



1/2" CELLFLEX® Low-Loss Foam-Dielectric Coaxial Cable

Product Description

CELLFLEX® 1/2" low loss flexible cable; flame retardant/ halogen free jacket

Application: In Building, Wireless Communication, In Tunnel/HF Defense, Microwave, Mobile Radio

Features/Benefits

- Low Attenuation**
The low attenuation of CELLFLEX® coaxial cable results in highly efficient signal transfer in your RF system.
- Complete Shielding**
The solid outer conductor of CELLFLEX® coaxial cable creates a continuous RF/EMI shield that minimizes system interference.
- Low VSWR**
Special low VSWR versions of CELLFLEX® coaxial cables contribute to low system noise.
- Outstanding Intermodulation Performance**
CELLFLEX® 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, CELLFLEX® 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.

Technical Features

Structure

| | | | |
|------------------|--|-----------|-------------|
| Inner conductor: | Copper-Clad Aluminum Wire | [mm (in)] | 4.8 (0.19) |
| Dielectric: | | [mm (in)] | 11.3 (0.44) |
| Outer conductor: | Annularly Corrugated Copper | [mm (in)] | 13.8 (0.54) |
| Jacket: | Polyethylene, PE, Metalhydroxite Filling | [mm (in)] | 15.8 (0.62) |

Mechanical Properties

| | | |
|--|----------------|------------------------|
| Weight, approximately | [kg/m (lb/ft)] | 0.22 (0.15) |
| Minimum bending radius, single bending | [mm (in)] | 70 (3) |
| Minimum bending radius, repeated bending | [mm (in)] | 125 (5) |
| Bending moment | [Nm (lb-ft)] | 6.5 (4.79) |
| Flat plate crush strength | [N/mm (lb/in)] | 20.4 (110) |
| Max. tensile force | [N (lb)] | 1100 (247) |
| Recommended / maximum clamp spacing | [m (ft)] | 0.6 / 1.0 (2.0 / 3.25) |

Electrical Properties

| | | |
|-------------------------------|-------------------|---------------|
| Characteristic impedance | [Ω] | 50 +/- 1 |
| Relative propagation velocity | [%] | 88 |
| Capacitance | [pF/m (pF/ft)] | 76.0 (23.2) |
| Inductance | [μH/m (μH/ft)] | 0.190 (0.058) |
| Max. operating frequency | [GHz] | 8.8 |
| Jacket spark test RMS | [V] | 8000 |
| Peak power rating | [kW] | 38 |
| RF Peak voltage rating | [V] | 1950 |
| DC-resistance inner conductor | [Ω/km (Ω/1000ft)] | 1.57 (0.48) |
| DC-resistance outer conductor | [Ω/km (Ω/1000ft)] | 2.30 (0.70) |

Recommended Temperature Range

| | | |
|--------------------------|-----------|--------------------------|
| Storage temperature | [°C (°F)] | -70 to +85 (-94 to +185) |
| Installation temperature | [°C (°F)] | -25 to +60 (-13 to +140) |
| Operation temperature | [°C (°F)] | -50 to +85 (-58 to +185) |

Other Characteristics

Fire Performance: Flame Retardant, LS0H

VSWR Performance: Standard [dB (VSWR)] Contact RFS for your VSWR performance specification for your required frequency band.

Other Options: Phase stabilized and phase matched cables and assemblies are available upon request.



| Frequency [MHz] | Attenuation | | Power [kW] |
|-----------------|-------------|------------|------------|
| | [dB/100m] | [dB/100ft] | |
| 0.5 | 0.149 | 0.0454 | 38.0 |
| 1.0 | 0.211 | 0.0643 | 38.0 |
| 1.5 | 0.258 | 0.0788 | 32.9 |
| 2.0 | 0.298 | 0.0910 | 28.5 |
| 10 | 0.67 | 0.204 | 12.7 |
| 20 | 0.95 | 0.290 | 8.93 |
| 30 | 1.17 | 0.356 | 7.27 |
| 50 | 1.51 | 0.462 | 5.61 |
| 88 | 2.02 | 0.616 | 4.20 |
| 100 | 2.16 | 0.658 | 3.94 |
| 108 | 2.24 | 0.684 | 3.78 |
| 150 | 2.66 | 0.810 | 3.20 |
| 174 | 2.87 | 0.875 | 2.96 |
| 200 | 3.08 | 0.940 | 2.75 |
| 300 | 3.81 | 1.16 | 2.23 |
| 400 | 4.43 | 1.35 | 1.92 |
| 450 | 4.71 | 1.44 | 1.80 |
| 500 | 4.98 | 1.52 | 1.71 |
| 512 | 5.04 | 1.54 | 1.69 |
| 600 | 5.48 | 1.67 | 1.55 |
| 700 | 5.95 | 1.81 | 1.43 |
| 800 | 6.39 | 1.95 | 1.33 |
| 824 | 6.49 | 1.98 | 1.31 |
| 894 | 6.78 | 2.07 | 1.25 |
| 900 | 6.80 | 2.07 | 1.25 |
| 925 | 6.90 | 2.10 | 1.23 |
| 960 | 7.04 | 2.15 | 1.21 |
| 1000 | 7.20 | 2.19 | 1.18 |
| 1250 | 8.12 | 2.48 | 1.05 |
| 1500 | 8.97 | 2.73 | 0.947 |
| 1700 | 9.6 | 2.93 | 0.884 |
| 1800 | 9.9 | 3.02 | 0.857 |
| 2000 | 10.5 | 3.20 | 0.809 |
| 2100 | 10.8 | 3.29 | 0.787 |
| 2200 | 11.1 | 3.38 | 0.767 |
| 2400 | 11.6 | 3.54 | 0.731 |
| 3000 | 13.2 | 4.01 | 0.645 |
| 3500 | 14.4 | 4.38 | 0.591 |
| 4000 | 15.5 | 4.72 | 0.548 |
| 5000 | 17.6 | 5.37 | 0.482 |
| 6000 | 19.6 | 5.97 | 0.434 |
| 7000 | 21.4 | 6.54 | 0.396 |
| 8000 | 23.2 | 7.07 | 0.366 |
| 8800 | 24.6 | 7.49 | 0.346 |

Attenuation at 20°C (68°F) cable temperature
Mean power rating at 40°C (104°F) ambient temperature

All information contained in the present datasheet is subject to confirmation at time of ordering