



# μSCAN™ SCATTEROMETER

Quickly monitor surface degradation with a portable handheld instrument

## Short facts

The μScan is a rugged hand held scatterometer. It 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. Results appear on a LCD screen and are saved internally for later transfer to a PC.

## Applications

- Measurement of RMS surface roughness
- Monitoring of large difficult to move surfaces (such as telescope mirrors)
- surface finish quality control
- inspection of large manufactured sheet products (rolled metal, coated glass, etc) on the manufacturing floor
- quick checks on BDRF and reflection values

## Measurements

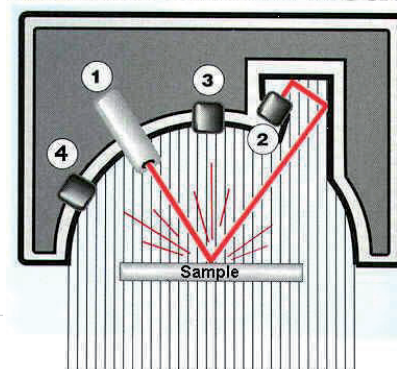
Range	(Ra, RMS.) (Reflectance) (BRDF)	From 1Å up to 1100Å (.004 to 4.3 μin.) From 0.1 up to 100.0% From 1 <sup>-6</sup> to 1 <sup>0</sup> (sr <sup>-1</sup> )
Spatial Bandwidth	Upper Lower	10 to 999 μm (selectable) 1.0 μm

## 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)       | 3. Scatter detector (0°, 0°)    |
| 2. Reflectance detector and specular beam trap | 4. Scatter detector (50°, 180°) |

## Measurement Head



## Control unit

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

## Charger

Dimension	4½"hx4¾"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.



**SphereOptics**

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SphereOptics GmbH | Gewerbestr. 13 | 82211 Herrsching am Ammersee | Germany  
Tel +49 (0) 8152 983 789-0 | Fax +49 (0) 8152 983 789-1 | info@sphereoptics.de  
www.sphereoptics.de