

HELIFLEX® Cable

HCA318-50 Series 3-1/8" Air Coax



APPLICATIONS

TV, Broadcast

GENERAL INFORMATION

Cable Type	Air-Dielectric, Corrugated
Size	3-1/8"

STRUCTURE

Inner Conductor Material	Corrugated Copper Tube
Diameter Inner Conductor, mm (in)	34.8 (1.37)
Diameter Dielectric, mm (in)	75.3 (2.96)
Outer Conductor Material	Corrugated Copper
Diameter Copper Outer Conductor, mm (in)	85.5 (3.36)
Diameter over Jacket Nominal, mm (in)	90.5 (3.56)

MECHANICAL SPECIFICATIONS

Cable Weight, kg/m (lb/ft)	3.3 (2.25)
Minimum Bending Radius, Single Bend, mm (in)	380 (15)
Minimum Bending Radius, Repeated Bends, mm (in)	1100 (43)
Tensile Strength, N (lb)	2600 (585)
Recommended / Maximum Clamp Spacing, m (ft)	0.8 / 1.2 (2.75 / 4.0)

ELECTRICAL SPECIFICATIONS

Impedance, Ohm	50 +/- 0.5
Velocity, percent	96
Capacitance, pF/m (pF/ft)	70.0 (21.3)
Inductance, μH/m (μH/ft)	0.175 (0.053)
Maximum Frequency, GHz	1.5
Peak Power Rating, kW	940
RF Peak Voltage, Volts	9700
Jacket Spark, Volt RMS	8000
Inner Conductor dc Resistance, ohm/1000 m (ohm/1000 ft)	0.43 (0.13)
Outer Conductor dc Resistance, ohm/1000 m (Ohm/1000 ft)	0.13 (0.04)

See Installation, Operation and Storage Temperatures on page 28.

CONNECTORS AND ACCESSORIES

Connectors	See pages 79-81
Jumpers	See pages 82-87
Accessories	See pages 103-105
Coaxial Devices	See pages 106-108
Technical Appendix	See pages 639-648

HCA318-50J/JB ATTENUATION AND AVERAGE POWER

Frequency MHz	Attenuation dB/100 m	Attenuation dB/100 ft	Average Power kW
0.5	0.0245	0.0075	793
1.0	0.0346	0.0106	560
1.5	0.0425	0.0129	457
2.0	0.0491	0.0150	395
10	0.111	0.0337	175
20	0.158	0.0480	123
30	0.194	0.0591	100
50	0.252	0.0769	77.3
88	0.338	0.103	57.9
100	0.362	0.110	54.2
108	0.377	0.115	52.1
150	0.448	0.136	44.0
174	0.484	0.148	40.8
200	0.521	0.159	38.0
300	0.648	0.198	30.9
400	0.757	0.231	26.7
450	0.808	0.246	25.1
500	0.856	0.261	23.8
512	0.867	0.264	23.6
600	0.946	0.288	21.8
700	1.03	0.314	20.2
800	1.11	0.339	18.9
824	1.13	0.344	18.6
894	1.18	0.360	17.9
900	1.19	0.362	17.9
925	1.21	0.367	17.6
960	1.23	0.375	17.3
1000	1.26	0.384	17.0
1250	1.43	0.436	15.3
1500	1.59	0.485	14.1

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.

ORDERING INFORMATION

Model Number	Jacket
HCA318-50J	Standard
HCA318-50JB	Standard, Self-Healing