

# Alcatel 6900 Singlemode Fiber

## OPTICAL SPECIFICATIONS

|                       |              |
|-----------------------|--------------|
| Attenuation (cabled)  |              |
| Attenuation @ 1310nm  | ≤ 0.35 dB/km |
| Attenuation @ 1550nm  | ≤ 0.25 dB/km |
| Attenuation at 1383nm | ≤ 1.5 dB/km  |

### Attenuation Uniformity (cabled)

No point discontinuity greater than 0.1 dB at 1310nm and 1550nm.

### Wavelength vs. Attenuation

Maximum attenuation change over the window.

| Wavelength (nm) | Attenuation (dB/km) |
|-----------------|---------------------|
| 1285-1310       | ≤ 0.035             |
| 1310-1330       | ≤ 0.03              |
| 1525-1550       | ≤ 0.03              |
| 1575-1550       | ≤ 0.03              |

### Attenuation with Bending

|   |           |
|---|-----------|
| 100 turns, 60mm diameter @ 1550 & 1620nm: | ≤ 0.05 dB |
| 1 turn, 32mm diameter @ 1550 & 1620nm:    | ≤ 0.5 dB  |

### Wavelength

|                            |           |
|----------------------------|-----------|
| Cutoff Wavelength (cabled) | ≤ 1260nm  |
| Zero Dispersion Wavelength | 1310±10nm |

### Dispersion Slope

|                       |                                |
|-----------------------|--------------------------------|
| Zero Dispersion Slope | < 0.092 ps/nm <sup>2</sup> ·km |
|-----------------------|--------------------------------|

### PMD (cabled)

|                         |              |
|-------------------------|--------------|
| PMD Quadrature Average: | ≤ 0.1 ps/√km |
|-------------------------|--------------|

## DIMENSIONAL SPECIFICATIONS

|   |             |
|---|-------------|
| Mode Field Diameter @1310nm:              | 9.0±0.5µm   |
| Mode Field Diameter @1550nm:              | 10.2±1.0µm  |
| Fiber Outside Diameter:                   | 125.0±1.0µm |
| Core/Cladding Offset:                     | ≤ 0.6µm     |
| Fiber Non-Circularity:                    | ≤ 1.0%      |
| Colored Coating Outside Diameter:         | 242±7µm     |
| Colored Coating/Clad Concentricity Error: | ≤ 12µm      |
| Fiber Curl (radius):                      | > 4 meters  |

Alcatel's Singlemode Fiber is fully ITU G.652, IEC 60793-1 and Telcordia GR-20-CORE compliant.

Cable specifications apply to Alcatel manufactured cables and are tested or characterized in compliance to international standards.

Alcatel reserves the right to change specifications without prior notice.

## MECHANICAL SPECIFICATIONS

### Proof Test of AFC™ ColorLock™ Coated

The entire length is subjected to a tensile proof stress >100 kpsi (0.7 GN/m<sup>2</sup>); 1% strain equivalent

### Tensile Strength

Dynamic Tensile Strength (0.5 meter gauge length):  
Aged\* & Unaged median ≥ 550 kpsi (3.8GN/m<sup>2</sup>)

### Dynamic and Static Fatigue

Dynamic Fatigue, Tensile: N<sub>d</sub> ≥ 20 unaged and aged\*  
Dynamic Fatigue, 2 Point Bend: N<sub>d</sub> ≥ 20 unaged and aged\*  
Static Fatigue: N<sub>s</sub> ≥ 20 aged at 85°C, 85% RH

### Coating Performance

Coating Strip Force: 2.0lbf (8.9N) max, 0.3 lbf (1.3N) min.  
23°C, 0°C, and 45°C  
Aged: 30 days at 85°C and 85% relative humidity  
14 days water immersion at 23°C  
Wasp spray exposure (Telcordia)  
Aged: 30 days at 85°C water No delimitation

## ENVIRONMENTAL SPECIFICATIONS

| Induced Attenuation@1550nm                             | (dB/km) |
|--|---------|
| Temperature Cycling Performance (-60°C to 85°C):       | ≤ 0.05  |
| Temperature Humidity Cycling (-10°C to 85°C, 4-98%RH): | ≤ 0.05  |
| Water Immersion (23°C):                                | ≤ 0.05  |
| Heat Aging (85°C):                                     | ≤ 0.05  |

## TYPICAL CHARACTERIZATION VALUES

|  |  |
|--|--|
| Nominal Zero Dispersion Wavelength:                      | 1310nm                                   |
| Nominal Zero Dispersion Slope:                           | 0.086 ps/nm <sup>2</sup> ·km             |
| Effective Group Index @ 1310nm:                          | 1.4640                                   |
| @ 1550nm:  | 1.4645                                   |
| Backscatter Coefficient @ 1310nm:                        | -76.7 dB                                 |
| Backscatter Coefficient @ 1550nm:                        | -81.7 dB                                 |
| Typical Core Diameter:                                   | 8.8µm                                    |
| Dynamic Tensile Strength (*Aged):<br>(0.5m gauge length) | median 750 kpsi (5.26GN/m <sup>2</sup> ) |
| Dynamic Fatigue (*Aged):                                 | N <sub>d</sub> =22                       |
| Static Fatigue:  | N <sub>s</sub> ≥ 25 aged @ 85°C, 85% RH  |
| Dispersion @1285-1330nm:                                 | ≤ 2.7 ps/nm·km                           |
| Dispersion @1550nm                                       | ≤ 17 ps/nm·km                            |

\*Aged for 30 days at 85°C, 85% relative humidity

For additional information visit Alcatel online or call your nearest Optical Fiber Sales Representative

[www.alcatel.com/opticalfiber](http://www.alcatel.com/opticalfiber)

|               |                                 |
|---------------|---------------------------------|
| Brazil        | +55 11 3068 9993                |
| France        | +33 1 55 51 51 51               |
| France (HQ)   | +33 1 39 19 12 00               |
| Germany       | +49 2166 27 2164                |
| India         | +91 11 335 9650                 |
| Spain         | +34 942 247 111                 |
| UK            | +44 1633 413 600                |
| North America | +1 828 459 9787<br>800 879 9862 |

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