

# HL4RPV-50B (520099902/00)

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HL4-50A, HELIAX® Plenum Rated Air Dielectric Coaxial Cable, corrugated copper, 1/2 in, blue PVC jacket



## Product Classification

|                       |                   |
|-----------------------|-------------------|
| <b>Product Type</b>   | Air coaxial cable |
| <b>Product Brand</b>  | HELIAX®           |
| <b>Product Series</b> | HL4-50A           |

## General Specifications

|                     |          |
|---------------------|----------|
| <b>Flexibility</b>  | Standard |
| <b>Jacket Color</b> | Blue     |

## Dimensions

|                             |                      |
|-----------------------------|----------------------|
| <b>Diameter Over Jacket</b> | 15.367 mm   0.605 in |
| <b>Inner Conductor OD</b>   | 4.801 mm   0.189 in  |
| <b>Outer Conductor OD</b>   | 13.843 mm   0.545 in |
| <b>Nominal Size</b>         | 1/2 in               |

## Electrical Specifications

|  |                                   |
|--|-----------------------------------|
| <b>Cable Impedance</b>                 | 50 ohm $\pm$ 2 ohm                |
| <b>Capacitance</b>                     | 75.459 pF/m   23 pF/ft            |
| <b>dc Resistance, Inner Conductor</b>  | 1.476 ohms/km   0.45 ohms/kft     |
| <b>dc Resistance, Outer Conductor</b>  | 1.903 ohms/km   0.58 ohms/kft     |
| <b>dc Test Voltage</b>                 | 4000 V                            |
| <b>Inductance</b>                      | 0.19 $\mu$ H/m   0.058 $\mu$ H/ft |
| <b>Insulation Resistance</b>           | 100000 Mohms•km                   |
| <b>Jacket Spark Test Voltage (rms)</b> | 5000 V                            |
| <b>Operating Frequency Band</b>        | 1 – 8800 MHz                      |
| <b>Peak Power</b>                      | 40 kW                             |

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|                          |       |
|--------------------------|-------|
| <b>Power Attenuation</b> | 2.325 |
| <b>Pulse Reflection</b>  | 0.5%  |
| <b>Velocity</b>          | 88 %  |

## VSWR/Return Loss

| <b>Frequency Band</b> | <b>VSWR</b> | <b>Return Loss (dB)</b> |
|-----------------------|-------------|-------------------------|
| <b>700–894 MHz</b>    | 1.25        | 19.1                    |
| <b>806–960 MHz</b>    | 1.25        | 19.1                    |
| <b>1700–2200 MHz</b>  | 1.25        | 19.1                    |

## 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                          | 36.18                     |
| <b>1.5</b>             | 0.259                         | 0.079                          | 29.51                     |
| <b>2.0</b>             | 0.299                         | 0.091                          | 25.54                     |
| <b>10.0</b>            | 0.673                         | 0.205                          | 11.34                     |
| <b>20.0</b>            | 0.957                         | 0.292                          | 7.97                      |
| <b>30.0</b>            | 1.177                         | 0.359                          | 6.48                      |
| <b>50.0</b>            | 1.529                         | 0.466                          | 4.99                      |
| <b>85.0</b>            | 2.011                         | 0.613                          | 3.79                      |
| <b>88.0</b>            | 2.048                         | 0.624                          | 3.73                      |
| <b>100.0</b>           | 2.188                         | 0.667                          | 3.49                      |
| <b>108.0</b>           | 2.278                         | 0.694                          | 3.35                      |
| <b>150.0</b>           | 2.705                         | 0.824                          | 2.82                      |
| <b>174.0</b>           | 2.924                         | 0.891                          | 2.61                      |
| <b>200.0</b>           | 3.147                         | 0.959                          | 2.42                      |
| <b>204.0</b>           | 3.18                          | 0.969                          | 2.4                       |
| <b>300.0</b>           | 3.903                         | 1.19                           | 1.95                      |
| <b>400.0</b>           | 4.554                         | 1.388                          | 1.68                      |
| <b>450.0</b>           | 4.853                         | 1.479                          | 1.57                      |
| <b>460.0</b>           | 4.911                         | 1.497                          | 1.55                      |
| <b>500.0</b>           | 5.138                         | 1.566                          | 1.48                      |
| <b>512.0</b>           | 5.205                         | 1.586                          | 1.47                      |
| <b>600.0</b>           | 5.675                         | 1.73                           | 1.34                      |
| <b>700.0</b>           | 6.176                         | 1.882                          | 1.24                      |
| <b>800.0</b>           | 6.648                         | 2.026                          | 1.15                      |

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|        |        |       |      |
|--------|--------|-------|------|
| 824.0  | 6.758  | 2.06  | 1.13 |
| 894.0  | 7.07   | 2.155 | 1.08 |
| 960.0  | 7.357  | 2.242 | 1.04 |
| 1000.0 | 7.526  | 2.294 | 1.01 |
| 1218.0 | 8.407  | 2.562 | 0.91 |
| 1250.0 | 8.531  | 2.6   | 0.89 |
| 1500.0 | 9.461  | 2.884 | 0.81 |
| 1700.0 | 10.164 | 3.098 | 0.75 |
| 1794.0 | 10.483 | 3.195 | 0.73 |
| 1800.0 | 10.503 | 3.201 | 0.73 |
| 2000.0 | 11.163 | 3.402 | 0.68 |
| 2100.0 | 11.483 | 3.5   | 0.66 |
| 2200.0 | 11.798 | 3.596 | 0.65 |
| 2300.0 | 12.108 | 3.69  | 0.63 |
| 2500.0 | 12.714 | 3.875 | 0.6  |
| 2700.0 | 13.303 | 4.055 | 0.57 |
| 3000.0 | 14.159 | 4.315 | 0.54 |
| 3400.0 | 15.256 | 4.65  | 0.5  |
| 3600.0 | 15.788 | 4.812 | 0.48 |
| 3700.0 | 16.051 | 4.892 | 0.48 |
| 3800.0 | 16.311 | 4.971 | 0.47 |
| 3900.0 | 16.568 | 5.05  | 0.46 |
| 4000.0 | 16.824 | 5.128 | 0.45 |
| 4100.0 | 17.078 | 5.205 | 0.45 |
| 4200.0 | 17.329 | 5.282 | 0.44 |
| 4300.0 | 17.579 | 5.358 | 0.43 |
| 4400.0 | 17.827 | 5.433 | 0.43 |
| 4500.0 | 18.073 | 5.508 | 0.42 |
| 4600.0 | 18.317 | 5.583 | 0.42 |
| 4700.0 | 18.559 | 5.657 | 0.41 |
| 4800.0 | 18.8   | 5.73  | 0.41 |
| 4900.0 | 19.04  | 5.803 | 0.4  |
| 5000.0 | 19.277 | 5.875 | 0.4  |
| 6000.0 | 21.581 | 6.577 | 0.35 |
| 8000.0 | 25.869 | 7.884 | 0.29 |
| 8800.0 | 27.494 | 8.38  | 0.28 |

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## Material Specifications

|                                 |                           |
|---------------------------------|---------------------------|
| <b>Dielectric Material</b>      | PE spline                 |
| <b>Jacket Material</b>          | PVC                       |
| <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>Number of Bends, minimum</b>            | 15                     |
| <b>Number of Bends, typical</b>            | 25                     |
| <b>Tensile Strength</b>                    | 113 kg   249.122 lb    |
| <b>Bending Moment</b>                      | 4 ft lb   5.423 N-m    |
| <b>Flat Plate Crush Strength</b>           | 1.429 kg/mm   80 lb/in |

## Environmental Specifications

|   |                                     |
|---|-------------------------------------|
| <b>Installation temperature</b>                   | -20 °C to +60 °C (-4 °F to +140 °F) |
| <b>Operating Temperature</b>                      | -20 °C to +80 °C (-4 °F to +176 °F) |
| <b>Storage Temperature</b>                        | -20 °C to +85 °C (-4 °F to +185 °F) |
| <b>Average Power, Ambient Temperature</b>         | 104 °F   40 °C                      |
| <b>Average Power, Inner Conductor Temperature</b> | 212 °F   100 °C                     |
| <b>Fire Retardancy Test Method</b>                | NFPA 262/CATVP/CMP                  |

## Packaging and Weights

|                     |                         |
|---------------------|-------------------------|
| <b>Cable weight</b> | 0.253 kg/m   0.17 lb/ft |
|---------------------|-------------------------|

## Regulatory Compliance/Certifications

| <b>Agency</b>        | <b>Classification</b>  |
|----------------------|--|
| ISO 9001:2015        | Designed, manufactured and/or distributed under this quality management system |
| UL/ETL Certification | CATVP  |

