



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

## Product Description

HELIFLEX® 1-5/8" low loss air dielectric cable; Plenum-rated

Application: Plenum In-Building only

## 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.

## Technical Features

## Structure

Inner conductor:	Corrugated Copper Tube	[mm (in)]	18.6 (0.73)
Dielectric:	Helical Polyethylene Spacer	[mm (in)]	39.8 (1.56)
Outer conductor:	Corrugated Copper	[mm (in)]	46.6 (1.83)
Jacket:	Polyvinylidene Fluoride, PVDF	[mm (in)]	48.9 (1.925)

## 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)]	42 (31)
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)]	-40 to 85 (-40 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: Flame Retardant, Plenum Rated

VSWR Performance: Standard [dB (VSWR)]

Other Options:

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 [ dB/100m [ dB/100ft ] ]		Power [ kW ]
0.5	0.0437	0.0133	270
1.0	0.0618	0.0188	196
1.5	0.0757	0.0231	160
2.0	0.0875	0.0267	138
10	0.197	0.0599	61.4
20	0.279	0.0850	43.4
30	0.342	0.104	35.4
50	0.444	0.135	27.3
88	0.592	0.180	20.5
100	0.632	0.193	19.2
108	0.657	0.200	18.4
150	0.778	0.237	15.6
174	0.840	0.256	14.4
200	0.902	0.275	13.5
300	1.11	0.339	11.0
400	1.29	0.394	9.44
450	1.38	0.419	8.83
500	1.45	0.443	8.41
512	1.47	0.449	8.30
600	1.60	0.488	7.64
700	1.74	0.529	7.03
800	1.86	0.568	6.59
824	1.89	0.577	6.49
894	1.98	0.603	6.20
900	1.98	0.605	6.20
925	2.01	0.614	6.11
960	2.05	0.626	6.00
1000	2.10	0.640	5.86
1250	2.37	0.722	5.21
1500	2.61	0.797	4.75
1700	2.80	0.853	4.44
1800	2.89	0.880	4.31
2000	3.06	0.932	4.08
2200	3.22	0.982	3.89
2300	3.30	1.01	3.81
3000	3.83	1.17	3.32

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