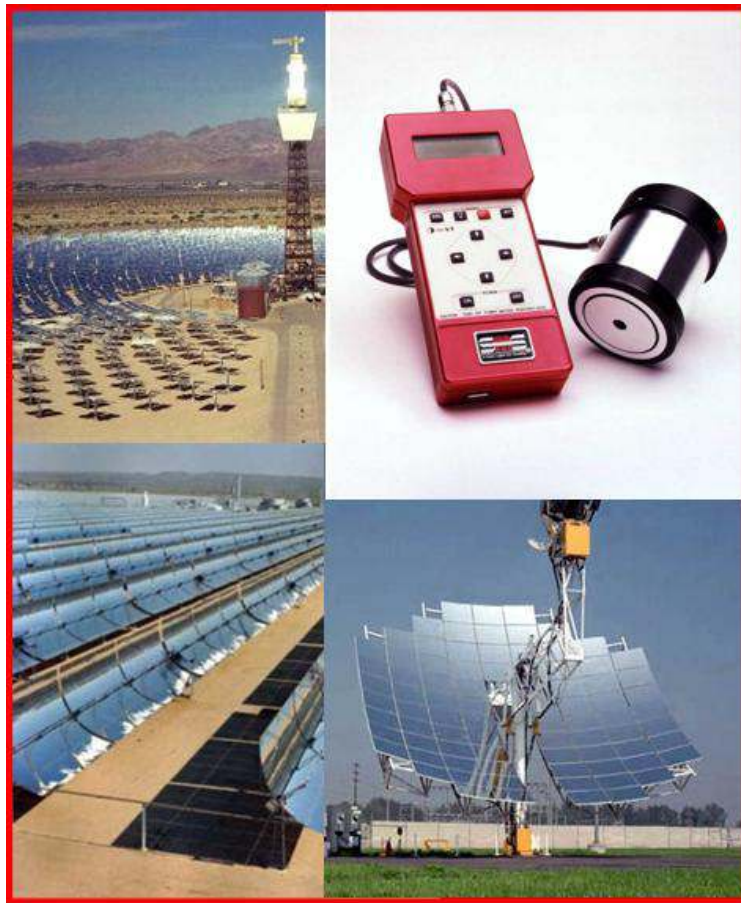


The μ ScanTM Scatterometer

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

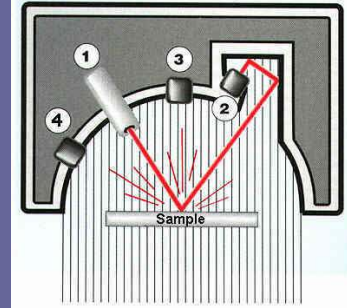
Measurements

Range:	(Ra, RMS, (Reflectance) (BRDF)	From 1 Å up to 1100 Å (.004 to 4.3 μin.) From 0.1 up to 100.0% From 1 ^{e-6} to 1 ^{e0} (sr ⁻¹)
Spatial Bandwidth:	Upper Lower	10 to 999 μm (selectable) 1.0 μm

Measurement Head

Dimensions	5"h x 3½"d
Weight	1¼ lbs.
Time of Measurement	< 5 seconds
Spot Size	1 mm
Repeatability	±0.5%
Accuracy	±2% Reflectance ±3% Scatter
Wavelength	670nm (1300nm available)
1.Laser diode (25° from surface normal)	
2.Reflectance detector and specular beam trap	
3.Scatter detector (0°, 0°)	
4.Scatter detector (50°, 180°)	

Measurement Head



Dimensions	1¾"h x 4½"wx9½"d	Temperature Coefficient	
Weight	2 lbs.	Scatter detectors	±0.1%per °C
Power Source		Reflectance detector	±0.15%per °C
Batteries		Non-Volatile Memory	
- Type	Rechargeable NiCd	Storage capacity	700 measurements
- Duration	> 5 hours	Number of files	255
- Charge Time Turbo	< 3 hours, trickle 15 hours	Real Time Clock	
External	9 VDC to 11 VDC		
Data Transfer	Baud rate selectable to 9600, 4800, 2400, 1200, 300 bps (no parity, 8 bits, 1 stop bit)	Display	
Temperature Range		Size	4 line x 20 character LCD
Operations	-10C to + 45C (LCD Limited)	Lighting	LED backlit
Storage	-40C to + 50C	Contrast Control	Keypad controllable

Charger

Dimension	4½"h x 4¾"wx8½"d
Weight	3¼ lbs.
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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