

# Product Specifications

## AL7-50

AL7-50, HELIAX<sup>®</sup> Low Loss Flexible Aluminum Coaxial Cable, corrugated aluminum, 1-5/8 in, black PE jacket



## CHARACTERISTICS

### Construction Materials

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

### Dimensions

Nominal Size	1-5/8 in
Cable Weight	0.52 lb/ft   0.77 kg/m
Diameter Over Dielectric	44.450 mm   1.750 in
Diameter Over Jacket	49.784 mm   1.960 in
Inner Conductor OD	18.288 mm   0.720 in
Outer Conductor OD	46.482 mm   1.830 in

### Electrical Specifications

Cable Impedance	50 ohm $\pm$ 1 ohm
Capacitance	72 pF/m   22 pF/ft
dc Resistance, Inner Conductor	0.410 ohms/kft   1.435 ohms/km
dc Resistance, Outer Conductor	0.200 ohms/kft   0.656 ohms/km
dc Test Voltage	11000 V
Inductance	0.187 $\mu$ H/m   0.057 $\mu$ H/ft
Insulation Resistance	100000 MOhm
Jacket Spark Test Voltage (rms)	10000 V
Operating Frequency Band	1 – 2700 MHz
Peak Power	302.0 kW
Pulse Reflection	0.5%

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Velocity 92%

## 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)

## General Specifications

Brand HELIAX®

## Mechanical Specifications

Bending Moment	40.7 N-m   30.0 ft lb
Flat Plate Crush Strength	75.0 lb/in   1.3 kg/mm
Minimum Bend Radius, Multiple Bends	381.00 mm   15.00 in
Minimum Bend Radius, Single Bend	203.20 mm   8.00 in
Number of Bends, minimum	15
Number of Bends, typical	50
Tensile Strength	159 kg   350 lb

## 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

Frequency Band	VSWR	Return Loss (dB)
806–960 MHz	1.13	24.30
1700–2170 MHz	1.13	24.30

## Attenuation

Frequency (MHz)	Attenuation (dB/100 m)	Attenuation (dB/100 ft)	Average Power (kW)
0.5	0.049	0.015	147.02
1	0.069	0.021	103.83
1.5	0.085	0.026	84.69
2	0.098	0.03	73.28
10	0.221	0.067	32.52
20	0.314	0.096	22.87
30	0.387	0.118	18.59
50	0.502	0.153	14.30
88	0.673	0.205	10.67
100	0.72	0.219	9.99
108	0.749	0.228	9.59
150	0.89	0.271	8.08
174	0.962	0.293	7.47
200	1.035	0.316	6.94

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300	1.285	0.392	5.59
400	1.5	0.457	4.79
450	1.599	0.487	4.49
500	1.693	0.516	4.24
512	1.715	0.523	4.19
600	1.871	0.57	3.84
700	2.037	0.621	3.53
800	2.193	0.668	3.28
824	2.229	0.679	3.22
894	2.333	0.711	3.08
960	2.428	0.74	2.96
1000	2.484	0.757	2.89
1250	2.817	0.859	2.55
1500	3.126	0.953	2.30
1700	3.36	1.024	2.14
1800	3.472	1.058	2.07
2000	3.692	1.125	1.95
2100	3.798	1.158	1.89
2200	3.903	1.19	1.84
2300	4.006	1.221	1.79
2500	4.208	1.282	1.71
2700	4.404	1.342	1.63

## Regulatory Compliance/Certifications

### Agency

RoHS 2002/95/EC

### Classification

Compliant

