



**RLK78-50CPR**

7/8" RADIAFLEX® RLK 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**

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

**Technical Features**

**STRUCTURE**

Cable Type	RLK
Size	7/8
Inner Conductor Material	Copper Tube
Outer Conductor Material	Overlapping Copper Strip
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	Bulge atop slots

**MECHANICAL SPECIFICATION**

Diameter Inner Conductor	9.3mm (0.37in)
Diameter Outer Conductor	23.8mm (0.94in)
Minimum Bending Radius	350mm (13.8in)
Cable Weight	0.55kg/m (0.37lb/ft)
Tensile Force	2,300N (507lb)
Recommended / Maximum Clamp Spacing	0.9m (3ft)
Minimum Distance to Wall	80mm (3.15in)



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**ELECTRICAL SPECIFICATION**

Impedance	50 +/- 2 Ω	
Max. Operating Frequency	980 MHz	
Velocity	89 %	
Capacitance	75pF/m (22.9pF/ft)	
Inductance	0.188μH/m (0.057μH/ft)	
DC-resistance inner conductor	1.74Ω/km (0.53Ω/kft)	
DC-resistance outer conductor	2.52Ω/km (0.77Ω/kft)	
Stop bands	300-375, 650-685	
Frequency Selection	600	900

**TESTING AND ENVIRONMENTAL**

Operation Temperature	-40 - 85 °C (-40 - 185°F)
Installation Temperature	-15 - 60 °C (5 - 140°F)
Storage Temperature	-70 - 85 °C (-94 - 185°F)
Compliance	<p>Test methods for fire behaviour of cable :</p> <p>IEC 60754-1/-2 smoke emission: halogen free, non corrosive</p> <p>IEC 61034 low smoke</p> <p>IEC 60332-1 flame retardant</p> <p>IEC 60332-3-24 fire retardant</p> <p>UL1666, ASTM E 662, NES711 and NES713</p> <p>CPR: EN50575:2014 + A1:2016 classified cable, class B2ca s1a do a1</p>

**ATTENUATION AND COUPLING LOSS**

Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
75	1,08 (0,33)	46 (50)	58 (60)
150	1,56 (0,48)	54 (58)	66 (69)
225	1,95 (0,59)	62 (66)	71 (74)
380	2,69 (0,81)	53 (55)	57 (59)
400	2,70 (0,82)	53 (55)	57 (59)
450	2,90 (0,88)	52 (55)	56 (59)
470	2,97 (0,91)	52 (55)	56 (59)
500	3,10 (0,94)	52 (55)	56 (59)
700	3,9 (1,19)	56 (59)	59 (63)
800	4,35 (1,33)	55 (58)	59 (62)
870	4,90 (1,49)	56 (59)	61 (64)
900	5,05 (1,54)	57 (60)	62 (65)
960	5,19 (1,58)	57 (60)	62 (65)

@ 20°C (68°F)

**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.




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- 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.

### Related Documents

 [Construction Products Regulation \(CPR\) classification and product related information available on RFS webpage.](#)

Other Documents