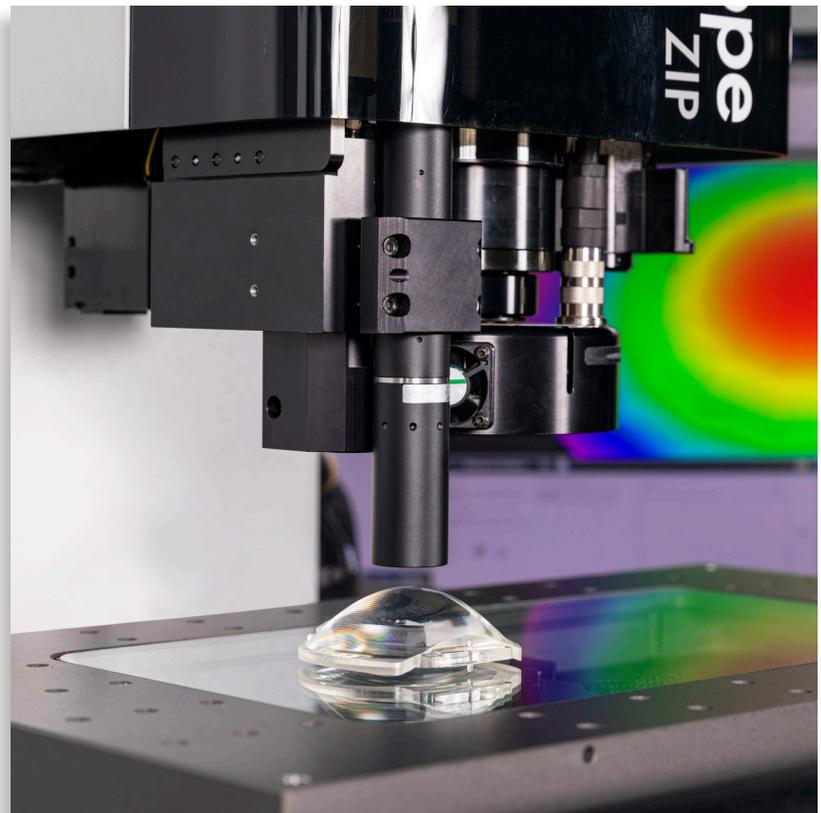
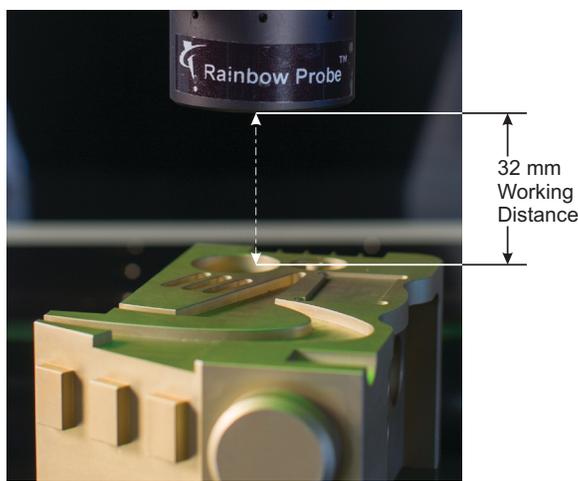


**Rainbow Probe** is a non-contact chromatic confocal sensor that measures surfaces by analyzing changes in the optical spectrum as a function of part to probe spacing. Additional capabilities include:

- **Measurement Advantages –** Rainbow Probe easily measures transparent, translucent, fragile, liquid, or easily deformable surfaces. The Rainbow Probe also has dual measuring modes for select distance or thickness measuring mode.
- **Right Probe - Right Application –** A range of CL-series and RP1500 probes are available, each with a unique measuring range, working distance, axial resolution, accuracy, and spot size.
- **Multisensor Integration –** Integrates into automatic measurements with other sensors on measurement systems.

## High Resolution, Non-Contact Optical Sensor for Surface Measurements





The RP1500's 32 mm working distance and 40 nm resolution make it the probe of choice for many applications.

## Technical Specifications – RP1500<sup>1</sup>

<b>Available for</b>	Fusion™, SmartScope ZIP® and most SmartScope® Flash™, and Quest™ systems	OGP® Benchmark™, Pinnacle™, and Summit™ systems
<b>Required Metrology Software</b>	ZONE3®	VMS™ or ZONE3
<b>Working Distance (mm)</b>	32	
<b>Measuring Range (mm)</b>	1.5	
<b>Accuracy<sup>2</sup> (µm)</b>	0.3	
<b>Numerical Aperture</b>	0.42	
<b>Max Data Rate (samples/sec)</b>	1000	
<b>Max Object Slope<sup>3</sup> (deg)</b>	± 24	
<b>Spot Size Diameter (µm)</b>	10	
<b>Axial Resolution<sup>4</sup> (µm)</b>	0.04	
<b>Lateral Resolution (µm)</b>	5	
<b>Min Measurable Thickness (µm)</b>	180	
<b>Probe Barrel Diameter (mm)</b>	50	

## Technical Specifications – CL Series<sup>1</sup>

<b>Available for</b>	SmartScope ZIP and most SmartScope Flash and Quest systems	OGP Benchmark, Pinnacle, and Summit systems
<b>Required Metrology Software</b>	ZONE3	VMS or ZONE3

Probe Model	CL1			CL2			CL3		CL4		CL5		CL6	
<b>Working Distance (mm)</b>	3.3			10.8			12.2		16.5		26.6		20	
<b>Measuring Range</b>	150 µm			400 µm			1.4 mm		4 mm		12 mm		24 mm	
<b>Accuracy<sup>2</sup> (µm)</b>	0.02			0.06			0.2		0.4		0.9		3	
<b>Numerical Aperture</b>	0.71			0.46			0.41		0.32		0.20		0.12	
<b>Max Data Rate (samples/sec)</b>	1000													
<b>Max Object Slope<sup>3</sup> (deg)</b>	± 42			± 28			± 25		± 21		± 14		± 8.5	
<b>Magnifier Model</b>	MG140	MG210	MG420	MG70	MG140	MG210	MG70	MG140	MG20	MG35	MG20	MG35	MG20	MG35
<b>Spot Size Diameter (µm)</b>	3.5	2.7	1.8	8.8	5.2	4	11.9	6.8	19.9	12.3	40	24.3	43	26.8
<b>Axial Resolution<sup>4</sup> (µm)</b>	0.048	0.042	0.036	0.15	0.12	0.12	0.36	0.3	0.81	0.66	2.55	2.22	4.8	4.5
<b>Lateral Resolution (µm)</b>	1.3	1.1	0.8	3.7	1.8	1.7	4.5	2.6	7	4.6	14	11	18	11
<b>Min Measurable Thickness (µm)</b>	9	7.5	5	22	14	14	40	38	120	110	550	350	725	590
<b>Probe Length (mm)</b>	209.4	243.8	270	176.1	208.9	143.3	176.1	208.9	130	145.4	130	145.4	155.6	171
<b>Probe Diameter (mm)</b>	27													

<sup>1</sup>Includes CCS PRIMA control box.

<sup>2</sup>In distance measuring mode. In thickness measuring mode, the accuracy depends on sample characteristics (material, thickness). System performance varies depending on machine type. Rainbow Probe calibration certificate included for each sensor, with test protocol.

<sup>3</sup>For specular (perfectly reflecting) samples. For diffuse objects, the maximum object slope can reach 87°.

<sup>4</sup>In distance measuring mode. In thickness measuring mode, the axial resolution is given by:  $R_{th} = n \cdot R_d$  ( $R_d$  = axial resolution in distance mode,  $R_{th}$  = axial resolution in thickness mode,  $n$  = refractive index of the sample).