

D38999 Series III Derived Expanded Beam Connector



Features

- Size 11 Shell: 1 to 4 Optical channels
- Size 13 Shell: 2 or 4 Optical channels
- Size 15 Shell: 2, 4, 6 or 8 Optical channels
- Size 17 Shell: 12 or 16 Optical channels
- Single-mode or multimode
- Straight 90° back-shell
- Low insertion loss/high return loss
- Aluminium, nickel aluminium bronze or 316 grade stainless steel shell options
- Fully sealed (IP67)

AFL D38999 Series III derived expanded beam fibre optic connectors have been designed for use in the most demanding civil and military electronic equipment interface applications.

The connector features the generic MIL-DTL-38999 Series III tri-start thread and one-turn self locking anti-vibration coupling mechanism making it ideal for use in vehicle, aircraft and naval environments.

Plug and receptacle connectors are available with straight 90° back-shell and a choice of shell materials including aluminium alloy (zinc cobalt, olive drab), aluminium alloy (electroless nickel plated), nickel aluminium bronze (shot blast, non-reflective) and 316 grade stainless steel (passivated).

Receptacle connectors are available with jam-nut or square-flange mounting and strain relief for zip-cords or tactical cable.

The connectors are terminated using an epoxy-polish ferrule termination process with standard fibre optic termination tools and equipment. The terminated ferrules are simply inserted into the expanded beam housing and fixed in place via a spring and cover-plate. Ferrule alignment to the lenses is achieved automatically by the unique optical arrangement developed.

AFL D38999 Series III expanded beam connectors offer high performance, flexibility and cost effectiveness, combined with a simple termination process allowing rapid in-field termination and repair.



Connector Specifications

| | | | | | | | |
|-----------------------------------|--|---------|---------------------------|---------|-------------------------|---------|-------|
| Insertion loss | 9/125 Fibre at 1310 nm / 1550 nm: 1 to 4 channels: -1.5 dB max/6 to 16 channels: -2.0 dB max* 50/125 Fibre at 850 nm / 1300 nm: 1 to 4 channels: -1.0 dB max/6 to 16 channels: -1.5 dB max* | | | | | | |
| Return loss | > 32 dB (typical 40 dB) single-mode / > 20 dB multimode* | | | | | | |
| Durability | 1000 Matings minimum | | | | | | |
| Operating temperature | -40°C to +85°C | | | | | | |
| Storage temperature | -55°C to +85°C | | | | | | |
| Water immersion | IP67 | | | | | | |
| Free fall resistance | 350 falls from 1.2 height | | | | | | |
| Vibration | 10-500 Hz, 3 directions, 0.75 mm amplitude at 10 g acceleration | | | | | | |
| Bump | 4000 bumps at 40 g acceleration | | | | | | |
| Corrosion resistance | 350 hours salt spray | | | | | | |
| Cable retention | 1000 N (Cable dependent) | | | | | | |
| Weight (approx) | Aluminium | | 316 Grade Stainless Steel | | Nickel Aluminium Bronze | | |
| | Size 11 | Size 15 | Size 11 | Size 15 | Size 11 | Size 15 | |
| | Plug: | 50 g | 90 g | 95 g | 170 g | 95 g | 170 g |
| | Bulkhead: | 45 g | 85 g | 85 g | 155 g | 85 g | 155 g |
| Connector shell material / colour | Aluminium alloy (zinc cobalt, olive drab), aluminium alloy (electroless nickel plated), nickel aluminium bronze (shot blast, non-reflective) or 316 grade stainless steel (passivated). | | | | | | |

* Measurements against reference - random mate performance in line with MIL83526