

**RLKW12-50CPR**

1/2" RADIAFLEX® RLKW 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.

**Features / Benefits**

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

**Technical Features****STRUCTURE**

|                              |                                                                                                                                               |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Cable Type                   | RLKW                                                                                                                                          |
| Size                         | 1/2                                                                                                                                           |
| Inner Conductor Material     | Copper Clad Aluminum Wire                                                                                                                     |
| Outer Conductor Material     | Overlapping Copper Foil                                                                                                                       |
| 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 vertical slots at short intervals                                                                                                   |
| Indication of Slot Alignment | Bulge atop slots                                                                                                                              |

**MECHANICAL SPECIFICATION**

|                                     |                      |
|-------------------------------------|----------------------|
| Diameter Inner Conductor            | 4.4mm (0.17in)       |
| Diameter Outer Conductor            | 11.4mm (0.45in)      |
| Minimum Bending Radius              | 200mm (7.9in)        |
| Cable Weight                        | 0.23kg/m (0.16lb/ft) |
| Tensile Force                       | 1,300N (292lb)       |
| Recommended / Maximum Clamp Spacing | 0.5m (1.6ft)         |
| Minimum Distance to Wall            | 80mm (3.15in)        |

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**ELECTRICAL SPECIFICATION**

|                               |                                                                                      |     |           |
|-------------------------------|--------------------------------------------------------------------------------------|-----|-----------|
| Impedance                     | 50 +/- 2 $\Omega$                                                                    |     |           |
| Max. Operating Frequency      | 1,950 MHz                                                                            |     |           |
| Velocity                      | 88 %                                                                                 |     |           |
| Capacitance                   | 76pF/m (23.2pF/ft)                                                                   |     |           |
| Inductance                    | 0.19 $\mu$ H/m (0.058 $\mu$ H/ft)                                                    |     |           |
| DC-resistance inner conductor | 1.97 $\Omega$ /km (0.6 $\Omega$ /kft)                                                |     |           |
| DC-resistance outer conductor | 4.84 $\Omega$ /km (1.48 $\Omega$ /kft)                                               |     |           |
| Stop bands                    | 115-135, 235-255, 360-375, 475-505, 600-630, 720-750, 970-1075, 1340-1460, 1590-1700 |     |           |
| Frequency Selection           | 600                                                                                  | 900 | 1800/1900 |

**TESTING AND ENVIRONMENTAL**

|                          |                                                                                                                                                                                                                                                                                    |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operation Temperature    | -40 - 85 °C (-40 - 185°F)                                                                                                                                                                                                                                                          |
| Installation Temperature | -15 - 60 °C (5 - 140°F)                                                                                                                                                                                                                                                            |
| Storage Temperature      | -70 - 85 °C (-94 - 185°F)                                                                                                                                                                                                                                                          |
| Compliance               | 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<br>CPR: EN50575:2017 class B2ca s1a d0 a1 |

**ATTENUATION AND COUPLING LOSS**

| Frequency, MHz | Longitudinal Loss, dB/100 m<br>(dB/100 ft) | Coupling Loss 50%, dB | Coupling Loss 95%, dB |
|----------------|--------------------------------------------|-----------------------|-----------------------|
| 75             | 2,17 (0,66)                                | 45 (49)               | 56 (60)               |
| 150            | 3,10 (0,94)                                | 58 (58)               | 64 (67)               |
| 450            | 5,74 (1,75)                                | 58 (62)               | 62 (66)               |
| 800            | 7,89 (2,40)                                | 61 (62)               | 63 (66)               |
| 870            | 8,33 (2,54)                                | 59 (62)               | 66 (69)               |
| 900            | 8,63 (2,63)                                | 59 (62)               | 66 (69)               |
| 960            | 8,92 (2,72)                                | 59 (62)               | 66 (69)               |
| 1800           | 20,60 (6,28)                               | 51 (54)               | 63 (66)               |
| 1900           | 21,62 (6,59)                               | 50 (53)               | 62 (65)               |

@ 20°C (68°F)

**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 or parallel (125-800 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.



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- 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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**Related Documents**



Web URL to CPR ressources with DoP and CE-label download folders  
Other Documents