

**RLKL114-50CPRD**

1-1/4" RADIAFLEX® RLKL Cable, A-series



- 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 Features**STRUCTURE**

Cable Type	RLKL
Size	1-1/4
Inner Conductor Material	Corrugated Copper Tube
Outer Conductor Material	Overlapping Copper Foil
Jacket	CPR, EN50575:2014 + A1:2016 classified cable
Jacket Description	Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin + flame barrier tape above outer conductor for lowest cable loss
Slot Design	Groups of vertical slots at short intervals
Indication of Slot Alignment	Guides opposite to slots

MECHANICAL SPECIFICATION

Diameter Inner Conductor	13.9mm (0.55in)
Diameter Outer Conductor	34mm (1.34in)
Minimum Bending Radius	325mm (13in)
Cable Weight	0.87kg/m (0.58lb/ft)
Tensile Force	2,000N (440lb)
Recommended / Maximum Clamp Spacing	1.3m (4.25ft)
Minimum Distance to Wall	80mm (3.15in)

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ELECTRICAL SPECIFICATION

Impedance	50 +/- 2 Ω
Max. Operating Frequency	520 MHz
Velocity	91 %
Capacitance	73pF/m (22.25pF/ft)
DC-resistance inner conductor	2.4 Ω /km (0.74 Ω /kft)
DC-resistance outer conductor	1.95 Ω /km (0.59 Ω /kft)
Stop bands	34-37, 41-44, 82-86
Frequency Selection	520

TESTING AND ENVIRONMENTAL

Operation Temperature	-40 - 85 °C (-40 - 185°F)
Installation Temperature	-25 - 60 °C (-13 - 140°F)
Storage Temperature	-70 - 85 °C (-94 - 185°F)
Compliance	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 CPR: EN50575:2014 + A1:2016 classified cable, class B2ca s1b do a1

ATTENUATION AND COUPLING LOSS

Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
75	0.79 (0.24)	49 (52)	60 (62)
150	1.12 (0.34)	57 (59)	60 (65)
225	1.37 (0.42)	57 (59)	61 (65)
380	1.95 (0.60)	54 (57)	58 (62)
400	2.00 (0.61)	53 (56)	56 (60)
420	2.12 (0.65)	53 (56)	55 (59)
450	2.18 (0.67)	52 (56)	54 (58)
470	2.30 (0.70)	52 (56)	54 (58)
500	2.41 (0.74)	51 (55)	53 (57)

@ 20°C (68°F)

NOTES

- Coupling loss and longitudinal attenuation of RADIAFLEX® cables are measured according to IEC 61196-4. The cable tests are performed under 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.).
- In case of a conflict of operational and stop band, please contact RFS for further assistance.



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- As with any radiating cable, the performance in actual building or tunnel environments may deviate from figures based on the free space method.

Related Documents



Construction Products Regulation (CPR) classification and product related information available on RFS webpage.
Other Documents