

WellConnect™

Horizontal Instrument Wet Mate Optical Connector

The Horizontal Instrument Wet Mateable Optical Connector is designed to provide continuous optical connection between the Tubing Hanger and the X-Tree. The purpose of the Horizontal Multi-way (Single Mode / Multi-mode) Optical Connector is to provide a long-term reliable optical connection for DFOS (Downhole Fibre Optic Sensing) Applications.

Operational Requirements

Design Life:	25 years
Location within Completion:	Subsea Horizontal X-Tree
Rated Pressure:	10,000 Psi
Test Pressure:	15,000 Psi
Working Temperature Range:	-18°C to 150°C
Water Depth:	3000 Mtrs

Mechanical Requirements

Vertical Misalignment:	± 2mm
Radial Misalignment:	± 1.68°
No. Turns (Mate/Demate):	17
Envelope Diameter:	As per Customer Specifications

Optical Specification

Number of Contacts:	6 - with any combination of single mode or multi-mode APC Ferrule
Contact Method:	APC Ferrule
Insertion Loss:	≤ 0.5 dB Single Mode (1310nm, 1550nm & 1625nm) ≤ 1.0 dB Multi-mode (850nm & 1300nm)
Return Loss:	≤ -45 dB Single Mode ≤ -30 dB Multi-mode
Max. Optical Crosstalk:	≤ -60 dB Single Mode ≤ -60 dB Multi-mode

Material Specification

Housing:	HS Cupro Nickel Alloy
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Cable

Plug Termination 1/8" Metal Tube with Alpha Cable
Receptacle Termination 1/4" Metal Clad Monocable

Qualification Testing

Optical Insertion Loss
Optical Return Loss
Optical Power
Pressure Test
Pressure and Temperature Cycling (API 6A)
100 Mating cycles at pressure
Dry Mate Test
Gas Test
Turbid Test
Sealing Systems
Spheri-Seal Pressure Test
Mating Forces
Internal Seal
Misalignment Test
ROV Actuation

Key Performance Features

Unique Oil Flow Design to flush the Optical Connection during Mating
HPHT Application Materials
Energised Seals
Metal to Metal Sealing
Pressure Testable

