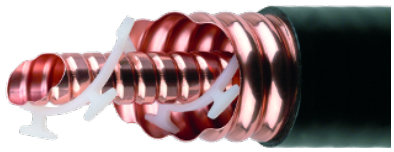
Product Data Sheet **HCA295-50JB**

3" HELIFLEX® Air-Dielectric Coaxial Cable

Product Description

HELIFLEX® 3" low loss air dielectric cable

Application: TV, Broadcast



3" 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	0.0307	0.0094	518
1.0	0.0434	0.0132	366
1.5	0.0532	0.0162	299
2.0	0.0615	0.0187	259
10	0.138	0.0421	115
20	0.196	0.0597	81.2
30	0.240	0.0732	66.3
50	0.311	0.0949	51.2
88	0.415	0.127	38.4
100	0.443	0.135	36.0
108	0.461	0.141	34.6
150	0.546	0.166	29.3
174	0.589	0.179	27.2
200	0.633	0.193	25.3
300	0.780	0.238	20.6
400	0.906	0.276	17.8
450	0.964	0.294	16.8
500	1.02	0.311	15.9
512	1.03	0.314	15.7
600	1.12	0.342	14.5
700	1.22	0.371	13.4
800	1.31	0.398	12.5
824	1.33	0.404	12.3
894	1.38	0.422	11.9
900	1.39	0.424	11.8
925	1.41	0.430	11.7
960	1.44	0.438	11.4
1000	1.47	0.448	11.2

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)]	27.1 (1.067)
Dielectric:	Helical Polyethylene Spacer	[mm (in)]	58.4 (2.3)
Outer conductor:	Corrugated Copper	[mm (in)]	66.6 (2.622)
Jacket:	Polyethylene, PE, Bitumen Filling	[mm (in)]	71 (2.795)

Mechanical Properties

Weight, approximately	[kg/m (lb/ft)]	2.6 (1.75)
Minimum bending radius, single bending	[mm (in)]	270 (11)
Minimum bending radius, repeated bending	[mm (in)]	800 (31)
Bending moment	[Nm (lb-ft)]	145 (107)
Max. tensile force	[N (lb)]	1800 (405)
Recommended / maximum clamp spacing	[m (ft)]	0.8 / 1.2 (2.75 / 4)

Electrical Properties

Characteristic impedance	[Ω]	50 +/- 0.5
Relative propagation velocity	[%]	96
Capacitance	[pF/m (pF/ft)]	70 (21.3)
Inductance	[µH/m (µH/ft)]	0.175 (0.053)
Max. operating frequency	[GHz]	1.5
Jacket spark test RMS	[V]	8000
Peak power rating	[kW]	580
RF Peak voltage rating	[V]	7600
DC-resistance inner conductor	[Ω/km (Ω/1000ft)]	0.51 (0.16)
DC-resistance outer conductor	[Ω/km (Ω/1000ft)]	0.18 (0.06)

Recommended Temperature Range

Storage temperature	[°C (°F)]	-70 to 85 (-94 to 185)
Installation temperature	[°C (°F)]	-25 to 60 (-13 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 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.		