

Zero Water Peak Enhanced Singlemode Fiber

Fiber Backed by CommScope's Legendary Quality and Service

CommScope's tradition of being the leading manufacturer of innovative and performance-enhancing products for the cable industry continues with LightScope ZWP, a zero water peak, enhanced singlemode fiber.

LightScope ZWP removes the pronounced attenuation increase at 1383 nm, known as the water peak, in standard singlemode fiber resulting in a full-spectrum fiber designed for use across the entire wavelength range from 1260 nm to 1625 nm. The absence of the water peak makes available 30% more usable bandwidth, yet it is still fully backward compatible with existing singlemode legacy fiber optic plants. Increased usable wavelengths mean expanded bandwidth capabilities and tremendous network design flexibility for existing and future expansion requirements.

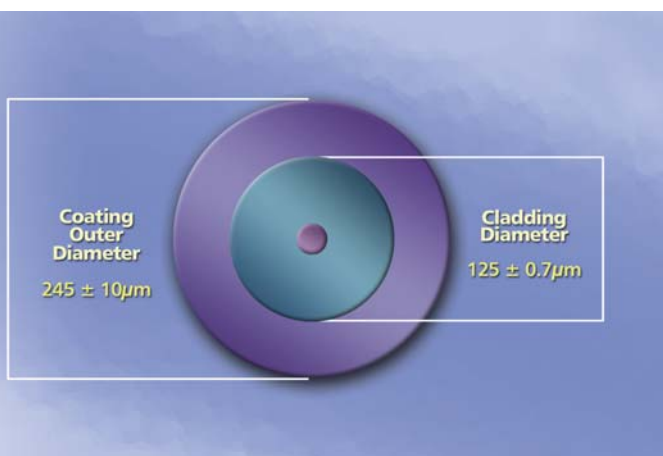


Features & Benefits

- Opens up transmission over the previously unusable wavelength range from 1360 nm to 1460 nm known as the "Extended Band" or E-band.
- Enables full-spectrum transmission from 1260 nm to 1625 nm, adding 30% more bandwidth.
- Utilizing the full transmission spectrum translates to added capacity for new technological advancements, such as video on demand (VOD), Dedicated Wavelength Services™ for businesses or other applications, etc.
- Fully backward compatible with legacy standard singlemode fiber optic networks.
- Provides future bandwidth flexibility and upgradeability.
- Enables 16 channel coarse wavelength division multiplexing (CWDM) as a lower cost alternative to dense wavelength division multiplexing (DWDM) in unamplified portions of hybrid fiber coax (HFC) networks.
- Compliant to the latest ITU-T G.652 A through D requirements.

Reduced Attenuation

LightScope ZWP cable is designed for use with wavelengths between 1260 nm and 1625 nm, including the formerly off-limit wavelengths in the E-band. LightScope ZWP fiber cable provides superior attenuation performance throughout this range, including a lower attenuation performance at 1383 nm than at 1310 nm. Manufacturing improvements that ensure this lowered attenuation, also provide stable performance over time. This improved performance now results in lower cabled attenuation across the entire spectrum, thus providing maximum network reach and greater design flexibility.



LightScope ZWP - Reduced Water Peak

Standard singlemode fiber cable has a pronounced attenuation increase at 1383 nm. This region, called the water peak, is an area within the fiber's transmission spectrum where light is increasingly absorbed by the hydroxyl (OH⁻) ions present within the structure of the glass core. Hydroxyl ions are the cause of increased attenuation within the E-band. The formation of these ions is prevented during the manufacturing of LightScope ZWP, thereby eliminating attenuation spikes in the E-band and rendering this portion of the transmission spectrum usable. The E-band accounts for 30% of the transmission spectrum available in silica glass fibers.

LightScope ZWP cable provides superior low water peak performance in the E-band over the lifetime of the product. This performance is ensured by a unique ultra-purifying manufacturing process which virtually eliminates hydroxyl ions in the glass fiber. The decrease in attenuation over the water peak region and relatively lower 1400 nm band dispersion, results in a singlemode fiber with increased transmission spectrum and the economic benefits of less expensive transmission options.

Physical Characteristics

Cladding Diameter	125 ± 0.7 μm
Core/Clad Offset	≤ 0.5 μm max
Coating Diameter (uncolored)	245 ± 10 μm
Coating Diameter (colored)	254 ± 7 μm
Coating/Cladding Concentricity Error, max.	12 μm
Clad Non-Circularity	≤ 1%

Mechanical Characteristics

Proofstress	100 kpsi (0.69 Gpa)
Coating Strip Force	0.3 - 2.0 lbf (1.3 - 8.9 N)
Fiber Curl	≥ 4 m radius of curvature
Dynamic Fatigue Parameter	≥ 18 nd

Macrobend 100 turns @ 50 mm mandrel

1550 nm	0.05 dB maximum
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Macrobend 100 turns @ 60 mm mandrel

1625 nm	0.05 dB maximum
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Macrobend 1 turn @ 32 mm mandrel

1550 nm	0.05 dB maximum
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Environmental Characteristics

Temperature Dependence -60°C to +85°C	≤ 0.05 dB
Temperature Humidity Cycling -10°C to 85°C up to 95% RH	≤ 0.05 dB
Water Immersion, 23 + 2°C	≤ 0.05 dB
Heat Aging, 85 + 2°C	≤ 0.05 dB

Optical Characteristics, Wavelength Specific

Attenuation, Loose Tube Cable

1310 nm	0.34 dB/km
1385 nm	0.31 dB/km
1550 nm	0.22 dB/km

Attenuation, Tight Buffer Cable

1310 nm	0.70 dB/km
1385 nm	0.70 dB/km
1550 nm	0.70 dB/km

Mode Field Diameter

1310 nm	9.2 ± 0.3 μm
1385 nm	9.6 ± 0.6 μm
1550 nm	10.4 ± 0.5 μm

Group Refractive Index

1310 nm	1.467
1385 nm	1.468
1550 nm	1.468

Dispersion

1310 nm	3.5 ps/(nm-km) from 1285 to 1330 nm
1550 nm	18 ps/(nm-km)

Optical Characteristics, General

Point Defects	0.10 dB
Cutoff Wavelength	≤ 1260 nm
Zero Dispersion Wavelength	1302 - 1322 nm
Zero Dispersion Slope	0.090 ps/(km-nm-nm)
Polarization Mode Dispersion Link Design Value	≤ 0.06 ps/sqrt(km)

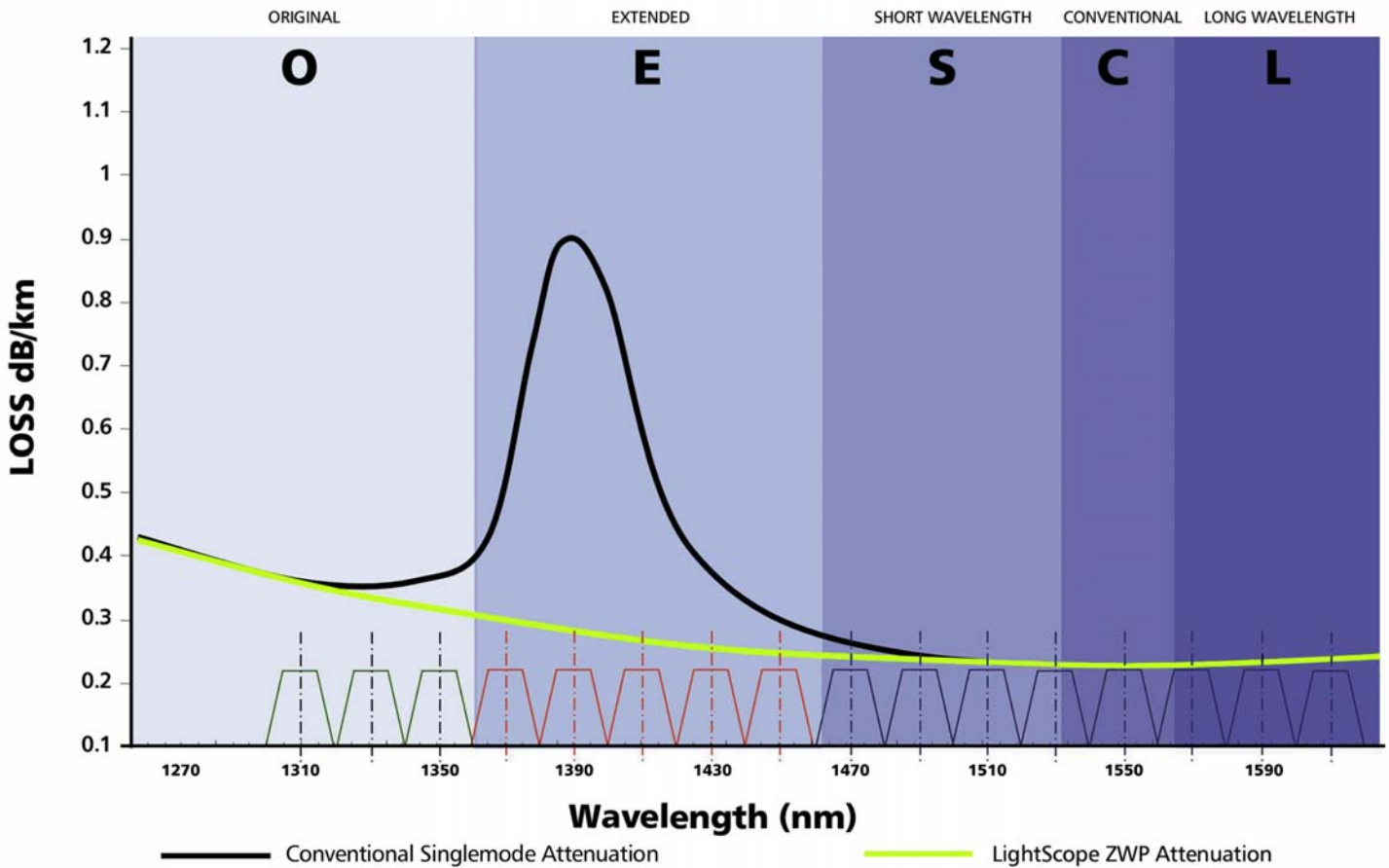


To order LightScope ZWP® fiber, be sure to specify 8W as the fiber type (positions 7 & 8) in the CommScope catalog number.



Request a **FREE** CommScope catalog, featuring fiber optic cable, headend products, coax cable, ConQuest® conduit products and technical services...all in the largest CommScope broadband catalog ever! Now available in print, on cd or download from our website.

Attenuation Performance Across Operating Bands



All specifications subject to change without notice

Designed to meet TIA/EIA 492-CABB; ITU G.652.D

CommScope has partnered with one of the world's largest producers of optical fiber and cable. This arrangement with OFS provides CommScope access to a broad array of technologically advanced optical fibers including the LightScope ZWP family of products from CommScope.

For more information please contact the:

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