

## Optical Fiber

### TECHNICAL DATA SHEET

## Fiber Optic FC/UPC SX Connector



## **Fiber Optic FC/UPC SX Connector**

### **Product Description:**

The FC UPC SM 3mm Connector is a single-mode fiber optic connector with a UPC (Ultra Physical Contact) polish, providing low insertion loss and high return loss for reliable optical performance. It features a threaded FC (Ferrule Connector) design for secure mechanical connection, making it ideal for telecom, FTTH, PON, LAN/WAN, and data center applications.



### **Applications:**

- Telecom backbone networks
- FTTH (Fiber-to-the-Home) and PON deployments
- LAN/WAN fiber infrastructure
- Data centers and server racks
- CATV systems and broadband networks
- Optical test and measurement setups



## Technical Specifications:

Parameter	Specification
Connector Type	FC (Ferrule Connector), Threaded
Polish Type	UPC (Ultra Physical Contact)
Fiber Type	Single-Mode (9/125 $\mu\text{m}$ )
Ferrule Material	Zirconia Ceramic
Ferrule Diameter	2.5 mm
Insertion Loss (IL)	$\leq 0.3$ dB (Typical)
Return Loss (RL)	$\geq 50$ – $55$ dB (UPC)
Operating Wavelength	1310 nm, 1490 nm, 1550 nm
Cable Jacket Diameter	3 mm
Operating Temperature	$-40$ °C to $+85$ °C
Durability (Mating Cycles)	$\geq 500$ cycles
Housing Material	PBT (Polybutylene Terephthalate)
Boot Material	TPV / TPU (Thermoplastic Elastomer)
Threaded Coupling Torque	0.5–1.0 Nm (typical)
Standards Compliance	IEC 61754-13, Telcordia GR-326-CORE
RoHS Compliance	Yes

## Benefits:

- Low Insertion Loss – Ensures minimal signal attenuation for high-quality single-mode transmission ( $\leq 0.3$  dB).
- High Return Loss – UPC polish reduces back-reflection ( $\geq 50$ – $55$  dB), suitable for sensitive telecom and data networks.
- Secure Threaded Connection – FC design provides reliable mechanical stability and prevents accidental disconnection.
- Precise Fiber Alignment – Zirconia ceramic ferrule ensures consistent optical performance.
- Wide Operating Temperature Range – Performs reliably from  $-40$  °C to  $+85$  °C.
- High Durability – Supports  $\geq 500$  mating cycles without performance degradation.
- 3 mm Boot Design – Compatible with standard jacketed fiber cables and provides strain relief.
- Standards Compliant – Meets IEC 61754-13 and Telcordia GR-326-CORE requirements.
- RoHS Compliant Materials – Safe for environmentally conscious deployment.



## Raw Materials Detailed List:

Item	Part	Material	RoHS Compliance
1	Anti-dust Cap	LDPE (Low-Density Polyethylene)	Yes
2	Housing	PBT (Polybutylene Terephthalate)	Yes
3	Inner Core	PBT (Polybutylene Terephthalate)	Yes
4	Ferrule	Zirconia Ceramic (2.5 mm)	Yes
5	Spring	SUS304 Stainless Steel	Yes
6	Body	Copper Alloy	Yes
7	Boot (Strain Relief)	TPV / TPU (Thermoplastic Elastomer)	Yes