Polarization-Maintaining Fiber Fusion Splicer

(patent pending)

Features

- PM Fiber
- Multicore Fiber
- PhotonicCryFiber
- Low Cost
- Low Loss
- High ER
- Fast

Applications

- Production
- Test
- R&D

Product Description

The TUNE PM 500 Splicer is a novel solution to fusion splice polarization-maintaining fibers. It directly aligns the fiber end polarization stress birefringence of a pair of optical fibers. The design adds two manual rotary fiber holders to a conventional fusion splicer having modified software so that the PM axes can be aligned manually while fiber core alignment is automatic. The splice machine has advanced functions of core-core/cladding-cladding auto-alignment and arc in situ auto adjustment to ensure very low loss and high pull strength joint for each splicing. The ease of operation has been perfected in the manufacturing environment for over ten years. In operation, the axes of the two PM fibers are manually aligned by rotating the holders while visually matching the stress patterns on display. Once the axes are aligned and locked in position, the fusion splicing will then be performed automatically by pushing a button.

The alignment resolution can be further assisted by an optional fiber end face magnifying scope or by an optional active polarization extinction (ER) power meter attachment that measures the result during the operation. ER>22 can be routinely achieved by the visual methods, ER>25 can be achieved by the actively monitoring option.

Performance Specifications

TUNE PM 500	Min	Typical	Max	Unit
Fiber Type	Multicore, Panda , Bow-Tie, Photonic Crystal,		Tiger,	
Insertion Loss	0.01	0.1	0.3	dB
Polarization Extinction Ratio	22[1]	23	32[2]	
Fiber Glass Diameter	80		150	μm
Fiber Buffer Diameter	100		400	μm
Stripped Coating Length	7	9	10	mm
Splicing Strength		2		N
Electrode Life		5000		discharge
Cleaver Blade Life		30,000[3]		cleavering
Remote Operation Battery		5200mAHincluded		
Real Time Arc Calibration		included		
Protection Shrink Oven		built-in		
Monitor TFT Color		4.3		inch
Image Magnification		320X		
Operating Humidity (non-condensing)			85	%
Operating Temperature	-20		45	^{0}C
Storage Temperature	-40		80	^{0}C

Notes:

1. Visual alignment
2. Active alignment, Sensitive to fiber bending
3. Rotate 16 positions for every 1000 fiber cleaving

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Optional Active Splicing Monitoring Kit

The optional active splicing monitoring kit achieves optimum splicing result of maximum ER and lowest insertion loss possible. It consists of a cost effective PM light source, a manual polarization extinction meter to precisely measure insertion loss and polarization extinction ratio.

The set forms a system that launches a polarization light source to one end of the fiber and connects the polarization extinction ratio and insertion loss meter at the other end of the fiber to be spliced.

This instrument is also a high-performance general instrument for fiber optical power and polarization extinction measurements

Fiber End Face Microscope

This scope provides a clear image of the stress pattern for verifying or fine tuning the alignment prior splicing. 400X is standard.

This is also a general fiber end face and connector inspection tool.

Ordering Information

	☐☐	☐	☐	☐☐	☐☐
Prefix	**500**	**Fiber Diameter**	**Battery**	**Live ER Measurement**	**End Face Monitoring**
PMSPL-	55	125 mm = 5 80 mm = 8 Special = 0	Yes = 1 No = 0	No = 00 Yes = 11	Yes = 11 No = 00

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

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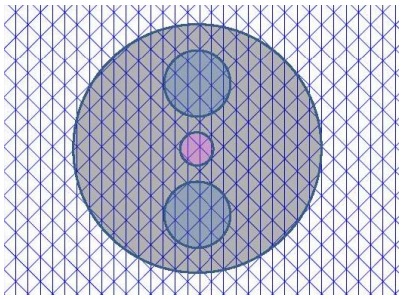
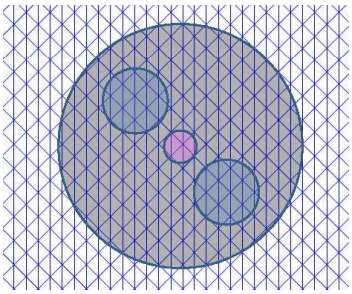
Visual Alignment Instruction

- Mount the fiber into the rotatable clamp
- Cleave the fiber using the special cleaver
- Perform the same procedure for another fiber
- Spark clean the fiber end by putting both cleaved fibers into the splicer and pushing the button once
- Insert the fiber with the clamp into the microscope and adjust focus to see the image
- Rotate the clamp to align the stress pattern vertically using the marking on the screen and tight the screw on the side to fix the fiber position on the clamp
- Remove the clamp along with the fiber and put it into the splicer
- Perform the same alignment procedure for the other clamp
- Push the splicing button again to complete the splicing with the pair of clamps on the splicer
- One can also perform splicing two fibers with any angle between them. The graphs below illustrate a case of -45 degree polarization axis splicing.





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