PRODUCT DATASHEET

HCA78-50JFN

7/8" HELIFLEX® Air-Dielectric Coaxial Cable, flame retardant/ halogen free jacket

HELIFLEX® 7/8" low loss air dielectric cable

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	7/8
Jacket Option	Black
Inner Conductor Diameter	9mm (0.35in)
Inner Conductor Material	Copper Tube
Dielectric Diameter	20.2mm (0.79in)
Dielectric Material	Helical Polyethylene Spacer
Outer Conductor Diameter	25.5mm (1in)
Outer Conductor Material	Corrugated Copper
Jacket Diameter	28mm (1.103in)
Jacket Material	Polyethylene, PE, Metalhydroxite Filling

TESTING AND ENVIRONMENTAL

Fire Performance	Flame Retardant, LS0H
Flame Retardant Jacket Specifications	The jacketing meets the testing requirements of Underwriters Laboratories UL 1666, and qualifies for the NEC CATVR type rating code (NEC Section 820-51(b) Type CATVR- NEC 1996)as well as IEC 60332-1
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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ELECTRICAL SPECIFICATIONS

Impedance	50 +/- 0.5 Ω
Maximum Frequency	3 GHz
Velocity	93 %
Capacitance	71pF/m (21.6pF/ft)
Inductance	0.178µH/m (0.054µH/ft)
Peak Power Rating	73 kW
RF Peak Voltage	2700 Volts
Jacket Spark	8000 Volt RMS
Inner Conductor dc Resistance	1.1ohm/1000 m (0.34ohm/1000 ft)
Outer Conductor dc Resistance	0.88ohm/1000 m (0.27ohm/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	0.68kg/m (0.46lb/ft)
Minimum Bending Radius	100mm (4in)
Minimum Bending Radius	250mm (10in)
Bending Moment	27 (20)
Tensile Strength	1600N (360lb)
Recommended / Maximum Clamp Spacing	0.5 / 0.9 (1.8 / 3)

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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	0.081	0.025	73
1	0.115	0.035	73
1.5	0.141	0.043	70.9
2	0.163	0.05	61.4
10	0.366	0.112	27.3
20	0.52	0.158	19.2
30	0.638	0.194	15.7
50	0.827	0.252	12.1
88	1.1	0.337	9.11
100	1.18	0.359	8.49
108	1.23	0.374	8.15
150	1.45	0.443	6.92
174	1.57	0.478	6.39
200	1.69	0.514	5.94
300	2.08	0.634	4.84
400	2.42	0.738	4.17
450	2.57	0.785	3.93
500	2.72	0.83	3.71
512	2.76	0.84	3.66
600	3	0.914	3.37
700	3.25	0.992	3.12
800	3.49	1.07	2.91
824	3.55	1.08	2.86
894	3.71	1.13	2.74
900	3.72	1.13	2.74
925	3.78	1.15	2.69
960	3.85	1.17	2.65
1000	3.94	1.2	2.59
1250	4.45	1.36	2.3
1500	4.91	1.5	2.1
1700	5.26	1.6	1.97
1800	5.43	1.65	1.91
2000	5.75	1.75	1.81
2200	6.07	1.85	1.72
2300	6.22	1.9	1.68
3000	7.22	2.2	1.47

External Document Links

Notes