PRODUCT DATASHEET

HCA118-50J

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

HELIFLEX® 1-1/8" 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	Wireless Communication	TV & Radio	HF Defense	Mobile Radio	Cable Solutions

STRUCTURE

Cable Type	HCA
Size	1-1/8"
Jacket Option	Outdoor
Inner Conductor Material	Copper Tube
Dielectric Material	Helical Polyethylene Spacer
Outer Conductor Material	Corrugated Copper
Jacket Material	Black Polyethylene

MECHANICAL SPECIFICATIONS

Inner Conductor Diameter	12mm (0.47in)
Dielectric Diameter	27.2mm (1.069in)
Outer Conductor Diameter	33.2mm (1.3in)
Jacket Diameter	36.4mm (1.43in)
Cable Weight	1.1kg/m (0.74lb/ft)
Min Bending Radius, Single Bend	130mm (5in)
Min. Bending Radius, Repeated Bends	400mm (16in)
Bending Moment	42 Nm (31 lbf*ft)
Tensile Strength	2,200N (495lb)
Air Volume	0.6l/m (0.0065ft³/ft)
Recommended / Maximum Clamp Spacing	0.5 / 0.9 m (1.8 / 3) ft

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ELECTRICAL SPECIFICATIONS

Impedance	50 +/- 0.5 Ω
Max. Operating Frequency	3 GHz
Velocity	92 %
Capacitance	73pF/m (22.3pF/ft)
Inductance	0.183µH/m (0.056µH/ft)
Peak Power Rating	137 kW
RF Peak Voltage	3,700 V
Jacket Spark	8,000 V RMS
DC-Resistance Inner Conductor	0.64Ω/km (0.195Ω/kft)
DC-Resistance Outer Conductor	0.5Ω/km (0.152Ω/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 stabilized and 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	0.062	0.019	137
1	0.088	0.027	125
1.5	0.108	0.033	102
2	0.125	0.038	88
10	0.281	0.086	39.2
20	0.399	0.122	27.6
30	0.491	0.15	22.4
50	0.637	0.194	17.3
88	0.852	0.26	13
100	0.91	0.277	12.1
108	0.947	0.289	11.7
150	1.12	0.342	9.89
174	1.21	0.37	9.16
200	1.31	0.398	8.47
300	1.62	0.492	6.88
400	1.88	0.574	5.96
450	2	0.611	5.61
500	2.12	0.646	5.31
512	2.15	0.655	5.24
600	2.34	0.713	4.83
700	2.54	0.775	4.47
800	2.73	0.833	4.18
824	2.78	0.847	4.11
894	2.91	0.886	3.93
900	2.92	0.889	3.92
925	2.96	0.902	3.87
960	3.02	0.921	3.8
1000	3.09	0.942	3.72
1250	3.5	1.07	3.32
1500	3.87	1.18	3.04
1700	4.15	1.27	2.86
1800	4.29	1.31	2.77
2000	4.55	1.39	2.64
2200	4.81	1.46	2.52
2300	4.93	1.5	2.46
3000	5.75	1.75	2.17
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