

# DIAMOND

## Fiber Optic Components

### CABLE ASSEMBLIES AND ADAPTERS

The F-3000™ PS Small Form Factor (SFF) connector is designed for high power applications up to 3 Watt optical power. The F-3000™ PS connector which is LC compatible, has been developed to support the continuous raise 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. Furthermore, all of the features, users have come to expect from the F-3000™ standard connector, are available from the F-3000™ PS.

### FEATURES AND BENEFITS

- ▶ Integrated black metal protective cap on connector
  - maximizes operator eye safety protection from damaging laser radiation, and close automatically upon extraction to protect ferrule from dust 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.
- ▶ Reduced density of the optical power at the interface of the connection
  - the connection results to be less sensitive to contaminations, and the bearable maximum power that can be transmitted without consequences is greater.

### AVAILABLE AS

- ▶ Terminated connector (other configurations available upon request)

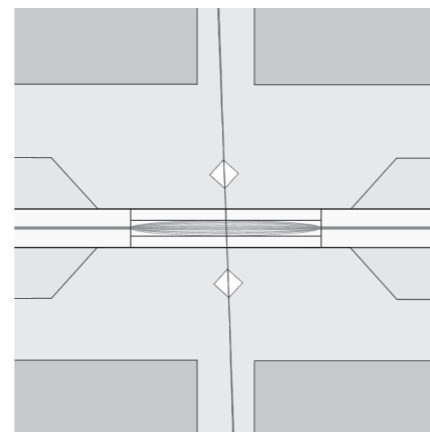
### SPECIFICATIONS

	SINGLE MODE 4° APC	UNITS	TEST CONDITIONS
Insertion Loss (IL)	typ. 0.3 max. 0.7	dB	IEC 61300-3-4; $\lambda = 1550\text{nm}$ Random
Insertion Loss (IL)	typ. 0.2 max. 0.4	dB	IEC 61300-3-4; $\lambda = 1550\text{nm}$ Against reference
Repeatability of IL	max. $\pm 0.1$	dB	IEC 61300-2-2; $\lambda = 1300/1550\text{nm}$
$\Delta$ IL vs. wavelength	max. $\pm 0.15$	dB	IEC 61300; $\lambda =$ from 1300 to 1625nm
Return Loss (RL)	min. 75*	dB	IEC 61300-3-6; $\lambda = 1300/1550\text{nm}$
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

### F-3000™ PS Simplex

#### SINGLE MODE (4°) APC



### GENERAL INFORMATION FOR F-3000™ POWER SOLUTION

#### 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 F-3000™ 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.



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Specifications subject to change  
 without notice

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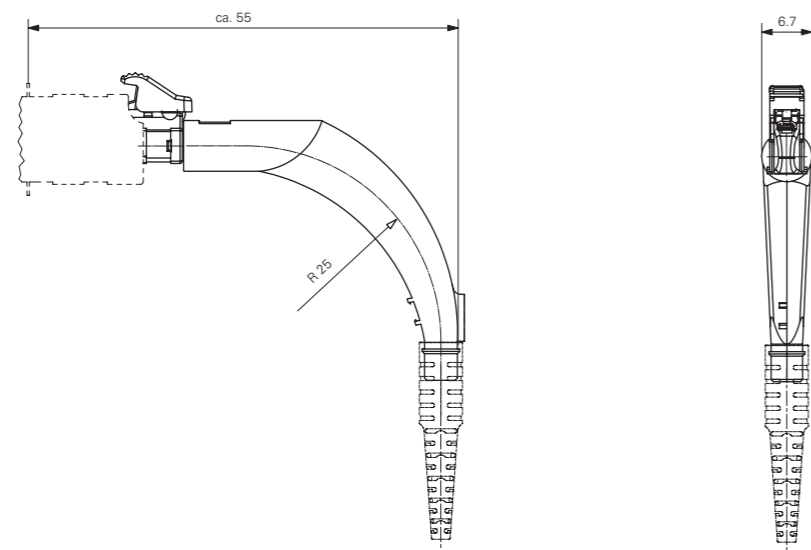
**CONNECTOR TYPE AND DIMENSIONS**

F-3000™ PS Simplex connectors 900 µm - 3 mm boot style

Available types: **F-3000™ PS Simplex**  
 Ferrule material: Zirconia/metal insert  
 External parts: Plastic red  
 Polish geometry: 4° (APC)

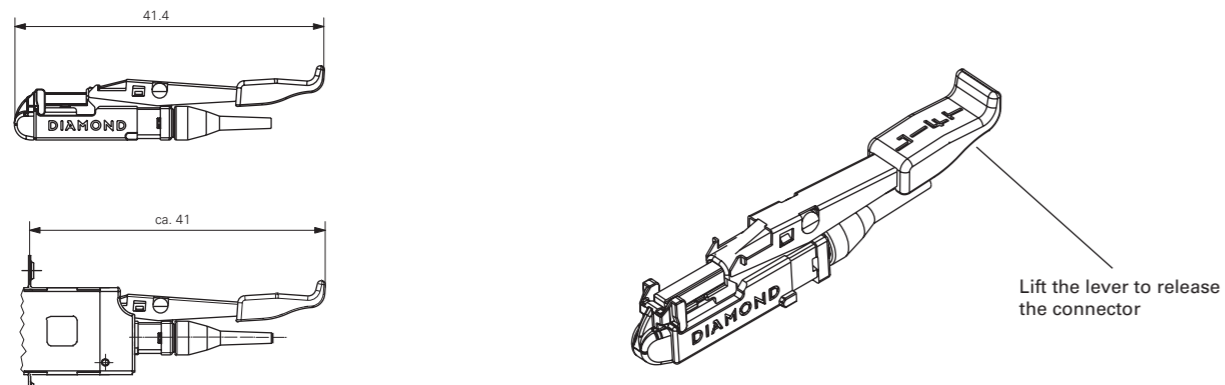


F-3000™ PS Simplex connectors 900 µm - 3 mm 90° boot style



**OPTION: LONG THUMB-LATCH**

The ideal solution for special applications with difficult access



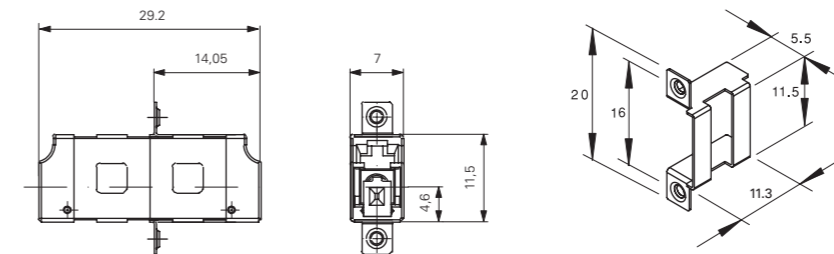
**NOTES:** - Cable ø 2.1 mm max.  
 - Please contact your local Diamond representative for additional information

**ADAPTER TYPES AND DIMENSIONS**

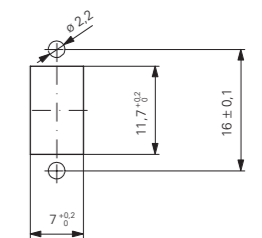
F-3000™ PS Simplex mating adapters

Material: Plastic red  
 Mating sleeve: Zirconia

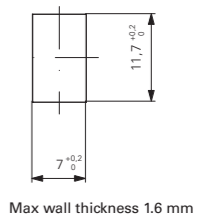
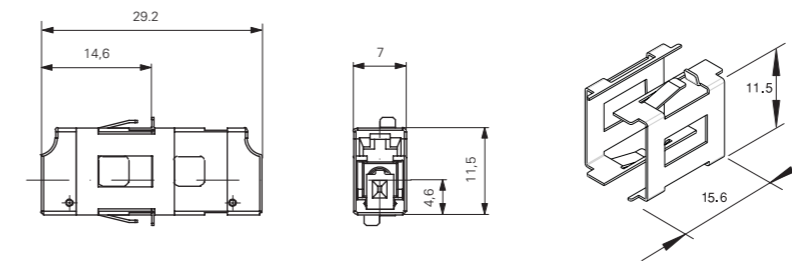
F-3000™ PS Simplex mating adapters with screw fixing clip



CUTOUT DIMENSIONS



F-3000™ PS Simplex mating adapter with quick fixing clip



**NOTE** Diamond's standard F-3000™ PS connector/boot/adapter 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 pigtails 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.