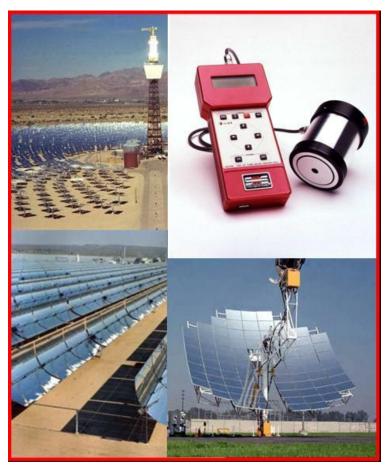
The Scatter Works Inc.

The μ ScanTM Scatterometer

Quickly monitor surface degradation with a portable handheld instrument



This rugged hand held scatterometer provides a fast, non-destructive way to monitor surface roughness and optical characteristics. It can be used on mirrors, various reflectors and precision machined surfaces. It finds use in lab, field and manufacturing environments. A common use is in place monitoring of large difficult to move surfaces (such as telescope mirrors). Another use is surface finish quality control inspection of large manufactured sheet products (rolled metal, coated glass, etc) on the manufacturing floor. Results appear on an LCD screen and are saved for transmission can be transmitted

System Description

The μ Scan System consists of a hand held Control Unit (CU), an interchangeable measurement head, and a separate charging unit. The CU controls all aspects of the system operation.

Operators place the measurement head on the surface to be measured and presses a button, each measurement takes less than five seconds. From a single measurement, a user can determine RMS surface roughness, Reflectance and scattered light level (BRDF) on flat or curved surfaces under any lighting conditions. The results are digitally displayed and stored in system memory. Software is available for control, analysis and file conversion.

µScan® Technical Information

Measurements

Range: (Ra, RMS,) From 1Å up to 1100Å (.004 to 4.3 µin.)

From 0.1 up to 100.0% From 1^{e-6} to 1^{e0} (sr⁻¹) (Reflectance) (BRDF)

Spatial Bandwidth: Upper 10 to 999 µm (selectable)

> 1.0 µm Lower

Measurement Head

Dimensions 5"h x 31/2"d Weight 11/4 lbs. Time of Measurement < 5 seconds **Spot Size** 1 mm . Repeatability ±0.5%

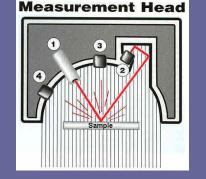
<u>Accuracy</u> ±2% Reflectance

±3% Scatter 670nm (1300nm available) Wavelength

1.Laser diode (25º from surface normal)

2.Reflectance detector and specular beam trap 3.Scatter detector (ذ, ذ)

4.Scatter detector (500, 1800)



Dimenions 1¾"h x 4½"wx9½"d

Weight 2 lbs.

Power Source **Batteries**

- Type Rechargeable NiCd

- Duration > 5 hours

< 3 hours, trickle 15 hours - Charge Time Turbo

9 VDC to 11 VDC External

Data Transfer Baud rate selectable to 9600, 4800, 2400, 1200,

300 bps (no parity, 8 bits, 1 stop bit)

Temperature Range

Operations -10C to + 45C (LCD Limited)

Storage -40C to + 50C **Temperature Coefficient**

Scatter detectors ±0.1%per °C ±0.15%per °C Reflectance detector

Non-Volatile Memory

Storage capacity 700 measurements

Number of files

Real Time Clock

Display

4 line x 20 character LCD Size

Lighting LED backlit

Keypad controllable Contrast Control

Charger

Dimension 4½"hx4¾"wx8½"d

Weight

Power 100VAC and 220 VAC, 50/60 HZ

PC Software (Optional) Downloads files to PC for statistical analysis of data. Provides selection of on board process control limits. Formats data and statistics for printing. Converts data to ASCII format. Provides PC control of µScan.



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