

AT1 Thin Film Defect Optical Scanner

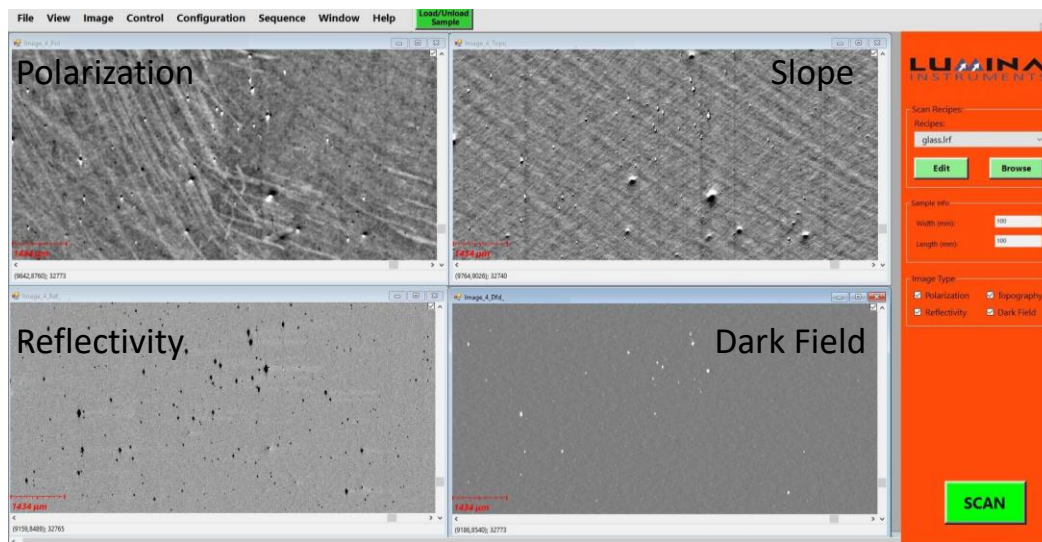


The **Lumina Instruments AT1** introduces an innovative technology in laser scanning

- Enables full surface scan and imaging of sub-nanometer film coatings and defects
- Scans and displays a 50-mm x 50-mm sample in 30 seconds
- Capable on transparent, silicon, compound semiconductor or metal substrates
- Accommodates non-circular and fragile substrates
- Able to separate top/bottom features on transparent substrates
- Up to 300x300 mm scan area
- Can scribe location of defects for further analysis



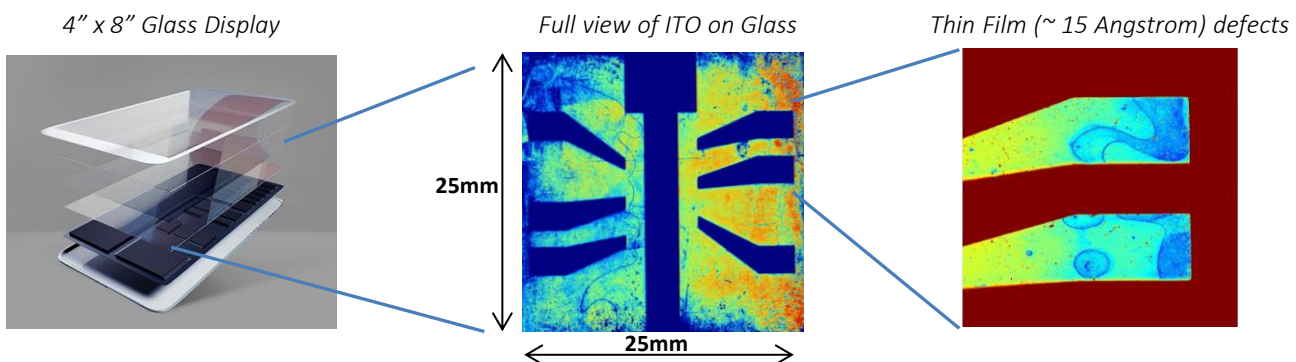
The AT1 has 4 detection channels for imaging of sub-nm transparent stains, particles, and crystal defects.



4 Detection channels:

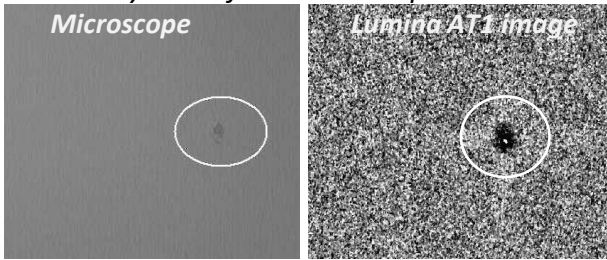
- **Polarization** (film, scratches)
- **Slope** (height, depth)
- **Reflectivity** (particles on rough surface)
- **Dark Field** (particles, scratches)

The polarization image generated by the AT1 is shown in the images below. Local film thickness variations as small as a few Angstroms are easily captured by the system.

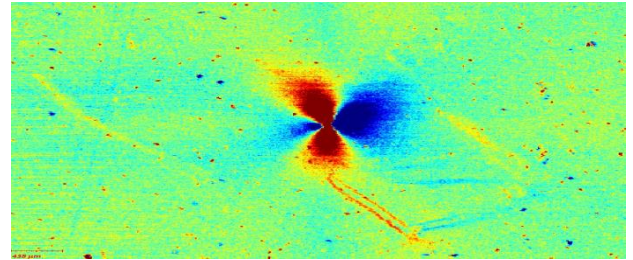


System Information

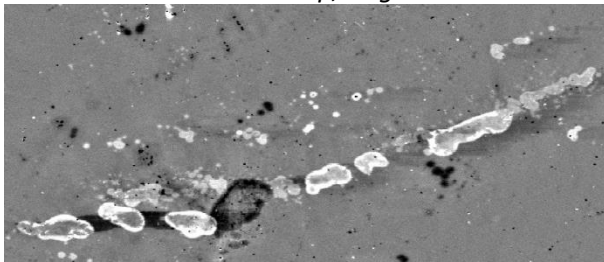
Glass crystal defect: Microscope vs Lumina



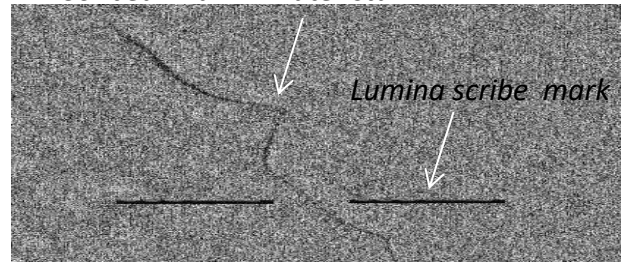
Stress Points within Glass Substrate



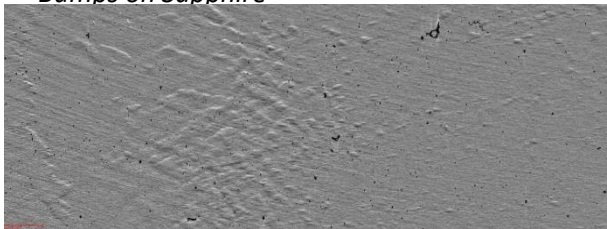
Stain on Glass: dark on top, bright at the bottom



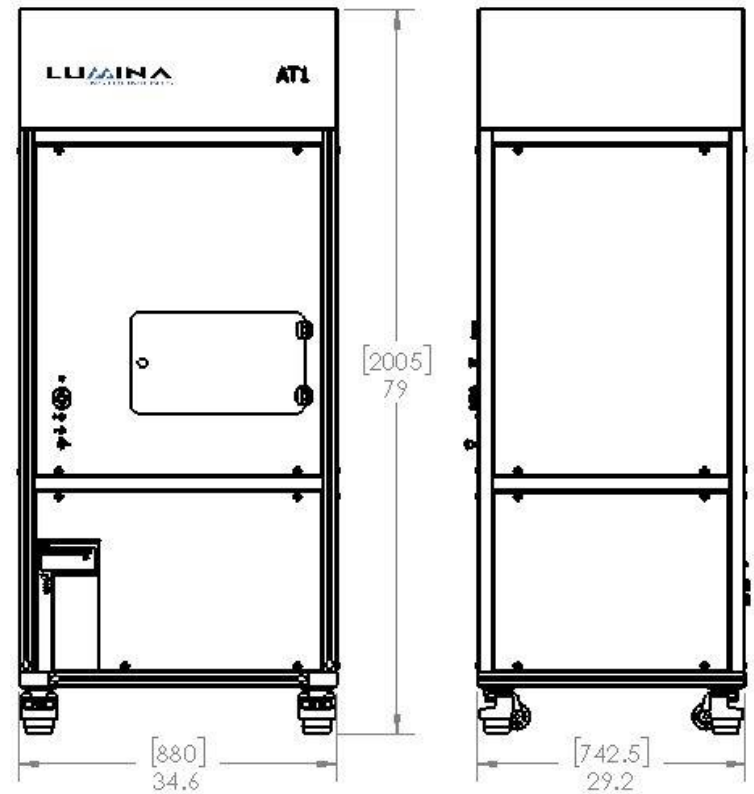
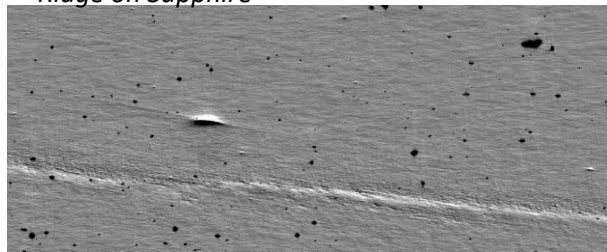
Scribed mark – water stain



Bumps on Sapphire



Ridge on Sapphire



TOOL SPECIFICATIONS

Scan time	50mm x 50mm in 30 seconds
Scan area	300x300 mm
Scribe	Diamond scribe - adjustable
Sensitivity	Film Defects <50 Angstroms
Operating Temp	18 – 30° C
Voltage	120 / 230 VAC
Current	6 A / 4 A
Weight	450 lbs / 205 kg