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PERSIAN FIBER COMMUNICATION CO.  
TECHNICAL SPECIFICATION FOR DATA CABLE

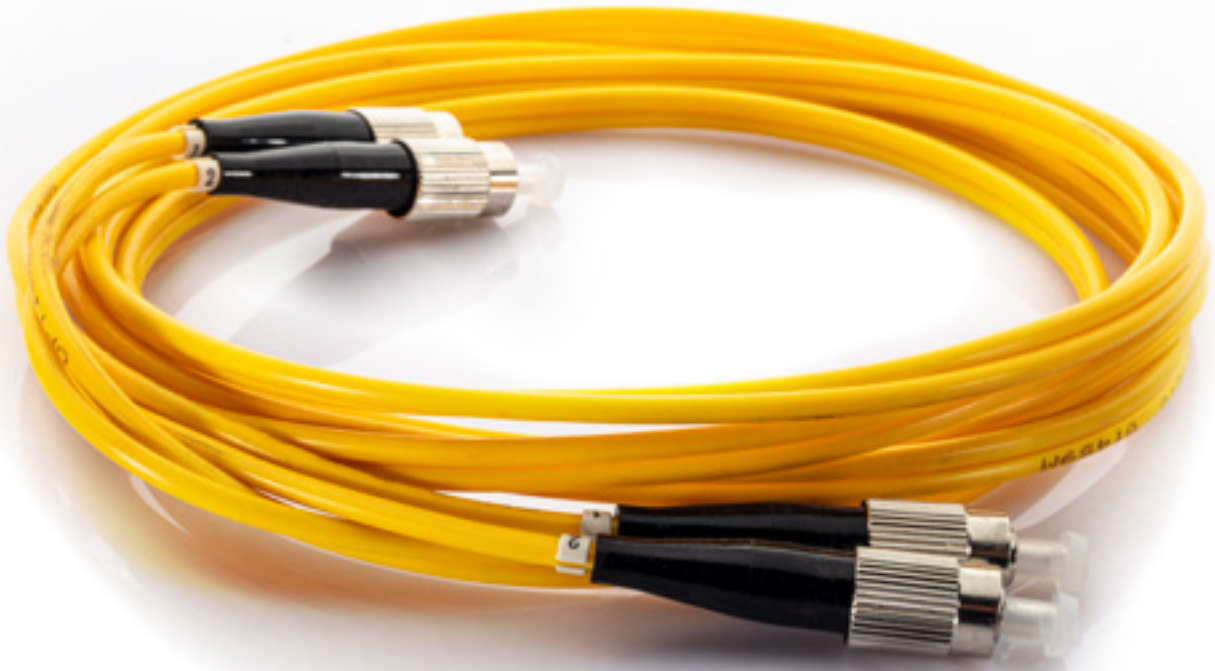
# FIBER

# PATCH CORD

SALE ENGINEERING DEPARTMENT



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## SPECIFICATION FOR DATA CABLE

# FIBER PATCH CORD

Indoor

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## 1- GENERAL

Fiber optic patch cables are ideal for supporting high speed telecommunication network fiber applications. They are manufactured OM2, OM3 or OS2 fiber types are available to meet the demand of Gigabit Ethernet, 10 Gigabit Ethernet and high speed Fiber Channel. Every termination is through rigorous parameter test to ensure the highest network performance.

## 2- OPTICAL FIBER

The fibers will be SM Fiber 9/125 have the following properties table (1).

| PARAMETERS (Maximum Individual)   |                    | UNIT                   | VALUE     |
|-----------------------------------|--------------------|------------------------|-----------|
| Fiber Attenuation                 | 1310nm             | dB/km                  | <0.35     |
|                                   | 1550nm             | dB/km                  | <0.25     |
| Temperature Variation Attenuation |                    | dB/km                  | ≤0.05     |
| Point Discontinuities             | 1310/1550nm        | dB                     | ≤0.10     |
| Water Peak Attenuation            | 1383±3             | dB/km                  | See note  |
| Attenuation Change vs. Wavelength | 1285-1310          | dB/km                  | ≤0.10     |
|                                   | 1525-1575          | dB/km                  | ≤0.05     |
| Attenuation Change vs. Bending    | 100wraps/50mmdia   | dB                     | ≤0.5      |
|                                   | 1wrap/32mmdia      | dB                     | ≤0.05     |
| Zero Dispersion Wavelength        |                    | nm                     | 1300-1324 |
| Maximum Dispersion                | 1310nm             | Ps/nm.Km               | ≤3.2      |
|                                   | 1550nm             | Ps/nm.Km               | ≤18.0     |
| Zero Dispersion Slope             |                    | Ps/nm <sup>2</sup> .Km | ≤0.092    |
| Nominal Mode Field Diameter       | 1310nm             | μm                     | 9.2±0.4   |
|                                   | 1550nm             | μm                     | 10.4±0.8  |
| Cable Fiber Cut-off Wavelength    | (λ <sub>cc</sub> ) | nm                     | <1260     |
| Polarization Mode Dispersion      | 1310nm             | Ps/√Km                 | <0.2      |
|                                   | 1550nm             | Ps/√Km                 | <0.2      |

The fibers will be MM Fiber 50/125 have the following properties table (2).

| Fiber                          | Item                          | Parameters | Unit   | Value         |
|--------------------------------|-------------------------------|------------|--------|---------------|
| 2.1. OPTICAL CHARACTERISTICS   |                               |            |        |               |
| 2.1.1                          | Attenuation                   | @ 850 nm   | dB/km  | Max 2.4       |
|                                |                               | @ 1300 nm  | dB/km  | Max 0.6       |
| 2.1.2                          | Bandwidth                     | 850 nm     | MHz-km | Max 1500      |
|                                |                               | 1300 nm@   | MHz-km | Max 500       |
| Fiber                          | Point Discontinuity           |            | dB     | Max 0.1       |
| Fiber                          | Numerical Aperture            |            | -      | 0.200 ± 0.015 |
| 2.2. DIMENSIONAL SPECIFICATION |                               |            |        |               |
| 2.2.1                          | Core Diameter                 |            | μm     | 50 ± 2.5      |
| 2.2.2                          | Cladding Diameter             |            | μm     | 125.0 ± 1.0   |
| 2.2.3                          | Coating Diameter              |            | μm     | 245 ± 7       |
| 2.2.4                          | Core Non-Circularity          |            | %      | Max 5         |
| 2.2.5                          | Cladding Non-Circularity      |            | %      | Max 0.6       |
| 2.2.6                          | Core/Cladding Eccentricity    |            | μm     | Max 1         |
| 2.2.7                          | Coating/Cladding Eccentricity |            | μm     | Max 10        |

### 3- Technical Specification

| Physical Characteristics      |                                                               |
|-------------------------------|---------------------------------------------------------------|
| Connector Types End A         | LC/SC/ST/FC                                                   |
| Connector Types End B         | LC/SC/ST/FC                                                   |
| Polish Type                   | UPC-APC                                                       |
| Connector Ferrule             | Zirconia Ceramic                                              |
| Cable Outside Diameter        | Duplex: 2.0/3.0mm, Simplex: 0.9/2.0/3.0mm                     |
| Interchangeability            | ≤0.2dB                                                        |
| Vibration                     | ≤0.2dB                                                        |
| Mechanical Characteristics    |                                                               |
| Fiber Type                    | OS2/ OM2/OM3                                                  |
| Fiber Count                   | Duplex /Simplex                                               |
| Cable Jacket                  | LSZH                                                          |
| Jacket Color                  | OM2: Orange; OM3: Aqua; OS2: Yellow                           |
| Application                   | Indoor                                                        |
| Fiber Grade                   | SM: G.652.D<br>OM2/OM3: Bend Insensitive                      |
| Optical Characteristics       |                                                               |
| Connector Insertion Loss      | LC/SC/ST/FC ≤0.3dB                                            |
| Connector Return Loss         | SM: UPC≥50, APC≥60 (LC/SC/ST/FC)<br>MMF: UPC≥30 (LC/SC/ST/FC) |
| Attenuation at 1310nm         | 0.36dB/km                                                     |
| Attenuation at 1550nm         | 0.22dB/km                                                     |
| Attenuation at 850nm          | 3.0dB/km                                                      |
| Storage Temperature           | 1.0dB/km                                                      |
| Environmental Characteristics |                                                               |
| Operating Temperature         | -20~70℃                                                       |
| Storage Temperature           | -40~80℃                                                       |

### 4- CABLE CONSTRUCTION

Cable constructions are in accordance with the following table (4) and FIG. (1)

| Subject              | Description                                                                                                                                               |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4-1- Optical fiber   | Single Mode fiber 9/125, Multimode fiber 50/125. The fibers are color coded and properly operate at a wide range of temperature from -60 °C up to +85 °C. |
| 4-2- Strength member | A layer of Aramid yarn will be applied over the buffer. Swell able yarn may be applied over Aramid yarns.                                                 |
| 4-3- Outer jacket    | A LSZH jacket in accordance will be applied on Aramid yarn. The nominal jacket thickness is max1.5mm.                                                     |

## 5 - Transmission Distance Comparison

| Data Rate | Interface Type | Fiber Mode | Wavelength | Maximum Distance |
|-----------|----------------|------------|------------|------------------|
| 1G        | 1000BASE       | SM         | 1310nm     | 10km             |
|           |                | OM2        | 1300nm     | 550m             |
|           |                | OM3        | 1300nm     | 550m             |
| 10G       | 10GBASE        | SM         | 1310nm     | 10km             |
|           |                | OM2        | 1300nm     | 220m             |
|           |                | OM3        | 1300nm     | 220m             |
| 40G       | 40GBASE        | SM         | 1310nm     | 10km             |
|           |                | OM2        | -          | -                |
|           |                | OM3        | 850nm      | 100m             |
| 100G      | 100GBASE       | SM         | 1310nm     | 10km             |
|           |                | OM2        | -          | -                |
|           |                | OM3        | 850nm      | 70m              |





## شرکت پارسیان فیبر ارتباط

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