

AL5-50



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

Product Classification

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

Construction Materials

Jacket Material	PE
Outer Conductor Material	Corrugated aluminum
Dielectric Material	Foam PE
Flexibility	Standard
Inner Conductor Material	Copper tube
Jacket Color	Black

Dimensions

Nominal Size	7/8 in
Cable Weight	0.26 lb/ft 0.39 kg/m
Diameter Over Dielectric	24.130 mm 0.950 in
Diameter Over Jacket	27.940 mm 1.100 in
Inner Conductor OD	9.3980 mm 0.3700 in
Outer Conductor OD	25.400 mm 1.000 in

Electrical Specifications

Cable Impedance	50 ohm \pm 1 ohm
Capacitance	22.0 pF/ft 72.2 pF/m
dc Resistance, Inner Conductor	0.410 ohms/kft 1.435 ohms/km
dc Resistance, Outer Conductor	0.500 ohms/kft 1.641 ohms/km
dc Test Voltage	6000 V
Inductance	0.184 μ H/m 0.056 μ H/ft
Insulation Resistance	100000 Mohms•km
Jacket Spark Test Voltage (rms)	8000 V
Operating Frequency Band	1 – 5000 MHz
Peak Power	91.0 kW
Velocity	91 %

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)

Mechanical Specifications

Bending Moment	18.3 N-m 13.5 ft lb
Flat Plate Crush Strength	58.0 lb/in 1.0 kg/mm
Minimum Bend Radius, Multiple Bends	254.00 mm 10.00 in
Minimum Bend Radius, Single Bend	127.00 mm 5.00 in
Number of Bends, minimum	15
Number of Bends, typical	30
Tensile Strength	147 kg 325 lb

Note

Performance Note	Values typical, unless otherwise stated
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Standard Conditions

Attenuation, Ambient Temperature	20 °C 68 °F
Average Power, Ambient Temperature	40 °C 104 °F
Average Power, Inner Conductor Temperature	100 °C 212 °F

Return Loss/VSWR

Frequency Band	VSWR	Return Loss (dB)
806–960 MHz	1.13	24.30
1700–2000 MHz	1.13	24.30

Attenuation

Frequency (MHz)	Attenuation (dB/100 m)	Attenuation (dB/100 ft)	Average Power (kW)
0.5	0.085	0.026	91.00
1	0.12	0.037	64.46
1.5	0.147	0.045	52.60
2	0.17	0.052	45.53
10	0.382	0.117	20.25
20	0.543	0.165	14.27
30	0.667	0.203	11.61
50	0.865	0.264	8.95
85	1.135	0.346	6.82
88	1.155	0.352	6.70
100	1.234	0.376	6.28
108	1.284	0.391	6.03
150	1.521	0.464	5.09
174	1.642	0.501	4.71
200	1.766	0.538	4.39
204	1.784	0.544	4.34
300	2.183	0.665	3.55
400	2.539	0.774	3.05
450	2.703	0.824	2.86
460	2.735	0.833	2.83
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500	2.858	0.871	2.71
512	2.895	0.882	2.68
600	3.15	0.96	2.46
700	3.421	1.043	2.26
800	3.676	1.12	2.11
824	3.735	1.138	2.07
894	3.903	1.19	1.98
960	4.057	1.237	1.91
1000	4.148	1.264	1.87
1218	4.619	1.408	1.68
1250	4.685	1.428	1.65
1500	5.18	1.579	1.49
1700	5.551	1.692	1.39
1794	5.72	1.743	1.35
1800	5.73	1.747	1.35
2000	6.077	1.852	1.27
2100	6.246	1.904	1.24
2200	6.411	1.954	1.21
2300	6.573	2.003	1.18
2500	6.89	2.1	1.12
2700	7.197	2.194	1.08
3000	7.642	2.329	1.01
3400	8.21	2.502	0.94
3600	8.485	2.586	0.91

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3700	8.62	2.627	0.90
3800	8.754	2.668	0.88
3900	8.886	2.708	0.87
4000	9.018	2.748	0.86
4100	9.148	2.788	0.85
4200	9.277	2.827	0.83
4300	9.405	2.866	0.82
4400	9.532	2.905	0.81
4500	9.658	2.943	0.80
4600	9.782	2.982	0.79
4700	9.906	3.019	0.78
4800	10.029	3.057	0.77
4900	10.151	3.094	0.76
5000	10.273	3.131	0.75

** Values typical, guaranteed within 5%*