



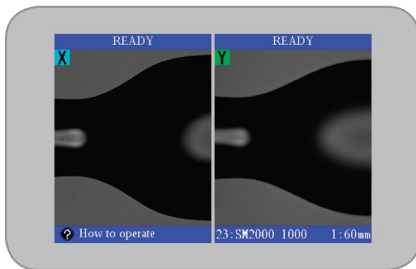
LZM-110M+/110P+

LAZERM Master®

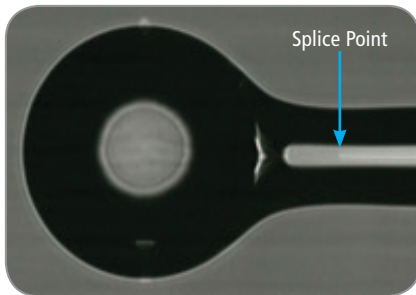
LZM-110M+ and LZM-110P+ Splicing Systems

The LZM-110M /110P LAZERM Master is a splicing and glass processing system that uses a CO₂ laser heat source to perform splicing, tapering (to create MFAs), lensing, or other glass shaping operations with glass diameters up to 2.3 mm. The high resolution optical analysis system works in conjunction with on-board firmware for fully automatic splicing, tapering and other glass shaping processes.

High precision glass processing is enabled by the intuitive and user-friendly on-board firmware (virtually identical to that of the Fujikura FSM-100 splicers). Operations may also be performed manually and by PC control. The FPS PC control GUI is supplied with the LZM-110M+/110P+ to provide additional features, greater flexibility and finer control. The FPS GUI may be used on a PC chosen by the customer. Customers can also create proprietary PC control algorithms using a complete set of PC control commands.



1 mm to 2 mm X-LDF Splice



Coreless Ball Lens to Collimate SMF Fiber Output



Tapered Probe with Small Ball End

Features

- Splicing and glass processing of 80 μm to 2.3 mm fibers
- High resolution motion for precise control during splicing and glass processing operations
- Extensive library of applications which are transferable between the LZM and FSM family
- FPS PC GUI provides additional measurement capabilities and glass shaping control
- Very clean heat source: Absolutely no deposits on fiber surface as might occur with filaments or electrodes Provides extremely stable and repeatable operation with virtually no maintenance
- Substantially reduces maintenance and calibration requirements
- Proprietary feedback system ensures heating power stability
- No need for process gas (as required with filament systems) or Vacuum systems
- Class 1 Laser with redundant automated laser safety features

Ordering Information

DESCRIPTION	ITEM NO.
LAZERM Master LZM-110M+ Glass Processing and Splicing System (Standard baseline LZM-110 system. Includes AC adapters and cords and FPS PC software)	S016411
LAZERM Master LZM-110P+ Glass Processing and Splicing System (Standard baseline LZM-110 system. Includes AC adapters and cords and FPS PC software)	S016413
All-in-one Computer (includes keyboard and mouse, all-in-one computer, FPS software included.) (required)	S015242-LZM110
Optional Tablet PC (includes FPS software pre-installed) (recommended)	S016772
Splicer V-Groove Cleaning Kit	S014397

LAZERMaster[®] LZM-110M+ and LZM-110P+ Splicing Systems

Specifications

Fiber Heating and Splicing Method	CO ₂ Laser
CO ₂ Laser Power	30 W standard (Lasers expected lifetime is 20,000 hrs / 2.3 years before service is required.)
Laser Safety Features	Metal cover with interlock, class 1 enclosure Automatic actuation of safety shutter Automatic laser power cutoff Triple redundancy
Laser Beam Control	Proprietary feedback system assures laser beam power stability Laser beam size and shape may be customized to meet specific user requirements
Typical Splice Loss	0.02 dB for SMF (ITU-T G.652)
Typical Splice Strength	250+ kpsi for SMF (ITU-T G.652) using appropriate fiber preparation equipment
Camera Field of View	2.3 mm
Fiber Observation Methods	<ul style="list-style-type: none"> • PAS (Profile Alignment System) via transverse fiber observation. • WSI (Warm Splice Image) and WTI (Warm Taper Image) • End-view observation
Applicable Fiber Diameter	80 μm to 2300 μm for automatic alignment by PAS Larger diameter fibers may be aligned manually or by power meter feedback
V-Groove Clamping System	Infinitely variable from 80 μm up to 2300 μm Clamping bare fiber or fiber coating Patented "split V-groove" system
Fiber Handling	Fujikura FSM-100, FSM-45, and FSM-40 splicer fiber holders Custom fixtures to meet specific customer requirements
Alignment Methods	PAS (Profile Alignment System, automatic alignment by camera observation) Manual Other methods by PC control Power meter feedback via GPIB End-view
Endless Theta Rotation	360° endless rotation, angle resolution 0.1°
X/Y Alignment Resolution	0.1 μm
Maximum Z Travel Length	36 mm (both left and right Z units) as well as sweep
Z Travel Resolution	0.125 μm theoretical
Maximum Taper Length	36 mm
Maximum Taper Ratio	10:1 standard (For uniform direction, one-pass tapering) Dual direction tapering offers greatly increased taper ratios, as does tapering with more than one tapering pass.
Maximum Taper Speed	1 mm/sec standard
Splicing Control	Internal firmware or operation by PC
Fiber Tapering and Glass Shaping Control	Internal firmware or operation by PC
PC Control	FPS software will be provided Complete command set for PC control
PC Option	Optional Tablet PC (includes FPS software pre-installed). Use of the FPS software on a PC provides finer control and additional features compared to the LZM-110 internal firmware
Interface Ports	USB 2.0 (For PC communications, data and image download, etc.) GPIB (for power meter feedback)
Electrical Power	100-240 VAC
Operating Conditions / Storage (shipping) Conditions	5 to 40°C / -10 to 60°C
Rotation Motors	For LZM-110P+, theta rotational motion is available for PM fiber alignment.
PM Fiber Alignment Methods	<ul style="list-style-type: none"> • PAS (For PANDA and other PM fibers) • IPA (Interrelation Profile Alignment, applicable to almost all PM fibers. Three distinct IPA methods available.) • End-view (Optional) • Power meter feedback (Requires polarizer and analyzer, as well as GPIB interface) • Manual • Other methods by PC control
End-View Observation and Alignment	Internal end-view system
Flexibility for Customer Design Input	Customizable platform