

**HCA300-50JFN**

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



HELIFLEX® 3" low loss air dielectric cable; flame retardant/ halogen free jacket

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	TV & Radio	HF Defense	Cable Solutions
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STRUCTURE

Cable Type	HCA
Size	3"
Jacket Option	Indoor
Inner Conductor Material	Corrugated Copper Tube
Dielectric Material	Helical Polyethylene Spacer
Outer Conductor Material	Corrugated Copper
Jacket Material	Black Polyethylene, Metalhydroxite Filling

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MECHANICAL SPECIFICATIONS

Inner Conductor Diameter	29.3mm (1.15in)
Dielectric Diameter	63.5mm (2.5in)
Outer Conductor Diameter	72.4mm (2.85in)
Jacket Diameter	76mm (2.992in)
Cable Weight	2.3kg/m (1.55lb/ft)
Min Bending Radius, Single Bend	270mm (11in)
Min. Bending Radius, Repeated Bends	760mm (30in)
Bending Moment	145 Nm (107 lbf*ft)
Tensile Strength	1,800N (405lb)
Air Volume	3l/m (0.0323ft³/ft)
Recommended / Maximum Clamp Spacing	0.8 / 1.2 m (2.75 / 4) ft

ELECTRICAL SPECIFICATIONS

Impedance	50 +/- 0.5 Ω
Max. Operating Frequency	1.63 GHz
Velocity	96 %
Capacitance	66.6pF/m (20.3pF/ft)
Inductance	0.167 μ H/m (0.051 μ H/ft)
Peak Power Rating	640 kW
RF Peak Voltage	8,000 V
Jacket Spark	8,000 V RMS
DC-Resistance Inner Conductor	0.39 Ω /km (0.12 Ω /kft)
DC-Resistance Outer Conductor	0.16 Ω /km (0.05 Ω /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	Flame Retardant, Halogen Free, Low Smoke
Compliance	RoHS 2011/65/EU China RoHS SJ/T 11364-2006 IEC 60754-1/-2 Halogen Acid Gases REACH (EC 1907/2006) IEC 60332-1 Single-Cable Flame Test IEC 61034-1, -2 Smoke Density Measurement EN 50575:2014 + A1:2016 Construction Products Regulation
Phase Stabilized	Phase matched cables and assemblies are available upon request.
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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ATTENUATION AND POWER RATING

Frequency, MHz	dB per 100m	dB per 100ft	Power, kW
0.5	0.028	0.009	596
1	0.04	0.012	421
1.5	0.049	0.015	343
2	0.056	0.017	297
10	0.127	0.039	132
20	0.181	0.055	92.3
30	0.223	0.068	74.9
50	0.291	0.089	57.4
88	0.391	0.119	42.8
100	0.418	0.127	40
108	0.436	0.133	38.4
150	0.519	0.158	32.2
174	0.561	0.171	29.8
200	0.605	0.184	27.7
300	0.754	0.23	22.2
400	0.883	0.269	19
450	0.943	0.287	17.8
500	1	0.305	16.8
512	1.01	0.309	16.6
600	1.11	0.338	15.2
700	1.21	0.368	13.9
800	1.3	0.398	13
824	1.33	0.404	12.7
894	1.39	0.424	12.1
900	1.4	0.425	12.1
925	1.42	0.432	11.9
960	1.45	0.441	11.6
1000	1.48	0.452	11.4
1250	1.69	0.515	10
1500	1.88	0.573	9.04
1700	2.03	0.618	8.39

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