

# L4A-PNMNM-20-X

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LDF4-50A SureFlex® Jumper with interface types N male attached and N male loose, 20 feet

## Product Classification

<b>Product Type</b>	SureFlex® standard
<b>Product Brand</b>	HELIAX®   SureFlex®
<b>Product Series</b>	LDF4-50A

## General Specifications

<b>Attachment, Connector A</b>	Factory attached
<b>Attachment, Connector B</b>	Field attachment
<b>Body Style, Connector A</b>	Straight
<b>Body Style, Connector B</b>	Straight
<b>Interface, Connector A</b>	N Male
<b>Interface, Connector B</b>	N Male
<b>Specification Sheet Revision Level</b>	A

## Dimensions

<b>Length</b>	6.096 m   20 ft
<b>Nominal Size</b>	1/2 in

## Electrical Specifications

<b>DTF, Connector A</b>	-32 dB
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## Jumper Assembly Sample Label

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## Environmental Specifications

### Immersion Test Method

Meets IEC 60529:2001, IP68 in mated condition

## Regulatory Compliance/Certifications

### Agency

ISO 9001:2015

### Classification

Designed, manufactured and/or distributed under this quality management system

## Included Products

L4TNM-PSA

- Type N Male Positive Stop™ for 1/2 in AL4RPV-50, LDF4-50A, HL4RPV-50 cable

LDF4-50A

- LDF4-50A, HELIAX® Low Density Foam Coaxial Cable, corrugated copper, 1/2 in, black PE jacket Halogen free jacketing non-fire-retardant (General propose cable for outdoor use only)

# L4TNM-PSA

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Type N Male Positive Stop™ for 1/2 in AL4RPV-50, LDF4-50A, HL4RPV-50 cable

- This product is part of the ANDREW Wired for Wireless® Solution

## Product Classification

<b>Product Type</b>	Wireless and radiating connector
<b>Product Brand</b>	HELIAX®   Positive Stop™
<b>Product Series</b>	LDF4-50A
<b>Ordering Note</b>	ANDREW® standard product (Global)

## General Specifications

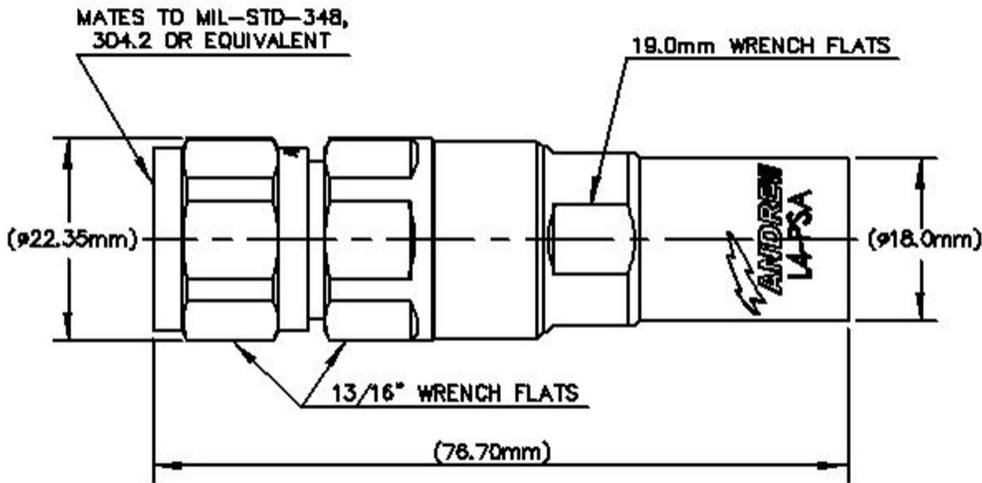
<b>Body Style</b>	Straight
<b>Cable Family</b>	AL4-50
<b>Harmonized System (HS) Code</b>	85366910 (Coaxial cable and other coaxial electric conductors)
<b>Inner Contact Attachment Method</b>	Captivated
<b>Inner Contact Plating</b>	Silver
<b>Interface</b>	N Male
<b>Mounting Angle</b>	Straight
<b>Outer Contact Attachment Method</b>	Ring-flare
<b>Outer Contact Plating</b>	Trimetal

## Dimensions

<b>Length</b>	76.71 mm   3.02 in
<b>Diameter</b>	22.35 mm   0.88 in
<b>Nominal Size</b>	1/2 in

## Outline Drawing

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## Electrical Specifications

<b>3rd Order IMD at Frequency</b>	-116 dBm @ 910 MHz
<b>3rd Order IMD Test Method</b>	Two +43 dBm carriers
<b>Insertion Loss Coefficient, typical</b>	0.05
<b>Average Power at Frequency</b>	0.6 kW @ 900 MHz
<b>Cable Impedance</b>	50 ohm
<b>Connector Impedance</b>	50 ohm
<b>dc Test Voltage</b>	2000 V
<b>Inner Contact Resistance, maximum</b>	2 mOhm
<b>Insulation Resistance, minimum</b>	5000 MOhm
<b>Operating Frequency Band</b>	0 – 8800 MHz
<b>Outer Contact Resistance, maximum</b>	0.3 mOhm
<b>Peak Power, maximum</b>	10 kW
<b>RF Operating Voltage, maximum (vrms)</b>	707 V
<b>Shielding Effectiveness</b>	-130 dB

## VSWR/Return Loss

Frequency Band	VSWR	Return Loss (dB)
45–1000 MHz	1.023	38.89

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<b>1010–2200 MHz</b>	1.036	35
<b>2210–3000 MHz</b>	1.046	32.96
<b>3010–4000 MHz</b>	1.094	26.96
<b>4010–6000 MHz</b>	1.26	19
<b>6010–8000 MHz</b>	1.33	17

## Mechanical Specifications

<b>Attachment Durability</b>	25 cycles
<b>Connector Retention Tensile Force</b>	889.64 N   200 lbf
<b>Connector Retention Torque</b>	5.42 N-m   47.998 in lb
<b>Coupling Nut Proof Torque</b>	4.52 N-m   39.997 in lb
<b>Coupling Nut Retention Force</b>	444.82 N   100 lbf
<b>Coupling Nut Retention Force Method</b>	MIL-C-39012C-3.25, 4.6.22
<b>Insertion Force</b>	66.72 N   15 lbf
<b>Insertion Force Method</b>	MIL-C-39012C-3.12, 4.6.9
<b>Interface Durability</b>	500 cycles
<b>Interface Durability Method</b>	IEC 61169-16:9.5
<b>Mechanical Shock Test Method</b>	MIL-STD-202, Method 213, Test Condition I

## Environmental Specifications

<b>Operating Temperature</b>	-55 °C to +85 °C (-67 °F to +185 °F)
<b>Storage Temperature</b>	-55 °C to +85 °C (-67 °F to +185 °F)
<b>Corrosion Test Method</b>	MIL-STD-1344A, Method 1001.1, Test Condition A
<b>Immersion Depth</b>	1 m
<b>Immersion Test Mating</b>	Unmated
<b>Immersion Test Method</b>	IEC 60529:2001, IP68
<b>Moisture Resistance Test Method</b>	MIL-STD-202F, Method 106F
<b>Thermal Shock Test Method</b>	MIL-STD-202F, Method 107G, Test Condition A-1, Low Temperature -55 °C
<b>Vibration Test Method</b>	IEC 60068-2-6
<b>Water Jetting Test Mating</b>	Unmated
<b>Water Jetting Test Method</b>	IEC 60529:2001, IP66

## Packaging and Weights

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**Weight, net**

94.71 g | 0.209 lb

## Regulatory Compliance/Certifications

**Agency**

**Classification**

CHINA-ROHS

Above maximum concentration value

ISO 9001:2015

Designed, manufactured and/or distributed under this quality management system

ROHS

Compliant/Exempted

UK-ROHS

Compliant/Exempted



### \* Footnotes

**Insertion Loss Coefficient, typical** 0.05√freq (GHz) (not applicable for elliptical waveguide)

**Immersion Depth** Immersion at specified depth for 24 hours

# LDF4-50A



LDF4-50A, HELIAX® Low Density Foam Coaxial Cable, corrugated copper, 1/2 in, black PE jacket Halogen free jacketing non-fire-retardant (General propose cable for outdoor use only)

## Product Classification

<b>Product Type</b>	Coaxial wireless cable
<b>Product Brand</b>	HELIAX®
<b>Product Series</b>	LDF4-50A
<b>Ordering Note</b>	ANDREW® standard product (Global)

## General Specifications

<b>Product Number</b>	520094002/00   SZ520094902/00
<b>Flexibility</b>	Standard
<b>Jacket Color</b>	Black
<b>Performance Note</b>	Attenuation values typical, guaranteed within 5%

## Dimensions

<b>Diameter Over Dielectric</b>	12.954 mm   0.51 in
<b>Diameter Over Jacket</b>	15.875 mm   0.625 in
<b>Inner Conductor OD</b>	4.826 mm   0.19 in
<b>Outer Conductor OD</b>	13.97 mm   0.55 in
<b>Nominal Size</b>	1/2 in

## Electrical Specifications

<b>Cable Impedance</b>	50 ohm ±1 ohm
<b>Capacitance</b>	75.8 pF/m   23.104 pF/ft
<b>dc Resistance, Inner Conductor</b>	1.48 ohms/km   0.451 ohms/kft
<b>dc Resistance, Outer Conductor</b>	2.69 ohms/km   0.82 ohms/kft
<b>dc Test Voltage</b>	4000 V
<b>Inductance</b>	0.19 µH/m   0.058 µH/ft
<b>Insulation Resistance</b>	100000 MOhms-km
<b>Jacket Spark Test Voltage (rms)</b>	8000 V

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<b>Operating Frequency Band</b>	1 – 8800 MHz
<b>Peak Power</b>	40 kW
<b>Velocity</b>	88 %

## VSWR/Return Loss

<b>Frequency Band</b>	<b>VSWR</b>	<b>Return Loss (dB)</b>
<b>680–800 MHz</b>	1.13	24.3
<b>800–960 MHz</b>	1.13	24.3
<b>1700–2200 MHz</b>	1.13	24.3
<b>2300–2700 MHz</b>	1.13	24.3

## Attenuation

<b>Frequency (MHz)</b>	<b>Attenuation (dB/100 m)</b>	<b>Attenuation (dB/100 ft)</b>	<b>Average Power (kW)</b>
<b>1.0</b>	0.211	0.064	36.11
<b>1.5</b>	0.259	0.079	29.46
<b>2.0</b>	0.299	0.091	25.5
<b>10.0</b>	0.672	0.205	11.35
<b>20.0</b>	0.954	0.291	7.99
<b>30.0</b>	1.172	0.357	6.51
<b>50.0</b>	1.521	0.463	5.02
<b>85.0</b>	1.995	0.608	3.82
<b>88.0</b>	2.031	0.619	3.76
<b>100.0</b>	2.169	0.661	3.52
<b>108.0</b>	2.256	0.688	3.38
<b>150.0</b>	2.673	0.815	2.85
<b>174.0</b>	2.887	0.88	2.64
<b>200.0</b>	3.103	0.946	2.46
<b>204.0</b>	3.135	0.956	2.43
<b>300.0</b>	3.835	1.169	1.99
<b>400.0</b>	4.462	1.36	1.71
<b>450.0</b>	4.749	1.447	1.61
<b>460.0</b>	4.804	1.464	1.59
<b>500.0</b>	5.021	1.53	1.52
<b>512.0</b>	5.085	1.55	1.5
<b>600.0</b>	5.533	1.686	1.38

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<b>700.0</b>	6.009	1.831	1.27
<b>800.0</b>	6.456	1.968	1.18
<b>824.0</b>	6.56	1.999	1.16
<b>894.0</b>	6.855	2.089	1.11
<b>960.0</b>	7.124	2.171	1.07
<b>1000.0</b>	7.284	2.22	1.05
<b>1218.0</b>	8.11	2.472	0.94
<b>1250.0</b>	8.226	2.507	0.93
<b>1500.0</b>	9.093	2.771	0.84
<b>1700.0</b>	9.744	2.97	0.78
<b>1794.0</b>	10.039	3.06	0.76
<b>1800.0</b>	10.058	3.066	0.76
<b>2000.0</b>	10.666	3.251	0.72
<b>2100.0</b>	10.961	3.341	0.7
<b>2200.0</b>	11.251	3.429	0.68
<b>2300.0</b>	11.535	3.516	0.66
<b>2500.0</b>	12.09	3.685	0.63
<b>2700.0</b>	12.627	3.849	0.6
<b>3000.0</b>	13.407	4.086	0.57
<b>3400.0</b>	14.401	4.389	0.53
<b>3600.0</b>	14.882	4.536	0.51
<b>3700.0</b>	15.118	4.608	0.5
<b>3800.0</b>	15.353	4.679	0.5
<b>3900.0</b>	15.585	4.75	0.49
<b>4000.0</b>	15.815	4.82	0.48
<b>4100.0</b>	16.042	4.889	0.48
<b>4200.0</b>	16.268	4.958	0.47
<b>4300.0</b>	16.492	5.027	0.46
<b>4400.0</b>	16.714	5.094	0.46
<b>4500.0</b>	16.934	5.161	0.45
<b>4600.0</b>	17.153	5.228	0.44
<b>4700.0</b>	17.37	5.294	0.44
<b>4800.0</b>	17.585	5.36	0.43
<b>4900.0</b>	17.798	5.425	0.43
<b>5000.0</b>	18.01	5.489	0.42

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<b>6000.0</b>	20.055	6.113	0.38
<b>8000.0</b>	23.826	7.262	0.32
<b>8800.0</b>	25.244	7.694	0.3

## Material Specifications

<b>Dielectric Material</b>	Foam PE
<b>Jacket Material</b>	PE
<b>Inner Conductor Material</b>	Copper-clad aluminum wire
<b>Outer Conductor Material</b>	Corrugated copper

## Mechanical Specifications

<b>Minimum Bend Radius, multiple Bends</b>	127 mm   5 in
<b>Minimum Bend Radius, single Bend</b>	50.8 mm   2 in
<b>Number of Bends, minimum</b>	15
<b>Number of Bends, typical</b>	50
<b>Tensile Strength</b>	113 kg   249.122 lb
<b>Bending Moment</b>	3.8 N-m   33.633 in lb
<b>Flat Plate Crush Strength</b>	2 kg/mm   111.995 lb/in

## Environmental Specifications

<b>Installation temperature</b>	-40 °C to +60 °C (-40 °F to +140 °F)
<b>Operating Temperature</b>	-55 °C to +85 °C (-67 °F to +185 °F)
<b>Storage Temperature</b>	-70 °C to +85 °C (-94 °F to +185 °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>	0.22 kg/m   0.148 lb/ft
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## Regulatory Compliance/Certifications

<b>Agency</b>	<b>Classification</b>
CENELEC	EN 50575 compliant, Declaration of Performance (DoP) available
CHINA-ROHS	Below maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system

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REACH-SVHC	Compliant as per SVHC revision on <a href="http://www.andrew.com/ProductCompliance">www.andrew.com/ProductCompliance</a>
ROHS	Compliant
UK-ROHS	Compliant

