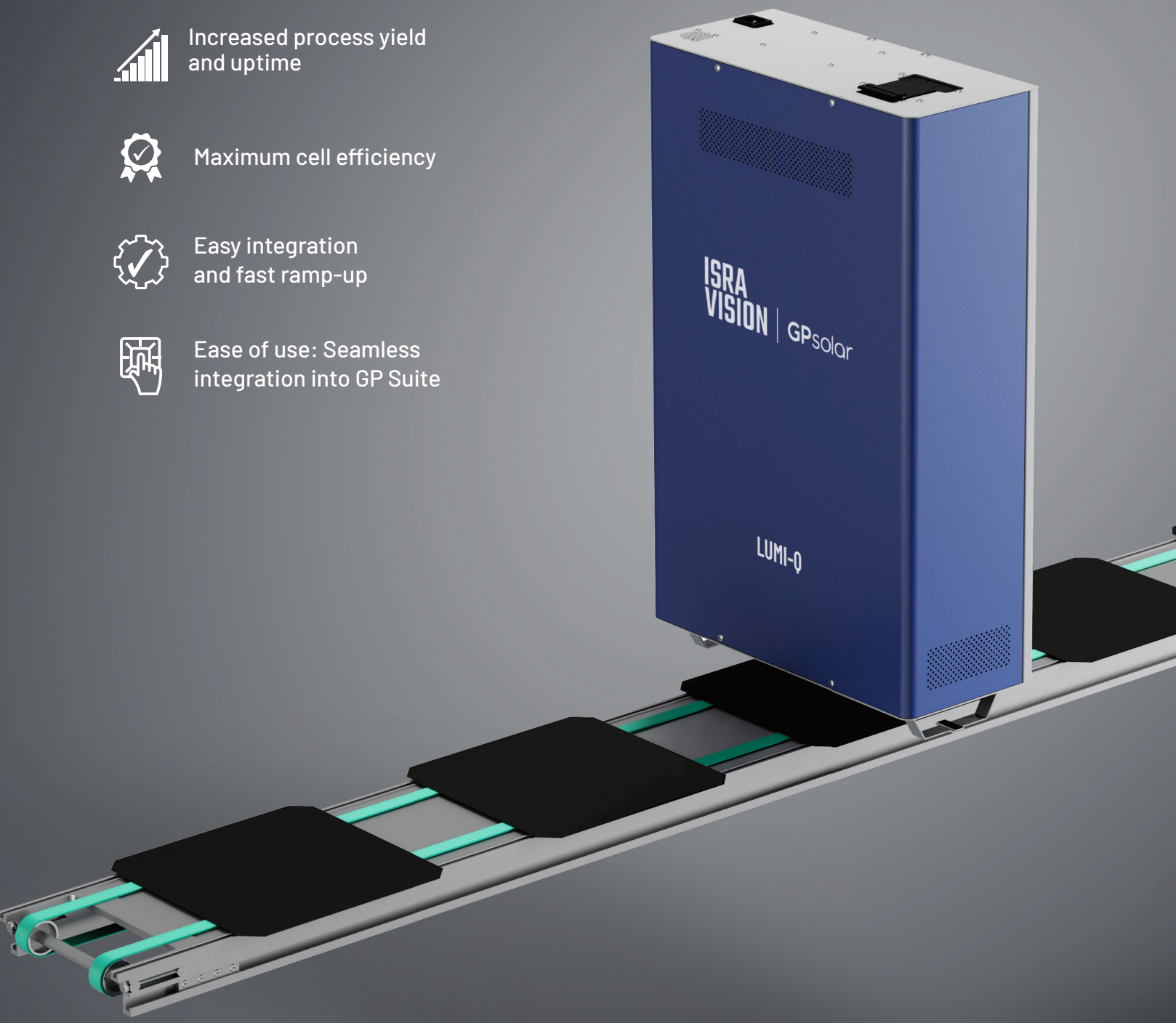
- Increased process yield and uptime
- Maximum cell efficiency
- Easy integration and fast ramp-up
- Ease of use: Seamless integration into GP Suite



LUMI-Q Coating

Pre- and post-coating photoluminescence inspection

ISRA VISION
Part of Atlas Copco Group

ABOUT LUMI-Q COATING

LUMI-Q Coating is a photoluminescence inspection system designed for pre- and post-coating inspection. It automatically detects all relevant defects that have a negative impact on cell efficiency. With the information generated by LUMI-Q Coating during the inspection, the system provides immediate feedback on the process, which can then be corrected or continued accordingly. Without a laser and therefore without additional safety measures, LUMI-Q Coating delivers reliable results with fast cycle times and high production volumes. Thanks to the unique ISRA VISION GP platform design, LUMI-Q Coating can be integrated into existing systems without any additional footprint and fits seamlessly into the existing GP software suite.

KEY FEATURES

- **Laser-free – reduced safety requirements**
- **Seamless integration into standard handling equipment**
- **On-the-fly scanning**
- **Fast measurement speed: ≥ 1500 mm/s @ 1k**
- **Easy integration into GP Software Suite and fab data management (Connected PV 4.0)**
  - **Central recipe management**
  - **Central data reporting**
  - **Interface to MES system**

DEFECTS

Material defects: Microcracks, impurities, crystal defects, cell breakage

Coating defects: Scratches, stains, passivation defects

- For layers with very high lateral conductivity (e.g. very high doped TCO for HTL/ETL): defects affecting lateral current flow
- Defects caused by shading, e.g. objects such as wafer debris

PROCESSES

HJT (xBC)

- i:a-Si deposition
- n:a-Si, p:a-Si, n:µc-Si, p:µc-Si deposition
- TCO coating

TopCon (xBC)

- Poly-deposition
- AlOx coating
- SiNx coating

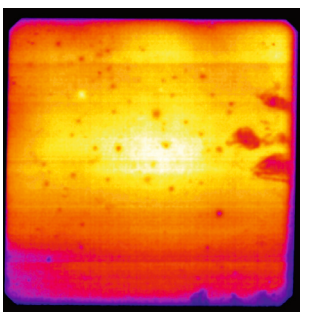
Perovskite

Bottom cell:

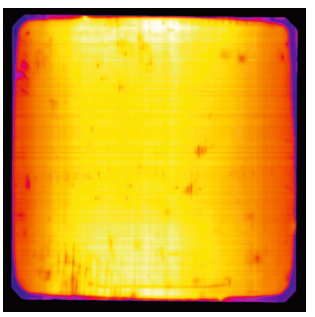
- Poly-deposition
- AlOx coating
- SiNx coating

Top cell:

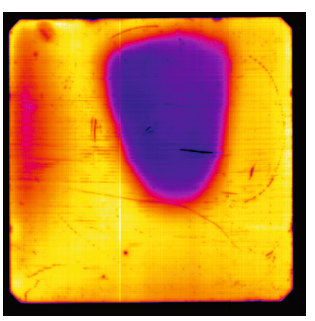
- TCO bottom
- ETL/Absorber/HTL
- TCO top



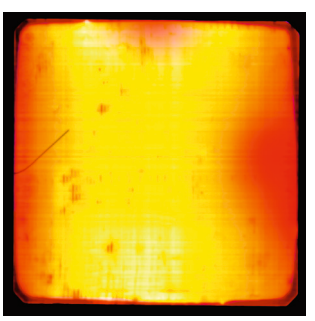
Photoluminescence enables checking the electrical material properties inside the cell.



Edge wrap-around in poly deposition



Passivation issue in FS PECVD



Cracks

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