Digital Radius Slides

4D Technology

For 4D Laser Interferometers

Accurate ROC Measurement

The Digital Radius Slide (DRS) for 4D interferometers provide axial positioning resolution down to 10 nm, for extremely accurate Radius of Curvature measurement of concave or convex optics.

The linear encoder based DRS uses an optical encoder with 1 µm resolution and ± 5 µm/meter accuracy at 20°C. The scale is constructed of low CTE (~10.6 µm/m/°C) hardened stainless steel with high scratch and solvent resistance. The linear encoder DRS provides repeatability of <15 µm and uncertainty of <50 µm.

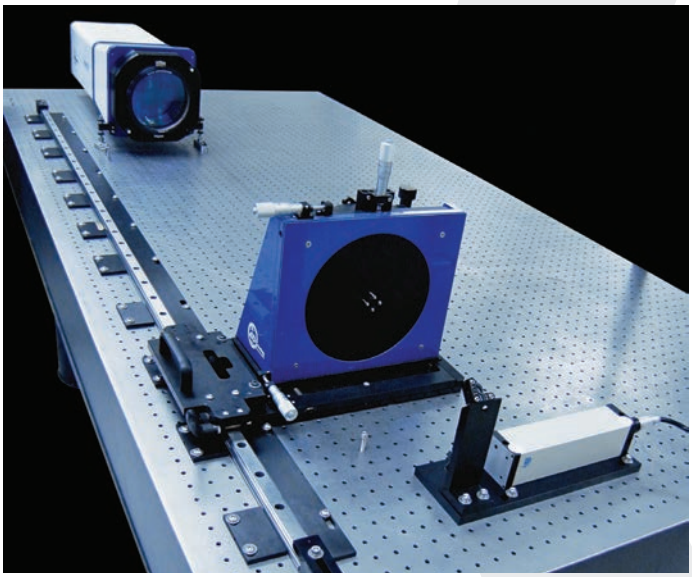
The laser based DRS incorporates a Laser Doppler Distance Measurement (LDDM) system with 10 nm resolution and less than 1 ppm accuracy. Its position sensor axis is identical to the test part axis which all but eliminates Abbé error contribution and results in better repeatability and uncertainty.

Both DRS versions are horizontally mounted and include a 5-axis mount for either 4-inch or 6-inch optics. Lengths of 1 and 2 meters are available, with mounting hardware for optical tables with English (1/4-20 x 1 inch) or metric (M6 x 25 mm) spacing.

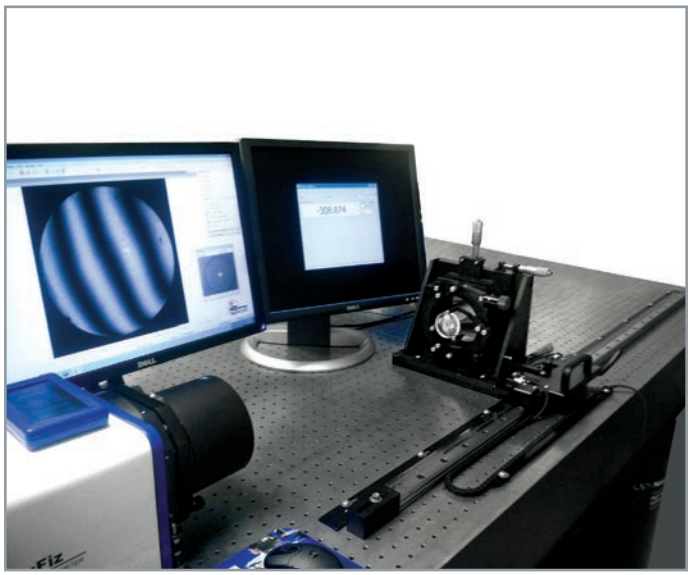
All DRS systems are integrated with 4D's 4Sight software for easy Radius of Curvature (ROC) measurement. The need for precise null at catseye and confocal positions is not required, which increases both accuracy and throughput.

FEATURES

- Accurate Radius of Curvature Measurement
- Linear Encoder and LDDM versions
- Resolution to 10 nm
- 1 and 2 Meter Lengths
- English or Metric Mounting
- Integrates Easily with 4D AccuFiz and Other Interferometers



Laser Doppler Distance Measurement (LDDM) Digital Radius Slide.



Linear Encoder based Digital Radius Slide.

* Factors such as setup, atmospheric conditions, thermal expansion, optics thermal drift and dead path error will contribute to overall system uncertainty.

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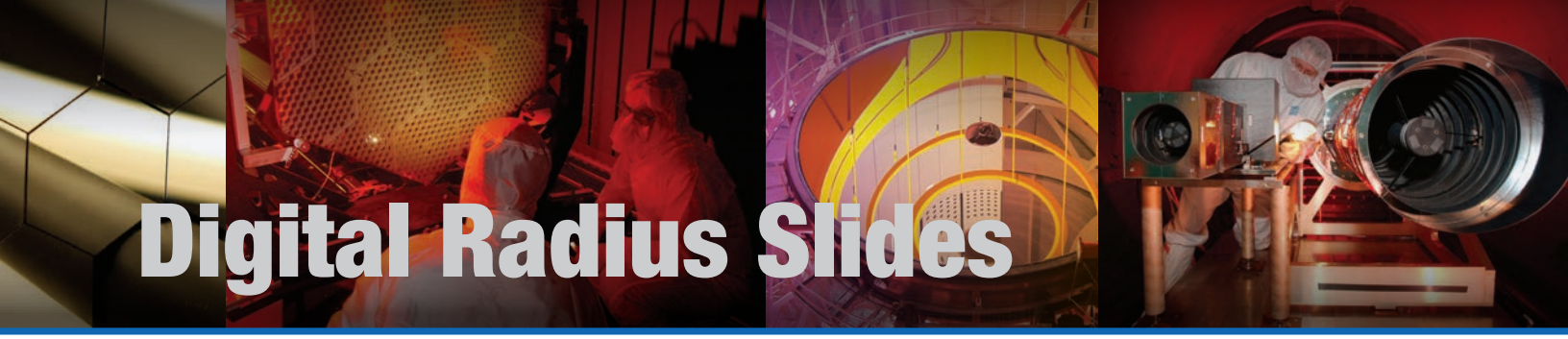

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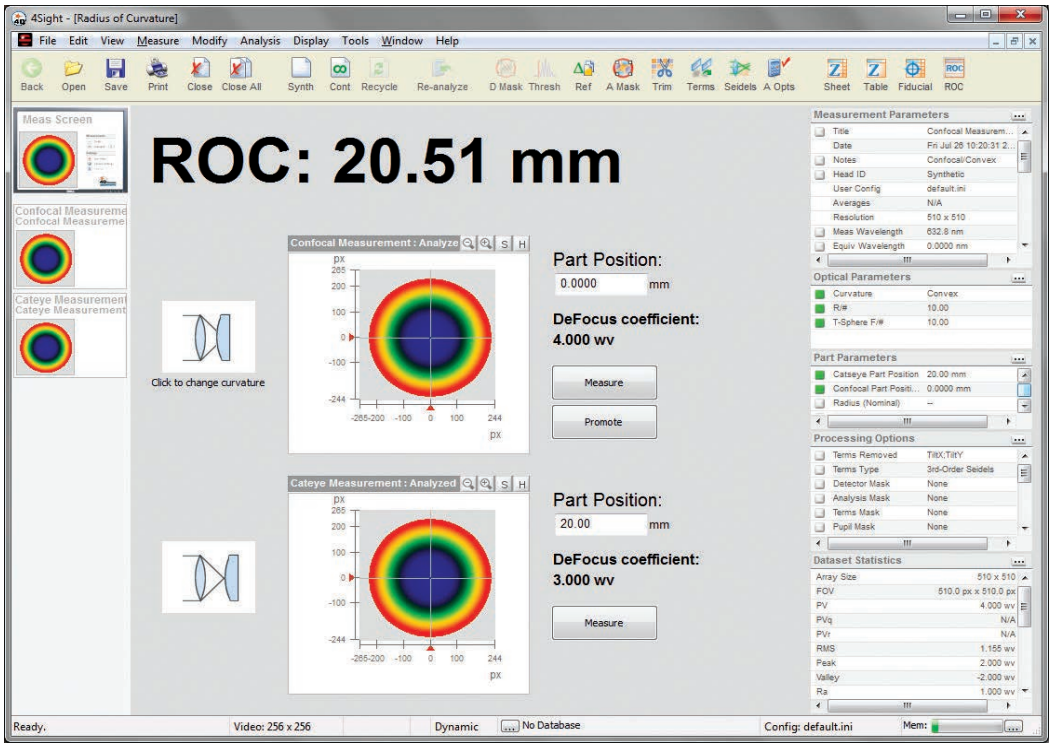
Specifications

4D Part No.	Type	Rail Length	Mount Size	Resolution
7001-00150	Encoder	1m (39.4 in)	102 mm (4 in)	1 µm
7001-00173	LDDM	1m (39.4 in)	102 mm (4 in)	10 nm
7001-00172	Encoder	2m (78.8 in)	102 mm (4 in)	1 µm
7001-00174	LDDM	2m (78.8 in)	102 mm (4 in)	10 nm
7001-00181	Encoder	1m (39.4 in)	152 mm (6 in)	1 µm
7001-00183	LDDM	1m (39.4 in)	152 mm (6 in)	10 nm
7001-00182	Encoder	2m (78.8 in)	152 mm (6 in)	1 µm
7001-00175	LDDM	2m (78.8 in)	152 mm (6 in)	10 nm



Digital Radius Slides work in conjunction with 4Sight software for easy Radius of Curvature Analysis.

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