



HELIFLEX® 1-5/8" 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 RFI/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.



1-5/8" HELIFLEX® 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 | Ω | 50 +/- 0.5 |
| Maximum Frequency | GHz | 3 |
| Velocity | % | 95 |
| Capacitance | pF/m (pF/ft) | 70 (21.3) |
| Inductance | uH/m (uH/ft) | 0.175 (0.053) |
| Peak Power Rating | kW | 270 |
| RF Peak Voltage | Volts | 5200 |
| Jacket Spark | Volt RMS | 8000 |
| Inner Conductor dc Resistance | Ω/1000 m (Ω/1000 ft) | 1.06 (0.33) |
| Outer Conductor dc Resistance | Ω/1000 m (Ω/1000 ft) | 0.39 (0.13) |
| 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) | 1.3 (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 |

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