

# DIAMOND

## Fiber Optic Components

### CABLE ASSEMBLIES AND ADAPTERS

The E-2000™ PS System is designed for high power applications up to 3 Watts optical power. The E-2000™ PS connector has been developed to support the continuous rise of higher bit rates and longer transmission distances, within DWDM technology, and is based on expanded beam technology.

A section of graded index fiber is introduced as a collimating lens, which enlarges the beam diameter and reduces power density at the connector interface. All of the features, users have come to expect from the E-2000™ family, are available from the E-2000™ PS, including: ease of installation, integrated protection caps, color coding, mechanical keying and excellent vibration resistance.

Diamond E-2000™ components are EtO-sterilizable and, with optional O-ring seals, IP65-rated, meeting today's requirements for safety, reliability, and quality in biomedical markets and applications subject to special environmental conditions.

### FEATURES AND BENEFITS

- ▶ Injection molded housing (UL 94 V0 flammability rating)
  - Connector housing totally encloses ferrule to optimally protect it from dust, contaminants and scratches
- ▶ Spring-loaded shutters on mating adapters
  - Engage automatically to protect personnel from eye-damaging laser radiation
  - Angled, anti-reflection surface ensures low reflectance in unmated state.
- ▶ Integrated black metal protective caps
  - Maximizes operator eye safety protection from damaging laser radiation.
  - Close automatically upon extraction to protect ferrule from dust and scratches
- ▶ Interchangeable color-coded and mechanically keyed thumb-latches and frames
  - Permit clear and unmistakable identification of lines on crowded patch panels
  - Guard against improper connections
- ▶ Cutout for E-2000™ LED connectors

### AVAILABLE AS

- ▶ Standard terminated connector, and as optional IP65-rated versions

### SPECIFICATIONS

	SINGLE MODE 4° APC	UNITS	TEST CONDITIONS
Insertion Loss (IL)	≤ 0.25 mean ≤ 0.5 97%	dB	IEC 61300-34; λ = 1550nm Random
Insertion Loss (IL)	≤ 0.20 mean ≤ 0.4 97%	dB	IEC 61300-3-4; λ = 1550nm Against reference
Repeatability of IL	max. ±0.1	dB	IEC 61300-2-2; λ = 1300/1550nm
ΔIL vs. wavelength	max. ±0.15	dB	IEC 61300; λ = from 1300 to 1625nm
Return Loss (RL)	min. 75*	dB	IEC 61300-3-6; λ = 1300/1550nm
Service life	1000 mate/demate cycles		According to field experience
Operating temperature	-40/+85**	°C	
Storage temperature	-40/+90**	°C	

\* Measured with high resolution reflectometer  
 \*\* May be further limited by cable specifications

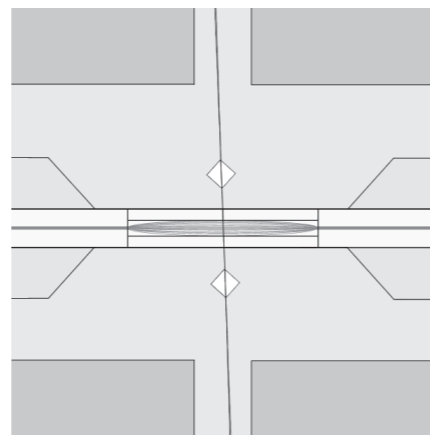
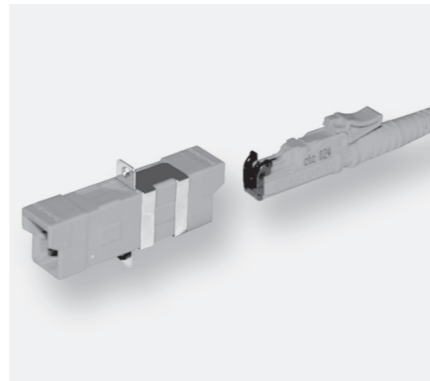


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### E-2000™ PS Simplex

#### SINGLE MODE (4°) APC



### SAFETY INFORMATION FOR E-2000™ POWER SOLUTION

The E-2000™ Power Solution (PS) connector takes advantage of the expanded beam technology to reduce the density of the optical power at the interface of the connection. This way the connector is less sensitive to contamination, and the maximum power that can be transmitted without damage to the connector is greater.

### CLEANING

Cleanliness still remains the key word using high power. The basic concept using PS connectors is therefore the following:

“ before each mating procedure, the connectors must be absolutely clean and inspected with a microscope “. The ferrule's surface inspection should be performed using an optical microscope with a magnification of at least 200x.

The connector is normally affected by contamination during handling and mating procedures; the degree of cleanliness of the overall installation is also a critical parameter to be taken into consideration.

### HANDLING

The E-2000™ Power Solution connectors should be operated with high power only when connected. When unmated, the light source must absolutely be switched off.

### SAFETY

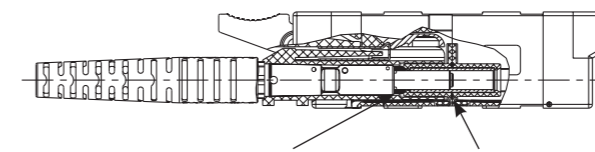
Using standard as well as high power PS connectors with optical power of tens or hundreds of mW, the knowledge and respect of safety standards is essential.

A laser source emitting 1 Watt at 1550 nm in a SM fiber is for instance recorded as a class 3B (IEC 825-1 and 825-2 standards), while the same laser with a collimated output will be classified as a class 4.

The main safety precautions that have to be considered working with class 4 lasers are summarized as follows:

- usage in restricted area, access only for authorized and qualified personnel.
- use protective glasses, skin protective measures recommended.
- optical behavior under control: eliminate reflections (also diffuse), close unused optical channels, avoid light beams at eye level.
- switch on/off system with remote control or interlock and additional automatic switch off safety system.
- warning signal when sources are active.
- laser classification markings and danger indications.

### E-2000™ IP65 CONNECTION



Optional O-ring seals on E-2000™ connectors and mating adapters result in sealed, IP65-rated connections

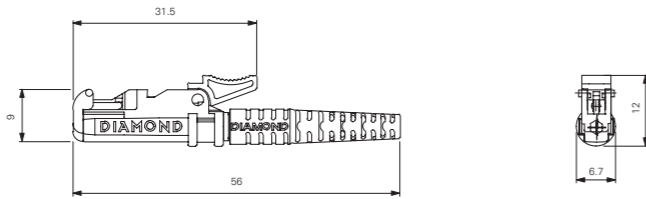
Specifications subject to change without notice

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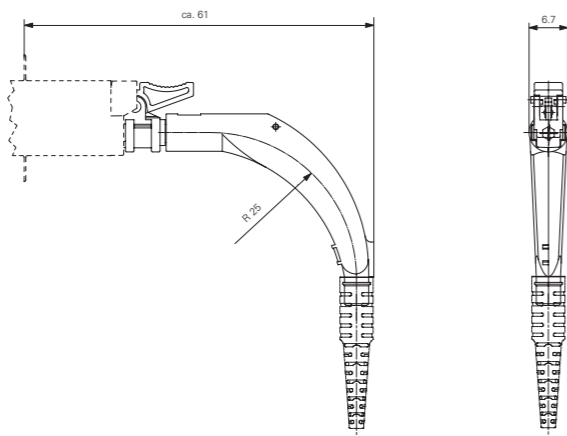
## CONNECTOR TYPE AND DIMENSIONS

E-2000™ PS Simplex connectors 900 µm - 3 mm boot style

Available types: **E-2000™ PS Simplex**  
 Ferrule material: Zirconia/metal insert  
 External parts: Plastic red  
 Polish geometry: 4° (APC)



E-2000™ PS Simplex connectors 900 µm - 3 mm 90° boot style



## COLOR KEYING

The E-2000™ system permits the user to specify the color of the thumb-latch and the mating adapter frame so that different line types, uses, destinations and points of origin, etc. can be readily identified.

The thumb-latch and frame are available in eight distinct colors:

- |                  |            |           |            |
|------------------|------------|-----------|------------|
| 1. Blue          | (RAL 5015) | 5. Orange | (RAL 2003) |
| 2. Beige (White) | (RAL 1013) | 6. Yellow | (RAL 1016) |
| 3. Black         | (RAL 9005) | 7. Green  | (RAL 6018) |
| 4. Red           | (RAL 3020) | 8. Violet | (RAL 4008) |

## MECHANICAL KEYING

Additionally, it will become increasingly necessary to guard against improper connection in multiple-service patch facilities. The E-2000™ system permits the inclusion of a mechanical keying mechanism to ensure channel differentiation.

The mechanical keying options are also color-coded as follows:

- |           |        |            |           |               |            |
|-----------|--------|------------|-----------|---------------|------------|
| Key Nr. 1 | Red    | (RAL 3020) | Key Nr. 4 | Orange        | (RAL 2003) |
| Key Nr. 2 | Brown  | (RAL 8004) | Key Nr. 5 | Violet        | (RAL 4008) |
| Key Nr. 3 | Yellow | (RAL 1016) | Key Nr. 6 | Beige (White) | (RAL 1013) |

**NOTE** Diamond's standard E-2000™ connector/boot/adapter PS colors are as follows: red/red/red for SM 4° APC

## ORDER INFORMATION

When ordering mating adapters and fixing clips, please refer to the part numbers provided in the enclosed P/N list.

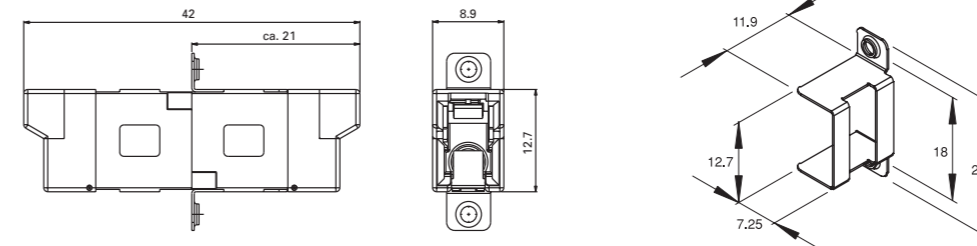
When ordering pigtailed or cable assemblies, please refer to the **connector type description** in the Available types section, and fill in the Simplex, Duplex, Multiple fiber Assemblies order form according to **those** denominations.

## ADAPTER TYPES AND DIMENSIONS

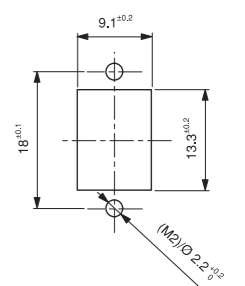
E-2000™ PS Simplex mating adapters

Material: Plastic red  
 Mating sleeve: Zirconia

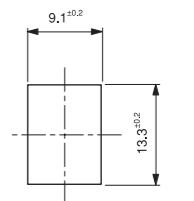
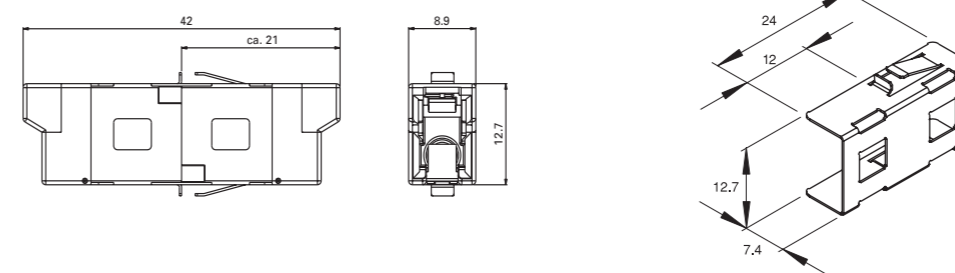
E-2000™ PS Simplex mating adapters with screw fixing clip



## CUTOUT DIMENSIONS

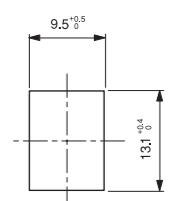
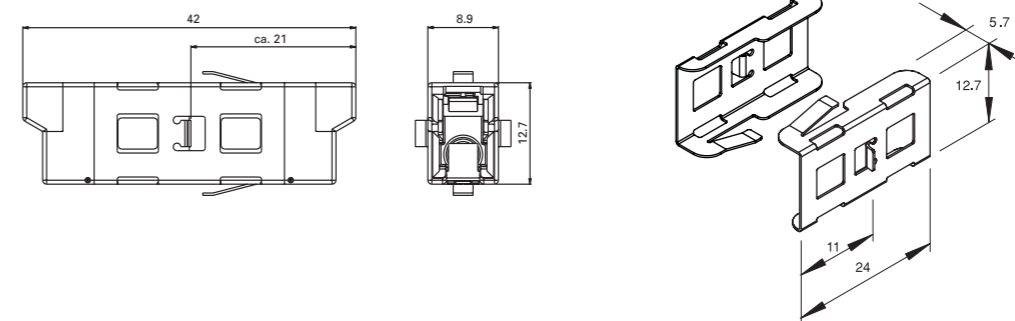


E-2000™ PS Simplex mating adapter with quick fixing clip  
 (Type A: for higher packaging density within E-2000™ cutout)



Max wall thickness 1.6 mm

E-2000™ PS Simplex mating adapter with quick fixing clip  
 (Type B: for excellent stability within SC cutout)



Max wall thickness 1.6 mm

E-2000™ PS Simplex mating adapter with print fixing clip

