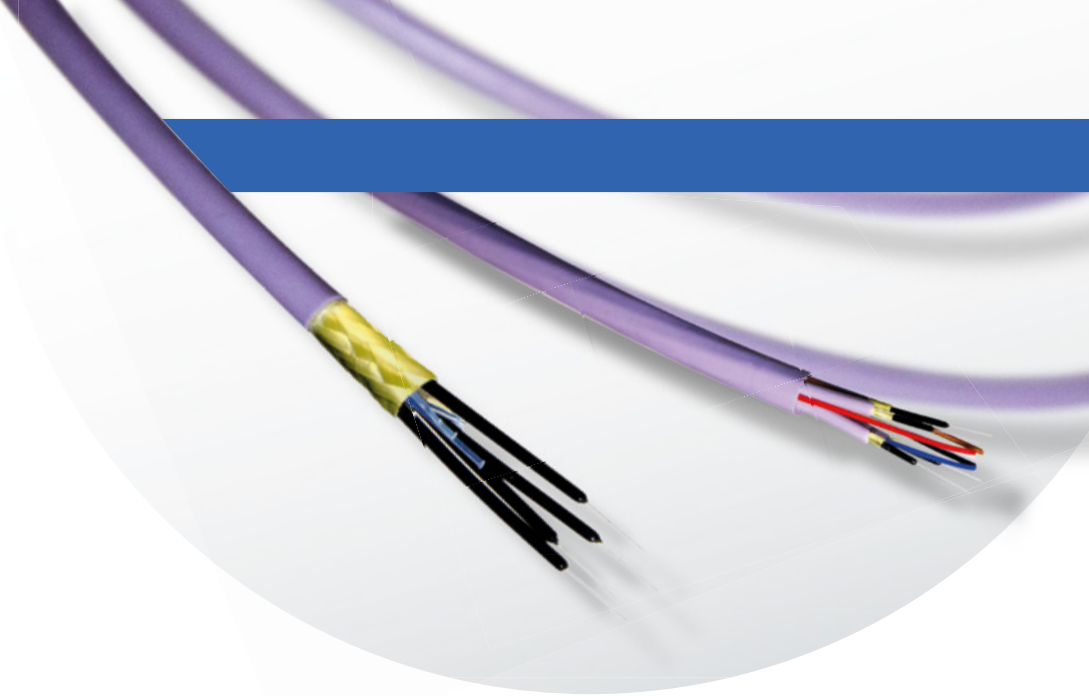


AXOPT[®] OPTICAL FIBER CABLES

FOR HARSH
ENVIRONMENTS





**VERTICALLY INTEGRATED,
AXON' CABLE IS AN
ACKNOWLEDGED
EXPERT IN THE DESIGN
AND MANUFACTURE
OF CUSTOM DESIGNED
CABLES, INCLUDING
OPTICAL FIBER
CABLES FOR BESPOKE
APPLICATIONS IN HARSH
ENVIRONMENTS.**

Advantages

- Lightweight.
- Electromagnetic immunity.
- Tight structure to optimize mechanical & optical performances and improve termination.
- Resistance to harsh environments.
- Tensile strength: > 200 N.
- UV laser marking.
- Operating temperature: -60 to +135°C.
- Very low shrinkage ensuring very stable performance of terminated optical assembly.
- Easy cable stripping.
- Compatible with:
 - MIL-DTL-38999 optical connectors,
 - SC, FC, LC, ST ...,
 - Axon' optical Micro-D connectors.

Applications

Designed for applications including defense, milaero & space which require :

- Weight saving.
- Immunity to electro-magnetic interference.
- High data rates.

Examples: tank turret, optronics systems on UAVs, helicopters, ships, drones & avionics equipment.

Interconnect solutions

• Expert in optical interconnect solutions

Axon' cable has drawn on long experience in both Micro-D and high data rate links to develop high performance optical cable assemblies. Vertically integrated, Axon' Cable is able to manufacture optimized fiber optic cables fully adapted to high performance optical **Micro-D** based connectors.

Axon's engineers have designed **AXOPT**[®] interconnects to help you make the switch from electrical to optical devices.

• Fiber optic cables compatible with rugged connectors

Axon' fiber optic cables are fully compatible with a wide range of standardized contacts or connectors including **ARINC 801, MIL** (MIL-PRF-29504, etc), **ST,FC, LC connectors** as well as Axon's own fiber optic connectors. Easy to strip, they can be readily assembled to the fiber optic contact or connector.

The low shrinkage/elongation of Axon's fiber optic cables reduces time and cost during cabling, and ensures a highly reliable connection.



Standard range

SINGLE FIBER OPTIC CABLES MULTIMODE 50/125 1.8 mm ARINC-802 QUALIFIED	SINGLE FIBER OPTIC CABLES MULTIMODE 62.5/125 1.8 mm ARINC-802 qualified	SINGLE FIBER OPTIC CABLES SINGLE MODE 9/125 1.8 mm ARINC-802 qualified
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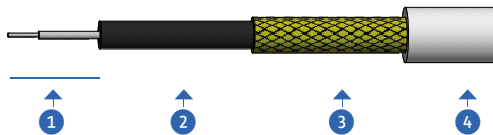
	PF73965		PF67314		PF73966		
1 FIBER	CORE/CLADDING		Silica Graded Index Multimode 50/125	125 ± 2 μm	Silica Graded Index Multimode 62.5/125	125 ± 2 μm	
	PRIMARY BUFFER		High temperature Acrylate	245 ± 15 μm	High temperature Acrylate	245 ± 15 μm	
2 BUFFER	ETFE (Black)	0.90 ± 0.05 mm	ETFE (Black)	0.90 ± 0.05 mm	ETFE (Black)	0.90 ± 0.05 mm	
3 BRAIDED SHIELD	Aramid Strength Member	1.15 mm nom	Aramid Strength Member	1.15 mm nom	Aramid Strength Member	1.15 mm nom	
4 OUTER JACKET	ETFE (Purple)	1.80 ± 0.1 mm	ETFE (Purple)	1.80 ± 0.1 mm	ETFE (Purple)	1.80 ± 0.1 mm	
	ATTENUATION		At 850 nm	5.0 dB/km max	At 850 nm	4.0 dB/km max	
		At 1300 nm	3.0 dB/km max	At 1300 nm	2.0 dB/km max	At 1310 nm	1.0 dB/km max
						At 1550 nm	0.85 dB/km max
NUMERICAL APERTURE		0.20 ± 0.015		0.275 ± 0.015		NA	
CUTOFF WAVELENGTH		NA		NA		< 1260 nm	
BANDWIDTH		At 850 nm	1500 MHz.Km min	At 850 nm	160 MHz.Km min	(*) At 1310 nm	8.8 ± 0.4 μm
(*) MODE FIELD DIAMETER		At 1300 nm	500 MHz.Km min	At 1300 nm	500 MHz.Km min	(*) At 1550 nm	9.8 ± 0.5 μm
OPERATING TEMPERATURE		-60°C to 135°C		-60°C to 135°C		-60°C to 135°C	

Space range



SPACE

SINGLE FIBER OPTIC CABLES MULTIMODE 50/125 1.8 mm SPACE RADIATION RESISTANT
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	SPACE & PF71368		
1 FIBER	CORE/CLADDING		
	PRIMARY BUFFER		
2 BUFFER	ETFE (Black)	0.90 ± 0.05 mm	
3 BRAIDED SHIELD	Aramid Strength Member	1.15 mm nom.	
4 OUTER JACKET	RADATOX® (white)	1.80 ± 0.1 mm	
	ATTENUATION		
		At 850 nm	5.0 dB/km max
		At 1300 nm	3.0 dB/km max
NUMERICAL APERTURE		0.20 ± 0.015	
BANDWIDTH		At 850 nm	1500 MHz.Km min
(*) MODE FIELD DIAMETER		At 1300 nm	500 MHz.Km min
OPERATING TEMPERATURE		-60°C to 135°C	

Radatox® is a new insulation system developed for low earth orbit (LEO) space applications which is highly resistant to atomic oxygen (ATOX).

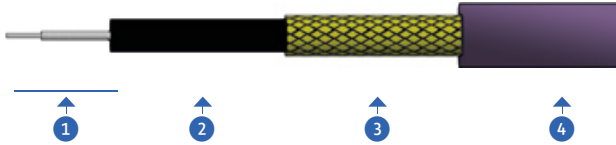
ATOX can be highly corrosive to most organic materials, and even some metals, and this, combined with the effects of radiation, UV and thermal cycling can have catastrophic consequences.

Axon's Radatox® material is up to 100 times more resistant to ATOX than other insulations commonly used in space, is low outgassing, and has a radiation tolerance of up to 200 MRad.

EXAMPLES

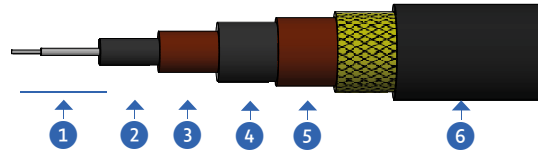
Custom designed cables

SINGLE FIBER OPTIC CABLES
50/125 1.8 mm
HIGH TEMPERATURE 200°C



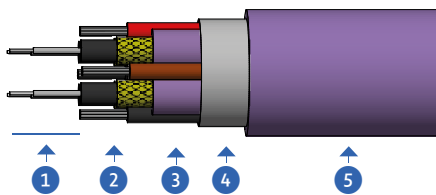
1 FIBER	CORE/CLADDING	Silica Graded Index Multimode 50/125	125 ± 2 µm
	PRIMARY BUFFER	High temperature Acrylate	245 ± 15 µm
2 BUFFER	ETFE (black)		0.90 ± 0.05 mm
3 BRAIDED SHIELD	Aramid Strength Member		1.15 mm nom.
4 OUTER JACKET	PEEK (purple)		1.80 ± 0.1 mm
NUMERICAL APERTURE	0.200 ± 0.015		
ATTENUATION	At 850 nm		5.0 dB/km
	At 1300 nm		3.0 dB/km
BANDWIDTH	At 850 nm		1500 MHz.Km min
	At 1300 nm		500 MHz.Km min
OPERATING TEMPERATURE	-60°C to 200 °C (continuous at -60 °C and 7 days at 200 °C)		

SINGLE FIBER OPTIC CABLES
SINGLE MODE 9/125
SHIELDED



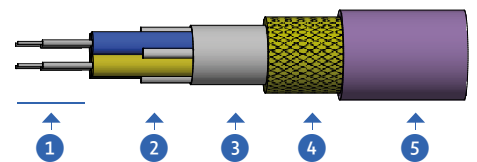
1 OPTICAL FIBER BUFFER	FIBER	9 / 125
	BUFFER	ETFE 0.9 mm
2 HELICOIDAL SHIELDING	COPPER	
3 INTERMEDIATE JACKET	FEP	
4 HELICOIDAL SHIELDING	COPPER	
5 BRAIDED SHIELD	Aramid Strength Member	
6 OUTER JACKET	FEP	
CUTOFF WAVELENGTH	< 1260 nm	
MODE FIELD DIAMETER	At 1310 nm	8.8 ± 0.4 µm
	At 1550 nm	9.8 ± 0.5 µm
ATTENUATION	At 1310 nm	1.0 dB/km
	At 1550 nm	0.85 dB/km
OPERATING TEMPERATURE	-60°C to 135°C	

HYBRID ELECTRICAL/ OPTICAL CABLES
4 OPTICAL WAYS 50/125
+ 4 ELECTRICAL WIRES



1 SINGLE FIBER OPTIC CABLE PF 73965	FIBER	CORE	Silica Graded Index Multimode 50/125
		PRIM. BUFFER	High temp. Acrylate
2 ELECTRICAL WIRE	COPPER		
	PTFE		
3 FILLER	PTFE		
4 SEPARATING TAPE	PTFE		
5 OUTER JACKET	ETFE (purple)		
NUMERICAL APERTURE	0.200 ± 0.015		
ATTENUATION	At 850 nm		5.0 dB/km
	At 1300 nm		3.0 dB/km
BANDWIDTH	At 850 nm		1500 MHz.Km min
	At 1300 nm		500 MHz.Km min
OPERATING TEMPERATURE	-60°C to 135°C		

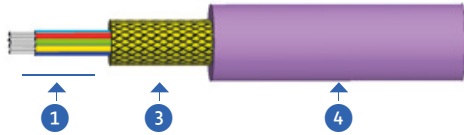
MULTIFIBER OPTIC CABLES
4 WAYS 50/125



1 OPTICAL FIBER BUFFER	FIBER	50 / 125
	BUFFER	ETFE 0.9 mm
2 FILLER	PTFE	
3 SEPARATING TAPE	PTFE	
4 BRAIDED SHIELD	Aramid Strength Member	
5 OUTER JACKET	ETFE or PUR	
NUMERICAL APERTURE	0.200 ± 0.015	
ATTENUATION	At 850 nm	5.0 dB/km
	At 1300 nm	3.0 dB/km
BANDWIDTH	At 850 nm	1500 MHz.Km min
	At 1300 nm	500 MHz.Km min
OPERATING TEMPERATURE	-60°C to 135°C	

High Density Fiber Optics

LOOSE TUBE CABLE FOR MT FERRULE 12 WAYS 50/125



1 FIBER 50 / 125 / 250

2 SEPARATING TAPE

3 BRAIDED SHIELD

4 OUTER JACKET

Aramid Strength Member

ETFE (light purple) 3.0 ± 0.1 mm

NUMERICAL APERTURE

0.200 ± 0.015

ATTENUATION

At 850 nm 5.0 dB/km

At 1300 nm 3.0 dB/km

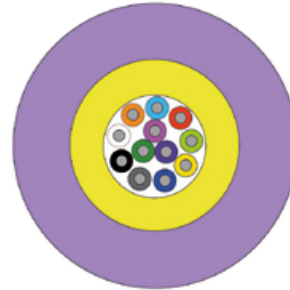
BANDWIDTH

At 850 nm 1500 MHz.Km min

At 1300 nm 500 MHz.Km min

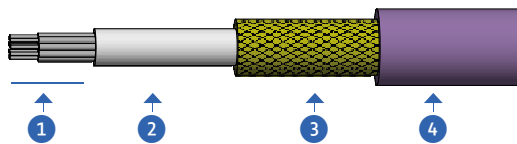
OPERATING TEMPERATURE

-60°C to 135°C



Axon' **loose tube** cable version is designed for termination to miniaturized MPO-MTP connector interfaces, thus providing a large number of optical terminations in an extremely small form factor. Axon' can offer MPO-based fiber optic cables and assemblies to suit a wide range of ground, mil/aero and space applications.

TIGHT MULTIFIBER OPTIC CABLES 12 WAYS 50/125



1 FIBER 50 / 125 / 250

2 SEPARATING TAPE

3 BRAIDED SHIELD

4 OUTER JACKET

PTFE

Aramid Strength Member

ETFE (purple)

Tight: 2.7 ± 0.1 mm

NUMERICAL APERTURE

0.200 ± 0.015

ATTENUATION

At 850 nm 5.0 dB/km

At 1300 nm 3.0 dB/km

BANDWIDTH

At 850 nm 1500 MHz.Km min

At 1300 nm 500 MHz.Km min

OPERATING TEMPERATURE

-60°C to 135°C

Axon' **tight multifiber optic cables** are compatible with SC, FC, LC, ST optical connectors.

INTERNATIONAL PRESENCE

SUBSIDIARIES

>> AUSTRALIA

AXON' CONNECT PTY LTD
MELBOURNE
TEL.: +61 417 284 674
e-mail: sales.australia@axon-cable.com

>> BRAZIL

AXON' CABLE INDUSTRIA E COMÉRCIO LTDA
RIO DE JANEIRO
TEL.: +55 21 3596-8002
e-mail: salesbrazil@axon-cable.com

>> CANADA

AXON' CÂBLAGE INC./AXON' WIRING INC.
MONTREAL, QUEBEC
TEL.: +1 514-898-2044
e-mail: sales@axoncable.com

>> CHINA

AXON' INTERCONNECT LTD
SHUNDE, GUANGDONG
TEL.: +86 757 2838.7200
e-mail: sales@axon-interconnect.com

>> GERMANY

AXON' KABEL GMBH
LEONBERG
TEL.: +49 7152-97992-0
e-mail: sales@axon-cable.de

>> HUNGARY

AXON' KÁBELGYÁRTÓ KFT.
KECSKEMÉT
TEL.: +36 76 508 195
e-mail: axon@axon-cable.hu

>> INDIA

AXON' INTERCONNECTORS & WIRES PVT LTD
BANGALORE
TEL.: +91 (0) 806 816 2966
e-mail: sales@axon-cable.in

DHRUV AXON' INTERCONNECT PRIVATE LTD

e-mail: sales@dhuv-cable.in

>> JAPAN

AXON' CABLE JAPAN OFFICE
NAGANO
TEL./FAX: +81 2 6217 6728
e-mail: axon-japan@axon-cable.com

>> LATVIA

AXON' CABLE SIA
DAUGAVPILS
TEL.: +371 6540 78 91
e-mail: axon@axoncable.lv

>> MEXICO

AXON' INTERCONEX, S.A. DE C.V.
QUERÉTARO
TEL.: +52 44 2215 2713
e-mail: axon-mexico@axoncable.com.mx

>> SINGAPORE

AXON' CONNECT PTE LTD
SINGAPORE
TEL.: +65 6250 3169
e-mail: sales.singapore@axon-cable.com

>> SPAIN

AXON' CABLE SPANISH OFFICE
MADRID
TEL.: +34 911.30.91.23
e-mail: axon-spain@axon-cable.com

>> UNITED KINGDOM

AXON' CABLE LTD
DUNFERMLINE
TEL.: +44 1383 421500
e-mail: sales@axon-cable.co.uk

>> USA

AXON' CABLE INC.
SCHAUMBURG
TEL.: +1 847 230-7800
e-mail: sales@axoncable.com



Axon' Cable is a global leader in the design and manufacture of high-performance interconnect solutions for a wide range of industries, including aerospace, defence, medical, and industrial markets. Since 1965, Axon' Cable has established itself as a trusted partner to its customers by providing innovative solutions that meet their most demanding requirements. From custom-designed cables and connectors to cable assemblies and harnesses, Axon' Cable's expertise and state-of-the-art manufacturing facilities enable it to deliver reliable, high-quality products that are optimized for performance and reliability. With a commitment to excellence and a focus on customer satisfaction, Axon' Cable is dedicated to driving innovation and advancing the state-of-the-art in interconnect technology.

HEADQUARTERS

>> FRANCE

>> **AXON' CABLE S.A.S.**
2 Route de Châlons en Champagne
51210 MONTMIRAIL
TEL.: +33 3 26 81 70 00
sales@axon-cable.com



www.axon-cable.com

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