



1-5/8" low loss air dielectric cable

#### FEATURES / BENEFITS

- **Low Attenuation**

The low attenuation of air dielectric coaxial cable results in highly efficient signal transfer in your RF system.

- **Complete Shielding**

The solid outer conductor of air dielectric coaxial cable creates a continuous RFI/EMI shield that minimizes system interference.

- **Low VSWR**

Special low VSWR versions of air dielectric coaxial cables contribute to low system noise.

- **Outstanding Intermodulation Performance**

Air dielectric coaxial cable's solid inner and outer conductors virtually eliminate intermods. Intermodulation performance is also confirmed with state-of-the-art equipment at the RFS Technologies factory.

- **High Power Rating**

Due to their low attenuation, outstanding heat transfer properties and temperature stabilized dielectric materials, air dielectric coaxial cable provides safe long term operating life at high transmit power levels.

- **Wide Range of Application**

Typical areas of application are: feedlines for broadcast and terrestrial microwave antennas, wireless cellular, PCS and ESMR base stations, cabling of antenna arrays, and radio equipment interconnects.



1-5/8" Air Dielectric Coaxial Cable

## Technical features

#### APPLICATIONS

| Applications |  | Wireless Communication | TV & Radio | HF Defense | Mobile Radio | Cable Solutions |
|--------------|--|------------------------|------------|------------|--------------|-----------------|
|--------------|--|------------------------|------------|------------|--------------|-----------------|

#### STRUCTURE

|                          |         |                             |
|--------------------------|---------|-----------------------------|
| Size                     |         | 1-5/8                       |
| Jacket Option            |         | Black                       |
| Inner Conductor Diameter | mm (in) | 18.6 (0.73)                 |
| Inner Conductor Material |         | Corrugated Copper Tube      |
| Dielectric Diameter      | mm (in) | 39.8 (1.56)                 |
| Dielectric Material      |         | Helical Polyethylene Spacer |
| Outer Conductor Diameter | mm (in) | 46.6 (1.83)                 |
| Outer Conductor Material |         | Corrugated Copper           |
| Jacket Diameter          | mm (in) | 50.4 (1.984)                |
| Jacket Material          |         | Polyethylene, PE            |
| Cable Type               |         | Air-Dielectric, Corrugated  |



## TESTING AND ENVIRONMENTAL

|                                       |         |                                                             |
|---------------------------------------|---------|-------------------------------------------------------------|
| Fire Performance                      |         | Halogene Free                                               |
| Flame Retardant Jacket Specifications |         | Meets the requirements according to: IEC60754-1, IEC60754-2 |
| Installation Temperature              | °C(°F)  | -40 to 60 (-40 to 140)                                      |
| Storage Temperature                   | °C (°F) | -70 to 85 (-94 to 185)                                      |
| Operation Temperature                 | °C(°F)  | -50 to 85 (-58 to 185)                                      |

## ELECTRICAL SPECIFICATIONS

|                                |                                       |                                                                                                                                                                                      |
|--------------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Impedance                      | $\Omega$                              | 50 +/- 0.5                                                                                                                                                                           |
| Maximum Frequency              | GHz                                   | 3                                                                                                                                                                                    |
| Velocity                       | %                                     | 95                                                                                                                                                                                   |
| Capacitance                    | pF/m (pF/ft)                          | 70 (21.3)                                                                                                                                                                            |
| Inductance                     | $\mu$ H/m ( $\mu$ H/ft)               | 0.175 (0.053)                                                                                                                                                                        |
| Peak Power Rating              | kW                                    | 270                                                                                                                                                                                  |
| RF Peak Voltage                | Volts                                 | 5200                                                                                                                                                                                 |
| Jacket Spark                   | Volt RMS                              | 8000                                                                                                                                                                                 |
| Inner Conductor dc Resistance  | $\Omega$ /1000 m ( $\Omega$ /1000 ft) | 1.06 (0.33)                                                                                                                                                                          |
| Outer Conductor dc Resistance  | $\Omega$ /1000 m ( $\Omega$ /1000 ft) | 0.39 (0.13)                                                                                                                                                                          |
| Return Loss (VSWR) Performance |                                       | Typical 20.8dB (1.2 VSWR) or better within the operation bands of most global frequency ranges. Premium also available. Contact factory for options in your specific frequency band. |
| Phase Stabilized               |                                       | Phase stabilized and phase matched cables and assemblies are available upon request.                                                                                                 |
| Temperature & Power            |                                       | Standard                                                                                                                                                                             |

## MECHANICAL SPECIFICATIONS

|                                        |              |                      |
|----------------------------------------|--------------|----------------------|
| Cable Weight, Nominal                  | kg/m (lb/ft) | 1.3 (0.89)           |
| Minimum Bending Radius, Single Bend    | mm (in)      | 180 (7)              |
| Minimum Bending Radius, Repeated Bends | mm (in)      | 550 (22)             |
| Bending Moment                         | Nm (lb-ft)   | 42 (31)              |
| Tensile Strength                       | N (lb)       | 1500 (337)           |
| Recommended / Maximum Clamp Spacing    | m (ft)       | 0.8 / 1.2 (2.75 / 4) |

**ATTENUATION @ 20°C (68°F) AND POWER RATING @ 40°C (104°F)**

| Frequency, MHz | dB per 100m | dB per 100ft | Power, kW |
|----------------|-------------|--------------|-----------|
| 0.5            | 0.04        | 0.01         | 270       |
| 1              | 0.06        | 0.02         | 196       |
| 1.5            | 0.08        | 0.02         | 160       |
| 2              | 0.09        | 0.03         | 138       |
| 10             | 0.20        | 0.06         | 61.40     |
| 20             | 0.28        | 0.09         | 43.40     |
| 30             | 0.34        | 0.10         | 35.40     |
| 50             | 0.44        | 0.14         | 27.30     |
| 88             | 0.59        | 0.18         | 20.50     |
| 100            | 0.63        | 0.19         | 19.20     |
| 108            | 0.66        | 0.20         | 18.40     |
| 150            | 0.78        | 0.24         | 15.60     |
| 174            | 0.84        | 0.26         | 14.40     |
| 200            | 0.90        | 0.28         | 13.50     |
| 300            | 1.11        | 0.34         | 11        |
| 400            | 1.29        | 0.39         | 9.44      |
| 450            | 1.38        | 0.42         | 8.83      |
| 500            | 1.45        | 0.44         | 8.41      |
| 512            | 1.47        | 0.45         | 8.30      |
| 600            | 1.60        | 0.49         | 7.64      |
| 700            | 1.74        | 0.53         | 7.03      |
| 800            | 1.86        | 0.57         | 6.59      |
| 824            | 1.89        | 0.58         | 6.49      |
| 894            | 1.98        | 0.60         | 6.20      |
| 900            | 1.98        | 0.61         | 6.20      |
| 925            | 2.01        | 0.61         | 6.11      |
| 960            | 2.05        | 0.63         | 6         |
| 1000           | 2.10        | 0.64         | 5.86      |
| 1250           | 2.37        | 0.72         | 5.21      |
| 1500           | 2.61        | 0.80         | 4.75      |
| 1700           | 2.80        | 0.85         | 4.44      |
| 1800           | 2.89        | 0.88         | 4.31      |
| 2000           | 3.06        | 0.93         | 4.08      |
| 2200           | 3.22        | 0.98         | 3.89      |
| 2300           | 3.30        | 1.01         | 3.81      |
| 3000           | 3.83        | 1.17         | 3.32      |



External Document Links

Notes