

- RADIAFLEX® functions as a distributed antenna to provide communications in tunnels, mines and large building complexes and is the solution for any application in confined areas.
- Slots in the copper outer conductor allow a controlled portion of the internal RF energy to be radiated into the surrounding environment. Conversely, a signal transmitted near the cable will couple into the slots and be carried along the cable length.
- RADIAFLEX® is used for both one-way and two-way communication systems and because of its broadband capability, a single radiating cable can handle multiple communication systems simultaneously.
- This RADIAFLEX® radiating cable utilize a low-loss cellular polyethylene foam dielectric and a smooth copper outer conductor which offers a superior electrical performance together with good bending properties.

FEATURES / BENEFITS

- Broadband from 30 MHz to 1000 MHz
- Optimized for high frequencies and digital transmission
- Low coupling loss variation
- For tunnel applications



picture shows generic slot pattern

Technical features

GENERAL SPECIFICATIONS					
Size		1-1/4			
ELECTRICAL SPECIFICATIONS					
Max. Operating Frequency	MHz	1000			
Cable Type		RAY			
Impedance	Ohm	50 +/- 2			
Velocity, percent	%	89			
Capacitance	pF/m (pF/ft)	75 (22.9)			
Inductance, uH/m (uH/ft)	μH/m (μH/ft)	0.188 (0.057)			
DC-resistance inner conductor, ohm/km (ohm/1000ft)	Ω/km (Ω/1000ft)	0.84 (0.26)			
DC-resistance outer conductor, ohm/km (ohm/1000ft)	Ω/km (Ω/1000ft)	1.85 (0.56)			
Stop bands	MHz	240-300, 500-590, 750-860			
Frequency Selection	MHz	600, 900			

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MECHANICAL SPECIFICATIONS					
Jacket		JFL, EN50575:2017 classified cable			
Jacket Description		Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin + flame batape above outer conductor for lowest cable loss			
Slot Design		Groups of slope slots at short intervals			
Inner Conductor Material		Corrugated Copper Tube			
Outer Conductor Material		Overlapping Copper Strip			
Diameter Inner Conductor	mm (in)	13.9 (0.55)			
Diameter Outer Conductor	mm (in)	34 (1.34)			
Diameter over Jacket Nominal	mm (in)	38.1 (1.5)			
Minimum Bending Radius, Single Bend	mm (in)	500 (20)			
Cable Weight	kg/m (lb/ft)	0.87 (0.58)			
Tensile Force	N (lb)	2000 (440)			
Indication of Slot Alignment		Guides opposite to slots			
Recommended / Maximum Clamp Spacing	m (ft)	1.3 (4.25)			
Minimum Distance to Wall	mm (in)	80 (3.15)			

TESTING AND ENVIRONMENTAL

	Test methods for fire behaviour of cable : IEC 60754-1/-2 smoke emission: halogen free, non corrosive	
	IEC 61034 low smoke	
Jacket Testing Methods	IEC 60332-1 flame retardant	
	IEC 60332-3-24 fire retardant	
	UL1666, ASTM E 662, NES711 and NES713	
	EN50575:2017 class Dca s1b d2 a1	

TEMPERATURE SPECIFICATIONS

Storage Temperature	°C(°F)	-70 to 85 (-94 to 185)
Installation Temperature	°C(°F)	-25 to 60 (-13 to 140)
Operation Temperature	°C(°F)	-40 to 85 (-40 to 185)

ATTENUATION AND POWER RATING

Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
75	0,68 (0,21)	58 (62)	68 (72)
150	0,97 (0,30)	66 (70)	76 (80)
450	1,84 (0,56)	64 (66)	68 (70)
870	3,62 (1,10)	56 (58)	65 (67)
900	3,74 (1,14)	56 (58)	65 (67)
960	4,27 (1,30)	56 (58)	63 (65)



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External Document Links

Web URL to CPR ressources with DoP and CE-label download folders

Notes

• Coupling loss as well as longitudinal attenuation of RADIAFLEX®

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cables are measured by the free space method according to IEC 61196-4.

- Coupling loss values are measured with a radial (below 300 MHz) or orthogonal (above 300 MHz) orientated dipole antenna.
- The coupling loss values given in brackets are average values of all three spatial orientations (radial, parallel and orthogonal) of dipole antenna
- Coupling loss values are given with a tolerance of +5 dB and longitudinal loss values with a tolerance of +5%. Note: Measured values below nominal are better. They are not limited by any tolerance-range.
- In case of a conflict of operational and stop band, please contact RFS for further assistance.
- As with any radiating cable, the performance in building or tunnel environments may deviate from figures based on free space method.

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