

SUCCESS STORY 74 MONITORING OF FIBER OPTIC PREFORM



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How do you improve the yield and quality of a fiber optic preform manufacturing process?

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Situation and background

Preforms are 1-1.5m/39-59" in length and 25-75mm/.9-2.9" in diameter. Several kilometers of fiber are drawn from the preform after the preform operation is complete. Typically, there is scrap at each end of the preform after it has been manufactured, due to the preform process. A torch heats the preform to allow for chemical deposition to occur in the tube. The customer needs to monitor the hot spot temperature to control the chemical deposition rate and position in order to control lathe speed and rotation.

The winning solution

- Using a special 5 μ m Raytek® MP150 system scanning the length of the preform, the customer will always be able to determine the hot spot temperature. Using a spot pyrometer for this application does not guarantee this, as the spot pyrometer is fixed and only looks at a single point. Because the scanner is looking at temperatures over a line, it will always see the hot spot on the preform, which can move over time. The MP150 linescanner is optimized for this process.

Savings made

- With careful temperature control during this process, the scrap at each end of the preform can be minimized by by .5-1.5%.

KEY FACTS

Industry

Fiber optic industry

Customer's End Product

Fiber optic cables

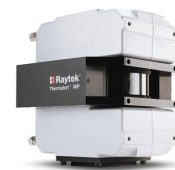
Process Temperatures

800C-2300°C/1472°F-4172°F

Distance to Object

500mm/19.6" close focus

PRODUCT AND BENEFITS



MP150 Linescanner with special modifications

- 500mm/19.6" focus distance
- 800-2300°C/1472°F-4172°F temperature range
- 1024 points of measurement
- Improved temperature control on preform
- Reduced preform setup time compared to setup using spot pyrometer