainability
3. Smart Living (IoT)

**Core Semiconductor Portfolio**

- Sensors
- Emitters
- Mixed Signal ICs
- Intelligent sensors
- Intelligent emitters

**Leading positions**

- Technology Leadership
- Innovation

**Functional Applications**

- Sensing
- Illumination
- Visualization

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1. ams OSRAM market model due to lack of suitable external market models
2. 2022 – 2026 CAGR due to 2022 was last full year actuals, and cyclical dip in 2023

=> No dedicated market reports for ams OSRAM addressed application segments available
ams OSRAM holds leading positions in its core semiconductor & lamps markets
Leverage strong positions with focused core portfolio and commitment to Automotive, Industrial, Medical markets

#2 in LED
LED Suppliers by 2023(E) market share (Total market USD ~11bn; TrendForce)

1. Nichia 15%
2. ams OSRAM 13%
3. Seoul Semiconductors 7%
4. Samsung LED 7%
5. MLS 6%

#1 in Light Sensors
Light Sensor Suppliers by 2022 market share (Total market USD ~1.1bn; OMDIA)

1. ams OSRAM 29.2%
2. STMicroelectronics 28.5%
3. Sensortek (Sitronix) 8.3%
4. ADI (includes Maxim) 5%
5. Capella/Vishay 3.5%

#1 in traditional Auto lamps/bulbs
Bulb Suppliers by 2023 market shares (Total market USD ~1.4bn; own market model due to lack of external research)

1. ams OSRAM
2. Lumileds
3. Others (incl. Asian suppliers)

Sources: TrendForce 2023 LED Player Revenue and Capacity 4Q23, OMDIA Light Sensor Report 2023
Very broad based and diversified revenue streams

Strong exposure to structural growth markets in automotive, industrial, medical and selected consumer applications

End market split
(FY 2023)

Automotive  52%
Consumer  19%
I&M  28%

Application split (estimates)
(FY 2022/23, core portfolio*)

**Automotive Semi Emitter** 25%
**Industrial LED Lighting & Semi Emitters** 23%
**L&S Automotive Lamps** 17%
**Semis for Display Management in Consumer Devices** 11%
**L&S Speciality Lamps** 6%
**I&M Semi Sensors** 8%
**Other Semi** 8%
**Automotive Semi Sensors** 2%

* Core portfolio already reflecting expected portfolio measures
Benefitting from globally balanced revenue base and healthy customer split

Strong regional presence and very balanced customer portfolio

Revenues by region (FY 2023)
- Americas: 29%
- EMEA: 21%
- APAC: 50%

Top customers split (FY 2023)
- Top 3 customers: 19%
- Top 4-10 customers: 15%
- Other customers: 66%

Total: more than 10k customers
Our customers are innovation leaders in their field

Global companies who set the benchmark for innovation
FY23 – like-for-like revenue decline mainly due to known consumer socket losses

Portfolio divestitures, inventory correction and phase out of specific consumer programs drove revenue decline

Main developments:
- L&S: portfolio divestitures (EUR ~586m total since FY22)
- Semi: stabilized automotive business, ongoing inventory correction in industrial/medical and phase-out of major programs in consumer

1) Excluding L&S portfolio divestitures, including FX effect
FY23 – adj. EBIT reduction essentially driven by known consumer socket losses

**Adjusted EBIT and Free Cash Flow**

<table>
<thead>
<tr>
<th></th>
<th>CY22</th>
<th>CY23</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Portfolio</strong></td>
<td>407</td>
<td>-24</td>
</tr>
<tr>
<td><strong>Consumer socket losses</strong></td>
<td>-128</td>
<td>-22</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td>233</td>
</tr>
<tr>
<td><strong>EBIT, EBIT margin (adj.)</strong></td>
<td>8.4%</td>
<td>(6.5%)</td>
</tr>
</tbody>
</table>

- **Operating Cash Flow**
  - CY22: 599
  - CY23: 674

- **Free Cash Flow**
  - CY22: 443
  - CY23: -151

**Main developments:**
- Drop in adjusted EBIT driven by underutilization cost in the semiconductor businesses for non-core consumer products, inventory corrections for products in industrial and automotive applications, and by high R&D spendings for microLED technology.
- Significant improvement of operating cash flow.
- Strong decline in FCF mainly driven by extraordinary investment into the 8-inch based microLED technology for next generation of displays.

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1) Excluding M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of businesses
2) FCF including divestments, excl. interest
FY2023: mid-term target growth model, strong design-win base & ‘re-establish-base’ drive structural growth & adj. EBIT improvement until 2026+ for turn-around

Portfolio re-adjustment revenue target

Exit of Semi non-core business

$3.6$ bn

$3.1$ bn

$300 - 400$m

$6\%$ to $10\%$

$9\%$ to $13\%$

L&S

$0$ to $2\%$

$2023$

$2026$

$\sim 3.6$ to $\sim 4.1$bn

Key growth contributors
1. Automotive (largest)
2. Mobile light sensors
3. 8” product sales
4. Industrial & Medical

Profitability adj. EBIT evolution target

$\sim 7\%$

$\sim 15\%$

EBIT improvement
- Fall-through from multi-bn € design-win base & some market recovery
- Restablish-the-Base program (EUR 150m savings by E-25)

Over-the-cycle mid-term targets

Revenues
$6 - 10\%$ CAGR

Adjusted EBIT Margin
$\sim 15\%$

CAPEX
$\sim 10\%$ of Sales

Free Cash Flow
Positive after interest payment

Leverage
Net Debt / (adj.) EBITDA < 2x

Notes:
1. Driven from new base following disposal of “non-core” semiconductor assets
2. >2x WSTS opto-electronics F19 & sensors H19 = 3.1% CAGR ’22 to ’26 due to addressed segments
3. FY2024 still above 10%
4. FY2024: slightly positive, including proceeds from divestments, before interest payments
With Q2/23, the new management team announced a new strategy and an efficiency program ‘Re-establish the Base’. It aims to strengthen profitability with targeted run-rate savings of EUR ~150m by end of 2025 and adj. EBIT margin target of ~15% in the mid-term.

**Portfolio**
- Focus the semiconductor portfolio on the core of differentiated, intelligent sensor and emitter components with the highest profitability and the best growth perspective
- Expand leading positions in relevant Automotive, Industrial, Medical markets
- Continue to pursue specific opportunities in Consumer markets where we sustainably differentiate
- Exit non-core Semiconductor business with a 2023 revenue run-rate of EUR 300-400m

**Set-up & Infrastructure**
- Make the company lean and efficient by having the appropriate size, infrastructure and agility

**Monetizing Innovation**
- Center mindset and accountability on “monetizing innovation” and overall profitability
- Invest selectively in disruptive innovation such as microLED technology

**Refinancing**
- Reduction of total debt & balanced maturity profile
- Strengthened balance sheet
- Completed in 2023
FY 2023 – strong design-win traction underpinning structural growth model

Majority in automotive, industrial & medical and consumer very strong

*Design- wins in 2023: estimated project life-time value
Continued strong design-win traction – Q4 2023 examples

Winning new business across the board

LTV estimates*

>100 m€ to date

+100 m€ in Q4

~150m€ in FY23

* cumulated, estimated project life-time values

LIDAR (Automotive)

Traditional Forward LED lighting (Automotive)

Material treatment (Industrial)

Laser projection (Consumer)

dToF sensors (Consumer)
ams OSRAM - ‘Outstanding Partner’ award by BYD

The world’s leading EV maker in 2023
Balanced end market mix within segments

Revenue split FY2023 by segments

**Semiconductors**
(origin / technology split below)

- Consumer: 41%
- Automotive: 31%
- I&M: 28%

**Lamps & Systems**

- Automotive: 75%
- I&M: 25%

**Emitters** (~57%)

- Consumer: 68%
- Automotive: 27%
- I&M: 5%

**Sensors + ICs** (~43%)

- Consumer: 58%
- Automotive: 36%
- I&M: 6%
### Overview of Q4 - financials

Figures in EUR million (for details refer to “Financial results in detail”)

<table>
<thead>
<tr>
<th>EUR millions (except per share data)</th>
<th>Q4 2023</th>
<th>Q3 2023</th>
<th>QoQ</th>
<th>Q4 2022</th>
<th>YoY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>908</td>
<td>904</td>
<td>+0%</td>
<td>1,177</td>
<td>-23%</td>
</tr>
<tr>
<td>Gross margin adj. (1)</td>
<td>28.7%</td>
<td>29.0%</td>
<td>-30 bps</td>
<td>28.5%</td>
<td>+20 bps</td>
</tr>
<tr>
<td>Results from operations (EBIT) adj. (1)</td>
<td>62</td>
<td>71</td>
<td>-12%</td>
<td>86</td>
<td>-28%</td>
</tr>
<tr>
<td>EBIT margin adj. (1)</td>
<td>6.9%</td>
<td>7.9%</td>
<td>-100 bps</td>
<td>7.3%</td>
<td>-40 bps</td>
</tr>
<tr>
<td>Net result adj. (1)</td>
<td>-16</td>
<td>29</td>
<td>-154%</td>
<td>29</td>
<td>-154%</td>
</tr>
<tr>
<td>Diluted EPS adj. (1)</td>
<td>-0.03</td>
<td>0.11</td>
<td>-131%</td>
<td>0.11</td>
<td>-131%</td>
</tr>
<tr>
<td>Diluted EPS adj. (in CHF) (1)(2)</td>
<td>-0.03</td>
<td>0.10</td>
<td>-133%</td>
<td>0.11</td>
<td>-130%</td>
</tr>
<tr>
<td>Net Result (IFRS reported)</td>
<td>-82</td>
<td>-55</td>
<td>-49%</td>
<td>-147</td>
<td>+44%</td>
</tr>
<tr>
<td>Diluted EPS (IFRS reported)</td>
<td>-0.18</td>
<td>-0.21</td>
<td>+14%</td>
<td>-0.56</td>
<td>+68%</td>
</tr>
<tr>
<td>Operating Cash Flow</td>
<td>80</td>
<td>199</td>
<td>-60%</td>
<td>201</td>
<td>-60%</td>
</tr>
<tr>
<td>Cash Flow from CAPEX (3)</td>
<td>-222</td>
<td>-262</td>
<td>-15%</td>
<td>-233</td>
<td>-5%</td>
</tr>
<tr>
<td>Free Cash Flow (4)</td>
<td>-142</td>
<td>-63</td>
<td>-125%</td>
<td>-32</td>
<td>-349%</td>
</tr>
<tr>
<td>Net debt (incl. SLB) (5)</td>
<td>1,312</td>
<td>2,269</td>
<td>-100%</td>
<td>1,717</td>
<td>-24%</td>
</tr>
<tr>
<td>Net debt (incl. SLB) (5)</td>
<td>1,696</td>
<td>2,269</td>
<td>-25%</td>
<td>1,717</td>
<td>-1%</td>
</tr>
</tbody>
</table>

1) Excluding M&A-related, transformation and share-based compensation costs, results from investments in associates and sale of businesses
2) Earnings per share in CHF were converted using the average currency exchange rate for the respective periods
3) Cash flow from investments in property, plant, and equipment and intangibles (such as capitalized R&D)
4) Free Cash Flow is defined as Operating Cash Flow minus CAPEX
5) Incl. EUR 384m equivalent from SLB Malaysia transaction closed in December 2023
# Overview of FY23 - financials

Figures in EUR million (for details refer to “Financial results in detail”)

<table>
<thead>
<tr>
<th>EUR millions (except per share data)</th>
<th>2023</th>
<th>2022</th>
<th>YoY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>3,590</td>
<td>4,819</td>
<td>-25%</td>
</tr>
<tr>
<td>Gross margin adj. 1)</td>
<td>28.7%</td>
<td>30.5%</td>
<td>-180bps</td>
</tr>
<tr>
<td>Results from operations (EBIT) adj. 1)</td>
<td>233</td>
<td>407</td>
<td>-43%</td>
</tr>
<tr>
<td>EBIT margin adj. 1)</td>
<td>6.5%</td>
<td>8.4%</td>
<td>-190bps</td>
</tr>
<tr>
<td>Net result adj. 1)</td>
<td>50</td>
<td>124</td>
<td>-59%</td>
</tr>
<tr>
<td>Diluted EPS adj. 1)</td>
<td>0,16</td>
<td>0,47</td>
<td>-66%</td>
</tr>
<tr>
<td>Diluted EPS adj. (in CHF) 1/2)</td>
<td>0,15</td>
<td>0,47</td>
<td>-68%</td>
</tr>
<tr>
<td>Net Result (IFRS reported)</td>
<td>-1,613</td>
<td>-444</td>
<td>-263%</td>
</tr>
<tr>
<td>Diluted EPS (IFRS reported)</td>
<td>-5,20</td>
<td>-1.70</td>
<td>-206%</td>
</tr>
<tr>
<td>Operating Cash Flow</td>
<td>674</td>
<td>599</td>
<td>+13%</td>
</tr>
<tr>
<td>Cash Flow from CAPEX 3)</td>
<td>-1,049</td>
<td>-537</td>
<td>-95%</td>
</tr>
<tr>
<td>Free Cash Flow 4)</td>
<td>-375</td>
<td>62</td>
<td>-705%</td>
</tr>
<tr>
<td>Net debt</td>
<td>1,312</td>
<td>1,717</td>
<td>-24%</td>
</tr>
<tr>
<td>Net debt (incl. SLB) 5)</td>
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5) Incl. EUR 384m equivalent from SLB Malaysia transaction closed in December 2023
### Macro headwinds expected to prevail throughout next 12 months – afterwards, back to moderate growth track towards 2026

<table>
<thead>
<tr>
<th>Outlook next 12 months</th>
<th>Long-term outlook</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Macro sentiment</strong></td>
<td></td>
</tr>
<tr>
<td>Dec Eurozone PMI still weak in contraction while US PMI bouncing up and down slightly below 50 level. China slightly above 50.</td>
<td>GDP consensus forecast shows moderately improving growth in Eurozone (1.4%) and US (1.7%).</td>
</tr>
<tr>
<td>GDP consensus expectations 2024 weaker in Eurozone (0.6%), China unchanged (4.5%), US higher (1.3%).</td>
<td>China consensus growth is expected to fall below 2024 level (4.3%).</td>
</tr>
<tr>
<td>2024 semiconductor forecast w/o memory slightly higher at 6.5% y-o-y.</td>
<td>Light vehicle production expected to grow with +2.1% y-o-y in 2025 to 91.5m and +1.8% y-o-y in 2026 to 93.2m units.</td>
</tr>
<tr>
<td><strong>Automotive sentiment</strong></td>
<td></td>
</tr>
<tr>
<td>Light vehicle production is on pre-pandemic level with 89.6m units for the full year, -0.5% below 2023 as a result of the relative production strength esp. in H2/2023</td>
<td>Growth in EVs softens but still expected to reach &gt;30% of global production within the next 3 years, that usually also have come with additional emitter &amp; sensor enabled innovations</td>
</tr>
<tr>
<td>2024 is seen as a transitional year towards a more demand-driven model with H1 production volume expected to grow +1.4% y-o-y, and H2 production volume -2.3% y-o-y / +2.8% over H1 sequentially</td>
<td></td>
</tr>
<tr>
<td><strong>Consumer sentiment</strong></td>
<td></td>
</tr>
<tr>
<td>Global smartphone forecast 2023/24 increased to 1,171m / 1,179m units implying -0.3% / +1.8% growth.</td>
<td>Global smartphone forecast 2025 shows growth increasing to 2.8% y-o-y to 1.212m units.</td>
</tr>
<tr>
<td>Initial signs of rebound seen in 4Q24, however global smartphone shipments in 2023 remain lower than 2022</td>
<td>Wearable forecast shows 4.3% y-o-y growth in 2025 to 596m units.</td>
</tr>
<tr>
<td>Wearable forecast 2023 slightly increased to 543 / 570m units implying +6.4% / +4.7% growth y-o-y.</td>
<td>MicroLED display shipments expected to increase to 50m units in 2030</td>
</tr>
<tr>
<td><strong>Industry &amp; Medical sentiment</strong></td>
<td></td>
</tr>
<tr>
<td>Further deterioration of end market expected; follows a similar correction pattern like Consumer in 2023</td>
<td>Global market for high power laser units to grow at +14% CAGR by 2030</td>
</tr>
<tr>
<td>German production of engineering products to decline -4% y-o-y in 2024</td>
<td>Worldwide projector market to increase annually by +10% over next 3 years</td>
</tr>
<tr>
<td>Global LED lighting market growth expectation downward adjusted.</td>
<td></td>
</tr>
</tbody>
</table>

Business outlook

Q1 2024 Guidance

- Revenue 800 m€ - 900 m€
- Adj. EBIT 4% - 7%
- Based on assumption EUR/USD 1.08

2024 comments

- Divesting/exiting non-core semiconductor portfolio (2023 run-rate: 300 to 400 m€)
- H1/24 with continued macro weakness, H2/24 improving (ramp of design-wins and expected market recovery)
- ~75 m€ savings run-rate at year-end from ‘Re-establish-the-Base’ program
- Some cost headwinds e.g. personnel cost, 8” ramp-up cost
- CAPEX in PPE of slightly above 500 m€ (incl. ~50m delayed PPE from 2023)
- Accounts Payable roll-over from Q4/23 and cap. R&D, combined ~200m€
- FCF positive (including divestments proceeds, before interest payments)
Summary Q4 & FY23

**Q4/23:**
- Solid Q4 revenue and adj. EBIT performance above mid-point
- Strong Design-Win traction continuing
- Implementation of Re-establish-the-Base program well on track

**FY/23:**
- Strategic re-alignment & revised mid-term financial model
- Re-financing completed ahead of schedule

**Outlook Q1/24:**
- Seasonal decline of revenue and adj. EBIT pronounced by inventory correction in industrial & medical

**Comments FY/24:**
- Executing ‘Re-establish-the-Base’ to benefit from structural growth
Chapter 2 – Structural Growth Driver
Semiconductors: Automotive Growth Drivers
Offering full technology range and innovation leadership in automotive emitters and light sensors

Leading Positions in Automotive Semiconductor Sub-Segments

<table>
<thead>
<tr>
<th>#1 in Automotive Emitters</th>
<th>Auto LED suppliers by 2023(E) market share (Total market USD ~3.3bn; TrendForce)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ams OSRAM</td>
<td>34%</td>
</tr>
<tr>
<td>2. Nichia</td>
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</tr>
<tr>
<td>3. Lumileds</td>
<td>10%</td>
</tr>
<tr>
<td>4. Seoul Semiconductor</td>
<td>7%</td>
</tr>
<tr>
<td>5. Samsung LED</td>
<td>7%</td>
</tr>
<tr>
<td>6. Dominant</td>
<td>6%</td>
</tr>
<tr>
<td>7. Stanley</td>
<td>4%</td>
</tr>
<tr>
<td>8. Everlight</td>
<td>2%</td>
</tr>
<tr>
<td>9. Jufei</td>
<td>1%</td>
</tr>
<tr>
<td>10. Lextar</td>
<td>1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>#1 in Automotive Light Sensors</th>
<th>Auto Light Sensor suppliers by 2022 market share (Total market USD ~71m; OMDIA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ams OSRAM</td>
<td>34%</td>
</tr>
<tr>
<td>2. Elmos</td>
<td>22%</td>
</tr>
<tr>
<td>3. Vishay</td>
<td>15%</td>
</tr>
<tr>
<td>4. Melexis</td>
<td>6%</td>
</tr>
<tr>
<td>5. Hamamatsu</td>
<td>4%</td>
</tr>
<tr>
<td>6. Rohm</td>
<td>1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>#16 in Automotive Semiconductors</th>
<th>Automotive semiconductor suppliers by 2022 market share (Total market USD ~64bn; OMDIA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. NXP</td>
<td>11%</td>
</tr>
<tr>
<td>2. Infineon</td>
<td>11%</td>
</tr>
<tr>
<td>3. STMicro</td>
<td>8%</td>
</tr>
<tr>
<td>15. Toshiba</td>
<td>1.5%</td>
</tr>
<tr>
<td>16. ams OSRAM</td>
<td>1.5%</td>
</tr>
<tr>
<td>17. Melexis</td>
<td>1.2%</td>
</tr>
<tr>
<td>18. Sanken</td>
<td>1.1%</td>
</tr>
<tr>
<td>19. Fuji Electric</td>
<td>1.0%</td>
</tr>
<tr>
<td>20. Nichia</td>
<td>0.9%</td>
</tr>
</tbody>
</table>

Sources: TrendForce 2023 LED Player Revenue and Capacity 4Q23, OMDIA Light Sensor Report 2023; OMDIA Competitive Landscaping Tool 1Q23
ams OSRAM can build on a strong track record as trusted innovation partner

ams OSRAM’s long history of driving innovation in the Automotive semiconductor world

- **1991**: Rain sensor
- **2003**: 1st full color head up display for BMW
- **1997**: 1st radial LED in VW
- **2005**: 1st daytime running LED light with Audi
- **2008**: 1st RGB ambient lighting color theme with Ford
- **2009**: 1st full LED front lighting
- **2010**: 1st full color head up display for BMW
- **2013**: 1st standard scalable LED forward lighting with BMW, VW
- **2014**: Eviyos 1.0 with microstructured LEDs
- **2017+**: LED matrix headlights
- **2020**: 1st 12V battery with high precision current aO sensor
- **2021**: 1st VCSEL for Driver Monitoring

- **1980**: 1st LED brand color program with VW
- **2007**: 1st daytime running LED light with Audi
- **2008**: 1st headlamp products with GM
- **2009**: 1st IR laser for emergency braking for Volvo
- **2010**: 1st ADB
- **2012**: 1st standard scalable LED forward lighting with BMW, VW
- **2017**: Tailgate sensor (capacitive) for 1st touchless trunk opener
- **2020**: 1st 12V battery with high precision current aO sensor
ams OSRAM Automotive and Mobility

Driven by safety, convenience and digitalization

- Exterior Sensing (LiDAR)
- Ambient lighting
- Dynamic signaling
- Smart Surface
- Display Backlighting
- In Cabin Sensing
- Battery management
- Head Up Display / Projection
- Exterior Sensing (LiDAR)
- Dynamic forward lighting
- Static forward lighting
- Functional illumination
- Position & Angle Sensing
- Static signaling
- Illumination / Visualization

Optical Sensing
- Ambient Light Sensing
- Rain, light & tunnel sensing
- Touchless trunk opener

Automotive Semicon Market**

- Power/Analog/Discretes 26.1%
- Sensors 6.5%
- LED 13%
- Memory 10.9%
- Processors/Logic 43.5%

BOM 2022 (SAM)
- ~14€
- ~24€
- ~38€*

BOM 2026 (SAM)
- ~19€
- ~34€
- ~53€

average € across all vehicle classes

*premium cars >50€ already today
**Source: Yole Overview of the Semiconductor Devices Industry 2023

BOM 2022 (SAM)
~14€
~24€
~38€*

BOM 2026 (SAM)
~19€
~34€
~53€

~24€
~34€
~53€

~14€
~24€
~38€*
~19€
~34€
~53€

~14€
~24€
~38€*
~19€
~34€
~53€
ams OSRAM is at the forefront of developing the LiDAR automotive market

Several key design wins for EEL and for VCSEL demonstrating our leading position

Since 2000

>14 car models

ams OSRAM’s 905nm laser used for laser based automated emergency braking systems

2023

>10 car models

L2 autonomous driving driven mainly out of APAC market

2025+

>7 car models

L3 autonomous driving systems for global market & mobility as a service

>100 m€

5-year design-win volume to date

Key Trends:

• Autonomous driving
• Safety
• Traffic jam assistant
• Highway pilot emerging
• Mobility as a service

Pioneer Role and Proven Track Record:

> 20 Mio LiDAR lasers in the field without chip failures
> 300 Bn kilometers covered in autonomous driving with OS lasers
Safe Mobility – high pixelated forward lighting (Eviyos)
Increasing ams OSRAM semiconductor BoM per car with a strong design-win base

<table>
<thead>
<tr>
<th>Year</th>
<th>2023</th>
<th>2024</th>
<th>2025+</th>
</tr>
</thead>
<tbody>
<tr>
<td>OEMs</td>
<td>1</td>
<td>7</td>
<td>&gt;12</td>
</tr>
</tbody>
</table>

Design-wins to date over lifetime

>250 m€

Example applications

- Adaptive Driving Beam
- Symbol projection

Implemented in the new VW Touareg (top version)

Image courtesy of Volkswagen AG
Car as a 3rd living room – Colored ambient lighting

Increasing ams OSRAM semiconductor BoM per car with a strong design-win base

Integrated RGB products:
- Dynamic Illumination with many LEDs
- High flexibility in function and system architecture
- ams OSRAM open system protocol

<table>
<thead>
<tr>
<th></th>
<th>2023</th>
<th>2024</th>
<th>2025+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market</td>
<td>Market</td>
<td>3 OEMs</td>
<td>&gt; 8 OEMs</td>
</tr>
<tr>
<td>introd</td>
<td>introduction</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

>100 m€
5-year design-win volume to date

>240 m€
market potential 2028
ALIYOS™ LED-on-foil technology creates unprecedented lighting

Increasing ams OSRAM semiconductor BoM per car with a strong design-win base

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2023</td>
<td>Technology launch and first customized demos with Tier1s</td>
</tr>
<tr>
<td>2024</td>
<td>Customized demos with OEMs as well as first series designs</td>
</tr>
<tr>
<td>2025+</td>
<td>First OEM SOPs with applications based on ALIYOS™</td>
</tr>
</tbody>
</table>

Press Release: 25.09.2023

Status 04.10.2023

Gross Reach: >10M

No. of articles: 71

H. Fratty, DVN: “ams OSRAM […] about the best innovative concept of the week for me, their amazing Aliyos which is sure to make fast friends with designers”

ALIYOS™ LED-on-foil technology pushes boundaries of multi-segmented area lighting and enables customization of light emission patterns
Safe & autonomous mobility – in-cabin sensing

Increasing ams OSRAM semiconductor BoM per car with a strong design-win base driven by regulation & comfort

On-going business relationships with all global OEMs and Tier-1

Driver safety & assistance
Cabin & Occupant safety

Product portfolio

Infrared LEDs
IR LEDs are preferred by most OEMs due to better cost efficiency for high-volume 2D Driver Monitoring applications

Infrared VCSELs
Mid-term, VCSEL growth will be accelerated by use cases related to autonomous driving that require 3D capability

>250 m€
LTV design-win volume to date
Semiconductors: Medical / Industrial Growth Drivers
ams OSRAM has been a trusted partner for decades in industrial / medical
Leading by system defining component performance, innovation & IP portfolio and deep customer relationships

<table>
<thead>
<tr>
<th>Value proposition for our customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>System defining component performance: Differentiating LED and laser technologies with leading performance - know-how across the entire value chain</td>
</tr>
<tr>
<td>Innovation leadership &amp; broad IP portfolio - recognition of strong technology know-how by our customers</td>
</tr>
<tr>
<td>In all focus applications, we have deep relationships with the leading customers and innovation drivers across all regions</td>
</tr>
<tr>
<td>Broad portfolio of high-performance light and other optical sensors as discrete components elements or integrated module</td>
</tr>
<tr>
<td>Best in Class LED emitters reinforcing market leadership and unrivaled performance, e.g. in horticulture lighting with hyper red innovation</td>
</tr>
<tr>
<td>Supply security: European-based specialty analog mixed-signal CMOS fab (Austria)</td>
</tr>
<tr>
<td>Worldwide regional presence and technical support</td>
</tr>
</tbody>
</table>
Addressing industrial / medical applications with key to system performance

Leveraging differentiated technology base into multi niches where we are key for the system performance

<table>
<thead>
<tr>
<th>Selected applications</th>
<th>Structural growth drivers</th>
<th>Typical ams OSRAM BoM potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Imaging &amp; Diagnostics</td>
<td>- Aging population&lt;br&gt;- Lower radiation dosage&lt;br&gt;- Higher specificity</td>
<td>~ 25 – several ten € (from image sensor to module for high end CT scanner)</td>
</tr>
<tr>
<td>Horticulture &amp; Smart Farming</td>
<td>- HPS lamp replacement&lt;br&gt;- Focus on near-shoring and freshness&lt;br&gt;- Yield improvement through optimized illumination&lt;br&gt;- Project business: subject to energy &amp; financing cost</td>
<td>~100 – 200 € per luminaire*</td>
</tr>
<tr>
<td>Robotics</td>
<td>- Automation, productivity&lt;br&gt;- Contextual Awareness</td>
<td>~20+ €</td>
</tr>
<tr>
<td>LED &amp; laser projection</td>
<td>- Home entertainment, lifestyle&lt;br&gt;- Replacement of traditional lamps&lt;br&gt;- Trickle-down from premium to mid-range</td>
<td>~5 – 190 € (from simple LED projector to high power material processing)</td>
</tr>
<tr>
<td>Outdoor / Industrial lighting</td>
<td>- Aging and growing population&lt;br&gt;- Urbanization&lt;br&gt;- HID replacement</td>
<td>~5 – 50 € per luminaire* (from small LED street luminaire to high power stadium light)</td>
</tr>
<tr>
<td>UV-C disinfection</td>
<td>- Growth opportunity &gt;2026&lt;br&gt;- Regulation &amp; Hg Lamp replacement once LEDs reach &gt;15% WPE</td>
<td>~20 – 2,500 € (from consumer device to industry scale water reactor disinfection)</td>
</tr>
</tbody>
</table>

*fixture combining light source with reflector, lens elements, etc.
Medical imaging – 4-side tileable sensor IC for computed tomography

Extending lifetime of ams OSRAM solutions at market leading medical customers

2022 – 2025+
annual revenue at high single digit to high teens m€

4-side tileable Sensor IC:
- Stacked CMOS wafer and Photodiode wafer using TSV technology
- ams OSRAM proprietary technology

>50 m€
5-year design-win volume to date
Example of leading position in niche – medical imaging CT scan sensors/ICs
8 out of 10 OEMs employ ams OSRAM products – solid revenue growth 2x market growth projected

CT scan detectors (units)

Top 10 CT Players

- ams OSRAM
- Customer Engagement

Generation of 3D images based on X-ray properties

CT scan detectors (units)

- CAGR 5.8%
- ~10.9k
- ~8.7k

(Source: Yole)

2022
2026

#1 CT Player
#2 CT Player
#3 CT Player
#4 CT Player
#5 CT Player
#6 CT Player
#7 CT Player
#8 CT Player
#9 CT Player
#10 CT Player

engaged
no engagement

(engaged)

(aids)

Path of continuously rotating x-ray tube and detector

Start of spiral scan

Direction of continuous patient transport

Detector Coverage

Attenuation readings

To computer

Sources: Yole Intelligence, Digital X-Ray Imaging 2022 volumes

Source: Yole
Semiconductors: Opportunities & growth drivers in Consumer portable devices
ams OSRAM offering full technology range and best value in focus applications

Strong Positions in Consumer Semiconductor Sub-Segments

#2 Light Sensor Supplier in Smartphones
Light Sensor suppliers by 2022 market share (Total market USD ~800m; Omdia)

1. STMicroelectronics 39%
2. ams OSRAM 30%
3. Sensortek 11%
4. Lite-On 4%
5. TXC 3%
6. Broadcom 2%
7. Elan 2%
8. Sharp 2%
9. Capella/Vishay 2%
10. Dyna Image 1%

#3 Sensor & Actuator Supplier in Wearables
Sensor & Actuator suppliers by 2022 market share (Total market USD ~864m; Yole)

1. Bosch 25%
2. ST Micro 19%
3. ams OSRAM 7%
4. Goermicro 7%
5. Knowles 5%
6. OMRON 5%
7. TDK 3%
8. Zilltek 2%

We are present at all Top 15+ Smartphone OEMs globally

Shipments 2022>> % of smartphones with ams OSRAM content

1. Smartphone OEM 1 62%
2. Smartphone OEM 2 91%
3. Smartphone OEM 3 22%
4. Smartphone OEM 4 27%
5. Smartphone OEM 5 45%
6. Smartphone OEM 6 50%
7. Smartphone OEM 7 55%
8. Smartphone OEM 8 24%
9. Smartphone OEM 9 45%
10. Smartphone OEM 10 47%

TOTAL (all OEMs) 50%

- ams OSRAM is present in 50% of smartphones shipped in 2022
- The addressed OEMs have a unit market share of >80%

Sources: OMDIA Light Sensor Report Database 2023, OMDIA Mobile Handset Database Historical Data - 3Q23, Yole Sensors and Actuators for Wearables 2023
Addressing relevant, system defining functions in portable consumer devices

Focus on significant growth opportunities in camera enhance, 3D AR, body tracking, microLED & smart glasses

<table>
<thead>
<tr>
<th>Focus applications</th>
<th>Addressed Functionalities</th>
<th>ams OSRAM BOM Potential</th>
</tr>
</thead>
</table>
| **Smartphone**     | − Camera enhancement (Flicker, Spectral Color Sensors, ToF)  
|                    | − 3D AR sensing  
|                    | − 3D Authentication  
|                    | − Display Management / BOLED sensing  
|                    | − MicroLED display | Mobile BOM: €1-25¹ |
| **Tablets**        | − 3D AR sensing  
|                    | − 3D Authentication  
|                    | − Display Management / BOLED sensing  
|                    | − MicroLED display | Tablet BOM: €3-40¹ |
| **Smartwatch**     | − Display Management / BOLED sensing  
|                    | − MicroLED display  
|                    | − User Interaction (Rotary Encoder)  
|                    | − Vital Sign Monitoring | Watch BOM: €2+ ¹ |
| **AR / VR**        | − Display Management  
|                    | − Vital Sign Monitoring  
|                    | − Face / Hand / Body Tracking  
|                    | − Eye Tracking / Authentication  
|                    | − 2D/3D sensing  
|                    | − Visualization (Light engine, microLED display, Optical coupling) | AR/VR Glasses BOM: €5-100¹ |

¹ excluding microLED display
Flicker Detection
Elimination of artificial light modulation bands

Display Proximity sensing
Intensity or ToF-based sensors for touch display on/off.

Spectral Ambient Light Sensing

Depth Sensing for Auto Focus & Bokeh
Single and Multi-zone dToF-based depth sensing for depth-of-field effects and sharp images, also in low light situations

AR Support
Social media (SnapChat, TikTok), room scanning, navigation, gaming, E-Commerce

ams OSRAM’s display management and camera enhancement are leading. Our technologies and products are relevant or key for system performance.
ams OSRAM’s spectral ambient light sensing makes the difference

8 out of the top 10 smartphones by camera score use ams OSRAM sensors for superior camera performance

Camera Enhancement: Light, Color, Flicker & Range sensors
- TMF882x Mutizone dToF
- TSL2585 ALS/UV/Flicker
- TCS3410 RGB/Flicker

Winning combination: Spectral + ALS

**Autofocus:**
"Fast and accurate autofocus, even in challenging light conditions"**

**AWB & Flicker:**
"Excellent for photographing family and friends, thanks to accurate skin tones and high details"**

**Top Smartphones by Camera score**

<table>
<thead>
<tr>
<th>Smartphone Model</th>
<th>Launch Date</th>
<th>Camera score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Huawei P60 Pro</td>
<td>Mar 2023</td>
<td>156</td>
</tr>
<tr>
<td>2. Oppo Find X6 Pro</td>
<td>Mar 2023</td>
<td>153</td>
</tr>
<tr>
<td>3. Honor Magic5 Pro</td>
<td>Feb 2023</td>
<td>152</td>
</tr>
<tr>
<td>4. Oppo Find X6</td>
<td>Mar 2023</td>
<td>150</td>
</tr>
<tr>
<td>5. Huawei Mate 50 Pro</td>
<td>Sep 2022</td>
<td>149</td>
</tr>
<tr>
<td>6. Google Pixel 7 Pro</td>
<td>Oct 2022</td>
<td>147</td>
</tr>
<tr>
<td>7. Honor Magic4 Ultimate</td>
<td>Mar 2022</td>
<td>147</td>
</tr>
<tr>
<td>8. Apple iPhone 14 Pro Max</td>
<td>Sep 2022</td>
<td>146</td>
</tr>
<tr>
<td>9. Apple iPhone 14 Pro</td>
<td>Sep 2022</td>
<td>146</td>
</tr>
<tr>
<td>10. Huawei P50 Pro</td>
<td>Jul 2021</td>
<td>143</td>
</tr>
</tbody>
</table>

source: https://www.dxomark.com/smartphones/

*DXOMARK February 2023, ALS denotes Ambient Light Sensor
Monetizing innovation: Next generation (micro)LED and 8” manufacturing
Extremely small microLED are required to enable disruptive mass adoption

<table>
<thead>
<tr>
<th>Chip size</th>
<th>Traditional LED</th>
<th>miniLED</th>
<th>microLED</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt;300µm</td>
<td>&gt;100µm</td>
<td>50 µm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>30 µm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>10 µm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 µm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 µm</td>
</tr>
</tbody>
</table>

→ Strongly increasing technological challenge →

**Applications**

- **Displays:**
  - Streetlighting
  - Direct backlight
  - Videowall
  - Luxury TV
  - 4k TV
  - 8k TV
  - Smartwatch
  - Smartphone
  - AR/VR microdisplay

- **Automotive:**
  - Headlamp
  - Rear light
  - External displays
  - Door display
  - Dashboard
  - Older ‘microLED’ products are actually based on miniLED
  - microLED demo products shown
  - ams OSRAM microLED focus

Older ‘microLED’ products are actually based on miniLED
Micro-LED displays promise a new and unique user experience

Ready to combine some of the really important features that the industry is looking for

- **Highest brightness** (e.g. for head-up displays), and robustness to temperature and sunlight
- **No burn-in** even for fixed image patterns in bright sunlight
- **Wide viewing angles**
- **Seamless stitching** and **bezel-free screens**
- **Transparent** or **curved** displays
Next-generation LED production is key enabler for significant microLED shrink

Shrink required to reach acceptable cost level for high-volume applications

Status today: Die sizes in existing products typically in the range of 35x60\(\mu\)m\(^2\) to 15x30\(\mu\)m\(^2\)

Massive die shrink required for mass adoption

Key enabler: 8-inch LED manufacturing

Modern state-of-the-art and first 8” fab for advanced LED technologies

Fully automated material handling system and factory control, advanced process control and material scheduling and fault detection (FDC) technologies

SMIF concept that allows lowest defect densities required for advanced (\(\mu\))LED manufacturing

Fab built in industry record time: 1 year from start of construction to first wafer starts

Chip cost too high for market breakthrough of microLED technology

1 wafer per color

1 to 4

4k displays

Acceptable LED cost for high-volume applications

25 to >80

4k displays
Lamps & Systems: Lamps for Automotive, Industrial and Entertainment
Strong and stable profit contributor with excellent position in lamps business

AMSP is covering automotive, entertainment and industry applications

**Automotive**
- LED retrofits
- Fixtures & car accessories
- Traditional lamps
- LED & Laser modules (e.g. XLS)

**End market split in AMSP lamps**
- ~80% Automotive lamps
- ~20% Entertainment & Industry lamps

**Entertainment and Industry**
- Semiconductors
- Entertainment
- Cinema
- Medical

- Large installed base globally
- Expanding our leading market position softens slowly declining market volume
- LEDr and XLS with positive market growth in declining lamps business
- New opportunities beyond lamps with fixtures & car accessories using our strong brand and channel position.
ams OSRAM is at the forefront of LED retrofits in automotive

Increasing potential of retrofit solutions for on-road and off-road applications

Key benefits of LED retrofit solutions:

- Easy upgrade to LED
- Earlier detection of signs and obstacles
- Optimized light distribution with reduced glare
- Stylish and modern look

---

### 2020

1st ever on-road LED headlamp retrofit in Europe
NIGHT BREAKER LED H7

---

### 2022

First leading player launching a "socket-design" solution for easier replacement
LEDriving HL EASY

---

### 2023

Further expansion of on-road and off-road portfolio for headlights and signal lights

---

### Way forward

Expand global leadership position in LEDr with our brands OSRAM and SYLVANIA

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1) Approved LED light source - only applies to the respective countries in which there is approval or to which an equivalent approval applies, and the vehicle models and light functions currently listed in the compatibility list. For more details see [www.osram.com/nb-led](http://www.osram.com/nb-led)
Chapter 3 – Our Sustainability Commitments
ESG update: climate strategy, carbon neutrality goal, ESG committee

**ams OSRAM group-wide ESG focus**

### ESG achievements

- Development and ongoing implementation of a comprehensive group climate strategy, aligning our actions with global climate goals.
- Annual sustainability reporting, demonstrating our commitment to transparency and accountability (GRI compliant)
- Comprehensive reporting of CO$_2$ emissions, including our own activities (Scope 1 + 2) and significant progress in reporting emissions along the value chain (Scope 3).
- ESG Committee, driving our sustainability efforts and ensuring focused decision-making.
- Sustainability Policy and internal Sustainability Guideline in place, guiding our actions towards a more sustainable future.
- All production sites exceeding a defined threshold are certified to ISO 14001.
- High rankings in ESG ratings.

### ESG goal: Carbon neutrality by 2030

- Group to be carbon neutral (Scope 1+2) by 2030, endeavor towards net zero ambition
- 100% green electricity at production sites in Germany + Austria
- Started to self-generate electricity
  - First solar energy production 2022 at sites e.g. in Austria, China
  - Large-scale solar energy production planned for new 8" manufacturing facility in Malaysia
- Strategy based on principle "avoid, reduce, compensate", reduction path developed
- Reducing emissions via energy efficiency measures at several locations, plan established to compensate for inevitable CO$_2$ emissions
At ams OSRAM, we are highly committed to sustainability.

External recognitions confirm our engagement within ESG (actual status per rating)

<table>
<thead>
<tr>
<th>INSTITUTION</th>
<th>RATING</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDP</td>
<td>C</td>
<td>Climate Change Water Security</td>
</tr>
<tr>
<td>ecovadis</td>
<td>Gold</td>
<td>Improvement from silver to gold</td>
</tr>
<tr>
<td>SUSTAINALYTICS</td>
<td>21.0</td>
<td>ESG Risk Rating <em>low</em> medium risk, +30% “Strong” ESG Risk Management</td>
</tr>
<tr>
<td>ISS</td>
<td>Score B-</td>
<td>improvement +25%, PRIME</td>
</tr>
<tr>
<td>MSCI</td>
<td>BBB</td>
<td>Average in managing the most significant ESG risks and opportunities</td>
</tr>
<tr>
<td>S&amp;P Global CSA</td>
<td>Score 67</td>
<td>Corporate Sustainability Assessment, positioning in 1st Quartile</td>
</tr>
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</table>
Chapter 4 – Selected Details of Financials
Group revenues and adjusted EBIT above mid-point of the guided range

All figures in EURm / % of revenues

- Revenue slightly above mid-point of the guided range of EUR 850m to 950m
- YoY: Like-for-like decline mainly driven by ramp-down of previous high-runner mobile-phone components

- Adj. EBIT margin 6.9%, above mid-point of the guided range of 5% to 8%
- QoQ decline due to one-time positive effect in Q3

1) Based on like-for-like portfolio comparison basis and constant currencies
2) Excluding M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of businesses
Automotive, industrial, medical represent ~80% of revenues

APAC most important sales region, semiconductor segment contributes ~70% of revenues

Revenues by segment (Q4 2023)
- Semiconductors: 69%
- Lamps & Systems: 31%

Revenues by end market (Q4 2023)
- Automotive: 19%
- Industrial & Medical: 24%
- Consumer: 57%

Revenues by region (H2 2023)
- Americas: 21%
- EMEA: 28%
- APAC: 52%

- Stable end market split as all end markets supported sequential growth
- Automotive: Stabilization, strong demand from China, improved inventory situation and more normalized order pattern
- Industrial & Medical: Stable q-o-q, mixed development overall, strong macro-economic pressure y-o-y
- Consumer: Seasonal upswing, y-o-y subdued also due to macro economic pressure

Note: Revenues by region are updated on a half-yearly basis
Semiconductors: decline driven by consumer and I&M, all-time-high in automotive

All figures in EURm / % of revenues

- Revenues/YoY: decline mainly driven by ramp down of previous high-runner custom products for mobile phones after socket losses and weakness in industrial markets
- Revenues/QoQ: decline driven by Consumer & I&M, whilst automotive increased to record level
- EBIT/YoY: decline due to lower run-rate causing high underutilization cost especially in Consumer related products
- EBIT/QoQ: decline due to positive one-time effect in Q3 (funding catch-up of ~10m€), like-for-like QoQ improvement

---

1) Excluding M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of businesses
Semiconductors segment in Q4: auto strong, I&M and consumer weak

Semiconductors segment, Q4 development QoQ & YoY, figures in EURm

- Non-core portfolio: ~100m per quarter
- Highest ever automotive semiconductor revenue
- Strong demand from China
- YoY growth, driven by content growth in highly digitized platforms (e.g. EVs)

- Sequential decrease due to macro economic pressure in all verticals
- YoY decline reflects overall weak macro economics in many areas, such as industrial lighting and horticulture, in line with LED market development
- QoQ upswing in Android overshadowed by ramp-down due to design-loss in high-runner phone
- YoY reflects design-loss in high-runner phone, slowdown of Android market and weak macro economy

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Total Semi Revenues</th>
<th>Semi AM Revenues</th>
<th>Semi I&amp;M Revenues</th>
<th>Semi Consumer Revenues</th>
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<td>253</td>
<td>213</td>
<td>301</td>
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<td>Q1/23</td>
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<td>147</td>
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<td>Q2/23</td>
<td>600</td>
<td>238</td>
<td>187</td>
<td>175</td>
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<tr>
<td>Q3/23</td>
<td>648</td>
<td>260</td>
<td>202</td>
<td>186</td>
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<tr>
<td>Q4/23</td>
<td>629</td>
<td>279</td>
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<tr>
<td>Total Semi Revenues</td>
<td>547</td>
<td>600</td>
<td>648</td>
<td>629</td>
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<tr>
<td>Automotive Revenues</td>
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<td>225</td>
<td>238</td>
<td>260</td>
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<tr>
<td>Industrial &amp; Medical Revenues</td>
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<td>175</td>
<td>187</td>
<td>202</td>
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<tr>
<td>Consumer Revenues</td>
<td>301</td>
<td>147</td>
<td>175</td>
<td>186</td>
</tr>
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</table>

+10% +7% -17% -12% -42% -6%
Lamps & Systems: seasonally strong Q4, continued weakness in industrial

All figures in EURm / % of revenues

- Revenues/Q4: strong seasonal aftermarket business
- Revenues/YoY: like-for-like decline due to weakness in industrial lamps business
- EBIT/Q4: negative one-time effect due to raw-material value correction

1) Based on like-for-like portfolio comparison basis
2) Excluding M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of businesses
Lamps & Systems: Seasonal effects in Q4, soft yoy development

Lamps & Systems segment: Q4 development QoQ & YoY, figures in EURm

- Strong QoQ in automotive mainly reflecting seasonality in aftermarket
- YoY impacted by negative effects from FX and portfolio (divestment of site Treviso)

- I&M mainly impacted by softer demand for specialty lamps for semiconductor manufacturing
Group: Gross Profit and OPEX sequentially flat, R&D further down

All figures in EURm / % of revenues

- Gross profit/QoQ flat, still impacted by underutilization effects mainly in consumer and industrial related manufacturing and a one-time raw material value correction in L&S
- R&D expenses QoQ decline reflects capitalization effect, besides continuous stream-lining and efficiency programs
- General sales overheads increased QoQ due to seasonal effects and bonus provisions. SG&A shows YoY a clear base-line reduction

1) Excluding M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of businesses
Group adj. Depreciation & Amortization and adj. EBITDA

All figures in EURm

D&A (adj.)$^1$  

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Q4/22</th>
<th>Q1/23</th>
<th>Q2/23</th>
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<td>Value</td>
<td>107</td>
<td>101</td>
<td>93</td>
<td>89</td>
<td>87</td>
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EBITDA (adj.)$^1$  

<table>
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<th>Q4/22</th>
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<th>Q4/23</th>
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<tr>
<td>Value</td>
<td>193</td>
<td>151</td>
<td>143</td>
<td>160</td>
<td>150</td>
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$^1$ Excluding M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of businesses
Adj. net result / Adj. EPS impacted by re-financing

All figures in EURm / EUR per share

Net financing result (adj.)¹)

Q4/22  Q1/23  Q2/23  Q3/23  Q4/23
-43    -32    -25    -34    -80

- Adjusted net financing result includes EUR 38m of re-financing related expenditures as a consequence of the EUR 2.25 bn re-financing, which leads to an adjusted net result of minus EUR 16m compared to the previous quarter

- Change in share count: 274,289,910 increased to 998,443,942 as of Dec 7th, 2023

- Q4/23 average share count at 456,490,225

Net results (adj.)¹)

Q4/22  Q1/23  Q2/23  Q3/23  Q4/23
29  6  31  29  Q4/23
-16

EPS diluted (adj.)¹)

CHF 0.11  -0.02  0.12  0.10  -0.03

Q4/22  Q1/23  Q2/23  Q3/23  Q4/23
0.11  0.02  0.12  0.11  Q4/23
-0.03

Net results IFRS

Q4/22  Q1/23  Q2/23  Q3/23  Q4/23
-147  -134  -55  -82

EPS diluted IFRS

CHF -0.56  -0.51  -5.02  -0.20  -0.17

Q4/22  Q1/23  Q2/23  Q3/23  Q4/23
-0.56  -0.51  -0.21  -0.18

-5.14

¹) Excluding M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of businesses
Reconciliation from EBIT IFRS reported to EBIT adjusted figures

Q4 2023, All figures in EURm

- EBIT Adj. best reflects underlying profitability of business and overall group development
- Historic M&A transactions (e.g. OSRAM) result in significant purchase price allocation expenses (non-cash, resulting in D&A), heavily impacting EBIT IFRS
- Transformation costs for personnel restructuring programs affect short-term profitability
- One-time impairment charges overshadow operating business development including profitability
- Book gain / losses of disposals + results from smaller historic equity investments are not part of operating business model
Net Working Capital
All figures in EURm

Net Working Capital

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<tr>
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<th>Q3/23</th>
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<td>586</td>
<td>673</td>
<td>554</td>
<td>555</td>
<td>612</td>
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+4%  

10%

Inventories

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<th>Q3/23</th>
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<td>864</td>
<td>880</td>
<td>804</td>
<td>784</td>
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-17%  

-9%

Trade & Other Receivables

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<th>Q3/23</th>
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<td>533</td>
<td>529</td>
<td>435</td>
<td>421</td>
<td>475</td>
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-11%  

+13%

Trade Payables

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<td>811</td>
<td>737</td>
<td>686</td>
<td>649</td>
<td>578</td>
<td></td>
</tr>
</tbody>
</table>

-29%  

-11%
Drop in operating cash flow and elevated capex put pressure on the FCF

All figures in EURm / % of revenues

- Significant drop in Operating CF due to EUR 77m reduction in accounts payable and seasonal increase of accounts receivables
- Still elevated Capex driven by tool installation in the 8-inch Kulim LED facility – in-line with expectations.

1) Free Cashflow (FCF) defined as Operating CF – Capex + proceeds from divestments
Cash and debt overview – strong deleveraging in Q4 2023

All figures in EURm

- Expected decrease of group leverage to 2.8x net debt/adjusted\(^1\) EBITDA driven by EUR 800m gross proceeds from rights issue completed in Q4-23
- Adj. EBITDA\(^1\) LTM EUR 603m (based on adj. EBIT + D&A not related to adjustments)
- EUR 800m undrawn RCF with core banking group successfully extended to September 2026
- Holistic refinancing plan released in Sep-23 successfully completed in Q4-23 (in particular EUR 850m and USD 450m former senior notes already refinanced by new senior notes of EUR 625m and USD 400m due in March 2029)

\(^1\) Excluding M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of businesses

\(^2\) Malaysia SLB Transaction (closed in Dec-23) shown under the B/S item “other liability” acc. to IFRS
Well balanced maturity profile with diversified funding mix post refinancing Q4/23

### Current capitalization

<table>
<thead>
<tr>
<th>IFRS book values</th>
<th>December-23</th>
<th>EUR million</th>
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<tr>
<td>Cash</td>
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<td>Other Financial Debt $^{1), 2}$</td>
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<tr>
<td>2025 EUR Convertible Bond (0.00%) $^{1}$</td>
<td>436</td>
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<tr>
<td>2027 EUR Convertible Bond (2.125%) $^{1}$</td>
<td>669</td>
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<tr>
<td>2029 EUR Senior Unsecured Note (10.50%) $^{1}$</td>
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<td>2029 USD Senior Unsecured Note (12.25%) $^{1}$</td>
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<td>Revolving Credit Facility (EUR 800m undrawn)</td>
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<td>SLB Malaysia transaction</td>
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<tr>
<td><strong>Total debt</strong></td>
<td><strong>2,842</strong></td>
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<td><strong>Total net debt $^{3}$</strong></td>
<td><strong>1,696</strong></td>
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<tr>
<td>Outstanding OSRAM Licht AG – Put Options</td>
<td>611</td>
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<tr>
<td><strong>Available Liquidity $^{4}$</strong></td>
<td><strong>2,152</strong></td>
<td></td>
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### Current debt maturity profile

**EUR m, repayment amounts as of December 2023**

- **Refinancing funds already available**
- **SSD / Promissory Notes**
- **Bank Facilities**
- **2025 EUR CB (0.00%)**
- **2029 EUR HYB (10.50%)**
- **SLB Malaysia**
- **2027 EUR CB (2.125%)**
- **2029 USD HYB (12.25%)**

Notes:
1. Amounts reflect carrying amounts / book values For 2025CB - Nominal Amount: EUR 447.4m (formerly EUR 600m; reduced by 2 Buybacks in the meantime) / Book Value under Debt (IFRS per 31-Dec-22): EUR 434m. For 2027CB - Nominal Amount: EUR 760m / Book Value under Debt (IFRS per 31-Dec-22): EUR 668m
2. Includes R&D loans, Bank Facilities and Promissory Notes
3. Includes EUR 384m equivalent Sale-and-Lease back Malaysia transaction
4. Includes EUR 1,145m Cash, EUR 800m RCF (undrawn) and EUR 206m bilateral bank facilities (undrawn)
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Investor Relations contact

<table>
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<tr>
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<th>Contact</th>
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<tbody>
<tr>
<td>Premstaetten Office</td>
<td>+ 43 3136 500-0</td>
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Upcoming events

- **February 13-14, 2024**  
  Non-Deal Roadshow London
- **February 21, 2024**  
  Non-Deal Roadshow Zurich
- **February 22, 2024**  
  Non-Deal Roadshow Frankfurt
- **March 8, 2024**  
  ODDO BHF TMT Forum, virtual
- **March 11-15, 2024**  
  Non-Deal Roadshow USA/Canada
- **March 21-22, 2024**  
  Jefferies Mid Cap TMT London