



- 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 |
|------|--|-------|

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**

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

TESTING AND ENVIRONMENTAL

| | | |
|------------------------|--|--|
| Jacket Testing Methods | | 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 CPR: EN50575:2014 + A1:2016 class B2ca s1b d0 a1 |
|------------------------|--|--|

TEMPERATURE SPECIFICATIONS

| | | |
|--------------------------|--------|-------------------------|
| Storage Temperature | °C(°F) | -70 to 85 (-94 to 185) |
| Installation Temperature | °C(°F) | -15 to 60 (5 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 | 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

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

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 for further assistance.
- As with any radiating cable, the performance in building or tunnel environments may deviate from figures based on free space method.