HMA-type ball lens expanded beam connectors and cables

Featuring the industry’s best performance—from insertion loss and return loss to mating durability

Ideal for use in harsh application environments such as geophysical exploration, military communications, industrial data transmission, and video broadcasts, Eye-Beam® GMA expanded beam connectors and cables are built in accordance with MIL-DTL-83526/20 and /21 and are fully intermateable with industry standard HMA type solutions. Sealed expanded beam interconnect technology resists water, mud, dust, oil and other chemicals contaminating the optical path and deteriorating system performance. The hermaphroditic design of the GMA interconnect eliminates the need for in-line adapters, and the environmentally resistant packaging reduces field maintenance and repair costs.

Eye-Beam GMA connectors are sold as parts of complete assemblies. Individual connectors require specialized termination, assembly, and cleaning processes. Customers are advised to consult with Glenair’s fiber optic application engineering team before purchasing.

Field-deployable system for both indoor and outdoor applications

Beam expansion dramatically reduces loss due to contamination

Large ball lens facilitates easy cleaning

Fully intermateable with all MIL-DTL-83526 /20 and /21 compliant connectors

2 and 4-channel insert arrangements

Singlemode and multimode versions, plus broad support for a wide range of standard and tactical military cables
SERIES 185-002 EYE-BEAM® GMA™
MIL-DTL-83526 /20 & /21 compliant hermaphroditic expanded beam connectors

EXPANDED BEAM TECHNOLOGY

Expanded Beam connectors utilize a sealed lens to expand the emitting beam of light from the fiber media. The expanded beam is then refocused back into the fiber of the mating half. These sealed assemblies are ideally suited for environmental applications where optical connectors are subjected to repeated mating/unmating cycles. Easy to clean, and insensitive to contamination.

SERIES 185-002 EYE-BEAM® GMA MATERIALS/FINISHES

Plug
Front housing, shell, and coupling nut: Aluminum Alloy / hard anodize
Insert body: Copper-nickel-zinc alloy
Guide pin: Stainless steel / passivate
Strain relief boot, facial seal, and grip sleeve: Fluorosilicone
Dust cap: Thermoplastic
Lanyard: Stainless steel / coated

Receptacle
Front housing: Aluminum alloy / hard anodize
Insert body: Copper-nickel-zinc alloy
Guide pin: Stainless steel / passivate
Shell, jam nut and back nut: Aluminum Alloy / Zinc-Nickel black
Facial seal and panel seal: Fluorosilicone
Dust cap: Thermoplastic
Lanyard: Stainless steel / coated

SERIES 185-002 EYE-BEAM® GMA PERFORMANCE SPECIFICATIONS

Insertion Loss
Multimode: ≤1.5 dB typical at 850/1300nm
Singlemode: ≤2.0 dB typical at 1310/1550nm
Return Loss
Singlemode: Better than 31 dB typical mated
Better than 34 dB typical unmated
Operating Temperature
-55°C to +85°C
Storage Temperature
-57°C to +85°C
Mating Durability
3000 mating cycles minimum
Cable Retention
1500N (cable dependent)
Bump
4000 bumps at 40g acceleration
Impact
8 drops from 0.9m per TIA/EIA-455-2, Method C, Service Class: Severe
Drop (Free Fall)
500 falls onto concrete from 1.2m
Vibration - Sinusoidal
10g Peak per TIA/EIA-455-11, Test Condition III
Vibration - Random
9g RMS per TIA/EIA-455-11, Test Condition VI-C, for 1.5 hours
Physical Shock (Half-sine Pulse)
50g Peak, 5 shocks per axis (30 shocks total) per TIA-455-14, Test Condition A
Water Immersion
Depth of 15m for 24 hours per TIA-455-74

Field-deployable GMA connector and cable technology may be deployed in a broad range of applications, from tactical communications to oil & gas industry exploration, satellite communications, and more. Multichannel fiber optic cable—including ruggedized simplex and mil-tactical solutions—are fully supported.

SERIES 185-002 EYE-BEAM® GMA materials/finishes

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Insert body: Copper-nickel-zinc alloy
Guide pin: Stainless steel / passivate
Strain relief boot, facial seal, and grip sleeve: Fluorosilicone
Dust cap: Thermoplastic
Lanyard: Stainless steel / coated

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