Sensing is life

ams OSRAM Capital Markets Day

Munich, April 5, 2022

Disclaimer

This presentation contains information relating to ams OSRAM Group ("ams OSRAM") that must not be relied upon for any purpose and may not be redistributed, reproduced, published, or passed on to any other person or used in whole or in part for any other purpose. By accessing this document, you agree to abide by the limitations set out in this document as well as any limitations set out on the webpage of ams-OSRAM AG on which this presentation has been made available.

This document is being presented solely for informational purposes. It should not be treated as giving investment advice, nor is it intended to provide the basis for any evaluation or any securities and should not be considered as a recommendation that any person should purchase, hold or dispose of any shares or other securities.

The information contained in this presentation may comprise financial and similar information which is neither audited nor reviewed and should be considered preliminary and subject to change. Some of the information presented herein is based on statements by third parties. No representation or warranty, express or implied, is made as to, and no reliance should be placed on, the fairness, accuracy, completeness or correctness of this information or any other information or opinions contained herein, for any purpose whatsoever.

This presentation may contain forward-looking statements based on current assumptions and forecasts made by ams OSRAM management and other information currently available to ams OSRAM. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. In particular, at the time of preparing this presentation, it is not possible to predict with sufficient certainty to what extent geopolitical developments, specifically the current Russia-Ukraine conflict and possible further escalations, will have material effects which could impact the global economy and growth in the industry in fiscal year 2022 and beyond.

Besides, material risks, uncertainties or other factors for us include the following: the duration and spread of the COVID-19 outbreak, its severity, the actions to contain the virus or treat its impact, and how quickly and to what extent normal economic and operating conditions can resume; our access to production from third-party outsourcing partners, and any events that might affect their business or our relationship with them including the outbreak of COVID-19; our ability to secure adequate and timely supply of equipment and materials from suppliers; our ability to avoid operational problems and product defects and, if such issues were to arise, to correct them quickly; our dependence on the business success with key customers; our ability to successfully introduce new technologies and products in a highly competitive landscape; volatile market demand and conditions of the industries in which ams OSRAM is operating; potential increase of barriers to international trade and resulting disruptions to our established supply chains; our ability to achieve the strategic and financial targets related to acquisitions and divestments, in particular concerning the takeover of the OSRAM group and related M&A measures.

ams OSRAM does not intend, and does not assume any liability whatsoever, to update these forward-looking statements or to conform them to future events or developments. Neither ams OSRAM nor any respective agents of ams OSRAM undertake any obligation to provide the recipient with access to any additional information or to update this presentation or any information, or to correct any inaccuracies in any such information.

Certain numerical data, financial information and market data (including percentages) in this presentation have been rounded according to established commercial standards. As a result, the aggregate amounts (sum totals or interim totals or differences or if numbers are put in relation) in this presentation may not correspond in all cases to the amounts contained in the underlying (unrounded) figures appearing in the consolidated financial statements. Furthermore, in tables and charts, these rounded figures may not add up exactly to the totals contained in the respective tables and charts.

Agenda

CEST	Topic	Presenter
13:00	Delivering double digit revenue growth with diverse portfolio of growth vectors	Alexander Everke
13:30	Innovation leadership in optical technologies	Thomas Stockmeier
14:00	Integration, synergies, manufacturing and portfolio management	Mark Hamersma / Mike Lusk
14:25	Financial model and path to financial targets	Ingo Bank
14:50	*Break*	
15:00	Key Automotive growth drivers	Robert Feurle
15:25	Key Consumer growth drivers	Jennifer Zhao
15:50	Key Industrial & Medical growth drivers	Jens Milnikel
16:15	Closing remarks	Alexander Everke
16:20	Q&A Session	Moderated by Moritz Gmeiner
17:00	*End of event*	

Speakers today

Alexander Everke
CEO

ams OSRAM, NXP, Infineon

31 years industry experience

Ingo Bank
CFO

ams OSRAM, Parexel, Philips

23 years industry experience

Thomas Stockmeier
CTO

ams OSRAM, SEMIKRON, ABB

37 years industry experience

Mark Hamersma
CBO

ams OSRAM, NXP, Philips, McKinsey
21 years industry experience

Robert Feurle
BU Opto Semiconductors

ams OSRAM, Infineon, Siemens, Qimonda, Micron
25 years industry experience

Jennifer Zhao
BU Advanced Optical Sensors

ams OSRAM, Nexperia, NXP

22 years industry experience

Jens Milnikel
BU Image Sensor Solutions

ams OSRAM, Zumtobel, Philips, Infineon, Roland Berger
21 years industry experience

Mike Lusk
Semiconductor Operations

ams OSRAM, NXP, Freescale, Motorola
47 years industry experience

Delivering double digit revenue growth with diverse portfolio of growth vectors

Alexander Everke

Chief Executive Officer

Delivering double digit revenue growth with diverse portfolio of growth vectors

Alexander Everke (CEO)

Outline

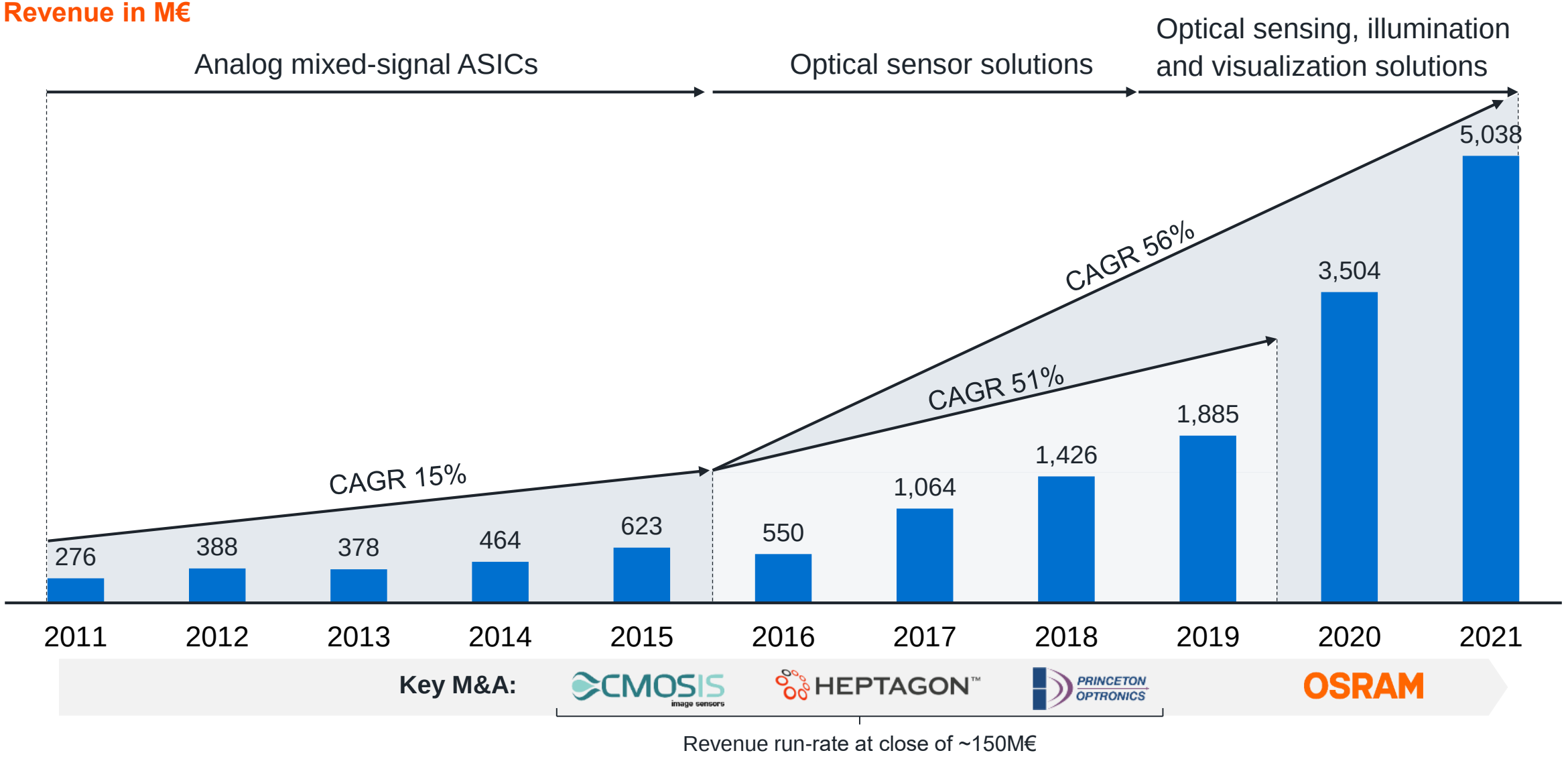
1. **Strong growth and integration track record**
2. Becoming the leader in optical solutions
3. Delivering double digit revenue growth
4. Next steps in the ams OSRAM journey

Our track record

- Pursuing a growth strategy with complementary M&A that resulted in outgrowing semiconductor peers over the past decade
- After 6x revenue growth in Consumer over the period 2016-2020, we experienced a market share loss in 2021, while being engaged in a broad & robust design-in pipeline to return the business to growth
- Our Automotive and Industrial & Medical businesses have shown consistent growth over the last 5 years with the exception of 2019, growing 23% in 2020-2021 on a pro forma basis
- Successfully executing on commitments made in the OSRAM acquisition and integration, expect to complete related divestments in 2022 to create the new base for the company

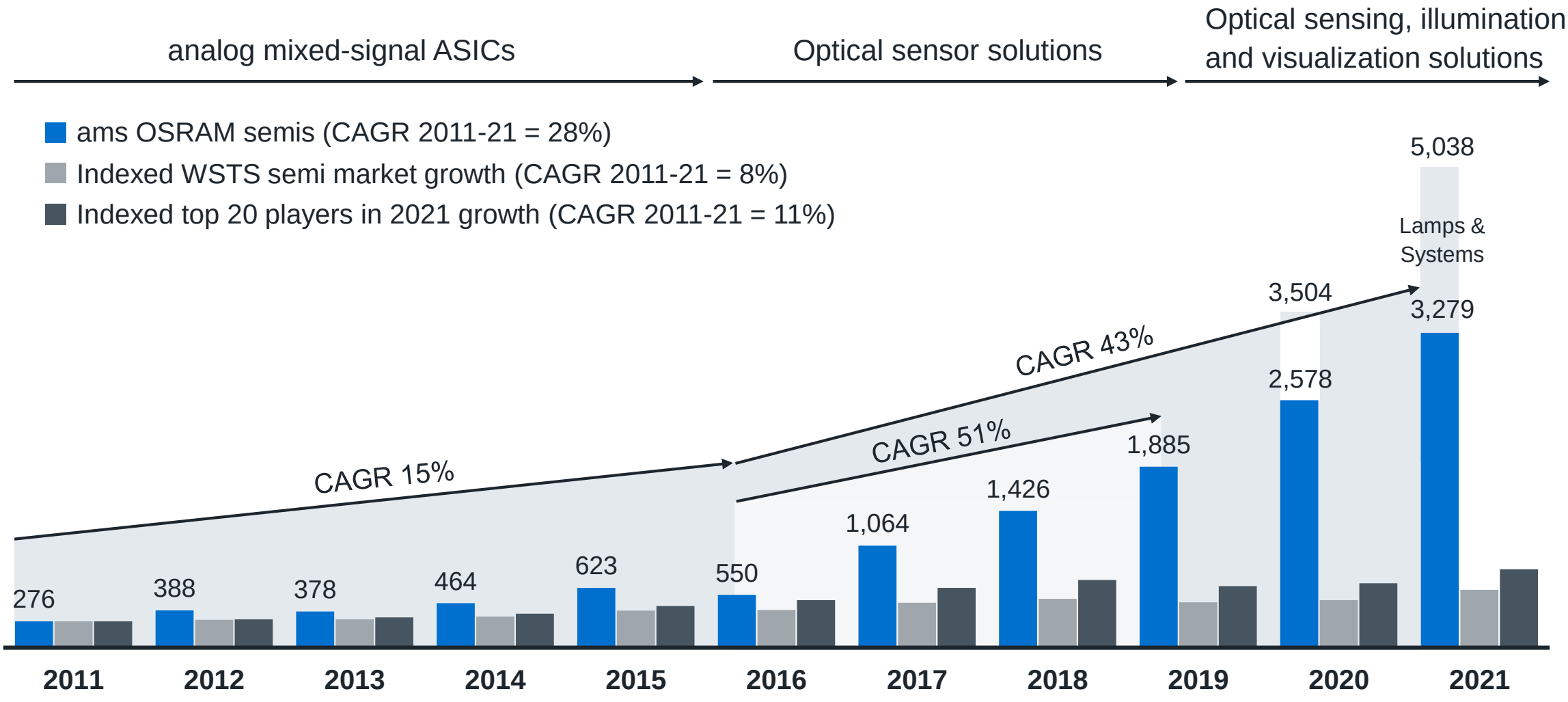
Pursuing a clear growth strategy with complementary M&A

Revenue in M€



ams OSRAM has outgrown semiconductor peers

Revenue in M€



Source: ams OSRAM, WSTS, OMDIA

Successfully executing on OSRAM acquisition and integration commitments

Operational control only since DPLTA effective date in March 2021

	Strong achievements across areas
1. Deal close 1H20 and DPLTA Dec 2020	✓ • Close July 2020, DPLTA AGM approval Nov 2020, de-listing 2021
2. Diversification of revenue mix	✓ • Balanced mix Consumer/Auto/I&M
3. Accelerate in new breakthrough optical solutions	✓ • Clear market traction in microLED, AR/VR glasses, ADAS/LIDAR • Joint developments for digital auto lighting and bio-sensing
4. Complementary go-to-market	✓ • One OEM sales force for semis & lamps fully operational
5. Synergies ~300M€ by year 3	✓✓ • Increased synergies/savings to ~350M€
6. ~390M€ one-off integration costs	✓✓ • Reduced to ~270M€
7. Semis footprint optimization	✓ • Optimized footprint defined and presented today
8. Dissolve Conti-JV and divest non-core business	✓ • Conti-JV dissolved on schedule in October 2021 • Systems business divestments in 2021/22 (0.8B€ revenues)
9. 2021 net debt / adj. EBITDA ~2x	✓ • 2021 net debt / adj. EBITDA = 1.9x

Note: Synergies refer to pre-tax run-rate gross synergies against original baseline
Adjusted figures exclude M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of a business

Delivering double digit revenue growth with diverse portfolio of growth vectors

Alexander Everke (CEO)

Outline

1. Strong growth and integration track record
2. **Becoming the leader in optical solutions**
3. Delivering double digit revenue growth
4. Next steps in the ams OSRAM journey

Vision and mission for ams OSRAM

To create the uncontested leader in optical solutions

Sensing

Illumination

Visualization

Become the uncontested leader in optical solutions through bold investments in disruptive innovation and continuous transformation delivering best in class profitability and growth

Clear investor value proposition

Commitment to growth
Leader in optical solutions driven by secular growth trends in Automotive, Consumer and Industrial & Medical

Path to strong sustainable profitability
Target to double adjusted EBIT margin driven by portfolio optimization, manufacturing footprint consolidation, synergy realization and revenue growth

Balanced and diversified business mix
Balanced application end-market exposure and diversified global customer base creates broadly supported earnings streams

Prudent financial policy
De-lever based on strong operational cash flows and proceeds from divestments, while maintaining investment for growth

Focus on long-term value generation
Re-invest in differentiating technology & innovation and related organic growth opportunities, in alignment with ESG focus

Our overall stakeholder value proposition

Customers

We develop leading edge optical technologies that enable our customers to create innovative solutions that open up new markets.

We bring intelligence to light and passion to innovation.

Employees

We provide a motivating, empowering and collaborative environment with significant personal development opportunities in a high-performance organization.

We attract, develop and retain the best talent.

Sensing is life

Shareholders

We outgrow the market and achieve the #1 market position based on our innovation leadership, which in turn delivers industry-leading profitability and sustainable growth in value.

We responsibly create sustaining value.

Society

We boldly invest in disruptive innovation that meaningfully improves the quality of life in terms of health, safety and convenience, while reducing impact on the environment.

We make life better.

Our commitment to ESG

Building a strong ESG framework for ams OSRAM

- Group-wide ESG strategy in detailed definition phase to be ready by end of 2022
- Group-wide compliance processes, code of conduct & whistleblower tool implemented
- Combined sustainability report to be published in May 2022 (GRI compliant)
- ESG-related KPIs to be included in 2023 management remuneration targets

Focus areas

E	CLIMATE	*Low-carbon value chain*
E	CIRCULARITY	*Responsible resource use*
S	LABOUR	*Responsible people mgmt.*
S	HUMAN RIGHTS (SUPPLY CHAIN)	*Responsible sourcing*
G	INTEGRITY	*Ethical business practices*

First major targets defined

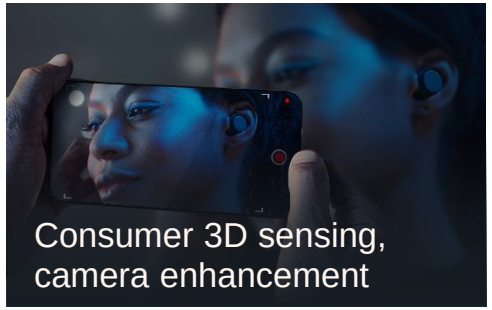
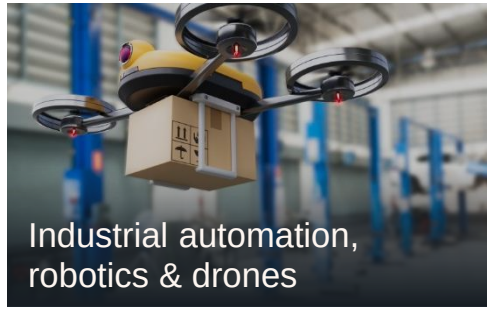
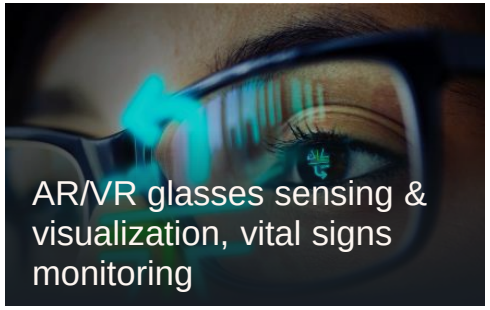
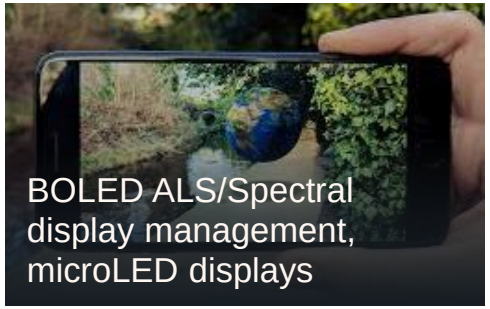
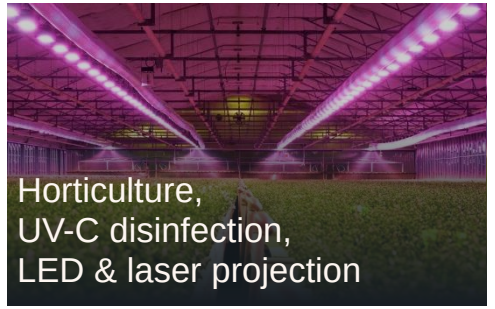
Climate 2030

Carbon neutral by **2030**,
endeavor towards net zero ambition

Diversity 2026

25% women in leadership positions by **2026** (increase from 21% in 2021)

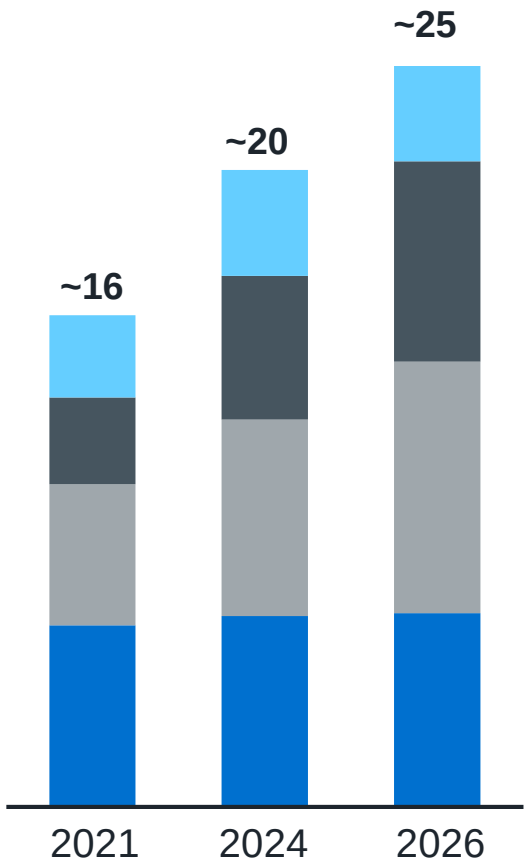
Key societal megatrends drive demand for our optical solutions

	Consumer	Automotive	Industrial	Medical
Digitalization	 Consumer 3D sensing, camera enhancement	 Advanced displays, smart surfaces, head-up display/ projected lighting	 Industrial automation, robotics & drones	 Medical imaging
Smart Living (IoT)	 AR/VR glasses sensing & visualization, vital signs monitoring	 ADAS/AD (LiDAR), in-cabin sensing, dynamic forward & signal lighting	 HABA, Outdoor & industry lighting	 Home diagnostics
Energy efficiency & sustainability	 BOLED ALS/Spectral display management, microLED displays	 Ambient lighting, UV-C disinfection	 Horticulture, UV-C disinfection, LED & laser projection	 UV-C disinfection

Addressed market growth projected above semiconductor market

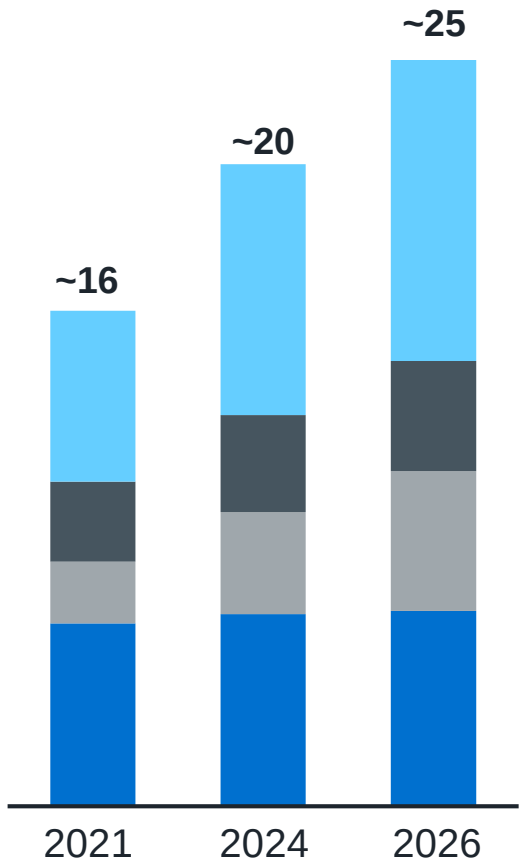
Projected growth at 8-10% CAGR compared to expected semiconductor market growth of 5-7% CAGR

Addressed market (SAM) by end market (in B€)



	CAGR 2021-26
Total	8-10%
Auto Semi	7-11%
Consumer	15-20%
Industrial & Medical	10-14%
Lamps & Systems	~0%

Addressed market (SAM) by application (in B€)



	CAGR 2021-26
Total	8-10%
Sensing	12-16%
Illumination	5-10%
Visualization	16-20%
Lamps & Systems	~0%

Source: ams OSRAM internal market model (based on market research data)

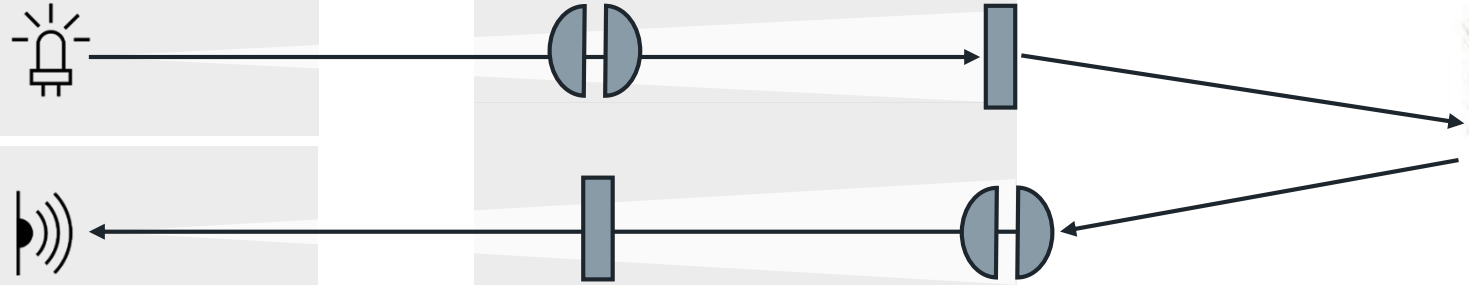
Pursuing market leadership across key components for optical solutions …

Light source

- LED
- MicroLED
- VCSEL / EEL
- Emitter driver IC

Light path optics

- Lenses
- Wave guides
- Spatial filters



- Light sensor
- Image sensor
- Sensor interface IC

Light detectors

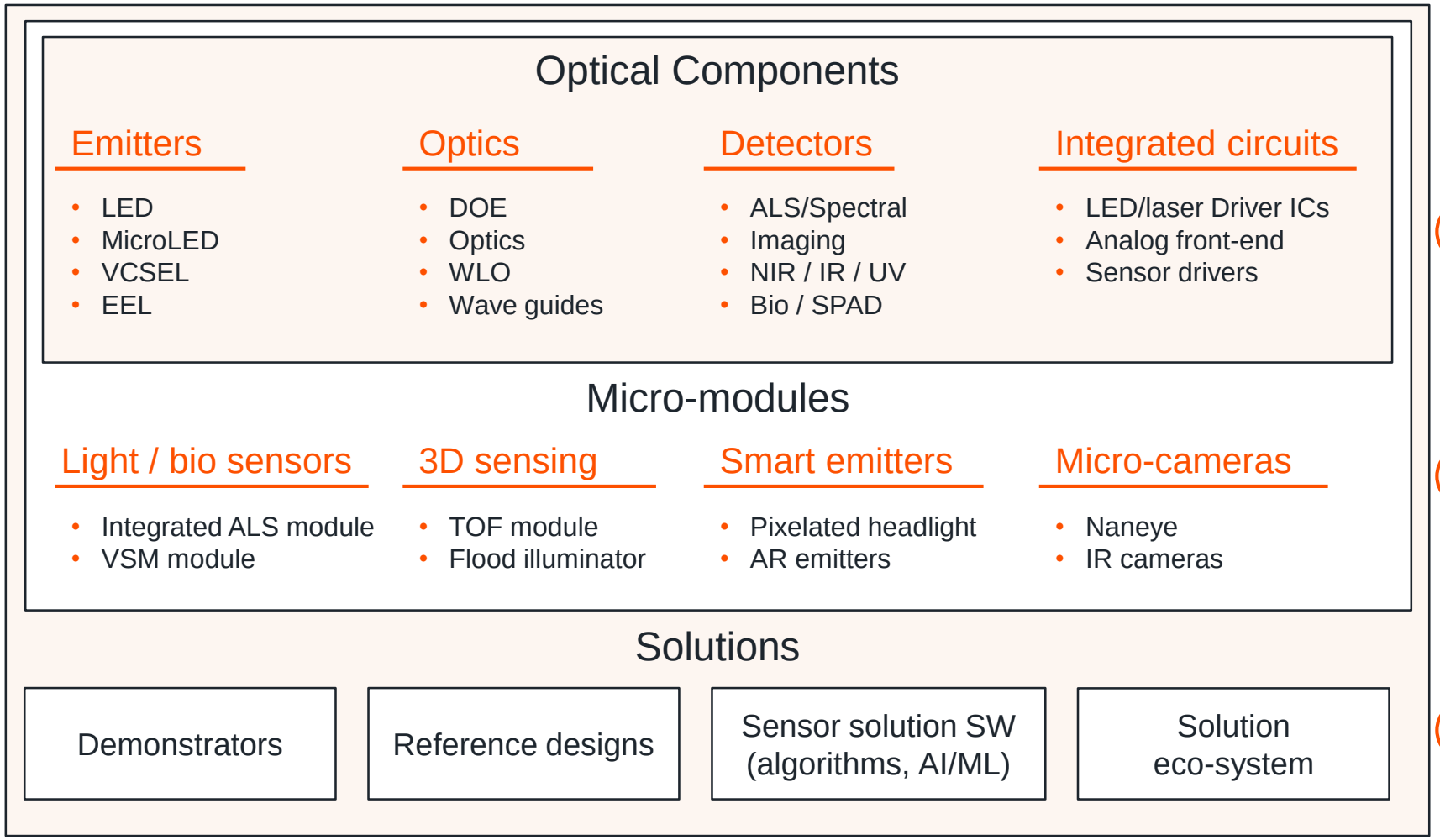
- Lenses
- Wave guides
- Band pass filters

Light path optics

Sensor processing (incl. algorithms)

Achieve best-in-class application performance through cross-optimized key components

… and offer micro-modules and solutions for key growth applications



1. Develop **best-in-class components** with innovation leaders
2. Offer differentiated **micro-modules** assembly largely with in-house components
3. Develop broader market and cross-optimize own components with system reference **solutions**

ams OSRAM is a top 3 player in optical semiconductors

Only player in industry covering the full optical value chain offering unique value to customers

		#1	ams OSRAM	#2[1)]	#4	#5	#6	#7	#8	#9	#10	TAM[2)] 2021
Total optical revenues 2021		▬	▬	▬	▬	▬	▬	▮	▮	▮	▮	**45B€**
Emitters	LED		✓	✓				✓	✓			**17B€**
	MicroLED		✓					✓	✓			
	VCSEL	✓	✓			✓		✓	✓	✓		
	EEL	✓	✓			✓		✓		✓		
Optical elements			✓			✓				✓	✓	**3B€**
Detectors	Image sensors	✓	✓	✓	✓		✓					**19B€**
	Light sensors	✓	✓		✓					✓		
ICs	Emitter drivers		✓	✓	✓							**4B€**
	Analog front-end	✓	✓		✓		✓					
Micro-optical assembly		✓	✓		✓	✓				✓	✓	**2B€**

1) ams OSRAM tied for #2 position 2) Total Addressable Market

Source: OMDIA, Yole Development, Thomson Reuters

Delivering double digit revenue growth with diverse portfolio of growth vectors

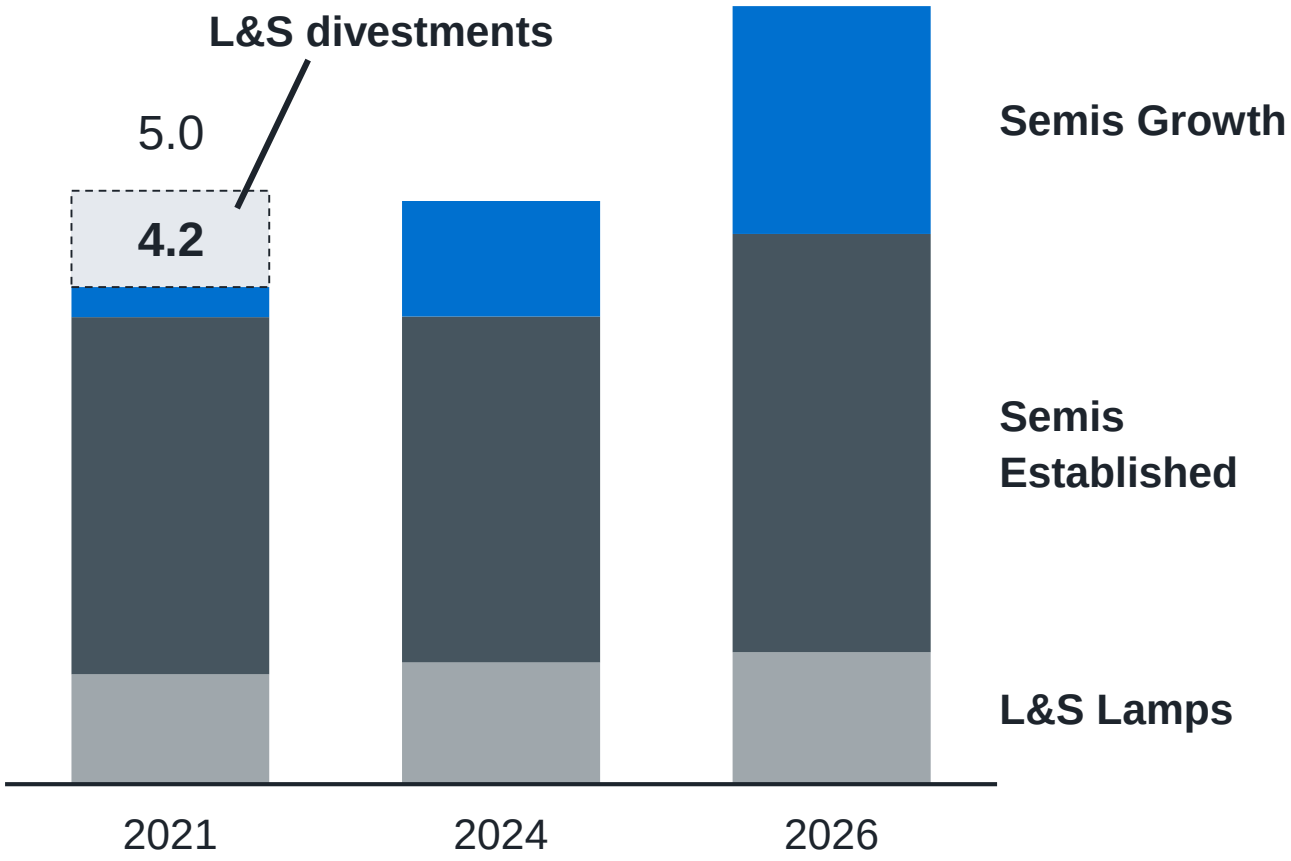
Alexander Everke (CEO)

Outline

1. Strong growth and integration track record
2. Becoming the leader in optical solutions
3. **Delivering double digit revenue growth**
4. Next steps in the ams OSRAM journey

Key growth areas on top of a steady growing established business

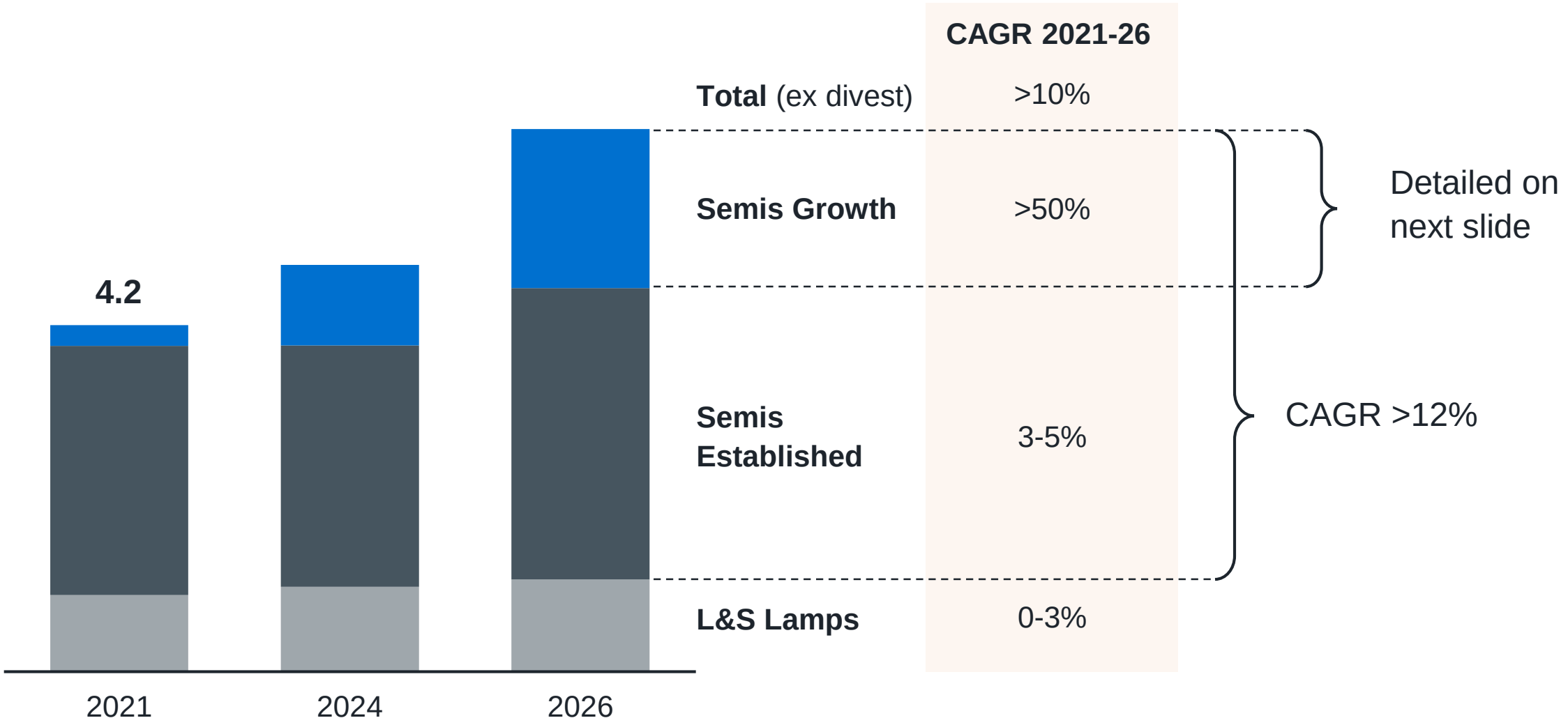
Revenues in B€



Note: 2021 figures reflect pro-forma financials, excluding revenues of the divested and to-be-divested businesses of the L&S segment; expected values based on current target model and available information
Expectations and targets are based on ams OSRAM's latest reasonable assumptions and do not include potentially material effects related to the further development of the current or to any future geopolitical crisis

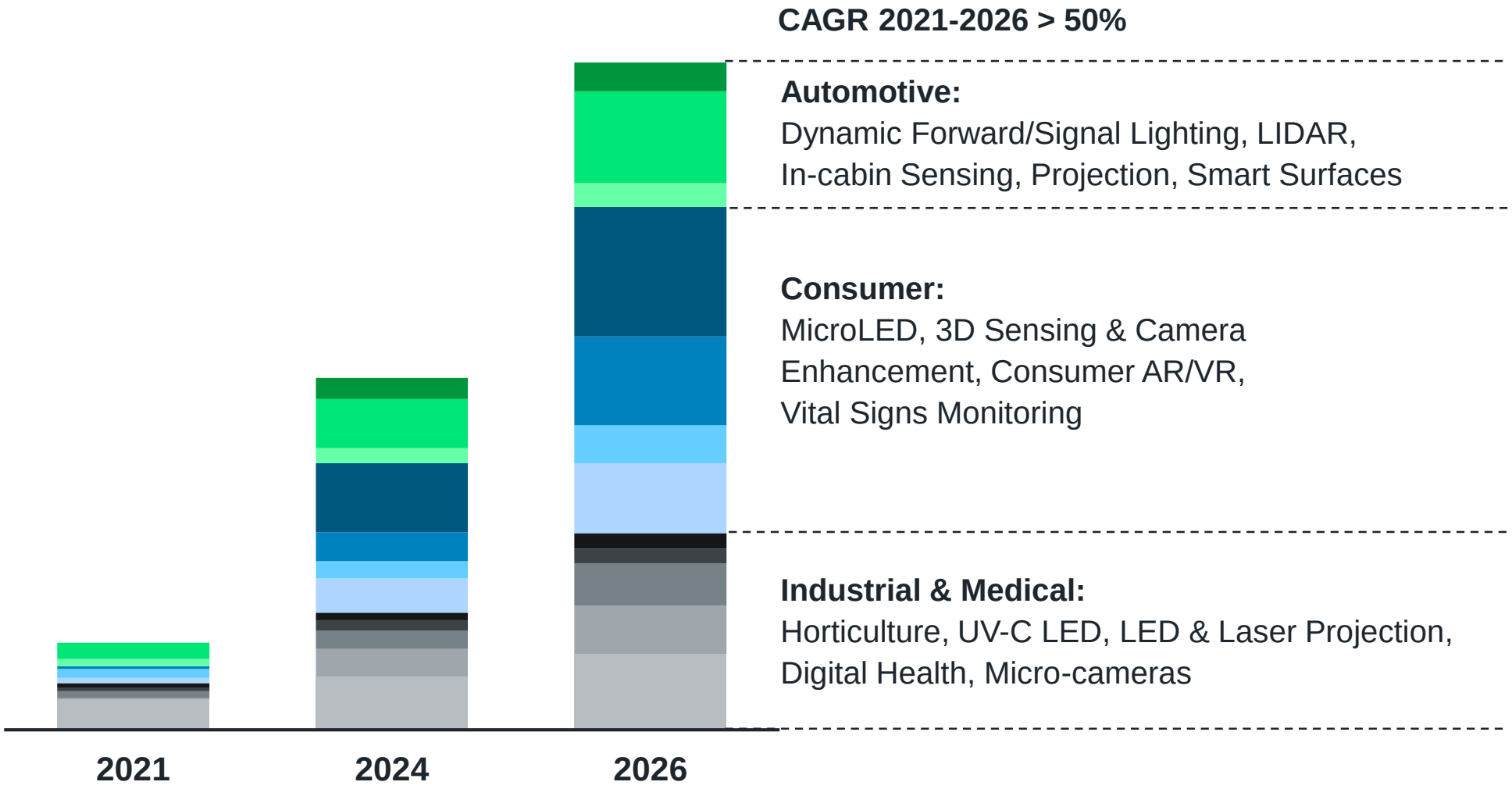
Key growth areas on top of a steady growing established business

Revenues in B€



Note: 2021 figures reflect pro-forma financials, excluding revenues of the divested and to-be-divested businesses of the L&S segment; expected values based on current target model and available information
Expectations and targets are based on ams OSRAM's latest reasonable assumptions and do not include potentially material effects related to the further development of the current or to any future geopolitical crisis

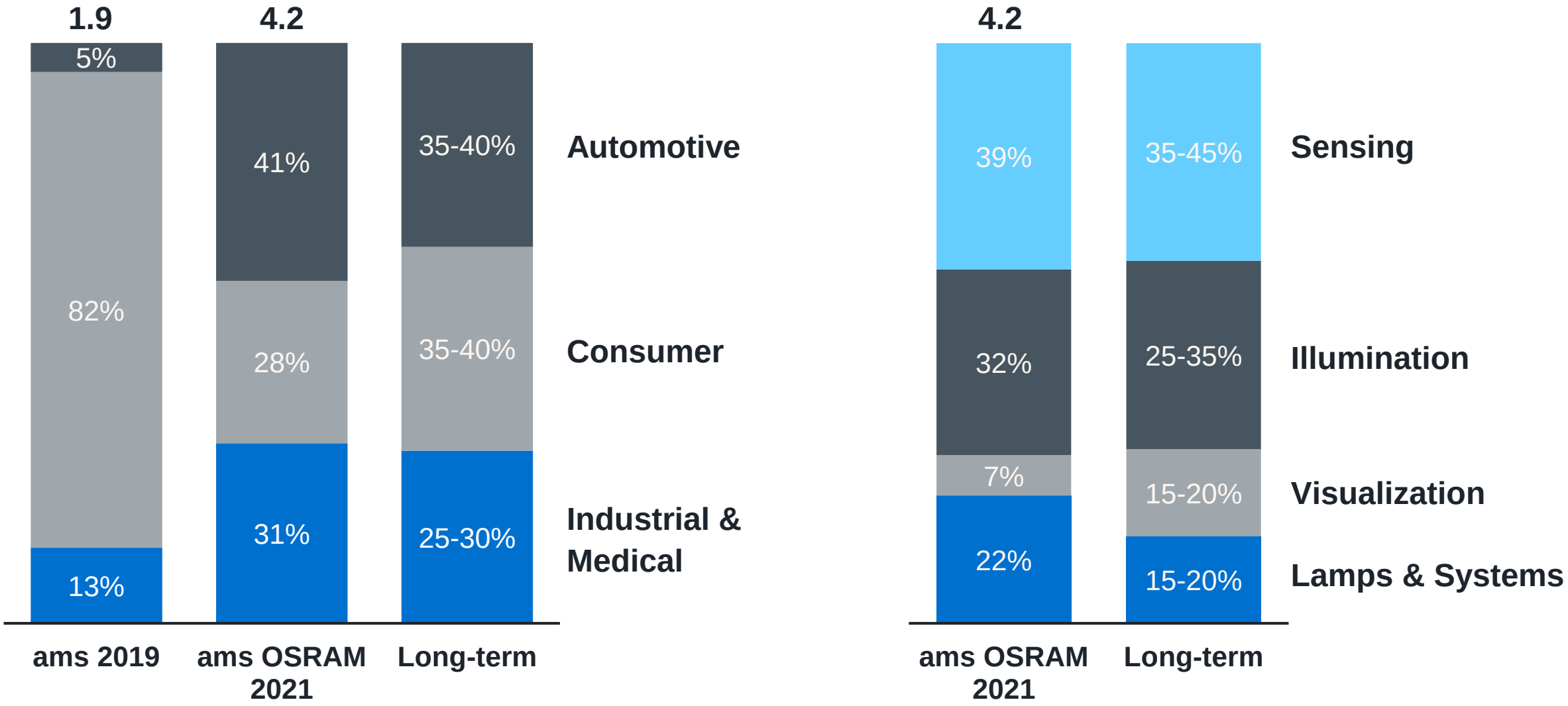
Semis Growth: Diversified growth vectors across markets



Note: Expected values based on current target model and available information
Expectations and targets are based on ams OSRAM's latest reasonable assumptions and do not include potentially material effects related to the further development of the current or to any future geopolitical crisis

Driving a balanced end-market and application mix

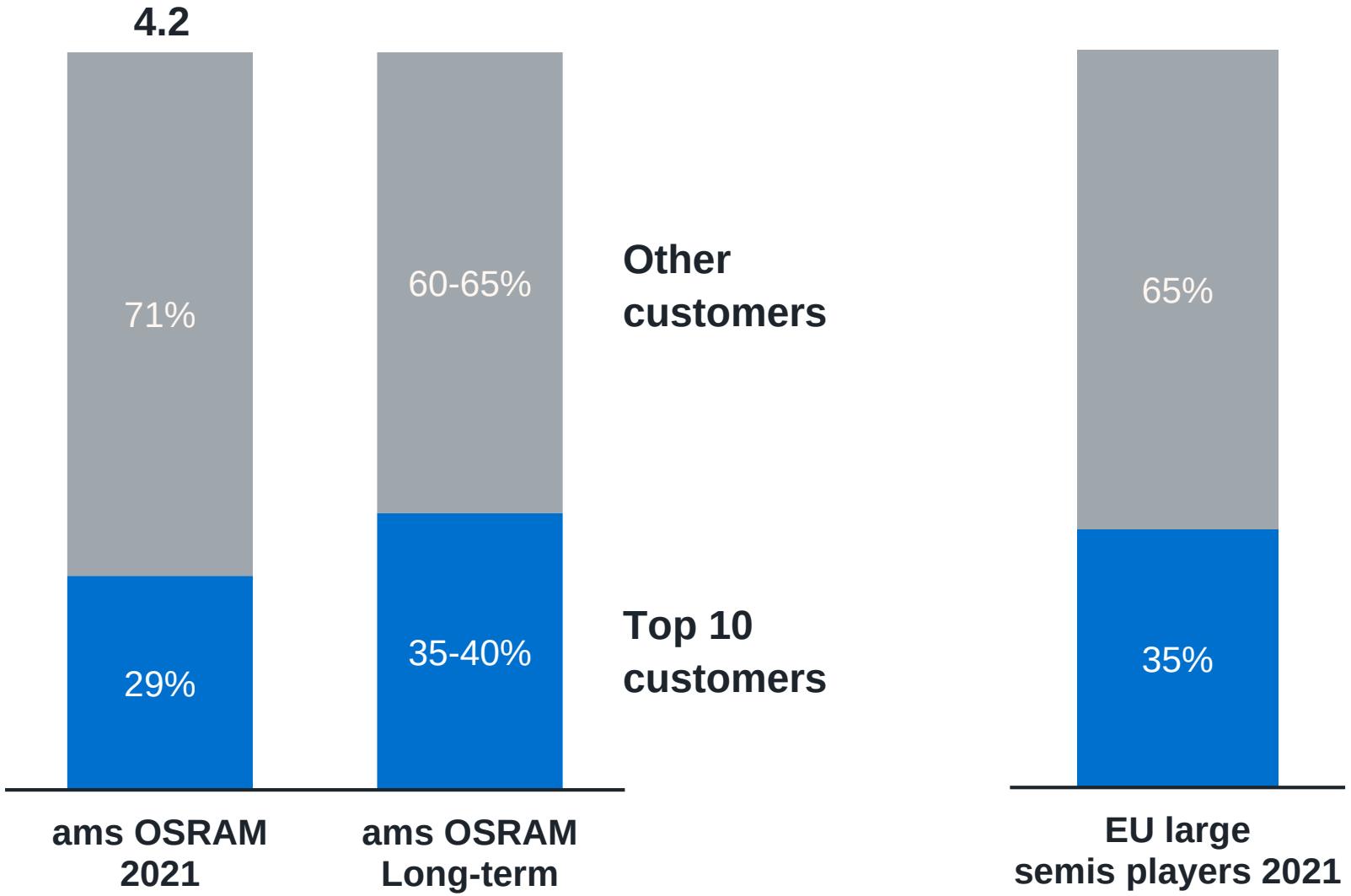
Revenues in B€; % of total revenues



Note: 2021 figures reflect pro-forma financials, excluding revenues of the divested and to-be-divested businesses of the L&S segment; expected values based on current target model and available information
Expectations and targets are based on ams OSRAM's latest reasonable assumptions and do not include potentially material effects related to the further development of the current or to any future geopolitical crisis

Successfully engaged with a diversified customer base

Revenues in B€; % of total revenues



Note: 2021 figures reflect pro-forma financials, excluding revenues of the divested and to-be-divested businesses of the L&S segment; expected values based on current target model and available information
Expectations and targets are based on ams OSRAM's latest reasonable assumptions and do not include potentially material effects related to the further development of the current or to any future geopolitical crisis

Delivering double digit revenue growth with diverse portfolio of growth vectors

Alexander Everke (CEO)

Outline

1. Strong growth and integration track record
2. Becoming the leader in optical solutions
3. Delivering double digit revenue growth
4. **Next steps in the ams OSRAM journey**

Becoming the uncontested leader in optical solutions as one company

2021-2022	2022-2023	2023-2024
Create one company	**Start leveraging strategic portfolio**	**Drive growth + profit targets**
• Execute business portfolio alignment • Implement common platforms to run business • Implement new organizational + culture model • Drive first year synergies (majority OPEX) • Define + complete joint solution roadmaps	• Disposals completed + portfolio in place • New revenue and growth base established • Drive second year synergies (OPEX + COGS) • Drive first gen joint solution developments • Full leverage of combined IP and resources	• Mid-term growth drivers kicking in • Longer-term growth vectors come into sight • Drive third year synergies (majority manufacturing/COGS) • Benefit from cross-sell opportunities

Note: Synergies refer to pre-tax run-rate gross synergies against original baseline

Key takeaways

- Track record of and unchanged commitment to growth
- Successfully executing on OSRAM acquisition and integration commitments, including disposals
- Top 3 optical semiconductor player today, uniquely covering the full optical value chain
- Expected to outgrow our market (8-10% CAGR) with revenue CAGR >10% 2021-26
- Broad and diversified set of growth drivers across all target markets and application segments
- Driving already balanced end-market and application mix with a diversified customer base

Innovation and Technology leadership

Thomas Stockmeier
Chief Technology Officer

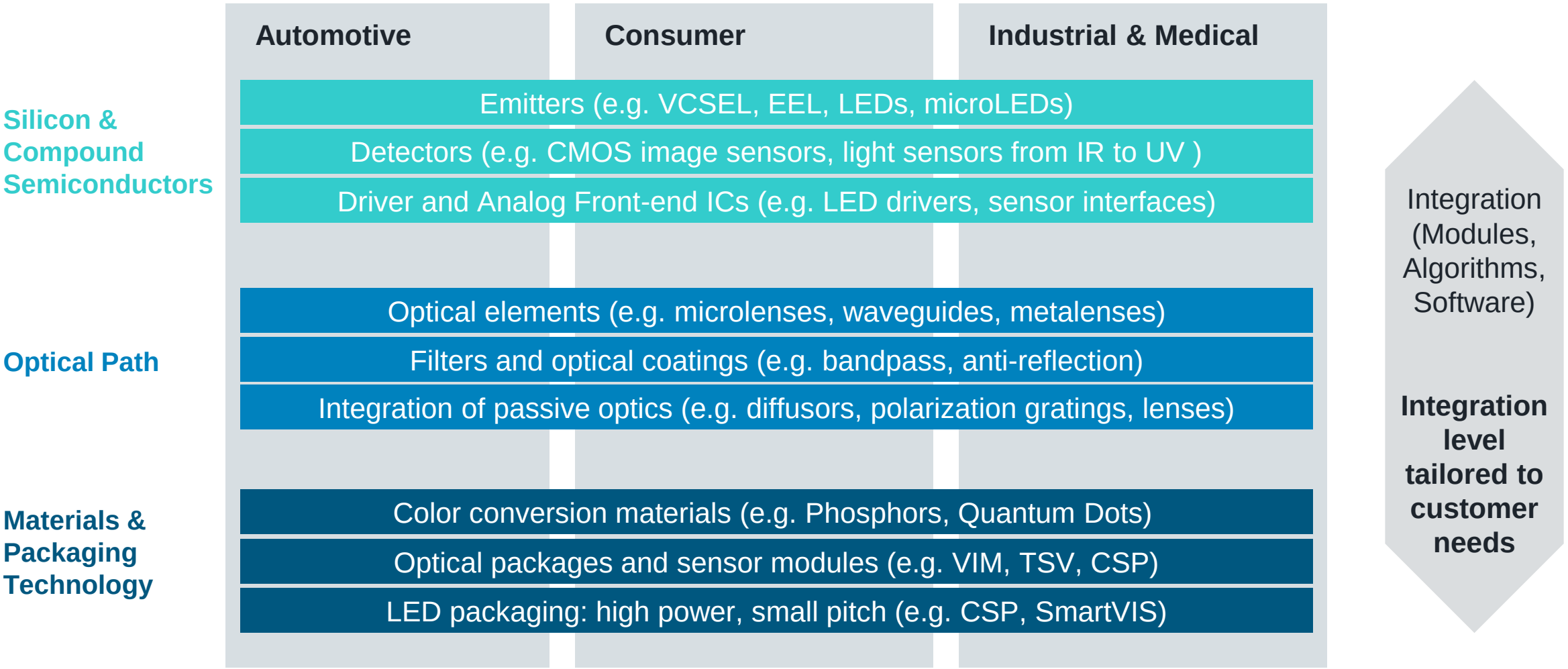
Innovation and Technology leadership

Thomas Stockmeier (CTO)

Outline

1. **Technology leadership in optical solution platforms for illumination, visualization, sensing**
2. Sustainable differentiation and leadership in LED
3. Uniquely positioned to capture microLED opportunity
4. Next generation technologies and solutions

Comprehensive portfolio of optical solution technology platforms for key markets

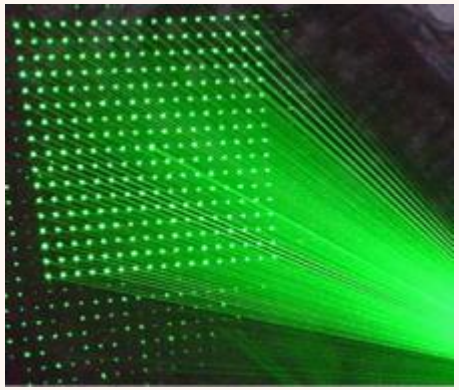


Optical path encompasses diversity of functions and components

Optical solutions

Emitter → Optical path → Detector

Light shaping



Enabling components

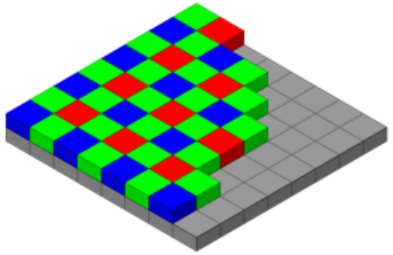
- Diffractive optics
- Micro-lenses
- Diffusors

Light transmission

- Prisms
- Mirrors
- Waveguides
  - Reflective
  - Diffractive
  - Holographic

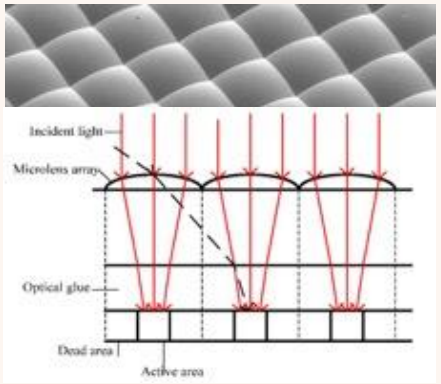
Light filtering

(spatial & spectral)



- Prisms
- Diffractive optics (e.g. gratings)
- Dielectric filters
- Absorption filters

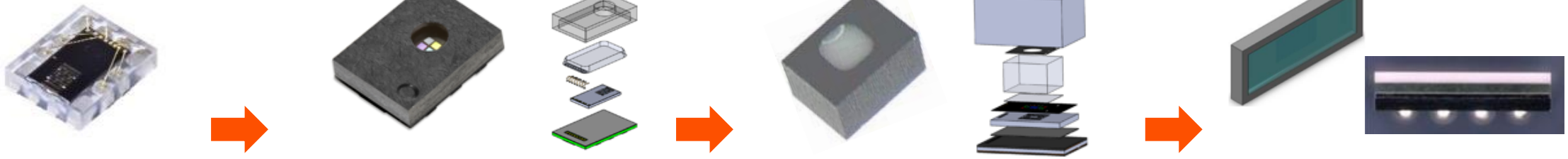
Light collection



- Diffractive optics
- Micro-lenses for imaging
- Other non-imaging optics

Core competence in complex very high volume micro-optical modules

Example: Light sensor system integration at package and wafer level



2017
Clear over-mold
Sensor bonded to lead frame
RGB sensor

2019
Clear over-mold, integrated aperture in cap
Sensor bonded to PCB substrate
Spectral sensor

2021
No air gap, integrated aperture and diffuser
Sensor bonded to PCB substrate
Spectral sensor + True Color

2022
No air gap, integrated diffuser
No aperture, Wafer level
Extremely low z-height

Significant integration driving performance increase, cost of ownership reduction, strong content increase

Key technologies in latest generation

- TSV on 8-inch wafer eliminating wire bonding
- Electrostatic shielding with transparent conductive layer (ITO - Indium Tin Oxide)
- High performance interference filters with very wide field-of-view
- Diffuser deposited directly on chip without air-gap
- Ambient Light Sensing (ALS) behind active OLED display, optimized by machine learning algorithms

Core competence in complex very high volume micro-optical modules

Example: Microcamera modules based on in-house imaging, sensing and optics components, realizing smallest high performing sensing module

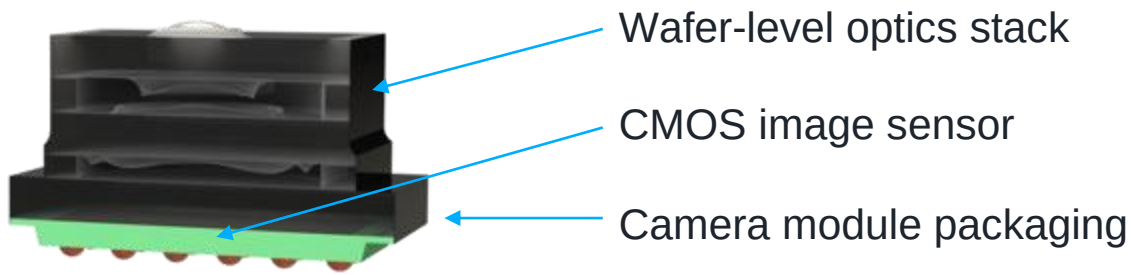
Image sensors

- Global shutter sensors: Leading performance
- Multi-sensor platform development
  - Fusion of global & rolling shutter
  - Event-based image sensors

Imaging & projection optics

- Small footprint, low z-height, optimized form factor, re-flowable
- Wafer-level manufacturing & assembly processes
- Meta-surfaces: More functions, further form factor reduction

Complete micro camera module
(2.3 x 2.8 x 2.0 mm)



Microcamera modules for AR/VR or medical endoscopy applications

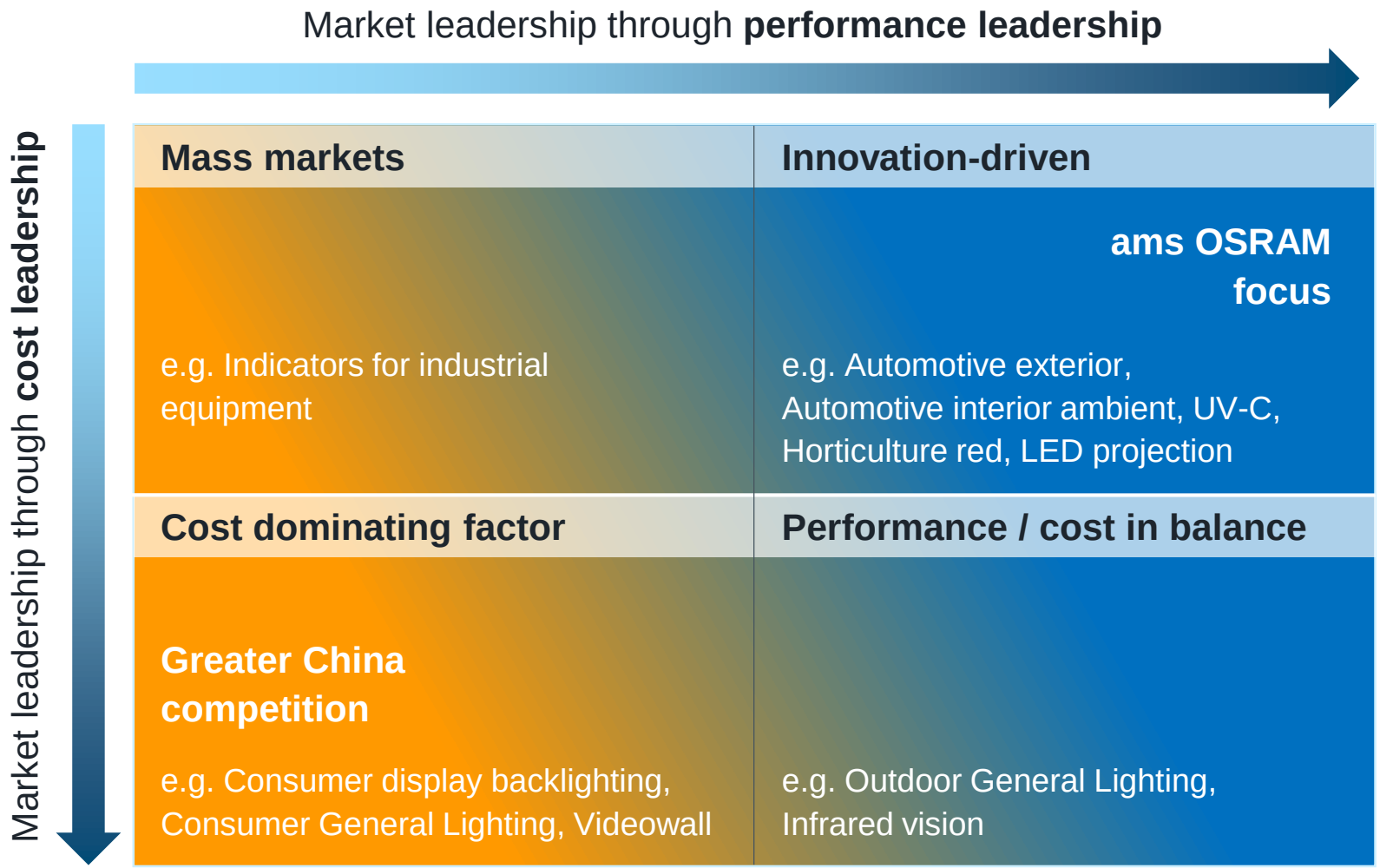
Innovation and Technology leadership

Thomas Stockmeier (CTO)

Outline

1. Technology leadership in optical solution platforms for illumination, visualization, sensing
2. **Sustainable differentiation and leadership in LED**
3. Uniquely positioned to capture microLED opportunity
4. Next generation technologies and solutions

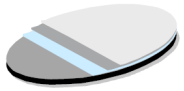
Focused on innovation and performance driven segments



- Strategic focus on innovation-driven LED market segments
- Continuously pushing frontier of performance and quality requirements

LED technology platforms

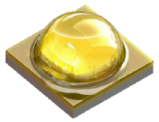
	Automotive	Consumer	Industrial & Medical
Material systems	AlInGaN (UV, blue and green)		
	InGaAlP (yellow, red and near infrared)		
	AlGaAs (near infrared)		
Chip technology	UX:3 & ThinFilm (Surface emitters)		
	Sapphire (Volume emitter)		
	Laser (Edge emitter and VCSEL)		
	microLED		
Materials & Conversion	Conversion Materials (Phosphors, Quantum dots)		
	Matrix Materials (Polymers, Encapsulants)		
Optical packages	Broad portfolio of LED packages		



EPI wafer

LED Die

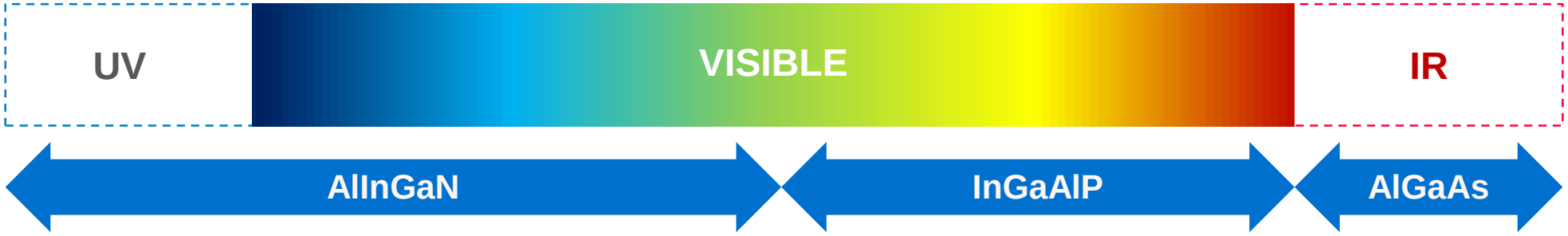
Conversion layer



LED package

Broadest emitter and package portfolio in the industry for perfect application fit

LED Chips across full light spectrum

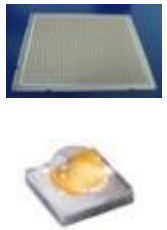
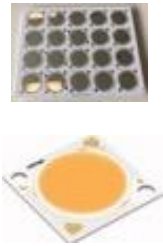
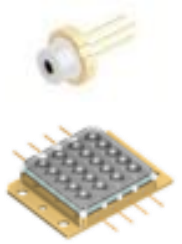
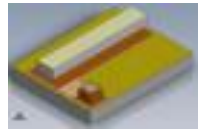


All technologies in chip sizes from 180µ-2mm

All technologies in chip sizes from 180µ-2mm

Optimized for Biometrics up to Security

Broad and differentiating LED package portfolio

Premold	QFN	Ceramic	Bare Lead frame	PCB	Metal Core Board	Metal Can	Filament	Coherent Optical Sub-assembly
								

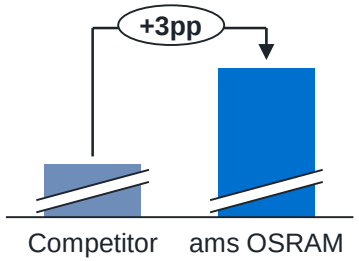
LED technology platform highlights

Epitaxy & Chip

Performance leadership in Hyper-Red devices

Product concept

% Wall-plug efficiency for Horticulture

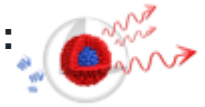


Highlights

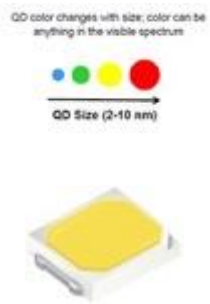
- Performance leadership of Hyper-Red device for horticulture lighting
- InGaAlP Epi and chip performance - market benchmark for competitors

Materials & Conversion

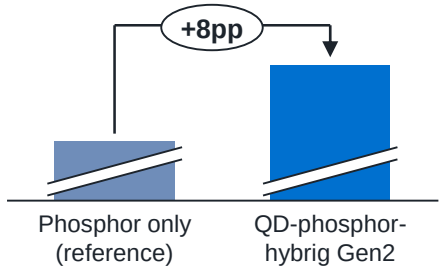
Premium lighting redefined: New Quantum Dot LED



Product concept



Relative performance



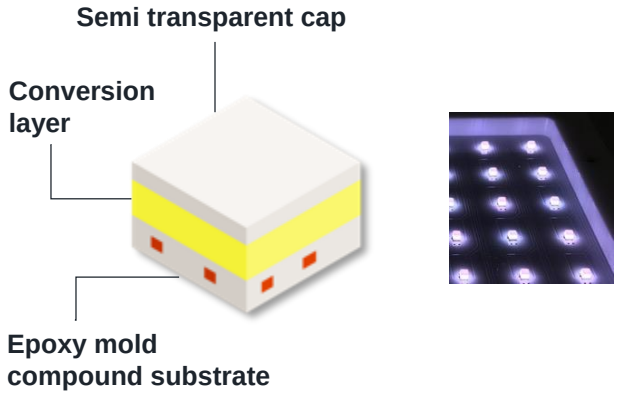
Highlights

- QD-phosphor hybrid solution enabling improved performance at high color quality
- Unique encapsulation – the only QDs in the world suitable for direct on-chip operation
- Award winning technology: High color quality + high efficacy

Packaging

360° SIDELED for Direct Backlighting

Product concept



Highlights

- 360° direct backlight optimized side emission enabling highest homogeneity
- Package level conversion w/o remote sheet, no color-over angle effects
- Automotive qualified EMC package providing highest stability & lifetime

Innovation and Technology leadership

Thomas Stockmeier (CTO)

Outline

1. Technology leadership in optical solution platforms for illumination, visualization, sensing
2. Sustainable differentiation and leadership in LED
3. **Uniquely positioned to capture microLED opportunity**
4. Next generation technologies and solutions

Focusing on smallest microLED dimensions with high volume applications

Chip size

Traditional LED | miniLED | microLED

>300µm | >100µm | 50 µm | 30 µm | 10 µm | 5 µm | 1 µm

→ **Strongly increasing technological challenge** →

Applications

Streetlighting

Videowall

Smartwatch

Smartphone

AR/VR microdisplay

Displays:

Direct backlight

Luxury TV

4k TV 8k TV

Automotive:

Headlamp

Rear light

External displays

Door display

Dashboard

2021 "microLED" products are actually based on miniLED

microLED demo products shown

ams OSRAM microLED focus

ams OSRAM

MicroLED will revolutionize future display generations

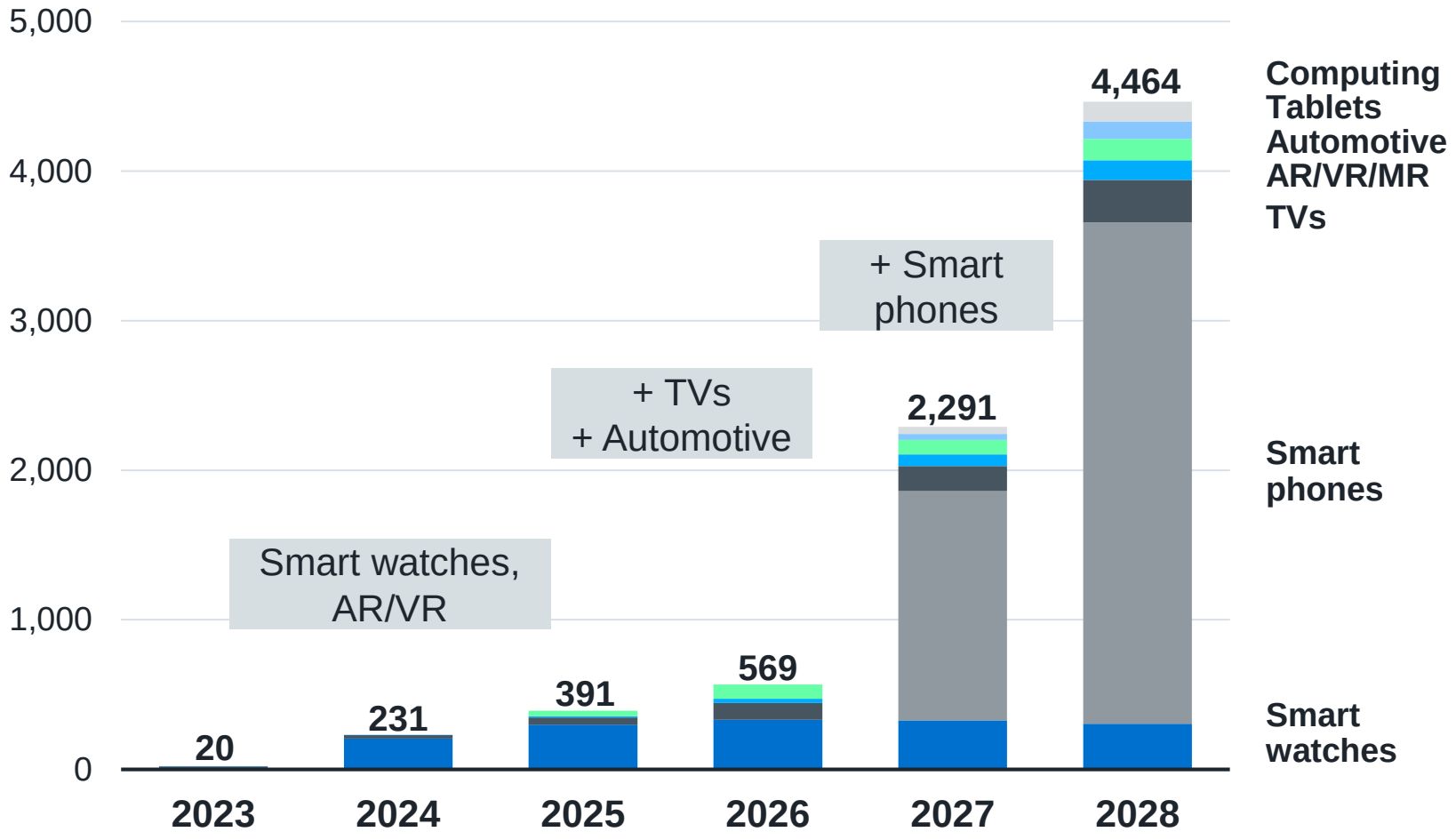
	LCD	OLED	microLED
Energy efficiency			**x2**
High pixel density		x6	**x9**
Brightness	x2		**x50**
Contrast		x10-x100	**x100+**
Broad viewing angle	Poor	Good	**Best**
Refresh rate	Poor	Good	**Best**
Operating temperature	x1.2		**x1.9**
Sensors in display	Difficult	Difficult	**Easiest**

Key challenge for microLED is maturing the technology and driving down cost per display

Source: MicroLED Displays: Market, Industry and Technology Trends report, Yole Développement, 2021

Market analyst expectation for microLED market starting from 2024

M$



Yole Développement key assumptions:

- Smart watch and mobile penetration largest growth drivers
- AR/VR/MR penetration reaches 33% by 2028 with a broader customer base
- Smart phone adoption will require 8” production to reach required yields and manufacturing cost
- Smart watches and phones will represent ~80% of the market in the 2024-2028 period

Assumptions: (1) Yole Développement’s micro-LED agressive adoption scenario (units) and 6” wafer volumes & prices per processed wafer (2) Adapted for 8” production (own estimates)
Source: MicroLED Displays: Market, Industry and Technology Trends report, Yole Développement, 2021

Focus on providing processed microLED wafers to display assemblers

EPI wafers → **MicroLED processed wafers**

ams OSRAM

Driver ICs

- Driver ICs produced in CMOS foundries

Backplanes

- Thin film transistor circuits on large glass substrates

Display assembly, test & repair

- Mass die transfer to TFT backplane and bonding
- Post-assembly inspection & testing and repair
- Optical color converter deposition and patterning

Display modules

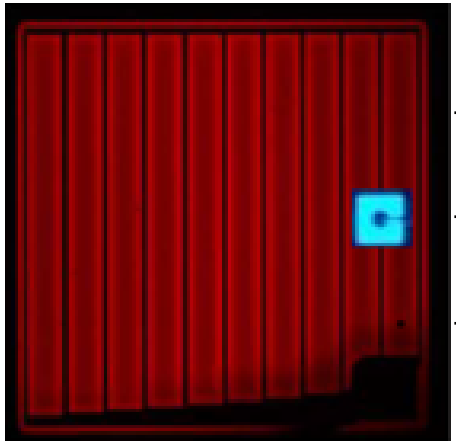
- Driver bonding
- Flat panel/module assembly
- Additional optical films
- Display inspection on key features
- Tiling (for large displays)

- Panel suppliers no longer vertically integrated as for LCD/OLED (2B-6B$ capex per fab)
- Different potential setups for microLED display supply chain:
  - Consumer OEMs with microLED makers & OSAT/EMS
  - LCD/OLED panel makers with microLED foundry partners

Source: Based on MicroLED Displays: Market, Industry and Technology Trends report, Yole Développement, 2021

MicroLED size comparison

LEDs size comparison

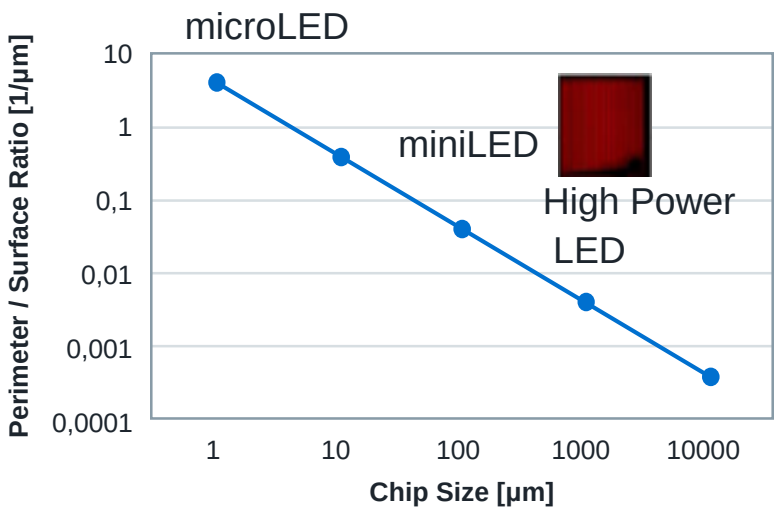


Technology	Dimension
High Power	1,000 µm
miniLED	130 µm
microLED	10 µm

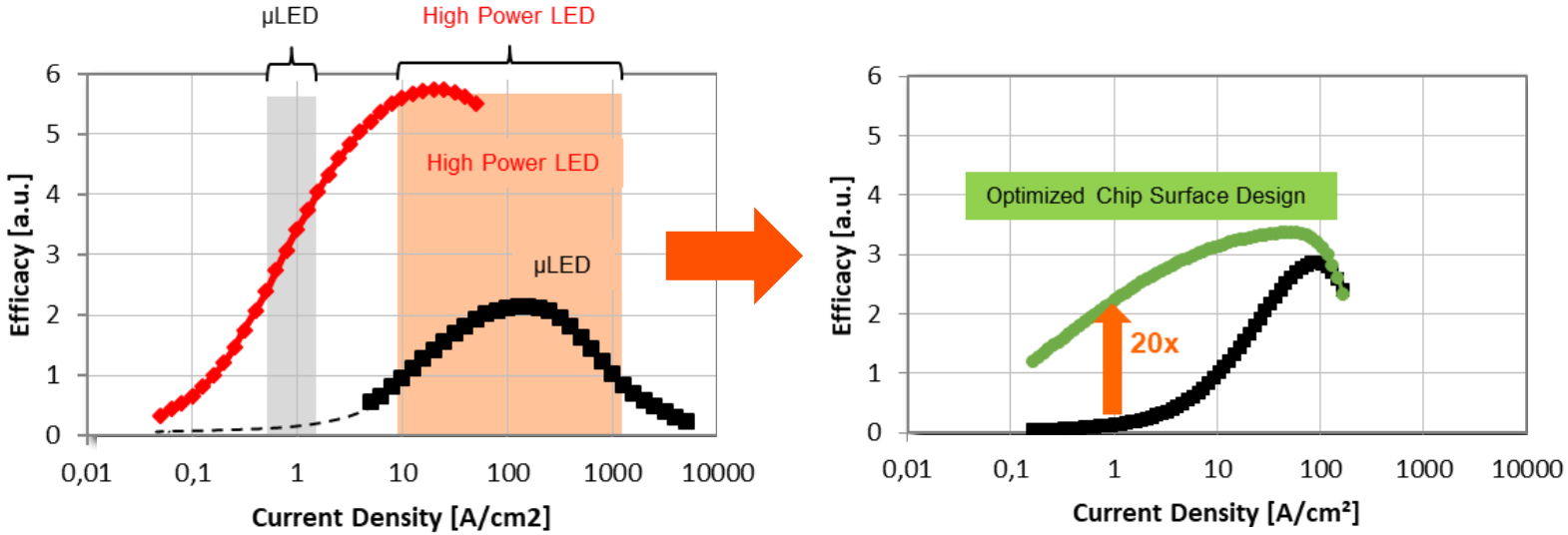
~4 million 10µm microLEDs fit on a 1€ coin

MicroLED technology poses particular challenges that ams OSRAM is solving

Small chip = large perimeter



Large perimeter to surface ratio reduces light generation significantly, solved via optimized chip design



Other challenges

- Environmental protection of chip on nanoscale needed
- Defects and particles are about the same size as a microLED
- Reliability over lifetime

ams OSRAM

New manufacturing infrastructure need for microLEDs <10-15 µm

Traditional LED fabs cannot be used for producing miniature scale microLEDs

Traditional LED/miniLED/larger microLED

”Discretes-like” manufacturing

- 4/6” wafers
- Proximity mask aligners
- Class 10,000+ clean room
- End-of-line metrology & inspection
- Limited advanced process control tools
- Limited automation

High performance microLED < 10-15 µm

”Semiconductor-like” manufacturing

- 8” wafers
- Stepper lithography
- Class 100 with class 10 areas
- In-line metrology and testing
- Close, real-time monitoring of tools and process excursions
- Full automation and SMIF boxes

Source: Based on MicroLED Displays: Market, Industry and Technology Trends report, Yole Développement, 2021

Best positioned to become leading player in microLED market

Selection criteria		ams OSRAM	
Die performance	Blue/green (GaN)	Top 3	Customers prefer to receive all three colors from one supplier
	Red (InGaAlP)	Best-in-class	
Production	Wafer size	8”	Expected to be the only scale 8” LED facility ramping from 2024
	Capacity	Scale 8” LED facility	
	Location	Malaysia (low cost)	High level of 8” automation drives quality, yield and reliability, and further reduces labor cost
	Quality/reliability	Top 3	
IP	Know-how	Top 3	Know How / IP is key to OEMs
	IP	Strong player	
Geopolitical risk	Location	EU/Malaysia	

Source: ams OSRAM internal market model and internal research

Innovation and Technology leadership

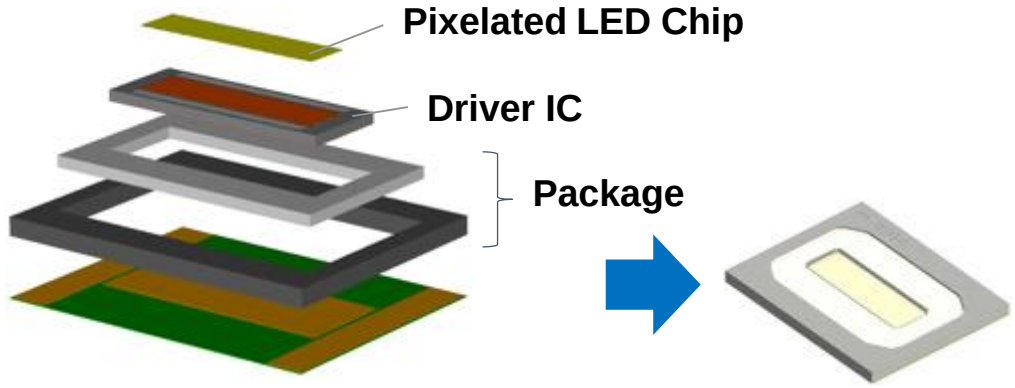
Thomas Stockmeier (CTO)

Outline

1. Technology leadership in optical solution platforms for illumination, visualization, sensing
2. Sustainable differentiation and leadership in LED
3. Uniquely positioned to capture microLED opportunity
4. **Next generation technologies and solutions**

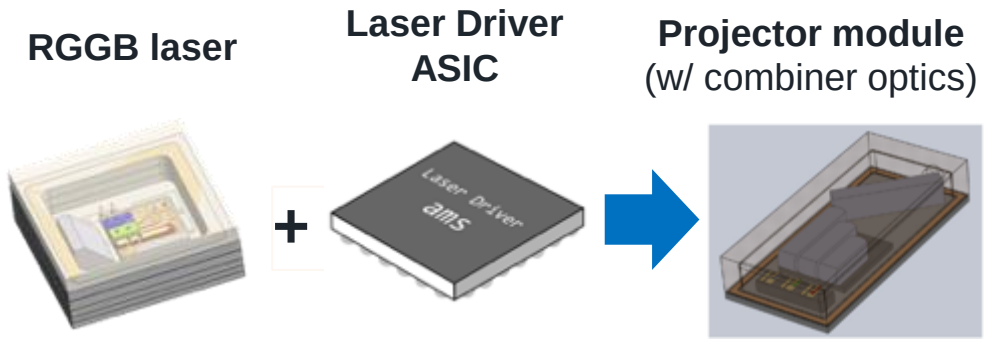
Solutions combining light source, optics, detectors and driver ICs

Pixelated Automotive Front Lighting



- Pixelated LEDs with ~25,000 light points directly mounted on driver IC
- ams OSRAM is uniquely positioned
  - Very small vertical emitting LEDs
  - Direct die attach to driver IC for IC/LED integration
  - System know-how

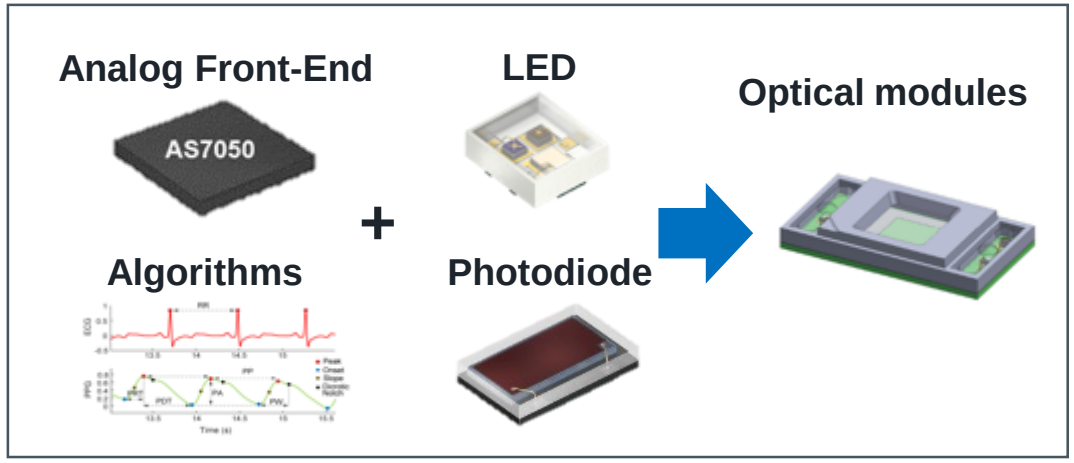
AR laser beam scanner visualization module



- Edge Emitting Lasers with prism, mounted in a ceramic package together with driver IC
- ams OSRAM is uniquely positioned
  - Leading multi-ridge EELs
  - Driver IC design capabilities
  - In-house optical components and module assembly
  - System know-how

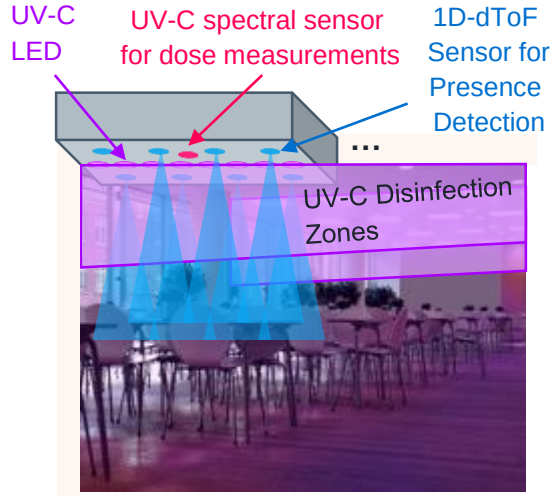
Solutions combining light source, optics, detectors and driver ICs

Integrated Vital Signs Monitoring Module

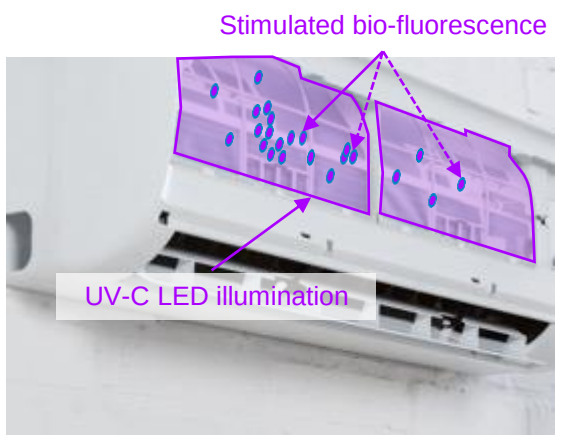


- Optical module integrating light source, receiver and driver & signal processing IC in miniaturized module
- ams OSRAM is uniquely positioned
  - Leader in individual components, only player with all in-house
  - High-volume optical module assembly capability
  - Reference designs including system-level algorithm support

Adaptive UV-C LED disinfection



UV-C disinfection segments



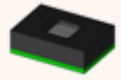
UV-C based
filter contamination testing

- UV-C LED

OSLON® UV
3636 / 6060

+

- UV-C sensor
- 1D dToF presence detection



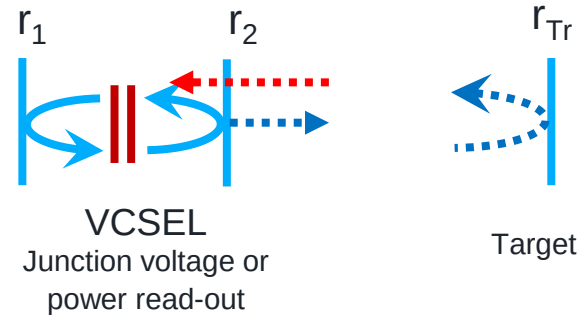
AS7331
UV Sensor

TMF882x
Multi-zone

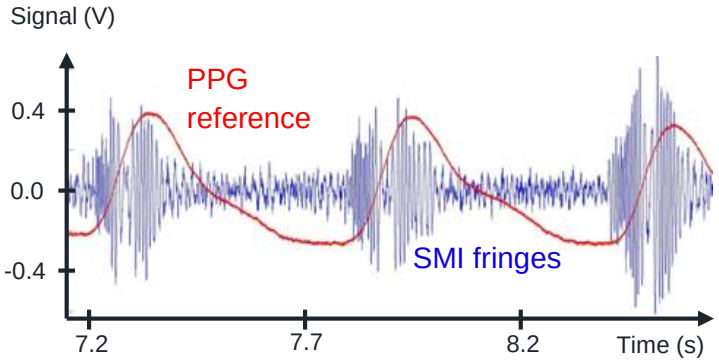
Self-mixing interferometer (SMI) sensing

Concept	• Use the VCSEL itself as sensor: measure changes in VCSEL properties induced by reflection of light into the VCSEL
Capabilities	• Expertise in SMI-optimized VCSEL • Leading expertise in optics & packaging, signal processing and in-depth application know-how
Applications	• **Optical microphones**: high SNR with small form factor, enable directional microphones • **Miniature rotary encoders**: higher precision for wider measurement range and faster data processing • **SMI imager**: richer data (4D predictive perception), longer range and no background light interference • **Vital Signs Monitor**: blood flow measurements for improved PPG, blood pressure, cardiovascular risk analysis

Self-mixing laser diode



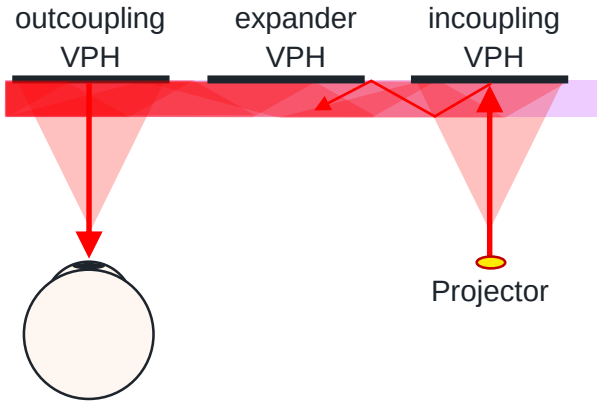
Heart rate proven in steady state (without motion)



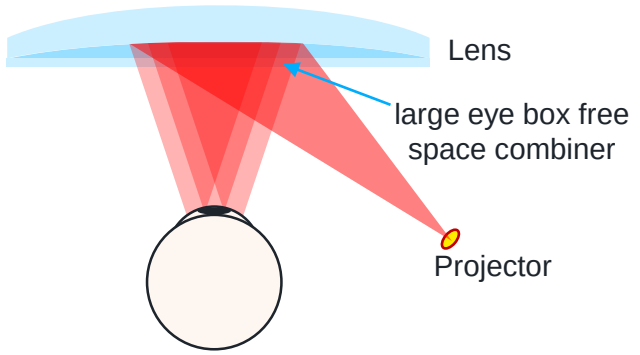
Volume phase holograms for AR device combiners

Concept	• Volume phase holograms (VPHs) increase efficiency of combiners in smart glass displays by 5x to 50x • Replacing existing grating solutions, solving biggest hurdle on path to consumer devices
Capabilities	• Design and manufacturing expertise of high efficiency, complex VPHs for disruptive combiner solutions: RGB & NIR, transmissive & reflective, multiplexed
Applications	• AR glasses: all-day wearable smart glasses with small form factor and cinematic image quality • Eye tracking solutions: high-speed, compact & non-obtrusive, low power consuming

Waveguide based combiner

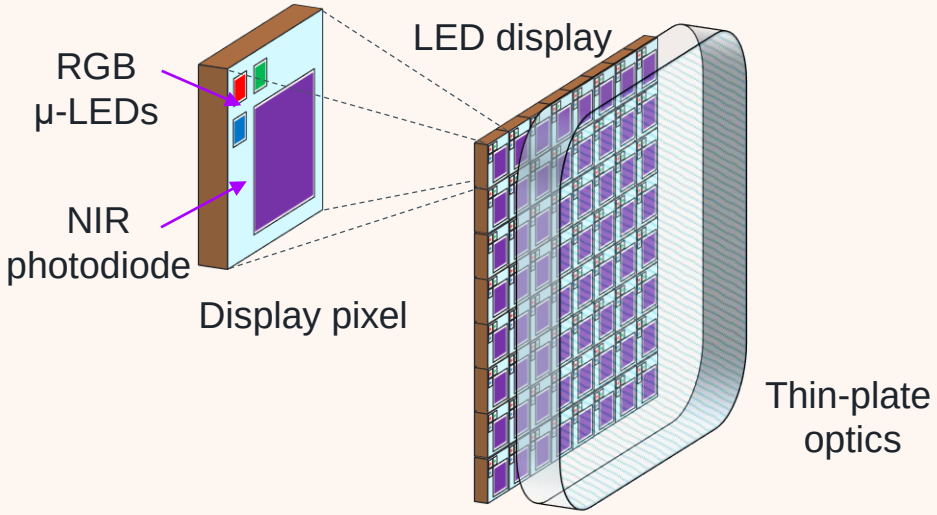


Free space combiner



Sensor / display integration with lensless imaging

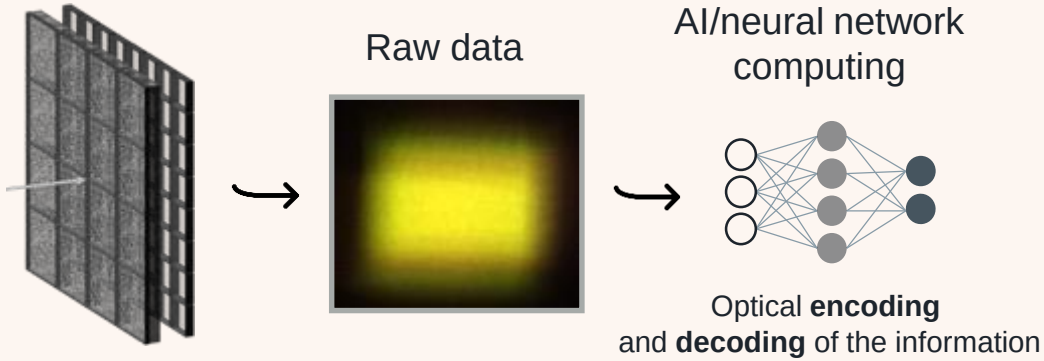
microLED display with integrated sensing



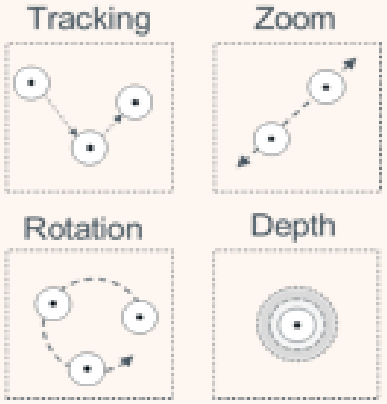
- LED and optical sensors integrated on the same plane
- Enabling displays with integrated functionalities
  - Display management (ALS, proximity)
  - Gesture / HMI
  - Face recognition / 3D sensing
  - Speed and distance measurements

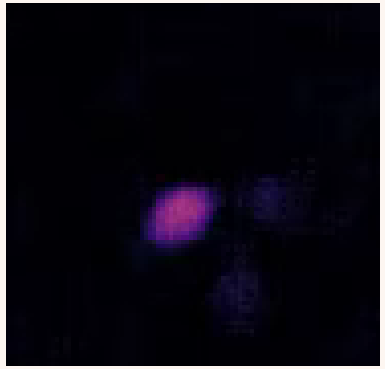
Potential functionality: finger tracking

Thin plate optics for coded aperture sensing (computational imaging)



Optical **encoding** and **decoding** of the information





Key takeaways

Thomas Stockmeier (CTO)

- Wide and deep technology portfolio from light source, optical path and package to IC and software/algorithms, enabling differentiated products and integrated solutions across the value chain

- Market-leading LED technology focused on highest performance in epi, chip, light conversion and package enables products for most demanding applications

- ams OSRAM is best positioned to capture the microLED opportunity
  - MicroLED as the next disruption in display technology
  - Technological challenges for highly performing LEDs <10µm being solved
  - Clear industrialization path for volume applications

- Combination of both companies‘ capabilities and IP provides unique source for disruptive innovation to serve the megatrends of our markets

Integration, synergies, manufacturing and portfolio management

Mark Hamersma

Chief Business Development Officer

Mike Lusk

Executive Vice President Semiconductor Operations

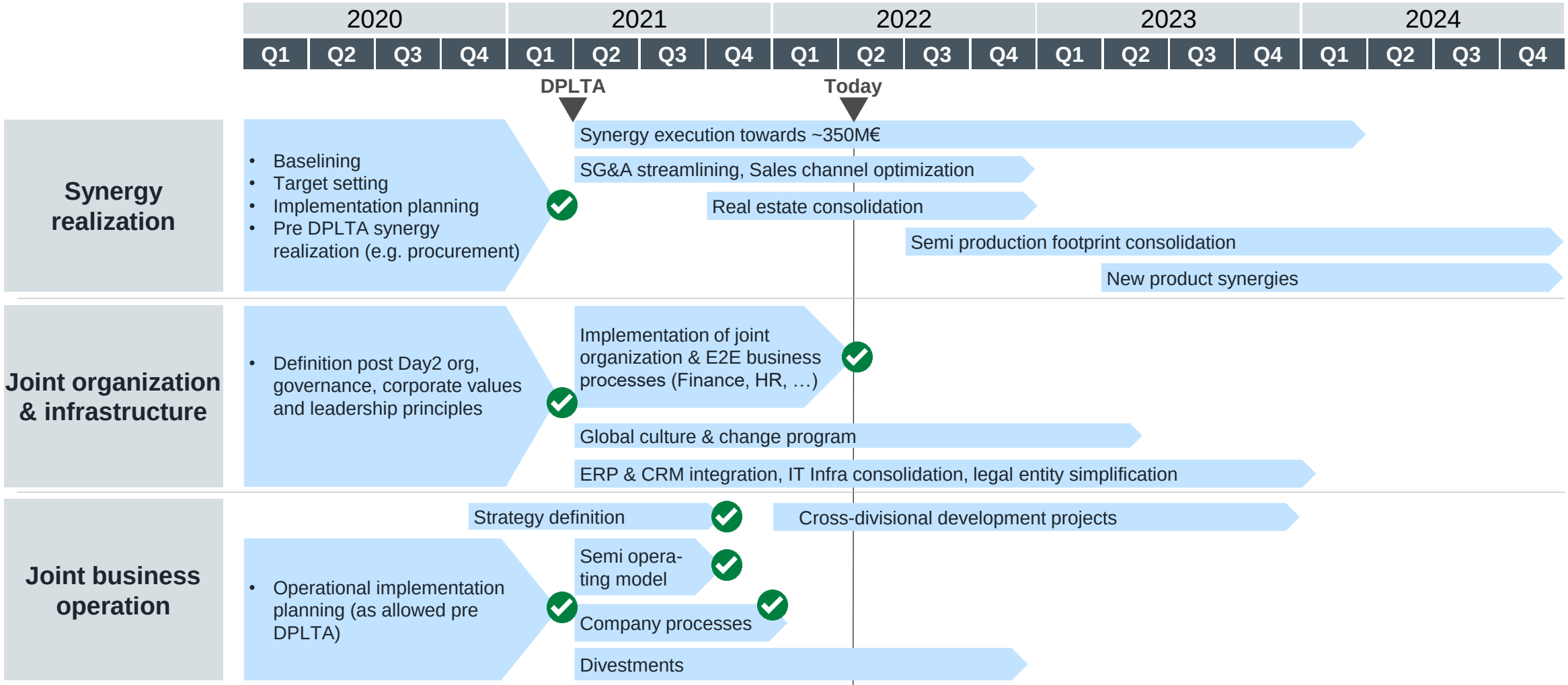
Integration, synergies, manufacturing and portfolio management

Mark Hamersma (CBO), Mike Lusk (EVP Semi Operations)

Outline

1. **Update on integration & synergy creation**
2. Manufacturing strategy & footprint optimization
3. Portfolio management approach, M&A strategy and current divestments

High-level post-merger integration timeline 2020-2024



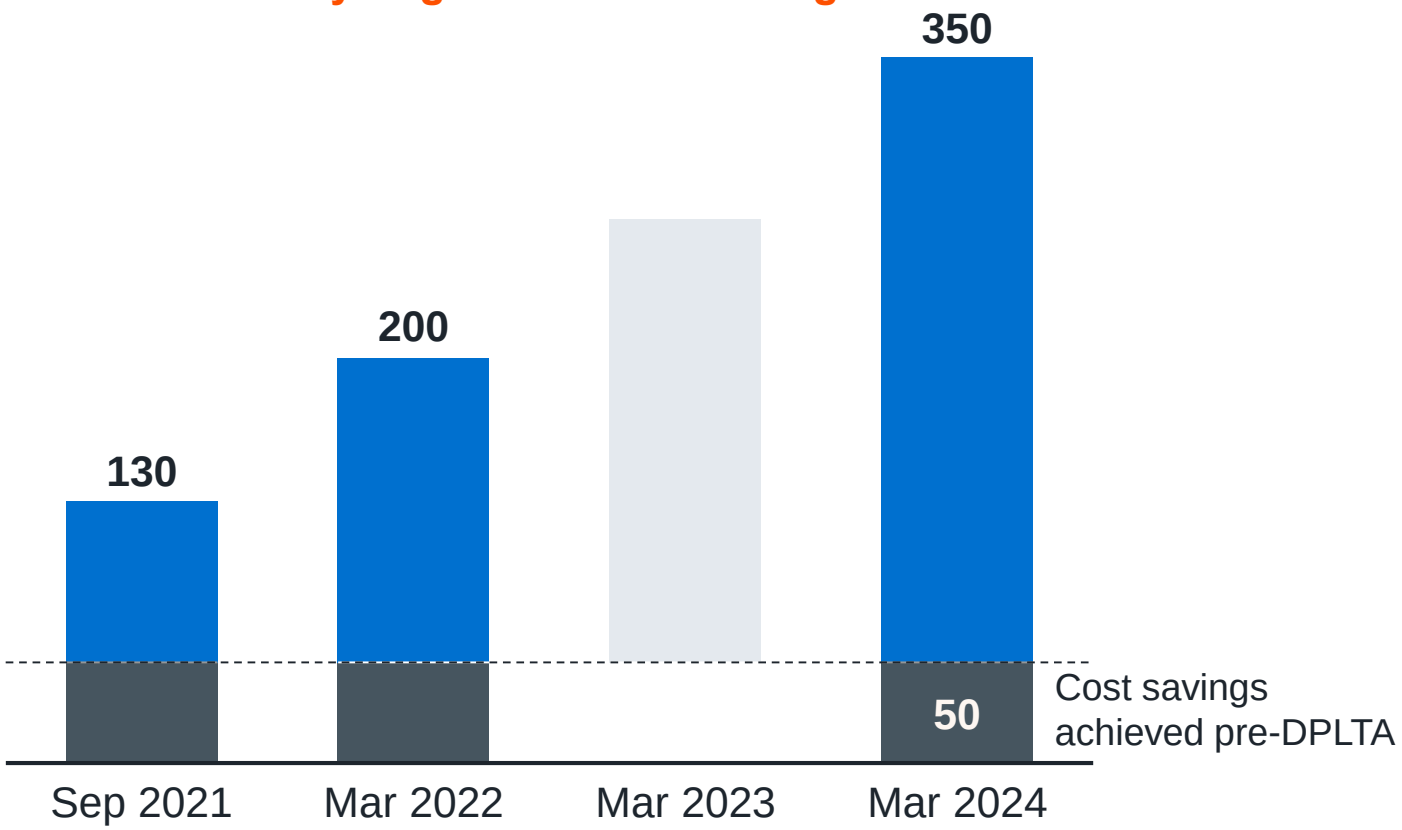
- Tracking >2,000 initiatives in state-of-the-art workflow tool
- All essential business operation integration completed, large-scale IT infrastructure and legal entity consolidation on track
- Increased focused on synergy / savings execution towards ~350M€ target

Note: Synergies refer to pre-tax run-rate gross synergies against original baseline

Synergy realization at lower cost

M€

~350M€ total synergies and cost savings



Key aspects

- Synergy run-rate in 1Q22 increased to 150M€ + 50M€ (pre-DPLTA cost savings) = 200M€
- Initial synergies more OPEX, procurement and manufacturing overhead-related
- Key drivers
  - Headcount measures
  - Joint procurement initiatives
  - Reduction of SG&A costs
- >70% of total integration synergies expected within first two years of control
- Latest view estimate of cost to realize synergies is ~270M€

All figures in M€; synergy values approximate figures

Graphic representation of expected annual pre-tax run-rate gross synergies of 300M€ p.a. against original baseline gradually ramping up over approx. three years after DPLTA effective date

Synergy measures implemented as of Q1 2022

	Synergy measures implemented	Synergy measures still to come
R&D (pre-DPLTA)	• Discontinued centralized innovation spend • Stopped low margin General Lighting	
SG&A	• >80% of FTE reductions being realized for most overhead functions • Sales force overlaps addressed • MarCom spend streamlined	• ERP consolidation (7→2) and IT application & infrastructure rationalization • Billing consolation, legal entity reduction (-50%) • Related F&A and IT synergies (remaining ~60% and ~50%, respectively) • Office space consolidation
COGS	• ~75% of materials procurement synergies and fab overhead & efficiency • Synergies in Quality • ~50% of IP synergies • Stopped low margin General Lighting	• Semis footprint consolidated and related indirect and direct labor productivity improvements • Asset utilization driven by new products • Remaining procurement, fab overhead & efficiency and IP synergies
Revenues	• Leverage in distribution set-up (pricing, consolidation, channel optimization) • Cross selling of existing products	• Synergies from new product developments

Note: Synergies refer to pre-tax run-rate gross synergies against original baseline

Integration, synergies, manufacturing and portfolio management

Mark Hamersma (CBO), Mike Lusk (EVP Semi Operations)

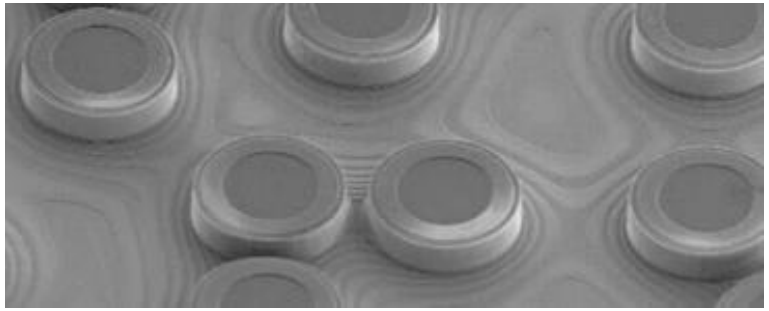
Outline

1. Update on integration & synergy creation
2. **Manufacturing strategy & footprint optimization**
3. Portfolio management approach, M&A strategy and current divestments

Summary semiconductor operations

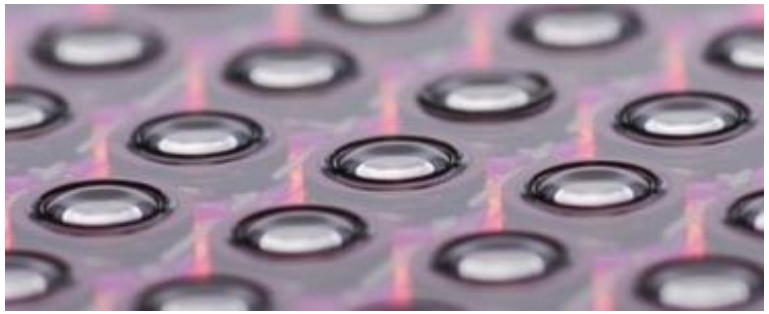
- Focus in-house manufacturing on differentiating processes and supply flexibility
- Continuous improvement programs to compensate ASP erosion, manufacturing cost increases, and provide capacity for additional business
- Key initiatives defined to address and improve pockets of underutilization
- Pursuing ~190M€ COGS savings from synergies and further footprint optimization
  - ~120M€ COGS synergies from combining ams OSRAM semis operations: eliminating manufacturing footprint and overhead overlaps, portfolio focusing, efficiency improvements, best practice sharing and purchasing synergies
  - ~70M€ from further Semis manufacturing footprint optimization on top of synergies
- Investing across 2022/2023 to establish a scale 8” LED production capability in Kulim that is expected to start ramping in 2024 and able to produce both high-power LEDs and microLEDs

Focus in-house manufacturing on differentiating processes



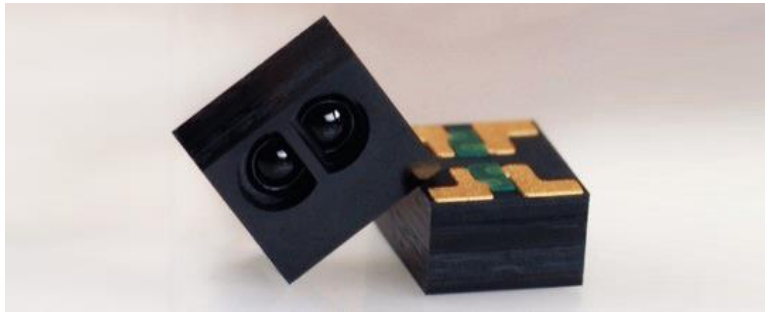
Wafer manufacturing

- III-V EPI and wafer production on 4/6/8” (InGaAlP/ AlInGaN/ AlGaAs)
- High-power visible and IR & UV-C invisible light LEDs and lasers
- Blue, green and red microLEDs
- Application-specific ICs in specialty CMOS processes ≥180nm



Wafer post-processing

- Phosphors and quantum dots
- Wafer Level Optics
- Color / Interference filters
- Optical coatings
- Open tube Through Silicon Via (TSV)



Assembly, calibration and test

- LED & Laser packaging
- Wafer-level sensor module manufacturing
- Micro-optical module assembly
- Optical testing
- Sensor calibration and testing

- **Differentiating process technologies**
- **Lack of viable commercial sources**
- **Avoidance of uncompetitive margin stacking**

Different types of manufacturing capacity with differing needs and focus areas

ams OSRAM business split

	Key sites Frontend	Key sites Assembly & test	Investment & Operational Focus
Optical Comp. & Modules	• Singapore	• Singapore	• Increase utilization • New products & technology invest
ICs	• Premstaetten • Foundries (external)	• Calamba • OSATs (external)	• Increase make-or-buy flexibility
Emitters (LED, microLED, lasers)	• Regensburg • Kulim	• Penang • Wuxi • OSATs (external)	• Expand for future growth needs (8“ LED, microLED, etc.) • Load and site optimization
Lamps & Systems		• Various in-house	• Maintenance • Cost efficiency

Capex commitments typically up to 24 months ahead of volume growth

Continuous improvement to mitigate ASP erosion and material cost increases

Example programs and achievements last 2-3 years

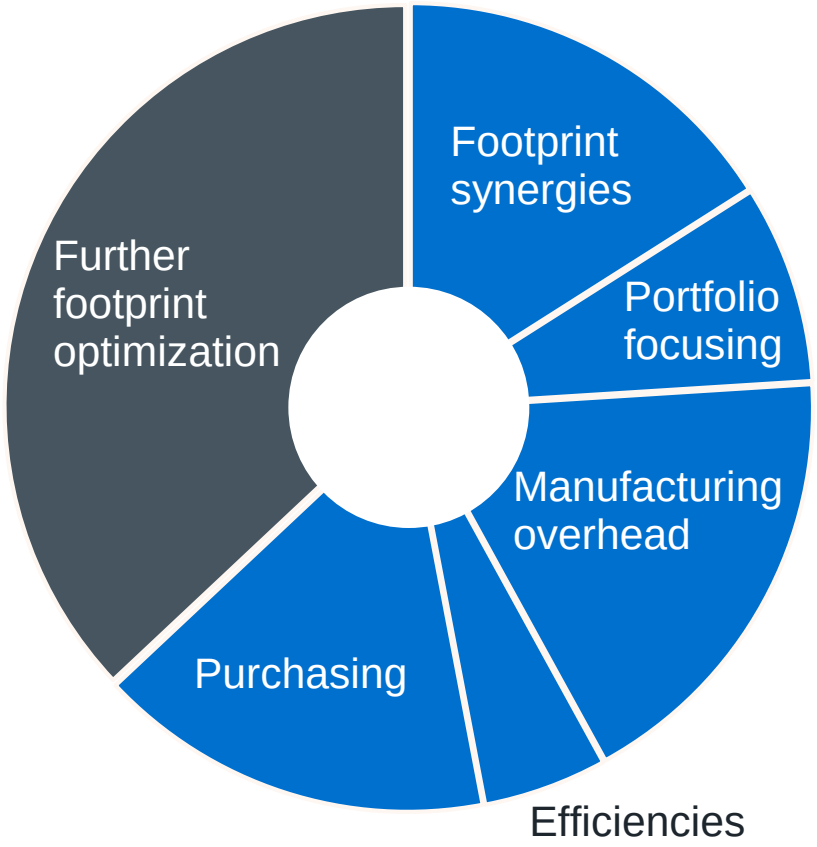
Regensburg, Malaysia, Wuxi	• Yield/Non-Conformance-Costs reduction of >25% in 2020/21 • Reduced front-end headcount by 7% while increasing fab moves by >65% • Flat back-end headcount while increasing value output by >35% • Significant cycle time improvements of up to 50% in the last 3 years in BE/FE • Annual purchasing cost reductions of 4.9%
Singapore	• Yield/Non-Conformance-Costs reduction of >20% per year in 2020/21 • Improved front-end moves per facility by 50-60% per year in 2020/21 • Increased front-end direct labor productivity by >80% • Increased back-end direct labor productivity by >55% • Annual purchasing cost reductions of 5.7%
Premstaetten	• Yield/Non-Conformance-Costs reduction of >20% in 2020/21 • Reduced front-end direct labor by 10% while increasing fab output by >30% • Reduction of indirect labor cost by 8% while increasing fab moves by 35% • Increase of fab capacity by >10% with existing tool park • Cycle-time improvement by >25% and increasing CLIP to >95%

Key initiatives to address pockets of underutilization

Singapore	• Move Woodlands production to AMK and close site • Transfer VCSEL production to Regensburg • Consolidate optical filter production in Premstaetten • Win additional large optical module and component programs – Re-uses existing excess capacity – Requires additional process steps that use the higher grade Tampines clean rooms
Premstaetten	• Product mix and Covid-19 effects drove temporary underutilization • Growing Industrial & Medical business fills existing capacity in 2022 • Expansion (+10%) for c18 processes drives better cost and loading balance with outsourced foundries
Test	• Continue to consolidate test in Calamba moving Foundry test from Singapore and bulk of CMOS test from Austria
Other semi	• Regensburg, Kulim and Penang well loaded and expanding capacity by addressing bottlenecks

Well underway to capture COGS synergies and further OPS footprint optimization

190M€ total COGS savings targeted



- COGS synergies 40% of total 300M€ synergy target = 120M€
- Actions implemented by 1Q22 expected to enable ~70% run-rate of total COGS synergies
- Semis manufacturing footprint strategy identified further footprint optimization opportunities with targeted annual savings of 70M€ to be realized after 1Q24

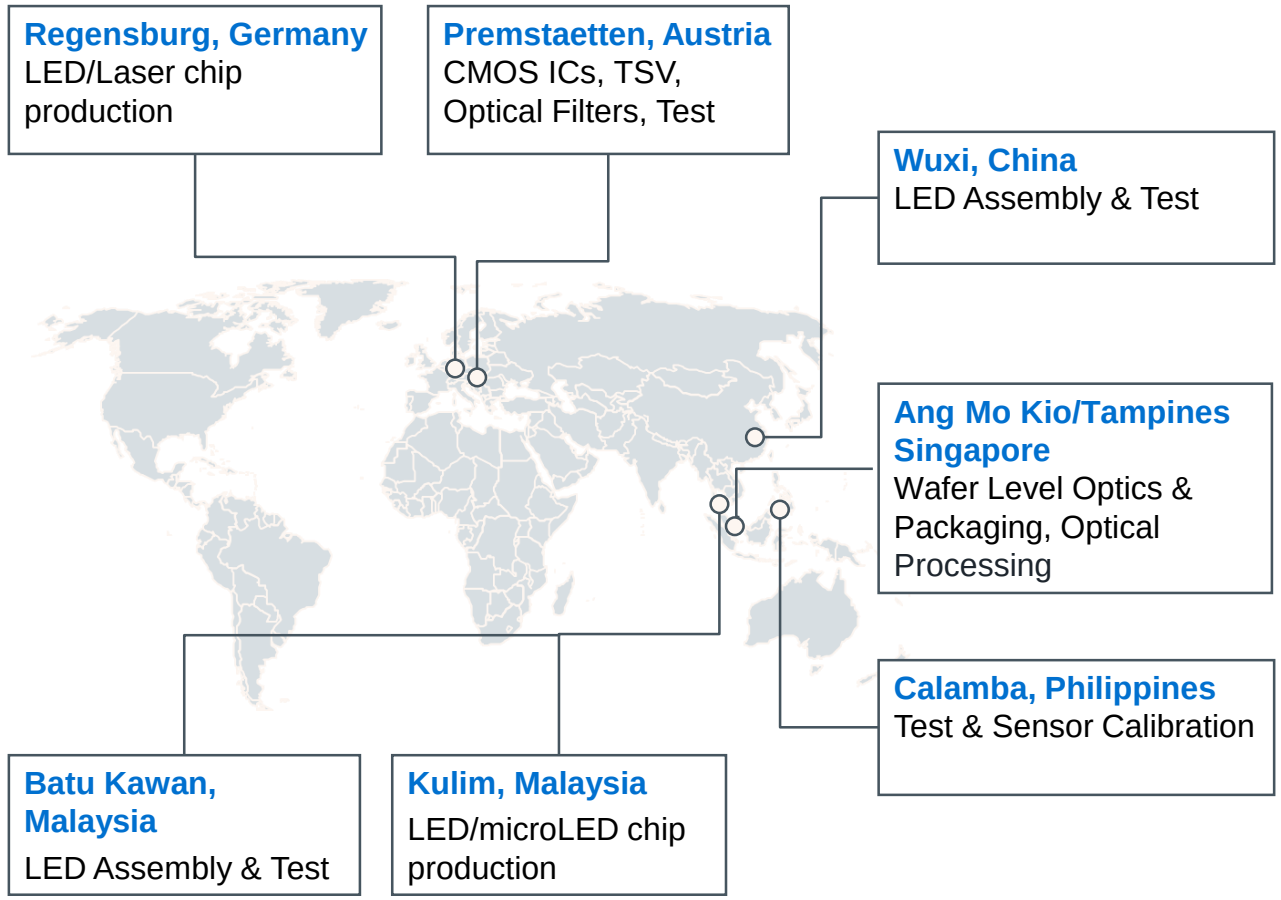
COGS synergies Further footprint optimization

Semis manufacturing footprint consolidation and optimization

Key footprint changes

- Close 2 complete sites (Woodlands, Penang) and add 1 new low-cost site (Batu Kawan)
  - Consolidate Singapore manufacturing in two sites by closing Woodlands
  - Consolidate dispersed, aged Malaysia LED assembly (12 buildings) into new Batu Kawan facility (1 building) with optimized layout
- Move VCSEL production to Regensburg and consolidate Optical Filters in Premstaetten to capture manufacturing economies
- Consolidate OSAT landscape by 35%
- Add new 8” front-end capacity/facility in Kulim to support future LED and microLED demand
- Add c18 CMOS capability in Austria to increase make-or-buy flexibility

Our key FE/BE manufacturing sites* after implementation (2026)



* Excludes small materials production sites for phosphors, platelets, etc.

Expected impact of the manufacturing footprint changes

Productivity and margin improvements

- Supports expected >2x volume growth for 2026 horizon
- Productivity per capita increase in indirect labor of >30%
- ~100M€ expected annual cost savings (~30M€ footprint synergies, ~70M€ further footprint optimization)
- Gross margin expansion
  - At-scale facilities with optimized production flows
  - Shift from 4/6” to mainly 6/8” LED production
  - Significant mix shift to low-cost countries while maintaining strong Europe presence

First 8” LED front-end facility

- First company to ramp a scale 8” LED front-end facility in 2024 (expected) that can produce both high-power LEDs as well as microLEDs
- High degree of automation in Kulim 8” front-end capacity further improves quality performance and reduces product cost
- New facility will also allow to incorporate energy and water saving measures supporting our ESG goals

1) Including treasury shares held by OSRAM Licht AG

Note: Synergies refer to pre-tax run-rate gross synergies against original baseline

Kulim development

Looking back

- Mid-2019, when ams made its offer to acquire OSRAM, OSRAM's business plan would not sufficiently load Kulim with profitable business
- In 2020, OSRAM changed its Kulim strategy
  - Discontinued mid-power general lighting that would largely load Kulim
  - Accelerated transfer of high-volume auto LEDs from 4/6" in Regensburg to 6" Kulim
- Capacity in Kulim and the transfers from Regensburg allowed to support the surge in demand for high-power LEDs in 2021

Looking forward

- Continued substantial volume growth in the diverse "Semis Growth" areas presented will require capacity expansion in Kulim while supporting continued full loading in Regensburg
- Existing front-end space in Kulim and Regensburg is expected to be fully utilized in the mid-term
- Further volume growth to be supported by the 8" LED and microLED platform to be located in Kulim
- Building construction started recently to allow for extended lead times

Summary semiconductor operations

- In-house manufacturing focused on differentiating processes and supply flexibility
- Clear plans to address pockets of underutilization and realize continuous improvement
- Pursuing ~190M€ COGS savings from synergies and further footprint optimization
- Preparing for future growth needs
  - Consolidate select product areas into single sites to drive manufacturing economies
  - Transition multiple older locations into larger sites for higher efficiency
  - First to ramp a scale 8” LED front-end facility in 2024 (expected) supporting both high-power LEDs as well as microLEDs
- New manufacturing footprint more environmentally positioned to support our long term ESG goals

Integration, synergies, manufacturing and portfolio management

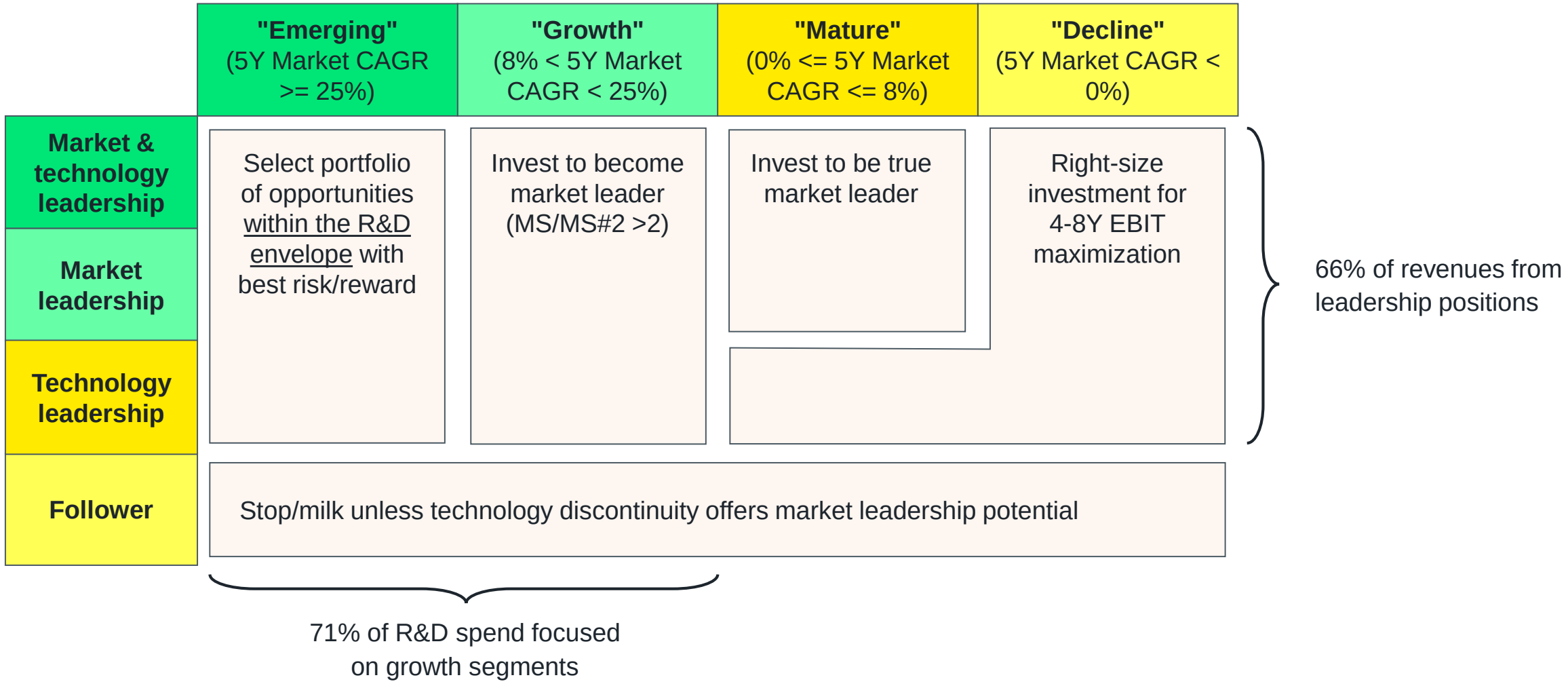
Mark Hamersma (CBO), Mike Lusk (EVP Semi Operations)

Outline

1. Update on integration & synergy creation
2. Manufacturing strategy & footprint optimization
3. **Portfolio management approach, M&A strategy and current divestments**

Portfolio framework for driving long-term growth and market leadership

Semis



Note: Percentage figures of R&D spend and revenues refer to 2021 actual financials

Accelerate implementation of our strategy through M&A

M&A principles	Example prior transactions
1. Build optical leadership positions by strengthening our strategic technologies & capabilities and not buying revenues	HEPTAGON™ · CMOSIS image sensors · OSRAM · PRINCETON OPTRONICS · MAZeT
2. Enable full application solutions to increase differentiation	sensing SW · KeyLemon · ixellence GmbH excellence in telematics and informatics
3. Divest/spin-off non-strategic businesses to eliminate distractions and free up capital	• NFC and RFID readers • LED display drivers • MEMS microphone ASICs • Environmental/flow sensors • OSRAM DI divestitures • OSRAM-Continental JV

Scope and status of divestments & portfolio alignment of Lamps & Systems

Retained L&S

Automotive Lamps
(OEM, Aftermarket)

Entertainment & Industry Lamps

~0.9B€ 2021 revenues

Double digit adj. EBIT margin

Sold / Announced

Digital Systems North America ✓ Closed

Connected Building App. (a.o. Digital Lumen) ✓ Closed

Fluence ✓ Close 1H 22E

Automotive Lighting Systems (Retained OSRAM-Conti JV business) ✓ Close 2H 22E

To-be-divested[1)]

Digital Systems Eurasia
Lighting electronics / LED drivers
Close late 22E

Traxon
City/building/street lighting systems
Close late 22E

Clay Paky
Entertainment lighting fixtures
Close late 22E

~0.8B€ 2021 reported revenues (~0.95B€ 2021 annualized run-rate est.)

Negative adj. EBIT contribution

Expected total proceeds: >500M€

1) To-be-divested closings reflect an expected potential date, no signing or agreement in place at this point in time
Adjusted figures exclude M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of a business

Financial model and path to financial targets

Ingo Bank

Chief Financial Officer

First twelve months: significant achievements

OSRAM acquisition & group financing

- ✓ DPLTA in place since March 2021
- ✓ De-listed OSRAM Licht AG; ownership >80%[1)]
- ✓ Bridge facility cancelled and 3-year RCF in place (800M€, undrawn), established core set of top-tier relationship banks
- ✓ Strong operational cash flow in 2021 (~16% of revenues)
- ✓ Leverage consistently below 2x and first steps in gross debt reduction

OSRAM integration

- ✓ Current synergy / savings run-rate of 200M€ (gross, ~57% of overall target) also helping to offset headwinds (Consumer share reduction, supply chain headwinds, inflation)
- ✓ Portfolio divestment process on track with 4 deals announced or closed
- ✓ Harmonized accounting principles, calendars, reporting segments and performance management approach
- ✓ Harmonized key policies for ESG focus areas
- ✓ IT integration and rationalization fully on track (HR-IS / CRM 2021, ERP 2022)

1) Including treasury shares held by OSRAM Licht AG

Note: Synergies refer to pre-tax run-rate gross synergies against original baseline

Financial model and investor value proposition

Ingo Bank (CFO)

Outline

1. **Company target financial model**
2. Path to value creation: Margin expansion
3. Capital allocation priorities
4. Investor value proposition

Company and segment target financial model

ams OSRAM Group	
Revenue CAGR (%)	>10%
Adj. Gross Margin (%)	~40%+
Adj. R&D (%)	11-14%
Adj. SG&A (%)	7-9%
Adj. EBIT (%)	~20%+

Semiconductors Economic Model

- Revenue CAGR (%): >12%; Adj. EBIT ~20-25%
- Growth driven by R&D and Capex investments
- Improved asset utilization & optimized industrial footprint
- Synergy realization and lean SG&A

Lamps & Systems Economic Model

- Revenue CAGR (%): ~0-3%; Adj. EBIT ~12-17%
- Divesting low margin businesses
- Market consolidation winner in Lamps, grow share in aftermarket business
- Increase SG&A productivity
- Low R&D and investment needs

= Company target = Indicative profile

Note: Expected values based on current target model and available information
Expectations and targets are based on ams OSRAM's latest reasonable assumptions and do not include potentially material effects related to the further development of the current or to any future geopolitical crisis
Adjusted figures exclude M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of a business

Financial model and path to financial targets

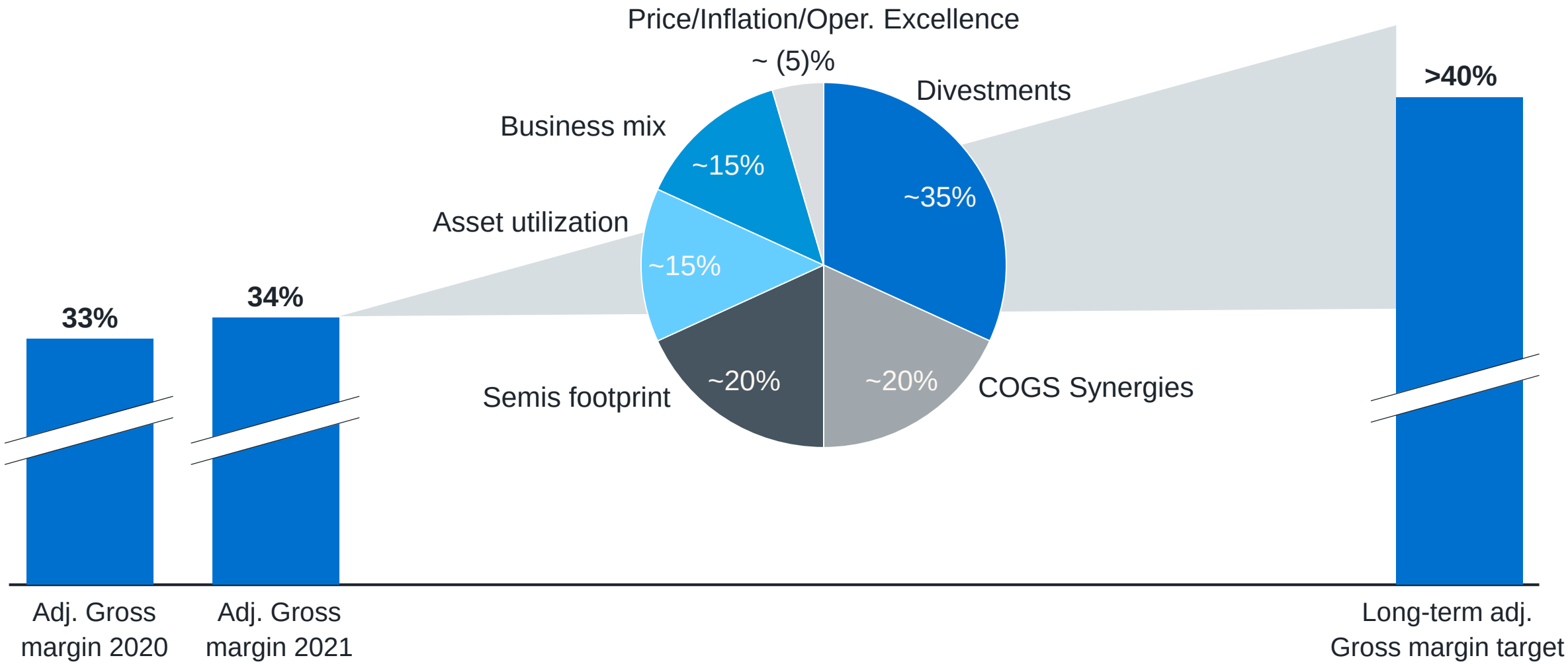
Ingo Bank (CFO)

Outline

1. Company target financial model
2. **Path to value creation: Margin expansion**
3. Capital allocation priorities
4. Investor value proposition

Our path to gross margin expansion

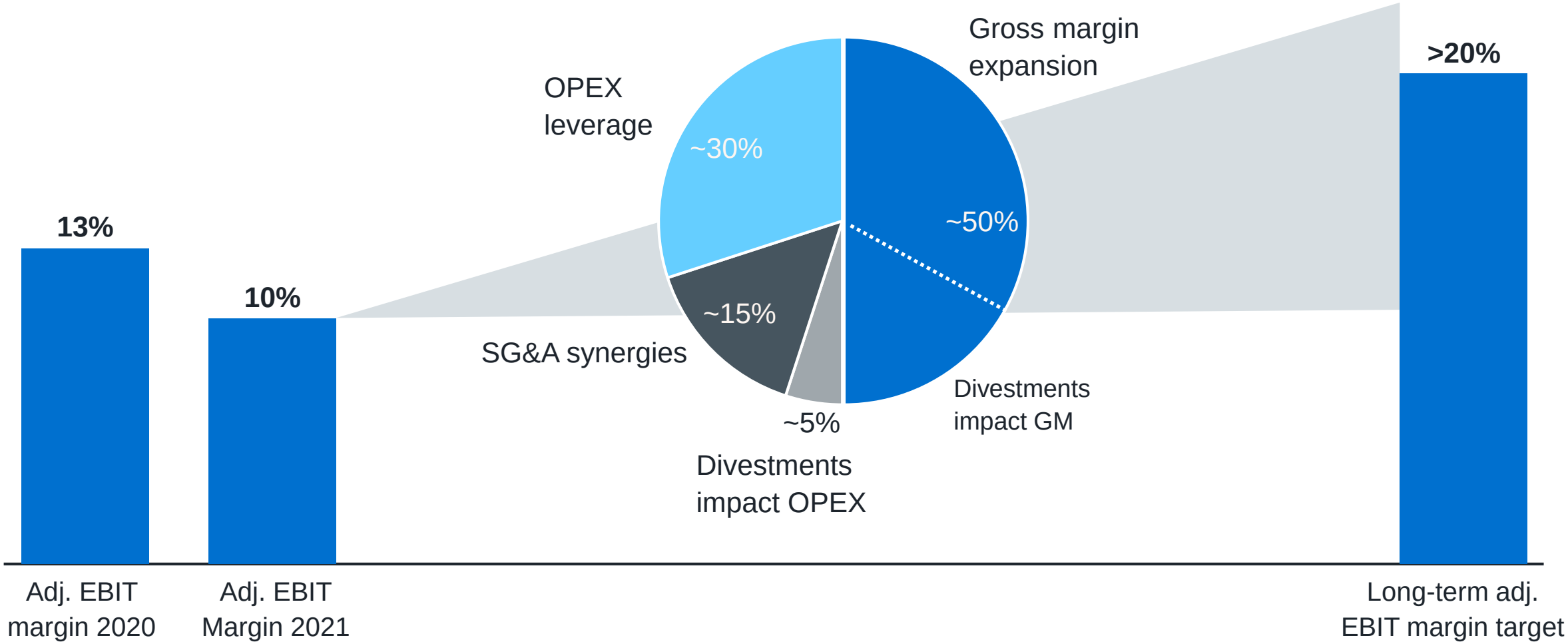
Adjusted numbers



Note: Expected values based on current target model and available information
Expectations and targets are based on ams OSRAM's latest reasonable assumptions and do not include potentially material effects related to the further development of the current or to any future geopolitical crisis
Adjusted figures exclude M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of a business

EBIT margin improvement path

Adjusted numbers



Note: Expected values based on current target model and available information
Expectations and targets are based on ams OSRAM's latest reasonable assumptions and do not include potentially material effects related to the further development of the current or to any future geopolitical crisis
Adjusted figures exclude M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of a business

On track to deliver on margin improvement levers

	2022-2023	2024+	Comments
1. Divestments	✓		• Expect to complete in 2022, full year effect in 2023
2. Synergies/savings of ~350M€E	✓		• >70% by 1Q23 and 100% by 1Q24
a. Revenue synergies	✓	✓	• 2022/23 channel & cross-selling, 2024+ new products
b. COGS synergies	✓		• Realized synergies masked by SGP asset utilization
c. SG&A synergies	✓		• SG&A reduction expected in 2022/2023; ongoing lean activities after that
3. Semis footprint	✓	✓	• Moves in 2022/2023 expected to deliver savings 2024+
4. Asset utilization	✓	✓	• Project funnel; further optimization measures
5. OPEX leverage	✓	✓	• Accelerating growth in 2024+

Note: Synergies values are based on current expectations and available information; Synergies refer to pre-tax run-rate gross synergies against original baseline

Mid-term (2024) ams OSRAM target financial model

	2024 target band	
Revenues total	~4.9B€	+ / - 300M€
Revenue growth run-rate year-on-year	~10%	
Adj. EBIT margin	15% or better	

Note: Expected bandwidth and values based on current target model and available information
Expectations and targets are based on ams OSRAM's latest reasonable assumptions and do not include potentially material effects related to the further development of the current or to any future geopolitical crisis
Adjusted figures exclude M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of a business

Financial model and path to financial targets

Ingo Bank (CFO)

Outline

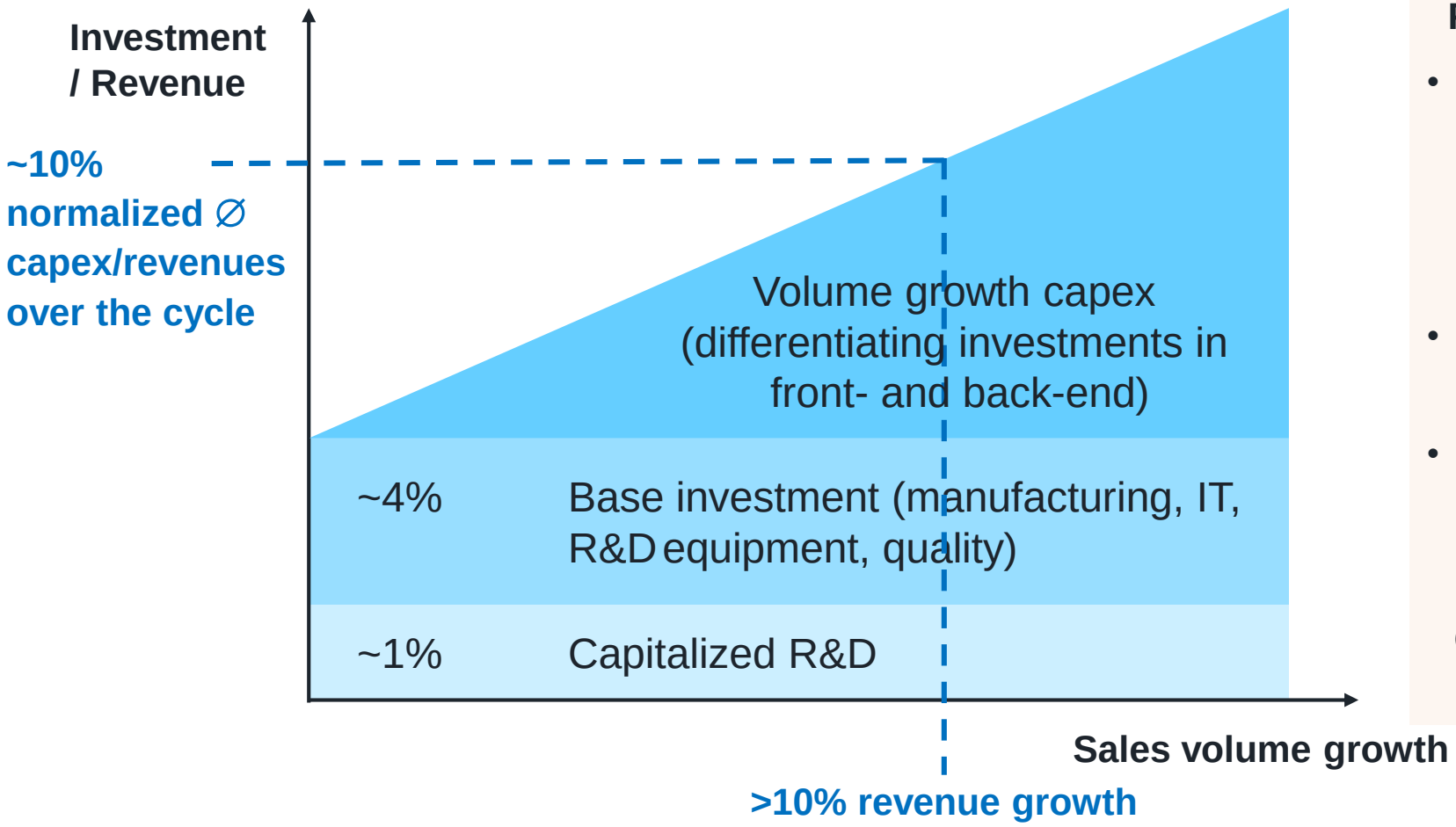
1. Company target financial model
2. Path to value creation: Margin expansion
3. **Capital allocation priorities**
4. Investor value proposition

Capital allocation priorities

Deliver >10% organic annual revenue growth	**Targeted technology spend**	• R&D target spend between 11-14% • Bolt-on technology M&A and buying/licensing strategic IP
	Capex	• Production volume growth & maintenance Capex • New manufacturing platforms (e.g. 8” LED); new technologies • Balancing strategic in-house capacity and capability with flexibility of outsourcing
Realize synergies	**One-time costs**	• Invest into integration: Expected ‘One-Time-Expense-to-Synergies’ ratio <0.7x • Footprint, infrastructure & systems rationalization
Balance Sheet	**Debt management**	• Expect to retire 320M$ CB in Sep 2022 and revisit HYB in 2023/24 • Maintain strong Operational Cash Flow focus • Target investment grade rating and leverage <2x
	Shareholder capital returns	• Focus on structurally establishing investment grade rating • Increase of OSRAM stake currently not a priority

Investment-to-revenue ratio expected ~10% on average through cycle

Next 18-24 months expected to be markedly higher to support growth and consolidation



Focus areas

- Establish first of its kind 8” front-end capacity in Kulim to support expected LED and microLED demand (step-up in asset base for emitters)
- Add c18 CMOS capability in Austria (make-or-buy CMOS)
- Consolidate back-end and remove duplicative settings (efficiency)

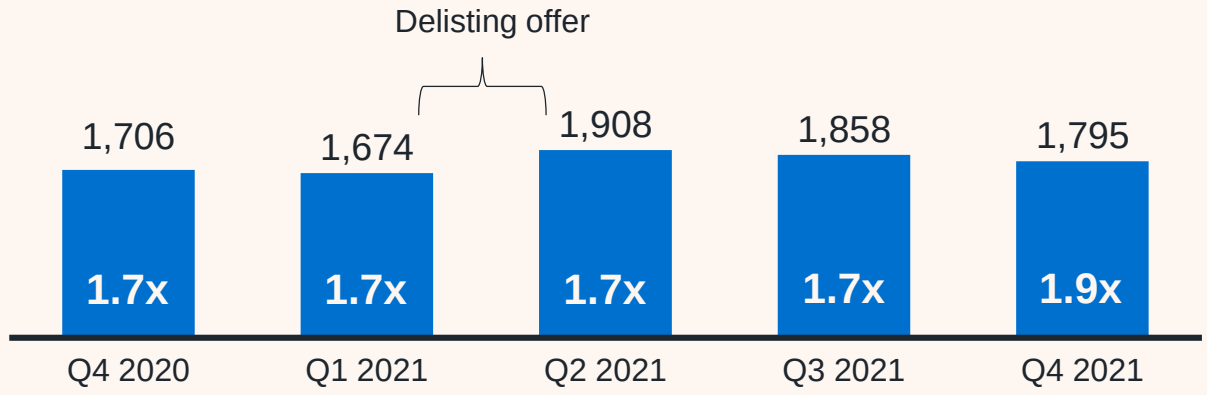
Capex in 2022 and 2023 expected to be markedly higher

Note: Conceptual representation; Normalized over a full cycle, i.e. an average value. Typically oscillates especially when footprint extensions are done

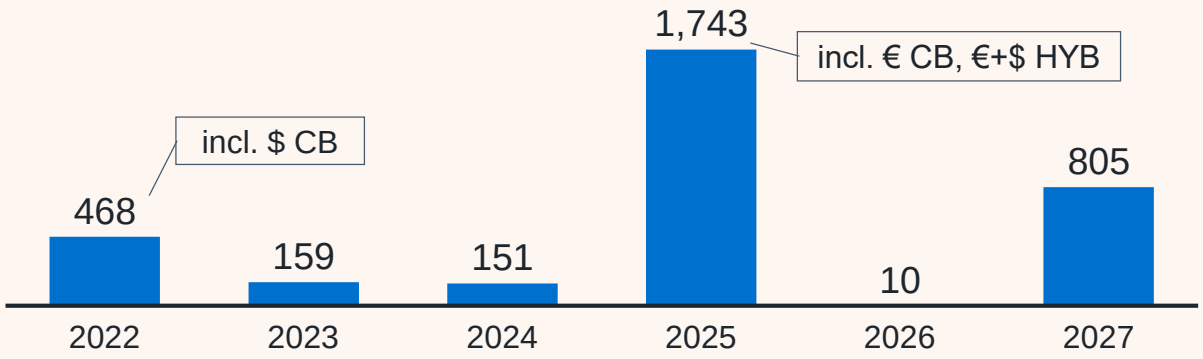
Stable and solid leverage coupled with layered maturity profile

M€

Net debt and leverage development



Debt maturity profile



- Stable leverage situation throughout 2021 and solid Balance Sheet in place
- ~320M$ CB due in Sep 2022, expected to be repaid from existing cash
- ~450M€ CB due in 2025
- HY bonds (850M€ + 450M$) to be revisited in 2023/2024 timeframe; due in 2025
- 800M€ RCF in place (undrawn)
- Limited exposure to interest rate increase with 95% of debt at fixed rates today
- Targeting investment grade rating and sustained leverage <2x

Note: Leverage defined as Net Debt / Adj. EBITDA (excluding M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of a business)

Minority situation OSRAM shareholders

- ams OSRAM owns 80.5% of OSRAM shares (including treasury shares held by OSRAM)
- Domination agreement (DPLTA) gives ams OSRAM full operational control over OSRAM since March 2021
- Under the DPLTA, remaining shareholders have a put option at 45.54€ per share
- Total liability for DPLTA put option recognized in balance sheet as Other Liability at 862M€
- In addition, under the DPLTA, outstanding shares receive annual fixed payment of 2.24€ net per share, totaling a cash out of ~49M€ p.a.* settled after AGM in following year; first payment due this year
- Given full management control, prevailing economics (cost of capital vs dividend yield) do not create an economic incentive to acquire further OSRAM shares at this point
- Select groups of remaining shareholders have started an appraisal proceeding to examine the put option pricing and resulting annual payment, typical for takeover transactions in Germany. Based on historical precedents, situation may take up to 5 years to be processed by the relevant courts

* Based on current amount of outstanding shares

Financial model and path to financial targets

Ingo Bank (CFO)

Outline

1. Company target financial model
2. Path to value creation: Margin expansion
3. Capital allocation priorities
4. **Investor value proposition**

Clear investor value proposition

	Clear long-term targets
Commitment to growth Leader in optical solutions driven by secular growth trends in Automotive, Consumer and Industrial & Medical	• Revenue CAGR >10%, outgrowing our SAM
Path to strong sustainable profitability Doubling of EBIT margin driven by portfolio optimization, manufacturing footprint consolidation, synergy realization and revenue growth	• Synergies / savings ~350M€ • Adj. EBIT margin 20%+
Balanced and diversified business mix Balanced application end-market exposure and diversified global customer base creates broadly supported earnings streams	• Automotive 35-40%, Consumer 35-40%, I&M 25-30% • Top 10 global customers 35-40%
Prudent financial policy De-lever based on strong operational cash flows and proceeds from divestments, while maintaining investment for growth	• Divestment proceeds >500M€ • Targeting investment grade with net debt/adj. EBITDA <2x
Focus on long-term value generation Re-invest in differentiating technology & innovation and related organic growth opportunities, in alignment with ESG focus	• Carbon neutrality in 2030 • Gender diversity in leadership 25% in 2026

Note: Expected values based on current target model and available information
Expectations and targets are based on ams OSRAM's latest reasonable assumptions and do not include potentially material effects related to the further development of the current or to any future geopolitical crisis
Adjusted figures exclude M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of a business

Ukraine situation for ams OSRAM

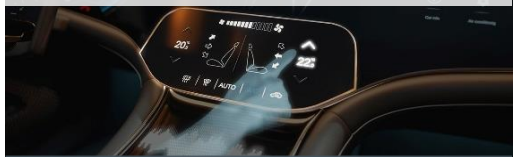
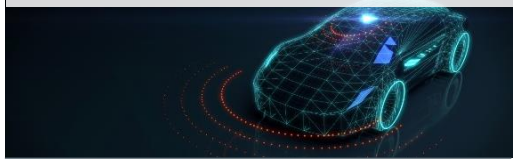
- Safety and security of our very small number of employees and their families in the Ukraine is our top priority. Full support in place.
- We have halted all shipments to and business activities in Russia and Belarus for the time being. Sanctions are fully observed and complied with.
- At this point in time we evaluate the direct economic impact to ams OSRAM as immaterial (less than 1% of revenue p.a.). No production sites in Ukraine and Russia, indirect impacts are outweighing direct impacts. Situation remains in flux also due to extensions of sanction regimes.
- Possible supply chain consequences are understood, corrective measures defined and being implemented - where necessary.
- Task forces in place to support our customers and suppliers as required.
- If the geopolitical situation remains tense or even worsens, this could result in lasting consequences for production, supply chains and demand with a potentially negative financial and operational impact on ams OSRAM.

Key Automotive growth drivers

Robert Feurle

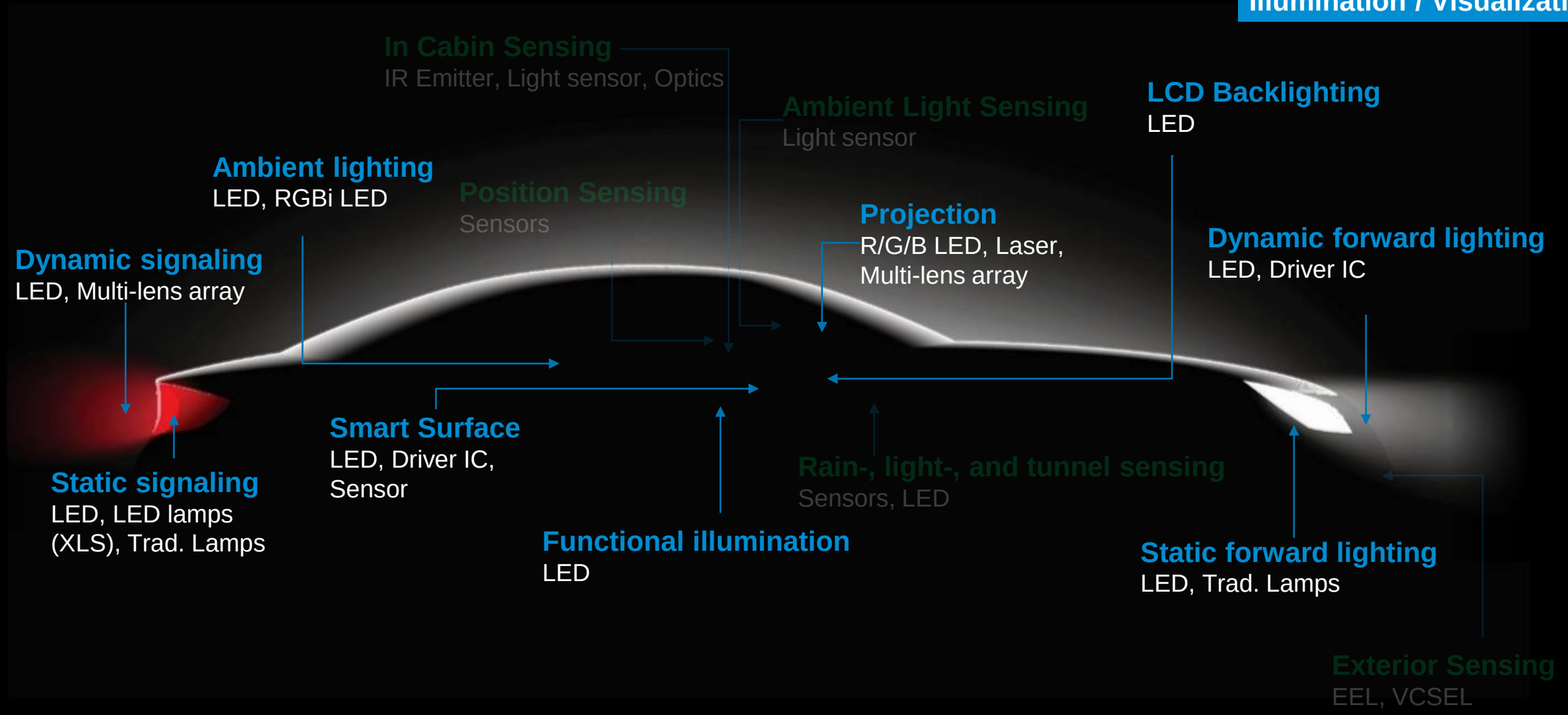
GM Opto Semiconductors

Automotive trends driving significant new opportunities

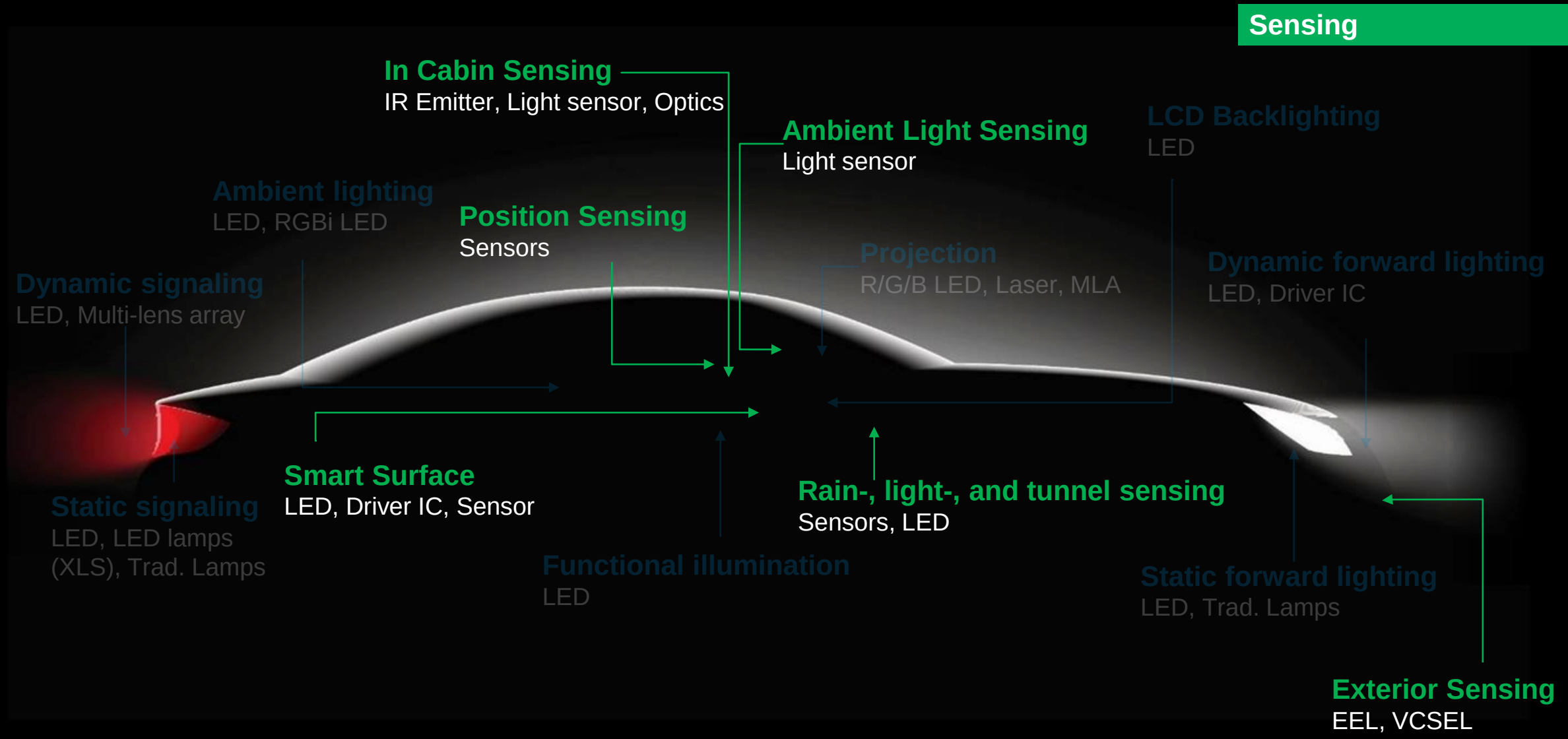
Automotive Trends	Illumination	Visualization	Sensing
Electrification 	• LEDification	• Smart surfaces replace buttons/displays	• Sensor ubiquity (interior & exterior)
Digitalization 	• Intelligent lighting	• Increasing number and size of displays	• Increasing complexity human-machine interface
Autonomous driving 	• Light color indicates driving mode	• Car as 3rd living room: Entertainment, productivity, comfort	• LiDAR adoption (EEL and VCSEL-based)
Comfort and Safety 	• Adaptive beam steering	• Advanced head-up displays	• Expanding 2D/3D driver monitoring use cases

Broad offering of illumination, visualization and sensing components

Illumination / Visualization



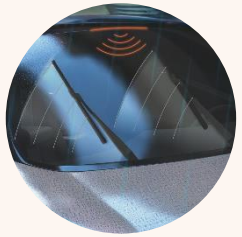
Broad offering of illumination, visualization and sensing components



Leadership positions in key markets

Market position and relative market share (RMS = MS / MS#2)[1]

Forward lighting	Signaling	Interior functional	LiDAR Emitters[2]
			
#1	#1	#1	#1
RMS >1-1.5	RMS >2	RMS >2	RMS >2

Display backlighting	Rain sensors	In-cabin sensing	Interior ambient
			
#3	#1	#1	#1 for RGB
RMS >0.1	RMS >1-1.5	RMS >1-1.5	RMS >1

1) Based on latest available market data 2) Automotive and Industrial markets combined

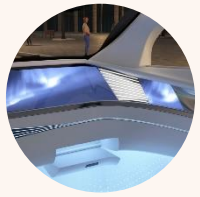
Broad range of Automotive growth drivers

Growth in established areas

Forward lighting static

Interior functional

Signaling static

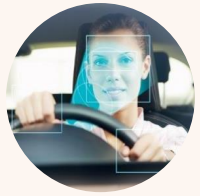


Ambient Light Sensors

Present growth drivers

Forward lighting dynamic

Backlighting



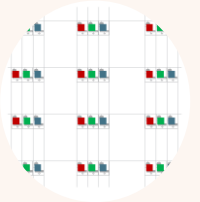
In-cabin sensing

Signaling dynamic

Interior ambient

Emerging growth drivers

Exterior sensing ADAS/AD (LiDAR)



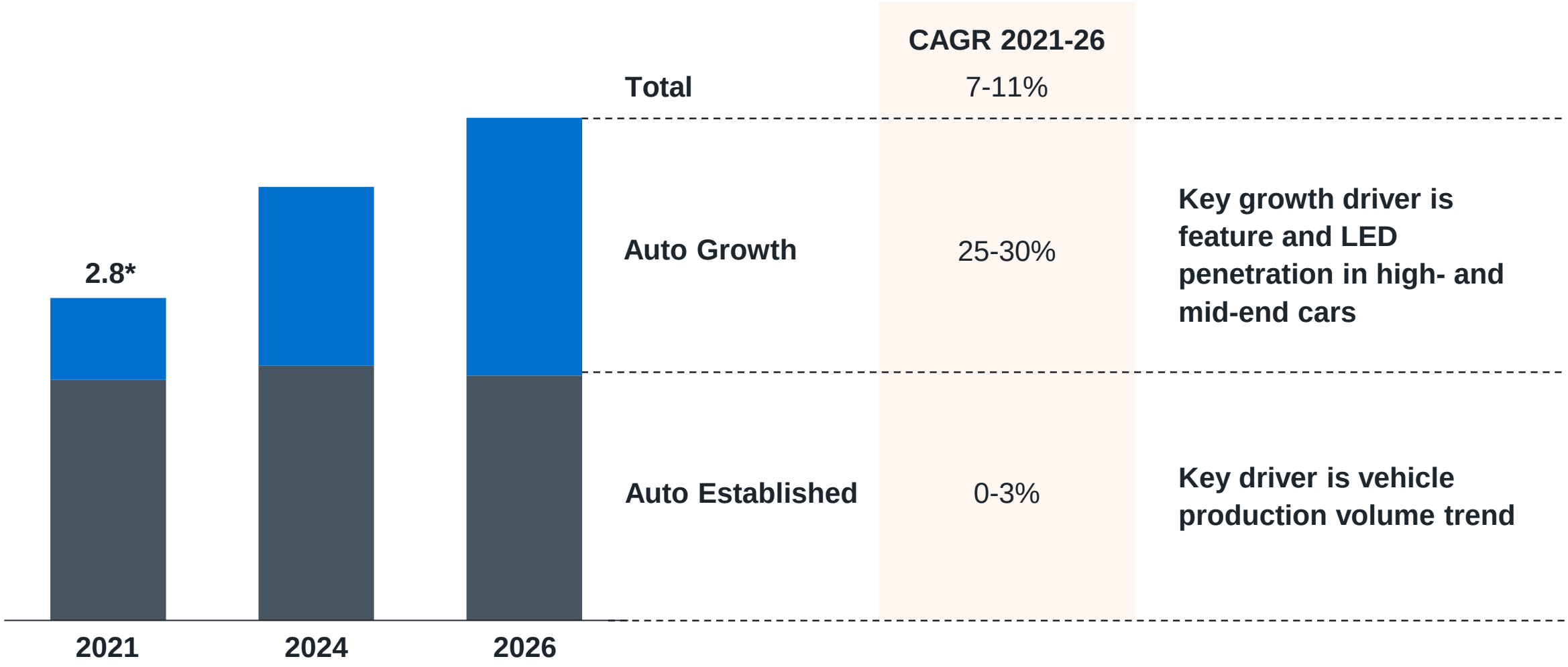
microLED Displays

Smart surfaces

Projection

Automotive addressed semiconductor market grows by 7-11% CAGR

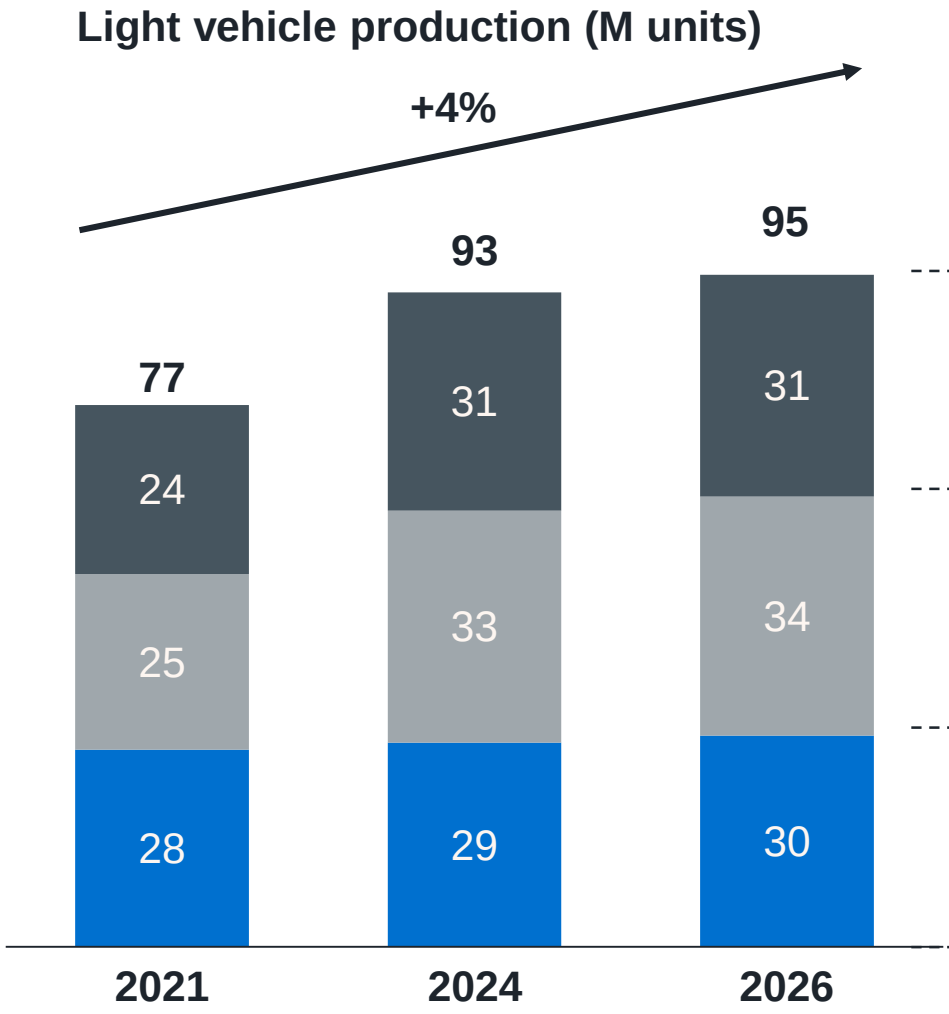
B€



*incl. ~350M€ extraordinary supply chain effects due to Covid-19 and semiconductor shortage

Source: ams OSRAM Automotive market model; SAM incl. LED lighting, optical sensing, non-optical position sensing

Significant content growth opportunities in particular for high-end vehicles



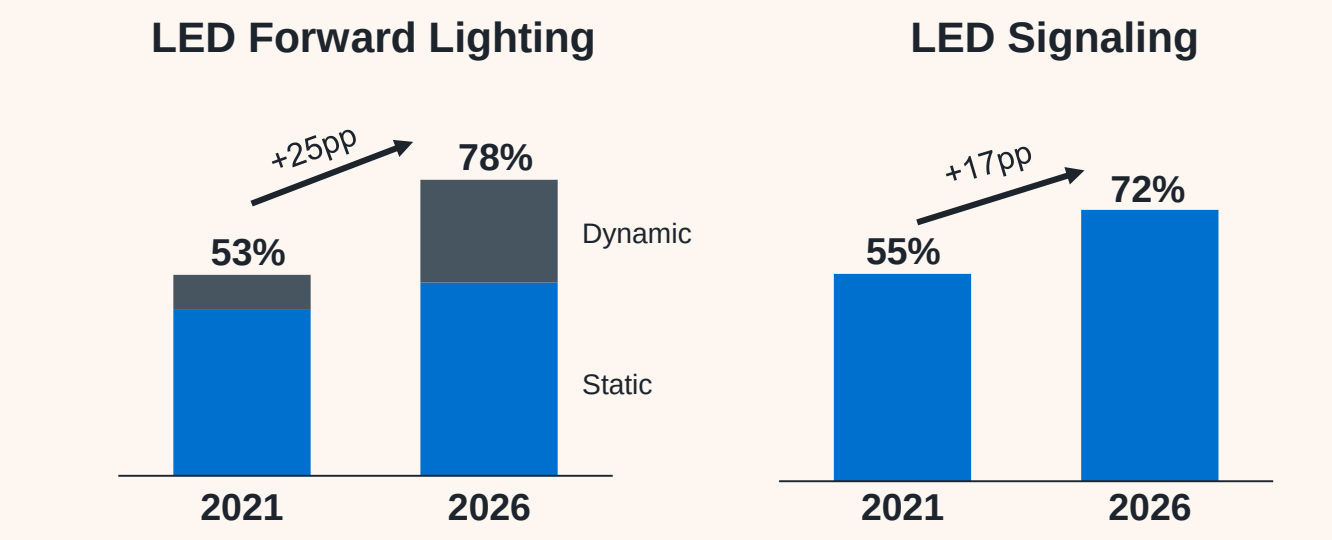
	Light Vehicle Unit CAGR 2021-26	Average SAM / car 2021		Average SAM / car 2026
High-end	5%	~52 €	↗	65-75 €
Mid-end	6%	~28 €	↗	35-40 €
Low-end	2%	~15 €	→	20-25 €

Source: IHS Light Vehicle Production Forecast 03/2022; SAM incl. LED lighting, optical sensing, non-optical position sensing

Feature and LED penetration driving growth segments

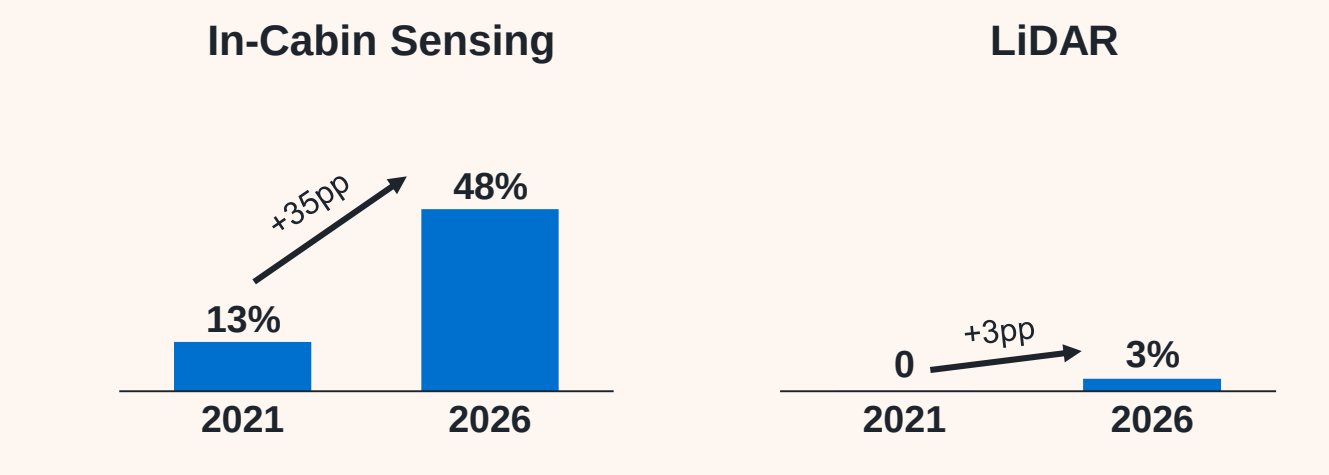
Illumination

(penetration in % of light vehicle production)



Sensing

(penetration in % of light vehicle production)

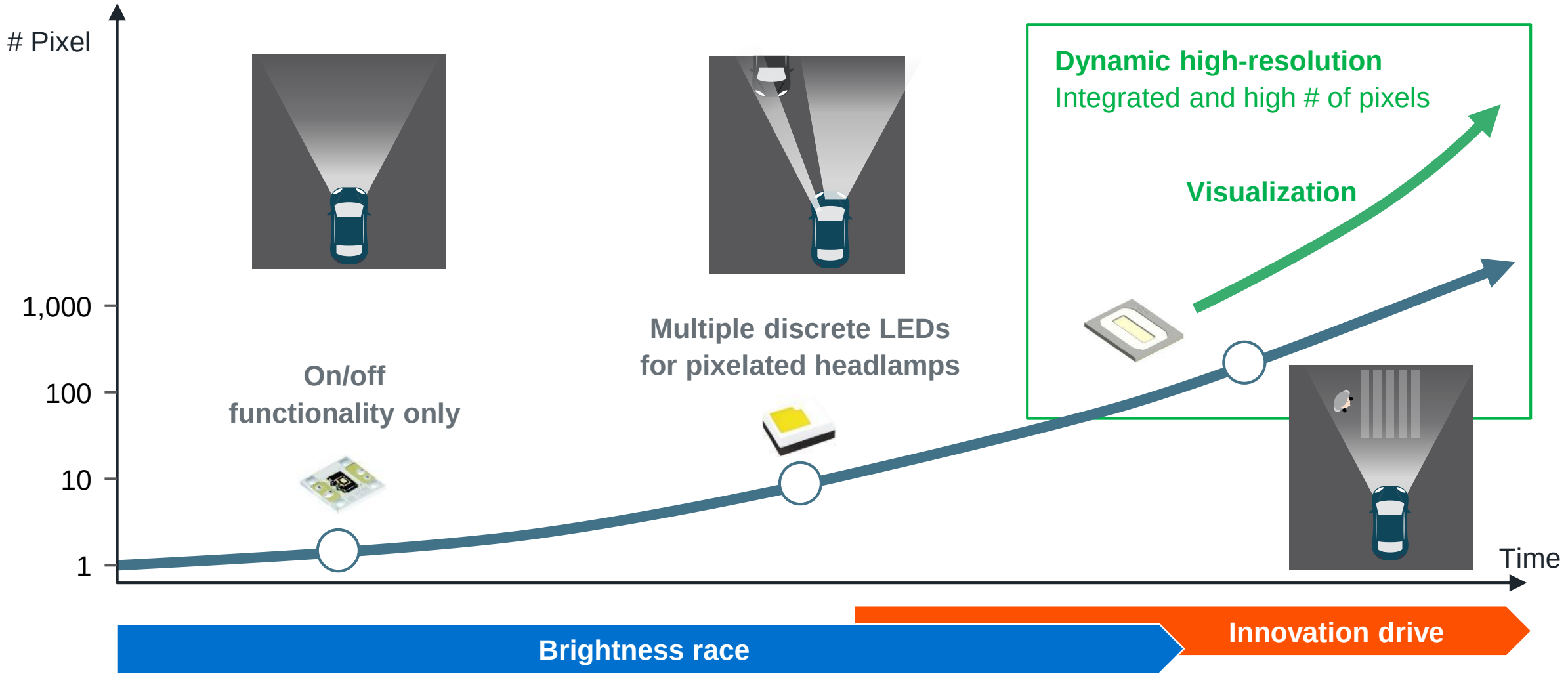


- Significant growth on top of light vehicle production
- Penetration still increasing significantly even in established applications
- Government regulation driving strong adoption in in-cabin sensing
- New technology adoption on different timelines

Source: IHS 2021, ams OSRAM Automotive Market Model 2021

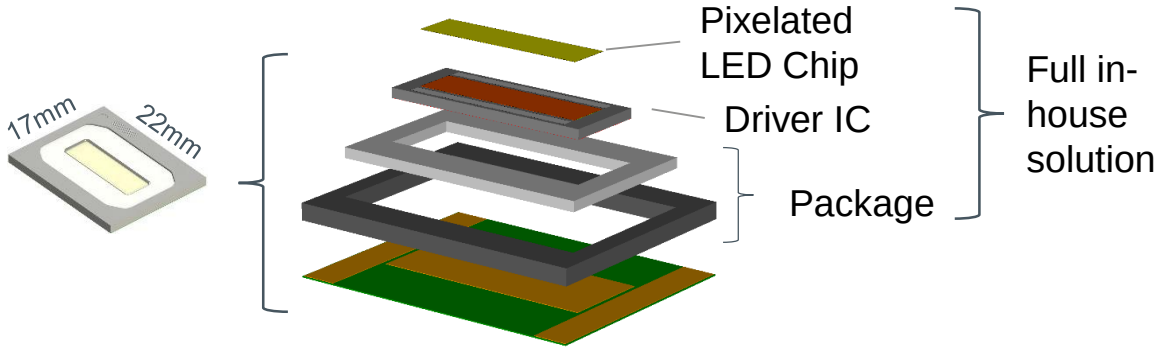
Headlamp evolution: from light source to micro-pixelated intelligent device

Evolution of headlamp functionality over time



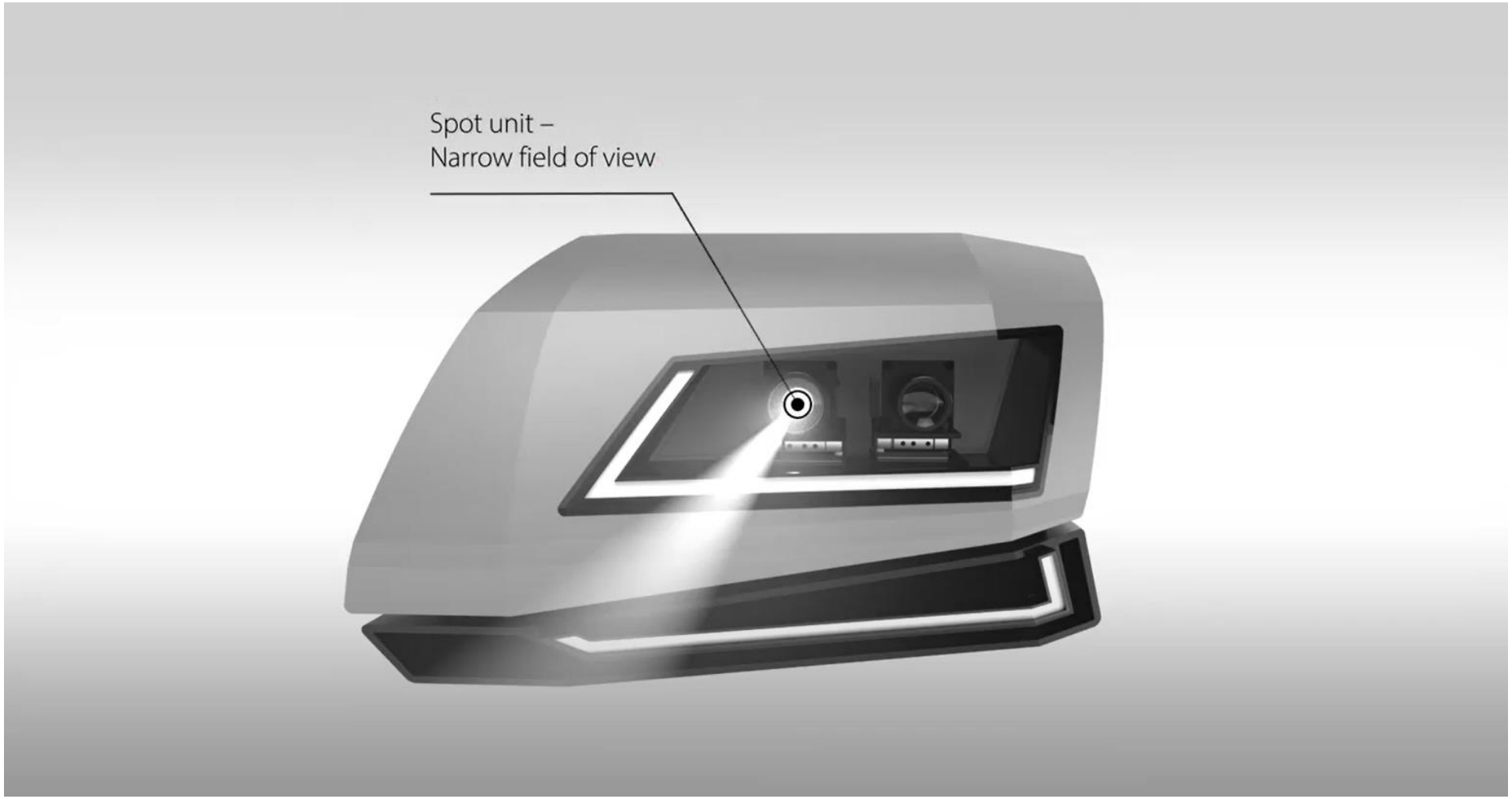
Key growth drivers – (1) Dynamic Forward Lighting (EVIYOS)

Well positioned to profit from being the innovation leader



- As next big step in dynamic forward lighting, EVIYOS enables adaptive driving beam and projection capabilities (e.g. construction lighting, traffic signs)
- Integrated intelligent light source based on a monolithic structured LED chip with >25k individually addressable pixels
- Very positive market traction: on the road from 2023 onwards
- Only player with all required capabilities in-house including driver IC; very limited number of capable competitors
- EVIYOS leading vs. competing technologies on key performance criteria: energy efficiency, system size, system cost

EVIYOS video



Key growth drivers – (2) In-Cabin Sensing

Regulatory push drives adoption

Driver Monitoring (DMS)

Driver safety & assistance

- Distraction & drowsiness monitoring
- Driver identification & authentication
- HuD / Augmented Reality support

Gesture Sensing

Intuitive Human-Machine Interface (HMI)

- Infotainment control
- Body controls (sunroof, lights, windows...)
- HVAC controls

Interior Monitoring (IMS)

Cabin & occupant safety

- Wide-FoV driver & occupant monitoring
- Child & pet presence / object detection
- Airbag control (adaptive restraint)

Market boost driven by regulatory push for driver and occupant monitoring[1]

1) Examples: DMS mandatory in Europe for new cars from 2024 onwards, China expected to follow. DMS on 10-year roadmap for US. For SAE autonomous driving L2+, driver presence and attentiveness of driver need to be monitored

Key growth drivers – (2) In-Cabin Sensing

Innovation and market leadership with IR LEDs and VCSEL for ICS

Only player covering full portfolio spanning LED and VCSEL for 2D and 3D

- **Market leading position in each region**
- **Revenues and design wins with leading OEMs worldwide**

Differentiation in IR LED-based solutions

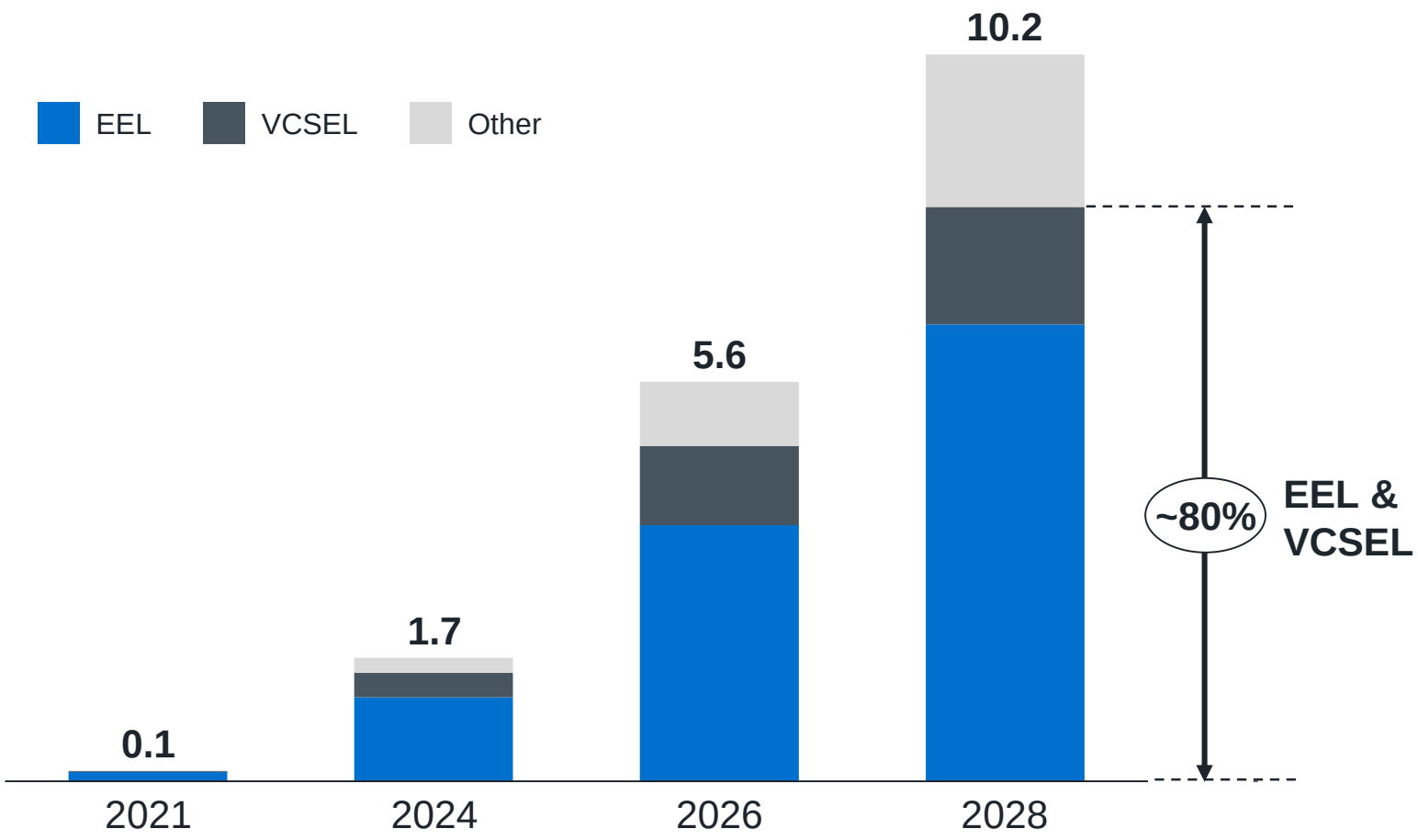
- #1 position based on broad portfolio with leading performance
- Enabling all types of 2D ICS application in every region
- Various lens options based on same package platform, enabling flexibility for customer designs

Differentiation in VCSEL-based solutions

- Industry's first automotive AECQ-102 qualified VCSEL flood illuminator
- Best-in-class optical performance, enabling 3D iToF-based gesture sensing + 2D cabin and driver monitoring systems at European and Asian OEMs
- Fully in-house developed solutions (Laser, micro-lens array, complete module)

Key growth drivers – (3) LiDAR emitters

Million LiDAR units; EEL and VCSEL expected to capture 80% of market



- OEMs defining technology / architectures and key suppliers now
- Confidence in market development higher than during "hype cycle"
- Well prepared for both EEL and VCSEL architecture deployment
- Expect ~2 LiDARs per equipped vehicle on average in 2026

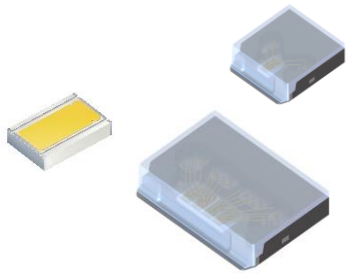
Source: LiDAR for Automotive and Industrial Applications report, Yole Développement (Yole), 2021

Key growth drivers – (3) LiDAR emitters

Innovation and market leadership position with full LiDAR emitter portfolio

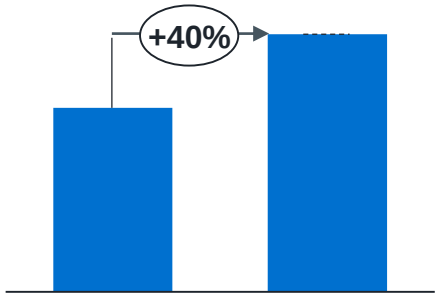
Only player able to offer full portfolio spanning EEL and VCSEL

Edge Emitting Lasers (EEL)

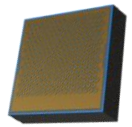


Single and multi-channel dies
1-4 channel SMT packages

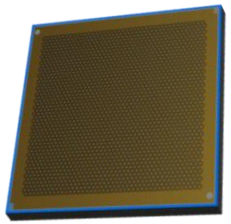
Superior peak optical output power



VCSEL arrays



100 emitters up to



>1,600 emitters

- Market leader for IR LIDAR EEL with over 30 design wins
- Outstanding track record: already delivered >20M lasers to auto OEMs with >300B km driven without chip failures
- Highly efficient laser chip portfolio with highest peak power & reliability, and strong roadmap in place
- Automotive-qualified SMT package platform

- First to market with multi-junction addressable arrays
- Over 20 years experience in Epi and VCSEL design
- Leading VCSEL portfolio following automotive trend of higher performance at lower cost of ownership
- In-house manufacturing leverages automotive footprint

Key growth drivers – (4) Smart Surfaces

Full offering for Smart Surfaces (multifunctional user interfaces)

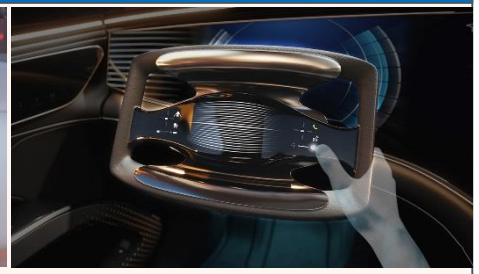
Smart Surfaces

Middle Console

Center Stack

Door Panels

Dashboard



Steering Wheel

Uniquely positioned with full offering

Emitters

LEDs	Integrated products (RGBi)	Drivers

Sensors

Proximity / gesture	Capacitive / optical touch	Ambient Light Sensing

- Complete offering of light emitters (full capabilities in in-house chip and package in all colors), drivers and sensors
- Development of open eco-system for all required functionalities
- First mover with novel system concepts

Key takeaways

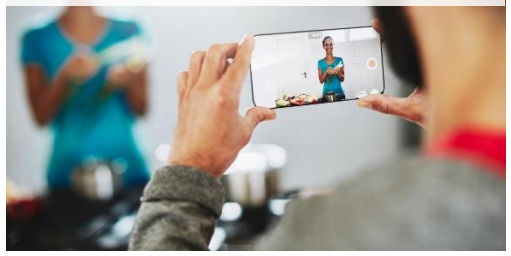
- Clear #1 in majority of served automotive segments creating an attractive business and margin profile
- SAM growth for 2021-26 of 7-11% CAGR fueled by automotive megatrends which ams OSRAM expects to outgrow
- Attractive mix of shorter and longer term growth drivers
  - Key growth drivers dynamic forward & signaling lighting, interior ambient lighting, LCD backlighting, in-cabin sensing and LIDAR
  - Longer-term growth from smart surfaces and long-term from microLED display and advanced head-up display opportunities
- Innovation leader with differentiated offering in each key growth driver

Key Consumer growth drivers

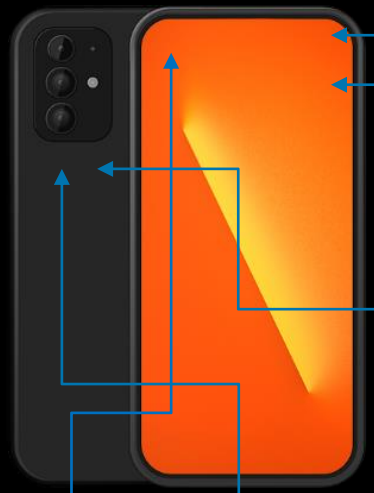
Jennifer Zhao

GM Advanced Optical Sensors

Consumer trends driving significant new opportunities

Consumer Trends	Sensing	Illumination	Visualization
Digitalization 	• 3D camera enhancement • Emerging AR/VR use cases • 3D authentication in select applications		• Size/number of displays • Color temperature correction
Smart devices 	• Vital Signs Monitoring • High SNR audio sensing for context awareness • MicroLED sensor integration	• Smart LED flash • Infrared eye, hand, and body posture tracking	• Near-to-Eye projection for AR/VR glasses
Energy efficiency 	• On-skin detection for wearables • Advanced BOLED sensing for low transmissivity displays		• MicroLED display adoption • Low power Near-to-Eye projection for AR/VR glasses

Significant content opportunities in phones, wearables, other devices



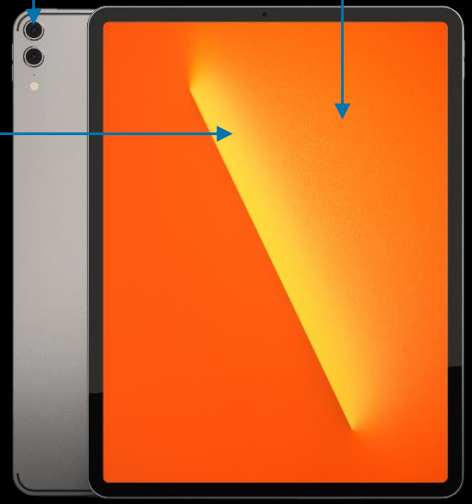
Display
- MicroLED

Display Management / BOLED sensing
- Ambient Light Sensor
- Spectral Color Sensor
- Proximity

Camera enhancement
- Flicker, Spectral Color Sensors
- Folded path optics
- Single/Multi-zone 3D/1D ToF

User Interaction
- Sensing applications

3D AR sensing
- Optical components
- 3D/1D dToF modules
- NIR imaging



Vital Sign Monitoring
- Green/Red/IR LED / VCSEL
- Photodiodes
- Temperature sensors
- Analog front-ends and modules

Authentication
- 3D sensing components

Body Tracking
- Proximity

Leadership positions in key markets

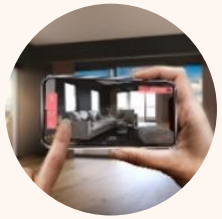
Market position and relative market share (RMS = MS / MS#2)[1]

Ambient Light Sensors

#1

RMS ~1-2

3D Sensing & Camera Enhancements



Top 3

RMS ~1

Vital Signs Monitoring

#2

RMS ~0.5-1

Wearable Optics

#1

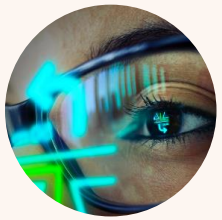
RMS >2

Wearable Proximity

#2

RMS ~0.5-1

Near-to-Eye Projection



#1

RMS >2

1) based on latest available market data

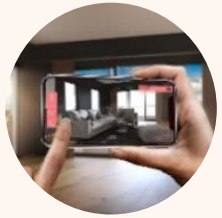
Key Consumer growth drivers

Growth in established areas

BOLED display management

Wearable optics & proximity

Present growth drivers

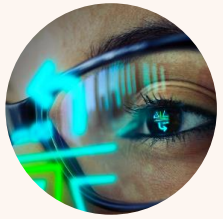


3D sensing & camera enhancements

Vital Signs Monitoring

Emerging growth drivers

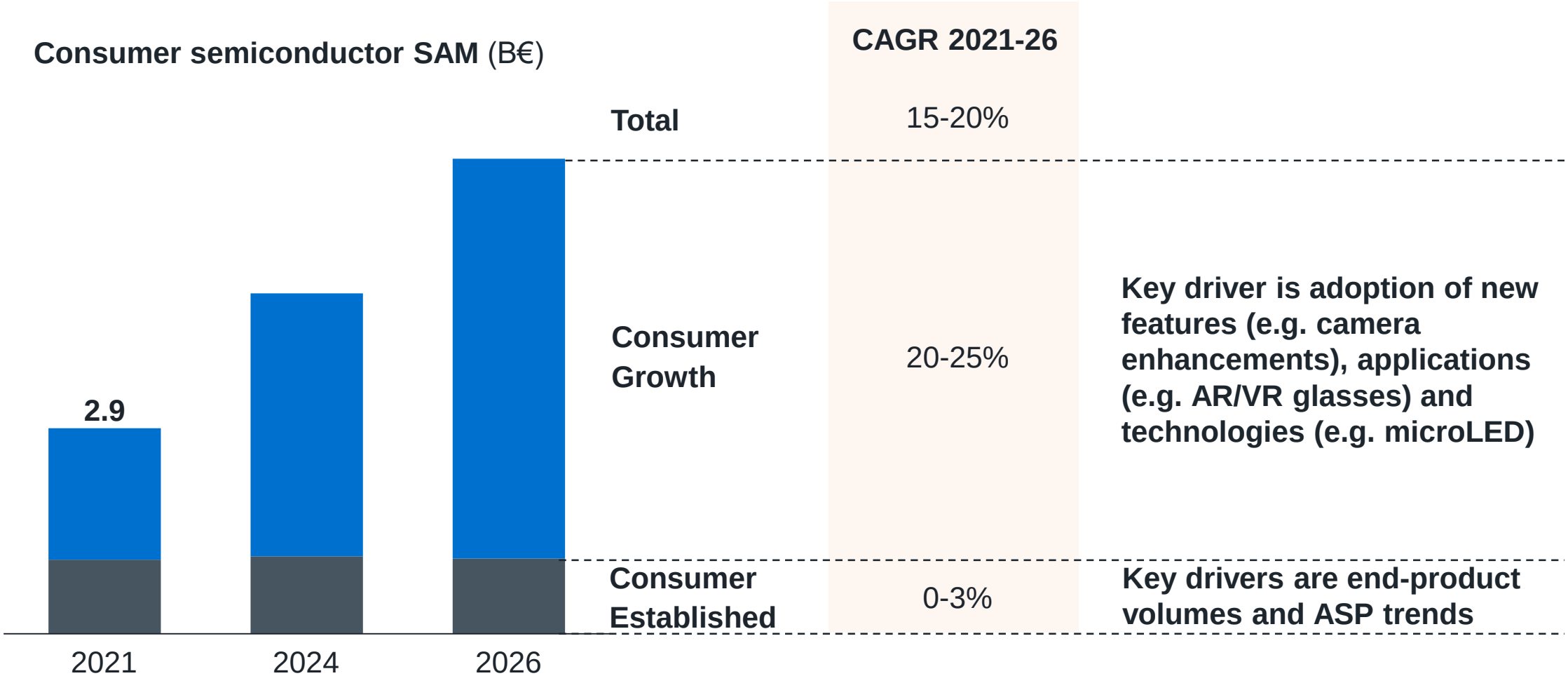
MicroLED displays



AR/VR glasses sensing & visualization

Consumer addressed semiconductor market grows by 15-20% CAGR

Stable core with strong growth



Source: ams OSRAM internal market model

Key growth drivers – (1) 3D sensing & camera enhancements

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

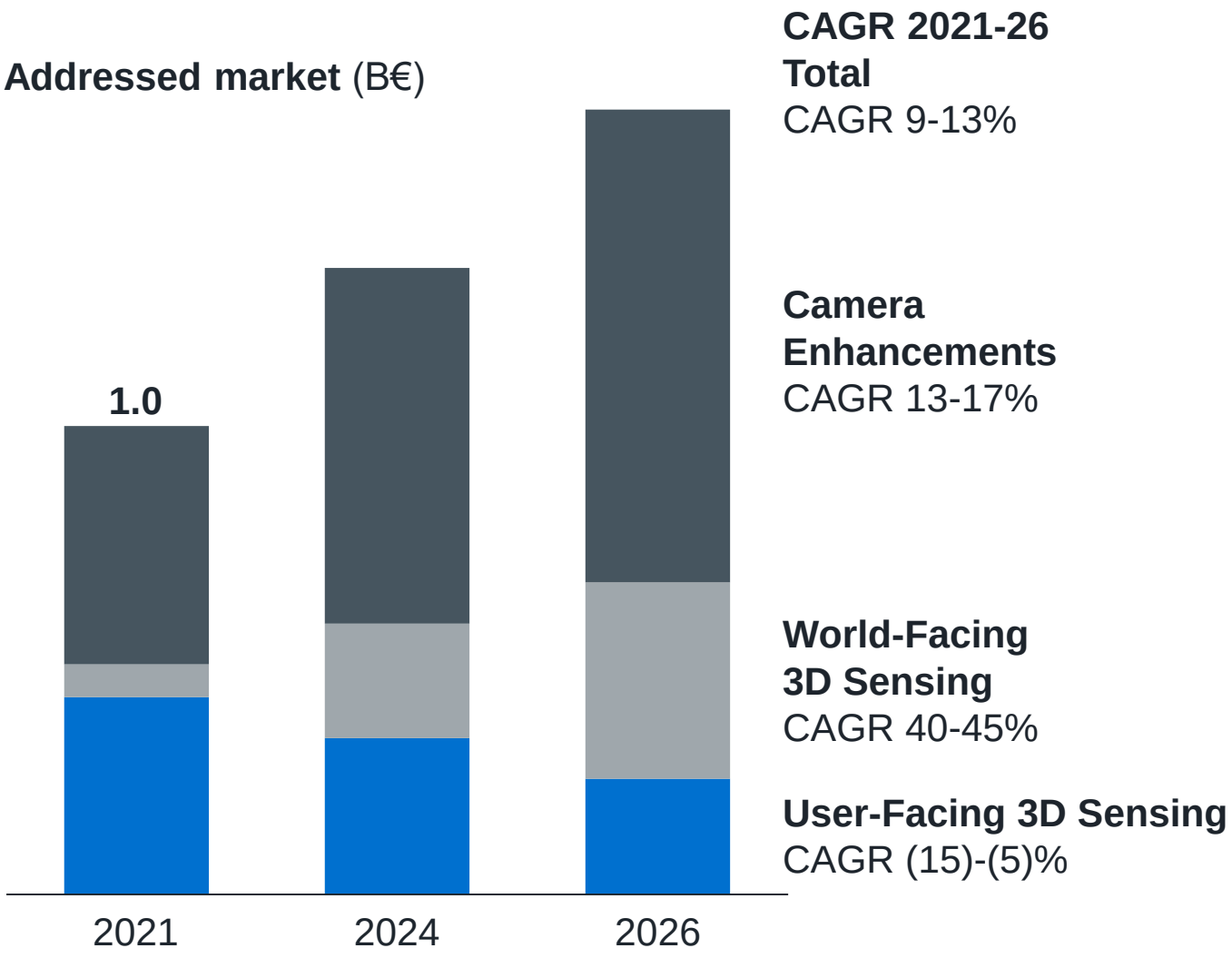
Flicker Detection
Artificial light modulation band elimination

Spectral Light Sensing
Auto White Balancing to improve contrast & low light performance

Folded Path Optics
Optical elements to enable optical zoom in thin devices

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

Key growth drivers – (1) 3D sensing & camera enhancements



Leveraging optical solution leadership

- Premium sensor offering to drive excellent camera performance and picture quality
- Leadership in multi-channel spectral color sensing (highest DXOMARK scores)
- Folded path optics for space-optimized optical zoom (leveraging top class high volume manufacturing capabilities)
- 3D/1D dToF for Auto Focus and Bokeh effects (smallest sensors & longest range with lowest power)

Source: OMDIA, ams OSRAM internal market model

Key growth drivers – (2) Vital Signs Monitoring

The partner of choice for optical Vital Sign Monitoring solutions

Emitters (LED, VCSEL)

Receivers (Photodiode)

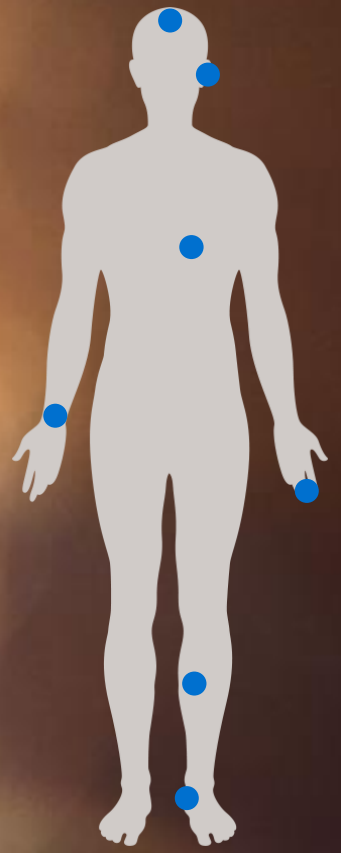
Analog Front End (AFE)
High performance & low power logic

Reference design portfolio

Module solution
With or without embedded AFE

Optical simulation capability

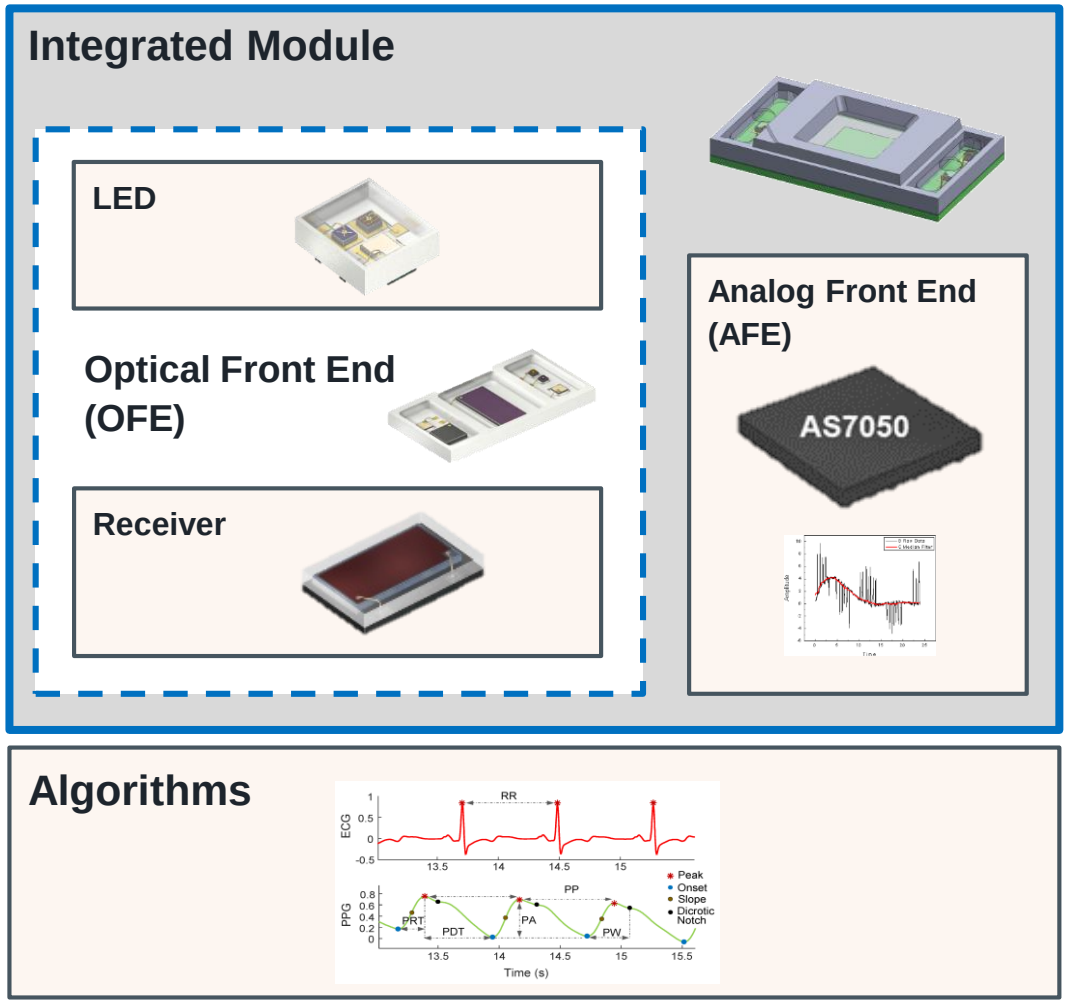
Algorithms
Heart Rate, Heart Rate Variability, SpO2, Blood Pressure, …



Able to fit anywhere on the body

Key growth drivers – (2) Vital Signs Monitoring

Uniquely positioned in both component and module markets



Uniquely positioned to win

- Cover all elements of vital sign monitoring solutions
- Offer integrated modules on top of individual components
  - Optical Front-End modules (LED + Receiver)
  - Integrated modules (LED + Receiver + Analog Front-End)
- Algorithm development in-house and with medical-certified partners
- Innovation leader in blood pressure, body temperature and hydration, and looking at additional vital signs
- Addressing new devices such as earbuds and glasses

ams OSRAM

Key growth drivers – (3) AR/VR smart glasses

Display
- LED/Laser projection
- MicroLED
- Optical components (e.g. waveguides)

Display Management
- Ambient Light Sensing

2D/3D sensing
- Optical components
- 3D / dToF modules
- NIR imaging

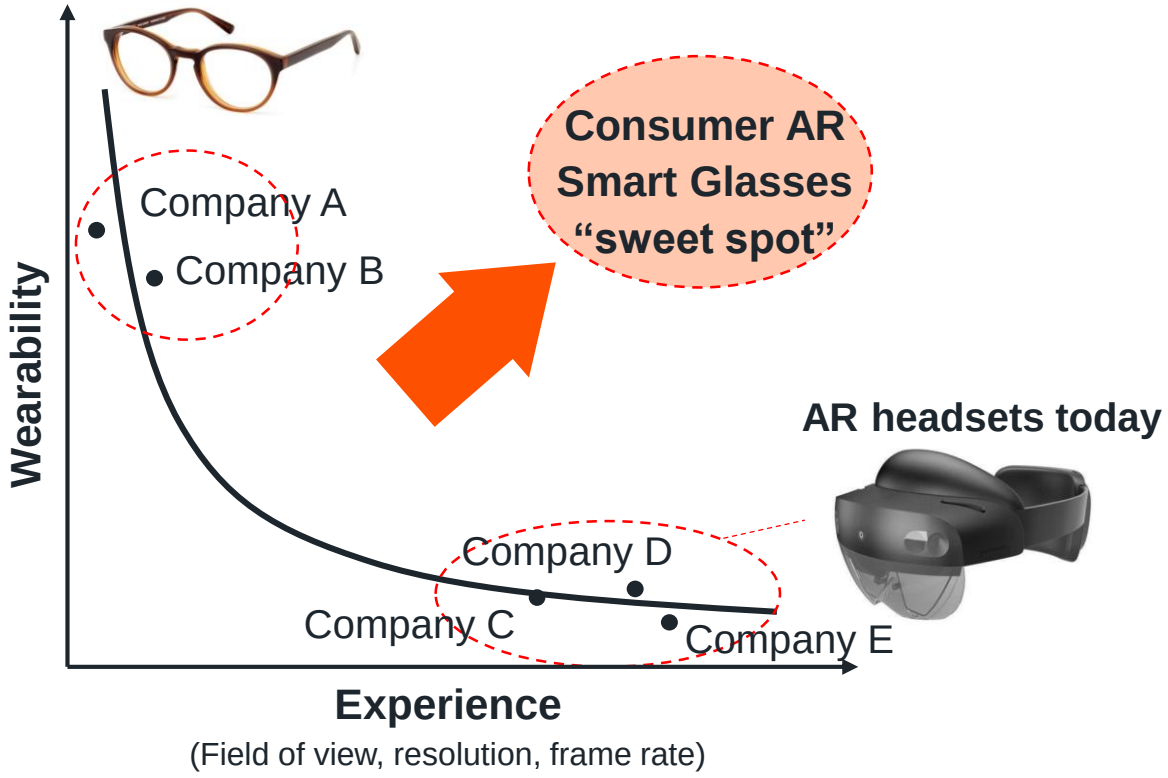
Eye Tracking / Authentication
- Optical components
- NIR illumination & imaging

Hand/Body Tracking
- Optical components
- 3D / dToF modules
- NIR illumination & imaging
- On-skin detection

Vital Sign Monitoring
- Green/Red/IR LED / VCSEL
- Photodiodes
- Temperature sensors
- Analog front-ends and modules

Key growth drivers – (3) AR/VR Smart Glasses

Roadmap for technologies addressing new generations of Smart Glasses



Developing multiple proprietary technologies to enable Smart Glasses for consumer adoption

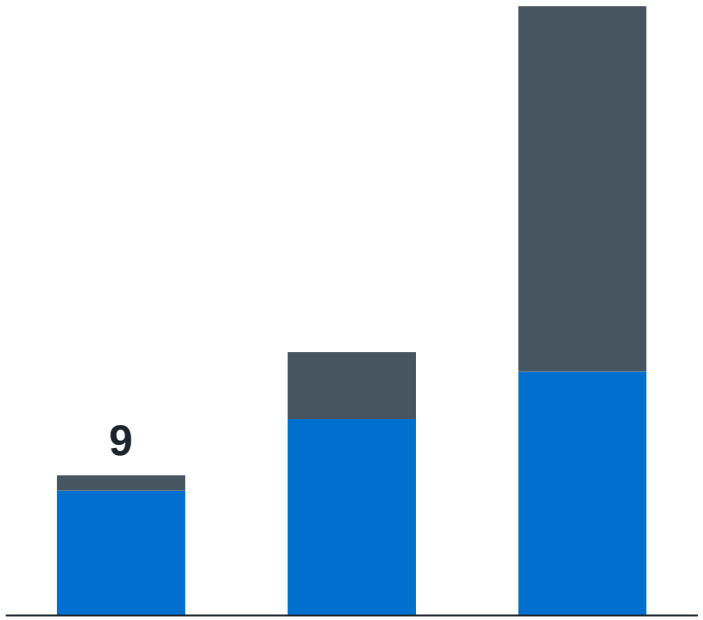
- **Near-to-Eye projection**
  Integrating RGB lasers or LEDs, driver ICs and optical path components in miniaturized package/form factor for projection solutions, and future microLED displays
- **Optical combiners / waveguides**
  Excellent optical performance with 5x-50x higher relative efficiency
- **Eye tracking systems**
  Based on NIR LED and laser technology, offering high speed and high accuracy at low power

Source: ams OSRAM market research and estimates

Key growth drivers – (3) AR/VR smart glasses

Uniquely positioned in both component and module markets

AR/VR glasses addressable market
(M units)



CAGR 2021-26 Total
CAGR 30-40%

Augmented Reality glasses
CAGR 85-95%

Virtual Reality headsets
CAGR 10-20%

15-20€
SAM/unit

~50€
SAM/unit

Uniquely positioned to win

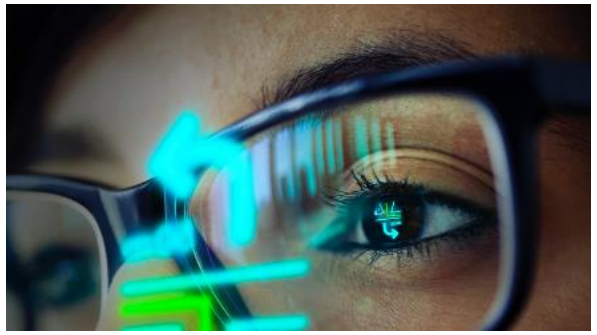
- Leading application know-how and support
- Strong traction in emitters based on excellent product performance, roadmap and reliability
- NIR image sensor offers optimal footprint & resolution for AR/VR today, unique roadmap with integrated wafer level optics
- In-house high-volume manufacturing capability for optics/waveguide components
- Broadest portfolio of products optimized for AR/VR glasses
- Customer traction with key Tier-1 OEMs

Volume Source: Yole Développement: 3D Imaging and Sensing – Technology and Market Trends, 2021

AR/VR video

Key takeaways

- Leading in majority of consumer segments served despite previously communicated headwinds in consumer business
- SAM growth for 2021-26 of 15-20% CAGR fueled by adoption of new features (e.g. camera enhancements, Vital Signs Monitoring), applications (e.g. AR/VR glasses) and technologies (e.g. microLED)
- Attractive mix of shorter and longer term growth drivers
  - Key growth drivers 3D Sensing & Camera Enhancement, BOLED ALS & Proximity Display Management, and Vital Signs Monitoring
  - Longer-term growth drivers AR/VR glasses and microLED displays
- Innovation leader with differentiated offering in each key growth driver



Key Industrial & Medical growth drivers

Jens Milnikel

GM Image Sensor Solutions

Industrial & Medical trends driving significant new opportunities

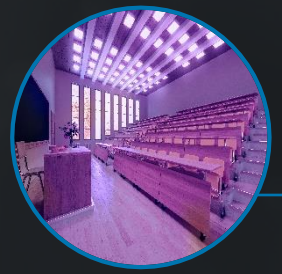
I&M Trends	Illumination	Visualization	Sensing
Smart health 	• UV-C disinfection acceleration		• Digital X-ray • CT photon counting • Point-of-care diagnostics
Industry 5.0 	• Smart industry lighting	• Smart surfaces	• Industrial automation • Drones & Robotics • Machine vision
		• Human Machine Interface	
Urbanization 	• Smart outdoor lighting • Vertical farming	• Outdoor displays	• Home & Building Automation • Security
Energy efficiency & sustainability 	• Horticulture • Disinfection • Human-centric lighting	• LED & laser projection	• Smart farming

Key applications enabled by illumination, visualization and sensing components

Illumination & Visualization

Outdoor / Industry Lighting

→ LED, presence detection sensor



UV-C LED Disinfection

→ LED, spectral sensor

Horticulture & Smart Farming

→ LED, spectral sensor

LED & Laser Projection

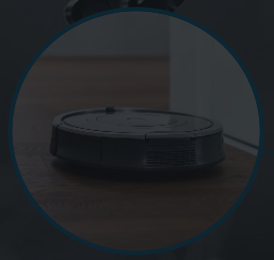
→ LED, laser

Home & Building Automation (HABA)

→ Image sensor, spectral sensor, illuminator, LED,

Point-of-care diagnostics

→ Spectral sensor, LED



Robotics & Drones

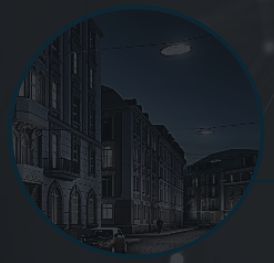
→ Image sensor, spectral sensor, illuminator, laser, LED, full ToF module

Medical Imaging

→ CT sensor modules, CMOS X-ray modules, ICs

Key applications enabled by illumination, visualization and sensing components

Sensing

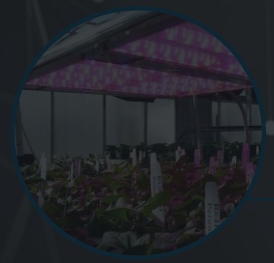


Outdoor / Industry Lighting

→ LED, presence detection sensor

UV-C LED Disinfection

→ LED, spectral sensor

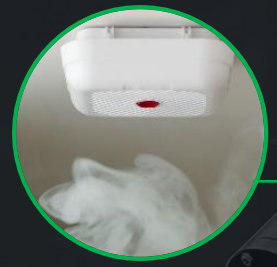


Horticulture & Smart Farming

→ LED, spectral sensor

LED & Laser projection

→ LED, laser



Home & Building Automation (HABA)

→ Image sensor, spectral sensor, illuminator, LED

Point-of-care Diagnostics

→ Spectral sensor, LED

Robotics & Drones

→ Image sensor, spectral sensor, illuminator, laser, LED, full ToF module

Medical Imaging

→ CT sensor modules, CMOS X-ray modules, Sensor Interface ICs

Leadership positions in key markets

Market position and relative market share (RMS = MS / MS#2)[1]

Horticulture (red)

#1

RMS 1.5-2

LED Projection

#1

RMS ~1.5

Medical Imaging

#1

RMS 1-1.5

Outdoor/Industry Lighting

#1/2

RMS 0.8-1.2

IR Vision LED

#1

RMS ~1.5

Material Processing

#1/2

RMS ~1

Industrial Imaging

#4

RMS <0.5

LiDAR emitters[2]

#1

RMS >2

1) Based on latest available market data 2) Automotive and Industrial markets combined

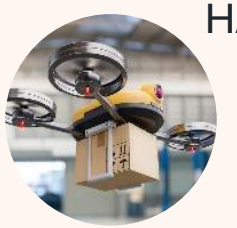
Broad range of Industrial & Medical growth drivers

Growth in established areas

Outdoor/Industry Lighting

Industrial Automation

HABA



Robotics & drones

Medical Imaging

Present growth drivers

Horticulture & Smart Farming

LED & Laser Projection

Emerging growth drivers

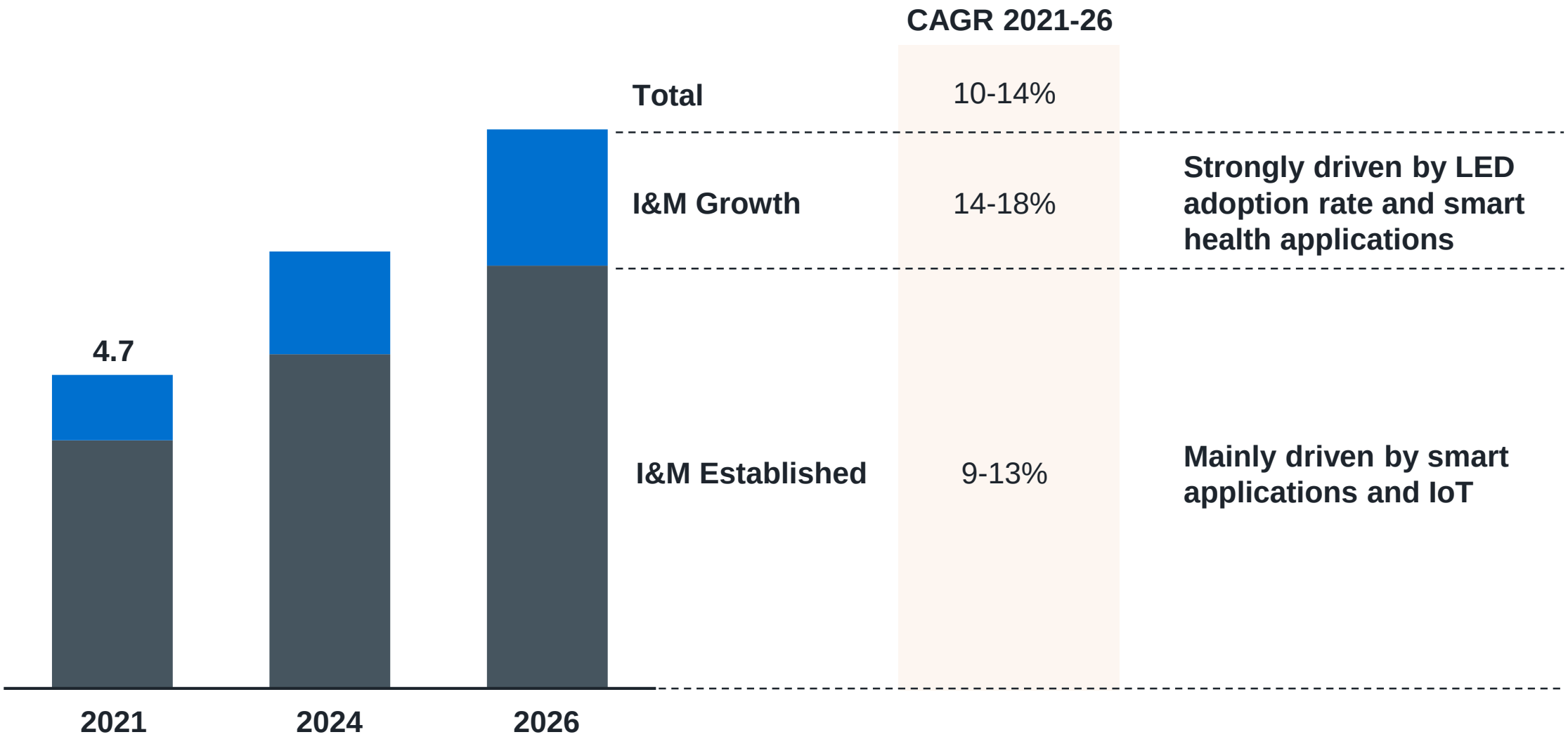
UV-C LED

Micro-cameras

Point-of-care diagnostics

Industrial & Medical addressed semiconductor market grows by 10-14% CAGR

B€



Source: ams OSRAM internal market model

Key growth drivers – (1) Horticulture

Drivers of fast-growing horticulture market

Increasing LED Adoption

… significantly higher energy efficiency for lower CO_2 footprint

Private investors and Government

… funding growth to reduce dependency on imports

Increase in automation

… to reduce labor costs in vertical farms to improve ROI

Broadening range of crops

… on top of continued strong growth in cannabis

Key growth drivers – (1) Horticulture

Significant growth potential as vast majority of green house area is not illuminated by artificial light

Artificial lighting in greenhouses globally

Global greenhouse illumination

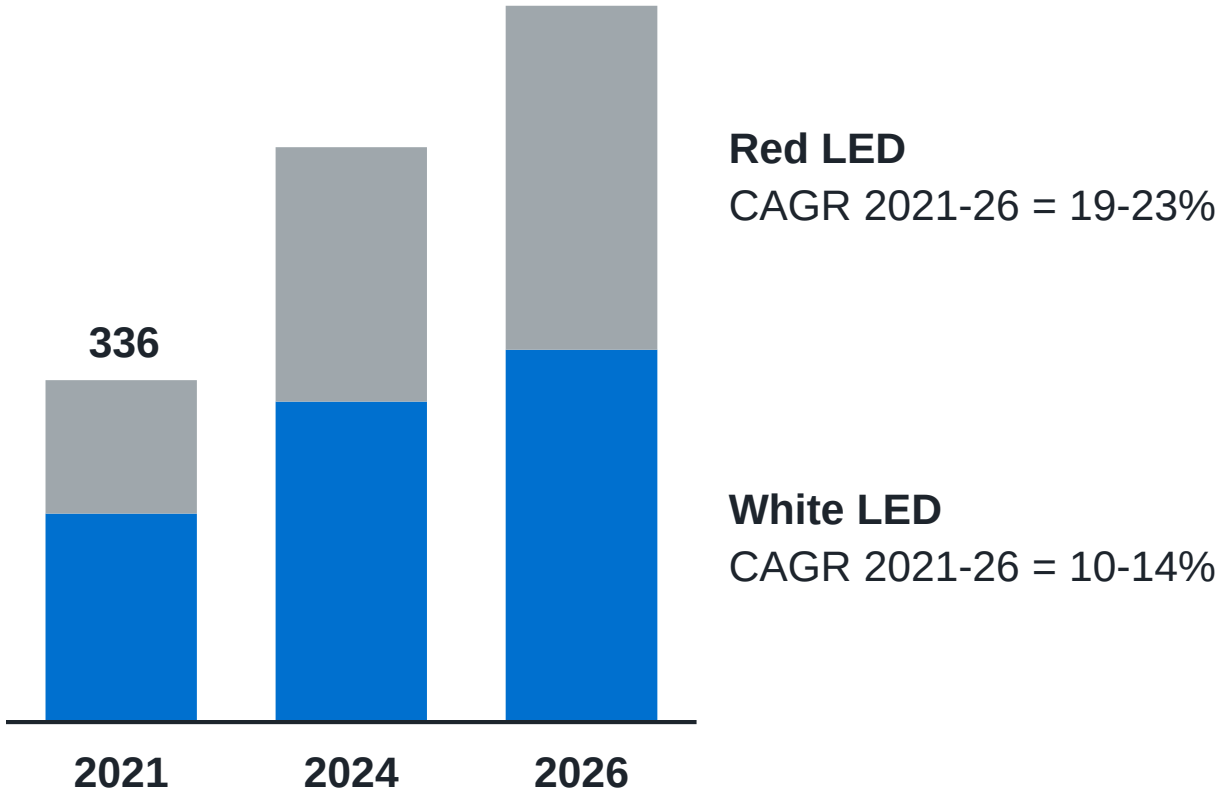
- Only a very small share of the worldwide green house area is illuminated today
- Of the illuminated area only ~10% are illuminated by LED luminaires
- Two growth drivers:
  - Further illumination of green houses
  - Conversion of traditionally illuminated area into LED

Source: Horti Daily and Produce Growers interviewed in Oct 20

Key growth drivers – (1) Horticulture

True market and technology leader in faster growing red LED segment

Horticulture LED market (value in M€)



Red LED
CAGR 2021-26 = 19-23%

White LED
CAGR 2021-26 = 10-14%

Our key differentiators in red LED

- 15 years experience in red process technology
- Full solution in-house (Epi, chip & packaging), while LED competitors need to buy chips
- Around 3 ppt better wall-plug efficiency vs. next best competitor across generations → significant competitive advantage as this can drive 20-40% higher crop yield
- New batwing lens design delivers better light distribution in selected plant setups
- #1 in lifetime and reliability data
- Best-in-class application support

Source: ams OSRAM internal market model

Horticulture video

Key growth drivers – (2) UV-C LED

Strong long-term potential, accelerated by Covid-19

Air disinfection

Surface disinfection

Water disinfection

UV-C disinfection using LEDs

- UV-C LEDs enable novel applications and replace traditional mercury lamps
  - Smaller footprint
  - Increased energy efficiency
  - Lower system cost
- Growth potential across various application areas:
  - Air: Air conditioning in cars, planes, offices
  - Surfaces: Hospitals, transportation, food
  - Water: Point of use and larger facilities
- Accelerating market growth driven by Covid-19, especially for air and surfaces applications

Note: Graphical representation as UV-C is not visible

Key growth drivers – (2) UV-C LED

Focus on high power applications in increasingly demanding application segments

Sub-segments:

Air	Surface	Water

Wave 4:
Professional water treatment

Wave 3:
Medical and Auto products

Wave 2:
Household goods & lighting

Wave 1:
Consumer products

Increasingly demanding application segments with higher power requirements

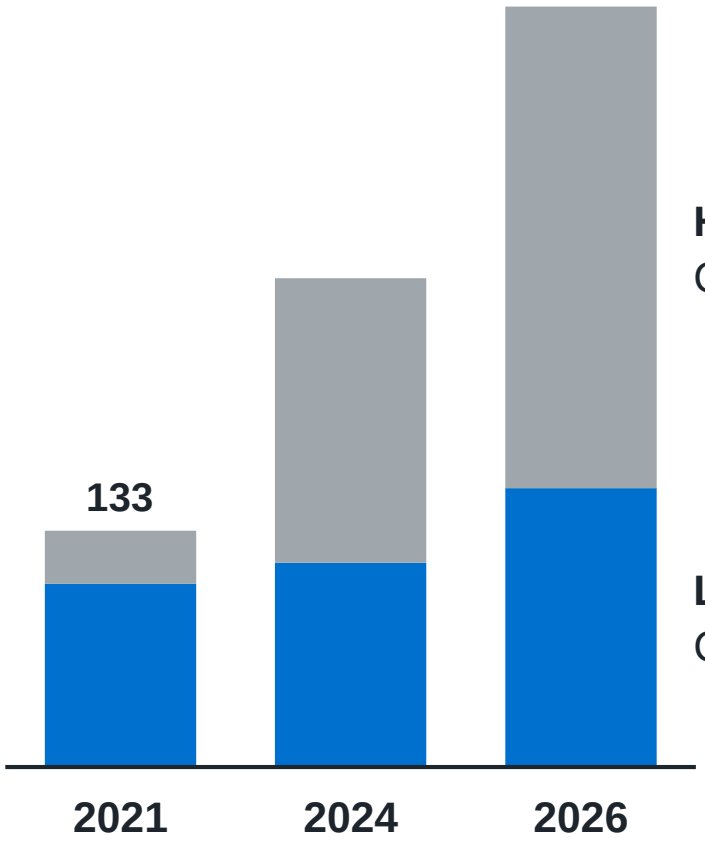
2018 2020 2022 2024 2026

Note: Graphical representation as UV-C is not visible

Key growth drivers – (2) UV-C LED

Penetrating High Power market with differentiated offering

UV-C LED market (M€)



High Power
CAGR 2021-26 = 100-120%

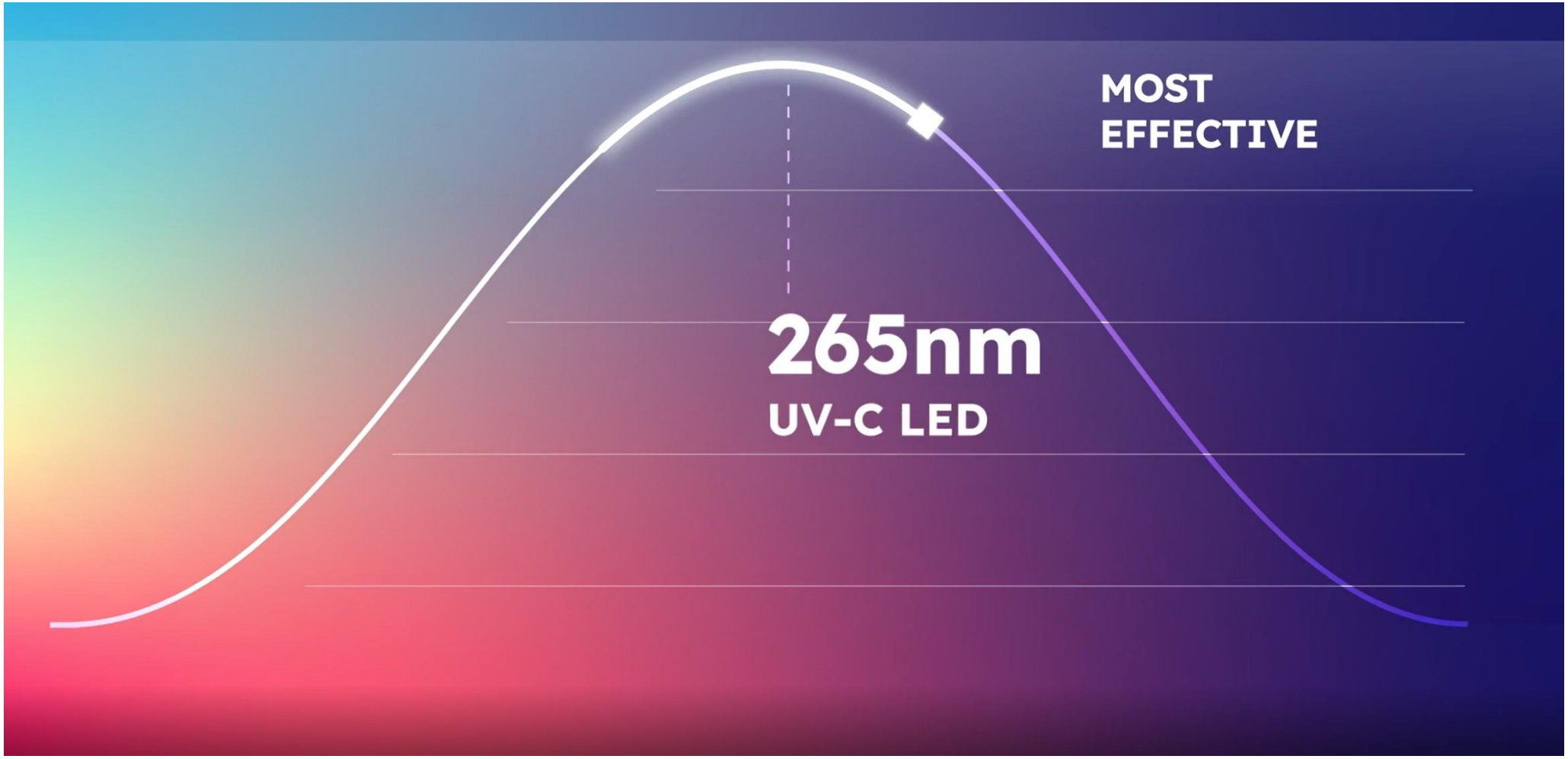
Low Power
CAGR 2021-26 = 10-20%

Our key differentiators in High Power

- Best in class wall plug efficiency (EQE) – targeting 20% for professional application – enabling lower system cost and longer lifetime
- Covering whole value chain (Epi, chip, LED, packaging), including high power ceramic package with tailored thermal management
- Full in-house manufacturing enables becoming a leader in €/mW
- Strong quality reputation for industry and medical segment

Source: ams OSRAM internal market model

UV-C LED video



Key growth drivers – (3) LED / Laser Projection

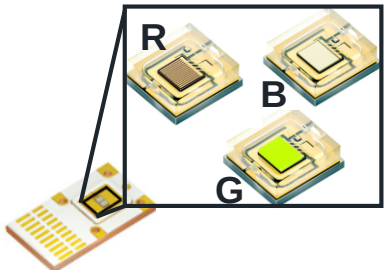
Both LEDs and Lasers are used as a light source for projection

Only player able to offer full portfolio spanning LED and Laser + complementing sensors

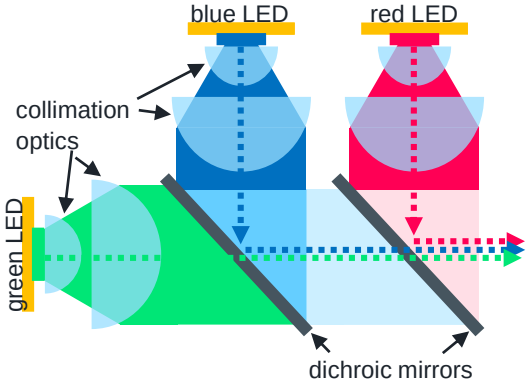
Projected lumen

2,000 | **4,000** | **10k+**

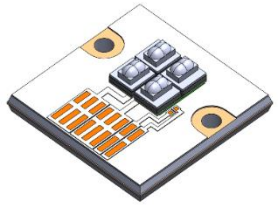
LED (e.g. projectors for entry-level consumer)	**LED + Laser** (e.g. projectors for home cinema)	**Laser** (e.g. projectors for enterprise & education)



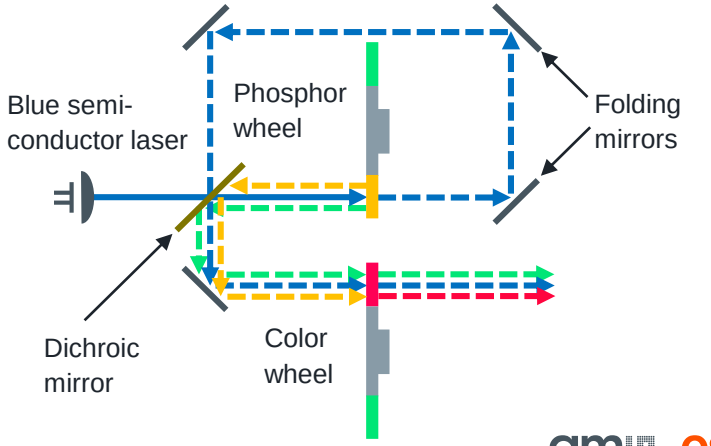
Red, green and blue LEDs



DLP



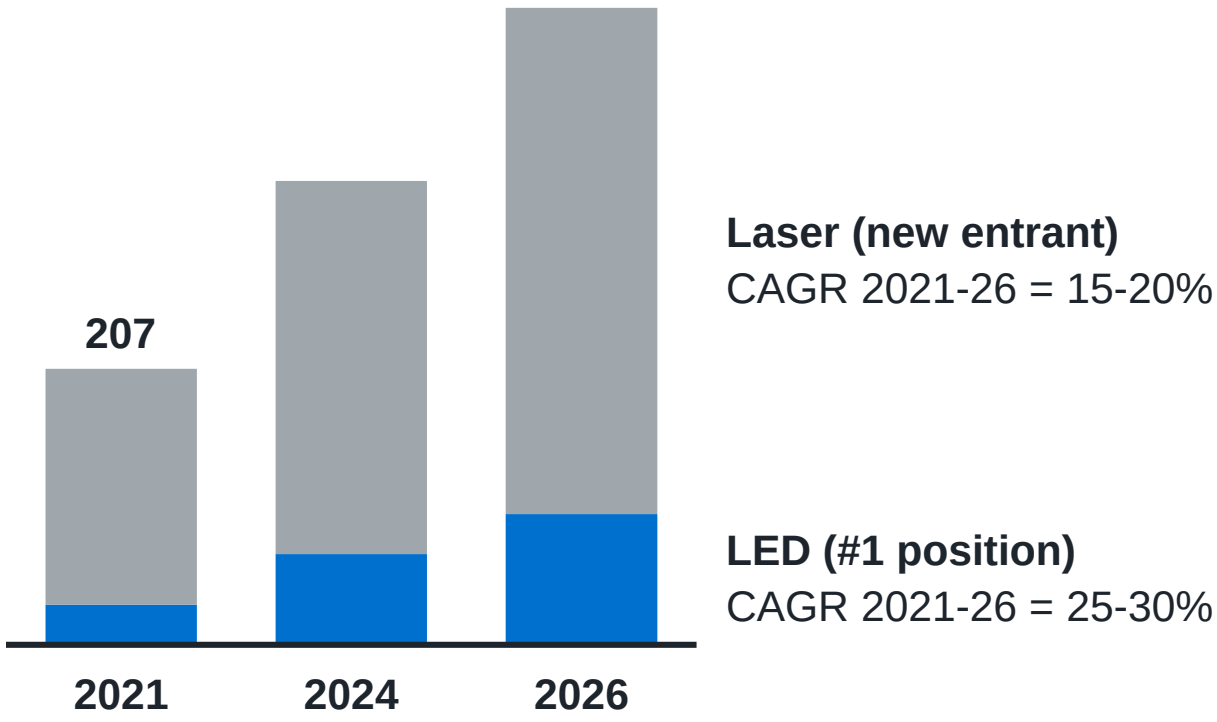
High power blue lasers



Key growth drivers – (3) LED / Laser Projection

Entering Laser segment to further accelerate growth as one-stop shop for LED + Laser

LED & Laser Projection market[1] (in M€)



Laser (new entrant)
CAGR 2021-26 = 15-20%

LED (#1 position)
CAGR 2021-26 = 25-30%

Our key differentiators in LED

- Best-in-class luminance in Red and Green LEDs, and on par in Blue
- Best-in-class application fit for larger DLP-imager sizes
- Best-in-class quality, automotive qualified

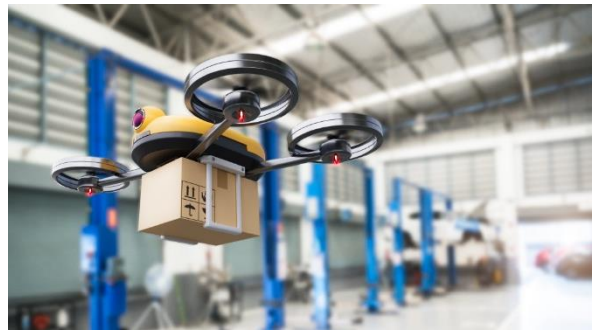
Why we will win share in Laser

- Customers want alternative supply to one major supplier
- Set to achieve best-in-class wall-plug efficiency
- Packaging synergies with broader laser portfolio

1) does not include Automotive applications Source: ams OSRAM internal market model

Key takeaways

- Targeting specific markets where challenging requirements allow for differentiation through innovation, resulting in #1/2 positions in majority of addressed markets
- SAM growth for 2021-26 of 10-14% CAGR fueled by global megatrends which we expect to outgrow
- Attractive mix of shorter and longer term growth drivers
  - Significant growth opportunities in established areas
  - Key growth drivers in components for Horticulture and LED/Laser Projection
  - Longer-term growth from UV-C LED, micro-cameras and point-of-care diagnostics opportunities
- Innovation leader with differentiated offering in each key growth driver



Key Takeaways

Alexander Everke

Chief Executive Officer

Clear investor value proposition for ams OSRAM

	Clear long-term targets
Commitment to growth Leader in optical solutions driven by secular growth trends in Automotive, Consumer and Industrial & Medical	• Revenue CAGR >10%, outgrowing our SAM
Path to strong sustainable profitability Doubling of EBIT margin driven by portfolio optimization, manufacturing footprint consolidation, synergy realization and revenue growth	• Synergies / savings ~350M€ • Adj. EBIT margin 20%+
Balanced and diversified business mix Balanced application end-market exposure and diversified global customer base creates broadly supported earnings streams	• Automotive 35-40%, Consumer 35-40%, I&M 25-30% • Top 10 global customers 35-40%
Prudent financial policy De-lever based on strong operational cash flows and proceeds from divestments, while maintaining investment for growth	• Divestment proceeds >500M€ • Targeting investment grade with net debt/adj. EBITDA <2x
Focus on long-term value generation Re-invest in differentiating technology & innovation and related organic growth opportunities, in alignment with ESG focus	• Carbon neutrality in 2030 • Gender diversity in leadership 25% in 2026

Note: Expected values based on current target model and available information
Expectations and targets are based on ams OSRAM's latest reasonable assumptions and do not include potentially material effects related to the further development of the current or to any future geopolitical crisis
Adjusted figures exclude M&A-related, transformation and share-based compensation costs as well as results from investments in associates and sale of a business

ams OSRAM - engineered for success

Technologies

Opportunities

Customers

People

Become the uncontested leader in optical solutions

Sensing is life

Glossary

Abbr.	Explanation
AFE	Analog Front-End
AGM	Annual General Meeting
ALS	Ambient Light Sensor
AM	Automotive
ASIC	Application Specific Integrated Circuit
BOLED	Behind OLED (screen)
CB	Convertible Bond
CMOS	Complementary Metal-Oxide-Semiconductor
CSP	Chip Scale Package
CT	Computer Tomography
DLP	Digital Light Processing
DMS	Driver Monitoring System
DOE	Diffractive Optical Element
DPLTA	Domination and Profit and Loss Transfer Agreement
dToF	Direct Time of Flight
EEL	Edge Emitting Laser
EMC	Epoxy Mold Compound

Abbr.	Explanation
EMS	Electronics Manufacturing Services
EPI	Epitaxy
EQE	External Quantum Efficiency
EVIYOS	Product for pixelated matrix LED forward lighting
FoV	Field of View
HABA	Home Automation & Building Automation
HMI	Human Machine Interface
HuD	Head Up Display
HVAC	Heating, Ventilation und Air Conditioning
I&M	Industrial & Medical
IC	Integrated Circuit
ICS	In-Cabin Sensing
IMS	Interior Monitoring
IR	Infrared
L&S	Lamps & Systems
LCD	Liquid Crystal Display
LED	Light Emitting Diode

Glossary

Abbr.	Explanation
LiDAR	Light Detection and Ranging or Laser Imaging Detection And Ranging
MEMS	Micro Electrical Mechanical Systems
ML	Machine Learning
MS	Market Share
NIR	Near Infra-Red
OEM	Original Equipment Manufacturer
OFE	Optical Front End
OLED	Organic Light Emittling Display
OSAT	Outsourced Assembly and Test
PCB	Printed Circuit Board
PPG	Photoplethysmogram
QD	Quantum Dot
QFN	Quad Flat No Leads Package
RCF	Revolving Credit Facility
RGB	Red, Green, Blue
RGGB	Red, Green, Green, Blue
RGBi	Intelligent Red, Green, Blue
RMS	Relative Market Share

Abbr.	Explanation
ROI	Return On Investment
SAM	Serviceable Available Market
SMI	Self-Mixing Interferometry
SMIF	Standard Mechanical Interface
SNR	Signal to Noise Ratio
SPAD	Single Photon Avalanche Diode
SW	Software
ToF	Time of Flight
TSV	Through Silicon Vias
UV	Ultra Violet
UV-C	Short-wave Ultra Violet light (C-Band)
UX:3	Properiety High power chip technology
VCSEL	Vertical Cavity Surface Emitting Laser
VIM	Versatile Interface Module
VPH	Volume Phase Holograms
VSM	Vital Signs Monitoring
WLO	Wafer Level Optics
XLS	Exchangeable Light Source

Disclaimer

This presentation contains information relating to ams OSRAM Group ("ams OSRAM") that must not be relied upon for any purpose and may not be redistributed, reproduced, published, or passed on to any other person or used in whole or in part for any other purpose. By accessing this document, you agree to abide by the limitations set out in this document as well as any limitations set out on the webpage of ams-OSRAM AG on which this presentation has been made available.

This document is being presented solely for informational purposes. It should not be treated as giving investment advice, nor is it intended to provide the basis for any evaluation or any securities and should not be considered as a recommendation that any person should purchase, hold or dispose of any shares or other securities.

The information contained in this presentation may comprise financial and similar information which is neither audited nor reviewed and should be considered preliminary and subject to change. Some of the information presented herein is based on statements by third parties. No representation or warranty, express or implied, is made as to, and no reliance should be placed on, the fairness, accuracy, completeness or correctness of this information or any other information or opinions contained herein, for any purpose whatsoever.

This presentation may contain forward-looking statements based on current assumptions and forecasts made by ams OSRAM management and other information currently available to ams OSRAM. Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. In particular, at the time of preparing this presentation, it is not possible to predict with sufficient certainty to what extent geopolitical developments, specifically the current Russia-Ukraine conflict and possible further escalations, will have material effects which could impact the global economy and growth in the industry in fiscal year 2022 and beyond.

Besides, material risks, uncertainties or other factors for us include the following: the duration and spread of the COVID-19 outbreak, its severity, the actions to contain the virus or treat its impact, and how quickly and to what extent normal economic and operating conditions can resume; our access to production from third-party outsourcing partners, and any events that might affect their business or our relationship with them including the outbreak of COVID-19; our ability to secure adequate and timely supply of equipment and materials from suppliers; our ability to avoid operational problems and product defects and, if such issues were to arise, to correct them quickly; our dependence on the business success with key customers; our ability to successfully introduce new technologies and products in a highly competitive landscape; volatile market demand and conditions of the industries in which ams OSRAM is operating; potential increase of barriers to international trade and resulting disruptions to our established supply chains; our ability to achieve the strategic and financial targets related to acquisitions and divestments, in particular concerning the takeover of the OSRAM group and related M&A measures.

ams OSRAM does not intend, and does not assume any liability whatsoever, to update these forward-looking statements or to conform them to future events or developments. Neither ams OSRAM nor any respective agents of ams OSRAM undertake any obligation to provide the recipient with access to any additional information or to update this presentation or any information, or to correct any inaccuracies in any such information.

Certain numerical data, financial information and market data (including percentages) in this presentation have been rounded according to established commercial standards. As a result, the aggregate amounts (sum totals or interim totals or differences or if numbers are put in relation) in this presentation may not correspond in all cases to the amounts contained in the underlying (unrounded) figures appearing in the consolidated financial statements. Furthermore, in tables and charts, these rounded figures may not add up exactly to the totals contained in the respective tables and charts.