

# DIAMOND

## Fiber Optic Components

### CABLE ASSEMBLIES AND ADAPTERS

Diamond has developed the new rugged, MIL-83526 DM connector featuring the DM (Diamond Multipurpose) insert for superior optical performance. This connector is extremely well suited for harsh environments and other demanding applications. The MIL-83526 DM (Diamond Multipurpose) connector incorporates four (4) termini utilizing Diamond's two-component ferrules, assembled with the company's Active Core Alignment (ACA) process for unparalleled fiber core concentricity. This connector is also available with electrical contacts for hybrid E/O applications.

The MIL-83526 DM connector is available for MM, SM (PC/APC) and small-core single mode fiber, polarization-maintaining (PM) fiber, and other specialty fiber types. Furthermore, Diamond's splice-on termini can be field terminated with the Diamond ZEUS D50 HE fusion splicer, allowing for in-service repairs and custom installation.

### FEATURES AND BENEFITS

- ▶ Rugged construction for highly reliable optical connections
- ▶ IP class: IP68 rated
- ▶ Easy ferrule front-face access for cleaning & inspection
- ▶ Keyed, self aligning, connector housing aides in "blind mating" applications
- ▶ Electrical pin size 20 AWG
- ▶ Easy termini insertion and removal for field termination and repair

### CHARACTERISTICS OF DM INSERT

- ▶ Well dimensioned hollow guide pins insure precise and repeatable pre-alignment
- ▶ Interacting, space saving pre-alignment hollow guide pins
- ▶ Robust alignment sleeve is protected in the hollow pre-alignment guide pins
- ▶ Alignment sleeves individually removable for easy cleaning
- ▶ Full protection of the optical elements from all external influences such as rotating, bending and/or lateral stress
- ▶ Ability for mechanical keying

## MIL-83526 DM

(Harsh environment)



MIL-83526 DM connector and bulkhead



Diamond Multipurpose (DM) insert



Optical - electrical termini

## OPTICAL PERFORMANCES (obtained with the diamond proposed cables)

MEASUREMENT/TEST	MULTIMODE	SINGLE MODE PC/APC	STANDARDS
Insertion loss (std. version)	typ. 0.20 dB max. 0.50 dB	typ. 0.15 dB max. 0.45 dB	IEC 61300-3-4 ( $\lambda = 1310 / 1550$ nm)
Insertion loss (fusion version)	typ. 0.20 dB max. 0.50 dB	typ. 0.25 dB max. 0.45 dB	IEC 61300-3-4 ( $\lambda = 1310 / 1550$ nm)
Insertion loss (PM version)	-	typ. 0.25 dB max. 0.45 dB	IEC 61300-3-4 ( $\lambda = 1310 / 1550$ nm)
Return loss	min. 40 dB	min. 75 dB (APC) min. 50 (PC)	IEC 61300-3-6 ( $\lambda = 1550$ nm)
Extinction Ratio	-	typ. 23 dB min. 20 dB	Diamond validated cross polarizers method ( $\lambda = 1550$ nm)

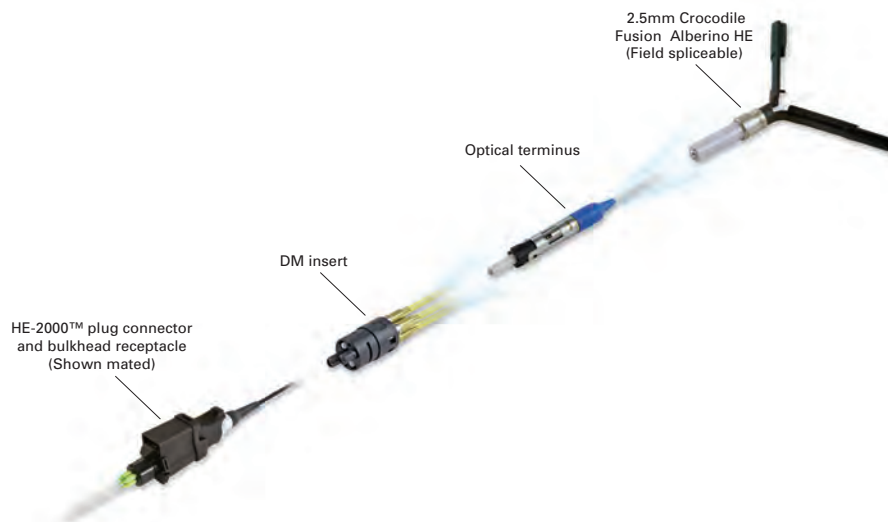
## ELECTRICAL TESTS

Insulation resistant test	Resistance >200 M $\Omega$	IEC 60512-3-1: 2002 (500V / 60 s)
Voltage Proof test	PASS	IEC 60512-4-1: 2003 (2500V / 60 s / 50 Hz)

## MECHANICAL AND ENVIRONMENTAL CONDITIONS

Change of temperature	-55 / + 85 °C	IEC 61300-2-22 ( $\lambda = 1310 / 1550$ nm)
Low temperature	-55 °C (96h)	MIL-STD-810G ( $\lambda = 1310 / 1550$ nm)
High temperature	+85 °C (96h)	MIL-STD-810G ( $\lambda = 1310 / 1550$ nm)
Humidity	95% r.h. / 10 cycles	MIL-STD-810G ( $\lambda = 1310 / 1550$ nm)
Temperature shock	-55 / + 85 °C	MIL-STD-810G ( $\lambda = 1310 / 1550$ nm)
Low pressure / altitude	110 mbar / 15240 m	MIL-STD-810G ( $\lambda = 1310 / 1550$ nm)
Vibration	10/2000 Hz (3h)	MIL-STD-202G ( $\lambda = 1310 / 1550$ nm)
Mating durability	500 cycles	IEC 61300-2-2 ( $\lambda = 1310 / 1550$ nm)
Cable torsion	+/-180° / 25 cycles	IEC 61300-2-5 ( $\lambda = 1310 / 1550$ nm)
Flexing of strain relief	+/-90° / 25 cycles	IEC 61300-2-44 ( $\lambda = 1310 / 1550$ nm)
Cable retention on connector side	600N on multi-fiber cable	IEC 61300-2-4 ( $\lambda = 1310 / 1550$ nm)
Shock	1.2m / 26 drops	MIL-STD-810G ( $\lambda = 1310 / 1550$ nm)
Tensile strength of coupling mechanism	200 N	IEC 61300-2-6 ( $\lambda = 1310 / 1550$ nm)

## DIAMOND Zeus D50 HE FUSION SPLICER FOR FIELD INSTALLATION AND REPAIR



## FEATURES AND BENEFITS OF THE ZEUS D50 HE KIT

- ▶ Complete set of all tools required for full termination process starting from cable preparation to connector assembly (Including cleaver and automatic stripper with heated jaws for tough secondary coating - 900  $\mu$ m)
- ▶ Suitable for use with 3mm-8mm OD multi-channel military and outdoor cables
- ▶ Special cable clamps on bearing slides for secure, easy, and proper cable handling
- ▶ Removable work plate – compatible with stand
- ▶ Hard protective case for harsh environments, IP65 rated
- ▶ Total weight: 15 kg



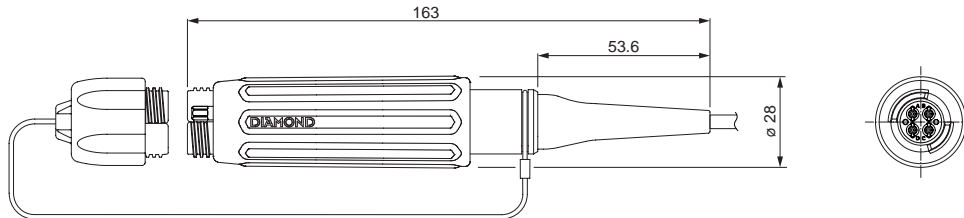
## ORDER INFORMATION

Please contact your nearest local Diamond representative or fill in the contact form at [www.diamond-fo.com](http://www.diamond-fo.com) website.

## CONNECTOR TYPES AND DIMENSIONS

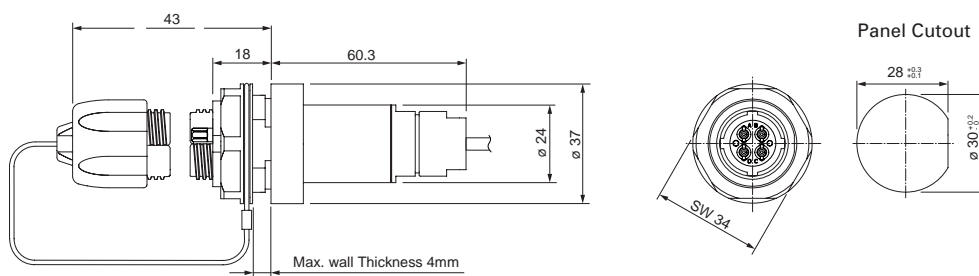
### MIL-83526 DM (Connector)

Housing material: Metal (Black) / Plastic (Orange)



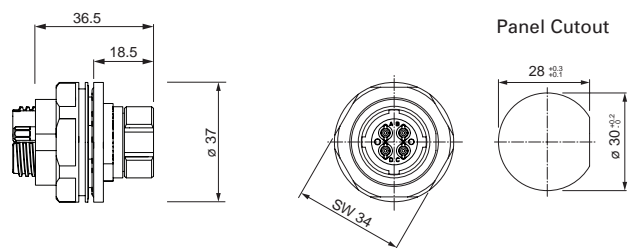
### MIL-83526 DM (Bulkhead)

Housing material: Metal (Black) / Nut (Orange)



### MIL-83526 DM (Bulkhead) Short

Housing material: Metal (Black) / Nut (Orange)



### Diamond Homologated OCC cables:

OCC SM Cable: ITU-T G.652.A

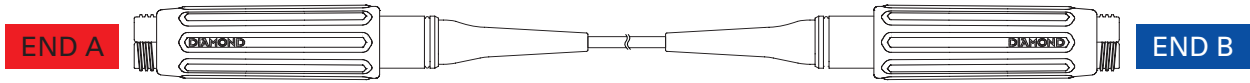
OCC MM Cable: ISO/IEC 11801 OM2 50/125

OCC MM Cable : ISO/IEC 110801 OM1 62.5/125

**NOTE** Other configuration available upon request.

ORDER INFORMATION

Assembly configuration



Connector/Bulkhead configuration

		END A	END B
Connector with Mini-break out cable (ø5.0mm or ø5.5mm)	<b>Connector</b> 	<input type="checkbox"/>	<input type="checkbox"/>
Bulkhead for simplex cable (ø5.0mm or ø5.5mm) or fiber 900µm max.	<b>Bulkhead</b> 	<input type="checkbox"/>	<input type="checkbox"/>
Other simplex connector types (END B)			<input type="checkbox"/> E-2000™ <input type="checkbox"/> F-3000™ <input type="checkbox"/> FC <input type="checkbox"/> SC <input type="checkbox"/> ST™ <input type="checkbox"/> _____

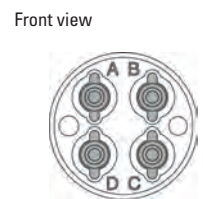
END A DM insert configuration

CHANNEL	OPTICAL			ELECTRICAL PIN	NONE
	* Hollow pin: Yes/No	* Fiber type: MM, SM, PM	Polishing: PC/APC	Male (with hollow pin) / Female (without)	
A					<input type="checkbox"/>
B					<input type="checkbox"/>
C					<input type="checkbox"/>
D					<input type="checkbox"/>



END B DM insert configuration

CHANNEL	CHANNEL FROM END A	OPTICAL		ELECTRICAL PIN	NONE
		* Hollow pin: Yes/No	Polishing: PC/APC	Male (with hollow pin) / Female (without)	
A					<input type="checkbox"/>
B					<input type="checkbox"/>
C					<input type="checkbox"/>
D					<input type="checkbox"/>

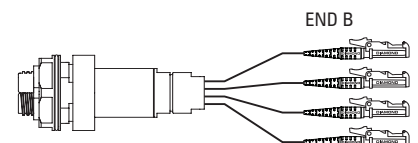


\* The hollow pin allows a mechanical coding

END B Simplex connector configuration

CHANNEL FROM END A	OPTICAL			ELECTRICAL
	Connector type	** Duplex (E-2000™, F-3000™, SC only)	Polishing: PC/APC	
A		<input type="checkbox"/>		TBD with customer
B		<input type="checkbox"/>		TBD with customer
C		<input type="checkbox"/>		TBD with customer
D		<input type="checkbox"/>		TBD with customer

Configuration example



\*\* Duplex channels have TBD with customer. As well as color/mechanical coding for E-2000™ connector

Cable/Fiber Ø _____ Length _____ m	<input type="checkbox"/> Delivered as air ring (Standard max. 100m) <input type="checkbox"/> Delivered on reel (Standard min. 100m)
Quantity _____	