

OptiSplice® M90e Fusion Splicer

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features and benefits |

Touch screen with graphical user interface	Easy menu navigation
Built-in interactive training videos	Simplifies training and reduces maintenance costs
Equipped with both LID System and CDS System 3-axis core-alignment technologies	LID System technology provides the accuracy of a power through splice loss measurement; CDS System technology provides speed and versatility
Fastest total splice cycle time in the industry	13 sec splice (CDS mode) + 20 sec heat-shrink oven = 33 sec typical
Two USB ports	Easy data output and software upgrades
Integrated GPS system	Automatically adjusts for altitude changes and allows storing of splice location coordinates

Corning Cable Systems OptiSplice® M90e Fusion Splicer is the next generation of the proven M90 Fusion Splicer and is the ideal machine for networks where low-loss performance and high-end accuracy are imperative. Ideal for long-haul, CATV, telco and LAN applications, it can accurately splice current, legacy, dissimilar and specialty fiber types.

The OptiSplice M90e Fusion Splicer offers the power thru core-alignment accuracy of Corning Cable Systems LID-SYSTEM™ Unit, along with the speed and versatility of a video camera based core-alignment technology known as the core detection system (CDS). The LID-SYSTEM Unit is the most advanced technology available for splicing 250 micron single-mode fibers, providing a splice loss measurement after the splice is completed. The CDS system works on both 250 and 900 micron fibers and offers the fastest total splice cycle time on the market for a core-alignment fusion

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OptiSplice M90e Fusion Splicer | Photo STE003



OptiSplice M90e Fusion Splicer | Photo STE004

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splicer. The ultra-fast heat-shrink oven requires only 20 sec heating time on industry standard 60 mm heat-shrinks.

With graphical user interface for easy menu navigation, the OptiSplice® M90e provides the most advanced set of features available including a high-contrast 5.7-in color touch screen with an ambient light sensor for automatic adjustment to different lighting conditions (even direct sunlight) and includes on-board, interactive training videos with operational and maintenance sections. The Auto-Start feature begins the splice process when the fiber flaps close. Utilizing automatic fusion time to optimize each splice, the unit offers real splice loss measurement and automatic fiber-type detection with the LID-SYSTEM™ Unit and splice loss estimation with the CDS.

The OptiSplice M90e offers a slot for a multimedia card (MMC), a USB work lamp and two USB ports for easy data output and software upgrades. It includes maintenance-free precise and durable (P&D) electrodes and is capable of building attenuators by using a programmable splice loss program (up to 10 dB).

This compact, user-friendly fusion splicer yields top-notch performance, while reducing training and maintenance costs and is RDUP listed (formerly RUS). The Integrated Global Positioning System (GPS), which can be disabled, automatically adjusts for altitude changes and allows for storing of splice location coordinates.

Advanced statistical data analysis features allow for the operator to graphically view the performance of things such as the cleave quality over a period of time. This enables the operator to make informed maintenance decisions based on data analysis, such as when to replace a cleaver blade.



M90e Fusion Splicer Carry-On Case | Photo NS81



Precise and Durable Electrodes (P&D)
| Drawing ZA-2737

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LID-SYSTEM™ Unit Technology

The accuracy of the LID-SYSTEM Unit and its power through splice loss measurement method eliminates the time consuming task of evaluating splices with an optical time domain reflectometer (OTDR). The single-mode LID-SYSTEM Unit first optimizes core alignment in each of the X, Y and Z axes. When the fusion process begins, the OptiSplice® M90e Fusion Splicer's unique auto fusion time control monitors the power level through the splice and completes the fusion process when splice loss is at a minimum – ensuring the best splice possible. Finally, the LID-SYSTEM Unit measures splice loss by comparing power levels before and after the fusion process.

Core Detection System (CDS)

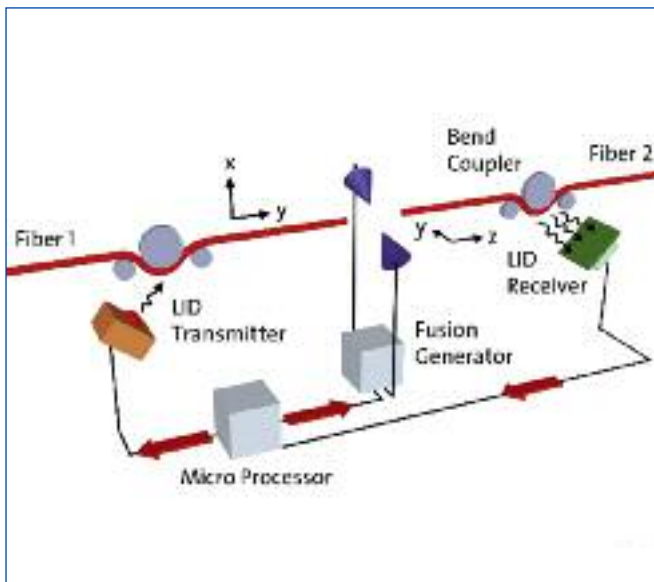
The OptiSplice M90e Fusion Splicer is equipped with a secondary method for core alignment (CDS) based on cameras. This technology, although not as accurate as the LID-SYSTEM, allows for fast core alignment (13 sec) even on 900 µm single-mode fibers. A brief arc causes the fiber to light up. The fiber core glows at a

different intensity than the cladding due to the different doping of the fiber. Image information is stored by the cameras in both the X and Y camera views.

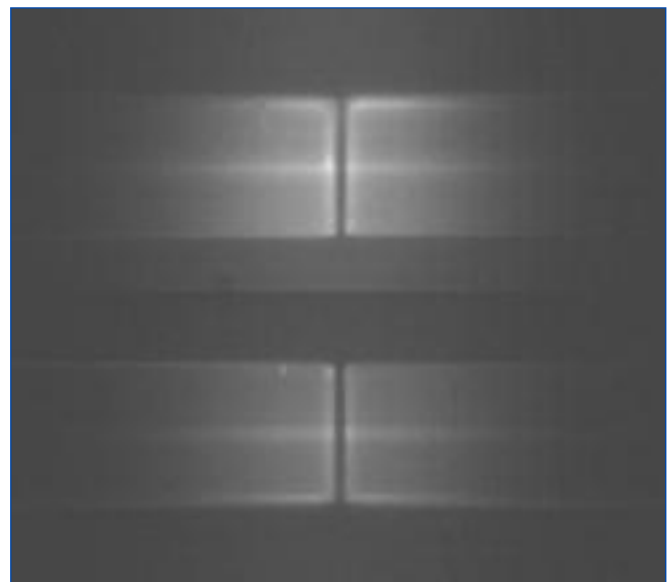
The microprocessor of the fusion splicer analyzes the images and establishes the fiber geometry. This determines the three-dimensional position of the core in both fiber ends. The core-to-core alignment of both fibers is then conducted on the basis of this information, and a splice loss estimate is displayed after the fusion splice is completed. The M90e is also capable of automatically choosing the best alignment method for the application at hand.

Precise and Durable Electrodes (P&D)

Precise and durable electrodes are absolutely maintenance-free, worry-free and can reduce the average splice loss up to 50 percent. Permanently attached arc-stabilizers guarantee both high-precision and long-life durability. An electrode cleaning arc is applied by the fusion splicer automatically and is sufficient to ensure continued low-loss splicing for approximately 7,000 arcs.



LID-SYSTEM Unit Technology | Drawing ZA-2736



Core Detection System Technology (CDS)
| Photo NS135

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specifications |

Dimensions (L x W x H) mm (in)	240 x 200 x 110 (9.4 x 7.8 x 4.3)
Weight kg (lb)	With battery: 2.7 (5.9) Without battery: 2.2 (4.8)
Principle Operation	Direct Core Alignment LID-SYSTEM™ Unit, 3-axis alignment, 1300 nm LED
Secondary Operation	3-axis core alignment by core detection system technology (CDS)
Fiber Coatings	Single-mode and multimode optical fibers with cladding diameter of 125 µm and coating diameters of 250 µm to 900 µm
Fiber Types	Standard single-mode, specialty single-mode (ClearCurve®, NZDS, DS, LS, Er), multimode (50 µm and 62.5 µm); 39 factory-optimized programs for various fiber types including attenuation splice programs (1310 nm and 1550 adjustable in 0.1 dB increments from 0.1 to 10 dB), storage for up to 150 custom, user-defined programs
Typical Splice Loss*	Standard single-mode < 0.02 dB (similar fibers), < 0.05 dB (dissimilar fibers) NZDS < 0.03 dB (similar fibers), < 0.06 dB (dissimilar fibers) Multimode < 0.01 dB
Splice Analysis	Splice loss measurement (LID-SYSTEM), splice loss estimation (CDS/Video); automatic tensile test with adjustable force between 0.1 N and 4.5 N
Estimator Accuracy	Typically ± 0.02 dB for standard single-mode splices when using the LID-SYSTEM Unit Technology mode, typically ± 0.03 dB when using CDS mode
Monitor	Color QVGA LCD Touch Screen with sensor for automatic adjustment for ambient lighting, 120x magnification, 5.7-in diagonal screen
Splice Protection	Heat-shrink, Splice Pak™ Splice Protector or Crimp & Go® Crimping Device
Interface Ports	VGA monitor output, 2 USB ports, GPS antenna port, external LID transmitter (pigtail adapter), 3.5 mm socket, MMC Memory Card Slot (Located under the battery)
Splice Loss Storage	Splice data memory for 10,000 data sets, including GPS data
Heat-Shrink Oven	20 sec on 60 mm heat-shrinks (fastest in the industry); energy efficient design increases battery life of the fusion splicer; 15 sec on 40 mm heat-shrinks

* Identical fibers

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specifications | (continued)

Precise and Durable Electrodes	Maintenance-free to the operator (lasts approximately 7,000 splices)
Temperatures	Storage: -40° to +80°C Operation: -15° to +50°C
Relative Humidity	< 95%, non-condensing
Altitude Compensation	-2000 m up to +4,500 m above sea level manually, or automatically by built-in GPS system
Power	External 12 VDC/80 W desktop power supply, input voltage 100 V AC to 240 V AC, 47 Hz to 63 Hz Internal 7.2 Ah lithium Li-Ion battery, exchangeable without tools, for approximately eight hours continuous working time (if fully charged) with typically 200 splice operations without shrink oven and typically 130 splice operations with fast heat-shrink oven working

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ordering information |

Part Number	Description
M90e-0SM-T-H	OptiSplice® M90e Fusion Splicer with FBC-006 cleaver, carrying case with wheels, fast heat-shrink oven, splice tray holder, AC power supply w/US cord, Li-Ion battery with external charger, 1-year limited warranty, operator's manual on CD, USB worklight, maintenance tool kit
M90e-XSM-T-H	OptiSplice M90e Fusion Splicer with carrying case with wheels, fast heat-shrink oven, splice tray holder, AC power supply with US cord, Li-Ion battery with external charger, 1-year limited warranty, operator's manual on CD, USB worklight, maintenance tool kit
M90e-0SM-T-C	OptiSplice M90e Fusion Splicer with FBC-006 cleaver, carrying case with wheels, Crimp & Go® Splice Protection Crimping Device, splice tray holder, AC power supply with US cord, Li-Ion battery with external charger, 1-year limited warranty, operator's manual on CD, USB worklight, maintenance tool kit
M90e-0SM-T-P	OptiSplice M90e Fusion Splicer with FBC-006 cleaver, carrying case with wheels, Splice Pak™ Splice Crimp Device with fiber guides, splice tray holder, AC power supply with US cord, Li-Ion battery with external charger, 1-year limited warranty, operator's manual on CD, USB worklight, maintenance tool kit
M90e-XSM-T-P	OptiSplice M90e Fusion Splicer with carrying case with wheels, Splice Pak Splice Crimp Device with fiber guides, splice tray holder, AC power supply with US cord, Li-Ion battery with external charger, 1-year limited warranty, operator's manual on CD, USB worklight, maintenance tool kit

Accessories

FBC-006	High-Performance Single-Fiber Cleaver, one-step operation, diamond blade (typically < 0.35°)
FSA-022	Spare Precise and Durable (P&D) Electrodes
2820013-01	M90e/OptiSplice LID/M90i/X77i USB worklight
2806031-01	Heat-Shrink Splice Protection Parts, 1 fiber (package of 50, 60 mm long)
2806032-01	Heat-Shrink Splice Protection Parts (package of 50, 40 mm long)
FSA-012	Crimp & Go Splice Protection Crimping Device parts (150/pack)
OSLID-SPLICEPAK	Splice Pak Splice Protector crimp adapter with fiber guides
A0276859	Splice Pak Splice Protector, yellow, 250/250 µm (25/pack)
A0295149	Splice Pak Splice Protector, blue, 250/900 µm (25/pack)
A0295150	Splice Pak Splice Protector, green, 900/900 µm (25/pack)
M67-003	Fusion Splicing Tool Kit
TKT-SPLICE	Basic Fusion Splicing Tool Kit
OFT-000	Optical Fiber Access Tool for midspan access
TKT-FIBERTECH-PRO	Advanced Fiber Optic Cable Prep and Splicing Tool Kit

