

# AVA7-50



AVA7-50, HELIAX® Andrew Virtual Air™ Coaxial Cable, corrugated copper, 1-5/8 in, black PE jacket (Halogen free jacketing non-fire-retardant)

## Product Classification

|                |                                                                                                                                                                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Type   | Coaxial wireless cable                                                                                                                                                                                                                                     |
| Product Brand  | HELIAX®                                                                                                                                                                                                                                                    |
| Product Series | AVA7-50                                                                                                                                                                                                                                                    |
| Ordering Note  | CommScope® standard product in Asia Pacific   CommScope® standard product in Europe, the Middle East, and Africa   CommScope® standard product in Mexico, Central America, and South America   CommScope® standard product in the United States and Canada |

## General Specifications

|                  |                                                  |
|------------------|--------------------------------------------------|
| Product Number   | 520096502/00   SZ520096502/00                    |
| Flexibility      | Standard                                         |
| Jacket Color     | Black                                            |
| Performance Note | Attenuation values typical, guaranteed within 5% |

## Dimensions

|                          |                      |
|--------------------------|----------------------|
| Diameter Over Dielectric | 44.45 mm   1.75 in   |
| Diameter Over Jacket     | 51.054 mm   2.01 in  |
| Inner Conductor OD       | 18.161 mm   0.715 in |
| Outer Conductor OD       | 46.355 mm   1.825 in |
| Nominal Size             | 1-5/8 in             |

## Electrical Specifications

|                                |                                |
|--------------------------------|--------------------------------|
| Cable Impedance                | 50 ohm ±1 ohm                  |
| Capacitance                    | 72.2 pF/m   22.007 pF/ft       |
| dc Resistance, Inner Conductor | 1.435 ohms/km   0.437 ohms/kft |
| dc Resistance, Outer Conductor | 0.525 ohms/km   0.16 ohms/kft  |
| dc Test Voltage                | 15000 V                        |

# AVA7-50

|                                 |                                    |
|---------------------------------|------------------------------------|
| Inductance                      | 0.187 $\mu$ H/m   0.057 $\mu$ H/ft |
| Insulation Resistance           | 100000 MOhms-km                    |
| Jacket Spark Test Voltage (rms) | 10000 V                            |
| Operating Frequency Band        | 1 – 2700 MHz                       |
| Peak Power                      | 302 kW                             |
| Velocity                        | 92 %                               |

## 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             |

## Attenuation

| Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) | Average Power (kW) |
|-----------------|------------------------|-------------------------|--------------------|
| 1.0             | 0.062                  | 0.019                   | 117.56             |
| 1.5             | 0.076                  | 0.023                   | 95.88              |
| 2.0             | 0.088                  | 0.027                   | 82.96              |
| 10.0            | 0.197                  | 0.06                    | 36.78              |
| 20.0            | 0.281                  | 0.086                   | 25.84              |
| 30.0            | 0.346                  | 0.105                   | 21                 |
| 50.0            | 0.45                   | 0.137                   | 16.14              |
| 85.0            | 0.593                  | 0.181                   | 12.25              |
| 88.0            | 0.603                  | 0.184                   | 12.03              |
| 100.0           | 0.645                  | 0.197                   | 11.26              |
| 108.0           | 0.672                  | 0.205                   | 10.81              |
| 150.0           | 0.798                  | 0.243                   | 9.09               |
| 174.0           | 0.864                  | 0.263                   | 8.41               |
| 200.0           | 0.93                   | 0.284                   | 7.81               |
| 204.0           | 0.94                   | 0.287                   | 7.72               |
| 300.0           | 1.156                  | 0.352                   | 6.28               |
| 400.0           | 1.351                  | 0.412                   | 5.37               |
| 450.0           | 1.441                  | 0.439                   | 5.04               |
| 460.0           | 1.459                  | 0.445                   | 4.98               |
| 500.0           | 1.527                  | 0.465                   | 4.76               |

# AVA7-50

|        |       |       |      |
|--------|-------|-------|------|
| 512.0  | 1.547 | 0.471 | 4.69 |
| 600.0  | 1.689 | 0.515 | 4.3  |
| 700.0  | 1.84  | 0.561 | 3.95 |
| 800.0  | 1.982 | 0.604 | 3.66 |
| 824.0  | 2.016 | 0.614 | 3.6  |
| 894.0  | 2.11  | 0.643 | 3.44 |
| 960.0  | 2.197 | 0.67  | 3.3  |
| 1000.0 | 2.249 | 0.685 | 3.23 |
| 1218.0 | 2.517 | 0.767 | 2.89 |
| 1250.0 | 2.554 | 0.779 | 2.84 |
| 1500.0 | 2.838 | 0.865 | 2.56 |
| 1700.0 | 3.053 | 0.93  | 2.38 |
| 1794.0 | 3.151 | 0.96  | 2.3  |
| 1800.0 | 3.157 | 0.962 | 2.3  |
| 2000.0 | 3.359 | 1.024 | 2.16 |
| 2100.0 | 3.457 | 1.054 | 2.1  |
| 2200.0 | 3.554 | 1.083 | 2.04 |
| 2300.0 | 3.649 | 1.112 | 1.99 |
| 2500.0 | 3.836 | 1.169 | 1.89 |
| 2700.0 | 4.017 | 1.224 | 1.81 |

## 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> | 381 mm   15 in           |
| <b>Minimum Bend Radius, single Bend</b>    | 203.2 mm   8 in          |
| <b>Number of Bends, minimum</b>            | 15                       |
| <b>Number of Bends, typical</b>            | 50                       |
| <b>Tensile Strength</b>                    | 181 kg   399.036 lb      |
| <b>Bending Moment</b>                      | 47.5 N-m   420.41 in lb  |
| <b>Flat Plate Crush Strength</b>           | 1.6 kg/mm   89.596 lb/in |

## Environmental Specifications

|                                            |                                      |
|--------------------------------------------|--------------------------------------|
| Installation temperature                   | -40 °C to +60 °C (-40 °F to +140 °F) |
| Operating Temperature                      | -55 °C to +85 °C (-67 °F to +185 °F) |
| Storage Temperature                        | -70 °C to +85 °C (-94 °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                      |

## Packaging and Weights

|              |                         |
|--------------|-------------------------|
| Cable weight | 1.07 kg/m   0.719 lb/ft |
|--------------|-------------------------|

## Regulatory Compliance/Certifications

| Agency        | Classification                                                                                                                 |
|---------------|--------------------------------------------------------------------------------------------------------------------------------|
| 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.commscope.com/ProductCompliance">www.commscope.com/ProductCompliance</a> |
| ROHS          | Compliant                                                                                                                      |
| UK-ROHS       | Compliant                                                                                                                      |

