

# AL5-50 | AL5-50-A

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

## Product Classification

<b>Product Type</b>	Coaxial wireless cable
<b>Product Brand</b>	HELIAX®
<b>Product Series</b>	AL5-50

## General Specifications

<b>Flexibility</b>	Standard
<b>Jacket Color</b>	Black
<b>Performance Note</b>	Attenuation values typical, guaranteed within 5%
<b>Specification Sheet Revision Level</b>	C

## Dimensions

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

## Electrical Specifications

<b>3rd Order IMD</b>	-112 dBm
<b>3rd Order IMD Test Method</b>	Two +43 dBm carriers
<b>Cable Impedance</b>	50 ohm ±1 ohm
<b>Capacitance</b>	72.2 pF/m   22.007 pF/ft
<b>dc Resistance, Inner Conductor</b>	2.201 ohms/km   0.671 ohms/kft
<b>dc Resistance, Outer Conductor</b>	1.7 ohms/km   0.518 ohms/kft
<b>dc Test Voltage</b>	6000 V

# AL5-50 | AL5-50-A

<b>Inductance</b>	0.184 $\mu$ H/m   0.056 $\mu$ H/ft
<b>Insulation Resistance</b>	100000 MOhms-km
<b>Jacket Spark Test Voltage (rms)</b>	8000 V
<b>Operating Frequency Band</b>	1 – 5200 MHz
<b>Peak Power</b>	91 kW
<b>Velocity</b>	88 %

## VSWR/Return Loss

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

## Attenuation

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

# AL5-50 | AL5-50-A

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<b>600.0</b>	3.465	2.46
<b>700.0</b>	3.763	2.26
<b>800.0</b>	4.044	2.11
<b>824.0</b>	4.109	2.07
<b>894.0</b>	4.293	1.98
<b>960.0</b>	4.463	1.91
<b>1000.0</b>	4.563	1.87
<b>1218.0</b>	5.081	1.68
<b>1250.0</b>	5.154	1.65
<b>1500.0</b>	5.698	1.49
<b>1700.0</b>	6.106	1.39
<b>1794.0</b>	6.292	1.35
<b>1800.0</b>	6.303	1.35
<b>2000.0</b>	6.685	1.27
<b>2100.0</b>	6.871	1.24
<b>2200.0</b>	7.052	1.21
<b>2300.0</b>	7.23	1.18
<b>2500.0</b>	7.579	1.12
<b>2700.0</b>	7.917	1.08
<b>3000.0</b>	8.406	1.01
<b>3400.0</b>	9.031	0.94
<b>3600.0</b>	9.334	0.91
<b>3700.0</b>	9.482	0.9
<b>3800.0</b>	9.629	0.88
<b>3900.0</b>	9.775	0.87
<b>4000.0</b>	9.92	0.86
<b>4100.0</b>	10.063	0.85
<b>4200.0</b>	10.205	0.83
<b>4300.0</b>	10.346	0.82
<b>4400.0</b>	10.485	0.81
<b>4500.0</b>	10.624	0.8
<b>4600.0</b>	10.76	0.79
<b>4700.0</b>	10.897	0.78
<b>4800.0</b>	11.032	0.77
<b>4900.0</b>	11.166	0.76

# AL5-50 | AL5-50-A

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5000.0

11.3

0.75

## Material Specifications

<b>Dielectric Material</b>	Foam PE
<b>Jacket Material</b>	PE
<b>Inner Conductor Material</b>	Copper tube
<b>Outer Conductor Material</b>	Corrugated aluminum

## Mechanical Specifications

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

## Environmental Specifications

<b>Installation temperature</b>	-40 °C to +60 °C (-40 °F to +140 °F)
<b>Operating Temperature</b>	-40 °C to +70 °C (-40 °F to +158 °F)
<b>Storage Temperature</b>	-40 °C to +70 °C (-40 °F to +158 °F)
<b>Attenuation, Ambient Temperature</b>	68 °F   20 °C
<b>Average Power, Ambient Temperature</b>	104 °F   40 °C
<b>Average Power, Inner Conductor Temperature</b>	212 °F   100 °C

## Packaging and Weights

<b>Cable weight</b>	0.385 kg/m   0.259 lb/ft
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