8D Series & ARINC 600 Series
ELIOBEAM® Fiber Optic Contact

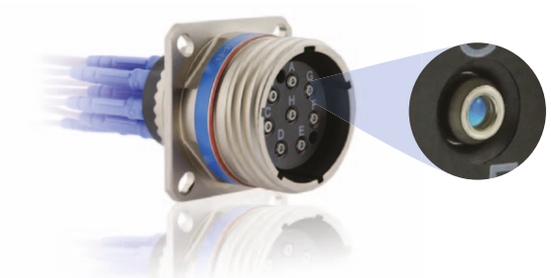
SOURIAU

Expanded Beam Optical Termini

The optical connection requirement for environmentally exposed mating cycles.

Robust to contamination

- Large beam transmission at the connection interface.
  No dust collecting socket cavity:



Easy design in

- ELIOBEAM® can be mounted in all standard EN4531 cavities either in MIL-DTL-38999 or ARINC 600 connectors.

Excellent performances

- Contact alignment is based on ceramic sleeve naturally protected by the contact when the connector is unmated.

Esterline
Connection Technologies

JOWO
Systemtechnik AG

EN4531 Style

ABS1379 Style

ELIObeam contact

- Fit in all ELIO® standard cavities (ABS1213, EN4531)
- Optical lense for expanded beam
- Allows signal communication without physical contacts
- Used like ELIO® standard contact

Technical features

Mechanical

- **Endurance:**
  Minimum 500 mating/unmating operations
- **Shock:**
  300 g, 3ms as per EN 2591-6402 method A
- **Vibration:**
  In MIL-DTL-38999 Series III/EN3645 connectors:
  - Sine 5Hz to 3000Hz as per EN2591-6403 method A
  - Random as per EN2591-6403 method B
- **Cable cyclic flexing*:**
  100 cycles, load 40N as per EN2591-609
- **Cable pulling*:** 111N
- **Cable torsion*:**
  100 cycles, load 40N as per EN2591-611

Environmental

- **Salt spray:** See the connector standard
- **Temperature range*:**
  - 65°C to +125°C (1000 hours)
- **Rapid temperature change:**
  10 cycles - 65°C / +150°C (30min/30min)
- **Air leakage:**
  Max leakage 16 cm^3/h, 2 hours, 40kPa differential pressure
- **Damp heat and low temperature:**
  5 cycles of 48h -65°C/+70°C with stage at 40°C with 95% of humidity as per EN2591- 6303 method A

Optical

- **Multimode contact - Insertion Loss (IL):**
  < 0.7dB mean 95% of the samples as per EN2591-601,
  < 1.0dB maximum on 100% of the samples after tests
- **Multimode contact - Return Loss (RL):**
  > 16dB before and after tests as per EN2591-605

Resistance to fluids as per MIL-DTL-38999/EN3645 standard

- **Fuel:** JP5
- **Mineral Hydraulic fluid:**
  MIL-PRF-5606 (NATO H-515)
- **Synthetic hydraulic fluid:**
  AS1241 (Skydrol 500B4, LD4)
- **Mineral lubricant:**
  MIL-PRF-7870 (NATO O-142)
- **Synthetic lubricant:**
  MIL-PRF-23699 (NATO O-156),
  MIL-PRF-7808 (NATO O-148)
- **Cleaning fluid:**
  MIL-PRF-87937 diluted, Propanol, white spirit, Azeotrope R113 + Methanol
- **De-icing fluid:** AMS 1424 (NATO S-742)
- **Extinguishing fluid:** Chlorobromethane
- **Cooling fluid:** Coolanol

* With multimode EN4641-100 and EN4641-301 cables and following the maintenance procedure in the document "Technical Bulletin N°170 - Fiber optics installation and maintenance procedure".

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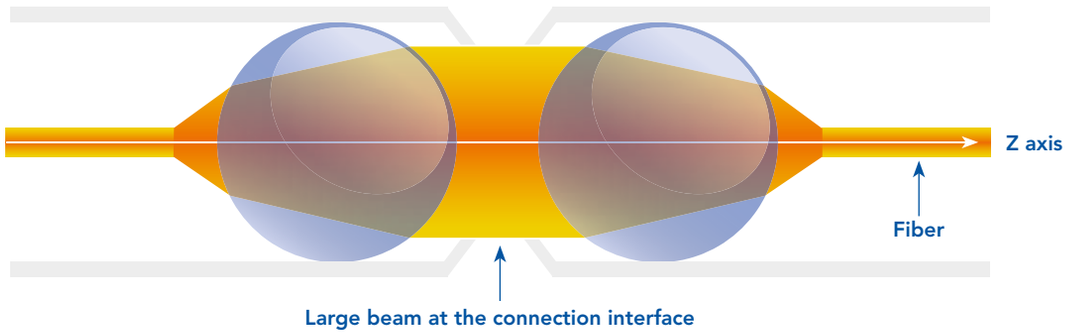
Principle of expanded beam

The expanded beam concept expands and collimates the beam from the launch fiber. Without mechanical contact of the optical elements, the beam remains collimated until it is focused down to the receiving fiber.

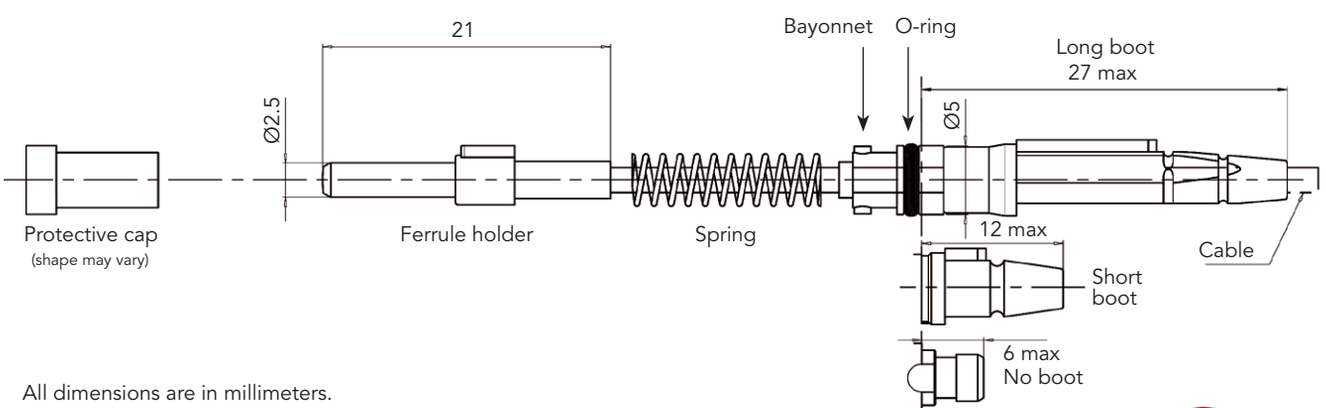
The beam expansion at the interface provides protection of the fiber from contaminants.



ELIObeam contact - Ordering information

	EOB1	09N	G	L	A
Cable external diameter & Contact sealing: **09N:** $0.9^{\pm0.1}$mm. Non waterproof **18N:** from 1.5mm to 1.9mm. Non waterproof **18W:** $1.8^{\pm0.1}$mm. Waterproof **20N:** from 1.7mm to 2.1mm. Non waterproof **20W:** $2.0^{\pm0.1}$mm. Waterproof					
Fibre type: **G:** ELIOBEAM® Multimode fibre, 50/125 or 62.5/125					
Boot type: **L:** Long boot **S:** Short boot **N:** No boot (non waterproof version only)					
Contact version index					

ELIOBEAM® contact dimensions



All dimensions are in millimeters.

Note: All dimensions are in millimeters (mm)

Recommended cables

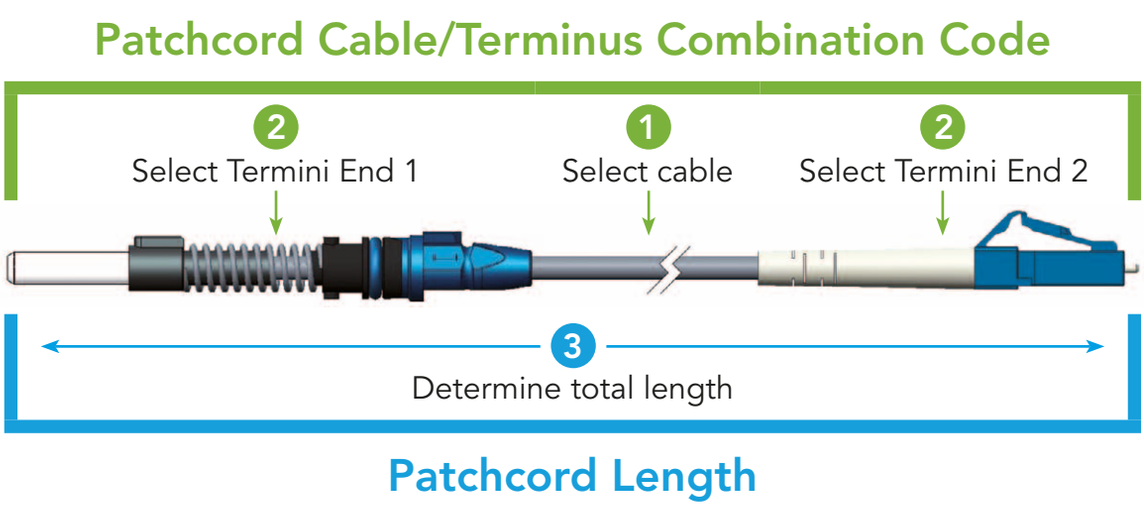
SOURIAU can offer a wide range of cables in its assemblies, from low cost to high performance aeronautical cables.
ELIOBEAM® contact is compatible with singlemode and multimode cables, with tactical and breakout cables.
ELIOBEAM® contact is suitable with loose and tight structure cable.

See next page and SOURIAU "ELIO® Fiber Optic Technology" catalog.

#8 Adaptors, Accessories & Tooling

See SOURIAU "ELIO® Fiber Optic Technology" catalog.

Your optical patchcord in 3 steps!



Ordering information

	HA02	XXXX	XXX	M	A

Patchcord cable/terminus combination code:
XXXX: See tables p.5

Patchcord length:
In meter when possible. Examples:
- for a 3 meter assembly, use **003**(M) and not 300(CM)
- for a 3.5 meter assembly, use **350**(CM)

Standard length tolerances

Patchcord from 30 cm to 1 m	0 / + 5 cm
Patchcord from 1 m to 4 m	0 / + 10 cm
Patchcord from 4 m to 15 m	0 / + 20 cm
Patchcord > 15 m	0 / + 30 cm

Length unit:
M: Meter
CM: Centimeter

Patchcord version index

Note: To create your patchcord part number, select your patchcord combination code in tables p.5 (1st contact - 2nd contact - Fiber Optic cable) and the length of your assembly on 3 digits in meter (M) or centimetre (CM). You must use meter when possible (see examples above).

1 Select Cable

SOURIAU offers a wide range of cables, from cost efficient to high performance aeronautical cables.
Select your optical fiber's properties. Temperature range can be critical for your applications.
If you need any help on a criteria selection, please contact us.

Application	Fiber type	Cable diameter	Temperature range	Tensile strength (N)	OM class	Attenuation (dB.km-1)*	Min. bend radius (mm)	Weight (kg.km-1)	Structure outer jacket	Standard	Cable type
FOR FLYING USE High performance cables	62.5/125	1.8	-55°C to +125°C	250	OM2	4.0/2.0	20	4	Tight	ABS0963-003LF, EN4641-102	**FCABLE11**
	62.5/125	0.9	-55°C to +125°C	20	OM2	4.0/2.0	10	1	NA	EN4641-101	**FCABLE41**
	50/125	1.8	-65°C to +135°C	200	OM3	4.0/2.0	5	4	Tight	EN4641-301	**FCABLE22**
FOR HARSH ENVIRONMENT Cost efficient cables	50/125	1.8	-40°C to +85°C	130	OM3	3.0/1.0	25	2.2	Loose	-	**FCABLE42**
	62.5/125	1.8	-40°C to +85°C	130	OM1	3.5/1.5	25	2.2	Loose	-	**FCABLE61**

* 1st value @850nm for multimode cable, 2nd value @1300nm for multimode (respectivly 1300nm and 1550nm for singlemode)
Consult us for other harsh environment cables.

2 Select Termini End 1 & 2 according to your selected cable, and get your final Patchcord Cable/Terminus Combination Code

Most common cables with most common contacts - For other combinations please consult us.
All contacts are UPC polished otherwise specified.

Termini End 2 / Termini End 1	EOB118WGLA				EOB109NGLA
	Cable types				Cable type
	FCABLE11	FCABLE22	FCABLE42	FCABLE61	FCABLE41
ELIO18NGLA	3060	3071	3091	3102	N/A
ELIO18NGNA	3061	3072	3092	3103	N/A
ELIO18NGSA	3062	3073	3093	3104	N/A
ELIO18WGLA	3063	3074	3094	3105	N/A
ELIO18WGSA	3064	3075	3095	3106	N/A
LC Simplex	3065	3076	3097	3108	3086
ARC1G18TA	3066	3077	N/A	N/A	N/A
ARC1G18LA	N/A	N/A	3098	3109	N/A
ARC1G09TA	N/A	N/A	N/A	N/A	3087
FC/PC	3067	3078	3096	3107	3085
SC	3068	3079	3099	3110	3088
ST	3069	N/A	3100	3111	3089
ST2	N/A	3080	N/A	N/A	N/A
EOB118WGLA	3070	3081	3101	3112	N/A
ELIO09NGLA	N/A	N/A	N/A	N/A	3082
ELIO09NGNA	N/A	N/A	N/A	N/A	3083
ELIO09NGSA	N/A	N/A	N/A	N/A	3084
EOB109NGLA	N/A	N/A	N/A	N/A	3090

For further information contact us at technical-emear-ect@esterline.com (Europe - Asia - Africa)
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or visit our web site www.esterline-connection-technologies.com