

FLEXORAD[®]

FLEXIBLE RF CABLES FOR
RESEARCH &
NUCLEAR MARKETS





Flexorad®, flexible RF cables for research & nuclear markets

Axon' Cable is specialised in the design and manufacture of custom-designed wires, cables and cable assemblies for harsh environments. Our experts have developed a new range of 50Ω and 75Ω RF cables called Flexorad® which combine high flexibility, resistance to high temperatures and radiation with excellent electrical performances. Icing on the cake: the cable is halogen-free and flame retardant.



FL FLEXIBLE RF CABLES

CUTTING-EDGE PERFORMANCES

Flexorad®-RF cables combine all advantages:

- ↗ Good electrical performances
- ↗ New innovative material with low dielectric constant (ϵ 2.20)
- ↗ Resistance to temperatures from 4K up to 125°C and 150°C
- ↗ Can be used for cryogenic applications
- ↗ Flame retardant
- ↗ Halogen-free
- ↗ Highly flexible: much more than any alternative existing on the market. Tests according to EN3475-704 and EN3475-512.
- ↗ Radiation resistant ≥ 3500 kGy
- ↗ Cost-effective solution
- ↗ Can be delivered as a cable or terminated with standard coaxial connectors including SMA, BNC, TNC, N.
- ↗ Can be used for dynamic applications

FLEXORAD®-RF VERSUS EXISTING SOLUTIONS: AXON' IS ON THE LEAD!

Dielectric system	T°C range	Dielectric performance	Flexibility	Radiation resistance	Halogen Free	Fire retardant
Fluoropolymers	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	●	NO	YES
Polyolefins	● ●	● ● ● ● ●	● ●	● ●	YES	NO
Polyimides	● ● ● ● ●	● ●	●	● ● ● ● ●	YES	YES
Axon' Flexorad®	● ● ●	● ● ● ● ●	● ● ● ● ●	● ● ● ● ●	YES	YES

WHERE TO USE FLEXORAD®-RF CABLES?

- ↗ Where standard PE insulated solutions (RG and others) work but fire retardant properties are requested.
* **Examples:** facilities receiving public, underground facilities, confined environments.
- ↗ Where standard PE insulated solutions (RG and others) work but have short lifetime because of radiation.
- ↗ Where PEEK/polyimide insulated cables work but flexibility is requested.
* **Examples:** nuclear facilities, scientific facilities, medical isotopes production facilities, nuclear imaging facilities.

EXORAD®

FOR RESEARCH & NUCLEAR MARKETS

CONSTRUCTION

125°C - Single screen



Cable reference	Conductor			Dielectric		Screen	Outer sheath		Approx. weight (g/m)	Flexibility acc. EN3475-704 (N)	Zc Nom. (Ohms)	Max capacitance (pF/m)	Max attenuation @400 MHz (dB/m)	Related RG
	Material	Construction	Nom. Ø (mm)	Material	Nom Ø (mm)	Material	Material	Nom Ø (mm)						
RF125-49MX50ST	SPC	7 X 0.32	0.96	Flexorad® RF125	3.20	SPC	Poliax®	4.85	35	2	50	115	0.65	M17/183-00001 (Att @ 400M : 0.557 max)
RF125-97MX75ST	SPC	7 X 0.404	1.21	Flexorad® RF125	7.45	SPC	Poliax®	9.70	115	6.8	75	75	0.40	M17/191-00001 (Att @ 400M : 0.213 max)
RF125-101MX50ST	SPC	19 X 0.455	2.27	Flexorad® RF125	7.75	SPC	Poliax®	10.10	149.5	Not tested	50	115	0.75*	M17/190-00001 (Att @ 400M : 0.223 max)

Tests according to EN 3475-512 - Minimum bending radius @ 20°C. Single Ext Ø x 5 - Repeated Ext Ø x 10.

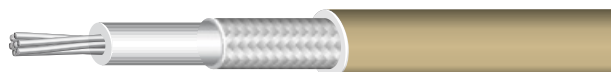
125°C - Double screen



Cable reference	Conductor			Dielectric		Screen 1	Screen 2	Outer sheath		Approx. weight (g/m)	Flexibility acc. EN3475-704 (N)	Zc Nom. (Ohms)	Max capacitance (pF/m)	Max attenuation @400 MHz (dB/m)	Related RG
	Material	Construction	Nom. Ø (mm)	Material	Nom Ø (mm)	Material	Material	Material	Nom Ø (mm)						
RF125-53MX50DT	SPC	7 X 0.32	0.96	Flexorad® RF125	3.20	SPC	SPC	Poliax®	5.30	47.50	Not tested	50	115	0.65	M17/128 (RG400DT) (Att @ 400M : 0.557 max)
RF125-103MX75DT	SPC	7 X 0.404	1.21	Flexorad® RF125	7.45	SPC	SPC	Poliax®	10.35	150	Not tested	75	75	0.40	M17/77 (RG216) (Att @ 400M : 0.213 max)
RF125-109MX50DT	SPC	19 X 0.455	2.27	Flexorad® RF125	7.75	SPC	SPC	Poliax®	10.90	197.50	Not tested	50	115	0.75*	M17/164-00001 (Att @ 400M : 0.259 max)

Tests according to EN 3475-512 - Minimum bending radius @ 20°C. Single Ext Ø x 5 - Repeated Ext Ø x 10.

150°C - Single screen



Cable reference	Conductor			Dielectric		Screen	Outer sheath		Approx. weight (g/m)	Flexibility acc. EN3475-704 (N)	Zc Nom. (Ohms)	Max capacitance (pF/m)	Max attenuation @400 MHz (dB/m)	Related RG
	Material	Construction	Nom. Ø (mm)	Material	Nom Ø (mm)	Material	Material	Nom Ø (mm)						
RF150-49MXB50ST	SPC	7 X 0.32	0.96	Flexorad® RF150	3.20	SPC	Poliax® HT	4.85	35	47	50	115	0.65	M17/183-00001 (Att @ 400M : 0.557 max)
RF150-97MXB75ST	SPC	7 X 0.404	1.21	Flexorad® RF150	7.45	SPC	Poliax® HT	9.70	115	Not tested	75	75	0.40	M17/191-00001 (Att @ 400M : 0.213 max)
RF150-101MXB50ST	SPC	19 X 0.455	2.27	Flexorad® RF150	7.75	SPC	Poliax® HT	10.10	149.5	Not tested	50	115	0.75*	M17/190-00001 (Att @ 400M : 0.223 max)

Tests according to EN 3475-512 - Minimum bending radius @ 20°C. Single Ext Ø x 5 - Repeated Ext Ø x 10.

150°C - Double screen



Cable reference	Conductor			Dielectric		Screen 1	Screen 2	Outer sheath		Approx. weight (g/m)	Flexibility acc. EN3475-704 (N)	Zc Nom. (Ohms)	Max capacitance (pF/m)	Max attenuation @400 MHz (dB/m)	Related RG
	Material	Construction	Nom. Ø (mm)	Material	Nom Ø (mm)	Material	Material	Material	Nom Ø (mm)						
RF150-53MXB50DT	SPC	7 X 0.32	0.96	Flexorad® RF150	3.20	SPC	SPC	Poliax® HT	5.30	47.50	Not tested	50	115	0.65	M17/128 (RG400DT) (Att @ 400M : 0.557 max)
RF150-103MXB75DT	SPC	7 X 0.404	1.21	Flexorad® RF150	7.45	SPC	SPC	Poliax® HT	10.35	150	Not tested	75	75	0.40	M17/77 (RG216) (Att @ 400M : 0.213 max)
RF150-109MXB50DT	SPC	19 X 0.455	2.27	Flexorad® RF150	7.75	SPC	SPC	Poliax® HT	10.90	197.50	Not tested	50	115	0.75*	M17/164-00001 (Att @ 400M : 0.259 max)

Tests according to EN 3475-512 - Minimum bending radius @ 20°C. Single Ext Ø x 5 - Repeated Ext Ø x 10.

* Theoretical values

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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.

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