



HELIFLEX® 1-1/8" low loss air dielectric cable

FEATURES / BENEFITS

• **Low Attenuation**

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

• **Complete Shielding**

The solid outer conductor of HELIFLEX® coaxial cable creates a continuous RF/EMI shield that minimizes system interference.

• **Low VSWR**

Special low VSWR versions of HELIFLEX® coaxial cables contribute to low system noise.

• **Outstanding Intermodulation Performance**

HELIFLEX® 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 factory.

• **High Power Rating**

Due to their low attenuation, outstanding heat transfer properties and temperature stabilized dielectric materials, HELIFLEX® 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.



1-1/8" HELIFLEX® Air Dielectric

Technical features

APPLICATIONS

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

STRUCTURE

| | | |
|------------------------|---------|----------------------------|
| Cable Type | | Air-Dielectric, Corrugated |
| Size | | 1-1/8 |
| Jacket Option | | Black |
| Inner Conductor | mm (in) | 12 (0.47) |
| Dielectric | mm (in) | 27.2 (1.069) |
| Outer Conductor | mm (in) | 33.2 (1.3) |
| Jacket | mm (in) | 36.4 (1.43) |

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, Ohm | Ω | 50 +/- 0.5 |
| Maximum Frequency | GHz | 3 |
| Velocity, percent | % | 92 |
| Capacitance | pF/m (pF/ft) | 73 (22.3) |
| Inductance, uH/m (uH/ft) | μH/m (μH/ft) | 0.183 (0.056) |
| Peak Power Rating | kW | 137 |
| RF Peak Voltage | Volts | 3700 |
| Jacket Spark | Volt RMS | 8000 |
| Inner Conductor dc Resistance, Ω/km (Ω/kft) | Ω/1000 m (Ω/1000 ft) | 0.64 (0.195) |
| Outer Conductor dc Resistance, ohm/1000 m (Ohm/1000 ft) | Ω/1000 m (Ω/1000 ft) | 0.5 (0.152) |
| Return Loss (VSWR) Performance | | Standard |
| Min. Return Loss (Max. VSWR) | dB (VSWR) | 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) | 1.1 (0.74) |
| Minimum Bending Radius, Single Bend | mm (in) | 130 (5) |
| Minimum Bending Radius, Repeated Bends | mm (in) | 400 (16) |
| Bending Moment, Nm (lb-ft) | Nm (lb*ft) | 42 (31) |
| Tensile Strength | N (lb) | 2200 (495) |
| Recommended / Maximum Clamp Spacing | m (ft) | 0.5 / 0.9 (1.8 / 3) |



ATTENUATION AND POWER RATING

| Frequency, MHz | dB per 100m | dB per 100ft | Power, kW |
|----------------|-------------|--------------|-----------|
| 0.5 | 0.06 | 0.02 | 137 |
| 1 | 0.09 | 0.03 | 125 |
| 1.5 | 0.11 | 0.03 | 102 |
| 2 | 0.13 | 0.04 | 88 |
| 10 | 0.28 | 0.09 | 39.20 |
| 20 | 0.40 | 0.12 | 27.60 |
| 30 | 0.49 | 0.15 | 22.40 |
| 50 | 0.64 | 0.19 | 17.30 |
| 88 | 0.85 | 0.26 | 13 |
| 100 | 0.91 | 0.28 | 12.10 |
| 108 | 0.95 | 0.29 | 11.70 |
| 150 | 1.12 | 0.34 | 9.89 |
| 174 | 1.21 | 0.37 | 9.16 |
| 200 | 1.31 | 0.40 | 8.47 |
| 300 | 1.62 | 0.49 | 6.88 |
| 400 | 1.88 | 0.57 | 5.96 |
| 450 | 2 | 0.61 | 5.61 |
| 500 | 2.12 | 0.65 | 5.31 |
| 512 | 2.15 | 0.66 | 5.24 |
| 600 | 2.34 | 0.71 | 4.83 |
| 700 | 2.54 | 0.78 | 4.47 |
| 800 | 2.73 | 0.83 | 4.18 |
| 824 | 2.78 | 0.85 | 4.11 |
| 894 | 2.91 | 0.89 | 3.93 |
| 900 | 2.92 | 0.89 | 3.92 |
| 925 | 2.96 | 0.90 | 3.87 |
| 960 | 3.02 | 0.92 | 3.80 |
| 1000 | 3.09 | 0.94 | 3.72 |
| 1250 | 3.50 | 1.07 | 3.32 |
| 1500 | 3.87 | 1.18 | 3.04 |
| 1700 | 4.15 | 1.27 | 2.86 |
| 1800 | 4.29 | 1.31 | 2.77 |
| 2000 | 4.55 | 1.39 | 2.64 |
| 2200 | 4.81 | 1.46 | 2.52 |
| 2300 | 4.93 | 1.50 | 2.46 |
| 3000 | 5.75 | 1.75 | 2.17 |

External Document Links

Notes