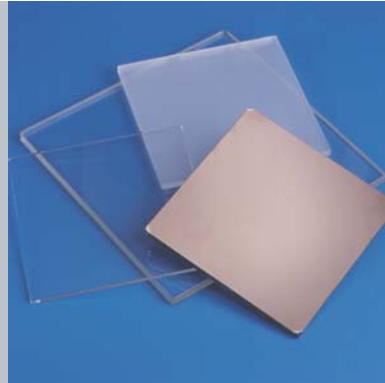


Tropel® UltraFlat™

Photomask Form Analysis System

Ultra-precision flatness measurements of photomasks



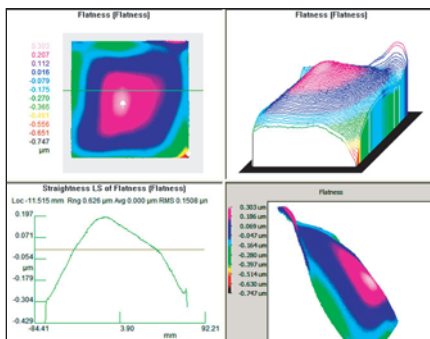
Corning Tropel
Metrology
Instruments



The UltraFlat™ 200 system provides for unprecedented flatness measurements of photomasks in critical applications such as polishing and post coating analysis.

Corning Tropel Corporation designed the Tropel® UltraFlat™ 200 Mask System specifically for the photomask industry. It delivers the lowest measurement uncertainty for ever-tightening mask flatness specifications. Shrinking device features require not only flatter wafers, but flatter masks. The UltraFlat system is used to measure flatness of photoblanks and photomasks throughout every stage of manufacturing and use, including, substrate polishing, coating and patterning to analyze film stress, and verification.

UltraFlat system utilizes near-normal incidence interferometry, rock solid structural design, state-of-the-art optical fabrication techniques and Tropel's renowned phase shifting analysis software to deliver 20 nanometer measurement uncertainty. The system is NIST traceable and provides measurements that conform to SEMI standards. An automated photomask handling and measurement configuration is also available.



Specifications	UltraFlat™ 200
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Measurement Method	Near Normal-Incidence Interferometry
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Performance

Uncertainty ¹	20 nm
Dynamic Range ²	10 µm
Mask Sizes	≤ 6 inches (6025, 5009 and other upon request)
Measured Data Points	≤ 1,000,000 per measurement
Measurement Time	≤ 30 seconds
Standard Measurements	Front referenced flatness, local slope, stress, microwaviness, x-y polyfit
Data Analysis	3-D, contour, isometric, histogram and site plots, site analysis

Data Management

Data Storage	40 GB Hard Drive
Communications	10 / 100-BaseT Ethernet, RS-232c port
Hard Copy	High speed color inkjet printer
Operating System	Windows® 2000

Weights and Dimensions

Interferometer Housing and Table	89 cm x 117 cm x 132 cm, 400 kg (35 in x 46 in x 52 in, 880 lb)
Computer Workstation	66 cm x 66 cm x 168 cm, 34 kg (26 in x 26 in x 66 in, 75 lb)

Options

Automated parts handling

¹ Refers to instrument limited uncertainty as measured on NIST traceable artifact and $\lambda/100$ reference flat.

See Tropel Acceptance Procedure for further details.

² Typical, limited by surface slope.

We reserve the right to change the detail specifications as may be required to permit improvements in the design.

This product may be covered by one or more U.S. or international patents.



TROPEL®
METROLOGY INSTRUMENTS

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