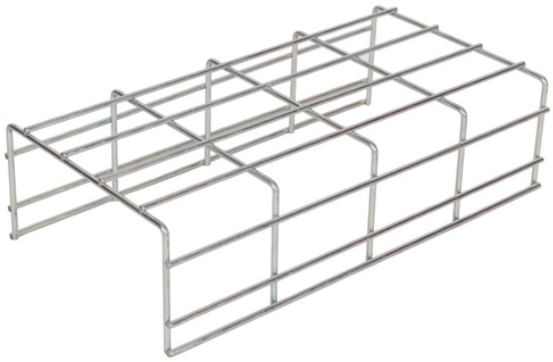
GDR Telecom Site Energy Systems

Fiber optic coil winding effect



Overview

Numerous factors affect fiber-coil quality and performance, including the polarization crosstalk, coil asymmetry, fiber-winding tension, and properties of potting adhesives. This chapter will first discuss all winding-induced imperfections and their relationship to FOG performance. Another type of fiber coil, made of rare-earth doped fiber, is used for a relatively uncommon type of fiber lasers, called side-pumped fiber disk. Fiber coils form the heart of fiber optic gyroscopes. In order. Fiber-optic gyroscopes (FOGs) are common rotation measurement devices in aerospace applications.

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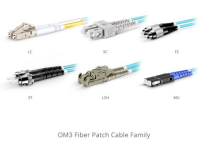

Fiber coils should be carefully wound by special winding machines to minimize thermal and stress gradients and asymmetries. The performance of FOGs is mostly limited by thermally induced bias ...

Simulation by finite element method is conducted to analyze the transient heat transfer performance of the D-CYL winding coils and a comparative analysis is made to find out the different...

In this study, we analyzed the optical fiber coil performance of different quadrupole winding patterns per the differences in birefringent and elastic optical effects of optical fibers. We established ...

Learn how fiber coil length, winding techniques and precision engineering influence the accuracy and stability of Fiber Optic Gyros used in modern marine navigation.

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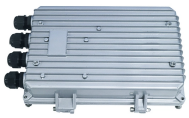
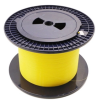


In this study, the dynamic behavior of a quadrupole wound fiber-optic coil is investigated. First, pre-wound fiber-optic coils are tested with an impact modal test, where the mode shapes and natural ...



Results of the nature modeling of the winding process of a polymer fiber onto a coil carcass revealed that the algorithm proposed allows one to detect coil winding defects with a high probability, and that ...

We develop a novel method in which the Shupe effect can be easily measured and integrated into the IFOG systems independent of temperature variation and fiber coil winding symmetry.

SHUPE effect is an important factor affect the Fiber-Optic Gyroscope (FOG) precision and temperature drift. As its critical sensing component, the fiber optic c

For fiber-optic current sensors, a fiber coil is wound around an electrical conductor. The magnetic field from the current causes a Faraday effect in the fiber, which is measured to determine the current''s ...

Contact Us

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