# 7/8" RADIAFLEX® RLKW 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.

RLK cable, A-series

## Features/Benefits

- **Wideband from 30 MHz to 1950 MHz**
- **For applications in tunnels and buildings**
- **Low coupling loss variations**

## Technical Specifications

| | | |
|---|---|---|
| Size: | [ in ] | 7/8" |
| Max. operating frequency: | [MHz] | 1950 |
| Cable Type: | | RLK |
| Jacket | JFL | |
| Jacket Description | Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin + flame barrier tape above outer conductor for lowest cable loss 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 | [%] | 89 |
| Capacitance | [pF/m (pF/ft)] | 75 (22.9) |
| Inductance | [µH/m (µH/ft)] | 0.1875 (0.057) |
| DC-resistance inner conductor | [Ω/km (Ω/1000ft)] | 1.74 (0.53) |
| DC-resistance outer conductor | [Ω/km (Ω/1000ft)] | 2.52 (0.77) |
| Outer Conductor Material | | Overlapping Copper Foil |
| Inner Conductor Material | | Copper Tube |
| Diameter over Jacket | [mm (in)] | 28.5 (1.12) |
| Diameter Outer Conductor | [mm (in)] | 23.8 (0.94) |
| Diameter Inner Conductor | [mm (in)] | 9.3 (0.37) |
| Minimum Bending Radius, Single Bend | [mm (in)] | 350 (13.8) |
| Cable Weight | [kg/m (lb/ft)] | 0.55 (0.37) |
| Max. tensile force | [N (lb)] | 2300 (507) |
| Indication of Slot Alignment | | Bulge atop 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] | 115-135, 235-255, 360-375, 475-505, 600-630, 720-750, 970-1075, 1340-1460, 1590-1700 |
| Recommended / maximum clamp spacing | [m (ft)] | 0.9 (3) |
| Minimum Distance to Wall | [mm (in)] | 80 (3.15) |
| Length | [m (ft)] | |

| PERFORMANCE | | | |
|---|---|---|---|
| Frequency, MHz | Longitudinal Loss, dB/100 m (dB/100 ft) | Coupling Loss 50%, dB | Coupling Loss 95%, dB |
| 75 | 1,05 (0,32) | 48 (52) | 59 (63) |
| 150 | 1,52 (0,46) | 57 (60) | 66 (68) |
| 380 | 2,56 (0,78) | 58 (61) | 61 (65) |
| 400 | 2,65 (0,81) | 58 (61) | 61 (65) |
| 450 | 2,88 (0,88) | 58 (61) | 61 (65) |
| 800 | 4,44 (1,35) | 60 (61) | 62 (65) |
| 870 | 5,14 (1,57) | 56 (58) | 62 (64) |
| 900 | 5,12 (1,56) | 56 (58) | 64 (66) |
| 960 | 5,47 (1,67) | 56 (58) | 62 (64) |
| 1800 | 13,32 (4,06) | 50 (52) | 60 (63) |
| 1900 | 14,62 (4,46) | 50 (52) | 59 (63) |

Standard conditions

## 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 125 MHz and above 800 MHz) or parallel (125-800MHz) 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 for further assistance.**
- **As with any radiating cable, the performance in building or tunnel environments may deviate from figures based on free space method.**

## Rev.

2015/04/24

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