PRODUCT DATASHEET

HCA158-50JB

1-5/8" HELIFLEX® Air-Dielectric Coaxial Cable

HELIFLEX® 1-5/8" low loss air dielectric cable; standard, self-healing jacket

Feature / 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	Air-Dielectric, Corrugated
Size	1-5/8
Jacket Option	Black Self healing
Inner Conductor Diameter	18.6mm (0.73in)
Inner Conductor Material	Corrugated Copper Tube
Dielectric Diameter	39.8mm (1.56in)
Dielectric Material	Helical Polyethylene Spacer
Outer Conductor Diameter	46.6mm (1.83in)
Outer Conductor Material	Corrugated Copper
Jacket Diameter	50.4mm (1.984in)
Jacket Material	Polyethylene, PE, Bitumen Filling

TESTING AND ENVIRONMENTAL

Fire Performance	Halogene Free
Installation Temperature	-25°C to 60°C (-13°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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ELECTRICAL SPECIFICATIONS

Impedance	50 +/- 0.5 Ω
Maximum Frequency	3 GHz
Velocity	95 %
Capacitance	70pF/m (21.3pF/ft)
Inductance	0.175µH/m (0.053µH/ft)
Peak Power Rating	270 kW
RF Peak Voltage	5200 Volts
Jacket Spark	8000 Volt RMS
Inner Conductor dc Resistance	1.06ohm/1000 m (0.33ohm/1000 ft)
Outer Conductor dc Resistance	0.39ohm/1000 m (0.13ohm/1000 ft)
Return Loss (VSWR) Performance	Standard
Phase Stabilized	Phase stabilized and phase matched cables and assemblies are available upon request.

MECHANICAL SPECIFICATIONS

Cable Weight	1.3kg/m (0.89lb/ft)
Minimum Bending Radius	180mm (7in)
Minimum Bending Radius	550mm (22in)
Bending Moment	42 (31)
Tensile Strength	1500N (337lb)
Recommended / Maximum Clamp Spacing	0.8 / 1.2 (2.75 / 4)

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ATTENUATION @ 20°C (68°F) AND POWER RATING @ 40°C (104°F)

Frequency, MHz	dB per 100m	dB per 100ft	Power, kW
0.5	0.044	0.013	270
1	0.062	0.019	196
1.5	0.076	0.023	160
2	0.088	0.027	138
10	0.197	0.06	61.4
20	0.279	0.085	43.4
30	0.342	0.104	35.4
50	0.444	0.135	27.3
88	0.592	0.18	20.5
100	0.632	0.193	19.2
108	0.657	0.2	18.4
150	0.778	0.237	15.6
174	0.84	0.256	14.4
200	0.902	0.275	13.5
300	1.11	0.339	11
400	1.29	0.394	9.44
450	1.38	0.419	8.83
500	1.45	0.443	8.41
512	1.47	0.449	8.3
600	1.6	0.488	7.64
700	1.74	0.529	7.03
800	1.86	0.568	6.59
824	1.89	0.577	6.49
894	1.98	0.603	6.2
900	1.98	0.605	6.2
925	2.01	0.614	6.11
960	2.05	0.626	6
1000	2.1	0.64	5.86
1250	2.37	0.722	5.21
1500	2.61	0.797	4.75
1700	2.8	0.853	4.44
1800	2.89	0.88	4.31
2000	3.06	0.932	4.08
2200	3.22	0.982	3.89
2300	3.3	1.01	3.81
3000	3.83	1.17	3.32

External Document Links

Notes