



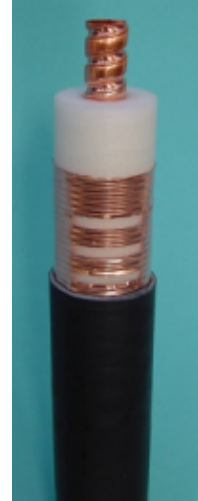
# RAY114-50JFLA

## 1-1/4" RADIAFLEX® RAY 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 1000 MHz
- Optimized for high frequencies and digital transmission
- Low coupling loss variation
- For tunnel applications



picture shows generic slot pattern

## Technical features

### GENERAL SPECIFICATIONS

Size		1-1/4
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### ELECTRICAL SPECIFICATIONS

Max. Operating Frequency	MHz	1000
Cable Type		RAY
Impedance	Ohm	50 +/- 2
Velocity, percent	%	89
Capacitance	pF/m (pF/ft)	75 (22.9)
Inductance, uH/m (uH/ft)	µH/m (µH/ft)	0.188 (0.057)
DC-resistance inner conductor, ohm/km (ohm/1000ft)	Ω/km (Ω/1000ft)	0.84 (0.26)
DC-resistance outer conductor, ohm/km (ohm/1000ft)	Ω/km (Ω/1000ft)	1.85 (0.56)
Stop bands	MHz	240-300, 500-590, 750-860
Frequency Selection	MHz	600, 900



**MECHANICAL SPECIFICATIONS**

<b>Jacket</b>		JFL, EN50575:2017 classified cable
<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>		Corrugated Copper Tube
<b>Outer Conductor Material</b>		Overlapping Copper Strip
<b>Diameter Inner Conductor</b>	mm (in)	13.9 (0.55)
<b>Diameter Outer Conductor</b>	mm (in)	34 (1.34)
<b>Diameter over Jacket Nominal</b>	mm (in)	38.1 (1.5)
<b>Minimum Bending Radius, Single Bend</b>	mm (in)	500 (20)
<b>Cable Weight</b>	kg/m (lb/ft)	0.87 (0.58)
<b>Tensile Force</b>	N (lb)	2000 (440)
<b>Indication of Slot Alignment</b>		Guides opposite to slots
<b>Recommended / Maximum Clamp Spacing</b>	m (ft)	1.3 (4.25)
<b>Minimum Distance to Wall</b>	mm (in)	80 (3.15)

**TESTING AND ENVIRONMENTAL**

<b>Jacket Testing Methods</b>		<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>EN50575:2017 class Dca s1b d2 a1</p>
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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	0,68 (0,21)	58 (62)	68 (72)
150	0,97 (0,30)	66 (70)	76 (80)
450	1,84 (0,56)	64 (66)	68 (70)
870	3,62 (1,10)	56 (58)	65 (67)
900	3,74 (1,14)	56 (58)	65 (67)
960	4,27 (1,30)	56 (58)	63 (65)



#### External Document Links

[Web URL to CPR resources with DoP and CE-label download folders](#)

#### 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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