RADIO FREQUENCY SYSTEMS
The Clear Choice®

# 7/8" RADIAFLEX® RLFU 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.

RLF cable, A-series

### FEATURES / BENEFITS

- Wideband from 30 MHz to 2400 MHz
- Heavy duty multiuse, for tunnel applications of all kind
- Easy system planning
- Insensitive to environmental influences

## Technical Features

| | | |
|---|---|---|
| **GENERAL SPECIFICATIONS** | | |
| **Size** | | 7/8" |
| **ELECTRICAL SPECIFICATIONS** | | |
| **Max. Operating Frequency** | MHz | 2400.0 |
| **Cable Type** | | RLFU |
| **Impedance** | Ohm | 50 +/- 2 |
| **Velocity** | % | 89.0 |
| **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) |
| **Stop bands** | MHz | None |
| **MECHANICAL SPECIFICATIONS** | | |
| **Jacket** | | JFL |
| **Jacket Color** | | Standard Black, other colors on request |
| **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 slots at large intervals |
| **Inner Conductor Material** | | Copper Tube |
| **Outer Conductor Material** | | Overlapping Copper Foil |
| **Diameter Inner Conductor** | mm (in) | 9.3 (0.37) |
| **Diameter Outer Conductor** | mm (in) | 23.8 (0.94) |
| **Diameter over Jacket** | mm (in) | 28.5 (1.12) |
| **Minimum Bending Radius** | mm (in) | 350 (13.8) |
| **Cable Weight** | kg/m (lb/ft) | 0.55 (0.37) |
| **Tensile Force** | N (lb) | 2300 (507) |
| **Indication of Slot Alignment** | | Bulge atop slots |
| **Recommended Clamp Spacing** | m (ft) | 0.9 (3) |
| **Minimum Distance to Wall** | mm (in) | 50 (1.97) |
| **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 ) |

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## ATTENUATION AND POWER RATING

| Frequency | Longitudinal loss | Coupling Loss | |
|---|---|---|---|
| MHz | dB/100m (dB/100ft) | 50%, dB | 95%, dB |
| 75 | 1.02 (0.31) | 62 (63) | 72 (73) |
| 150 | 1.48 (0.45) | 60 (62) | 70 (75) |
| 450 | 2.76 (0.84) | 66 (66) | 78 (78) |
| 800 | 3.93 (1.20) | 66 (67) | 77 (77) |
| 870 | 4.10 (1.25) | 62 (62) | 72 (74) |
| 900 | 4.29 (1.31) | 64 (64) | 75 (74) |
| 960 | 4.37 (1.33) | 64 (66) | 75 (77) |
| 1800 | 8.07 (2.46) | 57 (58) | 69 (70) |
| 1900 | 8.81 (2.69) | 58 (59) | 69 (70) |
| 2000 | 9.28 (2.83) | 57 (59) | 69 (70) |
| 2200 | 10.72 (3.27) | 57 (58) | 69 (69) |
| 2400 | 12.52 (3.82) | 54 (60) | 66 (71) |

## TESTING AND ENVIRONMENTAL

| | | |
|---|---|---|
| **Jacket Testing Methods** | | Test methods for fire behaviour of cable :<br>IEC 60754-1/-2 smoke emission, halogen free, non corrosive<br>IEC 61034 low smoke<br>IEC 60332-1 flame retardant<br>IEC 60332-3-24 fire retardant<br>UL1666, ASTM E 662, NES711 and NES713 |

## 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 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.
- As with any radiating cable, the performance in building or tunnel environments may deviate from figures based on free space method.
- Due to the cable design, single lengths should not be less than 80m (262ft).