

WE'RE WELL CONNECTED



TEST AND CALIBRATION LAB

DIAMOND operates an ISO/IEC 17025 accredited test and calibration laboratory (STS 0333 / SCS 0101), providing reliable and traceable measurements for fiber optic components and assemblies. The laboratory supports both internal production and customer-specific testing requirements. Using state-of-the-art equipment, we perform optical and mechanical measurements, as well as calibration of fiber optic measurement instruments with full traceability to international standards. This ensures verified performance, consistent quality and confidence for demanding applications.

MANUFACTURING EXPERTISE

DIAMOND's vertically integrated manufacturing, encompassing plastic, ceramic and metal components, is a fundamental quality factor behind our fiber optic solutions. By keeping all critical production steps in-house, we maintain full control over materials, tolerances and processes. This ensures consistent quality, reliable performance and reproducibility across standard and customer-specific assemblies, supporting demanding applications where precision and long-term stability are essential. Selected manufacturing services are also available to third-party customers.

CONTROLLED ASSEMBLY & CLEANING

DIAMOND operates certified ISO 5, 6 and 7 cleanrooms for the assembly, inspection and packaging of fiber optic components. High-purity cleaning processes are fully integrated in-house and supported by a dedicated oil-free machining department, ensuring controlled contamination levels and reproducible cleanliness.

By combining cleanroom assembly and cleaning under one roof, DIAMOND reduces handling, interfaces and logistics, minimizing contamination risks, lead times and dependencies on external suppliers for sensitive applications.

CABLE AND FIBER ASSEMBLY

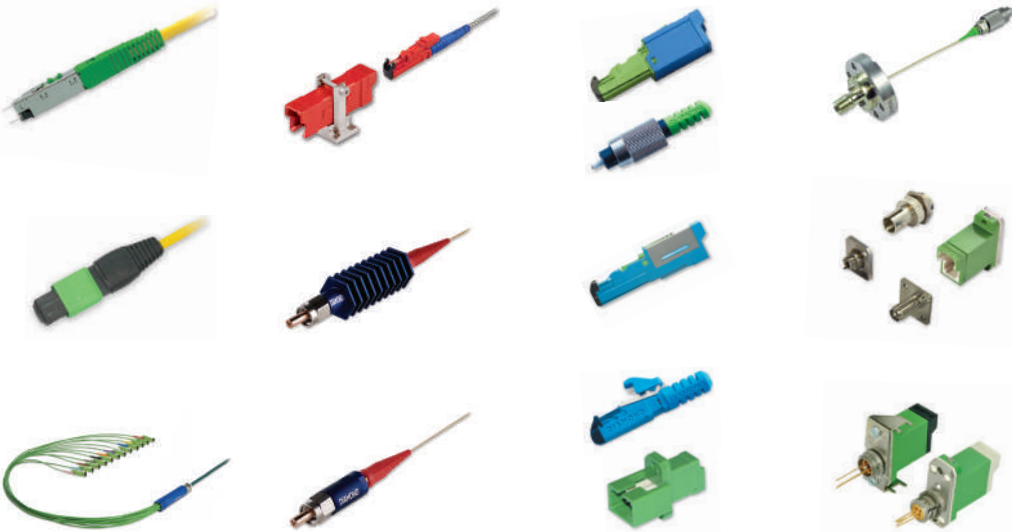
DIAMOND designs and manufactures standard and custom fiber and cable assemblies, covering a wide range of fiber types, cable constructions and connector interfaces. Our expertise includes special fiber assemblies for VIS-NIR applications, fiber Bragg gratings (FBG), PM, PCF, HCF and application-specific solutions. By combining precision termination, controlled assembly processes and in-house testing, we ensure reproducible quality and reliable implementation, fully integrated with manufacturing, cleanroom and laboratory activities under one roof.

EXPERTISE

DIAMOND SA



DIAMOND SA, based in Losone, Switzerland, specializes in high-performance fiber optic interconnect solutions with ultra-tight tolerances, offering both standard and custom options. Through vertically integrated manufacturing and state-of-the-art assembly processes, we ensure precision, consistency and reliable performance across a wide range of fibers and cable types.



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.

MULTI FIBER, POWER SOLUTION & ACCESSORIES

CUSTOMIZED SOLUTIONS



Many applications require customized solutions beyond standard products. DIAMOND supports customer-specific developments from concept to industrialization, leveraging its in-house infrastructure, manufacturing capabilities and testing resources. This enables efficient transition from development to series production, ensuring consistent quality, reproducibility and reliable performance for demanding fiber optic applications.

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.

SPECIAL PRODUCTS

Vacuum Feedthrough
Obtained feedthrough benefits from 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.



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E-2000® Unique connector with spring cap that provides outstanding optical performance, along with excellent handling characteristics. Available versions: ▶ 0.1 dB class ▶ SX, DX, Compact DX, Low profile DX ▶ Backplane (2-6 channels) ▶ Fusion ▶ IP65 ▶ Non-magnetic ▶ Interlock ▶ PM, PS, PSm, PS+ ▶ 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 ▶ Harsh environment qualified Features: ▶ High vibration resistance (35 gRMS) ▶ High Shock resistance (500g) ▶ Space flight experience Standards: ▶ ESCC 3420/002	Midi AVIM® Designed for compactness and ruggedness in dynamic small environments such as space, avionics and mobile platforms. Available versions: ▶ SM, MM, PM and PZ Features: ▶ High vibration resistance (35 gRMS) ▶ High Shock resistance (500g) ▶ Titanium design Standards: ▶ Diamond	Mini AVIM® Designed for even higher compactness and ruggedness in dynamic small environments such as space, avionics and mobile platforms. Available versions: ▶ SM, MM, PM and PZ ▶ PS, PM-PS, PST ▶ 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) are light weight connectors that require minimal space making it ideal for use on Printed Circuit Boards. Available versions: ▶ PM, PM-PS and PZ ▶ PS, PSm, PS+ (available for DMI on request) 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, 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 ▶ Automatic protection shutter ▶ Protection IP67 ▶ Push-Pull ▶ 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 ▶ Resistant metal shell ▶ Protection IP67 ▶ 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 ▶ Protection IP68 ▶ Vibration resistant ▶ Allows mixing of fiber types Standards: ▶ MIL-DTL-83526	X-BEAM 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. Available with SM and MM cables. Features: ▶ 4 optical channels ▶ Resistant metal shell ▶ Protection IP68 ▶ Easy maintenance ▶ Vibration resistant Standards: ▶ MIL-DTL-83526	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 ▶ 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 European Union and other countries.

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

SINGLE FIBER CONNECTORS

TECHNOLOGIES



Active Core Alignment (ACA)

Active Core Alignment (ACA) is designed to achieve Low Loss ("0.1 dB" class) and Ultra-Low Loss (ULL) fiber interconnects by precisely aligning the fiber core to the ferrule's central axis. By actively minimizing fiber eccentricity and controlling the exit angle, ACA enables highly accurate and reproducible optical interfaces, with demonstrated insertion loss values down to 0.02 dB. This proprietary process ensures consistent low-loss performance for applications where precision and stability are critical.

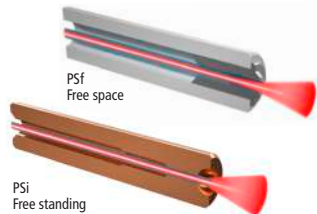
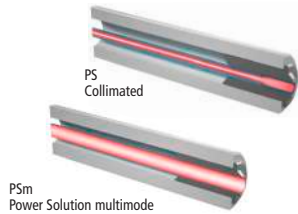
Available connectors: All connector types



High Power (PS)

High Power (PS) solutions are designed to reliably handle elevated optical power levels using application-specific beam expansion concepts. Depending on the application requirements, DIAMOND offers a range of PS configurations, including contact-based and free-space solutions, enabling controlled power density, reduced thermal load and stable long-term performance. PS+ solutions support optical power levels of up to 16 W on single-mode and 100 W on multimode fibers.

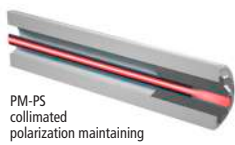
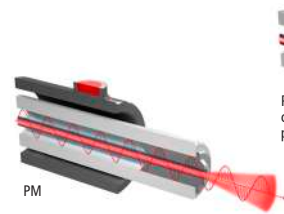
Available connectors: E-2000®, F-3000®, Mini AVIM®, DMI, FC, X-Beam and more upon request



Polarization Maintaining (PM)

DIAMOND's Polarization Maintaining (PM) connectors are designed for applications requiring stable and precise polarization control. The Active Core Alignment (ACA) process minimizes core offset to achieve low insertion loss, while Active Polarization Orientation (APO) ensures accurate alignment of the polarization axes. This combination enables high extinction ratios and reliable performance on PM and polarizing (PZ) fibers.

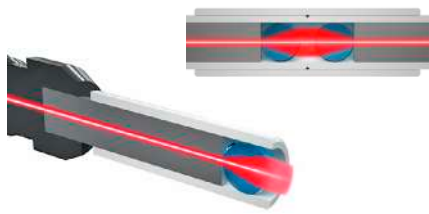
Available connectors: E-2000®, F-3000®, LSA (DIN), FC, SC, DMI, AVIM® family and others upon request



Expanded Beam (XB)

Expanded Beam (XB) technology is based on an ultra-low tolerance optical sub-assembly combining a microlens and ferrule embedded in a high-precision ceramic guide sleeve. This results in a compact, highly reliable lensed-ferrule interface with repeatable low insertion loss and increased tolerance to contamination. Thanks to its modular design, the lensed-ferrule assembly can be integrated into standard connector bodies and various connectivity solutions, offering an effective alternative to physical contact (PC) interfaces where high mating cycles, dust insensitivity and long-term reliability are required.

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



MULTI FIBER CONNECTORS