Product Data Sheet **HCA12-50JPL**

1/2" HELIFLEX® Air-Dielectric Coaxial Cable

Product Description

HELIFLEX® 1/2" low loss air dielectric cable, Plenum-rated

Application: Plenum In-Building only

1/2" 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.

Frequency	Attenuation		Power
[MHz]	[dB/100m]	[dB/100ft]	[kW]
0.5	0.151	0.0459	21.4
1.0	0.213	0.0650	21.4
1.5	0.261	0.0797	21.4
2.0	0.302	0.0921	21.4
10	0.680	0.207	21.4
20	0.967	0.295	16.3
30	1.19	0.362	13.2
50	1.54	0.471	10.2
88	2.07	0.630	7.60
100	2.21	0.673	7.11
108	2.30	0.700	6.84
150	2.73	0.831	5.76
174	2.95	0.898	5.33
200	3.17	0.966	4.96
300	3.93	1.20	4.00
400	4.58	1.40	3.44
450	4.88	1.49	3.23
500	5.16	1.57	3.05
512	5.23	1.59	3.01
600	5.70	1.74	2.76
700	6.20	1.89	2.54
800	6.67	2.03	2.36
824	6.78	2.07	2.32
894	7.09	2.16	2.22
900	7.12	2.17	2.21
925	7.23	2.20	2.18
960	7.38	2.25	2.14
1000	7.55	2.30	2.09
1250	8.55	2.60	1.84
1500	9.47	2.89	1.67
1700	10.2	3.10	1.55
1800	10.5	3.20	1.50
2000	11.2	3.40	1.41
2200	11.8	3.59	1.34
2300	12.1	3.69	1.31
3000	14.1	4.30	1.12
3500	15.5	4.71	1.02
4000	16.7	5.10	0.951

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

Technical Features

Structure

Inner conductor:	Copper-Clad Aluminum Wire	[mm (in)]	4.8 (0.19)
Dielectric:	Helical Fluoropolymer Spacer	[mm (in)]	3.9 (0.153)
Outer conductor:	Annularly Corrugated Copper	[mm (in)]	13.9 (0.547)
Jacket:	Polyvinylidene Fluoride, PVDF	[mm (in)]	15.9 (0.62)

Mechanical Properties

Weight, approximately	[kg/m (lb/ft)]	0.40 (0.27)
Minimum bending radius, single bending	[mm (in)]	125 (5)
Minimum bending radius, repeated bending	[mm (in)]	381 (15)
Bending moment	[Nm (lb-ft)]	
Max. tensile force	[N (lb)]	1112 (250)
Recommended / maximum clamp spacing	[m (ft)]	0.5 / 0.9 (1.8 / 3.0)

Electrical Properties

Characteristic impedance	[Ω]	50 +/- 1
Relative propagation velocity	[%]	91
Capacitance	[pF/m (pF/ft)]	66.8 (20.4)
Inductance	[µH/m (µH/ft)]	0.191 (0.058)
Max. operating frequency	[GHz]	4
Jacket spark test RMS	[V]	8000
Peak power rating	[kW]	21.4
RF Peak voltage rating	[V]	1500
DC-resistance inner conductor	[Ω/km (Ω/1000ft)]	1.48 (0.45)
DC-resistance outer conductor	[Ω/km (Ω/1000ft)]	1.90 (0.58)

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)]	-40 to +85 (-40 to +185)

Other Characteristics

Fire Performance:	Flame Retardant, Plenum Rated		
VSWR Performance:	Standard	[dB (VSWR)]	Typical 20.8dB (1.2:1 VSWR) or better within the operation bands of most global frequency ranges. Premium also available. Contact factory for options in your specific frequency band.
Other Options:			