

# LS2-NMNM-1M-D

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D-CLASS LSF2-50 SureFlex® Jumper with interface types N Male and N Male, 1 m



## Product Classification

|                       |                                |
|-----------------------|--------------------------------|
| <b>Product Type</b>   | SureFlex® D-CLASS, dynamic PIM |
| <b>Product Brand</b>  | HELIAX®   SureFlex®            |
| <b>Product Series</b> | LSF2-50                        |

## General Specifications

|   |          |
|---|----------|
| <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>       | 1 m   3.281 ft |
| <b>Nominal Size</b> | 3/8 in         |

## Logo Image

# LS2-NMNM-1M-D



## Electrical Specifications

|  |                                    |
|--|------------------------------------|
| <b>3rd Order IMD Dynamic</b>             | -119 dBm                           |
| <b>3rd Order IMD Dynamic Test Method</b> | Two +43 dBm carriers per IEC 62037 |

## VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 698–970 MHz    | 1.065 | 30.04            |
| 1700–2200 MHz  | 1.065 | 30.04            |
| 2200–2700 MHz  | 1.083 | 27.99            |
| 3400–3800 MHz  | 1.222 | 20.01            |
| 4000–6000 MHz  | 1.222 | 20.01            |

## 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     | Classification   |
|------------|--|
| CHINA-ROHS | Below maximum concentration value  |
| REACH-SVHC | Compliant as per SVHC revision on <a href="http://www.commscope.com/ProductCompliance">www.commscope.com/ProductCompliance</a> |
| ROHS       | Compliant  |
| UK-ROHS    | Compliant  |



## Included Products

- LS2NM-S2 – N Male for 3/8 in LSF2-50 cable, factory attached
- LSF2-50 – LSF2-50, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 3/8 in, black PE jacket (Not for Individual Sale - Jumpers only)

# LS2NM-S2

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N Male for 3/8 in LSF2-50 cable, factory attached

## Product Classification

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

## General Specifications

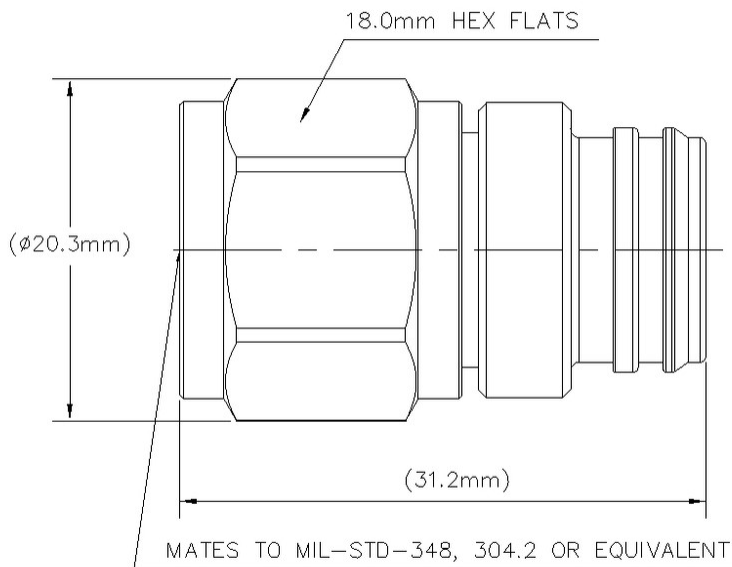
|  |          |
|--|----------|
| <b>Body Style</b>                      | Straight |
| <b>Cable Family</b>                    | LSF2-50  |
| <b>Inner Contact Attachment Method</b> | Solder   |
| <b>Inner Contact Plating</b>           | Silver   |
| <b>Interface</b>                       | N Male   |
| <b>Outer Contact Attachment Method</b> | Solder   |
| <b>Outer Contact Plating</b>           | Trimetal |

## Dimensions

|                     |                     |
|---------------------|---------------------|
| <b>Length</b>       | 31.2 mm   1.228 in  |
| <b>Diameter</b>     | 20.25 mm   0.797 in |
| <b>Nominal Size</b> | 3/8 in              |

## Outline Drawing

# LS2NM-S2



## Electrical Specifications

|  |                      |
|--|----------------------|
| <b>3rd Order IMD at Frequency</b>          | -110 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>dc Test Voltage</b>                     | 2500 V               |
| <b>Inner Contact Resistance, maximum</b>   | 1 mOhm               |
| <b>Insulation Resistance, minimum</b>      | 5000 MOhm            |
| <b>Operating Frequency Band</b>            | 0 – 6000 MHz         |
| <b>Outer Contact Resistance, maximum</b>   | 0.25 mOhm            |
| <b>Peak Power, maximum</b>                 | 10 kW                |

## VSWR/Return Loss

| <b>Frequency Band</b> | <b>VSWR</b> | <b>Return Loss (dB)</b> |
|-----------------------|-------------|-------------------------|
| <b>0–3.8 GHz</b>      | 1.025       | 38.17                   |
| <b>3.8–6 GHz</b>      | 1.046       | 32.96                   |

# LS2NM-S2

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## Mechanical Specifications

|  |                        |
|--|------------------------|
| <b>Connector Retention Tensile Force</b> | 200 N   44.962 lbf     |
| <b>Connector Retention Torque</b>        | 2.7 N-m   23.897 in lb |
| <b>Coupling Nut Proof Torque</b>         | 1.7 N-m   15.046 in lb |
| <b>Coupling Nut Retention Force</b>      | 450 N   101.164 lbf    |
| <b>Interface Durability</b>              | 500 cycles             |
| <b>Mechanical Shock Test Method</b>      | IEC 60068-2-27         |

## Environmental Specifications

|  |                                       |
|--|---------------------------------------|
| <b>Operating Temperature</b>           | -55 °C to +85 °C (-67 °F to +185 °F)  |
| <b>Storage Temperature</b>             | -65 °C to +125 °C (-85 °F to +257 °F) |
| <b>Corrosion Test Method</b>           | IEC 60068-2-11                        |
| <b>Immersion Depth</b>                 | 1 m                                   |
| <b>Immersion Test Mating</b>           | Mated                                 |
| <b>Immersion Test Method</b>           | IEC 60529:2001, IP68                  |
| <b>Moisture Resistance Test Method</b> | IEC 60068-2-3                         |
| <b>Thermal Shock Test Method</b>       | IEC 60068-2-14                        |
| <b>Vibration Test Method</b>           | IEC 60068-2-6                         |

## Packaging and Weights

|                    |                    |
|--------------------|--------------------|
| <b>Weight, net</b> | 30.74 g   0.068 lb |
|--------------------|--------------------|

## Regulatory Compliance/Certifications

| <b>Agency</b> | <b>Classification</b>   |
|---------------|---|
| CHINA-ROHS    | Below maximum concentration value   |
| REACH-SVHC    | Compliant as per SVHC revision on <a href="https://www.commscope.com/ProductCompliance">www.commscope.com/ProductCompliance</a> |
| ROHS          | Compliant   |
| UK-ROHS       | Compliant   |



## \* Footnotes

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

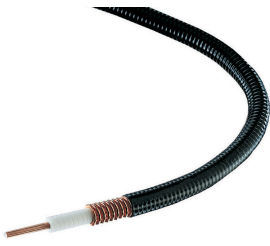
# LS2NM-S2

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**Immersion Depth**

Immersion at specified depth for 24 hours

# LSF2-50



LSF2-50, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 3/8 in, black PE jacket (Not for Individual Sale - Jumpers only)

## Product Classification

|                       |                                      |
|-----------------------|--------------------------------------|
| <b>Product Type</b>   | Coaxial wireless cable               |
| <b>Product Brand</b>  | HELIAX®   SureFlex®                  |
| <b>Product Series</b> | LSF2-50   MLOC                       |
| <b>Ordering Note</b>  | CommScope® standard product (Global) |

## General Specifications

|                         |  |
|-------------------------|--|
| <b>Flexibility</b>      | Superflexible                                    |
| <b>Jacket Color</b>     | Black  |
| <b>Performance Note</b> | Attenuation values typical, guaranteed within 5% |

## Dimensions

|                                 |                      |
|---------------------------------|----------------------|
| <b>Diameter Over Dielectric</b> | 7.645 mm   0.301 in  |
| <b>Diameter Over Jacket</b>     | 11.024 mm   0.434 in |
| <b>Inner Conductor OD</b>       | 3.048 mm   0.12 in   |
| <b>Outer Conductor OD</b>       | 9.906 mm   0.39 in   |
| <b>Nominal Size</b>             | 3/8 in               |

## Electrical Specifications

|  |                                    |
|--|------------------------------------|
| <b>Cable Impedance</b>                 | 50 ohm $\pm$ 1 ohm                 |
| <b>Capacitance</b>                     | 80.7 pF/m   24.597 pF/ft           |
| <b>dc Resistance, Inner Conductor</b>  | 3.65 ohms/km   1.113 ohms/kft      |
| <b>dc Resistance, Outer Conductor</b>  | 4.64 ohms/km   1.414 ohms/kft      |
| <b>dc Test Voltage</b>                 | 2500 V                             |
| <b>Inductance</b>                      | 0.202 $\mu$ H/m   0.062 $\mu$ H/ft |
| <b>Insulation Resistance</b>           | 100000 MOhms-km                    |
| <b>Jacket Spark Test Voltage (rms)</b> | 5000 V                             |
| <b>Operating Frequency Band</b>        | 1 – 10200 MHz                      |



# LSF2-50

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|                   |         |
|-------------------|---------|
| <b>Peak Power</b> | 15.6 kW |
| <b>Velocity</b>   | 82 %    |

## VSWR/Return Loss

| <b>Frequency Band</b> | <b>VSWR</b> | <b>Return Loss (dB)</b> |
|-----------------------|-------------|-------------------------|
| <b>680–800 MHz</b>    | 1.201       | 20.79                   |
| <b>800–960 MHz</b>    | 1.201       | 20.79                   |
| <b>1700–2200 MHz</b>  | 1.201       | 20.79                   |
| <b>2300–2700 MHz</b>  | 1.201       | 20.79                   |
| <b>3400–3800 MHz</b>  | 1.201       | 20.79                   |

## 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>             | 0.422                         | 0.129                          | 15.6                      |
| <b>1.5</b>             | 0.501                         | 0.153                          | 15.6                      |
| <b>2.0</b>             | 0.567                         | 0.173                          | 14.27                     |
| <b>10.0</b>            | 1.179                         | 0.359                          | 6.86                      |
| <b>20.0</b>            | 1.641                         | 0.5                            | 4.93                      |
| <b>30.0</b>            | 1.998                         | 0.609                          | 4.05                      |
| <b>50.0</b>            | 2.567                         | 0.782                          | 3.15                      |
| <b>85.0</b>            | 3.342                         | 1.019                          | 2.42                      |
| <b>88.0</b>            | 3.4                           | 1.036                          | 2.38                      |
| <b>100.0</b>           | 3.625                         | 1.105                          | 2.23                      |
| <b>108.0</b>           | 3.768                         | 1.148                          | 2.15                      |
| <b>150.0</b>           | 4.447                         | 1.355                          | 1.82                      |
| <b>174.0</b>           | 4.795                         | 1.461                          | 1.69                      |
| <b>200.0</b>           | 5.147                         | 1.569                          | 1.57                      |
| <b>204.0</b>           | 5.199                         | 1.585                          | 1.56                      |
| <b>300.0</b>           | 6.336                         | 1.931                          | 1.28                      |
| <b>400.0</b>           | 7.351                         | 2.241                          | 1.1                       |
| <b>450.0</b>           | 7.815                         | 2.382                          | 1.03                      |
| <b>460.0</b>           | 7.905                         | 2.409                          | 1.02                      |
| <b>500.0</b>           | 8.257                         | 2.517                          | 0.98                      |
| <b>512.0</b>           | 8.36                          | 2.548                          | 0.97                      |
| <b>600.0</b>           | 9.084                         | 2.769                          | 0.89                      |

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|               |        |       |      |
|---------------|--------|-------|------|
| <b>700.0</b>  | 9.851  | 3.003 | 0.82 |
| <b>800.0</b>  | 10.572 | 3.222 | 0.77 |
| <b>824.0</b>  | 10.739 | 3.273 | 0.75 |
| <b>894.0</b>  | 11.214 | 3.418 | 0.72 |
| <b>960.0</b>  | 11.648 | 3.55  | 0.69 |
| <b>1000.0</b> | 11.904 | 3.628 | 0.68 |
| <b>1218.0</b> | 13.231 | 4.033 | 0.61 |
| <b>1250.0</b> | 13.417 | 4.089 | 0.6  |
| <b>1500.0</b> | 14.806 | 4.512 | 0.55 |
| <b>1700.0</b> | 15.848 | 4.83  | 0.51 |
| <b>1794.0</b> | 16.32  | 4.974 | 0.5  |
| <b>1800.0</b> | 16.35  | 4.983 | 0.49 |
| <b>2000.0</b> | 17.321 | 5.279 | 0.47 |
| <b>2100.0</b> | 17.791 | 5.423 | 0.45 |
| <b>2200.0</b> | 18.253 | 5.563 | 0.44 |
| <b>2300.0</b> | 18.706 | 5.701 | 0.43 |
| <b>2500.0</b> | 19.589 | 5.97  | 0.41 |
| <b>2700.0</b> | 20.445 | 6.231 | 0.4  |
| <b>3000.0</b> | 21.682 | 6.608 | 0.37 |
| <b>3400.0</b> | 23.26  | 7.089 | 0.35 |
| <b>3600.0</b> | 24.022 | 7.321 | 0.34 |
| <b>3700.0</b> | 24.396 | 7.436 | 0.33 |
| <b>3800.0</b> | 24.767 | 7.549 | 0.33 |
| <b>3900.0</b> | 25.134 | 7.661 | 0.32 |
| <b>4000.0</b> | 25.498 | 7.771 | 0.32 |
| <b>4100.0</b> | 25.858 | 7.881 | 0.31 |
| <b>4200.0</b> | 26.215 | 7.99  | 0.31 |
| <b>4300.0</b> | 26.569 | 8.098 | 0.3  |
| <b>4400.0</b> | 26.92  | 8.205 | 0.3  |
| <b>4500.0</b> | 27.267 | 8.311 | 0.3  |
| <b>4600.0</b> | 27.612 | 8.416 | 0.29 |
| <b>4700.0</b> | 27.954 | 8.52  | 0.29 |
| <b>4800.0</b> | 28.294 | 8.623 | 0.29 |
| <b>4900.0</b> | 28.63  | 8.726 | 0.28 |
| <b>5000.0</b> | 28.965 | 8.828 | 0.28 |

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|                |        |        |      |
|----------------|--------|--------|------|
| <b>6000.0</b>  | 32.183 | 9.809  | 0.25 |
| <b>8000.0</b>  | 38.096 | 11.611 | 0.21 |
| <b>8800.0</b>  | 40.314 | 12.287 | 0.2  |
| <b>10000.0</b> | 43.516 | 13.263 | 0.19 |

## 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> | 25.4 mm   1 in          |
| <b>Minimum Bend Radius, single Bend</b>    | 25.4 mm   1 in          |
| <b>Number of Bends, minimum</b>            | 15                      |
| <b>Tensile Strength</b>                    | 118 kg   260.145 lb     |
| <b>Bending Moment</b>                      | 2.2 N-m   19.472 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                      |
| <b>EN50575 CPR Cable EuroClass Fire Performance</b> | Fca                                  |

## Packaging and Weights

|                     |                         |
|---------------------|-------------------------|
| <b>Cable weight</b> | 0.11 kg/m   0.074 lb/ft |
|---------------------|-------------------------|

## Regulatory Compliance/Certifications

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

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