

# L4P43A-PNF-7M

LDF4-50A SureFlex® Jumper with interface type N Female, 7 m



## Product Classification

|                       |                                      |
|-----------------------|--------------------------------------|
| <b>Product Type</b>   | Wireless transmission cable assembly |
| <b>Product Brand</b>  | HELIAX®   SureFlex®                  |
| <b>Product Series</b> | LDF4-50A                             |

## General Specifications

|   |                 |
|---|-----------------|
| <b>Body Style, Connector A</b>            | Straight        |
| <b>Interface, Connector A</b>             | N Female        |
| <b>Interface, Connector B</b>             | Sold separately |
| <b>Specification Sheet Revision Level</b> | A               |

## Dimensions

|                     |                 |
|---------------------|-----------------|
| <b>Length</b>       | 7 m   22.966 ft |
| <b>Nominal Size</b> | 1/2 in          |

## Electrical Specifications

|                         |        |
|-------------------------|--------|
| <b>DTF, Connector A</b> | -32 dB |
|-------------------------|--------|

## VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 710–806 MHz    | 1.201 | 20.79            |
| 806–970 MHz    | 1.15  | 23.13            |
| 1420–1530 MHz  | 1.15  | 23.13            |
| 1910–2180 MHz  | 1.15  | 23.13            |
| 2535–2655 MHz  | 1.201 | 20.79            |
| 3400–3800 MHz  | 1.25  | 19.08            |
| 4400–4900 MHz  | 1.41  | 15.56            |

## Jumper Assembly Sample Label

# L4P43A-PNF-7M



## 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

- |          |   |   |
|----------|---|---|
| L4PNM    | - | Type N Male for 1/2 in LDF4-50A cable   |
| L4PNM-H  | - | Type N Male for 1/2 in LDF4-50A cable. Only available through distribution  |
| 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) |

# L4PNM

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Type N Male for 1/2 in LDF4-50A cable

## Product Classification

|                      |                                  |
|----------------------|----------------------------------|
| <b>Product Type</b>  | Wireless and radiating connector |
| <b>Product Brand</b> | HELIAX®                          |

## General Specifications

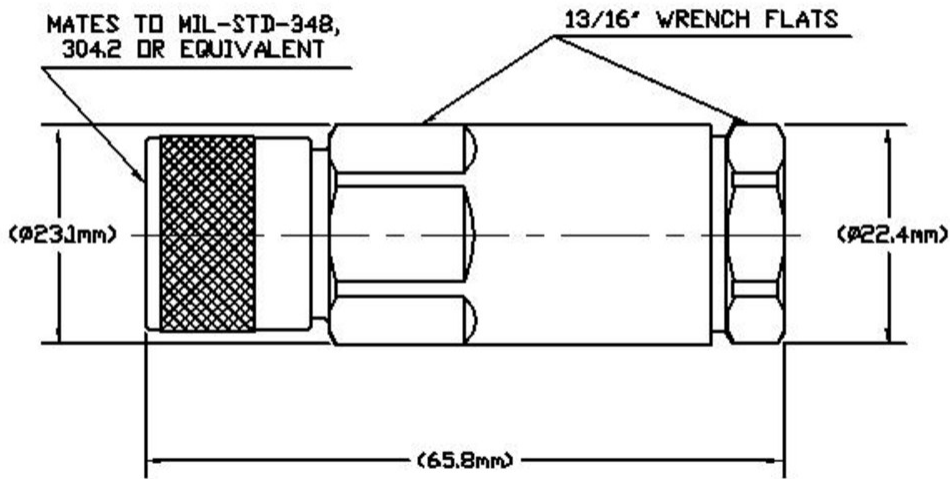
|  |            |
|--|------------|
| <b>Body Style</b>                      | Straight   |
| <b>Cable Family</b>                    | LDF4-50A   |
| <b>Inner Contact Attachment Method</b> | Solder     |
| <b>Inner Contact Plating</b>           | Gold       |
| <b>Interface</b>                       | N Male     |
| <b>Mounting Angle</b>                  | Straight   |
| <b>Outer Contact Attachment Method</b> | Self-flare |
| <b>Outer Contact Plating</b>           | Trimetal   |
| <b>Pressurizable</b>                   | No         |

## Dimensions

|                     |                    |
|---------------------|--------------------|
| <b>Length</b>       | 65.79 mm   2.59 in |
| <b>Diameter</b>     | 23.11 mm   0.91 in |
| <b>Nominal Size</b> | 1/2 in             |

## Outline Drawing

# L4PNM



## 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>Cable Impedance</b>                      | 50 ohm               |
| <b>Connector Impedance</b>                  | 50 ohm               |
| <b>Inner Contact Resistance, maximum</b>    | 2 mOhm               |
| <b>Operating Frequency Band</b>             | 0 – 8800 MHz         |
| <b>Outer Contact Resistance, maximum</b>    | 0.3 mOhm             |
| <b>RF Operating Voltage, maximum (vrms)</b> | 707 V                |

## VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 3.5–4.4 GHz    | 1.152 | 23.02            |
| 45–920 MHz     | 1.036 | 35.05            |
| 920–2700 MHz   | 1.058 | 31               |
| 2700–3500 MHz  | 1.106 | 25.96            |
| 4400–5300 MHz  | 1.196 | 20.99            |
| 5300–6200 MHz  | 1.222 | 20.01            |
| 6200–8800 MHz  | 1.29  | 18               |

# L4PNM

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## 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>Interface Durability</b>                | 500 cycles                |
| <b>Interface Durability Method</b>         | IEC 61169-16:9.5          |

## Environmental Specifications

|   |                |
|---|----------------|
| <b>Attenuation, Ambient Temperature</b>   | 20 °C   68 °F  |
| <b>Average Power, Ambient Temperature</b> | 40 °C   104 °F |

## Packaging and Weights

|                    |                    |
|--------------------|--------------------|
| <b>Weight, net</b> | 108.86 g   0.24 lb |
|--------------------|--------------------|

## Regulatory Compliance/Certifications

| <b>Agency</b> | <b>Classification</b>             |
|---------------|-----------------------------------|
| CHINA-ROHS    | Below maximum concentration value |
| ROHS          | Compliant                         |
| UK-ROHS       | Compliant                         |



## \* Footnotes

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

# L4PNM-H

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Type N Male for 1/2 in LDF4-50A cable. Only available through distribution

## Product Classification

|                       |                                  |
|-----------------------|----------------------------------|
| <b>Product Type</b>   | Wireless and radiating connector |
| <b>Product Brand</b>  | HELIAX®                          |
| <b>Product Series</b> | LDF4-50A                         |
| <b>Ordering Note</b>  | ANDREW® non-standard product     |

## General Specifications

|  |            |
|--|------------|
| <b>Body Style</b>                      | Straight   |
| <b>Cable Family</b>                    | LDF4-50A   |
| <b>Inner Contact Attachment Method</b> | Solder     |
| <b>Inner Contact Plating</b>           | Gold       |
| <b>Interface</b>                       | N Male     |
| <b>Mounting Angle</b>                  | Straight   |
| <b>Outer Contact Attachment Method</b> | Self-flare |
| <b>Outer Contact Plating</b>           | Trimetal   |
| <b>Pressurizable</b>                   | No         |

## Dimensions

|                     |                   |
|---------------------|-------------------|
| <b>Length</b>       | 66.04 mm   2.6 in |
| <b>Diameter</b>     | 25.4 mm   1 in    |
| <b>Nominal Size</b> | 1/2 in            |

## Electrical Specifications

|  |              |
|--|--------------|
| <b>Insertion Loss Coefficient, typical</b> | 0.05         |
| <b>Cable Impedance</b>                     | 50 ohm       |
| <b>Connector Impedance</b>                 | 50 ohm       |
| <b>Inner Contact Resistance, maximum</b>   | 2 mOhm       |
| <b>Operating Frequency Band</b>            | 0 – 8800 MHz |

# L4PNM-H

|   |          |
|---|----------|
| <b>Outer Contact Resistance, maximum</b>    | 0.3 mOhm |
| <b>RF Operating Voltage, maximum (vrms)</b> | 707 V    |

## VSWR/Return Loss

| <b>Frequency Band</b> | <b>VSWR</b> | <b>Return Loss (dB)</b> |
|-----------------------|-------------|-------------------------|
| <b>3.5–4.4 GHz</b>    | 1.152       | 23.02                   |
| <b>45–920 MHz</b>     | 1.036       | 35.05                   |
| <b>920–2700 MHz</b>   | 1.058       | 31                      |
| <b>2700–3500 MHz</b>  | 1.106       | 25.96                   |
| <b>4400–5300 MHz</b>  | 1.196       | 20.99                   |
| <b>5300–6200 MHz</b>  | 1.222       | 20.01                   |
| <b>6200–8800 MHz</b>  | 1.29        | 18                      |

## 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>Interface Durability</b>                | 500 cycles                |
| <b>Interface Durability Method</b>         | IEC 61169-16:9.5          |

## Environmental Specifications

|   |                |
|---|----------------|
| <b>Attenuation, Ambient Temperature</b>   | 20 °C   68 °F  |
| <b>Average Power, Ambient Temperature</b> | 40 °C   104 °F |

## Packaging and Weights

|                    |                    |
|--------------------|--------------------|
| <b>Weight, net</b> | 108.86 g   0.24 lb |
|--------------------|--------------------|

## Regulatory Compliance/Certifications

| <b>Agency</b> | <b>Classification</b>  |
|---------------|--|
| CHINA-ROHS    | Below maximum concentration value  |
| ISO 9001:2015 | Designed, manufactured and/or distributed under this quality management system |
| ROHS          | Compliant  |

# L4PNM-H

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UK-ROHS

Compliant



## \* Footnotes

**Insertion Loss Coefficient, typical**  $0.05\sqrt{\text{freq}}$  (GHz) (not applicable for elliptical waveguide)



# LDF4-50A

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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                        |

# LDF4-50A

|                                 |              |
|---------------------------------|--------------|
| <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 |
|---------------------|-------------------------|

## 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 |

# LDF4-50A

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REACH-SVHC

Compliant as per SVHC revision on [www.andrew.com/ProductCompliance](http://www.andrew.com/ProductCompliance)

ROHS

Compliant

UK-ROHS

Compliant

