

Corning® Vascade® Optical Fiber

Product Information



Customized Solutions for Maximum Performance and Reliability

The Corning® Vascade® family of submarine optical fibers provide high-speed, high-capacity solutions for transoceanic and regional submarine networks, guaranteeing 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 Vascade fibers, Corning also offers Vascade fiber solutions with customized length, 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 up to a 1.38 GN/m² (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, all Vascade fibers can be supplied in the 12 standard colors.

Individual Vascade® Optical Fibers

Vascade® EX3000 Fiber

Vascade EX3000 fiber is an ultra-low-loss and very large area-effective silica core fiber which is ITU-T Recommendation G.654.D (cut-off shifted fibers) compliant. This product is primarily intended for use in high-bit-rate 40 and 100+ Gb/s repeated submarine transmission systems operating in the C-band. 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 cable designs.

Vascade® EX2000 Fiber

Vascade EX2000 fiber is a silica core fiber that combines ultra-low attenuation with large effective area which is ITU-T Recommendation G.654.B 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 40 and 100+ Gb/s. This fiber is designed for both repeated and unrepeated submarine applications.

How to Order

Contact your sales representative, or call the Optical Fiber Customer Service Department:
Ph: 1-607-248-2000 (U.S. and Canada)
+44-1244-525-320 (Europe)

Email: cofic@corning.com
Please specify the fiber type, attenuation, and quantity when ordering.



Vascade® EX1000 Fiber

Vascade EX1000 fiber is a silica core fiber that is optimized for long unrepeated submarine systems that need lower attenuation characteristics compared to standard single-mode fibers. In repeated systems, the ultra-low attenuation of Vascade EX1000 fiber allows system designers to compensate higher accumulated dispersion with the same span loss budget. Vascade EX1000 fiber is ITU-T Recommendation G.654.C compliant.

Vascade® LEAF® EP Fiber

Vascade LEAF EP fiber is a non-zero dispersion-shifted fiber (NZDSF) with negative dispersion and positive dispersion slopes that offers the advantages 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 non-linear effects.

Vascade® L1000 Fiber

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

Vascade® S1000 Fiber

Vascade S1000 Fiber is Corning's dispersion and dispersion slope compensation fiber designed specifically to match and compensate the dispersion characteristics of Vascade L1000 and Vascade EX2000 fibers. The dispersion managed solutions are Vascade R1000 and Vascade R2000 fibers respectively.

| Typical Values at 1550 nm | | | | | | |
|---|---|--|---|--|--|---|
| | Vascade® EX3000 Fiber | Vascade® EX2000 Fiber | Vascade® EX1000 Fiber | Vascade® LEAF® EP Fiber | Vascade® L1000 Fiber | Vascade® S1000 Fiber |
| Description | An ultra-low-loss fiber with very large effective area and high positive dispersion | An ultra-low-loss fiber with large effective area and high positive dispersion | An ultra-low-loss fiber with high positive dispersion | A negative dispersion, NZDSF with large effective area and positive dispersion slope | A high positive dispersion fiber with large effective area | A high negative dispersion fiber with negative dispersion slope |
| Attenuation* (dB/km) | 0.157 | 0.154 | 0.162 | 0.198 | 0.182 | 0.231 |
| Effective Area (μm ²) | 150 | 112 | 76 | 65 | 100 | 27 |
| Dispersion (ps/nm•km) | +20.9 | +20.2 | +18.5 | -4.0 | +18.5 | -38.0 |
| Dispersion Slope (ps/nm ² •km) | +0.06 | +0.06 | +0.06 | +0.12 | +0.06 | -0.12 |
| PMD _Q (ps/√km) | ≤ 0.05 | ≤ 0.05 | ≤ 0.05 | ≤ 0.05 | ≤ 0.05 | ≤ 0.05 |

*Attenuation values of constituent fiber as measured on shipping spools. Expected reduction of 0.002-0.003 dB/km (depending on fiber type) in loose tube cable.

