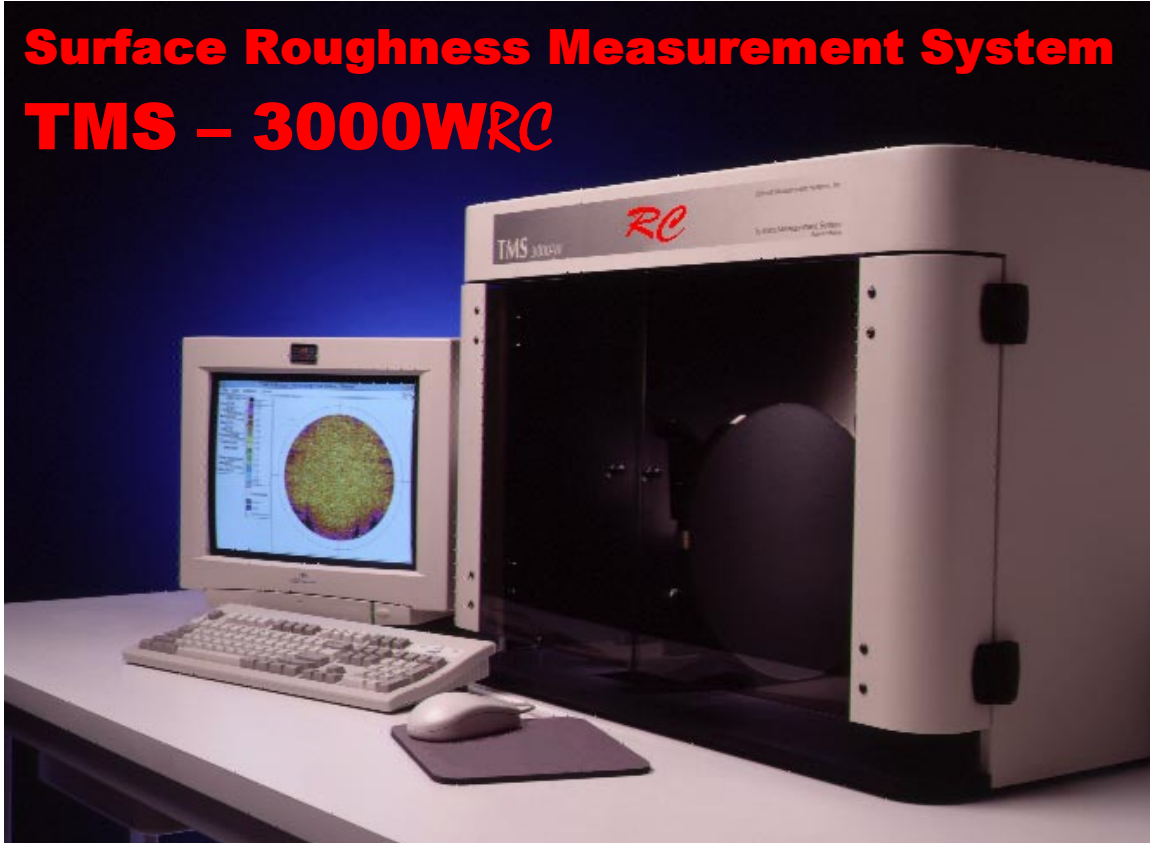


# ***The Ultimate Wafer Measurement System***

## **Surface Roughness Measurement System TMS – 3000WRC**



### **Non-Contact ■ Fast ■ Accurate ■ Repeatable**

The fastest, most accurate, non-contact texture measurement system in the world. Laser technology of today for the future. The system collects scattered light and segments the scattered light to compare anisotropic and isotropic roughness of the surface. Currently being used successfully by major wafer manufacturers. Discover the ultimate solution to fast, accurate measurements in wafer manufacturing on

#### **Features:**

- **Non-Contact Measurements** cannot harm test surfaces
- **Results** – RA, RMS roughness from 0.2Å up to 1,000Å
- **Cost** – Lower costs than Profilometer, AFM or Interferometers
- **Precision** – Resolution of 0.01Å reproducibility +/-0.25Å or ½% and repeatability: +/-0.1 Å
- **Speed** – 100 measurements per second

#### **Benefits:**

- Quadruple Production Throughput
- Measures Radial, Circumferential, Total Interrupted & Zone Textures, Haze and Emissivity
- Increase Performance/Quality
- Unaffected environmental conditions
- Minimal operator training required
- Lowest cost per measurement of any system
- Correlates to other measurement instruments via slope/offset or bandwidth compensation.

# The Ultimate In Metrology Roughness Characterization

The fastest, highest resolution, most stable non-contact microroughness measurement system in the world. Advanced laser-based system ideally suited for quantifying and mapping full surface, interrupted, and zone textures. The roughness direction is selectable

from Radial, Circumferential, or Total. Now used by major wafer manufacturers. Discover the ultimate answer to fast, reliable microroughness measurements in wafer manufacturing, with systems that simplify lab to manufacturing correlation.

## ■ Measurements

**Source:** Class II Laser, 670 nm  
**Spot Size:** ~1mm diameter  
**Primary & Secondary Results:** Ra or RMS (Rq) Microroughness Peak-to-Valley (P-V), RMS Slope, TIS, Diffuse Reflectance, Specular Reflectance, Total Reflectance, Emissivity, Haze, and Gloss R-C Ratio  
**Speed:** 100 measurements per second ★  
**Range:** From 0.2Å up to 1,000Å (RMS or Ra)  
**Resolution:** 0.01Å

## Technical Specifications

**Repeatability:**  $\pm 0.1 \text{ \AA}$  (same sample, same machine)  
**Reproducibility:**  $\pm 0.5 \text{ \AA}$  or 1/2% (whichever is greater) (same sample, same machine)  
**Spacial Filtering Frequency:** (wavelength)  
 Low Band: 0.026 to 0.129  $\mu\text{m}^{-1}$  (7.8 to 38  $\mu\text{m}$ )  
 High Band: 0.129 to 1.14  $\mu\text{m}^{-1}$  (0.88 to 7.8  $\mu\text{m}$ )  
 Full Band: 0.026 to 1.14  $\mu\text{m}^{-1}$  (0.88 to 38  $\mu\text{m}$ )  
 Comp Band: Selectable from 0.2 to 150 $\mu\text{m}$   
**Microroughness:** Selectable between Radial, Circumferential, or Total

★ Varies with Scan and User Setup

## ■ Rotary Stage

Repeatability:  $\pm 0.01^\circ$   
 Accuracy:  $\pm 0.05^\circ$

## ■ Linear Stage

Repeatability:  $\pm 0.0005 \text{ inch}$  ( $\pm 0.01 \text{ mm}$ )  
 Accuracy:  $\pm 0.001 \text{ inch}$  ( $\pm 0.03 \text{ mm}$ )

## ■ Data Generation

ASCII data files (detailed), SPC data files (production statistics), Color plots and sample statistics

## ■ Computer

Pentium class, with optional Color Printer

## ■ Sample - Holders

125mm, 150mm, 200mm and 300mm

## ■ Materials

Bare Silicon (etched, ground, polished, etc.) and other various coated silicon

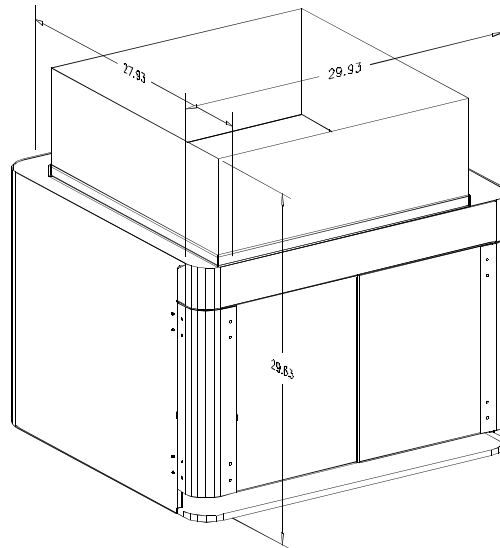
## ■ Installation

Electrical Requirements: 100-240 VAC – 50/60Hz  
 Meets Class ten clean room requirements.

## ■ Shipping Weights

Total w/packing: 180 lbs. (82 kg.)

## ■ Dimensional Drawing



**SCHMITT MEASUREMENT SYSTEMS, INC.**  
 A DIVISION OF SCHMITT INDUSTRIES, INC.



**Schmitt Measurement Systems, Inc.**  
 2765 NW Nicolai St.  
 Portland, Oregon 97210  
 Phone: (503) 227-5178  
 Fax: (503) 227-5040

[www.schmitt-ind.com](http://www.schmitt-ind.com)