

# AVA5RK-50

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AVA5RK-50, HELIAX® Andrew Virtual Air™ Coaxial Cable, corrugated copper, 7/8 in, black non-halogenated, fire retardant polyolefin jacket B2ca- s1a, d2,a1 (CPR testing is conducted annually please reference the website for latest classification)

## Product Classification

|                       |                        |
|-----------------------|------------------------|
| <b>Product Type</b>   | Coaxial wireless cable |
| <b>Product Brand</b>  | HELIAX®                |
| <b>Product Series</b> | AVA5-50                |

## General Specifications

|   |  |
|---|--|
| <b>Product Number</b>                     | 520097502/00   SZ520097502/00                    |
| <b>Flexibility</b>                        | Standard   |
| <b>Jacket Color</b>                       | Black  |
| <b>Performance Note</b>                   | Attenuation values typical, guaranteed within 5% |
| <b>Specification Sheet Revision Level</b> | B  |

## Dimensions

|                                 |                     |
|---------------------------------|---------------------|
| <b>Diameter Over Dielectric</b> | 24.13 mm   0.95 in  |
| <b>Diameter Over Jacket</b>     | 27.94 mm   1.1 in   |
| <b>Inner Conductor OD</b>       | 9.449 mm   0.372 in |
| <b>Outer Conductor OD</b>       | 25.4 mm   1 in      |
| <b>Nominal Size</b>             | 7/8 in              |

## Electrical Specifications

|                                       |                                |
|---------------------------------------|--------------------------------|
| <b>Cable Impedance</b>                | 50 ohm $\pm$ 1 ohm             |
| <b>Capacitance</b>                    | 73.2 pF/m   22.311 pF/ft       |
| <b>dc Resistance, Inner Conductor</b> | 1.435 ohms/km   0.437 ohms/kft |
| <b>dc Resistance, Outer Conductor</b> | 1.116 ohms/km   0.34 ohms/kft  |
| <b>dc Test Voltage</b>                | 6000 V                         |

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|  |                                    |
|--|------------------------------------|
| <b>Inductance</b>                      | 0.184 $\mu$ H/m   0.056 $\mu$ H/ft |
| <b>Insulation Resistance</b>           | 100000 MOhms-km                    |
| <b>Jacket Spark Test Voltage (rms)</b> | 8000 V                             |
| <b>Operating Frequency Band</b>        | 1 – 5000 MHz                       |
| <b>Peak Power</b>                      | 91 kW                              |
| <b>Velocity</b>                        | 91 %                               |

## VSWR/Return Loss

| <b>Frequency Band</b> | <b>VSWR</b> | <b>Return Loss (dB)</b> |
|-----------------------|-------------|-------------------------|
| <b>680–800 MHz</b>    | 1.13        | 24.3                    |
| <b>800–960 MHz</b>    | 1.13        | 24.3                    |
| <b>1700–2200 MHz</b>  | 1.13        | 24.3                    |

## 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>             | 0.113                         | 0.034                          | 74.43                     |
| <b>1.5</b>             | 0.138                         | 0.042                          | 60.73                     |
| <b>2.0</b>             | 0.16                          | 0.049                          | 52.56                     |
| <b>10.0</b>            | 0.359                         | 0.11                           | 23.37                     |
| <b>20.0</b>            | 0.51                          | 0.156                          | 16.46                     |
| <b>30.0</b>            | 0.627                         | 0.191                          | 13.39                     |
| <b>50.0</b>            | 0.814                         | 0.248                          | 10.32                     |
| <b>85.0</b>            | 1.068                         | 0.326                          | 7.86                      |
| <b>88.0</b>            | 1.088                         | 0.332                          | 7.72                      |
| <b>100.0</b>           | 1.162                         | 0.354                          | 7.23                      |
| <b>108.0</b>           | 1.209                         | 0.368                          | 6.95                      |
| <b>150.0</b>           | 1.433                         | 0.437                          | 5.86                      |
| <b>174.0</b>           | 1.548                         | 0.472                          | 5.43                      |
| <b>200.0</b>           | 1.665                         | 0.507                          | 5.05                      |
| <b>204.0</b>           | 1.682                         | 0.513                          | 4.99                      |
| <b>300.0</b>           | 2.059                         | 0.628                          | 4.08                      |
| <b>400.0</b>           | 2.398                         | 0.731                          | 3.5                       |
| <b>450.0</b>           | 2.553                         | 0.778                          | 3.29                      |
| <b>460.0</b>           | 2.583                         | 0.787                          | 3.25                      |
| <b>500.0</b>           | 2.7                           | 0.823                          | 3.11                      |

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|        |       |       |      |
|--------|-------|-------|------|
| 512.0  | 2.735 | 0.834 | 3.07 |
| 600.0  | 2.977 | 0.907 | 2.82 |
| 700.0  | 3.235 | 0.986 | 2.6  |
| 800.0  | 3.478 | 1.06  | 2.42 |
| 824.0  | 3.534 | 1.077 | 2.38 |
| 894.0  | 3.694 | 1.126 | 2.27 |
| 960.0  | 3.841 | 1.171 | 2.19 |
| 1000.0 | 3.927 | 1.197 | 2.14 |
| 1218.0 | 4.377 | 1.334 | 1.92 |
| 1250.0 | 4.44  | 1.353 | 1.89 |
| 1500.0 | 4.912 | 1.497 | 1.71 |
| 1700.0 | 5.268 | 1.605 | 1.59 |
| 1794.0 | 5.429 | 1.655 | 1.55 |
| 1800.0 | 5.439 | 1.658 | 1.54 |
| 2000.0 | 5.771 | 1.759 | 1.46 |
| 2100.0 | 5.933 | 1.808 | 1.42 |
| 2200.0 | 6.091 | 1.856 | 1.38 |
| 2300.0 | 6.247 | 1.904 | 1.34 |
| 2500.0 | 6.55  | 1.996 | 1.28 |
| 2700.0 | 6.845 | 2.086 | 1.23 |
| 3000.0 | 7.272 | 2.217 | 1.15 |
| 3400.0 | 7.819 | 2.383 | 1.07 |
| 3600.0 | 8.083 | 2.464 | 1.04 |
| 3700.0 | 8.213 | 2.503 | 1.02 |
| 3800.0 | 8.342 | 2.542 | 1.01 |
| 3900.0 | 8.47  | 2.581 | 0.99 |
| 4000.0 | 8.596 | 2.62  | 0.98 |
| 4100.0 | 8.722 | 2.658 | 0.96 |
| 4200.0 | 8.846 | 2.696 | 0.95 |
| 4300.0 | 8.969 | 2.734 | 0.94 |
| 4400.0 | 9.092 | 2.771 | 0.92 |
| 4500.0 | 9.213 | 2.808 | 0.91 |
| 4600.0 | 9.333 | 2.845 | 0.9  |
| 4700.0 | 9.453 | 2.881 | 0.89 |
| 4800.0 | 9.572 | 2.917 | 0.88 |

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|        |       |       |      |
|--------|-------|-------|------|
| 4900.0 | 9.689 | 2.953 | 0.87 |
| 5000.0 | 9.806 | 2.989 | 0.86 |

## Material Specifications

|                                 |  |
|---------------------------------|--|
| <b>Dielectric Material</b>      | Foam PE                                    |
| <b>Jacket Material</b>          | Non-halogenated, fire retardant polyolefin |
| <b>Inner Conductor Material</b> | Copper tube                                |
| <b>Outer Conductor Material</b> | Corrugated copper                          |

## Mechanical Specifications

|  |                          |
|--|--------------------------|
| <b>Minimum Bend Radius, multiple Bends</b> | 254 mm   10 in           |
| <b>Minimum Bend Radius, single Bend</b>    | 127 mm   5 in            |
| <b>Number of Bends, minimum</b>            | 15                       |
| <b>Number of Bends, typical</b>            | 30                       |
| <b>Tensile Strength</b>                    | 159 kg   350.535 lb      |
| <b>Bending Moment</b>                      | 19 N-m   168.164 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>                        | -40 °C to +60 °C (-40 °F to +140 °F)              |
| <b>Storage Temperature</b>                          | -40 °C to +60 °C (-40 °F to +140 °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> | B2ca  |
| <b>EN50575 CPR Cable EuroClass Smoke Rating</b>     | s1a   |
| <b>EN50575 CPR Cable EuroClass Droplets Rating</b>  | d2  |
| <b>EN50575 CPR Cable EuroClass Acidity Rating</b>   | a1  |
| <b>Fire Retardancy Test Method</b>                  | IEC 60332-1-2   NFPA 130-2010   UL 1666/CATVR/CMR |
| <b>Smoke Index Test Method</b>                      | IEC 61034   |
| <b>Toxicity Index Test Method</b>                   | IEC 60754-1   IEC 60754-2                         |

## Packaging and Weights

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**Cable weight**

0.53 kg/m | 0.356 lb/ft

## Regulatory Compliance/Certifications

| <b>Agency</b>        | <b>Classification</b>  |
|----------------------|--|
| CENELEC              | EN 50575 compliant, Declaration of Performance (DoP) available   |
| CHINA-ROHS           | Below maximum concentration value  |
| ISO 9001:2015        | Designed, manufactured and/or distributed under this quality management system   |
| REACH-SVHC           | Compliant as per SVHC revision on <a href="http://www.andrew.com/ProductCompliance">www.andrew.com/ProductCompliance</a> |
| ROHS                 | Compliant  |
| UK-ROHS              | Compliant  |
| UL/ETL Certification | CATVR/CMR  |

