



Andrew Solutions
AVA7RK-50

AVA7-50, HELIAX® Andrew Virtual Air™ Coaxial Cable, corrugated copper, 1-5/8 in, black non-halogenated, fire retardant polyolefin jacket

Construction Materials

| | |
|--------------------------|--|
| Jacket Material | Non-halogenated, fire retardant polyolefin |
| Outer Conductor Material | Corrugated copper |
| Dielectric Material | Foam PE |
| Flexibility | Standard |
| Inner Conductor Material | Corrugated copper tube |
| Jacket Color | Black |

Dimensions

| | |
|--------------------------|------------------------|
| Nominal Size | 1-5/8 in |
| Cable Weight | 0.77 lb/ft 1.20 kg/m |
| Diameter Over Dielectric | 44.450 mm 1.750 in |
| Diameter Over Jacket | 51.054 mm 2.010 in |
| Inner Conductor OD | 18.1610 mm 0.7150 in |
| Outer Conductor OD | 46.355 mm 1.825 in |

Electrical Specifications

| | |
|---------------------------------|--------------------------------|
| Cable Impedance | 50 ohm ±1 ohm |
| Capacitance | 22.0 pF/ft 72.2 pF/m |
| dc Resistance, Inner Conductor | 0.410 ohms/kft 1.435 ohms/km |
| dc Resistance, Outer Conductor | 0.160 ohms/kft 0.525 ohms/km |
| dc Test Voltage | 15000 V |
| Inductance | 0.187 µH/m 0.057 µH/ft |
| Insulation Resistance | 100000 Mohms•km |
| Jacket Spark Test Voltage (rms) | 8000 V |
| Operating Frequency Band | 1 – 2700 MHz |
| Peak Power | 302.0 kW |
| Pulse Reflection | 0.5% |
| Velocity | 92% |

Environmental Specifications

| | |
|--------------------------|--------------------------------------|
| Installation Temperature | -25 °C to +60 °C (-13 °F to +140 °F) |
| Operating Temperature | -30 °C to +80 °C (-22 °F to +176 °F) |
| Storage Temperature | -30 °C to +80 °C (-22 °F to +176 °F) |

General Specifications

AVA7RK-50



Brand HELIAX®

Mechanical Specifications

| | |
|-------------------------------------|---------------------------|
| Bending Moment | 47.5 N-m 35.0 ft lb |
| Fire Retardancy Test Method | UL 1666/CATVR |
| Flat Plate Crush Strength | 90.0 lb/in 1.6 kg/mm |
| Minimum Bend Radius, Multiple Bends | 381.00 mm 15.00 in |
| Minimum Bend Radius, Single Bend | 203.20 mm 8.00 in |
| Number of Bends, minimum | 15 |
| Number of Bends, typical | 50 |
| Smoke Index Test Method | IEC 61034 |
| Tensile Strength | 181 kg 400 lb |
| Toxicity Index Test Method | IEC 60754-1 IEC 60754-2 |

Note

Performance Note Values typical, unless otherwise stated

Standard Conditions

| | |
|--|-----------------|
| Attenuation, Ambient Temperature | 20 °C 68 °F |
| Average Power, Ambient Temperature | 40 °C 104 °F |
| Average Power, Inner Conductor Temperature | 100 °C 212 °F |

Return Loss/VSWR

| Frequency Band | VSWR | Return Loss (dB) |
|----------------|------|------------------|
| 680–800 MHz | 1.13 | 24.30 |
| 806–960 MHz | 1.13 | 24.30 |
| 1700–2170 MHz | 1.13 | 24.30 |

Attenuation

| Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) | Average Power (kW) |
|-----------------|------------------------|-------------------------|--------------------|
| 0.5 | 0.044 | 0.013 | 166.49 |
| 1 | 0.062 | 0.019 | 117.56 |
| 1.5 | 0.076 | 0.023 | 95.88 |
| 2 | 0.088 | 0.027 | 82.96 |
| 10 | 0.197 | 0.06 | 36.78 |
| 20 | 0.281 | 0.086 | 25.84 |
| 30 | 0.346 | 0.105 | 21.00 |
| 50 | 0.45 | 0.137 | 16.14 |
| 88 | 0.603 | 0.184 | 12.03 |
| 100 | 0.645 | 0.197 | 11.26 |
| 108 | 0.672 | 0.205 | 10.81 |
| 150 | 0.798 | 0.243 | 9.09 |
| 174 | 0.864 | 0.263 | 8.41 |
| 200 | 0.93 | 0.284 | 7.81 |
| 300 | 1.156 | 0.352 | 6.28 |
| 400 | 1.351 | 0.412 | 5.37 |
| 450 | 1.441 | 0.439 | 5.04 |
| 500 | 1.527 | 0.465 | 4.76 |
| 512 | 1.547 | 0.471 | 4.69 |
| 600 | 1.689 | 0.515 | 4.30 |
| 700 | 1.84 | 0.561 | 3.95 |
| 800 | 1.982 | 0.604 | 3.66 |
| 824 | 2.016 | 0.614 | 3.60 |
| 894 | 2.11 | 0.643 | 3.44 |
| 960 | 2.197 | 0.67 | 3.30 |
| 1000 | 2.249 | 0.685 | 3.23 |
| 1250 | 2.554 | 0.779 | 2.84 |
| 1500 | 2.838 | 0.865 | 2.56 |
| 1700 | 3.053 | 0.93 | 2.38 |
| 1800 | 3.157 | 0.962 | 2.30 |
| 2000 | 3.359 | 1.024 | 2.16 |
| 2100 | 3.457 | 1.054 | 2.10 |
| 2200 | 3.554 | 1.083 | 2.04 |
| 2300 | 3.649 | 1.112 | 1.99 |
| 2500 | 3.836 | 1.169 | 1.89 |
| 2700 | 4.017 | 1.224 | 1.81 |

* Values typical, guaranteed within 5%

Regulatory Compliance/Certifications

| Agency | Classification |
|----------------------------|--|
| UL/ETL Certification | CATVR |
| RoHS 2011/65/EU | Compliant |
| China RoHS SJ/T 11364-2006 | Below Maximum Concentration Value (MCV) |
| ISO 9001:2008 | Designed, manufactured and/or distributed under this quality management system |

