

DIAMOND

Fiber Optic Components

CABLE ASSEMBLIES AND ADAPTERS

Optical reference connectors are manufactured with restricted tolerances and are used for attenuation measurement purposes; these shall be considered as part of the measurement set-up since they strongly contribute to its measurement uncertainty.

In order to limit the variability of attenuation measurement using reference connectors, Diamond uses selected single mode fiber with restricted tolerances on (MFD) as specified within the IEC 61755-2-4 / -2-5 standard. Using only this type of fiber and the tolerance parameters published in the standards mentioned below, it is possible to reach measurement values that are repeatable within ± 0.1 dB when randomly varying the reference connector. The main parameters influencing the performance of the reference connectors are fiber core location, fiber core axis angle and mode field diameter (MFD) variability. Diamond manufactures high performance reference connectors using the standardized composite ferrule, as well as "Active Core Alignment" (ACA) technology, which allows for the minimization of the fiber core eccentricity and the control of the angular misalignment. DIAMOND offers unique, fully tested and high-quality reference connectors for almost all mechanical interfaces, as well as a repair and quality-monitoring service. Reference connectors for Multimode fiber, Power solution (PS) and Polarisation maintaining (PM) technology are available upon request.

CONNECTOR PERFORMANCES AND GEOMETRICS SPECIFICATIONS

- ▶ Insertion Loss SM ≤ 0.1 dB
- ▶ Return Loss (SM PC/APC) min. 50 / 75 dB
- ▶ Ferrule diameter tolerance $< 0.2 \mu\text{m}$
- ▶ Fiber core position $< 0.2 \mu\text{m}$
- ▶ Angular misalignment (tilt angle) $< 0.2^\circ$

MATING ADAPTER SPECIFICATIONS

To select reference adaptors, Diamond uses reference connector plugs and measures them according to IEC 61300-3-42 with an attenuation variation smaller than 0.03 dB.

CABLE SPECIFICATIONS

- ▶ TB cable with 3-mm OD
- ▶ Selected fiber with restricted tolerances on MFD (min. 9.1, max. 9.3 μm , at 1310 nm)

FEATURES AND BENEFITS

- ▶ Reliable and reproducible measurements
- ▶ 100% performances and ferrule geometry parameters measurements
Delivered with measurement protocol and certificate
- ▶ Cable repairing and testing upon request
- ▶ Available types: E-2000®, F3000®, SC, FC

STANDARDS

- ▶ IEC 61755-2-4 / -2-5 Connection of non-dispersion, shifted, single mode physically contacting fibres for reference connector applications
- ▶ IEC 61755-3-5 Optical interface connectors with 2.5 mm and 1.25 mm diameter cylindrical composite ferrule
- ▶ IEC 61300-3-4 Basic test and measurement procedures - Part 3-4: Examinations and measurements - Attenuation



DIAMOND SA | Via dei Patrizi 5 | CH-6616 Losone - Switzerland
Tel. +41 58 307 45 45 | e-mail info@diamond-fo.com

www.diamond-fo.com

Reference patchcords

SINGLE MODE PC/APC



*Specifications subject to change
without notice*

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IL MEASUREMENTS

The following recommendations should be adhered to in order to perform an accurate IL measurement:

- ▶ Perform IL measurements only with reference connectors and reference adapters according to IEC 61300-3-4
- ▶ Take care of your reference connectors
 - Check connector
 - Check connector surface regularly
 - Use connectors for a maximum of 400 connections
- ▶ Do not repolish reference connectors

PRODUCT CONFIGURATION

- ▶ If the cable is terminated with reference connectors on both sides, the two connectors must have the same polishing type (PC or APC)
- ▶ If the cable is terminated with reference connectors on both sides, the two connectors must have the same ferrule diameter

ORDER INFORMATION

Please contact your nearest local Diamond representative or fill in the contact form available on our website at www.diamond-fo.com.
