

FIBER OPTIC CAPABILITIES

FAST FORWARD



CARLISLE
INTERCONNECT TECHNOLOGIES

Fiber Optic Applications

Industrial



- » Communication Systems
- » Land-Based and Marine Geoseismic Sensor Applications
- » Underground and Surface Mining Instrumentation
- » Power Station Instrumentation and Sensors
- » Robotics and Automation Communications
- » Crane Festoon Cabling

Defense Aerospace



- » Heads-Up Display Systems
- » Airframe Sensors
- » Communications
- » Tracking and Target Acquisition
- » Primary Flight Computing
- » Electronic Flight Bag
- » Radars

Military



- » Shipboard Communication and Navigation Systems
- » Vehicle Communications and Sensors
- » Ground Based Tactical Communications
- » Ship-to-Shore Communication Systems
- » Deployable Radar Systems
- » Deployable Airfield Communications
- » Fiber-Guided Missiles
- » Tethered Sensors

Commercial Aerospace



- » In-Flight Entertainment (IFE)
- » Enhanced Vision
- » Video
- » Airframe Sensors
- » Flight Control (fly-by-light)
- » Electronic Flight Bag
- » Primary Flight Control
- » Radars

Fiber Optic Capabilities

Why Fiber Optics?

- » Weighs significantly less than competing technologies
- » Capable of extremely high bandwidth
- » Not susceptible to electromagnetic interference (EMI)
- » Extremely low loss at high analog frequencies/digital rates
- » Suffers practically no signal crosstalk
- » Not susceptible to corrosion or decay (silica fiber)
- » Offers superb security (almost impossible to tap signal)
- » Poses no danger of fire, electrocution or irradiation

LITEflight® Fiber Optic Cable Features

- » Performance in temperature extremes with products available to operate in environments from -65°C to 260°C
- » Lowest susceptibility to thermally induced signal loss
- » Minimal bend sensitivity
- » Extreme shock and vibration resistance
- » Extended flexibility and flexure endurance
- » Tight kink resistance and tolerance
- » High tensile strength
- » Maximum abrasion resistance
- » Ultimate resistance to corrosive fluids and gases
- » Widest connector and contact compatibility
- » Low smoke & toxicity for transport installations
- » Flame Resistance exceeding FAR 25 Appendix F
- » Compatibility with the broadest range of contact and connector systems
- » Radiation tolerant products available

Leading Manufacturer of High Performance Fiber Optic Cabling

Carlisle Interconnect Technologies (CarlisleIT) is a leading manufacturer of high performance fiber optic cabling and offers a comprehensive range of rugged and high performance fiber optic cable products. CarlisleIT LITEflight® Fiber Optic Cable is specifically designed to provide maximum performance and durability in the demanding conditions found in aerospace, military, industrial and other harsh environments.

Severe installation conditions demand a product specifically engineered to perform where other fiber optic products fail. CarlisleIT LITEflight® Fiber Optic Cable products bring the incredible performance benefits of fiber optic communications into most demanding applications. Specific design characteristics include:

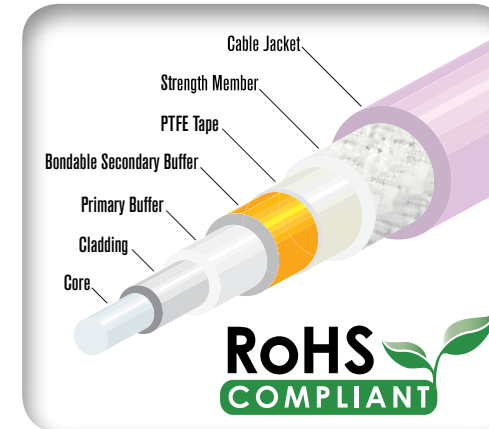
- » Performance in the harshest installation and operating environments
- » Unmatched performance in temperature extremes, high vibration, tight routing and bending, high mechanical shock, corrosive and caustic installation scenarios
- » Nonflammable properties, low smoke, low toxicity, low weight, and immunity to electromagnetic interference (EMI)

LITEflight® Fiber Optic products are widely deployed in industrial applications, defense ground tactical, military aerospace and commercial aerospace.



Our Range of Optical Fiber Products and Services Include:

- » Bulk Cable
- » Assemblies
- » Harnessing
- » Installation Expertise and Consulting
- » Custom Test, Inspection and Cleaning Kits



Bulk Cable



Assemblies



Test and Inspection Equipment

Advantages of Semi-Loose Fiber

A majority of connector and contact styles utilize a spring-loaded ferrule to maintain positive engagement of the contact faces when mated. CarlisleIT Fiber Optic Cable is designed for compatibility with the widest range of connector and contact styles.

The advantage of semi-loose construction is shown with a X-Ray cross section showing two ARINC 801 contacts as they are engaged:



Upon engagement the contact ferrules are pushed back, compressing the contact springs and ensuring a positive force that keeps the ferrule endfaces in contact under pressure. This positive force also prevents the loss of optical signal continuity even when the cable is pulled or stressed:



Here the blue line depicts the optical fiber arranged inside the contact body:



Upon engagement the inner portion of the contact moves towards the rear along with the fiber inside the contact. CarlisleIT Fiber Optic Cable is designed to allow the fiber to displace, pushing slightly out of the rear of the contact body:



Our loose construction enables the fiber to move rearward thus alleviating rearward compression. This compression can place significant stress on the optical fiber causing signal loss and mechanical damage. Breakage, progressive cracking and fiber failure can result from a tight fiber construction when the fiber is subjected to multiple mating cycles:

