

DIAMOND

Fiber Optic Components

CABLE ASSEMBLIES AND ADAPTERS

Diamond has developed the new rugged, reliable, push-pull actuating HE-2000™ harsh environment connector with superior optical and mechanical performance for demanding applications.

Built around the innovative Diamond Multipurpose (DM) insert, the HE-2000™ connector incorporates four (4) termini using Diamond's two-component ferrules, assembled with the company's Active Core Alignment (ACA) process for unparalleled fiber core concentricity. Also available are electrical contacts for hybrid E/O applications.

The optical and electrical termini are protected from dust and water with the unique automatic protection shutter on the plug connector and a manual shutter on the bulkhead receptacle.

The HE-2000™ 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 splice-on termini can be field terminated with the Diamond ZEUS D50 HE fusion splicer, allowing for in-service repairs and special installations.

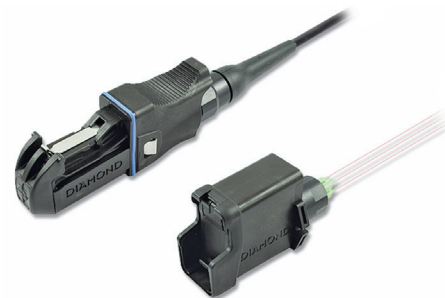
FEATURES AND BENEFITS

- ▶ Automatic protection shutter on the plug connector (manual on the bulkhead receptacle)
- ▶ Harsh-environment resistant plastic shell, nylon with 25% fiber-glass reinforcement
- ▶ IP class: IP67
- ▶ Easy ferrule front-face access for cleaning & inspection
- ▶ Push-pull mechanism for easy mating and handling
- ▶ Mechanical and color coding upon request
- ▶ Electrical pins 20 AWG
- ▶ Easy termini insertion and removal for field termination and repair

CHARACTERISTICS OF DM INSERT

- ▶ Precise and repeatable pre-alignment, thanks to the well dimensioned hollow guide pins
- ▶ Interacting, space saving pre-alignment hollow guide pins
- ▶ Resilient alignment sleeve 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 rotational, bending and/or lateral stress
- ▶ Ability for mechanical keying

HE-2000™



HE-2000™ plug connector on multi-fiber cable and bulkhead receptacle



Diamond Multipurpose (DM) insert



Optical and 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)

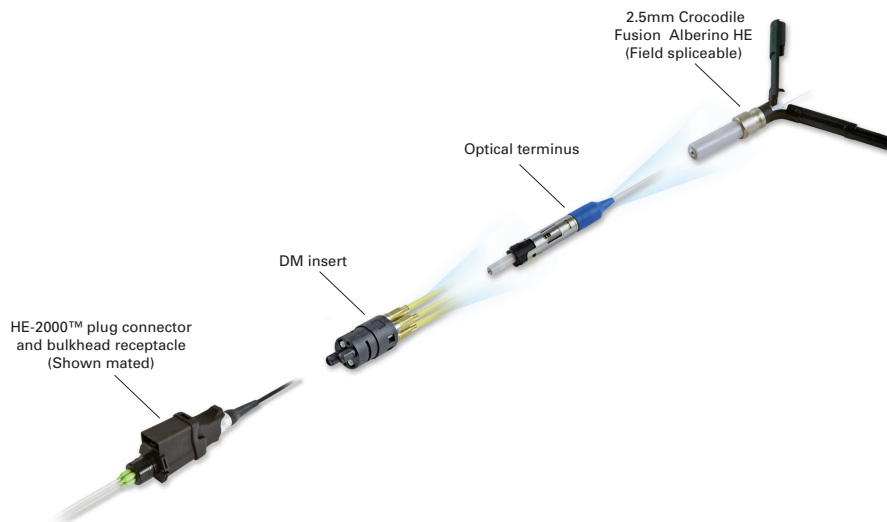
ELECTRICAL TESTS

Insulation resistant test	Resistance >200 M Ω	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)
Static side load	2N/90° (5min.)	IEC 61300-2-42 ($\lambda = 1310 / 1550$ nm)
Cable retention on connector side	800N on multi-fiber cable	IEC 61300-2-4 ($\lambda = 1310 / 1550$ nm)
Cable retention on bulkhead side	70N on simplex cable	IEC 61300-2-4 ($\lambda = 1310 / 1550$ nm)
Fibre retention	5N	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 INSALLATION AND REPAIR



FEATURES AND BENEFITS OF THE ZEUS D50 HE KIT

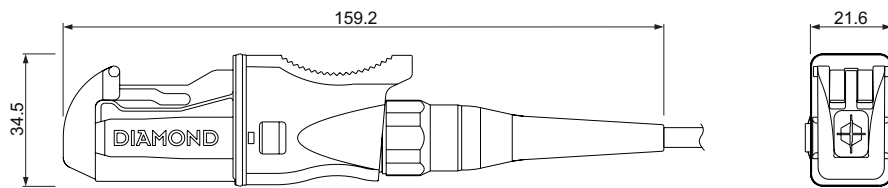
- ▶ Complete set of all tools required for full termination process starting from cable preparation to connector assembly (Including cleaver and automatic stripper with heated jaws for tough secondary coating - 900 μ m)
- ▶ Suitable for use with 3mm-8mm OD multi-channel military and outdoor cables
- ▶ 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



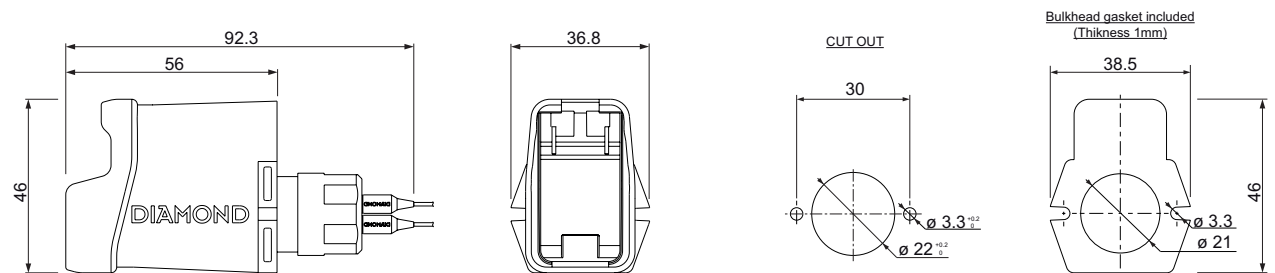
ORDER INFORMATION

Please contact your nearest Diamond representative or fill in the contact form available on the www.diamond-fo.com website.

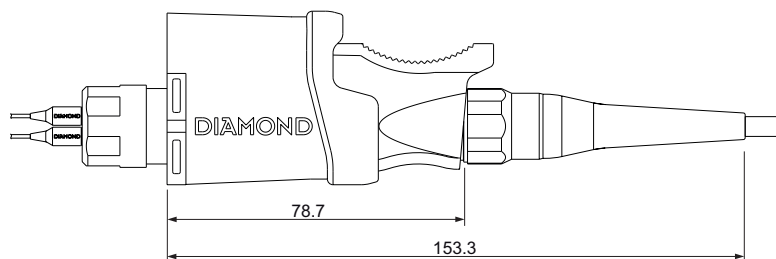
Type 1 Connector with mini-break cable (ø 5.0 mm or ø 5.5 mm)



Type 2 Bulkhead for simplex cable (ø 1.6 - 3.0 mm) or fiber 900µm max.



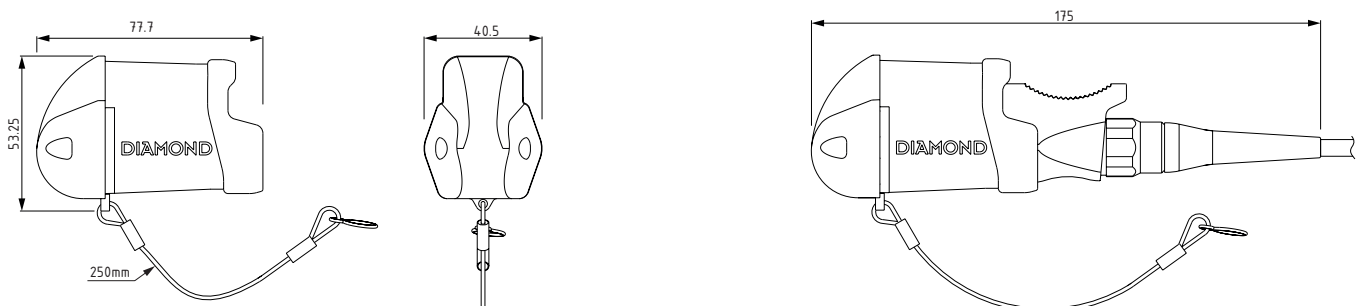
HE-2000™ bulkhead and connector



Diamond homologated OCC cables:

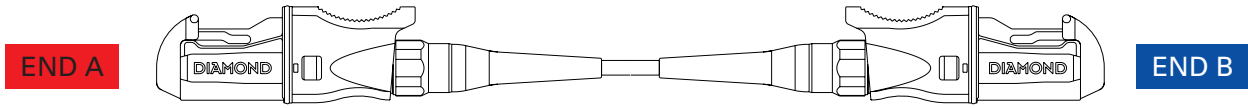
- ▶ OCC SM Cable: ITU-T G.652.A DIAMOND P/N 1027987
- ▶ OCC MM Cable: ISO/IEC 11801 OM2 50/125 DIAMOND P/N 1037942
- ▶ OCC MM Cable: ISO/IEC 11801 OM1 62.5/125 DIAMOND P/N 1036565

IP67 protection cap for HE-2000™ connectors



ORDER INFORMATION

Assembly configuration

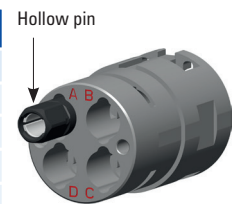


Connector/Bulkhead configuration

		END A	END B
Connector with Mini-break out cable (ø5.0mm or ø5.5mm)	Type 1	<input type="checkbox"/>	<input type="checkbox"/>
Bulkhead for simplex cable (ø1.6 - 3mm) or fiber 900µm max.	Type 2	<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"/> _____

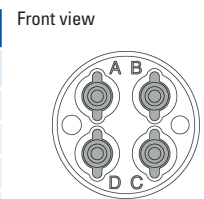
END A DM insert configuration

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"/>

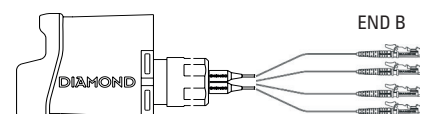


* The hollow pin allows a mechanical coding

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 _____	