



- RADIAFLEX® series 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 waveguide can handle multiple communication systems simultaneously.
- This RADIAFLEX® radiating waveguide is constructed of longitudinally continuous seam welded, highly conductive copper tube, corrugated and precision formed into an elliptical cross section. It is manufactured in continuous lengths using a special seam welding process developed by the RFS organization. The product offers a superior electrical performance together with good bending properties.

FEATURES / BENEFITS

- Optimized for ultra high frequency applications from 5 GHz to 6 GHz
- Best-in-class, RF wideband radiating waveguide with technology agnostic performance
- Designed for a variety of in-tunnel applications
- Lowest insertion loss and excellent coupling performance to minimize count of active equipment; low coupling loss variations
- Maintains functionality even in case of a fire



RE elliptical waveguide

Technical features**GENERAL SPECIFICATIONS**

| | | |
|------|--|------|
| Size | | RE60 |
|------|--|------|

ELECTRICAL SPECIFICATIONS

| | | |
|--------------------------|-----|------|
| Max. Operating Frequency | MHz | 6000 |
| Cable Type | | RE |
| Frequency Selection | MHz | 6000 |

MECHANICAL SPECIFICATIONS

| | | |
|--|--------------|--|
| Jacket Description | | Halogen free, non corrosive, flame and fire retardant, low smoke, polyolefin |
| Slot Design | | Milled |
| Outer Conductor Material | | Corrugated Copper Tube |
| Dimension over Jacket | mm (in) | 56 x 33 (2.2 x 1.3) |
| Min. Bending Radius E Plane w/o rebending | mm (in) | 200 (8) |
| Min. Bending Radius H Plane w/o rebending | mm (in) | 550 (22) |
| Min. Bending Radius E Plane with rebending | mm (in) | 300 (12) |
| Min. Bending Radius H Plane with rebending | mm (in) | 800 (31) |
| Cable Weight | kg/m (lb/ft) | 1.1 (0.74) |
| Indication of Slot Alignment | | Printing on jacket |
| Recommended / Maximum Clamp Spacing | m (ft) | 2 (5) |
| Minimum Distance to Wall | mm (in) | 50 (2) |



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

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 |
|----------------|---|-----------------------|-----------------------|
| 5000 | 4.90 (1.49) | 74 | 80 |
| 5100 | 4.90 (1.49) | 74 | 80 |
| 5200 | 4.80 (1.46) | 74 | 80 |
| 5300 | 4.80 (1.46) | 74 | 80 |
| 5400 | 4.80 (1.46) | 74 | 80 |
| 5500 | 4.80 (1.46) | 74 | 80 |
| 5600 | 4.80 (1.46) | 74 | 80 |
| 5700 | 4.80 (1.46) | 74 | 80 |
| 5800 | 4.80 (1.46) | 74 | 80 |
| 5900 | 4.80 (1.46) | 74 | 80 |
| 6000 | 4.80 (1.46) | 74 | 80 |

External Document Links

Notes

- Coupling loss as well as longitudinal attenuation of RADIAFLEX® elliptical waveguides is measured by the free space method according to IEC 61196-4.
- Coupling loss values are measured with a log-periodic antenna with gain of approx. 6 dBi in specified frequency range.
- The coupling loss values are average values of the three spatial orientations (radial, parallel and orthogonal) of log-periodic antenna.
- Coupling loss values are given with a tolerance of ± 6 dB and longitudinal loss values with a tolerance of $\pm 5\%$.
- As with any radiating element, the performance in building or tunnel environments may deviate from figures based on free space method.