



- 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

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



RLK12-50JFNA

Technical features

GENERAL SPECIFICATIONS

| | | |
|------|--|-----|
| Size | | 1/2 |
|------|--|-----|

ELECTRICAL SPECIFICATIONS

| | | |
|--|-----------------|------------------|
| Max. Operating Frequency | MHz | 980 |
| Cable Type | | RLK |
| Impedance | Ohm | 50 +/- 2 |
| Velocity, percent | % | 87 |
| 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) | 1.97 (0.6) |
| DC-resistance outer conductor, ohm/km (ohm/1000ft) | Ω/km (Ω/1000ft) | 4.84 (1.48) |
| Stop bands | MHz | 300-375, 675-685 |
| Frequency Selection | MHz | 600, 900 |



MECHANICAL SPECIFICATIONS

| | | |
|-------------------------------------|--------------|---|
| 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 |
| Slot Design | | Groups of vertical slots at short intervals |
| Inner Conductor Material | | Copper Clad Aluminum Wire |
| Outer Conductor Material | | Overlapping Copper Strip |
| Diameter Inner Conductor | mm (in) | 4.4 (0.17) |
| Diameter Outer Conductor | mm (in) | 11.4 (0.45) |
| Diameter over Jacket Nominal | mm (in) | 14.7 (0.58) |
| Minimum Bending Radius, Single Bend | mm (in) | 200 (7.9) |
| Cable Weight | kg/m (lb/ft) | 0.23 (0.16) |
| Tensile Force | N (lb) | 1300 (292) |
| Indication of Slot Alignment | | Bulge atop slots |
| Recommended / Maximum Clamp Spacing | m (ft) | 0.5 (1.6) |
| Minimum Distance to Wall | mm (in) | 80 (3.15) |

TESTING AND ENVIRONMENTAL

| | | |
|------------------------|--|---|
| Jacket Testing Methods | | <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>NFPA130 (ed. 2014) Ch.12 (NFPA70) via UL-1685/FT4/IEEE1202</p> |
|------------------------|--|---|

TEMPERATURE SPECIFICATIONS

| | | |
|--------------------------|--------|-------------------------|
| 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) |

ATTENUATION AND POWER RATING

| Frequency, MHz | Longitudinal Loss, dB/100 m (dB/100 ft) | Coupling Loss 50%, dB | Coupling Loss 95%, dB |
|----------------|---|-----------------------|-----------------------|
| 75 | 2,17 (0,66) | 46(50) | 58(60) |
| 150 | 3,11 (0,95) | 54(58) | 66(69) |
| 400 | 5,59 (1,70) | 53(55) | 57(59) |
| 450 | 5,88 (1,79) | 52(55) | 56(59) |
| 470 | 6,01 (1,83) | 52(55) | 56(59) |
| 500 | 6,20 (1,89) | 52(55) | 56(59) |
| 800 | 8,50 (2,59) | 55(58) | 59(62) |
| 870 | 9,07 (2,76) | 56(59) | 61(64) |
| 900 | 9,41 (2,87) | 57(60) | 62(65) |
| 960 | 10,51(3,20) | 57(60) | 62(65) |



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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 470 MHz) or parallel (above 470 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 +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.

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