

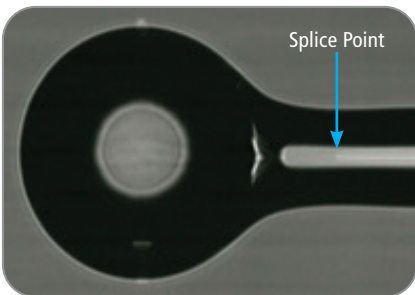
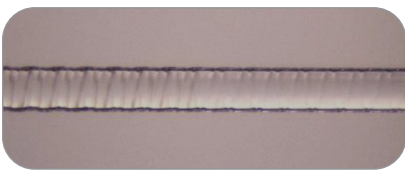


# LAZERMasteR®

## LZM-120A+ Splicing System

The LZM-120A+ LAZERMasteR is a splicing, glass processing system, and fiber ablation machine that uses a CO<sub>2</sub> laser heat source to perform splicing, tapering, lensing, ablation (for cleaving and mode stripping) 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. Operations may also be performed manually and by PC control. The FPS PC control GUI is supplied with the LZM-120A+ to provide additional features, greater flexibility and finer control. The FPS GUI allows customers to also create proprietary PC control algorithms using a complete set of PC control commands.



Coreless Ball Lens to Collimate SMF Fiber



Tapered Probe with Small Ball End

### Features

- High resolution motion for precise control during splicing and glass processing operations
- Automatic beam alignment and ablation focusing through new active mirror and focus motors.
- Very clean heat source: No deposits on fiber surface as might occur with filaments or electrode systems
- Provides extremely stable and repeatable operation
- 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 system with redundant automated laser safety features

### Applications

- Fiber Ablation that can be used for cleaving, shaping, or custom mode stripping
- Splicing and glass processing of 80 μm to 2.3 mm fibers
- Extensive library of applications which are similar between the LZM and FSM family
- FPS PC GUI provides additional measurement capabilities and glass shaping control

### Ordering Information

DESCRIPTION	AFL NO.
LAZERMasteR LZM-120A+ Glass Processing and Splicing System (Standard baseline LZM-120 system. Includes AC adapters and cords and FPS PC software)	S017140
Optional Tablet PC (includes FPS software pre-installed) (recommended)	S016772
LZM Training (Optional US based at customer locations)	S015867
LZM Training (Optional International)	S015868
Splicer V-Groove Cleaning Kit	S014397



# LAZERMaster<sup>®</sup>

## LZM-120A+ Splicing System

### Specifications

PARAMETER	VALUE
Fiber Heating and Splicing Method	CO <sub>2</sub> Laser
CO <sub>2</sub> Laser Power	30 W standard
Laser Safety Features	Metal cover with interlock, class 1 enclosure Automatic actuation of safety shutter Automatic laser power cutoff Double redundancy
Laser Beam Control	Proprietary feedback system assures laser beam power stability Laser beam size and shape may be customized (standard beam size is 4.5 mm X 2 mm and a minimum spot of 30 μm for ablations)
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"> <li>• PAS (Profile Alignment System) via transverse fiber observation</li> <li>• WSI (Warm Splice Image) and WTI (Warm Taper Image)</li> <li>• End-view observation</li> </ul>
Applicable Fiber Diameter	80 μm to 2300 μm for automatic alignment by PAS Larger diameter fibers or endcaps 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 in the "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 PC control with Power Meter feedback via GPIB/USB End-view
Endless Theta Rotation	360° endless rotation, angle resolution 0.1°
X/Y Alignment Resolution	Sub-micron
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/USB (for power meter feedback)
Electrical Power	100-240 VAC
Operating Conditions / Storage Conditions	5 to 40°C / -10 to 60°C
Rotation Motors	For LZM-120A+, theta rotational motion is available for PM fiber alignment.
PM Fiber Alignment Methods	<ul style="list-style-type: none"> <li>• PAS (For PANDA and other PM fibers)</li> <li>• IPA (Interrelation Profile Alignment, applicable to almost all PM fibers. Three distinct IPA methods available.)</li> <li>• End-view</li> <li>• Power meter feedback (Requires polarizer and analyzer, as well as GPIB/USB interface)</li> <li>• Manual</li> </ul>
End-View Observation and Alignment	Internal end-view system
Flexibility for Customer Design Input	Customizable platform