



AVA6-50, HELIAX® Andrew Virtual Air™ Coaxial Cable, corrugated copper, 1-1/4" in, black PE jacket (Halogen free jacketing non-fire-retardant) tested C-Band and CBRS qualified

## Product Classification

|                       |   |
|-----------------------|---|
| <b>Product Type</b>   | Coaxial wireless cable  |
| <b>Product Brand</b>  | HELIAX®   |
| <b>Product Series</b> | AVA6-50   |
| <b>Ordering Note</b>  | CommScope® standard product in Asia Pacific   CommScope® standard product in the United States and Canada |

## General Specifications

|                         |  |
|-------------------------|--|
| <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> | 34.036 mm   1.34 in  |
| <b>Diameter Over Jacket</b>     | 39.624 mm   1.56 in  |
| <b>Inner Conductor OD</b>       | 14.021 mm   0.552 in |
| <b>Outer Conductor OD</b>       | 36.068 mm   1.42 in  |
| <b>Nominal Size</b>             | 1-1/4 in             |

## Electrical Specifications

|                                       |                               |
|---------------------------------------|-------------------------------|
| <b>Cable Impedance</b>                | 50 ohm ±1 ohm                 |
| <b>Capacitance</b>                    | 72 pF/m   21.946 pF/ft        |
| <b>dc Resistance, Inner Conductor</b> | 1.74 ohms/km   0.53 ohms/kft  |
| <b>dc Resistance, Outer Conductor</b> | 0.75 ohms/km   0.229 ohms/kft |
| <b>dc Test Voltage</b>                | 8500 V                        |
| <b>Inductance</b>                     | 0.187 µH/m   0.057 µH/ft      |
| <b>Insulation Resistance</b>          | 100000 MOhms-km               |

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|  |              |
|--|--------------|
| <b>Jacket Spark Test Voltage (rms)</b> | 10000 V      |
| <b>Operating Frequency Band</b>        | 1 – 4000 MHz |
| <b>Peak Power</b>                      | 180 kW       |
| <b>Velocity</b>                        | 92 %         |

## Attenuation

| <b>Frequency (MHz)</b> | <b>Attenuation (dB/100 m)</b> | <b>Attenuation (dB/100 ft)</b> | <b>Average Power (kW)</b> |
|------------------------|-------------------------------|--------------------------------|---------------------------|
| 1.0                    | 0.079                         | 0.024                          | 82.63                     |
| 1.5                    | 0.097                         | 0.03                           | 67.41                     |
| 2.0                    | 0.113                         | 0.034                          | 58.33                     |
| 10.0                   | 0.253                         | 0.077                          | 25.89                     |
| 20.0                   | 0.36                          | 0.11                           | 18.21                     |
| 30.0                   | 0.443                         | 0.135                          | 14.8                      |
| 50.0                   | 0.576                         | 0.176                          | 11.39                     |
| 85.0                   | 0.758                         | 0.231                          | 8.66                      |
| 88.0                   | 0.772                         | 0.235                          | 8.51                      |
| 100.0                  | 0.825                         | 0.251                          | 7.96                      |
| 108.0                  | 0.858                         | 0.262                          | 7.65                      |
| 150.0                  | 1.019                         | 0.311                          | 6.44                      |
| 174.0                  | 1.102                         | 0.336                          | 5.96                      |
| 200.0                  | 1.186                         | 0.361                          | 5.53                      |
| 204.0                  | 1.198                         | 0.365                          | 5.48                      |
| 300.0                  | 1.471                         | 0.448                          | 4.46                      |
| 400.0                  | 1.717                         | 0.523                          | 3.82                      |
| 450.0                  | 1.829                         | 0.558                          | 3.59                      |
| 460.0                  | 1.851                         | 0.564                          | 3.54                      |
| 500.0                  | 1.937                         | 0.59                           | 3.39                      |
| 512.0                  | 1.962                         | 0.598                          | 3.34                      |
| 600.0                  | 2.14                          | 0.652                          | 3.07                      |
| 700.0                  | 2.329                         | 0.71                           | 2.82                      |
| 800.0                  | 2.507                         | 0.764                          | 2.62                      |
| 824.0                  | 2.548                         | 0.777                          | 2.58                      |
| 894.0                  | 2.666                         | 0.813                          | 2.46                      |
| 960.0                  | 2.774                         | 0.846                          | 2.37                      |
| 1000.0                 | 2.838                         | 0.865                          | 2.31                      |

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|        |       |       |      |
|--------|-------|-------|------|
| 1218.0 | 3.171 | 0.967 | 2.07 |
| 1250.0 | 3.218 | 0.981 | 2.04 |
| 1500.0 | 3.569 | 1.088 | 1.84 |
| 1700.0 | 3.835 | 1.169 | 1.71 |
| 1794.0 | 3.955 | 1.206 | 1.66 |
| 1800.0 | 3.963 | 1.208 | 1.66 |
| 2000.0 | 4.212 | 1.284 | 1.56 |
| 2100.0 | 4.333 | 1.321 | 1.51 |
| 2200.0 | 4.452 | 1.357 | 1.47 |
| 2300.0 | 4.569 | 1.393 | 1.44 |
| 2500.0 | 4.798 | 1.462 | 1.37 |
| 2700.0 | 5.021 | 1.53  | 1.31 |
| 3000.0 | 5.345 | 1.629 | 1.23 |
| 3400.0 | 5.76  | 1.755 | 1.14 |
| 3600.0 | 5.961 | 1.817 | 1.1  |
| 3700.0 | 6.06  | 1.847 | 1.08 |
| 3800.0 | 6.16  | 1.877 | 1.07 |
| 4000.0 | 6.36  | 1.94  | 1.03 |

## VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 680–800 MHz    | 1.13  | 24.3             |
| 806–960 MHz    | 1.13  | 24.3             |
| 1700–2170 MHz  | 1.13  | 24.3             |
| 2300–2700 MHz  | 1.222 | 20.01            |
| 3400–3800 MHz  | 1.288 | 18               |
| 3800–4200 MHz  | 1.377 | 16               |

## Material Specifications

|                                 |                        |
|---------------------------------|------------------------|
| <b>Dielectric Material</b>      | Foam PE                |
| <b>Jacket Material</b>          | PE                     |
| <b>Inner Conductor Material</b> | Corrugated copper tube |
| <b>Outer Conductor Material</b> | Corrugated copper      |

## Mechanical Specifications

|  |                 |
|--|-----------------|
| <b>Minimum Bend Radius, multiple Bends</b> | 203.2 mm   8 in |
|--|-----------------|

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|   |                          |
|---|--------------------------|
| <b>Minimum Bend Radius, single Bend</b> | 152.4 mm   6 in          |
| <b>Number of Bends, minimum</b>         | 15                       |
| <b>Number of Bends, typical</b>         | 40                       |
| <b>Tensile Strength</b>                 | 154 kg   339.511 lb      |
| <b>Bending Moment</b>                   | 29.8 N-m   263.752 in lb |
| <b>Flat Plate Crush Strength</b>        | 1.3 kg/mm   72.797 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> | 0.68 kg/m   0.457 lb/ft |
|---------------------|-------------------------|