ProView™ Theta LD/XD

INTERFEROMETER WITH FUSION SPLICER CONTROL

Splicing complex fiber structures has never been easier

The ProView Theta interferometer revolutionizes fiber splicing by enhancing standard PM splicers with advanced end face topography and geometry matching capabilities.

The ProView Theta is specifically designed to minimize the cleave angle gap for large diameter fibers and effectively match and align complex end face structures prior to splicing.

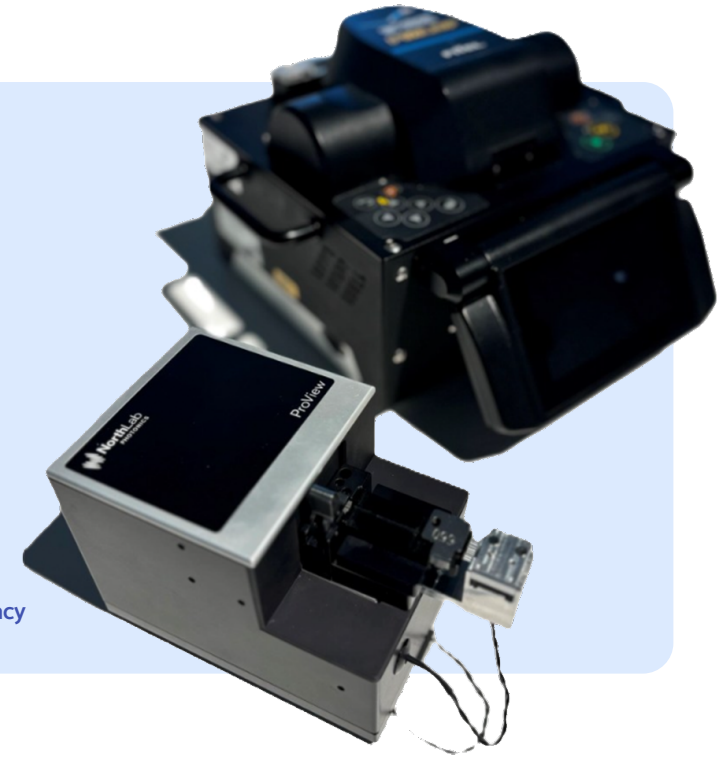
As the fiber optic industry evolves toward increasingly complex fiber types and structures, demand for versatile splicing equipment has grown. Traditional fusion splicers often struggle to accommodate these advancements. The ProView Theta meets this challenge by functioning as a "third eye" for PM splicers. Connected to the fusion splicer through an external PC, the interferometer analyzes end face structures and geometries to produce a detailed digital template of each fiber. Operators can then digitally align these templates, after which the ProView Theta sends precise rotational commands to the splicer, ensuring optimal theta alignment for flawless splicing.

The ProView Theta is well-suited for aligning and splicing a variety of fiber types, including PM, PCF, air-clad, multi-core, and complex geometries such as hexagonal, octagonal, and D-shaped fibers. Additionally, the design encourages prompt operator involvement and supports semi-automated processes, resulting in a flexible, versatile, and future-proof solution.

The Proview Theta is available in two models: LD (125–800 µm) and XD (250–1200 µm) cladding diameters. The interferometer is compatible with all FITEL S185 PM-type splicers.

Key Features

- For fiber cladding diameters: LD model: 125 to 800 µm, XD model: 250 to 1200 µm
- 2D and 3D topography
- Fringe & Inspection mode from PC Controller GUI
- Very fast inspection time with automatic angle estimation
- Optional use of PASS/FAIL cleave angle indication
- Inspection of end face properties such as flatness, perpendicularity, hackles and contamination
- Grab and save 2D and 3D images and cleave data
- User software calibration utility for extreme accuracy



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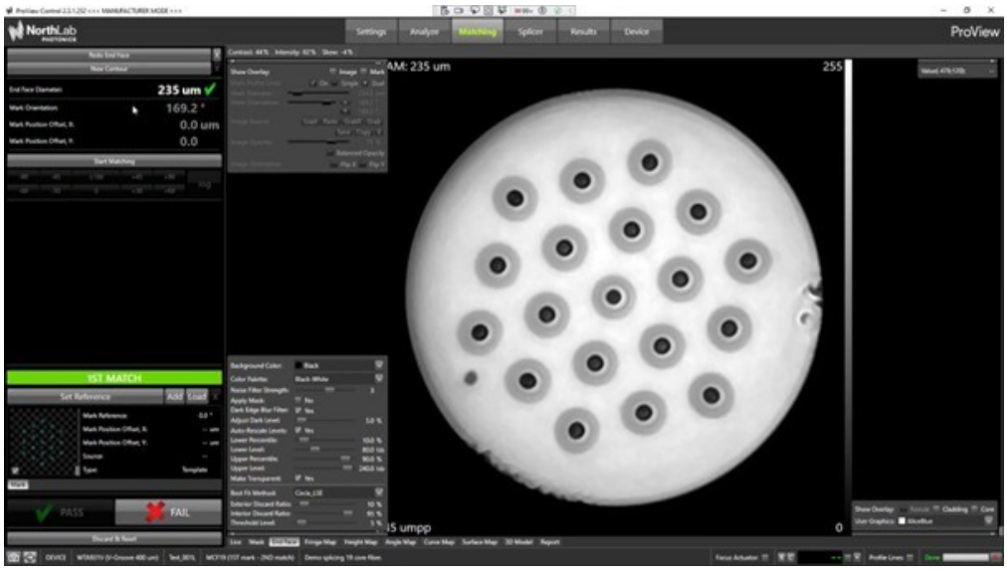
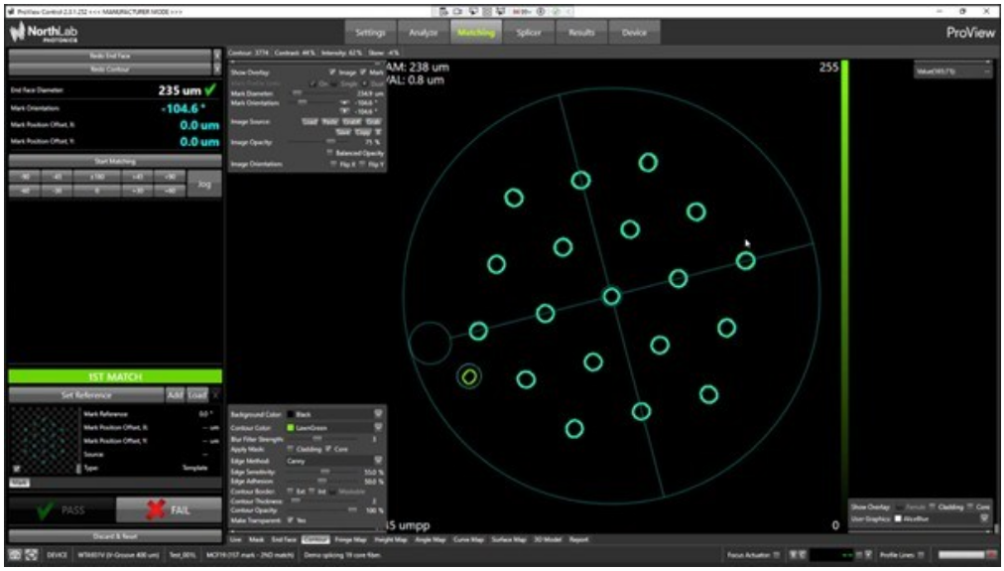
Geometry matching

The ProView Theta analyzes end-face structures and geometries to produce a detailed digital template of each fiber.



A digital template is produced, in this case on a multicore fiber with a built in “marker”.



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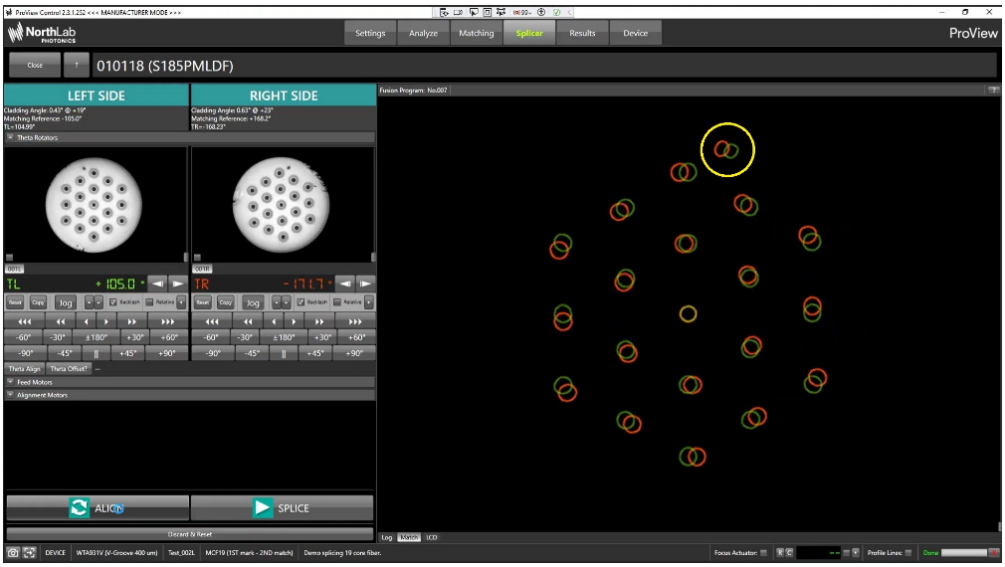
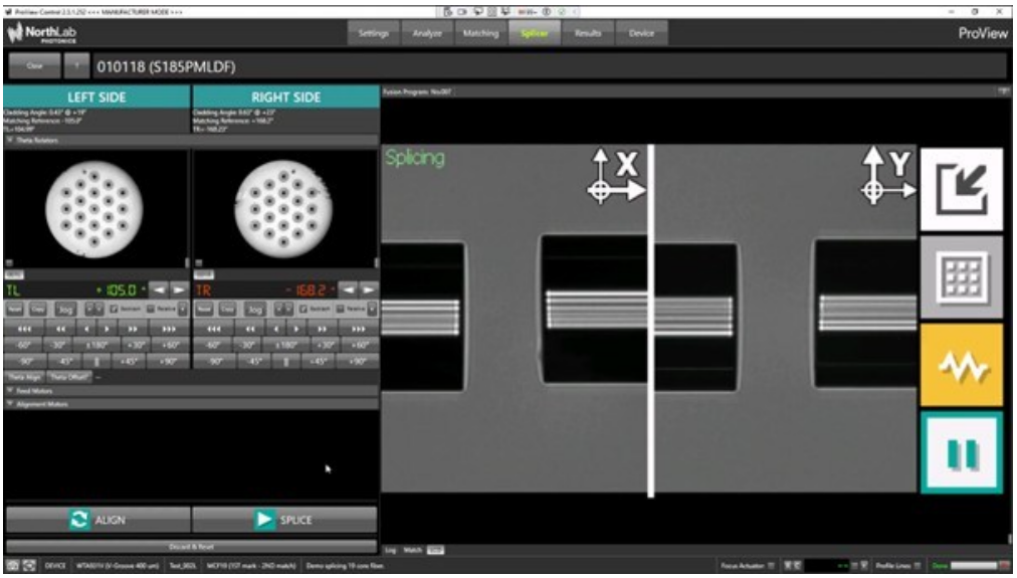
Geometry matching

The operator digitally align the two templates, in this case the built-in markers (yellow) are used as a reference for correct channel to channel alignment on a multicore fiber.



The ProView Theta sends precise rotational commands to the fusion splicer, ensuring optimal theta alignment prior to splicing.



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End-face topology matching

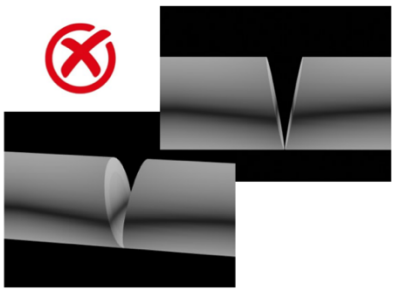
Theta alignment based on matching of cleave angle / 3D End-Face Topology.

The ideal configuration is determined using a rule-based approach that evaluates multiple factors, such as internal structure and complex cladding geometries.

Primary Goals: Minimize signal loss and mode leakage, maintain high-power beam integrity, eliminate splicing errors, and increase production yield.

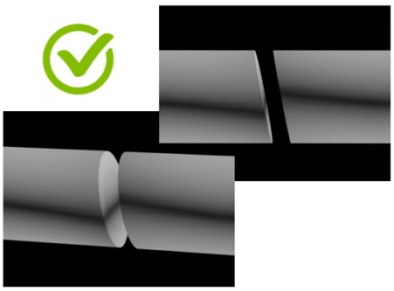
Standard splicing

A worst case scenario prone to higher and inconsistent loss

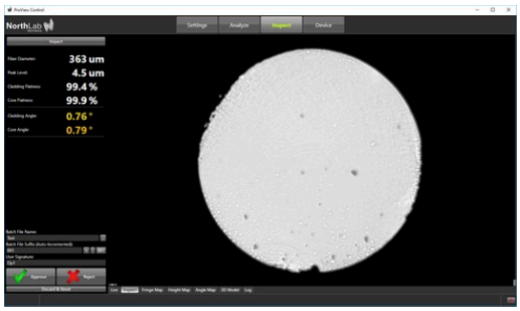


Standard with ProView Theta

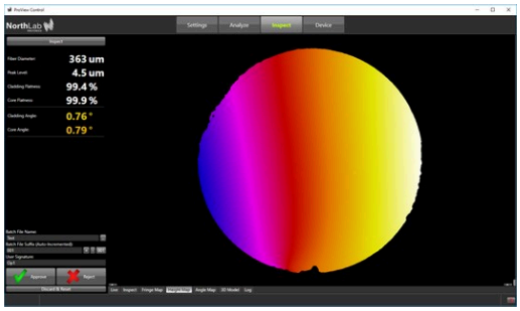
Unmatched precision delivering consistently minimal losses



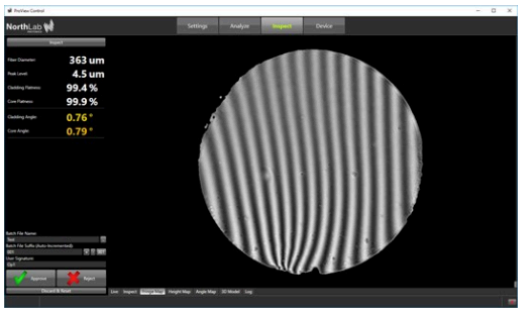
ProView Theta can be used as a standard interferometer



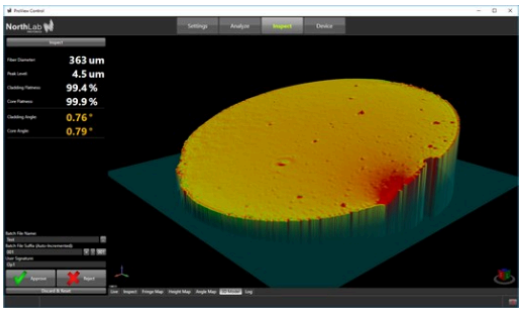
Microscope view



Height map view



Interferometer view



3D model view

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Technical Specifications

Dimensions:	86(W) x 127(D) x 93(H) mm 86(W) x 140(D) x 97(H) mm (incl. focus knob and rubber feet)
Weight:	1.2 kg
Power Source:	Through USB port
PC connection:	Super Speed USB (USB 3.0) Type-A with 2 m cable
Environment:	Operating temperature: 10 °C ~ 40 °C Storage temperature: -20 °C ~ 50 °C Humidity: 5% ~ 95% RH (non-condensing)
Fiber diameter:	LD Model: 125-800 µm, XD Model: 250-1200 µm
Field of view:	LD Model: ~900 µm, XD Model: ~1500
Resolution:	2560 x 1920 (4.92 MP)
Sensor:	CMOS (monochrome)
Image file format:	JPEG, PNG, TIFF, GIF

System Acquisition Range and Accuracy

Height, peak to valley:	15 µm
Angle, 125 µm fiber:	up to 5.0°
Angle, 220 µm fiber:	up to 3.9°
Angle, 400 µm fiber:	up to 2.1°
Angle, 720 µm fiber:	up to 1.2°
Absolute accuracy: [1]	0.03° standard deviation (<400 µm, ROI = 90%) 0.02° standard deviation (>400 µm, ROI = 90%)
Relative accuracy: [1]	5% up to 2°

[1] Using software calibration compensation.

System Requirements

Computer:	PC with Intel i5 (or better)
USB: [2]	One free USB 3.0 port (Super Speed)
Memory:	4 GB RAM (16 GB RAM recommended)
Disc space:	100 MB (500 MB recommended)
Operating system:	Windows 8/8.1/10 64-bit (with .NET Framework 4.8 or later)
Graphics card:	3D graphics support (dedicated GPU recommended)
Display resolution:	1920 x 1080 (dual monitor system recommended)
Input devices:	Keyboard and a three-button scroll-wheel mouse (or equivalent)

Compatible Fusion Splicer

Splicer:	All FITEL S185 PM-type splicers.

[2] Only use USB 3.0 ports directly connected to the motherboard of the PC (i.e. a port without an internal extension cable).

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Product	Part #	Qty
NorthLab ProView™ Theta LD	**IF-03-01000**	
NorthLab ProView™ Theta XD	**IF-13-01000**	

Information is subject to change without notice.

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