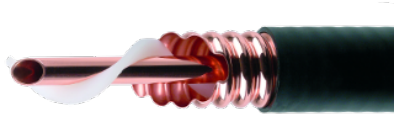
Product Data Sheet **HCA118-50JT**

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

Product Description

HELIFLEX® 1-1/8" low loss air dielectric cable; high power

Application: UHF, VHF, Broadcast



1-1/8" 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	0.0625	0.0190	137
1.0	0.0885	0.0270	137
1.5	0.109	0.0331	137
2.0	0.126	0.0383	128
10	0.284	0.0866	56.7
20	0.405	0.123	39.8
30	0.500	0.152	32.3
50	0.652	0.199	24.8
88	0.877	0.267	18.5
100	0.939	0.286	17.3
108	0.978	0.298	16.6
150	1.17	0.356	13.9
174	1.26	0.385	12.9
200	1.36	0.416	12.0
300	1.70	0.519	9.66
400	2.0	0.609	8.27
450	2.13	0.651	7.79
500	2.27	0.691	7.33
512	2.30	0.700	7.24
600	2.51	0.766	6.68
700	2.75	0.837	6.13
800	2.97	0.904	5.72
824	3.02	0.920	5.63
894	3.16	0.965	5.41
900	3.18	0.968	5.37
925	3.23	0.984	5.30
960	3.30	1.01	5.20
1000	3.38	1.03	5.09
1250	3.86	1.18	4.53
1500	4.30	1.31	4.13
1700	4.64	1.42	3.87
1800	4.81	1.47	3.76
2000	5.13	1.56	3.57
2200	5.44	1.66	3.40
2300	5.60	1.71	3.33
3000	6.62	2.02	2.93

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

Technical Features

Structure

Inner conductor:	Copper Tube	[mm (in)]	12 (0.47)
Dielectric:	Helical Fluoropolymer Spacer	[mm (in)]	27.2 (1.069)
Outer conductor:	Corrugated Copper	[mm (in)]	33.2 (1.3)
Jacket:	Polyethylene, PE	[mm (in)]	36.4 (1.43)

Mechanical Properties

Weight, approximately	[kg/m (lb/ft)]	1.1 (0.74)
Minimum bending radius, single bending	[mm (in)]	130 (5)
Minimum bending radius, repeated bending	[mm (in)]	400 (16)
Bending moment	[Nm (lb-ft)]	45 (33.2)
Max. tensile force	[N (lb)]	2200 (495)
Recommended / maximum clamp spacing	[m (ft)]	0.5 / 0.9 (1.8 / 3)

Electrical Properties

Characteristic impedance	[Ω]	50 +/- 0.5
Relative propagation velocity	[%]	92
Capacitance	[pF/m (pF/ft)]	73 (22.3)
Inductance	[µH/m (µH/ft)]	0.183 (0.056)
Max. operating frequency	[GHz]	3
Jacket spark test RMS	[V]	8000
Peak power rating	[kW]	137
RF Peak voltage rating	[V]	3700
DC-resistance inner conductor	[Ω/km (Ω/1000ft)]	0.64 (0.195)
DC-resistance outer conductor	[Ω/km (Ω/1000ft)]	0.5 (0.152)

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 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.		