

# DUPLEX FIBRE LEAD

## SC/APC TO SC/APC, LSZH

### Technical Overview

CERTECH OS2 SCA to SCA Duplex Fibre Leads provide a high-performance, individually factory tested patching solution for structured cabling, FFTP, and network backbone applications.

Constructed using G.657.A1 bend-insensitive Singlemode fibre, the cable maintains low attenuation and stable optical performance. The Duplex 2.0mm tight-buffered construction incorporates 900µm buffered fibres and aramid yarn strength members, supporting flexible routing, reliable installation in high-density indoor environments while improving occupancy safety with a Low Smoke, Zero Halogen Sheath (LSZH).

SC/APC connectors ensure consistent end-face geometry, delivering low insertion loss and high return loss for stable optical performance across network links. Duplex configuration supports transmit and receive channels within a single cable, enabling efficient patching and cross-connect applications.

Each lead is factory tested to ensure consistent performance, compliance with relevant industry standards and long-term reliability.

### Standards

|                         |                                                |
|-------------------------|------------------------------------------------|
| <b>AS/CA S008</b>       | Australian Manufacturing Requirements          |
| <b>AS/CA S009</b>       | Installation Requirements for Customer Cabling |
| <b>AS 11801 Series</b>  | Australian Performance Standard                |
| <b>AS/NZS 14763.3</b>   | Australian Fibre Testing Standard              |
| <b>IEC 61754 Series</b> | Fibre Connector Interface Geometry             |
| <b>IEC 61300 Series</b> | Fibre Connector Performance Testing            |
| <b>IEC 61753</b>        | Fibre Component Performance Standard           |
| <b>ITU-T G.652.D</b>    | Singlemode Fibre Manufacturing Performance     |
| <b>ITU-T G.657.A1</b>   | Bend Insensitive Fibre Standard                |



### Product

#### Product Code

FLSCASCAOS20.5 (0.5m)  
 FLSCASCAOS21 (1m)  
 FLSCASCAOS21.5 (1.5m)  
 FLSCASCAOS22 (2m)  
 FLSCASCAOS23 (3m)  
 FLSCASCAOS25 (5m)  
 FLSCASCAOS27 (7m)  
 FLSCASCAOS210 (10m)  
 FLSCASCAOS215 (15m)  
 FLSCASCAOS220 (20m)  
 FLSCASCAOS225 (25m)  
 FLSCASCAOS230 (30m)  
 FLSCASCAOS235 (35m)  
 FLSCASCAOS240 (40m)  
 FLSCASCAOS245 (45m)  
 FLSCASCAOS250 (50m)  
 FLSCASCAOS260 (60m)  
 FLSCASCAOS270 (70m)  
 FLSCASCAOS280 (80m)  
 FLSCASCAOS290 (90m)

#### Description

Duplex Fibre Lead  
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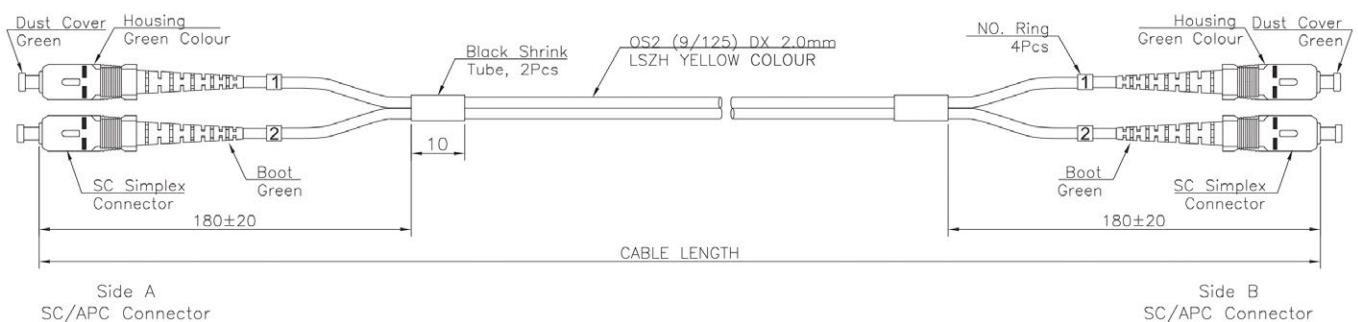


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## Features

- ✓ G.657.A1 Bend-insensitive fibre
- ✓ SC/APC connectors for optimum end face mating quality
- ✓ Duplex construction supporting transmit and receive channels
- ✓ 2.0mm Tight-buffered cable for flexible & high-density routing
- ✓ 900µm Buffered fibres with aramid yarn reinforcement
- ✓ LSZH Sheath for occupancy safety
- ✓ Low attenuation for stable optical performance across network links
- ✓ Optimised for O-E-S-C-L band transmission (1260-1625nm)
- ✓ 100% Individually factory tested for performance assurance and reliability
- ✓ APCO aligned recyclable packaging

## Technical Specifications



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## Technical Specifications

### Construction

1. **Optical Fibre:** 900um OS2 9/125 G.657.A1
2. **Aramid Yarn**
3. **Out Jacket:** LSZH  
**Sheath Thickness:**  $0.35 \pm 0.05$ mm  
**Diameter:**  $(1.9 \pm 0.05) * (3.9 \pm 0.1)$ mm  
**Colour:** Yellow, PMS 122C
4. **Cable Mark:** Fibre Optical Cable SM 9/125 OS2 G.657.A1 2.0mm - LSZH - MM/YY \*\*\*\*\*M

### Parameters of Fibre

| Optical Fibre Type | Unit  | OS2-G657.A1 |
|--------------------|-------|-------------|
| Waveband           | nm    | 1310/1550   |
| Attenuation        | dB/Km | 0.4/0.3     |

### Product Parameters

| Performance                       | Long-Term     | Short-Term   |
|-----------------------------------|---------------|--------------|
| Max. Tension (N)                  | 120           | 225          |
| Max. Crush Resistance (N/100mm)   | 100           | 500          |
| Min. Bend Radius                  | 30D (Dynamic) | 15D (Static) |
| Storage and Operating Temperature | -10°C ~ +60°C |              |

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#### Optical Characteristics

| Parameter                                  | Conditions                            | Value          | Units                    |
|--------------------------------------------|---------------------------------------|----------------|--------------------------|
| Attenuation                                | 1310 nm                               | $\leq 0.35$    | dB/km                    |
|                                            | 1383 nm (after H <sub>2</sub> -aging) | $\leq 0.35$    | dB/km                    |
|                                            | 1460 nm                               | $\leq 0.25$    | dB/km                    |
|                                            | 1550 nm                               | $\leq 0.21$    | dB/km                    |
|                                            | 1625 nm                               | $\leq 0.23$    | dB/km                    |
| Attenuation vs Wavelength (Max. $\Delta$ ) | 1285-1330 nm                          | $\leq 0.03$    | dB/km                    |
|                                            | 1525-1575 nm                          | $\leq 0.02$    | dB/km                    |
| Dispersion Coefficient                     | 1285-1340 nm                          | -3.0 to +3.0   | ps/(nm·km)               |
|                                            | 1550 nm                               | $\leq 18$      | ps/(nm·km)               |
|                                            | 1625 nm                               | $\leq 22$      | ps/(nm·km)               |
| Zero Dispersion Wavelength                 | —                                     | 1312 $\pm$ 10  | nm                       |
| Zero Dispersion Slope                      | —                                     | $\leq 0.090$   | ps/(nm <sup>2</sup> ·km) |
| Zero Dispersion Slope (Typical)            | —                                     | 0.086          | ps/(nm <sup>2</sup> ·km) |
| PMD (Maximum Individual Fibre)             | —                                     | $\leq 0.2$     | ps/ $\sqrt{\text{km}}$   |
| PMD (Link Design Value)                    | M=20, Q=0.01%                         | $\leq 0.1$     | ps/ $\sqrt{\text{km}}$   |
| PMD (Typical)                              | —                                     | 0.04           | ps/ $\sqrt{\text{km}}$   |
| Cable Cut-off Wavelength                   | —                                     | $\leq 1260$    | nm                       |
| Mode Field Diameter                        | 1310 nm                               | 9.0 $\pm$ 0.4  | $\mu\text{m}$            |
|                                            | 1550 nm                               | 10.1 $\pm$ 0.5 | $\mu\text{m}$            |
| Effective Group Index                      | 1310 nm                               | 1.466          | —                        |
|                                            | 1550 nm                               | 1.467          | —                        |
| Point Discontinuities                      | 1310 nm                               | $\leq 0.05$    | dB                       |
|                                            | 1550 nm                               | $\leq 0.05$    | dB                       |

#### Environmental Characteristics (1310, 1550 & 1625 nm)

| Parameter                      | Conditions             | Value       | Units |
|--------------------------------|------------------------|-------------|-------|
| Temperature Dependence         | -60°C to +85°C         | $\leq 0.05$ | dB/km |
| Temperature & Humidity Cycling | -10°C to +85°C, 98% RH | $\leq 0.05$ | dB/km |
| Water Soak Dependence          | 23°C, 30 days          | $\leq 0.05$ | dB/km |
| Damp Heat Dependence           | 85°C, 85% RH, 30 days  | $\leq 0.05$ | dB/km |
| Dry Heat Aging                 | 85°C                   | $\leq 0.05$ | dB/km |

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#### Geometrical Characteristics

| Parameter                            | Conditions | Value       | Units   |
|--------------------------------------|------------|-------------|---------|
| Cladding Diameter                    | —          | 124.8 ± 0.7 | µm      |
| Cladding Non-Circularity             | —          | ≤0.7        | %       |
| Coating Diameter                     | —          | 245 ± 5     | µm      |
| Coating-Cladding Concentricity Error | —          | ≤12.0       | µm      |
| Coating Non-Circularity              | —          | ≤6.0        | %       |
| Core-Cladding Concentricity Error    | —          | ≤0.5        | µm      |
| Curl (Radius)                        | —          | ≥4          | m       |
| Delivery Length                      | —          | 2.1 to 50.4 | km/reel |

#### Mechanical Characteristics

| Parameter  | Conditions | Value | Units |
|------------|------------|-------|-------|
| Proof Test | —          | ≥9.0  | N     |
| Proof Test | —          | ≥1.0  | %     |
| Proof Test | —          | ≥100  | kpsi  |

#### Macro-bend Induced Attenuation

| Parameter       | Conditions                                | Value | Units |
|-----------------|-------------------------------------------|-------|-------|
| Macro-bend Loss | 100 turns, 50 mm mandrel (1550 & 1625 nm) | ≤0.05 | dB    |
|                 | 10 turns, 30 mm mandrel (1550 nm)         | ≤0.1  | dB    |
|                 | 10 turns, 30 mm mandrel (1625 nm)         | ≤0.3  | dB    |
|                 | 1 turn, 20 mm mandrel (1550 nm)           | ≤0.1  | dB    |
|                 | 1 turn, 20 mm mandrel (1625 nm)           | ≤0.5  | dB    |

#### Mechanical Performance

| Parameter                               | Conditions | Value     | Units |
|-----------------------------------------|------------|-----------|-------|
| Coating Strip Force (Typical)           | —          | 1.7       | N     |
| Coating Strip Force (Peak)              | —          | 1.3 – 8.9 | N     |
| Dynamic Stress Corrosion Parameter (nd) | —          | ≥20       | —     |