PRODUCT DATASHEET

RCF78-50JFNAL

7/8" RCF RADIAFLEX Cable, Halogen Free, Flame/Fire Retardant, Low Smoke, Aluminum Outer Conductor

- 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 aluminum 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 or aluminum outer conductor which offers a combination of remarkable flexibility, high strength and excellent electrical performance.

FEATURES / BENEFITS

- Broadband radiating cable supporting all wireless application between 30 MHz to 3800 MHz
- Ideally suited for application that require low bending radius
- Robust radiating cable operational under all enviromental conditions as e.g. harsh tunnels or mines

Technical features

GENERAL SPECIFICATIONS

Size		7/8

ELECTRICAL SPECIFICATIONS

Max. Operating Frequency	MHz	3800
Cable Type		RCF
Impedance	Ohm	50 +/- 2
Velocity, percent	%	88
Capacitance	pF/m (pF/ft)	75 (22.9)
DC-resistance inner conductor, ohm/km (ohm/1000ft)	Ω/km (Ω/1000ft)	2.3 (0.7)
DC-resistance outer conductor, ohm/km (ohm/1000ft)	Ω/km (Ω/1000ft)	1.9 (0.58)
Stop bands	MHz	None
Frequency Selection	MHz	600, 900, 1800/1900, 2200, 2400, 2500, 2700

All values nominal unless tolerances provided; information contained in the present datasheet is subject to confirmation at time of ordering

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MECHANICAL SPECIFICATIONS

Jacket		Flame Retardant
Jacket Color		Standard Black, other colors on request
Jacket Description		Halogen free, non corrosive, flame retardant, low smoke
Slot Design		Milled (Two-Row)
Inner Conductor Material		Copper Tube
Outer Conductor Material		Annularly Corrugated Aluminum
Diameter Inner Conductor	mm (in)	9.4 (0.37)
Diameter Outer Conductor	mm (in)	25.2 (0.99)
Diameter over Jacket Nominal	mm (in)	28 (1.1)
Minimum Bending Radius, Single Bend	mm (in)	250 (10)
Cable Weight	kg/m (lb/ft)	0.42 (0.29)
Tensile Force	N (lb)	1400 (315)
Recommended / Maximum Clamp Spacing	m (ft)	0.9 (3)
Minimum Distance to Wall	mm (in)	50 (2)

TESTING AND ENVIRONMENTAL

Jacket Testing Methods		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

TEMPERATURE SPECIFICATIONS

Storage Temperature	°C(°F)	-10 to 50 (14 to 122)
Installation Temperature	°C(°F)	-25 to 60 (-13 to 140)
Operation Temperature	°C(°F)	-40 to 85 (-40 to 185)

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ATTENUATION

Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
75	1.23 (0.37)	60	69.8
150	1.85 (0.56)	71.3	80.5
450	3.52 (1.07)	60.2	69.9
800	4.87 (1.48)	76.7	88.3
870	5.09 (1.55)	73.2	84.6
900	4.71 (1.44)	72.7	83.9
960	5.38 (1.64)	72.1	83.2
1800	7.79 (2.37)	77.1	88.8
1900	8.04 (2.45)	74.2	86.1
2000	78.31 (2.53)	72.7	84.8
2200	8.85 (2.7)	70.5	83.3
2400	9.44 (2.88)	70.3	83
2600	10.03 (3.06)	69.8	81.9
2700	10.28 (3.13)	69	80.8
3200	11.84 (3.61)	64	78.8
3300	12.57 (3.83)	65.5	79.2
3400	12.51 (3.81)	67.6	81.1
3500	11.62 (3.54)	67.6	80.5
3600	12.07 (3.68)	66.1	79.8
3700	12.21 (3.72)	66.4	79.7
3800	12.15 (3.7)	66.7	79.8

External Document Links

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%. Note: Measured values below nominal are better. They are not limited by any tolerance-range.
- 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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