Product Data Sheet **RLK158-50JFLA**

1-5/8" RADIAFLEX® RLK Cable, A-series

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 smooth copper outer conductor which offers a superior electrical performance together with good bending properties.

RLK cable, A-series

Features/Benefits

- **Broadband from 30 MHz to 980 MHz**
- **For applications in tunnels and buildings**
- **Low coupling loss variations**

Technical Specifications

Size:	[in]	1-5/8"
Max. operating frequency:	[MHz]	980
Cable Type:		RLK
Jacket	JFL	
Jacket Description	Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin + flame barrier tape above outer conductor for lowest cable loss 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 IEC 60332-3-24 fire retardant UL1666, ASTM E 662, NES711, NES713 and NFPA130 (ed. 2014) Ch.12 (NFPA70) via UL-1685/FT4/IEEE1202	
Slot Design		Groups of vertical slots at short intervals
Impedance	[Ω]	50 +/-2
Relative propagation velocity	[%]	89
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)]	1.62 (0.49)
DC-resistance outer conductor	[Ω/km (Ω/1000ft)]	1.47 (0.45)
Outer Conductor Material		Overlapping Copper Foil
Inner Conductor Material		Corrugated Copper Tube
Diameter over Jacket	[mm (in)]	48.2 (1.90)
Diameter Outer Conductor	[mm (in)]	44.2 (1.74)
Diameter Inner Conductor	[mm (in)]	17.6 (0.69)
Minimum Bending Radius, Single Bend	[mm (in)]	700 (28.0)
Cable Weight	[kg/m (lb/ft)]	1.01 (0.68)
Max. tensile force	[N (lb)]	1200 (270)
Indication of Slot Alignment		Guides opposite to slots
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]	300-375, 660-750
Recommended / maximum clamp spacing	[m (ft)]	1.5 (5)
Minimum Distance to Wall	[mm (in)]	80 (3.15)
Length	[m (ft)]	

PERFORMANCE			
Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
35	0,43 (0,13)	47 (50)	57 (60)
75	0,62 (0,19)	51 (55)	60 (64)
150	0,91 (0,28)	56 (60)	68 (72)
400	1,77 (0,54)	55 (57)	58 (60)
450	1,86 (0,57)	55 (57)	58 (60)
470	1,91 (0,58)	55 (57)	58 (60)
480	1,94 (0,59)	55 (57)	58 (60)
800	3,06 (0,93)	54 (58)	58 (62)
870	3,34 (1,02)	54 (58)	58 (62)
900	3,46 (1,06)	54 (58)	58 (62)
960	3,73 (1,14)	54 (58)	58 (62)

Standard conditions

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 measured with a radial (below 330 MHz) or parallel (above 330 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 +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.**
- **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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