



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.

Features/Benefits

- **TETRA optimized cable**
- **Wideband from 30 MHz to 520 MHz**
- **For applications in tunnels and buildings**
- **Low coupling loss variations**

Technical Specifications

Size:	[in]	1-5/8"
Max. operating frequency:	[MHz]	520
Cable Type:		RLK
Jacket	JFN	
Jacket Description	Halogen free, non corrosive, flame and fire 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 IEC 60332-3-24 fire retardant UL1666, ASTM E 662, NES711 and NES713	
Slot Design	Groups of vertical slots at short intervals	
Impedance	[Ω]	50 +/-2
Relative propagation velocity	[%]	91
Capacitance	[pF/m (pF/ft)]	76 (23.2)
Inductance	[μH/m (μH/ft)]	
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]	41-43, 82-86, 206-214, 289-301
Recommended / maximum clamp spacing	[m (ft)]	1.5 (5)
Minimum Distance to Wall	[mm (in)]	80 (3.15)
Length	[m (ft)]	



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PERFORMANCE			
Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
IN TYP. TUNNEL			
75	0.91 (0.28)	52 (54)	61 (64)
150	1.15 (0.35)	53 (56)	57 (62)
225	1.38 (0.42)	58 (59)	64 (66)
380	1.76 (0.54)	50 (54)	54 (58)
400	1.82 (0.55)	50 (54)	54 (58)
420	1.88 (0.57)	51 (54)	54 (57)
450	1.99 (0.60)	50 (54)	53 (56)
470	2.04 (0.62)	50 (54)	53 (56)
500	2.16 (0.66)	50 (54)	52 (56)
IN FREE SPACE			
75	0.65 (0.20)	51 (54)	61 (64)
150	0.86 (0.26)	55 (57)	61 (64)
225	1.13 (0.34)	59 (61)	62 (65)
380	1.53 (0.47)	54 (58)	57 (61)
400	1.59 (0.48)	53 (57)	56 (60)
420	1.65 (0.50)	52 (56)	54 (58)
450	1.76 (0.54)	52 (55)	53 (57)
470	1.83 (0.56)	50 (55)	52 (56)
500	1.93 (0.59)	50 (54)	52 (56)

Standard conditions

Notes

- **Coupling loss and longitudinal attenuation of RADIAFLEX® cables are measured according to IEC 61196-4. The cable tests are performed under tunnel conditions (ground level method) and free space method (cable in 2 m height).**
- **Coupling loss values are measured with dipole antenna.**
- **The coupling loss values given in brackets are average values of all three spatial orientations (radial, parallel and orthogonal). The best values among the three spatial orientations are stated as well.**
- **Coupling loss values are given with a manufacturing tolerance of +3dB (typ.) and longitudinal loss values with a manufacturing tolerance of +5% (typ.). Values are stated for a typical in-tunnel application as well as for the IEC norm free-space environment. Note: Measured values below nominal are better. They are not limited by any tolerance-rang.**
- **In case of a conflict of operational and stop band, please contact RFS for further assistance.**
- **As with any radiating cable, the performance in actual building or tunnel environments may deviate from figures based on ground level method in tunnel or from the free space method.**

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All information contained in the present datasheet is subject to confirmation at time of ordering