

## 1/2" RADIAFLEX® RCF Cable

## Product Description

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 corrugated copper outer conductor which offers a combination of remarkable flexibility, high strength and excellent electrical performance.

## Features/Benefits

- Broadband from 30 MHz to 6000 MHz
- Physical properties similar to the CELLFLEX® cable family of type LCF
- Robust cable
- Low bending radii
- Main applications: in-building, vehicles, mines
- Meets MSHA requirements for US mining applications

## Technical Specifications

Size:	[ in ]	1/2"
Max. operating frequency:	[MHz]	6000
Cable Type:		RCF
Jacket	JFN	
Jacket Description	Halogen free, non corrosive, flame retardant, low smoke, polyolefin Test methods for fire behaviour of cable : IEC 60754-1/-2 smoke emission: halogen free, non corrosive IEC 61034 low smoke IEC 60332-1 flame retardant	
Slot Design	Milled (Two-Row)	
Impedance	[Ω]	50 +/-2
Relative propagation velocity	[%]	88
Capacitance	[pF/m (pF/ft)]	76 (23.2)
Inductance	[μH/m (μH/ft)]	0.190 (0.058)
DC-resistance inner conductor	[Ω/km (Ω/1000ft)]	1.57 (0.48)
DC-resistance outer conductor	[Ω/km (Ω/1000ft)]	2.23 (0.68)
Outer Conductor Material	Corrugated Copper Tube	
Inner Conductor Material	Copper Clad Aluminum Wire	
Diameter over Jacket	[mm (in)]	16.2 (0.64)
Diameter Outer Conductor	[mm (in)]	13.8 (0.54)
Diameter Inner Conductor	[mm (in)]	4.8 (0.19)
Minimum Bending Radius, Single Bend	[mm (in)]	125 (4.9)
Cable Weight	[kg/m (lb/ft)]	0.25 (0.17)
Max. tensile force	[N (lb)]	1000 (225)
Indication of Slot Alignment	None	
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)
Stop bands	[MHz]	None
Recommended / maximum clamp spacing	[m (ft)]	0.6 (2.0)
Minimum Distance to Wall	[mm (in)]	50 (2)
Length	[m (ft)]	

## Notes

- Coupling loss as well as longitudinal attenuation of RADIAFLEX® cables are measured by the free space method according to IEC 61196-4.
- Coupling loss values are average values of all three spatial orientations (radial, parallel and orthogonal) of dipole antenna.
- Coupling loss values are given with a tolerance of ±10 dB and longitudinal loss values with a tolerance of ±5%.
- As with any radiating cable, the performance in building or tunnel environments may deviate from figures based on free space method.

## Rev.

2012/10/09



RCF cable

PERFORMANCE			
Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
75	2.20 (0.67)	50	62
150	3.15 (0.96)	59	71
450	5.70 (1.74)	67	79
800	7.83 (2.39)	67	79
870	8.25 (2.51)	66	79
900	8.40 (2.56)	66	78
960	8.65 (2.64)	66	78
1800	13.1 (3.99)	68	80
1900	13.6 (4.15)	69	81
2000	14.0 (4.27)	72	84
2200	14.7 (4.48)	70	82
2400	15.3 (4.66)	70	82
2600	15.9 (4.85)	70	82
5000	24.8 (7.56)	75	87
5200	25.7 (7.83)	75	87
5800	27.6 (8.41)	75	87
6000	29.9 (8.81)	75	87

Standard conditions