

Sense the power of light

ams OSRAM

Sustainability in Micro-Electronics

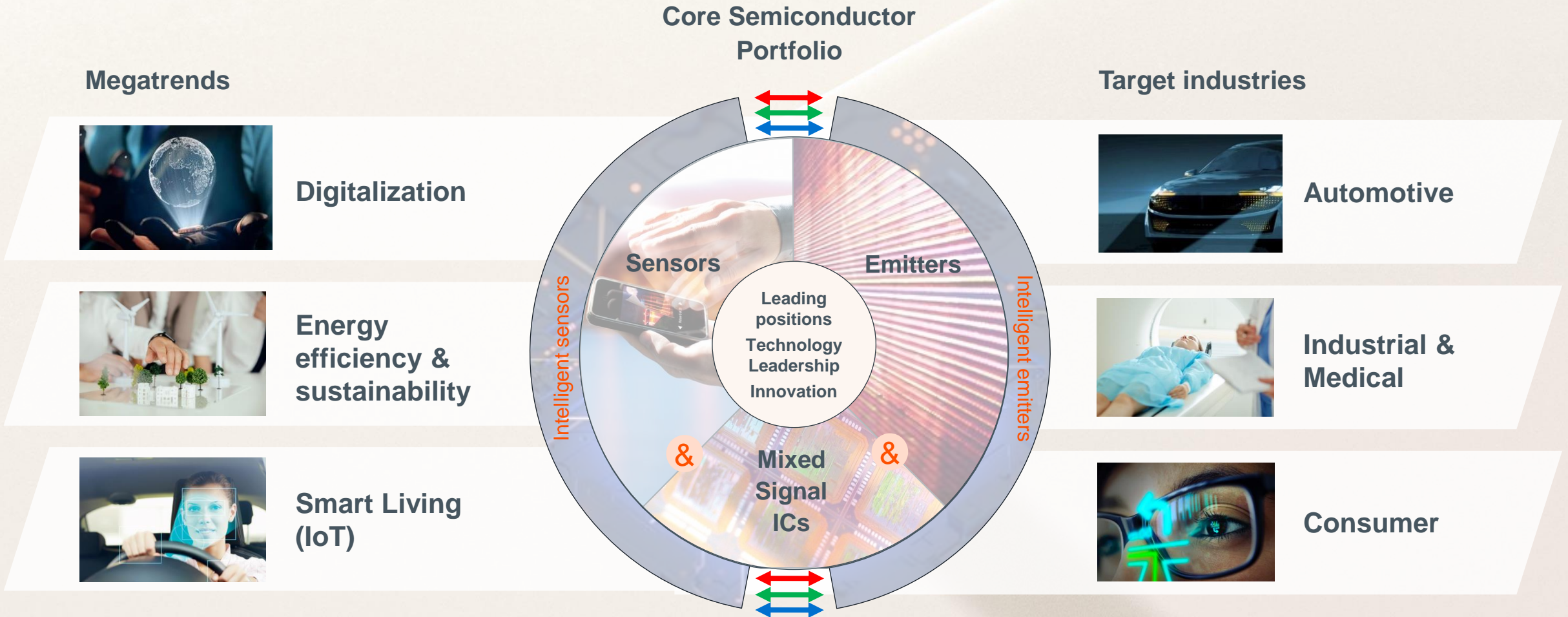
Sense the power of light by ams OSRAM to support the world
in going GREEN

Dr. Strauss, Joerg
Executive Vice President
Corporate Quality, Research & Development
03/06/2024



Structural growth in semiconductor core portfolio is driven by mega-trends and leading market positions

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



Three ways we drive sustainability at ams OSRAM



Sustainable production

Driving resource efficiency and recycling in our component production



Energy & resource efficient components

Increased energy efficiency and lifetime span in microelectronic devices



Enabled applications

Creating sustainable value and improving lives through technology



Sustainable production ams OSRAM Regensburg



Standby energy

Reducing energy used by clean rooms and other processes during standby/maintenance

Material recycling

Enabling recycling of Ga, GaAs & Au

Heating & cooling

Heat pump installation and other initiatives

Impact at a glance

+20% *Throughput increase at lower power consumption*

-20% *Industrial gases*

-24% *CO₂*

Ga, GaAs, Au, water, air recycling

N₂ and H₂ production

Enabling higher efficiency and lower cost

Air and water recycling

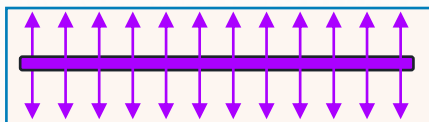
Feeding air back into clean rooms
25% wastewater savings

Energy efficient components, enabled applications

UV-C LED disinfection



Conventional – Hg based



Hg UV-C Lamp based system

Source Φ_{e_UV-C} : 19 W
Power P_{el} : 55 W
Air Flow: 78 m³/h
Position: center

-90%

Radiation
needed

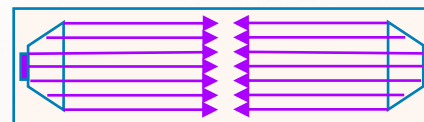
-30%

Potential
energy
saving



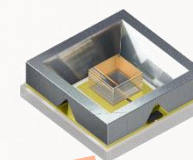
No
Mercury
pollution

Innovation - LED



LED UV-C Lamp based system

Source Φ_{e_UV-C} : 2 W
Power P_{el} : 39 W
Air Flow: 78 m³/h
Position: center



Only manufacturer in Europe
Top 2 player globally

Applications enabled

- Drinking water disinfection and recycling
- Surface treatment
- Air purification

Energy efficient components, enabled applications

Agricultural lighting



83.2%

Wall plug efficiency (-50% electrical energy vs. traditional high pressure sodium lamps)

>102k

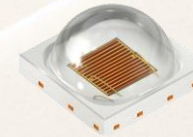
*Hours of Q90 Lifetime
~30 years @10 hours/ day*

4C+W

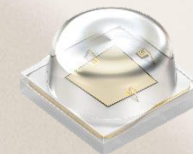
Four wavelengths + Horti White to drive efficient photosynthesis and enable stable production yield

~4%

Higher efficacy due to light uniformity enabled by Batwing optics



Osconiq P 3737



Oslo Square
Batwing

Applications enabled

- Controlled growing environments to increase food product effectiveness (“feed the world”)
- Addressing water shortage challenge and reducing fertilizer and pesticide need

Energy efficient components, enabled applications

Automotive lighting

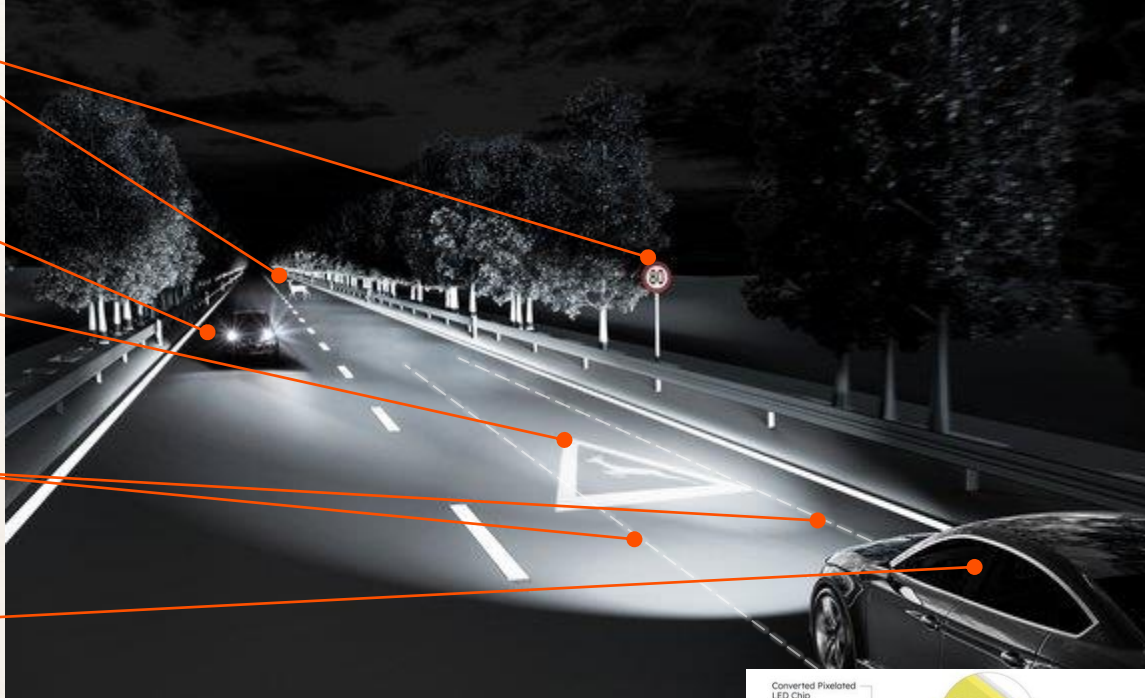
Advanced
object spotting

Glare-free
high beam

Geo-referenced
symbol projection

Vehicle trajectory
illumination for
precise steering

User experience
(coming home,...)

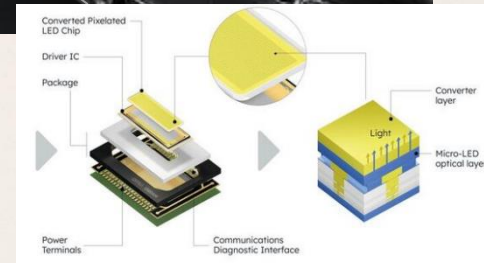


25.000+
pixels resolution

**Maximum
efficiency**
*by dimming
individual pixels
(vs. alternative
solutions <50%
efficiency)*

Applications enabled

- Road safety, pedestrian safety
- Responsible driving
- Efficiency, heat and range (EV)



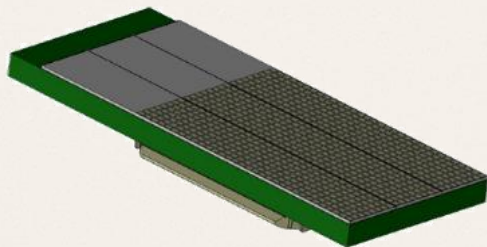
Energy efficient components, enabled applications

Medical imaging



-50% *lower x-ray dose*

better quality *of image for better diagnostic*

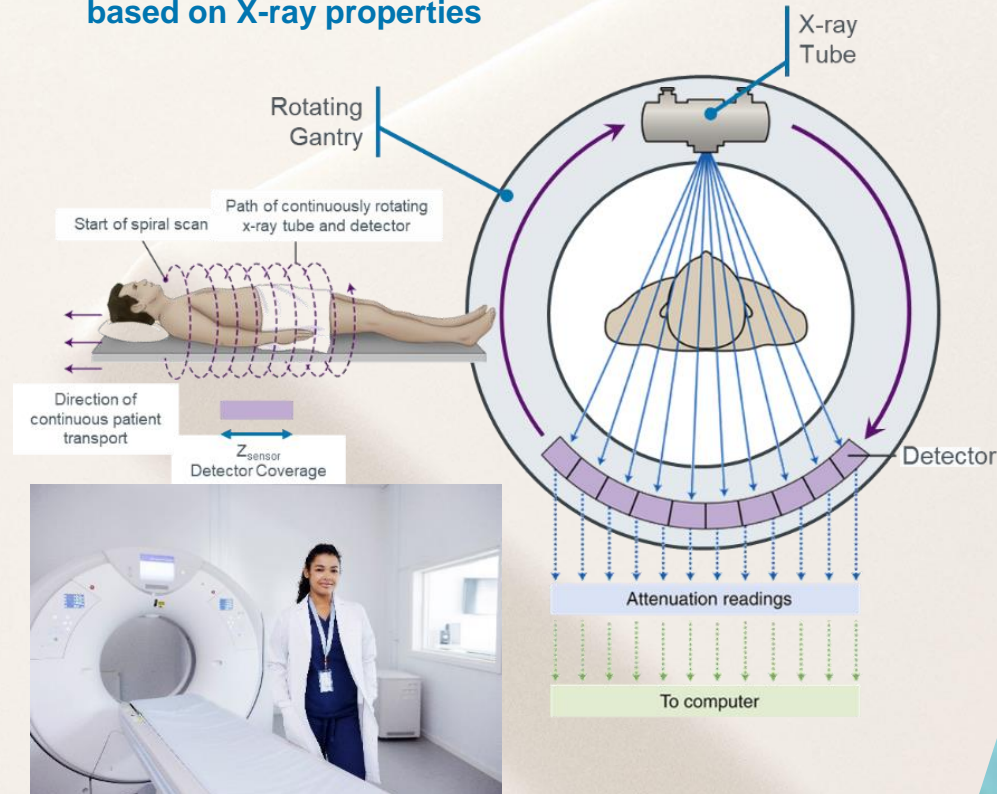


ams OSRAM 64-Slice CT Detector Module

Applications enabled

- Computer tomography
- Digital X-ray

Generation of 3D images based on X-ray properties



... and far beyond ams OSRAM applications across industries

Digitalization

Automotive



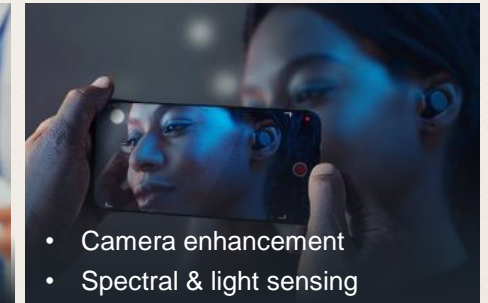
Industrial



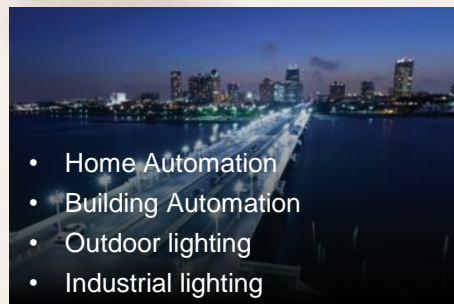
Medical



Consumer



Smart Living (IoT)



Energy efficiency & sustainability



Sense the power of light



Funded by
the European Union
NextGenerationEU

Supported by:



Federal Ministry
for Economic Affairs
and Climate Action

on the basis of a decision
by the German Bundestag

amun

OSRAM



IPCEI Microelectronics and
Communication Technologies

Bayerisches Staatsministerium für
Wirtschaft, Landesentwicklung und Energie

