

V 11/20

# WE'RE WELL CONNECTED

## MULTIPLE FIBER

**Multiple Fiber System (MFS)**  
A very compact connector developed by Diamond based on MT ferrule technology. Available in 4-, 8- and 12-channels, as simplex or backplane (up to 48-channels), MM/SM, PC/APC.

**Multiple Fiber Push-On (MPO)**  
A multifiber connector that complies with worldwide standards based on the MT ferrule. Available in 4-, 8- and 12-channels, as simplex, MM/SM, PC/APC.

**Fan-Out**  
Efficient cable installation by means of pre-assembled cables and connectors. Characterized by excellent mechanical and thermal properties. Available in different lengths and connector types.

## POWER SOLUTIONS

**Power Solution Multimode (PSm)**  
Designed to handle all optical fibers in higher power applications. The optical interface can transmit 100W optical power on a 105um core. Available with E-2000® and Micro AVIM® connectors.

**F-SMA Power Solution Injection (PSi) mode stripper**  
Removes unwanted cladding modes from the fiber and is used when emphasis is made on the preservation of the beam parameter (small spot diameter and low numerical aperture). Available with the F-SMA connector for MM fibers from 100µm to 1000µm.

**F-SMA Power Solution Injection (PSi) mode guider**  
Allows all modes, including cladding modes, to be transmitted with minimum attenuation, resulting in less heat and more power available at the cable output. Available with the F-SMA connector for MM fibers from 100µm to 1000µm.

## ACCESSORIES

**Optical Transmission Adapters (UGT) and Sacrificial Interfaces (SI)**  
UGT are in-line adapters for PC to APC or reverse transition. SI are in-line components used to protect front panel connectors from damage due to repeated matings.

**Terminators**  
High attenuation of return loss. Used for open output signals.

**In-line Attenuators**  
Used to adapt the transmitted light power to the characteristics of the receiver.

**Optical Gold Reflectors (OGR)**  
Used as a fiber termination with the highest possible reflection.

**Hybrid Mating Adapters**  
Used for connection of different types of connectors.

## CUSTOM PRODUCTS

**Vacuum Feedthrough**  
Benefits include a very low leak rate. It can be ordered for many types of fiber, including SM, MM, PM, PS, large core MM or others. Multichannel systems are also available.

**Interface Module (IMOD)**  
The IMOD is a half adapter used for free space applications of optical connectors. Available in different accuracy variants.

**Laser and LED transmitter modules (MAT) / photodiode receiver modules (MAR)**  
They are transceiver modules with an E-2000® interface. Both types are designed to minimize light coupling losses and provide high optical stability in a wide variety of environmental conditions.

## MULTI FIBER, POWER SOLUTION & ACCESORIES

## CUSTOMIZED SOLUTIONS

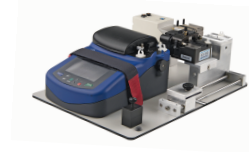


Many applications require complex, customized solutions. The highly qualified research and development team at Diamond will partner with you to develop the best mechanical and optical solution for your specific project. The technical team has in-depth experience in many different technologies. Diamond offers many years of experience in designing, manufacturing and testing high quality fiber optic components.



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## FIELD REPAIR EQUIPMENT

**ZEUS D50 HE**  
The Fusion Splice Kit is designed to assemble or repair fiber optic connections in the field. The kit contains everything needed to prepare, handle and splice fibers and robust outdoor/military and industrial cables and connectors.

**Splice-on connectors (SOC)**  
Fast, easy and reliable field installation of factory-quality terminations. Available connectors: E-2000®, F-3000®, SC, ST and FC.

**Splice Repair Kit**  
Innovative fiber/cable repair option requires minimal strip lengths and no bulky splice sleeves.



## CLEANING & INSPECTION

**Cleaning Kit**  
The kit contains a hand held microscope for connector end-face inspection and all necessary tools for cleaning, including in-adapter cleaners.

**Video Microscope Kit**  
The kit contains all necessary tools for inspection and cleaning of a connector end-face. The Video inspection Microscope QLP-82P with 3.5-inch display and a built-in power-meter meets today's requirements for safety, reliability and quality. The P5000i digital inspection probe allows mated connectors to be inspected. The probe may be connected to a laptop. A variety of inspection tips and adapters are available for both kits.

**Inspection Adapter**  
A variety of inspection tips and adapters are available for the video and handheld microscope to inspect all Diamond connectors.



## MEASUREMENT

**Reference patch cord**  
In order to limit the variability of attenuation measurement using reference connectors, Diamond uses selected single mode fiber with restricted tolerances on the mode field diameter (MFD) as specified within the IEC 61755-2-4/-2-5 standard. Available connectors: E-2000®, F-3000®, SC, FC.

**Launch fiber box**  
Suitable for characterization of fiber optic networks using an optical time domain reflectometer (OTDR) measurement device. Available with standard telecom connectors or harsh environment revos E-2000® and HE-2000® connectors.

**Optical Attenuating Fiber (OAF)**  
The OAF-Patch is a product family of wavelength independent fixed attenuation patchcords suitable for each connector type. Offering a large choice of nominal attenuation from 2dB to 30dB on fiber type 9/125 µm.



## SERVICES

**Design and Engineering**  
Diamond has over 40 years of experience in the design and engineering of fiber optic components and assemblies. We are an innovative partner able to develop custom-tailored solutions in response to customer demands.

**Manufacturing and Assembly**  
Diamond is a leading manufacturer of high-precision fiber optic products, and successfully serves several markets worldwide. The quality of our products and processes are overseen by a quality management system complying with ISO 9001.

**Training**  
Diamond offers several different training courses, both standard and custom. Training can be conducted on-site or via video conferencing and can be tailored specifically to your applications and audience.

## MAINTENANCE & REPAIR PRODUCTS AND SERVICES

### DIAMOND USA, Inc.



The management system of Diamond USA, Inc. has been assessed and certified as meeting the requirements of ISO 9001:2015 for the following activities: The manufacture, sales & service of fiber optic components, cable harnesses & customized system assemblies.

ISO 9001:2015



**Cage Code**  
1JZH5







#### E-2000®

Unique connector with spring cap that provides outstanding optical performance, along with excellent handling characteristics.

##### Available versions:

- ▶ 0.1dB class
- ▶ SX, DX, Compact DX, Low profile DX
- ▶ Backplane (2-6 channels)
- ▶ Fusion
- ▶ IP65
- ▶ Non-magnetic
- ▶ Interlock
- ▶ PM, PS, PSm
- ▶ XB

##### Features:

- ▶ Color and mechanical coding
- ▶ Interchangeable fixing clips
- ▶ Sterilizable

##### Standards:

- ▶ IEC 61754-15 LSH

#### F-3000®

The F-3000® connector family is designed according to international standards and is LC compatible.

##### Available versions:

- ▶ Simplex
- ▶ Duplex
- ▶ Junior Duplex
- ▶ Backplane (2-4 channels)
- ▶ Fusion

##### Features:

- ▶ Small-Form-Factor (SFF)
- ▶ Interchangeable fixing clips

##### Standards:

- ▶ IEC 61754-28 LF3

The F-3000®s connector comes without protective cap and thumb latch button. It has been specifically developed for use with active network devices (e.g. SFP).

#### DiaLink

A round, slim connector well-suited for use in medical, sensing and in-building cabling applications. The pull cap feature enables easy installation into conduit pipes.

##### Available versions:

- ▶ Dialink-Saver
- ▶ Dialink male
- ▶ Dialink female
- ▶ Threaded version

##### Features:

- ▶ Compact design
- ▶ High packing density
- ▶ Sterilizable
- ▶ Non-magnetic version
- ▶ Pull cap for max. 300N

##### Standards:

- ▶ IEC 61754-32 DiaLink

#### SC

A push-pull connector ideal for industrial, medical, sensing and telecom measurement.

##### Available versions:

- ▶ Simplex
- ▶ Duplex
- ▶ Fusion

##### Features:

- ▶ Push-pull mechanism

##### Standards:

- ▶ IEC 61754-4 SC

#### FC

A metal connector used for industrial, medical, sensing applications and telecom measurement.

##### Available versions:

- ▶ Standard
- ▶ Mini
- ▶ Fusion
- ▶ Alberino (plastic)
- ▶ PM, PSm
- ▶ Mating adapter with square, hexagonal or round flange

##### Features:

- ▶ High precision anti-rotation keys
- ▶ Nickel-plated brass housing
- ▶ Compatible with TIA-604-4B, IEC 61754-13, EN50377-1-2

##### Standards:

- ▶ IEC 61754-13 FC PC wk
- ▶ TIA-604-4B FC PC and APC
- ▶ EN50377-1-2 FC APC nk

#### ST

A bayonet style connector often used in industrial, medical, sensing applications, telecom and LAN applications.

##### Available versions:

- ▶ Standard
- ▶ Fusion

##### Features:

- ▶ Spring loaded (10N)
- ▶ Bayonet locking mechanism

##### Standards:

- ▶ IEC 61754-2 BFOC/2.5

#### AVIM®

Developed in the mid-90s, the AVIM® was designed for vibration resistance in avionics, space and mobile platforms.

##### Available versions:

- ▶ SM, MM, PM
- ▶ PS, PSm, PM-PS (Mini AVIM® only)
- ▶ Space Qualified (ESCC certificate 355)

##### Features:

- ▶ High vibration resistance (35 gRMS)
- ▶ High Shock resistance (500g)
- ▶ Space flight experience

##### Standards:

- ▶ ESCC 3420/002

#### Midi AVIM® / Mini AVIM®

Designed for compactness and ruggedness in dynamic small environments, such as space, avionics and mobile platforms.

##### Available versions:

- ▶ SM, MM, PM and PZ
- ▶ PS, PSm, PM-PS (Mini AVIM® only)
- ▶ Space Qualified (ESCC certificate 355)

##### Features:

- ▶ High vibration resistance (35 gRMS)
- ▶ High Shock resistance (500g)
- ▶ Titanium design

##### Standards:

- ▶ ESCC 3420/001 Mini AVIM®

#### Micro AVIM® / DMI

The Micro AVIM® or Diamond Micro Interface (DMI) connector requires minimal space making it ideal for use on Printed Circuit Boards.

##### Available versions:

- ▶ PM, PM-PS and PZ
- ▶ PS, PSm

##### Features:

- ▶ Very compact (4.5mm x 21mm)
- ▶ Standard Clip System
- ▶ Tested successfully up to 35 gRMS
- ▶ Very high precision anti-rotation keys
- ▶ Titanium design (Micro AVIM®)

##### Standards:

- ▶ Diamond

#### F-SMA

Designed for use with multimode fiber, including large core multimode fiber for higher power levels.

##### Available versions:

- ▶ MM Standard
- ▶ MM Large core

##### Features:

- ▶ External parts: Inox
- ▶ Ferrule ø 3.175 mm
- ▶ MM, PC

##### Standards:

- ▶ IEC 61754-22

#### HE-2000®

A rugged and reliable harsh environment push-pull connector with superior optical and mechanical performance.

##### Available versions:

- ▶ Connector and bulkhead assembled with cable, tube or fiber. The ferrule front face can be PC, APC or APC4° polished for MM, SM, PM, PS, large core or small core fibers. Available also as XB.

##### Features:

- ▶ 4 optical/electrical channels
- ▶ Automatic protection shutter
- ▶ Protection IP67
- ▶ Push-Pull
- ▶ Field repairable
- ▶ Vibration resistant
- ▶ Allows mixing of fiber types

##### Standards:

- ▶ IEC 61754-35

#### MIL-38999 DM4 Family

The well-known MIL style connector with superior optical and mechanical properties.

##### Available versions:

- ▶ Connector and bulkhead assembled with cable, tube or fiber. The ferrule front face can be PC, APC or APC4° polished for MM, SM, PM, PS, large core or small core fibers. Available also as XB.

##### Features:

- ▶ 4 to 12 optical / electrical channels
- ▶ Rugged metal shell
- ▶ Protection IP67
- ▶ Field repairable
- ▶ Vibration resistant locking system
- ▶ Allows mixing of fiber types

##### Standards:

- ▶ MIL-DTL-38999

#### MIL-83526 DM4

A ruggedized housing allows for easy handling in industrial environments.

##### Available versions:

- ▶ Connector and bulkhead assembled with cable, tubes or fibers. The ferrule front face can be PC, APC or APC4° polished for MM, SM, PM, PS, large core or small core fibers. Available also as XB.

##### Features:

- ▶ 4 optical/electrical channels
- ▶ Resistant metal shell
- ▶ Corrosion resistant
- ▶ Protection IP68
- ▶ Fiber types mix (keep consistent)
- ▶ Field repairable
- ▶ Vibration resistant
- ▶ Allows mixing of fiber types

##### Standards:

- ▶ MIL-DTL-83526

#### Expanded Beam (XB)

This lensed connector ensures the data connection can be easily maintained even in heavily polluted and other harsh environments.

##### Available versions:

- ▶ Connector and bulkhead assembled with cable or tube. The ferrule front face can be PC or APC polished for MM and SM fibers.

##### Features:

- ▶ 4 optical channels
- ▶ Resistant metal shell
- ▶ Corrosion resistant
- ▶ Protection IP68
- ▶ Fiber types mix (keep consistent)
- ▶ Field repairable
- ▶ Vibration resistant

##### Standards:

- ▶ MIL-DTL-83526

#### revoS E-2000®

A rugged design makes this connector particularly suitable for industrial applications requiring long transmission distances and high data rates.

##### Available versions:

- ▶ Connector and bulkhead assembled with cable or tube. The ferrule front face can be PC, APC or APC4° polished for MM and SM fibers. Available also as XB.

##### Features:

- ▶ 2 optical channels
- ▶ Robust IP65-rated enclosure
- ▶ Integrated caps and shutters
- ▶ E-2000® connector with ACA
- ▶ Easy locking lever
- ▶ Automatic protection shutter

##### Standards E-2000®:

- ▶ IEC 61754-15

#### DiaFlex

A multifiber connector system based on the MT ferrule and a mechanical design that provides excellent optical properties.

##### Available versions:

- ▶ Male and female connectors are assembled with cable or fan outs. The ferrule front face can be PC or APC polished for MM and SM fibers.

##### Features:

- ▶ 8-24 optical channels
- ▶ Resistant metal shell
- ▶ Corrosion resistant
- ▶ Protection IP68
- ▶ Easy locking system
- ▶ Protective cap with feed-in eye
- ▶ Small external diameter

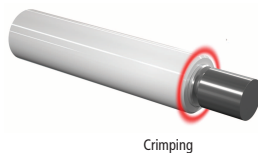
##### Standards MT Ferrule:

- ▶ IEC 61754-5

\* E-2000®, F-3000®, AVIM® and HE-2000® are registered trademarks of DIAMOND SA in the USA and other countries.

## SINGLE FIBER CONNECTORS

### TECHNOLOGIES

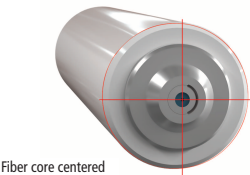


Crimping

#### Active Core Alignment (ACA)

The goal of ACA is to achieve the best insertion loss values by minimizing the fiber eccentricity to the ferrule outer diameter, as well as, achieving a perfectly aligned exit angle. As part of the ACA process, the metallic end-face of the two component ferrule is shaped so that one side of the material deformation causes the fiber core to align to the middle of the central axis of the ferrule in a controlled manner.

**Available connectors:** All connector types

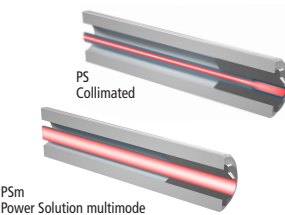


Fiber core centered

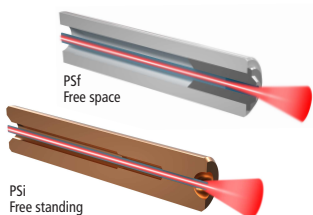
#### High Power (PS)

Diamond Power Solution (PS) connections utilize various beam expansion methods, which can vary greatly depending on the scope of the application. The different PS types available are as follows: PS Collimated (contact), PM-PS (contact), PSm (contact), PSi (free standing), PSc (collimator), PSf Free Space (diverging), PSb Ball Lens (expanded beam), PSl Lensed (focused).

**Available connectors:** E-2000®, F-3000®, Mini AVIM®, DMI, FC, X-Beam and more upon request



PSm Power Solution multimode

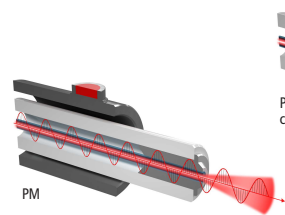


PSi Free standing

#### Polarization Maintaining (PM)

Diamond Polarization Maintaining (PM) connectors are renowned for their exceptional performance. The Active Core Alignment (ACA) process minimizes core offset to ensure low insertion loss. Active Polarization Orientation (APO) guarantees optimal alignment of polarization axes for high extinction ratio on PM and polarizing (PZ) fibers.

**Available connectors:** E-2000®, F-3000®, LSA (DIN), FC, SC, DMI, AVIM® family and others upon request

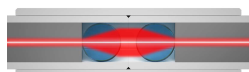
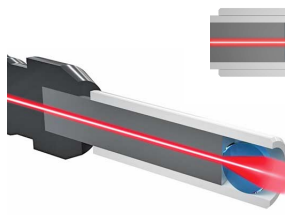


PM-PS collimated

#### Expanded Beam (XB)

Diamond has developed an ultra-low tolerance optical sub-assembly with a microlens and ferrule embedded in a high precision guide ceramic sleeve. The result is a high performance, exceedingly reliable lensed-ferrule assembly offering compact size and highly repeatable low insertion loss. A Diamond lensed-ferrule assembly can fit standard connector bodies, as well as, many different connectivity solutions. Due to its modular conception it can be used as a substitute for physical contact (PC) ferrules, when mating cycles, debris, reliability and low losses matter.

**Available connectors:** E-2000®, XB2, HE-2000®, MIL-83526 DM4, MIL-38999 DM4 Family, revoS E-2000®



\* The pictures of the connectors are not scaled true to the original