



## TherMoiré Model PS200 Flatness Measurement and Analysis System

The TherMoiré PS200 is a metrology solution that utilizes the shadow moiré measurement technique combined with automated phase-stepping to characterize out-of-plane displacement for samples up to 150 mm x 200 mm. With time-temperature profiling capability, the TherMoiré PS200 captures a complete history of a sample's behavior during a user-defined thermal excursion.

The combination of the shadow moiré technique and dynamic temperature profiling is the foundation of the patented TherMoiré platform. Dynamic profiling is the most effective approach to analyze mechanical behavior induced by real-world processes and operating environments.

Using the TherMoiré PS200, engineers will gain a better understanding of the interactions of materials, packages, substrates and complete assemblies, allowing for a thorough analysis of the system and improving its reliability and first pass yield performance. The PS200 is critical to helping meet the ever increasing interconnect and reliability requirements on both the device and substrate levels.

The PS200 is a laboratory solution designed for use in R&D, production and failure analysis/reliability applications such as:

- Pb-Free processing implementation
- Pre-production mechanical behavior qualification
- Evaluation of different materials and constructions
- Failure/defect analysis
- Validation of computer modeling
- Reflow profile optimization
- Supplier performance and conformity monitoring
- Evaluation of component-substrate seating plane interconnect



### **Akrometrix**

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## TherMoiré Model PS200 Product Specs

### Measurement Performance\*

Sample Size (max):	200mm x 200mm
Field of View:	200mm x 150mm
Lateral Resolution:	640 x 480 pixels
Repeatability (STD Deviation):	2.5 micron

Accuracy: Larger of +/- 2.5 micron or +/- 3%

\*Specifications apply to the relative height measurements (e.g., coplanarity) on an Akrometrix calibration sample or equivalent high-contrast, uniform reflectivity, continuous surface, using a 100 line per inch (LPI) grating. Performance specifications are affected by sample surface optical properties and should be confirmed for specific samples of user interest. Vertical resolution, repeatability and accuracy can be improved by using a higher frequency grating.

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### Mechanical:

Footprint (w x l x h):	1168mm x 638mm x 1689mm
Weight:	420 kg (crated for shipment)
Electrical:	220VAC, 1 phase, 50/60 Hz, 12A full load

### Optical:

Camera:	1/2" CCD
Lenses:	12.5mm - 75mm zoom lens
Illumination:	One (1) 150W DDL type bulb, one (1) 12" fiber optic line
Grating:	100 lines per inch (LPI), 287mm x 356mm ruled area (50 LPI and 300 LPI optionally available)

### Heat Chamber\*\*:

Temperature Range:	Room temperature to 300 °C
Heating Rate:	1.0 °C/sec or better (50 °C to 200 °C)
Cooling Rate:	1.0 °C/sec or better (225 °C to 150 °C)

\*\* Heating and cooling rate specifications apply to samples of 27 x 27 x 1.6mm FR-4 PCB material, and temperature range specifications apply to a metal sample of similar size.

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