

AL5-50



AL5-50, HELIAX® Low Loss Flexible Aluminum Coaxial Cable, corrugated aluminum, 7/8 in, black PE jacket.

Product Classification

Product Type	Coaxial wireless cable
Product Brand	HELIAX®
Product Series	AL5-50

General Specifications

Flexibility	Standard
Jacket Color	Black
Performance Note	Attenuation values typical, guaranteed within 5%
Specification Sheet Revision Level	B

Dimensions

Diameter Over Jacket	28 mm 1.102 in
Inner Conductor OD	9.3 mm 0.366 in
Outer Conductor OD	25.2 mm 0.992 in
Nominal Size	7/8 in

Electrical Specifications

3rd Order IMD	-112 dBm
3rd Order IMD Test Method	Two +43 dBm carriers
Cable Impedance	50 ohm ±1 ohm
Capacitance	72.2 pF/m 22.007 pF/ft
dc Resistance, Inner Conductor	2.201 ohms/km 0.671 ohms/kft
dc Resistance, Outer Conductor	1.7 ohms/km 0.518 ohms/kft
dc Test Voltage	6000 V
Inductance	0.184 µH/m 0.056 µH/ft
Insulation Resistance	100000 MOhms-km
Jacket Spark Test Voltage (rms)	8000 V

AL5-50

Operating Frequency Band	1 – 5200 MHz
Peak Power	91 kW
Velocity	88 %

VSWR/Return Loss

Frequency Band	VSWR	Return Loss (dB)
30–2700 MHz	1.15	23.13
3000–3900 MHz	1.2	20.83

Attenuation

Frequency (MHz)	Attenuation (dB/100 m)	Average Power (kW)
1.0	0.132	64.46
1.5	0.162	52.6
2.0	0.187	45.53
10.0	0.42	20.25
20.0	0.597	14.27
30.0	0.734	11.61
50.0	0.952	8.95
85.0	1.249	6.82
88.0	1.271	6.7
100.0	1.357	6.28
108.0	1.412	6.03
150.0	1.673	5.09
174.0	1.806	4.71
200.0	1.943	4.39
204.0	1.962	4.34
300.0	2.401	3.55
400.0	2.793	3.05
450.0	2.973	2.86
460.0	3.009	2.83
500.0	3.144	2.71
512.0	3.185	2.68
600.0	3.465	2.46
700.0	3.763	2.26
800.0	4.044	2.11

AL5-50

824.0	4.109	2.07
894.0	4.293	1.98
960.0	4.463	1.91
1000.0	4.563	1.87
1218.0	5.081	1.68
1250.0	5.154	1.65
1500.0	5.698	1.49
1700.0	6.106	1.39
1794.0	6.292	1.35
1800.0	6.303	1.35
2000.0	6.685	1.27
2100.0	6.871	1.24
2200.0	7.052	1.21
2300.0	7.23	1.18
2500.0	7.579	1.12
2700.0	7.917	1.08
3000.0	8.406	1.01
3400.0	9.031	0.94
3600.0	9.334	0.91
3700.0	9.482	0.9
3800.0	9.629	0.88
3900.0	9.775	0.87
4000.0	9.92	0.86
4100.0	10.063	0.85
4200.0	10.205	0.83
4300.0	10.346	0.82
4400.0	10.485	0.81
4500.0	10.624	0.8
4600.0	10.76	0.79
4700.0	10.897	0.78
4800.0	11.032	0.77
4900.0	11.166	0.76
5000.0	11.3	0.75

Material Specifications

Dielectric Material

Foam PE

AL5-50

Jacket Material	PE
Inner Conductor Material	Copper tube
Outer Conductor Material	Corrugated aluminum

Mechanical Specifications

Minimum Bend Radius, multiple Bends	280.01 mm 11.024 in
Minimum Bend Radius, single Bend	155.016 mm 6.103 in
Number of Bends, minimum	15
Number of Bends, typical	30
Tensile Strength	147 kg 324.079 lb
Bending Moment	18.3 N-m 161.969 in lb
Flat Plate Crush Strength	1 kg/mm 55.997 lb/in

Environmental Specifications

Installation temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Operating Temperature	-55 °C to +85 °C (-67 °F to +185 °F)
Storage Temperature	-70 °C to +85 °C (-94 °F to +185 °F)
Attenuation, Ambient Temperature	68 °F 20 °C
Average Power, Ambient Temperature	104 °F 40 °C
Average Power, Inner Conductor Temperature	212 °F 100 °C

Packaging and Weights

Cable weight	0.385 kg/m 0.259 lb/ft
---------------------	--------------------------