



- 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 1000 MHz
- Optimized for high frequencies and digital transmission
- Low coupling loss variation
- For tunnel applications



RAY78

**Technical features**

**GENERAL SPECIFICATIONS**

<b>Size</b>		7/8
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**ELECTRICAL SPECIFICATIONS**

<b>Max. Operating Frequency</b>	MHz	1000
<b>Cable Type</b>		RAY
<b>Impedance</b>	Ohm	50 +/- 2
<b>Velocity, percent</b>	%	89
<b>Capacitance</b>	pF/m (pF/ft)	75 (22.9)
<b>Inductance, uH/m (uH/ft)</b>	µH/m (µH/ft)	0.188 (0.057)
<b>DC-resistance inner conductor, ohm/km (ohm/1000ft)</b>	Ω/km (Ω/1000ft)	1.74 (0.53)
<b>DC-resistance outer conductor, ohm/km (ohm/1000ft)</b>	Ω/km (Ω/1000ft)	2.52 (0.77)
<b>Stop bands</b>	MHz	240-300, 500-590, 750-860
<b>Frequency Selection</b>	MHz	600, 900



**MECHANICAL SPECIFICATIONS**

<b>Jacket</b>		JFL
<b>Jacket Description</b>		Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin + flame barrier tape above outer conductor for lowest cable loss
<b>Slot Design</b>		Groups of slope slots at short intervals
<b>Inner Conductor Material</b>		Copper Tube
<b>Outer Conductor Material</b>		Overlapping Copper Strip
<b>Diameter Inner Conductor</b>	mm (in)	9.3 (0.37)
<b>Diameter Outer Conductor</b>	mm (in)	23.8 (0.94)
<b>Diameter over Jacket Nominal</b>	mm (in)	28.5 (1.12)
<b>Minimum Bending Radius, Single Bend</b>	mm (in)	350 (13.8)
<b>Cable Weight</b>	kg/m (lb/ft)	0.55 (0.37)
<b>Tensile Force</b>	N (lb)	2300 (507)
<b>Indication of Slot Alignment</b>		Bulge atop slots
<b>Recommended / Maximum Clamp Spacing</b>	m (ft)	0.9 (3)
<b>Minimum Distance to Wall</b>	mm (in)	80 (3.15)

**TESTING AND ENVIRONMENTAL**

<b>Jacket Testing Methods</b>		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
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**TEMPERATURE SPECIFICATIONS**

<b>Storage Temperature</b>	°C(°F)	-70 to 85 (-94 to 185 )
<b>Installation Temperature</b>	°C(°F)	-25 to 60 (-13 to 140 )
<b>Operation Temperature</b>	°C(°F)	-40 to 85 (-40 to 185 )

**ATTENUATION AND POWER RATING**

Frequency, MHz	Longitudinal Loss, dB/100 m (dB/100 ft)	Coupling Loss 50%, dB	Coupling Loss 95%, dB
75	1,04 (0,32)	53 (57)	62 (66)
150	1,48 (0,45)	58 (62)	69 (73)
450	2,67 (0,81)	60 (62)	67 (69)
870	5,41 (1,65)	54 (56)	63 (65)
900	5,70 (1,74)	54 (56)	61 (63)
960	6,46 (1,97)	54 (56)	60 (62)



#### 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 measured with a radial (below 300 MHz) or orthogonal (above 300 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 +5 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 Technologies 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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