



## H5-50

**H5-50, HELIAX® Standard Air Dielectric Coaxial Cable, corrugated copper, 7/8 in, un-jacketed**

### Construction Materials

|                          |                   |
|--------------------------|-------------------|
| Jacket Material          | Unjacketed        |
| Dielectric Material      | PE                |
| Flexibility              | Standard          |
| Inner Conductor Material | Copper tube       |
| Outer Conductor Material | Corrugated copper |

### Dimensions

|                      |                          |
|----------------------|--------------------------|
| Nominal Size         | 7/8 in                   |
| Cable Volume         | 3.5 ft³/kft   325.2 L/km |
| Cable Weight         | 0.80 kg/m   0.54 lb/ft   |
| Diameter Over Jacket | 28.194 mm   1.110 in     |
| Inner Conductor OD   | 9.1440 mm   0.3600 in    |
| Outer Conductor OD   | 25.400 mm   1.000 in     |

### Electrical Specifications

|                                 |                                    |
|---------------------------------|------------------------------------|
| Cable Impedance                 | 50 ohm $\pm$ 0.5 ohm               |
| Capacitance                     | 22.2 pF/ft   72.8 pF/m             |
| dc Resistance, Inner Conductor  | 0.820 ohms/km   0.250 ohms/kft     |
| dc Resistance, Outer Conductor  | 0.656 ohms/km   0.200 ohms/kft     |
| dc Test Voltage                 | 6000 V                             |
| Inductance                      | 1.870 $\mu$ H/m   0.570 $\mu$ H/ft |
| Insulation Resistance           | 100000 Mohms•km                    |
| Jacket Spark Test Voltage (rms) | 8000 V                             |
| Operating Frequency Band        | 1 – 5200 MHz                       |
| Peak Power                      | 90.0 kW                            |
| Power Attenuation               | 2.781                              |
| Velocity                        | 92%                                |

### 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) |

### General Specifications

|       |         |
|-------|---------|
| Brand | HELIAX® |
|-------|---------|

### Mechanical Specifications

|                |                       |
|----------------|-----------------------|
| Bending Moment | 33.9 N-m   25.0 ft lb |
|----------------|-----------------------|

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|                                     |                              |
|-------------------------------------|------------------------------|
| Flat Plate Crush Strength           | 250.0 lb/in   4.5 kg/mm      |
| Minimum Bend Radius, Multiple Bends | 254.00 mm   10.00 in         |
| Number of Bends, minimum            | 15                           |
| Number of Bends, typical            | 20                           |
| Pressurization, maximum             | 0 N/mm <sup>2</sup>   30 psi |
| Tensile Strength                    | 363 kg   800 lb              |

## 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 |

## Attenuation

| Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) | Average Power (kW) |
|-----------------|------------------------|-------------------------|--------------------|
| 0.5             | 0.082                  | 0.025                   | 90.00              |
| 1               | 0.116                  | 0.035                   | 78.44              |
| 1.5             | 0.143                  | 0.043                   | 63.98              |
| 2               | 0.165                  | 0.05                    | 55.36              |
| 10              | 0.372                  | 0.113                   | 24.56              |
| 20              | 0.529                  | 0.161                   | 17.26              |
| 30              | 0.65                   | 0.198                   | 14.03              |
| 50              | 0.846                  | 0.258                   | 10.79              |
| 88              | 1.134                  | 0.346                   | 8.05               |
| 100             | 1.212                  | 0.369                   | 7.53               |
| 108             | 1.262                  | 0.385                   | 7.23               |
| 150             | 1.499                  | 0.457                   | 6.09               |
| 174             | 1.621                  | 0.494                   | 5.63               |
| 200             | 1.746                  | 0.532                   | 5.23               |
| 300             | 2.168                  | 0.661                   | 4.21               |
| 400             | 2.532                  | 0.772                   | 3.60               |
| 450             | 2.7                    | 0.823                   | 3.38               |
| 500             | 2.86                   | 0.872                   | 3.19               |
| 512             | 2.897                  | 0.883                   | 3.15               |
| 600             | 3.161                  | 0.963                   | 2.89               |
| 700             | 3.442                  | 1.049                   | 2.65               |
| 800             | 3.708                  | 1.13                    | 2.46               |
| 824             | 3.769                  | 1.149                   | 2.42               |
| 894             | 3.946                  | 1.203                   | 2.31               |
| 960             | 4.107                  | 1.252                   | 2.22               |
| 1000            | 4.203                  | 1.281                   | 2.17               |
| 1250            | 4.77                   | 1.454                   | 1.91               |
| 1500            | 5.296                  | 1.614                   | 1.72               |
| 1700            | 5.694                  | 1.735                   | 1.60               |
| 1800            | 5.886                  | 1.794                   | 1.55               |
| 2000            | 6.26                   | 1.908                   | 1.46               |
| 2100            | 6.442                  | 1.964                   | 1.42               |
| 2200            | 6.621                  | 2.018                   | 1.38               |
| 2300            | 6.798                  | 2.072                   | 1.34               |
| 2500            | 7.142                  | 2.177                   | 1.28               |
| 2700            | 7.478                  | 2.279                   | 1.22               |
| 3000            | 7.965                  | 2.428                   | 1.15               |
| 3400            | 8.592                  | 2.619                   | 1.06               |
| 3700            | 9.045                  | 2.757                   | 1.01               |
| 4000            | 9.488                  | 2.892                   | 0.96               |
| 5000            | 10.893                 | 3.32                    | 0.84               |

\* Values typical, guaranteed within 5%

## Regulatory Compliance/Certifications

| Agency        | Classification                                                                 |
|---------------|--------------------------------------------------------------------------------|
| ISO 9001:2008 | Designed, manufactured and/or distributed under this quality management system |