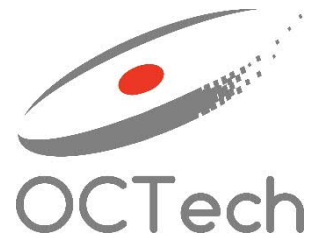


Concentricity monitor CCM-1000

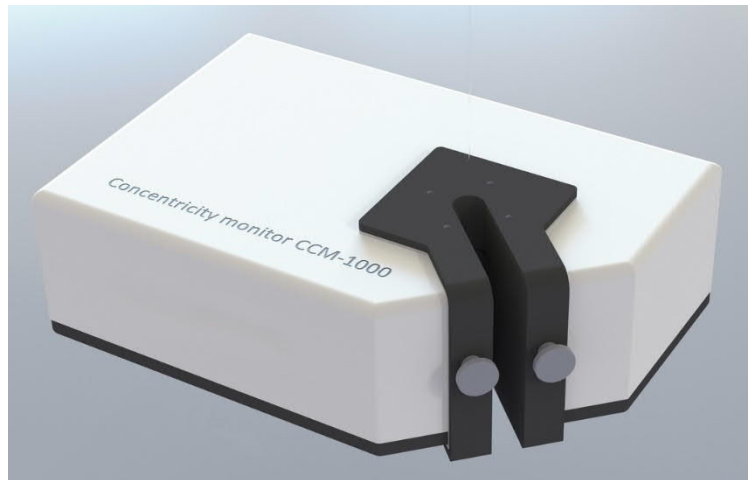


Application

Concentricity monitor CCM-1000 is an advanced, versatile system for measurement of coating concentricity during fiber drawing or off-line on rewinding/proof testing equipment. It features well known "forward scattering" principle, with addition of advanced pattern recognition, which allows numerical measurements on all standard refractive index acrylates.

Instrument displays the absolute value of non-concentricity, as well as the azimuthal angle, at which this maximum is detected, in

real time, while logging the data for post-acquisition analysis or quality report. If real-time data is fed to a draw tower control system, coating concentricity can be monitored on process screens during whole draw operation, permitting also active concentricity adjustment through control system (if implemented). CCM successfully replaces traditional monitors with beam optics and glass screens, which require operators to visual evaluate scattering patterns and manually adjust coating applicator settings



Features

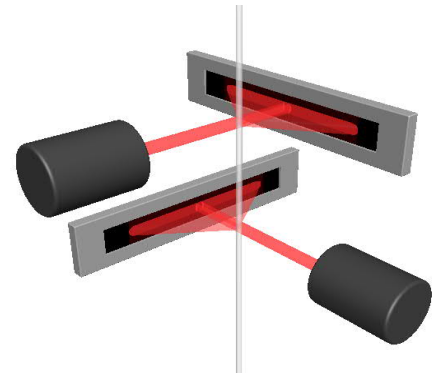
- Two measurement axes, with cameras positioned at 90° angles
- Easy high-speed threading via side slit opening in the CCM body
- Connection for purging gas to sweep internal space to reduce contamination
- All surfaces exposed to fiber and coating are accessible for cleaning
- Supports all standard refractive index acrylates (low index acrylate not supported)
- Numerical measurement of coating concentricity in absolute values
- Precise measurement of fiber position (limited to field of view ± 2 mm of center line)
- No moving parts
- Logging of concentricity, fiber position and other parameters
- Easily connected to any PC with Windows 8 or 10 with USB 2.0 interface
- Option: USB Analog Out module for connection to third party control systems

Measurement specification

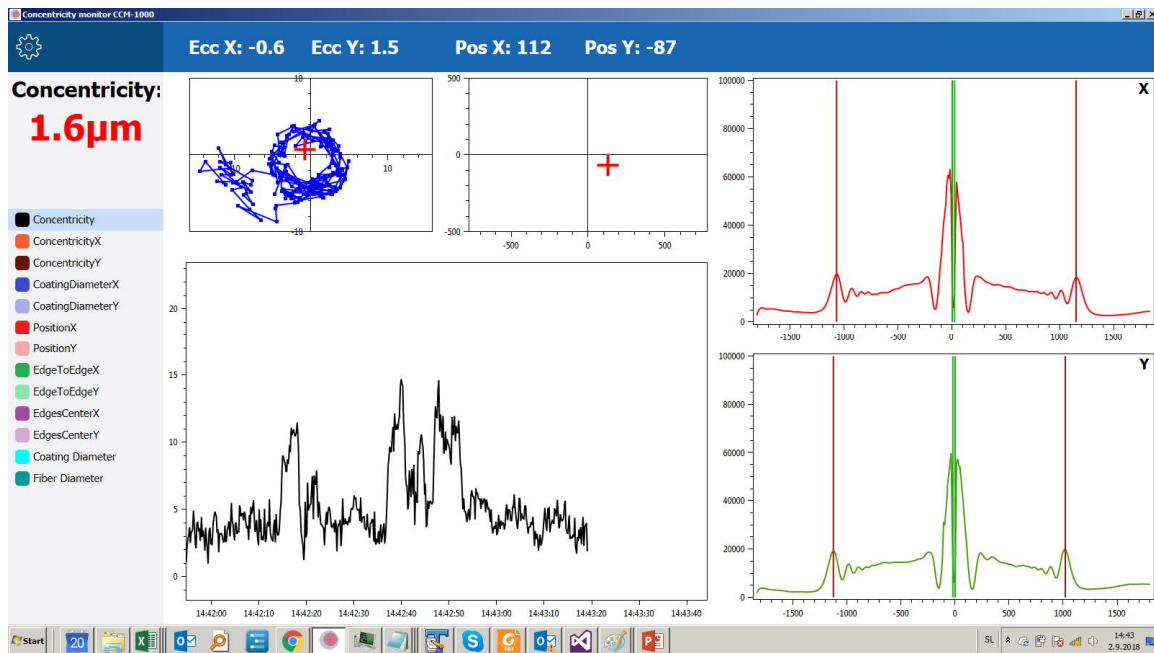
Fiber OD (with coating):	50 μ m - 1000 μ m (larger upon request)
Coating OD/glass OD ratio:	1.7 - 4
Concentricity measuring range:	0-15 μ m depending on fiber/coating dimensions/position
Concentricity accuracy:	± 1 μ m or better
Concentricity resolution:	± 0.1 μ m
Position measurement range:	± 1750 μ m minus fiber diameter
Position accuracy	± 10 μ m
Camera speed	125 fps

Measurement Principle:

Two perpendicular laser beam sources are projected on fiber surface. Light beams pass through the glass and coating layers and create distinct scattering pattern, including information about relative positions of fiber towards outer coating. Patterns are acquired by two high resolution CCD sensors and transmitted to PC via USB interface. Image recognition software detects features in the scattered pattern and calculates eccentricity.



Additionally, scattering pattern is displayed on PC computer screen to allow operator to observe certain scattering features and control coating process.



Unit specification

Light sources:	Laser diode 650 nm
Sensors:	CCD
Weight	1.7 kg
Dimensions (LxWxH)	180x120x58 mm
Baseplate and cover material	Anodized aluminum, dust painted stainless steel
Computer connection	USB 2.0, 3.0
Software	CCM-1000 v4.2 for Windows
Power supply	Powered by USB cable
Mounting to X-Y table	4x M5 (bottom plate) (table as option)

Accessories

CCM units can be supplied with the following accessories:

CCM-ANA	USB to analog out (8 channels module) for connection to third party control systems
CCM-BRK	bracket for draw tower mounting (for Nextrom-type guide rail or other)
CCM-XYT	precision CCM positioning table with X-Y adjustment and tilt angle control

Additional information

Visit www.octech.si/applications or write to borutl@octech.si

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