



Design Guide

CABLE AND HARNESS DESIGN GUIDE

In addition to our wide range of catalog (ASAP) Fiber Optic Cable Assemblies, Glenair offers turnkey, build-to-print fiber optic cable harnesses, breakout, and junction box assemblies. This design guide presents an overview of the key specifications and decision points in fiber optic cable harness design.

Application Specifications

Working Environment

- Shipboard
- Airframe
- Avionics
- Secure Communications
- Ground Support/Soldier System
- Armored Vehicle
- Rail/Mass Transit
- Space
- Missile Defense
- Telecommunications
- Industrial
- Downhole or Surface Use
- Other

Cable Installation

- Outdoor
- Indoor
- Internal-to-Equipment

Temperature Requirements

Operating: - °C=_____ +°C=_____

Storage: - °C=_____ +°C=_____

Optical Fiber Requirements

Singlemode

Number of fibers _____

Fiber Size

- 9/125 μm
- Other

Test wavelength

- 1310 nm
- 1550 nm

Acceptable optical dB insertion loss

- Less than .5 dB
- Less than 1.0 dB

Acceptable optical return loss (backreflection)

- Not applicable
- _____ dB

Multimode

Number of fibers _____

Fiber Size

- 50/125 μm
- 62.5/125 μm
- 100/140 μm
- Other

Test wavelength

- 850 nm
- 1300 nm

Acceptable optical dB insertion loss

- Less than .5 dB
- Less than 1.0 dB

Cable Harness Construction

Assembly Length Requirements

- Less than 10 Meters
- 10 to 150 Meters
- More than 150 Meters

Cable Type

- Buffered
- Simplex
- Distribution
- Breakout

Basic Harness/Assembly Description

- Open Wire Harness
- Repairable/Jacketed
- Overmolded (MIL-M-24041 Materials)
- Metal/Fabric Overbraided
- Conduit

Alternative Wire Protection Media

- High Flexibility Convuluted Tubing
- EMI/EMP Metal-Core Conduit
- Molded Shrink Boots
- Junction Boxes and Cable Bays



Design Guide

Strain relief

- Not Applicable
- Light Duty
- Medium Duty
- Heavy Duty

Level of Environmental Protection

- Not Applicable
- Moisture Resistance
- Full Water Immersion
- Chemical/Caustic Fluid Resistance
- Extreme Corrosion Resistance
- Intense Atomic Radiation

Special Considerations

- RoHS Compliant Materials
- Extreme Temperature Tolerance
- UL94-VO Flammability
- UV Resistance
- Radiation Resistance / Atomic Oxygen
- Field Repairability
- Crush/Abrasion Resistance
- Weight Reduction
- Size or Shape Restraints as Specified:

List jacket/sheath or other wire/fiber protection materials such as conduit, including material type and series:

Fiber Optic Termination Assembly

Connector

- Jam Nut or Square Flange or Plug
- Pin Skt Genderless Contact Qty_____

MIL-DTL-38999 Series III Type _____

SuperNine® MT _____

Series 79® MT _____

ARINC 801 _____

Glenair High Density (GHD) _____

Series 806 Mil-Aero _____

Eye-Beam™ GMA _____

Eye-Beam™ GLT _____

Eye-Beam™ POWER _____

Glenair Front Release (GFR) _____

MIL-PRF-64266 (NGCON) Type _____

GFOCA _____

MIL-PRF-28876 _____

Termini Part No. _____

Dust Cover: Yes No

Fiber Optic Breakout Assembly

A Connector

- Jam Nut or Square Flange or Plug
- Pin Skt Genderless Contact Qty_____

MIL-DTL-38999 Series III Type _____

SuperNine® MT _____

Series 79® MT _____

VITA 66 MT _____

ARINC 801 _____

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Glenair Front Release (GFR) _____

MIL-PRF-64266 (NGCON) Type _____

GFOCA _____

MIL-PRF-28876 _____

Termini Part No. _____

Dust Cover: Yes No

B Connector

MT Connector _____

ST Connector _____

FC Connector _____

SC Connector _____

SMA Connector _____

LC Connector _____

Other _____