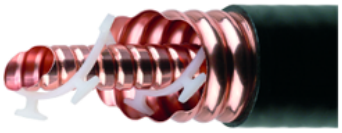
PRODUCT DATASHEET

HCA400-50J

4" HELIFLEX® Air-Dielectric Coaxial Cable



HELIFLEX® 4" low loss air dielectric 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

APPLICATIONS

Applications	TV & Radio	HF Defense	Cable Solutions

STRUCTURE

Cable Type	HCA
Size	4"
Jacket Option	Outdoor
Inner Conductor Material	Corrugated Copper Tube
Dielectric Material	Helical Polyethylene Spacer
Outer Conductor Material	Corrugated Copper
Jacket Material	Black Polyethylene

MECHANICAL SPECIFICATIONS

Inner Conductor Diameter	34.8mm (1.37in)
Dielectric Diameter	75.3mm (2.96in)
Outer Conductor Diameter	85.5mm (3.36in)
Jacket Diameter	90.5mm (3.56in)
Cable Weight	3.1kg/m (2.1lb/ft)
Min Bending Radius, Single Bend	380mm (15in)
Min. Bending Radius, Repeated Bends	890mm (35in)
Bending Moment	215 Nm (159 lbf*ft)
Tensile Strength	1,800N (405lb)
Air Volume	5l/m (0.0538ft³/ft)
Recommended / Maximum Clamp Spacing	0.8 / 1.2 m (2.75 / 4) ft

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ELECTRICAL SPECIFICATIONS

Impedance	50 +/- 0.5 Ω
Max. Operating Frequency	1.66 GHz
Velocity	96 %
Capacitance	70pF/m (21.3pF/ft)
Inductance	0.175µH/m (0.053µH/ft)
Peak Power Rating	940 kW
RF Peak Voltage	9,700 V
Jacket Spark	8,000 V RMS
DC-Resistance Inner Conductor	0.43Ω/km (0.13Ω/kft)
DC-Resistance Outer Conductor	0.13Ω/km (0.04Ω/kft)
Return Loss (VSWR) Performance	Standard
Min. Return Loss (Max. VSWR)	Typical 20.8dBdB (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.VSWR)

TESTING AND ENVIRONMENTAL

Fire Performance	Halogene Free
Compliance	RoHS 2011/65/EU China RoHS SJ/T 11364-2006 IEC 60754-1/-2 Halogen Acid Gases REACH (EC 1907/2006) IEC 60754-1/-2 Halogen Acid Gases
Phase Stabilized	Phase matched cables and assemblies are available upon request.
Installation Temperature	-40°C to 60°C (-40°F to 140°F)
Storage Temperature	-70°C to 85°C (-94°F to 185°F)
Operation Temperature	-50°C to 85°C (-58°F to 185°F)

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ATTENUATION AND POWER RATING

Frequency, MHz	dB per 100m	dB per 100ft	Power, kW
0.5	0.025	0.008	792
1	0.035	0.011	561
1.5	0.043	0.013	457
2	0.049	0.015	395
10	0.111	0.034	175
20	0.158	0.048	123
30	0.194	0.059	100
50	0.252	0.077	77.4
88	0.338	0.103	57.9
100	0.362	0.11	54.1
108	0.377	0.115	52
150	0.448	0.136	44
174	0.484	0.148	40.8
200	0.521	0.159	38
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	0.36	18
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
Note	Standard Conditions: For attenuation: VSWR 1.0, cable temperature 20°C (68°F). For average power: VSWR 1.0, ambient temperature 40°C (104°F), inner conductor temperature 115°C (239°F). No solar loading.		

External Document Links

Notes