

HL4RPV-50W-CBAND | HL4RPV-50-CBAND



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

Product Classification

| | |
|-----------------------|-------------------|
| Product Type | Air coaxial cable |
| Product Brand | HELIAX® |
| Product Series | HL4-50A |

General Specifications

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|-------------------------|--|
| Product Number | 520098102/00 |
| Flexibility | Standard |
| Jacket Color | Off-white |
| Performance Note | Attenuation values typical, guaranteed within 5% |

Dimensions

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

Electrical Specifications

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

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| Power Attenuation | 2.325 |
| Pulse Reflection | 0.5% |
| Velocity | 88 % |

VSWR/Return Loss

| Frequency Band | VSWR | Return Loss (dB) |
|----------------|-------|------------------|
| 450–680 MHz | 1.288 | 18 |
| 680–960 MHz | 1.13 | 24.3 |
| 1695–2200 MHz | 1.13 | 24.3 |
| 2300–2700 MHz | 1.173 | 22 |
| 3100–3300 MHz | 1.288 | 18 |
| 3300–4200 MHz | 1.288 | 18 |
| 5150–5925 MHz | 1.377 | 16 |

Attenuation

| Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) | Average Power (kW) |
|-----------------|------------------------|-------------------------|--------------------|
| 1.0 | 0.211 | 0.064 | 36.18 |
| 1.5 | 0.259 | 0.079 | 29.51 |
| 2.0 | 0.299 | 0.091 | 25.54 |
| 10.0 | 0.673 | 0.205 | 11.34 |
| 20.0 | 0.957 | 0.292 | 7.97 |
| 30.0 | 1.177 | 0.359 | 6.48 |
| 50.0 | 1.529 | 0.466 | 4.99 |
| 85.0 | 2.011 | 0.613 | 3.79 |
| 88.0 | 2.048 | 0.624 | 3.73 |
| 100.0 | 2.188 | 0.667 | 3.49 |
| 108.0 | 2.278 | 0.694 | 3.35 |
| 150.0 | 2.705 | 0.824 | 2.82 |
| 174.0 | 2.924 | 0.891 | 2.61 |
| 200.0 | 3.147 | 0.959 | 2.42 |
| 204.0 | 3.18 | 0.969 | 2.4 |
| 300.0 | 3.903 | 1.19 | 1.95 |
| 400.0 | 4.554 | 1.388 | 1.68 |
| 450.0 | 4.853 | 1.479 | 1.57 |
| 460.0 | 4.911 | 1.497 | 1.55 |

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|--------|--------|-------|------|
| 500.0 | 5.138 | 1.566 | 1.48 |
| 512.0 | 5.205 | 1.586 | 1.47 |
| 600.0 | 5.675 | 1.73 | 1.34 |
| 700.0 | 6.176 | 1.882 | 1.24 |
| 800.0 | 6.648 | 2.026 | 1.15 |
| 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 |

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|---------------|--------|-------|------|
| 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 |

Material Specifications

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|---------------------------------|---------------------------|
| Dielectric Material | PE spline |
| Jacket Material | PVC |
| Inner Conductor Material | Copper-clad aluminum wire |
| Outer Conductor Material | Corrugated copper |

Mechanical Specifications

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|--|------------------------|
| Minimum Bend Radius, multiple Bends | 127 mm 5 in |
| Number of Bends, minimum | 15 |
| Number of Bends, typical | 25 |
| Tensile Strength | 113 kg 249.122 lb |
| Bending Moment | 4 ft lb 5.423 N-m |
| Flat Plate Crush Strength | 1.429 kg/mm 80 lb/in |

Environmental Specifications

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|---|-------------------------------------|
| Installation temperature | -5 °C to +60 °C (+23 °F to +140 °F) |
| Operating Temperature | -20 °C to +80 °C (-4 °F to +176 °F) |
| Storage Temperature | -20 °C to +85 °C (-4 °F to +185 °F) |
| Attenuation, Ambient Temperature | 68 °F 20 °C |
| Average Power, Ambient Temperature | 104 °F 40 °C |
| Average Power, Inner Conductor Temperature | 212 °F 100 °C |
| Fire Retardancy Test Method | NFPA 262/CATVP/CMP |

Packaging and Weights

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|---------------------|-------------------------|
| Cable weight | 0.253 kg/m 0.17 lb/ft |
|---------------------|-------------------------|