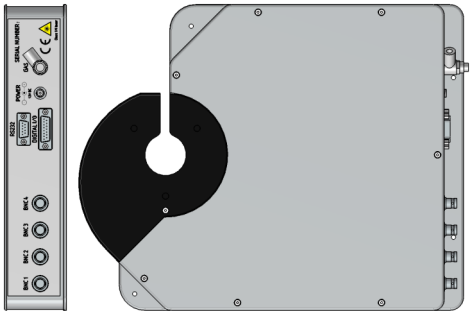
LISG

Laser Interferometric Sensor for Glass fiber



The **LISG** is designed for bare optical fiber measurement and defect check during drawing.
It uses the interferometric fringes pattern produced by a fiber when placed in a laser beam.
Main features:

* **Real-time**, high accurate diameter measurement.
* **Airline** defect detection (bubble into the preform)
* **Spinning** profile measurement

PRODUCT		LISG base	LISG full
Performances (traceable calibration to international standards - NIST and METAS)			
Measurement window	Disk diameter	3.0 mm	
Accurate Ø measurement	Diameter range	125 +/-8 µm	
	Uncertainty*1	+/- 0.15 µm *2	
	Repeatability	+/- 0.005 µm	
	Measurement rate	5000 measurements/sec	50 000 measurements/sec
Large Ø measurement	Diameter range	40 to 450 µm	
	Uncertainty*1	+/-1 µm	
	Repeatability	+/-0.5 µm	
	Measurement rate	400 measurements/sec	
Fine airline detection *3	Minimum diameter airline	0.3 µm	
	Min fault lenght	12.5 cm @ 3000 m/min	
Superficial and internal defect detection (particles, impurities)	Min fault lenght	1000 µm @ 3000 m/min	
Real-time diameter display	Sampling view of the real-time diameter with CIM software	5000 measurements/sec	50 000 measurements/sec
Spinning measurement *4	Maximum value measurement	-	7 to 1600 turns/sec +/-1%
	Inversion period measurement	-	0.1 to 4s+/-1ms
	Unbalance measurement	-	0 to 100%
Non circularity measurement *3	Uncertainty	-	+/-0.15 µm
	Repeatability	-	+/-0.03 µm
Diameter peak to peak measurement (process stability)	Uncertainty	-	+/-0.15 µm
	Repeatability	-	+/-0.03 µm
X&Y position measurement	Range	+/-2mm	
	Uncertainty	+/-0.1mm	
	Measurement rate	1000 measurements/sec	
Vibration frequency measurement	Method	Compute by FFT	

Remarks:
*1 includes slow ambient temperature fluctuation within 10-40°C and fiber moves within the measurement window.
*2 similar to uncertainty of best International laboratories
*3 available only if fiber spins (minimum 1 turn/meter)
*4 spinning features are available only if process stability is good enough to distinguish diameter fluctuations due to the fiber non-circularity. Refer to the manual for more details.

Ahead together
CERSA MCI
MEASUREMENT AND CONTROL INSTRUMENTS

Head Quarters France
M2, rue de Lisbonne
13480 Cabriès
Tel.: +33 4 4202 6044

sale@cersa-mci.com
support@cersa-mci.com

www.cersa-mci.com

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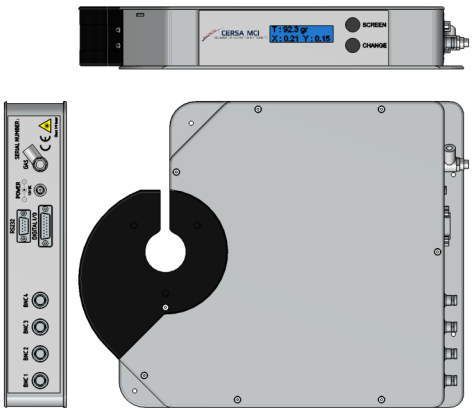

PRODUCT		LISG base	LISG full
Communications			
Serial RS232 (SUB-D 9 pins)	Baudrate	115200	
Digital (SUB-D 15 pins)	Digital output (open collectors)	8	
	Digital input (length counting and reset)	2	
Analogic output	BNC (+/-10V)	4	
Environmental & general data			
Temperature	Ambient T°	10 - 40°C	
	Max internal T° *5	55°C	
	Storage T°	0 - 60°C	
Laser source	Laser type	Class 1M	
Power	Power supply	12Vdc 45W	
Dimensions	Dimensions (LxWxH)	373.37 x 297 x 60.5 mm	
	Weight	4.7 kg	

Remarks:
*5 provide air flow of 5 to 20l/min to clean the optics and cool down the electronic

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