



1-5/8" low loss air dielectric cable; Plenum-rated



FEATURES / BENEFITS

- Low Attenuation**  
The low attenuation of air dielectric coaxial cable results in highly efficient signal transfer in your RF system.
- Complete Shielding**  
The solid outer conductor of air dielectric coaxial cable creates a continuous RFI/EMI shield that minimizes system interference.
- Low VSWR**  
Special low VSWR versions of air dielectric coaxial cables contribute to low system noise.
- Outstanding Intermodulation Performance**  
Air dielectric 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, Air Dielectric Cable 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

Size		1-5/8
Jacket Option		Blue
Inner Conductor Diameter	mm (in)	18.6 (0.73)
Inner Conductor Material		Corrugated Copper Tube
Dielectric Diameter	mm (in)	39.8 (1.56)
Dielectric Material		Helical Polyethylene Spacer
Outer Conductor Diameter	mm (in)	46.6 (1.83)
Outer Conductor Material		Corrugated Copper
Jacket Diameter	mm (in)	48.9 (1.925)
Jacket Material		Polyvinylidene Fluoride, PVDF
Cable Type		Air-Dielectric, Corrugated



**TESTING AND ENVIRONMENTAL**

<b>Fire Performance</b>		Flame Retardant, Plenum Rated
<b>Flame Retardant Jacket Specifications</b>		Meets/Exceeds Steiner Tunnel Test Method UL 910, NEC 820-53 (a) CATVP, NFPA-262.
<b>Installation Temperature</b>	°C(°F)	-40 to 60 (-40 to 140)
<b>Storage Temperature</b>	°C (°F)	-40 to 85 (-40 to 185)
<b>Operation Temperature</b>	°C(°F)	-50 to 85 (-58 to 185)

**ELECTRICAL SPECIFICATIONS**

<b>Impedance</b>	Ω	50 +/- 0.5
<b>Maximum Frequency</b>	GHz	3
<b>Velocity</b>	%	95
<b>Capacitance</b>	pF/m (pF/ft)	70 (21.3)
<b>Inductance</b>	uH/m (uH/ft)	0.175 (0.053)
<b>Peak Power Rating</b>	kW	270
<b>RF Peak Voltage</b>	Volts	5200
<b>Jacket Spark</b>	Volt RMS	8000
<b>Inner Conductor dc Resistance</b>	Ω/1000 m (Ω/1000 ft)	1.06 (0.33)
<b>Outer Conductor dc Resistance</b>	Ω/1000 m (Ω/1000 ft)	0.34 (0.11)
<b>Return Loss (VSWR) Performance</b>		Standard
<b>Min. Return Loss (Max. VSWR)</b>	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.
<b>Temperature &amp; Power</b>		Standard

**MECHANICAL SPECIFICATIONS**

<b>Cable Weight, Nominal</b>	kg/m (lb/ft)	1.3 (0.89)
<b>Minimum Bending Radius, Single Bend</b>	mm (in)	180 (7)
<b>Minimum Bending Radius, Repeated Bends</b>	mm (in)	550 (22)
<b>Bending Moment</b>	Nm (lb-ft)	42 (31)
<b>Tensile Strength</b>	N (lb)	1500 (337)
<b>Recommended / Maximum Clamp Spacing</b>	m (ft)	0.8 / 1.2 (2.75 / 4)



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

Frequency, MHz	dB per 100m	dB per 100ft	Power, kW
0.5	0.04	0.01	270
1	0.06	0.02	196
1.5	0.08	0.02	160
2	0.09	0.03	138
10	0.20	0.06	61.40
20	0.28	0.09	43.40
30	0.34	0.10	35.40
50	0.44	0.14	27.30
88	0.59	0.18	20.50
100	0.63	0.19	19.20
108	0.66	0.20	18.40
150	0.78	0.24	15.60
174	0.84	0.26	14.40
200	0.90	0.28	13.50
300	1.11	0.34	11
400	1.29	0.39	9.44
450	1.38	0.42	8.83
500	1.45	0.44	8.41
512	1.47	0.45	8.30
600	1.60	0.49	7.64
700	1.74	0.53	7.03
800	1.86	0.57	6.59
824	1.89	0.58	6.49
894	1.98	0.60	6.20
900	1.98	0.61	6.20
925	2.01	0.61	6.11
960	2.05	0.63	6
1000	2.10	0.64	5.86
1250	2.37	0.72	5.21
1500	2.61	0.80	4.75
1700	2.80	0.85	4.44
1800	2.89	0.88	4.31
2000	3.06	0.93	4.08
2200	3.22	0.98	3.89
2300	3.30	1.01	3.81
3000	3.83	1.17	3.32



PRODUCT DATASHEET

**HCA158-50JPL**

1-5/8" Air Dielectric Cable

External Document Links

Notes