



Heat Treated LDF1-50, HELIAX® Low Density Foam Coaxial Cable, corrugated copper, 1/4 in, black PE jacket

## Product Classification

|                       |                        |
|-----------------------|------------------------|
| <b>Brand</b>          | HELIAX®                |
| <b>Product Series</b> | LDF1-50                |
| <b>Product Type</b>   | Coaxial wireless cable |

## Construction Materials

|                                 |                           |
|---------------------------------|---------------------------|
| <b>Jacket Material</b>          | PE                        |
| <b>Outer Conductor Material</b> | Corrugated copper         |
| <b>Dielectric Material</b>      | Foam PE                   |
| <b>Flexibility</b>              | Standard                  |
| <b>Inner Conductor Material</b> | Copper-clad aluminum wire |
| <b>Jacket Color</b>             | Black                     |

## Dimensions

|                                 |                        |
|---------------------------------|------------------------|
| <b>Nominal Size</b>             | 1/4 in                 |
| <b>Cable Weight</b>             | 0.06 lb/ft   0.09 kg/m |
| <b>Diameter Over Dielectric</b> | 6.858 mm   0.270 in    |
| <b>Diameter Over Jacket</b>     | 8.763 mm   0.345 in    |
| <b>Inner Conductor OD</b>       | 2.5400 mm   0.1000 in  |
| <b>Outer Conductor OD</b>       | 7.874 mm   0.310 in    |

## Electrical Specifications

|  |                                |
|--|--------------------------------|
| <b>Cable Impedance</b>                 | 50 ohm ±1 ohm                  |
| <b>Capacitance</b>                     | 23.4 pF/ft   76.8 pF/m         |
| <b>dc Resistance, Inner Conductor</b>  | 1.570 ohms/kft   5.151 ohms/km |
| <b>dc Resistance, Outer Conductor</b>  | 1.220 ohms/kft   4.003 ohms/km |
| <b>dc Test Voltage</b>                 | 2200 V                         |
| <b>Inductance</b>                      | 0.194 µH/m   0.059 µH/ft       |
| <b>Insulation Resistance</b>           | 100000 Mohms•km                |
| <b>Jacket Spark Test Voltage (rms)</b> | 5000 V                         |
| <b>Operating Frequency Band</b>        | 1 – 15800 MHz                  |
| <b>Peak Power</b>                      | 12.1 kW                        |
| <b>Velocity</b>                        | 86%                            |

## 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) |

## Mechanical Specifications

|  |                        |
|--|------------------------|
| <b>Bending Moment</b>                      | 1.4 N-m   1.0 ft lb    |
| <b>Flat Plate Crush Strength</b>           | 80.0 lb/in   1.4 kg/mm |
| <b>Minimum Bend Radius, Multiple Bends</b> | 76.20 mm   3.00 in     |
| <b>Minimum Bend Radius, Single Bend</b>    | 38.10 mm   1.50 in     |
| <b>Number of Bends, minimum</b>            | 15                     |
| <b>Number of Bends, typical</b>            | 30                     |
| <b>Tensile Strength</b>                    | 91 kg   200 lb         |

## Note

|                         |   |
|-------------------------|---|
| <b>Performance Note</b> | Values typical, unless otherwise stated |
|-------------------------|---|

## Standard Conditions

|   |                 |
|---|-----------------|
| <b>Attenuation, Ambient Temperature</b>           | 20 °C   68 °F   |
| <b>Average Power, Ambient Temperature</b>         | 40 °C   104 °F  |
| <b>Average Power, Inner Conductor Temperature</b> | 100 °C   212 °F |

## Return Loss/VSWR

| <b>Frequency Band</b> | <b>VSWR</b> | <b>Return Loss (dB)</b> |
|-----------------------|-------------|-------------------------|
| 806–960 MHz           | 1.15        | 23.00                   |
| 1700–2000 MHz         | 1.15        | 23.00                   |

## Attenuation

| Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) | Average Power (kW) |
|-----------------|------------------------|-------------------------|--------------------|
| 0.5             | 0.278                  | 0.085                   | 12.10              |
| 1               | 0.394                  | 0.12                    | 12.10              |
| 1.5             | 0.483                  | 0.147                   | 12.10              |
| 2               | 0.558                  | 0.17                    | 12.10              |
| 10              | 1.254                  | 0.382                   | 5.83               |
| 20              | 1.781                  | 0.543                   | 4.11               |
| 30              | 2.188                  | 0.667                   | 3.34               |
| 50              | 2.838                  | 0.865                   | 2.58               |
| 85              | 3.724                  | 1.135                   | 1.96               |
| 88              | 3.791                  | 1.156                   | 1.93               |
| 100             | 4.049                  | 1.234                   | 1.81               |
| 108             | 4.213                  | 1.284                   | 1.74               |
| 150             | 4.993                  | 1.522                   | 1.47               |
| 174             | 5.392                  | 1.644                   | 1.36               |
| 200             | 5.798                  | 1.767                   | 1.26               |
| 204             | 5.858                  | 1.785                   | 1.25               |
| 300             | 7.168                  | 2.185                   | 1.02               |
| 400             | 8.342                  | 2.543                   | 0.88               |
| 450             | 8.88                   | 2.706                   | 0.82               |
| 460             | 8.984                  | 2.738                   | 0.81               |
| 460             | 8.984                  | 2.738                   | 0.81               |
| 500             | 9.391                  | 2.862                   | 0.78               |
| 512             | 9.511                  | 2.899                   | 0.77               |
| 600             | 10.351                 | 3.155                   | 0.71               |
| 700             | 11.244                 | 3.427                   | 0.65               |
| 800             | 12.084                 | 3.683                   | 0.61               |
| 824             | 12.278                 | 3.742                   | 0.60               |
| 894             | 12.833                 | 3.911                   | 0.57               |
| 960             | 13.339                 | 4.066                   | 0.55               |
| 1000            | 13.639                 | 4.157                   | 0.54               |
| 1218            | 15.192                 | 4.63                    | 0.48               |
| 1250            | 15.41                  | 4.697                   | 0.47               |
| 1500            | 17.04                  | 5.194                   | 0.43               |
| 1700            | 18.266                 | 5.567                   | 0.40               |
| 1794            | 18.823                 | 5.737                   | 0.39               |
| 1800            | 18.858                 | 5.748                   | 0.39               |
| 2000            | 20.003                 | 6.097                   | 0.37               |
| 2100            | 20.559                 | 6.266                   | 0.36               |
| 2200            | 21.104                 | 6.432                   | 0.35               |
| 2300            | 21.64                  | 6.596                   | 0.34               |
| 2500            | 22.686                 | 6.914                   | 0.32               |
| 2700            | 23.701                 | 7.224                   | 0.31               |
| 3000            | 25.171                 | 7.672                   | 0.29               |
| 3400            | 27.048                 | 8.244                   | 0.27               |
| 3700            | 28.403                 | 8.657                   | 0.26               |

|       |        |        |      |
|-------|--------|--------|------|
| 3800  | 28.846 | 8.792  | 0.25 |
| 4000  | 29.719 | 9.058  | 0.25 |
| 5000  | 33.871 | 10.323 | 0.22 |
| 6000  | 37.742 | 11.503 | 0.19 |
| 8000  | 44.888 | 13.681 | 0.16 |
| 8800  | 47.579 | 14.501 | 0.15 |
| 10000 | 51.475 | 15.689 | 0.14 |
| 12000 | 57.664 | 17.575 | 0.13 |
| 14000 | 63.552 | 19.37  | 0.12 |
| 15800 | 68.646 | 20.922 | 0.11 |

\* Values typical, guaranteed within 5%

## Regulatory Compliance/Certifications

### Agency

RoHS 2011/65/EU

ISO 9001:2015

China RoHS SJ/T 11364-2014

### Classification

Compliant

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

Above Maximum Concentration Value (MCV)

