

1-5/8" HELIFLEX® Air-Dielectric Coaxial Cable

Product Description

HELIFLEX® 1-5/8" low loss air dielectric cable; high power

Application: UHF, VHF, Broadcast, High Power



1-5/8" HELIFLEX® Air Dielectric Coaxial 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.

Technical Features

Structure

Inner conductor:	Corrugated Copper Tube	[mm (in)]	18.6 (0.73)
Dielectric:	Helical Fluoropolymer Spacer	[mm (in)]	39.8 (1.56)
Outer conductor:	Corrugated Copper	[mm (in)]	46.6 (1.83)
Jacket:	Polyethylene, PE	[mm (in)]	50.4 (1.984)

Mechanical Properties

Weight, approximately	[kg/m (lb/ft)]	1.3 (0.89)
Minimum bending radius, single bending	[mm (in)]	180 (7)
Minimum bending radius, repeated bending	[mm (in)]	550 (22)
Bending moment	[Nm (lb-ft)]	47 (34.7)
Max. tensile force	[N (lb)]	1500 (337)
Recommended / maximum clamp spacing	[m (ft)]	0.8 / 1.2 (2.75 / 4)

Electrical Properties

Characteristic impedance	[Ω]	50 +/- 0.5
Relative propagation velocity	[%]	95
Capacitance	[pF/m (pF/ft)]	70 (21.3)
Inductance	[μH/m (μH/ft)]	0.175 (0.053)
Max. operating frequency	[GHz]	3
Jacket spark test RMS	[V]	8000
Peak power rating	[kW]	270
RF Peak voltage rating	[V]	5200
DC-resistance inner conductor	[Ω/km (Ω/1000ft)]	1.06 (0.33)
DC-resistance outer conductor	[Ω/km (Ω/1000ft)]	0.34 (0.11)

Recommended Temperature Range

Storage temperature	[°C (°F)]	-70 to 85 (-94 to 185)
Installation temperature	[°C (°F)]	-40 to 60 (-40 to 140)
Operation temperature	[°C (°F)]	-50 to 85 (-58 to 185)

Other Characteristics

Fire Performance: Halogene Free

VSWR Performance: Standard

[dB (VSWR)]

Other Options:

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

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.

Frequency [MHz]	Attenuation		Power [kW]
	[dB/100m]	[dB/100ft]	
0.5	0.0442	0.0135	270
1.0	0.0626	0.0191	270
1.5	0.0767	0.0234	228
2.0	0.0886	0.0270	198
10	0.200	0.0608	87.5
20	0.284	0.0865	61.7
30	0.349	0.106	50.2
50	0.454	0.138	38.6
88	0.607	0.185	28.9
100	0.649	0.198	27.1
108	0.675	0.206	26.1
150	0.802	0.244	22.0
174	0.867	0.264	20.3
200	0.933	0.284	18.9
300	1.16	0.353	15.3
400	1.35	0.411	13.2
450	1.44	0.438	12.4
500	1.52	0.464	11.8
512	1.54	0.470	11.6
600	1.68	0.513	10.7
700	1.83	0.558	9.87
800	1.97	0.600	9.21
824	2.0	0.610	9.08
894	2.10	0.639	8.67
900	2.10	0.641	8.68
925	2.14	0.651	8.52
960	2.18	0.664	8.38
1000	2.23	0.680	8.21
1250	2.53	0.770	7.31
1500	2.80	0.854	6.68
1700	3.01	0.918	6.27
1800	3.11	0.948	6.09
2000	3.31	1.01	5.77
2200	3.49	1.06	5.52
2300	3.59	1.09	5.39
3000	4.19	1.28	4.75

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