

Corning® Vascade® Optical Fibers

Product Information



Customized Solutions for Maximum Performance and Reliability

The Corning® Vascade® family of submarine optical fibers enable high-speed, high-capacity solutions for transoceanic and regional submarine networks, providing the performance and reliability necessary in harsh undersea environments.

Submarine systems, from unrepeated networks spanning a few hundred kilometers to repeated networks bridging the world's oceans, demand the most advanced optical technologies. Each Vascade fiber type has a unique optical profile to allow customized system solutions; yet they all share the fundamental characteristics inherent to Corning's submarine fibers: superior mechanical reliability, high optical stability, and matched and managed optical properties.

In addition to individual Vascade fibers, Corning also offers Vascade fiber solutions with customized lengths, coloring, and splicing options.

Superior Mechanical Reliability

Mechanical reliability is critical. Submarine fiber-optic cables experience high tension during deployment and recovery from the ocean floor. With this in mind, Vascade fibers are subjected to a 1.38 GPa (200 kpsi) proof test. In addition, Corning has dedicated manufacturing lines for Vascade fibers. Corning's proprietary manufacturing process ensures high-quality fibers that offer maximum performance and economic advantage for your network. Vascade fibers are colored and spliced in a clean room environment and receive additional screening to ensure the fibers' long-term reliability.

Comprehensive Fiber Data

Corning Vascade fibers come with a wealth of measurement data. Corning's state-of-the-art measurement systems allow for a comprehensive fiber data package for every spool of fiber.

Coloring Options

To meet the unique requirements of each submarine network, including higher fiber count cable designs, all Vascade fibers can be supplied in up to 24 different colors.

ColorPro™ Identification Technology

Vascade fibers are also available in colored variants, enabled by ColorPro™ identification technology. Corning fibers with ColorPro™ identification technology deliver better efficiency in cable manufacturing, simplify inventory management, and leverage an enhanced fiber product offering.

How to Order

Contact your sales representative, or call the Optical Fiber Customer Service Department:
Ph: 1-607-248-2000 (U.S./Can.)
+44-1244-525-320 (Europe)
Email: cofic@corning.com
Please specify the fiber type, attenuation, and quantity when ordering.

Individual Vascade® Optical Fibers

Vascade® EX3000 Optical Fiber

Vascade EX3000 optical fiber is an ultra-low loss and very large area-effective silica core fiber which is ITU-T Recommendation G.654.D compliant. This product is primarily intended for use in high-bit-rate 100+ Gb/s repeated submarine transmission systems. This product may also be utilized in unrepeated submarine links as a loss-minimized, positive-dispersion fiber, enabling high launch powers and extended system lengths. Vascade EX3000 fiber is suitable for use in a wide range of submarine cable designs.

Vascade® EX2000 Optical Fiber

Vascade EX2000 optical fiber is a silica core fiber that combines ultra-low attenuation with large effective area which is ITU-T Recommendation G.654.B and G.654.D compliant. The result is a higher optical signal to noise ratio (OSNR), a critical requirement of networks operating at very high data rates such as 100+ Gb/s. This fiber is designed for both repeated and unrepeated submarine applications. To enable higher fiber count and higher capacity submarine cable systems, Vascade EX2000 fiber is now available in a smaller 200 µm nominal coating diameter.



Vascade® LEAF® EP Optical Fiber

Vascade LEAF EP optical fiber is a non-zero dispersion-shifted fiber (NZDSF) with negative dispersion and positive dispersion slope that offers the advantage of a large effective area designed to operate over the entire C-band. It has effective area that is 40 percent larger than typical NZDSFs, which increases the amount of optical power the fiber can carry without significant signal impairment from non-linear effects.

Vascade® L1000 Optical Fiber

Vascade L1000 optical fiber, a large effective area fiber, has an application in both repeatered and unrepeatered submarine systems. In unrepeatered systems, Vascade L1000 fiber's large effective area design allows for launching higher optical power in the fiber with fewer non-linear penalties. As a result, Vascade L1000 fiber can offer longer reach and higher capacity.

Typical Performance Values

Attribute	Vascade® EX3000 Optical Fiber	Vascade® EX2000 Optical Fiber	Vascade® LEAF® EP Optical Fiber	Vascade® L1000 Optical Fiber
Attenuation at 1550 nm (dB/km)*	0.154	0.152	0.198	0.182
Dispersion at 1550 nm (ps/nm·km)	+21.0	+20.2	-4.0	+18.5
Dispersion Slope at 1550 nm (ps/nm ² ·km)	+0.06	+0.06	+0.12	+0.06
Effective Area at 1550 nm (μm ²)	153	115	65	100
PMD ₀ (ps/√km)	0.02	0.02	0.02	0.02
Effective Index of Refraction (n _{eff})	1.4634	1.4634	1.4690	1.4684
Nonlinear Parameter n ₂ ·10 ⁻²⁰ (m ² /W)	2.1	2.1	2.2	2.2

*Attenuation values of constituent fiber as measured on shipping spools. Expected reduction of ~0.003 dB/km in loose tube cable.