Product Data Sheet **HCA400-50J**

4" HELIFLEX® Air-Dielectric Coaxial Cable

Product Description

HELIFLEX® 4" low loss air dielectric cable

Application: TV, Broadcast

4" 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	0.0245	0.0075	792
1.0	0.0346	0.0106	561
1.5	0.0425	0.0129	457
2.0	0.0491	0.0150	395
10	0.111	0.0337	175
20	0.158	0.0480	123
30	0.194	0.0591	100
50	0.252	0.0769	77.4
88	0.338	0.103	57.9
100	0.362	0.110	54.1
108	0.377	0.115	52.0
150	0.448	0.136	44.0
174	0.484	0.148	40.8
200	0.521	0.159	38.0
300	0.648	0.198	30.9
400	0.757	0.231	26.7
450	0.808	0.246	25.1
500	0.856	0.261	23.8
512	0.867	0.264	23.6
600	0.946	0.288	21.8
700	1.03	0.314	20.2
800	1.11	0.339	18.9
824	1.13	0.344	18.6
894	1.18	0.360	18.0
900	1.19	0.362	17.8
925	1.21	0.367	17.6
960	1.23	0.375	17.3
1000	1.26	0.384	17.0

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

Technical Features

Structure

Inner conductor:	Corrugated Copper Tube	[mm (in)]	34.8 (1.37)
Dielectric:	Helical Polyethylene Spacer	[mm (in)]	75.3 (2.96)
Outer conductor:	Corrugated Copper	[mm (in)]	85.5 (3.36)
Jacket:	Polyethylene, PE	[mm (in)]	90.5 (3.56)

Mechanical Properties

Weight, approximately	[kg/m (lb/ft)]	3.1 (2.1)
Minimum bending radius, single bending	[mm (in)]	380 (15)
Minimum bending radius, repeated bending	[mm (in)]	890 (35)
Bending moment	[Nm (lb-ft)]	215 (159)
Max. tensile force	[N (lb)]	1800 (405)
Recommended / maximum clamp spacing	[m (ft)]	0.8 / 1.2 (2.75 / 4.0)

Electrical Properties

Characteristic impedance	[Ω]	50 +/- 0.5
Relative propagation velocity	[%]	96
Capacitance	[pF/m (pF/ft)]	70.0 (21.3)
Inductance	[µH/m (µH/ft)]	0.175 (0.053)
Max. operating frequency	[GHz]	1.66
Jacket spark test RMS	[V]	8000
Peak power rating	[kW]	940
RF Peak voltage rating	[V]	9700
DC-resistance inner conductor	[Ω/km (Ω/1000ft)]	0.43 (0.13)
DC-resistance outer conductor	[Ω/km (Ω/1000ft)]	0.13 (0.04)

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