



# Expanded Beam Assembly

**Cable assemblies with expanded beam connectors for deployment and retrieval applications.**

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## Features

- 1 to 16 optical channels
- Singlemode or Multimode
- Four connector shell sizes
- Plug cable assemblies
- Bulkhead panel mounted assemblies
- Optical performance MIL-DTL-83526

## Application

Expanded beam cable assemblies are designed for use in the most demanding harsh environment applications including military tactical communications, outside broadcast, petrochemical plant, mining, and offshore systems. The increased size of the optical beam reduces susceptibility of the interconnect to contamination and allows for easy cleaning/maintenance in the field.

## Design

Hexatronic offers build-to-print and harness design services, and can advise on the best fibre-optic interconnection solution for a given environment. Expanded beam technology is less susceptible to dust and debris and has a non-contacting interface that allows thousands of mating cycles. In our range of expanded beam connectors there are four different interfaces, Mini, Junior, Senior and Maxi, which enables from 1 up to 16 optical channels and are choosable between multimode or singlemode. The cable is rugged and tight-buffered with construction for the highest possible survivability in severe crush, impact, vehicle rollover, deployment and retrieval conditions. Our cable assemblies are compatible with connector interfaces such as Falcon, HMA and Pro Beam.

## Technical Information

### Technical Notes

#### Cable Mechanical Performance:

- Crush Resistance: 1 800N/cm
- Fire Resistance: Flame Retardant
- Flex Resistance: 2 000 cycles
- Impact Resistance: 1 500 impacts

#### Connector Mechanical Performance:

- Cable Retention: 1 500N
- Corrosion Resistance: 500h salt spray
- Crush Resistance: 6 700N
- Durability: 3 000 matings min
- Free Fall Resistance: 500 falls from 1.2m
- Shock Resistance: 4 000 bumps @ 40g acc
- Vibration: 10-500Hz, 3d, 0.75mm amp @ 10g acc
- Water Immersion: 15m for 24h

#### Environmental Performance:

- Temperature Operating: -40°C to +85°C
- Temperature Storage: -55°C to +85°C

### Installation Notes

#### Fiber Optic Performance:

- Attenuation (dB/km): SM: 0.5/0.5, MM: 3.5/1.5
- Insertion Loss SM: -1.5dB max (typ <1.0dB)
- Insertion Loss MM: -1.0dB max (typ <0.7dB)
- Return Loss: SM: >32dB (typ 40dB), MM: >20dB
- Mating Performance: MIL-DTL-83526