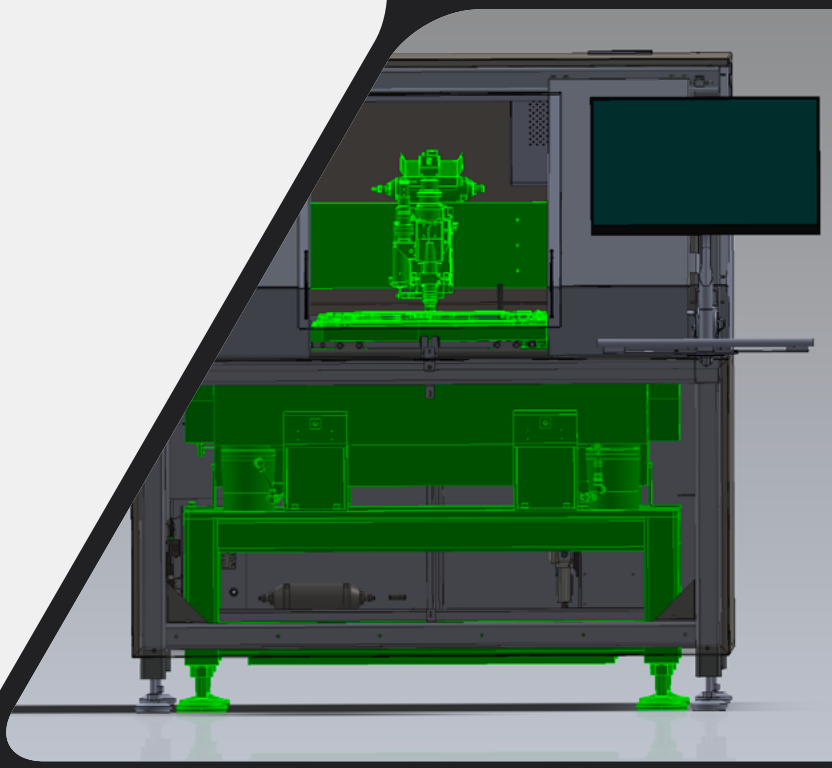
STRATUS INREMA

PHOTOMASK & RETICLE INSPECTION – PRECISION MEETS SIMPLICITY



Areascan Camera

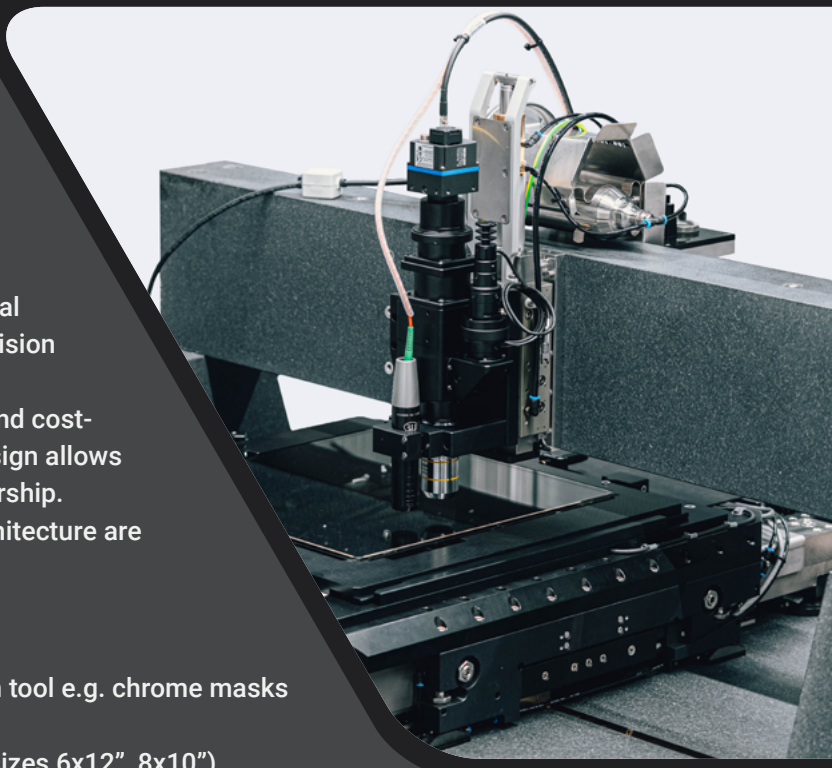
Manual Loading

Aftermarket Automation

Multiple Lighting Scenarios

AI Defect Classification

Resolution < 1µm



Engineered for the Highest Standards in Photomask Inspection

The STRATUS INREMA was designed to meet current and future mature photomask inspection requirements with full Die-to-Database (D2DB) and particle inspection capabilities. Supporting transmissive and reflective (T/R) lighting and mask sizes from 4" up to 14", including special formats (e.g., 6×12", 8×10"), INREMA combines high precision with unmatched simplicity.
Perfectly matched for high-throughput, fast turnaround and cost-sensitive mask production, INREMA's no-consumable design allows for continuous 24/7 operation with minimal cost of ownership.
INREMA's air-bearing motion and contamination-free architecture are optimized for ISO Class 3 and better cleanrooms.

Key Features & Capabilities

- Manually or automatically loaded photomask inspection tool e.g. chrome masks and reticles
- Supports reticle sizes from 4" to 14" (including special sizes 6x12", 8x10")
- Quick nest exchange in < 30 seconds without recalibration
- Designed for cleanroom use (ISO class 3 and higher)
- Compact footprint and robust, low-cost design
- Defect detection down to 100nm
- STRATUSLight combined top and bottom light inspection for finding particles and surface defects on photomasks

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Photomask Inspection with SPIN & SPINDLE

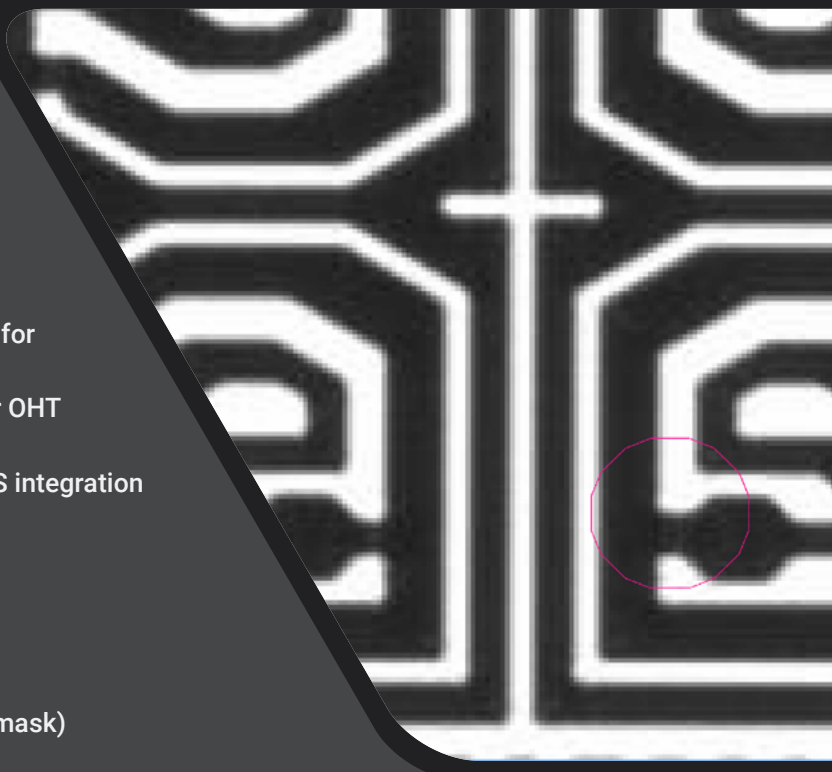
The Stratus SPIN software integrates seamlessly into production and supports direct CAD file imports (OASIS, GDSII) without conversion, delivering repeatable, verifiable defect detection with transmissive and reflective illumination for maximum contrast.
Setup requires less than 5 minutes, including data preparation and alignment, even for large data sets (>50 GB).

- Automated defect categorization via software
- Quick exchange nests: mask size changes < 30 seconds with automatic software alignment and no recalibration
- Defect spec: 0.25 µm on 6" mask in 36 minutes total cycle time
- Very low false call rate

Metrology & Review Integration

During inspection, INREMA automatically records absolute height values and detects surface variations or damage, while also measuring critical dimensions (CDs) across multiple plate areas in one automated step.

During review, the operator can overlay defects with CAD data for fast classification and perform post-repair verification immediately without additional setup.



Operational Highlights:

- >95% system availability
- Low maintenance cost
- No consumables or recurring parts

Connectivity & Automation

- Connection to repair tools via Stratus RepairLink Server for automated feedback
- Manual or fully automatic loading with optional EFEM or OHT SMIF interface
- SECS/GEM & OPC-UA communication protocols for MES integration
- Automated job scheduling and recipe management

Performance at a Glance

- 4"–14" reticle support
- < 5 min total setup (data + alignment)
- 0.25 µm defect detection capability (36 min cycle @ 6" mask)
- CAD overlay with automated categorization
- Fully automatable with optional EFEM/OHT
- Inspection with and without pellicle incl. particle inspection via StratusLight
- AI-assisted defect classification (optional)
- Traceability: Automatic logging of UID, lot, operator ID, and inspection parameters for MES traceability.

Learn more here! ▶▶▶

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