### F1A-PNMNM-1F5

FSJ1-50A SureFlex® Jumper with interface types N Male and N Male,

#### Product Classification

| Product Type                       | SureFlex® standard  |
|------------------------------------|---------------------|
| Product Brand                      | HELIAX®   SureFlex® |
| Product Series                     | FSJ1-50A            |
| General Specifications             |                     |
| Body Style, Connector A            | Straight            |
| Body Style, Connector B            | Straight            |
| Interface, Connector A             | N Male              |
| Interface, Connector B             | N Male              |
| Specification Sheet Revision Level | А                   |
| Dimensions                         |                     |
| Length                             | 0.46 m   1.509 ft   |
| Nominal Size                       | 1/4 in              |
| VSWR/Return Loss                   |                     |

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 700–3000 MHz   | 1.222 | 20.01            |

Jumper Assembly Sample Label

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### F1A-PNMNM-1F5



#### **Environmental Specifications**

**Immersion Test Method** 

Meets IEC 60529:2001, IP68 in mated condition

#### Regulatory Compliance/Certifications

| Agency        | Classification   |
|---------------|--|
| 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 www.commscope.com/ProductCompliance          |
| ROHS          | Compliant  |
| UK-ROHS       | Compliant  |



#### Included Products

| 35422-33   | <ul> <li>Heat Treated FSJ1-50A, HELIAX® Superflexible Low Density Foam Coaxial Cable, corrugated<br/>copper, 1/4 in, black PE Jacket</li> </ul>   |
|------------|---|
| 35422-75   | <ul> <li>Heat Treated FSJ1RK-50B, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 1/4<br/>in, black non-halogenated, fire retardant polyolefin jacket</li> </ul>             |
| FSJ1-50A   | <ul> <li>FSJ1-50A, HELIAX® Superflexible Low Density Foam Coaxial Cable, corrugated copper, 1/4 in,<br/>black PE jacket</li> </ul>  |
| FSJ1RK-50A | <ul> <li>FSJ1-50A, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 1/4 in, black non-<br/>halogenated, fire retardant polyolefin jacket, B2ca s1a dO a1 Compliant</li> </ul> |

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COMMSCOPE®

Heat Treated FSJ1-50A, HELIAX® Superflexible Low Density Foam Coaxial Cable, corrugated copper, 1/4 in, black PE Jacket

#### Product Classification

Product Type Coaxial wireless cable **Product Brand HELIAX® Product Series** FSJ1-50A General Specifications Flexibility Superflexible Jacket Color Black Performance Note Attenuation values typical, guaranteed within 5% Dimensions **Diameter Over Dielectric** 4.826 mm | 0.19 in **Diameter Over Jacket** 7.366 mm | 0.29 in **Inner Conductor OD** 1.905 mm | 0.075 in **Outer Conductor OD** 6.35 mm | 0.25 in **Nominal Size** 1/4 in **Electrical Specifications Cable Impedance** 50 ohm ±1 ohm 79.4 pF/m | 24.201 pF/ft Capacitance 9.843 ohms/km | 3 ohms/kft dc Resistance, Inner Conductor dc Resistance, Outer Conductor 6.562 ohms/km | 2 ohms/kft dc Test Voltage 1600 V Inductance 0.2 µH/m | 0.061 µH/ft

Insulation Resistance

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100000 MOhms-km



| Jacket Spark Test Voltage (rms) | 5000 V        |
|---------------------------------|---------------|
| Operating Frequency Band        | 1 – 18000 MHz |
| Peak Power                      | 6.4 kW        |
| Velocity                        | 82 %          |

#### VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 680–960 MHz    | 1.201 | 20.79            |
| 1700–2200 MHz  | 1.201 | 20.79            |
| 2200–2700 MHz  | 1.433 | 14.99            |

#### Attenuation

| Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) |
|-----------------|------------------------|-------------------------|
| 0.5             | 0.407                  | 0.124                   |
| 1.0             | 0.577                  | 0.176                   |
| 1.5             | 0.707                  | 0.215                   |
| 2.0             | 0.816                  | 0.249                   |
| 10.0            | 1.833                  | 0.559                   |
| 20.0            | 2.6                    | 0.792                   |
| 30.0            | 3.192                  | 0.973                   |
| 50.0            | 4.136                  | 1.261                   |
| 85.0            | 5.419                  | 1.652                   |
| 88.0            | 5.516                  | 1.681                   |
| 100.0           | 5.889                  | 1.795                   |
| 108.0           | 6.12                   | 1.867                   |
| 150.0           | 7.25                   | 2.21                    |
| 174.0           | 7.825                  | 2.385                   |
| 200.0           | 8.408                  | 2.563                   |
| 204.0           | 8.495                  | 2.589                   |
| 300.0           | 10.373                 | 3.162                   |
| 400.0           | 12.051                 | 3.673                   |
| 450.0           | 12.817                 | 3.906                   |
| 500.0           | 13.545                 | 4.128                   |
| 512.0           | 13.715                 | 4.18                    |
| 600.0           | 14.909                 | 4.544                   |

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| 700.0                   | 16.175  | 4.93   |
|-------------------------|---------|--------|
| 800.0                   | 17.362  | 5.292  |
| 824.0                   | 17.637  | 5.376  |
| 894.0                   | 18.42   | 5.614  |
| 960.0                   | 19.134  | 5.832  |
| 1000.0                  | 19.556  | 5.96   |
| 1218.0                  | 21.738  | 6.626  |
| 1250.0                  | 22.044  | 6.719  |
| 1500.0                  | 24.326  | 7.414  |
| 1700.0                  | 26.038  | 7.936  |
| 1794.0                  | 26.813  | 8.172  |
| 1800.0                  | 26.862  | 8.187  |
| 2000.0                  | 28.455  | 8.673  |
| 2100.0                  | 29.227  | 8.908  |
| 2200.0                  | 29.984  | 9.139  |
| 2300.0                  | 30.727  | 9.365  |
| 2500.0                  | 32.174  | 9.806  |
| 2700.0                  | 33.576  | 10.233 |
| 3000.0                  | 35.602  | 10.851 |
| 3400.0                  | 38.183  | 11.638 |
| 3700.0                  | 40.041  | 12.204 |
| 4000.0                  | 41.841  | 12.753 |
| 5000.0                  | 47.5    | 14.477 |
| 6000.0                  | 52.747  | 16.077 |
| 8000.0                  | 62.37   | 19.01  |
| 8800.0                  | 65.974  | 20.108 |
| 10000.0                 | 71.173  | 21.693 |
| 12000.0                 | 79.393  | 24.198 |
| 14000.0                 | 87.172  | 26.569 |
| 15800.0                 | 93.872  | 28.611 |
| 16000.0                 | 94.601  | 28.833 |
| 18000.0                 | 101.745 | 31.01  |
| Material Specifications |         |        |
|                         |         |        |

#### **Dielectric Material Jacket Material**

Foam PE

ΡE

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| Inner Conductor Material            | Copper-clad aluminum wire |
|-------------------------------------|---------------------------|
| Outer Conductor Material            | Corrugated copper         |
| Mechanical Specifications           |                           |
| Minimum Bend Radius, multiple Bends | 25.4 mm   1 in            |
| Minimum Bend Radius, single Bend    | 25.4 mm   1 in            |
| Number of Bends, minimum            | 15                        |
| Number of Bends, typical            | 20                        |
| Tensile Strength                    | 68 kg   149.914 lb        |
| Bending Moment                      | 1.1 N-m   9.736 in lb     |
| Flat Plate Crush Strength           | 1.8 kg/mm   100.795 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

0.07 kg/m | 0.047 lb/ft

#### Regulatory Compliance/Certifications

#### Agency

#### Classification

ISO 9001:2015 UL/ETL Certification Designed, manufactured and/or distributed under this quality management system Compliant



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Heat Treated FSJ1RK-50B, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 1/4 in, black non-halogenated, fire retardant polyolefin jacket

#### Product Classification

Product Type Coaxial wireless cable **Product Brand HELIAX® Product Series** FSJ1-50B General Specifications Flexibility Superflexible Jacket Color Black Performance Note Attenuation values typical, guaranteed within 5% Dimensions **Diameter Over Dielectric** 4.826 mm | 0.19 in **Diameter Over Jacket** 7.62 mm | 0.3 in **Inner Conductor OD** 1.905 mm | 0.075 in **Outer Conductor OD** 6.35 mm | 0.25 in **Nominal Size** 1/4 in **Electrical Specifications Cable Impedance** 50 ohm ±1 ohm 79.4 pF/m | 24.201 pF/ft Capacitance 9.843 ohms/km | 3 ohms/kft dc Resistance, Inner Conductor dc Resistance, Outer Conductor 6.562 ohms/km | 2 ohms/kft dc Test Voltage 1600 V Inductance 0.2 µH/m | 0.061 µH/ft **Insulation Resistance** 100000 MOhms-km

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| Jacket Spark Test Voltage (rms) | 4000 V        |
|---------------------------------|---------------|
| Operating Frequency Band        | 1 – 18000 MHz |
| Peak Power                      | 6.4 kW        |
| Velocity                        | 82 %          |

#### VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 680–960 MHz    | 1.201 | 20.79            |
| 1700–2200 MHz  | 1.201 | 20.79            |
| 2200–2700 MHz  | 1.433 | 14.99            |

#### Attenuation

| Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) | Average Power (kW) |
|-----------------|------------------------|-------------------------|--------------------|
| 1.0             | 0.577                  | 0.176                   | 6.4                |
| 1.5             | 0.707                  | 0.215                   | 6.4                |
| 2.0             | 0.816                  | 0.249                   | 6.4                |
| 10.0            | 1.833                  | 0.559                   | 3.99               |
| 20.0            | 2.6                    | 0.792                   | 2.81               |
| 30.0            | 3.192                  | 0.973                   | 2.29               |
| 50.0            | 4.136                  | 1.261                   | 1.77               |
| 85.0            | 5.419                  | 1.652                   | 1.35               |
| 88.0            | 5.516                  | 1.681                   | 1.33               |
| 100.0           | 5.889                  | 1.795                   | 1.24               |
| 108.0           | 6.125                  | 1.867                   | 1.19               |
| 150.0           | 7.25                   | 2.21                    | 1.01               |
| 174.0           | 7.825                  | 2.385                   | 0.93               |
| 200.0           | 8.408                  | 2.563                   | 0.87               |
| 204.0           | 8.495                  | 2.589                   | 0.86               |
| 300.0           | 10.373                 | 3.162                   | 0.71               |
| 400.0           | 12.051                 | 3.673                   | 0.61               |
| 450.0           | 12.817                 | 3.906                   | 0.57               |
| 460.0           | 12.965                 | 3.952                   | 0.56               |
| 500.0           | 13.545                 | 4.128                   | 0.54               |
| 512.0           | 13.715                 | 4.18                    | 0.53               |
| 600.0           | 14.909                 | 4.544                   | 0.49               |

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| 700.0  | 16.175 | 4.93   | 0.45 |
|--------|--------|--------|------|
| 800.0  | 17.362 | 5.292  | 0.42 |
| 824.0  | 17.637 | 5.376  | 0.41 |
| 894.0  | 18.42  | 5.614  | 0.4  |
| 960.0  | 19.134 | 5.832  | 0.38 |
| 1000.0 | 19.556 | 5.96   | 0.37 |
| 1218.0 | 21.738 | 6.626  | 0.34 |
| 1250.0 | 22.044 | 6.719  | 0.33 |
| 1500.0 | 24.326 | 7.414  | 0.3  |
| 1700.0 | 26.038 | 7.936  | 0.28 |
| 1794.0 | 26.813 | 8.172  | 0.27 |
| 1800.0 | 26.862 | 8.187  | 0.27 |
| 2000.0 | 28.455 | 8.673  | 0.26 |
| 2100.0 | 29.227 | 8.908  | 0.25 |
| 2200.0 | 29.984 | 9.139  | 0.24 |
| 2300.0 | 30.727 | 9.365  | 0.24 |
| 2500.0 | 32.174 | 9.806  | 0.23 |
| 2700.0 | 33.576 | 10.233 | 0.22 |
| 3000.0 | 35.602 | 10.851 | 0.21 |
| 3400.0 | 38.183 | 11.638 | 0.19 |
| 3600.0 | 39.428 | 12.017 | 0.19 |
| 3700.0 | 40.041 | 12.204 | 0.18 |
| 3800.0 | 40.647 | 12.389 | 0.18 |
| 3900.0 | 41.247 | 12.571 | 0.18 |
| 4000.0 | 41.841 | 12.753 | 0.17 |
| 4100.0 | 42.429 | 12.932 | 0.17 |
| 4200.0 | 43.012 | 13.11  | 0.17 |
| 4300.0 | 43.59  | 13.286 | 0.17 |
| 4400.0 | 44.163 | 13.46  | 0.17 |
| 4500.0 | 44.73  | 13.633 | 0.16 |
| 4600.0 | 45.293 | 13.805 | 0.16 |
| 4700.0 | 45.852 | 13.975 | 0.16 |
| 4800.0 | 46.405 | 14.144 | 0.16 |
| 4900.0 | 46.955 | 14.311 | 0.16 |
| 5000.0 | 47.5   | 14.477 | 0.15 |
|        |        |        |      |

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| 6000.0  | 52.747  | 16.077 | 0.14 |
|---------|---------|--------|------|
| 8000.0  | 62.37   | 19.01  | 0.12 |
| 8800.0  | 65.974  | 20.108 | 0.11 |
| 10000.0 | 71.173  | 21.693 | 0.1  |
| 12000.0 | 79.393  | 24.198 | 0.09 |
| 14000.0 | 87.172  | 26.569 | 0.08 |
| 15800.0 | 93.872  | 28.611 | 0.08 |
| 16000.0 | 94.601  | 28.833 | 0.08 |
| 18000.0 | 101.745 | 31.01  | 0.07 |
|         |         |        |      |

#### Material Specifications

| Dielectric Material      | Foam PE                                    |
|--------------------------|--|
| Jacket Material          | Non-halogenated, fire retardant polyolefin |
| Inner Conductor Material | Copper-clad aluminum wire                  |
| Outer Conductor Material | Corrugated copper                          |

### Mechanical Specifications

| Minimum Bend Radius, multiple Bends | 25.4 mm   1 in            |
|-------------------------------------|---------------------------|
| Minimum Bend Radius, single Bend    | 25.4 mm   1 in            |
| Number of Bends, minimum            | 15                        |
| Number of Bends, typical            | 20                        |
| Tensile Strength                    | 68 kg   149.914 lb        |
| Bending Moment                      | 1.1 N-m   9.736 in lb     |
| Flat Plate Crush Strength           | 1.8 kg/mm   100.795 lb/in |

### **Environmental Specifications**

| Installation temperature                   | -40 °C to +60 °C (-40 °F to +140 °F) |
|--|--------------------------------------|
| Operating Temperature                      | -40 °C to +60 °C (-40 °F to +140 °F) |
| Storage Temperature                        | -40 °C to +60 °C (-40 °F to +140 °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                      |
| Fire Retardancy Test Method                | UL 1666/CATVR/CMR                    |
| Smoke Index Test Method                    | IEC 61034                            |

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**Toxicity Index Test Method** 

IEC 60754-1 | IEC 60754-2

#### Packaging and Weights

Cable weight

0.07 kg/m | 0.047 lb/ft

#### Regulatory Compliance/Certifications

#### Agency

**Classification** Designed, manufactured and/or distributed under this quality management system

ISO 9001:2015

UL/ETL Certification



Compliant

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FSJ1-50A, HELIAX® Superflexible Low Density Foam Coaxial Cable, corrugated copper, 1/4 in, black PE jacket

#### Product Classification

Product Type Coaxial wireless cable **Product Brand** HELIAX® | SureFlex® **Product Series** FSJ1-50A | MLOC General Specifications 887009902/00 | SZ887009902/00 **Product Number** Flexibility Superflexible Jacket Color Black Performance Note Attenuation values typical, guaranteed within 5% Dimensions **Diameter Over Dielectric** 4.826 mm | 0.19 in **Diameter Over Jacket** 7.366 mm | 0.29 in **Inner Conductor OD** 1.905 mm | 0.075 in **Outer Conductor OD** 6.35 mm | 0.25 in **Nominal Size** 1/4 in **Electrical Specifications Cable Impedance** 50 ohm ±1 ohm 79.4 pF/m | 24.201 pF/ft Capacitance dc Resistance, Inner Conductor 9.843 ohms/km | 3 ohms/kft dc Resistance, Outer Conductor 7.216 ohms/km | 2.199 ohms/kft

Inductance

dc Test Voltage

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1600 V

0.2 µH/m | 0.061 µH/ft



| Insulation Resistance           | 100000 MOhms-km |
|---------------------------------|-----------------|
| Jacket Spark Test Voltage (rms) | 5000 V          |
| Operating Frequency Band        | 1 – 18000 MHz   |
| Peak Power                      | 6.4 kW          |
| Velocity                        | 82 %            |

### VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 680–960 MHz    | 1.201 | 20.8             |
| 1700–2200 MHz  | 1.201 | 20.8             |
| 2200–2700 MHz  | 1.433 | 15               |

#### Attenuation

| Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) | Average Power (kW) |
|-----------------|------------------------|-------------------------|--------------------|
| 1.0             | 0.577                  | 0.176                   | 6.4                |
| 1.5             | 0.707                  | 0.215                   | 6.4                |
| 2.0             | 0.816                  | 0.249                   | 6.4                |
| 10.0            | 1.833                  | 0.559                   | 3.99               |
| 20.0            | 2.6                    | 0.792                   | 2.81               |
| 30.0            | 3.192                  | 0.973                   | 2.29               |
| 50.0            | 4.136                  | 1.261                   | 1.77               |
| 85.0            | 5.419                  | 1.652                   | 1.35               |
| 88.0            | 5.516                  | 1.681                   | 1.33               |
| 100.0           | 5.889                  | 1.795                   | 1.24               |
| 108.0           | 6.125                  | 1.867                   | 1.19               |
| 150.0           | 7.25                   | 2.21                    | 1.01               |
| 174.0           | 7.825                  | 2.385                   | 0.93               |
| 200.0           | 8.408                  | 2.563                   | 0.87               |
| 204.0           | 8.495                  | 2.589                   | 0.86               |
| 300.0           | 10.373                 | 3.162                   | 0.71               |
| 400.0           | 12.051                 | 3.673                   | 0.61               |
| 450.0           | 12.817                 | 3.906                   | 0.57               |
| 460.0           | 12.965                 | 3.952                   | 0.56               |
| 500.0           | 13.545                 | 4.128                   | 0.54               |
| 512.0           | 13.715                 | 4.18                    | 0.53               |

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| 600.0  | 14.909 | 4.544  | 0.49 |
|--------|--------|--------|------|
| 700.0  | 16.175 | 4.93   | 0.45 |
| 800.0  | 17.362 | 5.292  | 0.42 |
| 824.0  | 17.637 | 5.376  | 0.41 |
| 894.0  | 18.42  | 5.614  | 0.4  |
| 960.0  | 19.134 | 5.832  | 0.38 |
| 1000.0 | 19.556 | 5.96   | 0.37 |
| 1218.0 | 21.738 | 6.626  | 0.34 |
| 1250.0 | 22.044 | 6.719  | 0.33 |
| 1500.0 | 24.326 | 7.414  | 0.3  |
| 1700.0 | 26.038 | 7.936  | 0.28 |
| 1794.0 | 26.813 | 8.172  | 0.27 |
| 1800.0 | 26.862 | 8.187  | 0.27 |
| 2000.0 | 28.455 | 8.673  | 0.26 |
| 2100.0 | 29.227 | 8.908  | 0.25 |
| 2200.0 | 29.984 | 9.139  | 0.24 |
| 2300.0 | 30.727 | 9.365  | 0.24 |
| 2500.0 | 32.174 | 9.806  | 0.23 |
| 2700.0 | 33.576 | 10.233 | 0.22 |
| 3000.0 | 35.602 | 10.851 | 0.21 |
| 3400.0 | 38.183 | 11.638 | 0.19 |
| 3600.0 | 39.428 | 12.017 | 0.19 |
| 3700.0 | 40.041 | 12.204 | 0.18 |
| 3800.0 | 40.647 | 12.389 | 0.18 |
| 3900.0 | 41.247 | 12.571 | 0.18 |
| 4000.0 | 41.841 | 12.753 | 0.17 |
| 4100.0 | 42.429 | 12.932 | 0.17 |
| 4200.0 | 43.012 | 13.11  | 0.17 |
| 4300.0 | 43.59  | 13.286 | 0.17 |
| 4400.0 | 44.163 | 13.46  | 0.17 |
| 4500.0 | 44.73  | 13.633 | 0.16 |
| 4600.0 | 45.293 | 13.805 | 0.16 |
| 4700.0 | 45.852 | 13.975 | 0.16 |
| 4800.0 | 46.405 | 14.144 | 0.16 |
| 4900.0 | 46.955 | 14.311 | 0.16 |
|        |        |        |      |

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| 5000.0  | 47.5    | 14.477 | 0.15 |
|---------|---------|--------|------|
| 6000.0  | 52.747  | 16.077 | 0.14 |
| 8000.0  | 62.37   | 19.01  | 0.12 |
| 8800.0  | 65.974  | 20.108 | 0.11 |
| 10000.0 | 71.173  | 21.693 | 0.1  |
| 12000.0 | 79.393  | 24.198 | 0.09 |
| 14000.0 | 87.172  | 26.569 | 0.08 |
| 15800.0 | 93.872  | 28.611 | 0.08 |
| 16000.0 | 94.601  | 28.833 | 0.08 |
| 18000.0 | 101.745 | 31.01  | 0.07 |

#### Material Specifications

| Dielectric Material      | Foam PE                   |
|--------------------------|---------------------------|
| Jacket Material          | PE                        |
| Inner Conductor Material | Copper-clad aluminum wire |
| Outer Conductor Material | Corrugated copper         |

#### Mechanical Specifications

| Minimum Bend Radius, multiple Bends | 25.4 mm   1 in            |
|-------------------------------------|---------------------------|
| Minimum Bend Radius, single Bend    | 25.4 mm   1 in            |
| Number of Bends, minimum            | 15                        |
| Number of Bends, typical            | 20                        |
| Tensile Strength                    | 68 kg   149.914 lb        |
| Bending Moment                      | 0.7 N-m   6.196 in lb     |
| Flat Plate Crush Strength           | 1.8 kg/mm   100.795 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                      |

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### Packaging and Weights

#### Cable weight

0.07 kg/m | 0.047 lb/ft

#### Regulatory Compliance/Certifications

| Agency               | Classification   |
|----------------------|--|
| 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 www.commscope.com/ProductCompliance          |
| ROHS                 | Compliant  |
| UK-ROHS              | Compliant  |
| UL/ETL Certification | Compliant  |
|                      |  |



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FSJ1-50A, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 1/4 in, black nonhalogenated, fire retardant polyolefin jacket, B2ca s1a dO a1 Compliant

#### Product Classification **Product Type** Coaxial wireless cable **Product Brand** HELIAX® | SureFlex® **Product Series** FSJ1-50A | MLOC General Specifications Flexibility Superflexible **Jacket Color** Black Performance Note Attenuation values typical, guaranteed within 5% Dimensions **Diameter Over Dielectric** 4.826 mm | 0.19 in **Diameter Over Jacket** 7.62 mm | 0.3 in **Inner Conductor OD** 1.905 mm | 0.075 in **Outer Conductor OD** 6.35 mm | 0.25 in **Nominal Size** 1/4 in **Electrical Specifications** 50 ohm ±1 ohm **Cable Impedance** Capacitance 79.4 pF/m | 24.201 pF/ft dc Resistance, Inner Conductor 9.843 ohms/km | 3 ohms/kft 7.216 ohms/km | 2.199 ohms/kft dc Resistance, Outer Conductor dc Test Voltage 1600 V

dc Resistance, Outer Conductor dc Test Voltage Inductance Insulation Resistance Jacket Spark Test Voltage (rms) Operating Frequency Band Peak Power Velocity

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0.2 µH/m | 0.061 µH/ft

100000 MOhms-km

1 - 18000 MHz

4000 V

6.4 kW 82 %



#### VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 680–960 MHz    | 1.201 | 20.79            |
| 1700–2200 MHz  | 1.201 | 20.79            |
| 2200–2700 MHz  | 1.433 | 14.99            |

#### Attenuation

| Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) | Average Power (kW) |
|-----------------|------------------------|-------------------------|--------------------|
| 1.0             | 0.577                  | 0.176                   | 6.4                |
| 1.5             | 0.707                  | 0.215                   | 6.4                |
| 2.0             | 0.816                  | 0.249                   | 6.4                |
| 10.0            | 1.833                  | 0.559                   | 3.99               |
| 20.0            | 2.6                    | 0.792                   | 2.81               |
| 30.0            | 3.192                  | 0.973                   | 2.29               |
| 50.0            | 4.136                  | 1.261                   | 1.77               |
| 85.0            | 5.419                  | 1.652                   | 1.35               |
| 88.0            | 5.516                  | 1.681                   | 1.33               |
| 100.0           | 5.889                  | 1.795                   | 1.24               |
| 108.0           | 6.125                  | 1.867                   | 1.19               |
| 150.0           | 7.25                   | 2.21                    | 1.01               |
| 174.0           | 7.825                  | 2.385                   | 0.93               |
| 200.0           | 8.408                  | 2.563                   | 0.87               |
| 204.0           | 8.495                  | 2.589                   | 0.86               |
| 300.0           | 10.373                 | 3.162                   | 0.71               |
| 400.0           | 12.051                 | 3.673                   | 0.61               |
| 450.0           | 12.817                 | 3.906                   | 0.57               |
| 460.0           | 12.965                 | 3.952                   | 0.56               |
| 500.0           | 13.545                 | 4.128                   | 0.54               |
| 512.0           | 13.715                 | 4.18                    | 0.53               |
| 600.0           | 14.909                 | 4.544                   | 0.49               |
| 700.0           | 16.175                 | 4.93                    | 0.45               |
| 800.0           | 17.362                 | 5.292                   | 0.42               |
| 824.0           | 17.637                 | 5.376                   | 0.41               |

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| 894.0  | 18.42  | 5.614  | 0.4  |
|--------|--------|--------|------|
| 960.0  | 19.134 | 5.832  | 0.38 |
| 1000.0 | 19.556 | 5.96   | 0.37 |
| 1218.0 | 21.738 | 6.626  | 0.34 |
| 1250.0 | 22.044 | 6.719  | 0.33 |
| 1500.0 | 24.326 | 7.414  | 0.3  |
| 1700.0 | 26.038 | 7.936  | 0.28 |
| 1794.0 | 26.813 | 8.172  | 0.27 |
| 1800.0 | 26.862 | 8.187  | 0.27 |
| 2000.0 | 28.455 | 8.673  | 0.26 |
| 2100.0 | 29.227 | 8.908  | 0.25 |
| 2200.0 | 29.984 | 9.139  | 0.24 |
| 2300.0 | 30.727 | 9.365  | 0.24 |
| 2500.0 | 32.174 | 9.806  | 0.23 |
| 2700.0 | 33.576 | 10.233 | 0.22 |
| 3000.0 | 35.602 | 10.851 | 0.21 |
| 3400.0 | 38.183 | 11.638 | 0.19 |
| 3600.0 | 39.428 | 12.017 | 0.19 |
| 3700.0 | 40.041 | 12.204 | 0.18 |
| 3800.0 | 40.647 | 12.389 | 0.18 |
| 3900.0 | 41.247 | 12.571 | 0.18 |
| 4000.0 | 41.841 | 12.753 | 0.17 |
| 4100.0 | 42.429 | 12.932 | 0.17 |
| 4200.0 | 43.012 | 13.11  | 0.17 |
| 4300.0 | 43.59  | 13.286 | 0.17 |
| 4400.0 | 44.163 | 13.46  | 0.17 |
| 4500.0 | 44.73  | 13.633 | 0.16 |
| 4600.0 | 45.293 | 13.805 | 0.16 |
| 4700.0 | 45.852 | 13.975 | 0.16 |
| 4800.0 | 46.405 | 14.144 | 0.16 |
| 4900.0 | 46.955 | 14.311 | 0.16 |
| 5000.0 | 47.5   | 14.477 | 0.15 |
| 6000.0 | 52.747 | 16.077 | 0.14 |
| 8000.0 | 62.37  | 19.01  | 0.12 |
| 8800.0 | 65.974 | 20.108 | 0.11 |
|        |        |        |      |

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| 10000.0 | 71.173  | 21.693 | 0.1  |
|---------|---------|--------|------|
| 12000.0 | 79.393  | 24.198 | 0.09 |
| 14000.0 | 87.172  | 26.569 | 0.08 |
| 15800.0 | 93.872  | 28.611 | 0.08 |
| 16000.0 | 94.601  | 28.833 | 0.08 |
| 18000.0 | 101.745 | 31.01  | 0.07 |

### Material Specifications

| Dielectric Material      | Foam PE                                    |
|--------------------------|--|
| Jacket Material          | Non-halogenated, fire retardant polyolefin |
| Inner Conductor Material | Copper-clad aluminum wire                  |
| Outer Conductor Material | Corrugated copper                          |

### Mechanical Specifications

| Minimum Bend Radius, multiple Bends | 25.4 mm   1 in            |
|-------------------------------------|---------------------------|
| Minimum Bend Radius, single Bend    | 25.4 mm   1 in            |
| Number of Bends, minimum            | 15                        |
| Number of Bends, typical            | 20                        |
| Tensile Strength                    | 68 kg   149.914 lb        |
| Bending Moment                      | 0.7 N-m   6.196 in lb     |
| Flat Plate Crush Strength           | 1.8 kg/mm   100.795 lb/in |

### Environmental Specifications

| Installation temperature                     | -40 °C to +60 °C (-40 °F to +140 °F) |
|--|--------------------------------------|
| Operating Temperature                        | -40 °C to +60 °C (-40 °F to +140 °F) |
| Storage Temperature                          | -40 °C to +60 °C (-40 °F to +140 °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                      |
| EN50575 CPR Cable EuroClass Fire Performance | B2ca                                 |
| EN50575 CPR Cable EuroClass Smoke Rating     | sla                                  |
| EN50575 CPR Cable EuroClass Droplets Rating  | d0                                   |
| EN50575 CPR Cable EuroClass Acidity Rating   | al                                   |

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| Fire Retardancy Test Meth            |  | IEC 60332-1-2   IEC 60332-3-24   NFPA 130-2010   UL 1666/CATVR<br>/CMR   UL 1685 |  |
|--------------------------------------|--|--|--|
| Smoke Index Test Method IEC 61034    |  | IEC 61034  |  |
| Toxicity Index Test Method           | ł  | IEC 60754-1   IEC 60754-2  |  |
| Packaging and W                      | /eights  |  |  |
| Cable weight                         |  | 0.07 kg/m   0.047 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                           | VHC Compliant as per SVHC revision on www.commscope.com/ProductCompliance      |  |  |
| ROHS                                 | Compliant  |  |  |
| UK-ROHS                              | Compliant  |  |  |
| UL/ETL Certification                 | Compliant  |  |  |
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