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TECHNOLOGY GROUP

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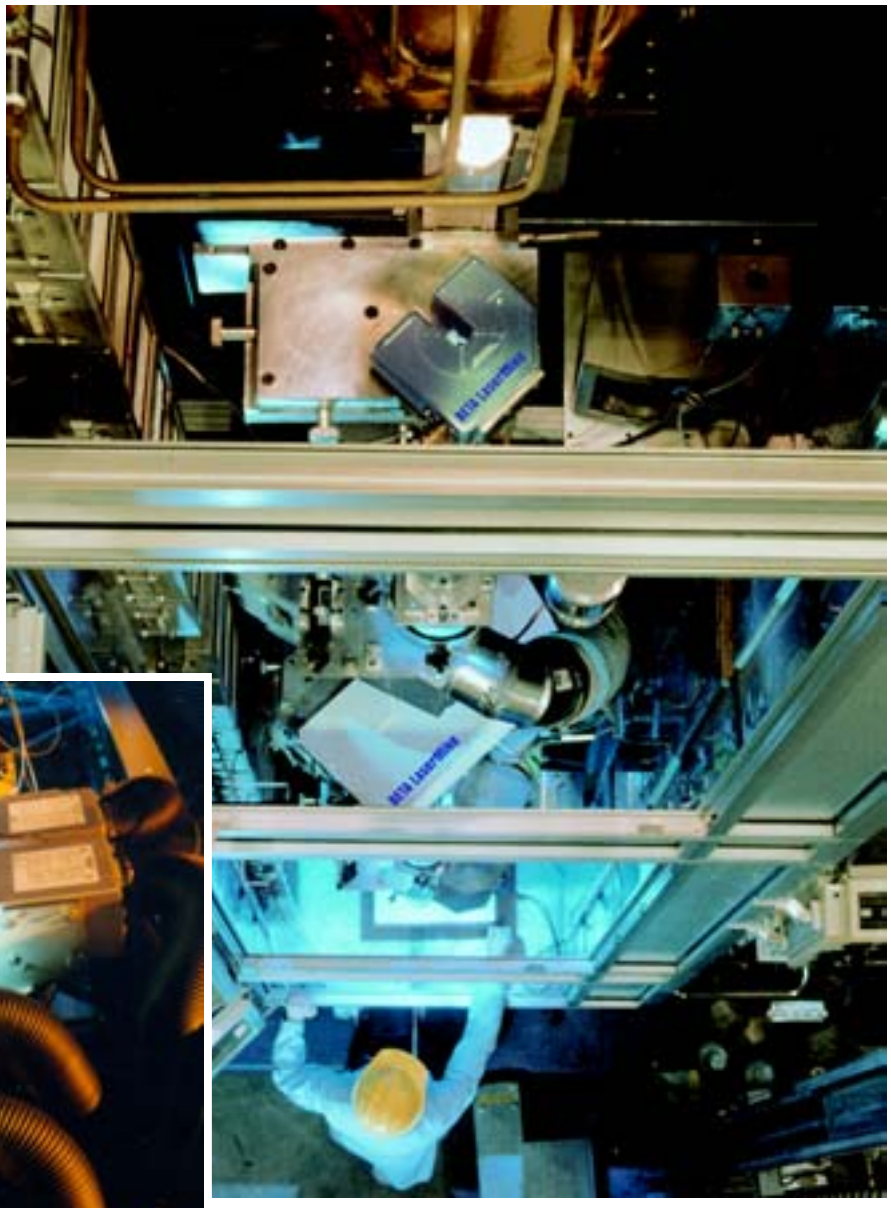
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Optical Fiber Measurement Technology





Draw Tower Solutions



With optical fiber experience spanning four decades, Beta LaserMike measurement tools are field-proven to help you produce the highest quality optical fiber.

BETA LaserMike

Providing Measurement Solutions for the Optical Fiber, Wire, Cable and Extrusion Industries

You Can Increase Yields Without Sacrificing Quality

The pressures of global competition force all of us to make products faster and at less cost without sacrificing quality. For optical fiber makers there is only one way to maintain the quality of your product while using faster draw speeds to increase yield: You must measure diameter and detect flaws accurately, in real time at every stage of your process. That's why Beta LaserMike created the FiberMike system.

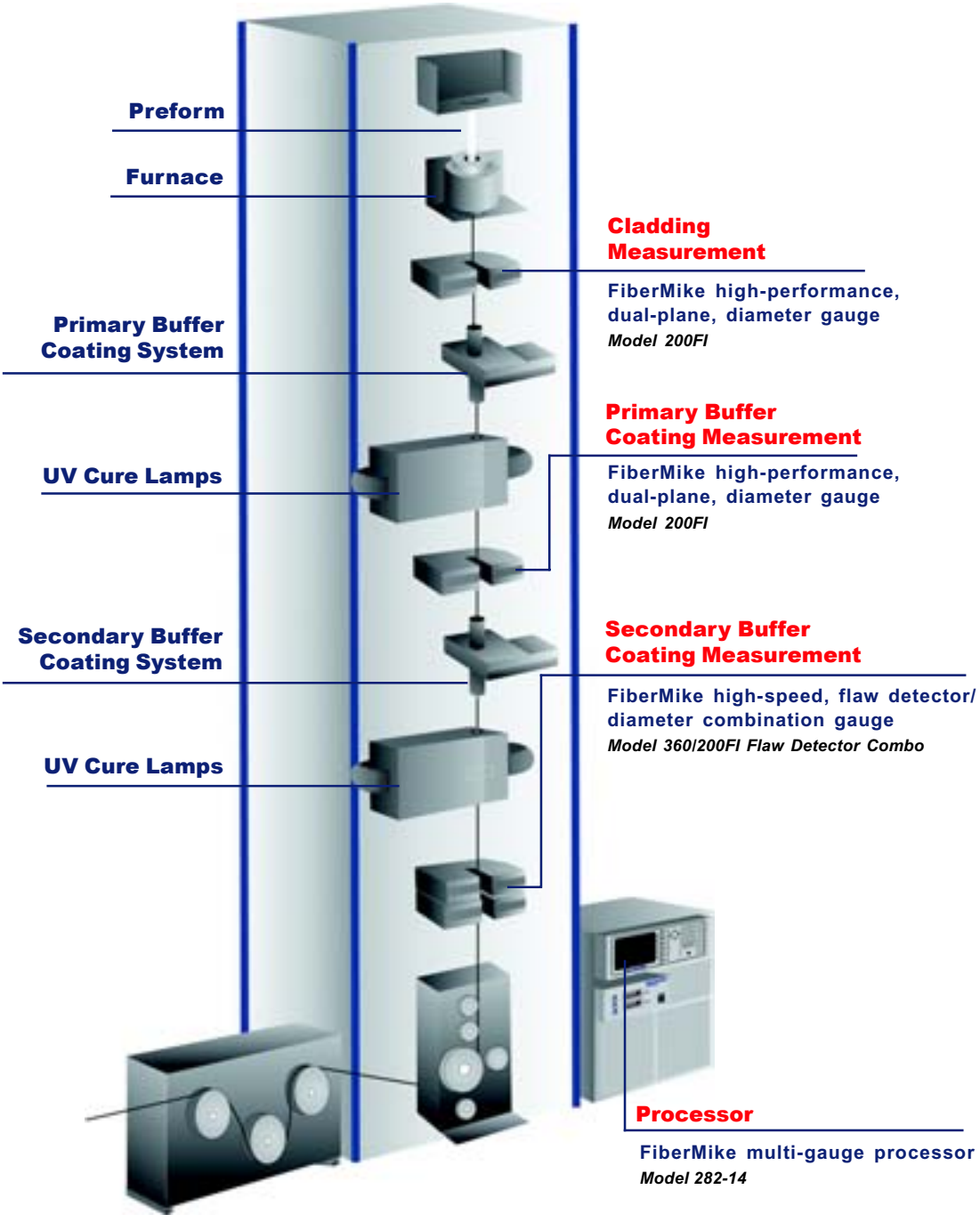
A Complete Draw Tower Solution

The FiberMike system uses diameter gauges, flaw detectors and a measurement processor to monitor each stage of your process. Diameter gauges use a flattened measurement response to provide sub-micron measurement accuracy at the cladding, primary and secondary buffer coating stages. A flaw detector checks for internal and external flaws after the secondary buffer coating. The FiberMike processor displays data both numerically and graphically, providing accurate, real time data and preform position control.

Digital inputs and outputs connect the FiberMike system with your draw tower PLCs allowing the draw system to start and stop measurements and detect alarms. You can also send and receive commands, status and measurements through RS232 line commands on the system's serial port. You can even choose analog outputs for voltage or current loop requirements.

The FiberMike Advantage

- High precision diameter measurement with sub-micron accuracies
- Internal/external flaw detection in excess of 45m/sec.
- Outputs for Preform position control
- Intuitive graphical interface
- Robust system design



Complete Measurement Control

The model 282-14 Processor seamlessly integrates diameter measurements from cladding, primary and secondary buffer coating stations, along with flaw detection. Interfaces with draw controllers for complete process control.



- Intuitive graphical user interface is easy to learn and use
- Separate Out of Tolerance and Out of Specification alarms provide early warning of potential problems
- SPC Histograms, X Bar and Range Charts track process control, and printed reports are available for fiber history



- Included: 1 Analog Voltage Card, 2 Scan Cards and 1 Alarms Card

Model 282-14 FiberMike Processor

Power Requirements	115 VAC ±10%, 3 amp, 50/60 Hz 230 VAC ±10%, 1.5 amp, 50/60 Hz
Operating Temperature	40-110°F (4-43°C) Specifications apply at 21°C ±2°
Dimensions (LxHxW)	18.0 x 6.97 x 19.0 in. (457 x 177 x 483 mm)
Weight	22 lbs. (10 kg)

Part Number: 84636

Options	Part #
Processor 230VAC Option	83522
Digital Input Card	85641
Serial/Parallel Card	84402
Analog Current Card	83125
Additional Scan Card	85625
Additional Alarms Card	85623
Additional Analog Voltage Card	83119
DB25F Terminal Strip Adapter	61562

Fast, Accurate, Diameter Measurement

Used at the cladding and both primary and secondary buffer coating stations, model 200FI Diameter Gauge provides sub-micron accuracy at speeds up to 2000 scans per second.



- High precision measurement with sub-micron accuracies
- Rugged, pressurized housing keeps out contaminants
- Nitrogen Purge function keeps gauge lens clean to insure accurate readings
- Positional measurement provides real-time positional information to make tower and gauge alignment easier (see right)



Model 200FI Diameter Gauge

Number of Axes	2
Measurement Range	80-1000 µm
Repeatability (16 scans avg.)	±0.025 µm
Scan Rate	Standard: 800 scans per second[1] Optional: 1500 or 2000 scans per second[1]
Positional Error	Measurement Area: 1 x 1 mm Error: 0.25 µm Measurement Area: 2 x 2 mm Error: 0.40 µm
Stability	±0.0125 µm, ±5°C

[1]Interleaved

Part Number: 84637

Options	Part #
1500 Scan Option	83426
2000 Scan Option	83920

Accessories	Part #
Scan cable (15m length)	83268
Scan cable (40m length)	84735
XY Calibration Fixture (127 µm/254 µm)	84618
XY Calibration Fixture (200 µm/300 µm)	84642
XY Calibration Fixture (254 µm/1250 µm)	84641

Flaw Detection Inside and Out

Coupled with a diameter gauge and positioned after the secondary buffer coating station, the high-speed Flaw Detector Combo uses three planes of continuous light traveling through the optical fiber to ensure 360º, internal and external flaw detection over 100% of your product. This patented method precisely detects bubbles, delaminations, lumps and neckdowns and other flaws at draw speeds exceeding 45m/sec.



- Detects flaws of any length as small as 3 microns in height such as bubbles, delaminations, lumps and neckdowns at draw speeds in excess of 45 m/sec
- Two threshold levels for short and long deuration flaws
- Rugged, pressurized housing keeps out contaminants
- Nitrogen Purge keeps gauge lens clean to insure accurate readings
- Includes Scan Cable (15meter)

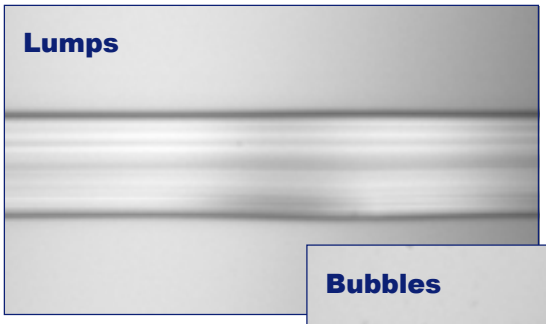
Model 360/200FI Flaw Detector Combo

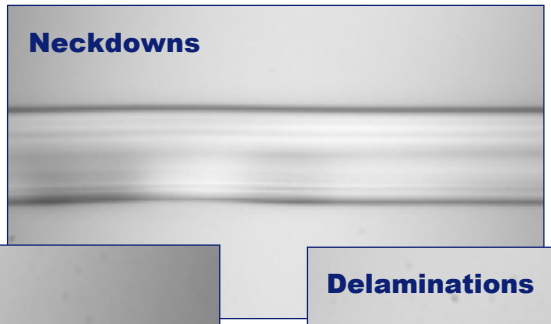
Diameter Specification	See Part Number: 84637
Minimum Flaw Length	None
Minimum Flaw Size	3 microns
Maximum Fiber Diameter	260 microns
Number of Axes	3
Working Area	1 mm x 1 mm square, centered at the intersection of the three laser beams
Line Speed	≥45m/sec.

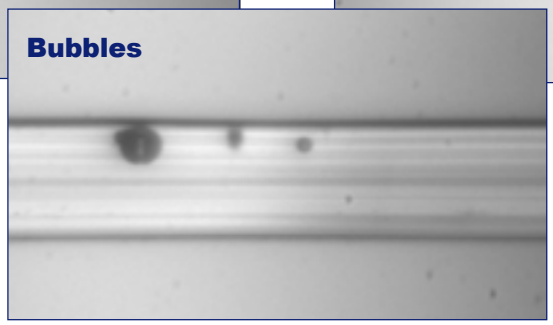
Part Number: 84638

Options	Part #
1500 Scan Option	83426
2000 Scan Option	83920
230VAC Option	83521

Accessories	Part #
Diameter-XY Calibration Fixture (127 µm/254 µm)	84618
Diameter-XY Calibration Fixture (200 µm/300 µm)	84642
Diameter-XY Calibration Fixture (254 µm/1250 µm)	84641
Flaw Detector-Calibration Pendent	83403
Flaw Detector-Calibration Fixture	84428
Calibration Fixture—Fiber Holder Kit	84704









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Precision Measurement & Control Systems

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