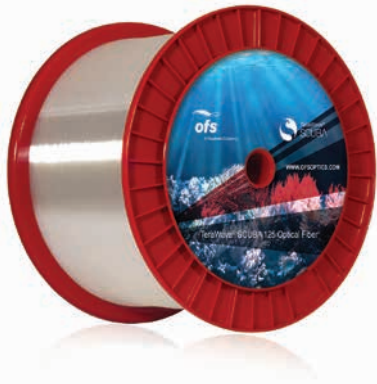


## TeraWave® SCUBA 110 Ocean Optical Fiber

For Submarine Systems Transmitting at 100 Gb/s and Beyond



### Applications

- Ultra-long haul networks using advanced modulation formats and coherent detection such as transoceanic networks
- Applications without repeaters, such as coastal festoons and deep-water crossings
- POP-to-landing-site connections for submarine cables

### Engineered Fiber Sets

OFS has the capability to color and splice ocean fibers to meet stringent cable requirements. Fibers are selected to meet customer specifications for numbers of fibers, colors, lengths, and transmission properties. They are then assembled into sets. Final measurements guarantee customer specified performance for all fibers in the set.

### Features and Benefits

- Effective area of 110  $\mu\text{m}^2$
- Enables launch of higher signal power than all G.652 and most G.654.B fibers
- Enable higher transmission speeds with more wavelengths over trans-oceanic distances
- Supports polarization-multiplexed, coherent transport using high spectral efficiency modulation formats
- Proof tested to 200 kpsi to help ensure long-term reliability under extreme conditions
- Available with average loss of 0.147 dB/km at 1550 nm

### Overview

TeraWave® SCUBA 110 Ocean Optical Fiber is optimally designed to deliver excellent performance for coherent transport in submarine systems. A combination of ultra-low loss and higher nonlinear performance recommended for the highest spectral efficiency TeraWave SCUBA 110 Ocean Fiber is fully compliant with the ITU G.654.B and ITU G.654.D standard for cutoff-shifted fiber and provides outstanding cable performance and design freedom for ocean networks.

### Product Description

A breakthrough in ocean fiber technology, TeraWave SCUBA Fibers offers a combination of large effective area, excellent cabling performance in the C- and L-bands, and world-class attenuation. These features enable reliable coherent transmission at 100 Gb/s and beyond over trans-oceanic distances at the highest channel counts. The fiber has a large effective area (110  $\mu\text{m}^2$ ) that reduces nonlinearities, enabling the launch of higher signal power into the span, and ultra-low attenuation that reduces signal loss.

The Silica Core and Ultra Big Area features of the TeraWave SCUBA fiber deliver significant margin beyond that needed for transmitting 100 Gb/s over trans-Atlantic distances. The additional margin can be used to upgrade to denser signal constellations for increased spectral efficiency as new transponders become commercially available.

TeraWave SCUBA Fiber is manufactured using OFS' proprietary manufacturing process, which produces ultra-low polarization mode dispersion (PMD) and exceptional resistance to mechanical stress.



A Furukawa Company

Product Specifications of TeraWave® SCUBA 110 Optical Fiber

Transmission Characteristics

Attenuation @ 1550 nm (nominal) ≤ 0.151 dB/km (standard)
≤ 0.147 dB/km (enhanced)

Dispersion @ 1550 nm ≤ 22 ps/nm-km

Mode Field Diameter @ 1550 nm (nominal) 11.5 μm

Effective Area (nominal) 110 μm²

Cable Cutoff Wavelength ≤ 1530 nm

PMD @ 1550 nm (nominal) ≤ 0.02 ps/√km

Effective Group Index of Refraction (nominal) 1.465 @ 1550 nm

Point Discontinuities @ 1550 nm ≤ 0.10 dB

Geometrical Characteristics

Clad Diameter 125.0 ± 0.7 μm

Coating Diameter, uncolored 240 - 250 μm

Coating/Clad Concentricity Error ≤ 12 μm

Mechanical and Other

Tensile Proof Test 200 kpsi (1.38 GPa)

Dynamic Fatigue Parameter (n\_d) ≥ 20

Coating Strip Force (Mechanical) 1.0 - 8.9 N

Colors 24 colors available

Matching Sets Yes

For additional information please contact your sales representative.

You can also visit our website at www.ofsoptics.com or call 1-888-fiberhelp (1-888-342-3743) USA or 1-770-798-5555 outside the USA.



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OFS Marketing Communications Doc ID: fiber-175 Date: 03/22

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