

# F4C-HMDM-15M-E1



HELIAX® 1/2" Superflexible SureFlex® Jumper with interface types 4.3-10 Male and 7-16 DIN Male 15M

- WARNING: DO NOT MATE WITH 4.1-9.5 DIN
- If there are threads along the entire device port length, the HELIAX® SureGuard weatherproofing solutions will only seal properly if the HSG-M29-ADPT adapter is installed on the device port

## Product Classification

|                       |                                      |
|-----------------------|--------------------------------------|
| <b>Product Type</b>   | Wireless transmission cable assembly |
| <b>Product Brand</b>  | HELIAX®   SureFlex®                  |
| <b>Product Series</b> | RSJ4-50                              |

## General Specifications

|   |               |
|---|---------------|
| <b>Body Style, Connector A</b>            | Straight      |
| <b>Body Style, Connector B</b>            | Straight      |
| <b>Interface, Connector A</b>             | 4.3-10 Male   |
| <b>Interface, Connector B</b>             | 7-16 DIN Male |
| <b>Specification Sheet Revision Level</b> | A             |

## Dimensions

|                     |                  |
|---------------------|------------------|
| <b>Length</b>       | 15 m   49.213 ft |
| <b>Nominal Size</b> | 1/2 in           |

## Electrical Specifications

|   |                      |
|---|----------------------|
| <b>3rd Order IMD Static</b>             | -116 dBm             |
| <b>3rd Order IMD Static Test Method</b> | Two +43 dBm carriers |
| <b>DTF, Connector A</b>                 | -34 dB               |
| <b>DTF, Connector B</b>                 | -34 dB               |

## VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) | Insertion Loss, typical (dB) |
|----------------|-------|------------------|------------------------------|
| 698–960 MHz    | 1.065 | 30.04            | 1.23                         |
| 1700–2200 MHz  | 1.083 | 27.99            | 2                            |



# F4XDM-S2

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7-16DIN Male for 1/2 in RSJ4-50LF cable, factory attached

## Product Classification

|                      |                                  |
|----------------------|----------------------------------|
| <b>Product Type</b>  | Wireless and radiating connector |
| <b>Product Brand</b> | HELIAX®                          |

## General Specifications

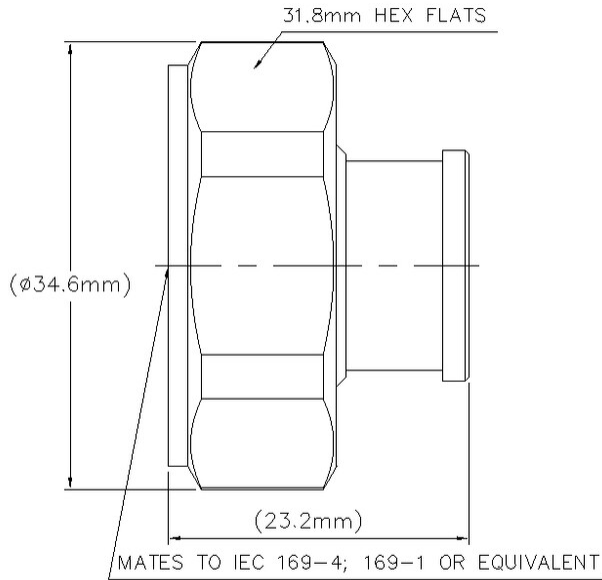
|  |               |
|--|---------------|
| <b>Body Style</b>                      | Straight      |
| <b>Cable Family</b>                    | RSJ4-50       |
| <b>Inner Contact Attachment Method</b> | Captivated    |
| <b>Inner Contact Plating</b>           | Silver        |
| <b>Interface</b>                       | 7-16 DIN Male |
| <b>Outer Contact Attachment Method</b> | Solder        |
| <b>Outer Contact Plating</b>           | Trimetal      |
| <b>Pressurizable</b>                   | No            |

## Dimensions

|                     |                    |
|---------------------|--------------------|
| <b>Length</b>       | 23.2 mm   0.913 in |
| <b>Diameter</b>     | 34.54 mm   1.36 in |
| <b>Nominal Size</b> | 1/2 in             |

## Outline Drawing

# F4XDM-S2



## Electrical Specifications

|   |                      |
|---|----------------------|
| <b>3rd Order IMD at Frequency</b>           | -116 dBm @ 910 MHz   |
| <b>3rd Order IMD Test Method</b>            | Two +43 dBm carriers |
| <b>Insertion Loss Coefficient, typical</b>  | 0.05                 |
| <b>Cable Impedance</b>                      | 50 ohm               |
| <b>Connector Impedance</b>                  | 50 ohm               |
| <b>dc Test Voltage</b>                      | 2500 V               |
| <b>Inner Contact Resistance, maximum</b>    | 0.8 mOhm             |
| <b>Insulation Resistance, minimum</b>       | 5000 MOhm            |
| <b>Operating Frequency Band</b>             | 0 – 7500 MHz         |
| <b>Outer Contact Resistance, maximum</b>    | 1.5 mOhm             |
| <b>Peak Power, maximum</b>                  | 15.6 kW              |
| <b>RF Operating Voltage, maximum (vrms)</b> | 884 V                |
| <b>Shielding Effectiveness</b>              | -110 dB              |

## VSWR/Return Loss

| Frequency Band | VSWR | Return Loss (dB) |
|----------------|------|------------------|
|----------------|------|------------------|

# F4XDM-S2

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|                      |       |       |
|----------------------|-------|-------|
| <b>698–960 MHz</b>   | 1.032 | 36.06 |
| <b>1700–2200 MHz</b> | 1.032 | 36.06 |
| <b>2200–2700 MHz</b> | 1.041 | 33.94 |
| <b>3400–3800 MHz</b> | 1.106 | 25.96 |

## Mechanical Specifications

|  |   |
|--|---|
| <b>Connector Retention Tensile Force</b>   | 889.64 N   200 lbf                          |
| <b>Connector Retention Torque</b>          | 4.07 N-m   36.023 in lb                     |
| <b>Coupling Nut Proof Torque</b>           | 25 N-m   221.269 in lb                      |
| <b>Coupling Nut Retention Force</b>        | 1,000.85 N   225 lbf                        |
| <b>Coupling Nut Retention Force Method</b> | MIL-C-39012C-3.25, 4.6.22                   |
| <b>Interface Durability</b>                | 500 cycles                                  |
| <b>Mechanical Shock Test Method</b>        | MIL-STD-202F, Method 213B, Test Condition C |

## Environmental Specifications

|   |   |
|---|---|
| <b>Operating Temperature</b>              | -55 °C to +85 °C (-67 °F to +185 °F)                                  |
| <b>Storage Temperature</b>                | -65 °C to +125 °C (-85 °F to +257 °F)                                 |
| <b>Attenuation, Ambient Temperature</b>   | 20 °C   68 °F   |
| <b>Average Power, Ambient Temperature</b> | 40 °C   104 °F  |
| <b>Corrosion Test Method</b>              | MIL-STD-1344A, Method 1001.1, Test Condition A                        |
| <b>Immersion Depth</b>                    | 1 m   |
| <b>Immersion Test Mating</b>              | Mated   |
| <b>Immersion Test Method</b>              | IEC 60529:2001, IP68  |
| <b>Moisture Resistance Test Method</b>    | MIL-STD-202F, Method 106F   |
| <b>Thermal Shock Test Method</b>          | MIL-STD-202F, Method 107G, Test Condition A-1, Low Temperature -55 °C |
| <b>Vibration Test Method</b>              | MIL-STD-202F, Method 204D, Test Condition B                           |

## Packaging and Weights

|                    |                   |
|--------------------|-------------------|
| <b>Weight, net</b> | 47.2 g   0.104 lb |
|--------------------|-------------------|

## \* Footnotes

|  |   |
|--|---|
| <b>Insertion Loss Coefficient, typical</b> | 0.05√freq (GHz) (not applicable for elliptical waveguide) |
| <b>Immersion Depth</b>                     | Immersion at specified depth for 24 hours                 |

# F4XHM-S2

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4.3-10 Male for 1/2 in RSJ4-50LF cable, factory attached

## Product Classification

|                      |                                  |
|----------------------|----------------------------------|
| <b>Product Type</b>  | Wireless and radiating connector |
| <b>Product Brand</b> | HELIAX®                          |

## General Specifications

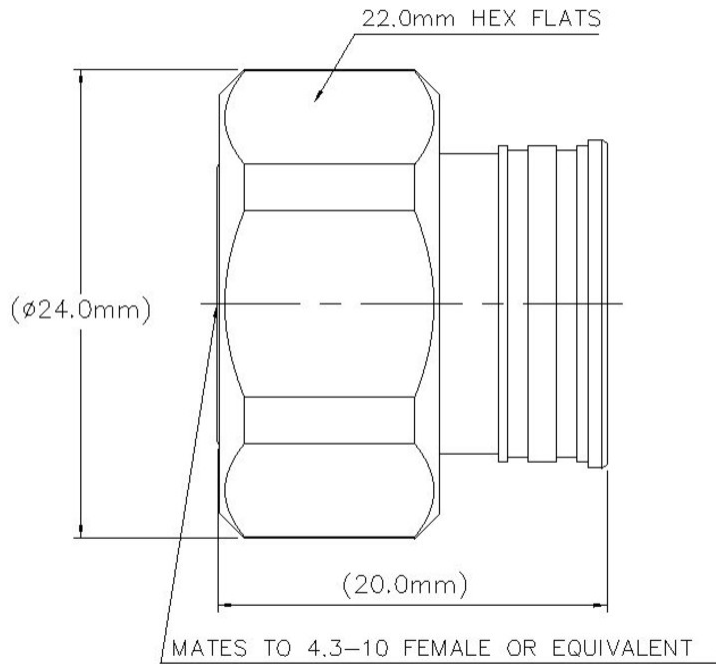
|  |             |
|--|-------------|
| <b>Body Style</b>                      | Straight    |
| <b>Cable Family</b>                    | RSJ4-50     |
| <b>Inner Contact Attachment Method</b> | Captivated  |
| <b>Inner Contact Plating</b>           | Silver      |
| <b>Interface</b>                       | 4.3-10 Male |
| <b>Outer Contact Attachment Method</b> | Solder      |
| <b>Outer Contact Plating</b>           | Trimetal    |

## Dimensions

|                     |                  |
|---------------------|------------------|
| <b>Length</b>       | 20 mm   0.787 in |
| <b>Diameter</b>     | 24 mm   0.945 in |
| <b>Nominal Size</b> | 1/2 in           |

## Outline Drawing

# F4XHM-S2



## Electrical Specifications

|  |                      |
|--|----------------------|
| <b>3rd Order IMD at Frequency</b>          | -119 dBm @ 910 MHz   |
| <b>3rd Order IMD Test Method</b>           | Two +43 dBm carriers |
| <b>Insertion Loss Coefficient, typical</b> | 0.05                 |
| <b>Cable Impedance</b>                     | 50 ohm               |
| <b>Connector Impedance</b>                 | 50 ohm               |
| <b>dc Test Voltage</b>                     | 2500 V               |
| <b>Inner Contact Resistance, maximum</b>   | 1 mOhm               |
| <b>Insulation Resistance, minimum</b>      | 5000 MOhm            |
| <b>Operating Frequency Band</b>            | 0 – 6000 MHz         |
| <b>Outer Contact Resistance, maximum</b>   | 1 mOhm               |
| <b>Peak Power, maximum</b>                 | 15 kW                |

## VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 698–960 MHz    | 1.032 | 36.06            |

# F4XHM-S2

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|                      |       |       |
|----------------------|-------|-------|
| <b>1700–2200 MHz</b> | 1.032 | 36.06 |
| <b>2200–2700 MHz</b> | 1.041 | 33.94 |
| <b>3400–3800 MHz</b> | 1.106 | 25.96 |

## Mechanical Specifications

|  |                        |
|--|------------------------|
| <b>Connector Retention Tensile Force</b> | 889.64 N   200 lbf     |
| <b>Connector Retention Torque</b>        | 4.1 N-m   36.288 in lb |
| <b>Coupling Nut Proof Torque</b>         | 8 N-m   70.806 in lb   |
| <b>Coupling Nut Retention Force</b>      | 449.98 N   101.16 lbf  |
| <b>Interface Durability</b>              | 100 cycles             |
| <b>Mechanical Shock Test Method</b>      | IEC 60068-2-27         |

## Environmental Specifications

|   |                                       |
|---|---------------------------------------|
| <b>Operating Temperature</b>              | -55 °C to +85 °C (-67 °F to +185 °F)  |
| <b>Storage Temperature</b>                | -65 °C to +125 °C (-85 °F to +257 °F) |
| <b>Attenuation, Ambient Temperature</b>   | 20 °C   68 °F                         |
| <b>Average Power, Ambient Temperature</b> | 40 °C   104 °F                        |
| <b>Corrosion Test Method</b>              | IEC 60068-2-11                        |
| <b>Immersion Depth</b>                    | 1 m                                   |
| <b>Immersion Test Mating</b>              | Mated                                 |
| <b>Immersion Test Method</b>              | IEC 60529:2001, IP68                  |
| <b>Moisture Resistance Test Method</b>    | IEC 60068-2-3                         |
| <b>Thermal Shock Test Method</b>          | IEC 60068-2-14                        |
| <b>Vibration Test Method</b>              | IEC 60068-2-6                         |

## Packaging and Weights

|                    |                    |
|--------------------|--------------------|
| <b>Weight, net</b> | 22.04 g   0.049 lb |
|--------------------|--------------------|

## Regulatory Compliance/Certifications

| <b>Agency</b> | <b>Classification</b>   |
|---------------|---|
| CHINA-ROHS    | Below maximum concentration value   |
| REACH-SVHC    | Compliant as per SVHC revision on <a href="https://www.commscope.com/ProductCompliance">www.commscope.com/ProductCompliance</a> |
| ROHS          | Compliant   |
| UK-ROHS       | Compliant   |



# F4XHM-S2

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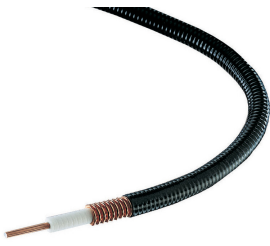


## \* Footnotes

**Insertion Loss Coefficient, typical**  $0.05\sqrt{\text{freq (GHz)}}$  (not applicable for elliptical waveguide)

**Immersion Depth** Immersion at specified depth for 24 hours

# RSJ4RK-50LF



RSJ4-50, HELIAX® Superflexible Foam Coaxial Cable, corrugated copper, 1/2 in, black non-halogenated, fire retardant polyolefin jacket B2ca-s1a,d1,a1

## Product Classification

|                       |                        |
|-----------------------|------------------------|
| <b>Product Type</b>   | Coaxial wireless cable |
| <b>Product Brand</b>  | HELIAX®   SureFlex®    |
| <b>Product Series</b> | RSJ4-50                |

## General Specifications

|                         |  |
|-------------------------|--|
| <b>Flexibility</b>      | Superflexible                                    |
| <b>Jacket Color</b>     | Black  |
| <b>Performance Note</b> | Attenuation values typical, guaranteed within 5% |

## Dimensions

|                                 |                      |
|---------------------------------|----------------------|
| <b>Diameter Over Dielectric</b> | 9.423 mm   0.371 in  |
| <b>Diameter Over Jacket</b>     | 13.411 mm   0.528 in |
| <b>Inner Conductor OD</b>       | 3.594 mm   0.141 in  |
| <b>Outer Conductor OD</b>       | 11.989 mm   0.472 in |
| <b>Nominal Size</b>             | 1/2 in               |

## Electrical Specifications

|  |                               |
|--|-------------------------------|
| <b>Cable Impedance</b>                 | 50 ohm ±1 ohm                 |
| <b>Capacitance</b>                     | 83.9 pF/m   25.573 pF/ft      |
| <b>dc Resistance, Inner Conductor</b>  | 2.76 ohms/km   0.841 ohms/kft |
| <b>dc Resistance, Outer Conductor</b>  | 5.73 ohms/km   1.747 ohms/kft |
| <b>dc Test Voltage</b>                 | 2500 V                        |
| <b>Inductance</b>                      | 0.213 µH/m   0.065 µH/ft      |
| <b>Insulation Resistance</b>           | 100000 MOhms-km               |
| <b>Jacket Spark Test Voltage (rms)</b> | 4000 V                        |
| <b>Operating Frequency Band</b>        | 1 – 10200 MHz                 |
| <b>Peak Power</b>                      | 15.6 kW                       |

# RSJ4RK-5OLF

Velocity

79 %

## VSWR/Return Loss

| Frequency Band | VSWR  | Return Loss (dB) |
|----------------|-------|------------------|
| 680–800 MHz    | 1.201 | 20.79            |
| 800–960 MHz    | 1.201 | 20.79            |
| 1700–2200 MHz  | 1.201 | 20.79            |
| 2300–2700 MHz  | 1.201 | 20.79            |

## Attenuation

| Frequency (MHz) | Attenuation (dB/100 m) | Attenuation (dB/100 ft) | Average Power (kW) |
|-----------------|------------------------|-------------------------|--------------------|
| 1.0             | 0.327                  | 0.1                     | 15.6               |
| 1.5             | 0.401                  | 0.122                   | 15.6               |
| 2.0             | 0.463                  | 0.141                   | 15.6               |
| 10.0            | 1.044                  | 0.318                   | 10.12              |
| 20.0            | 1.485                  | 0.453                   | 7.11               |
| 30.0            | 1.828                  | 0.557                   | 5.78               |
| 50.0            | 2.377                  | 0.724                   | 4.44               |
| 85.0            | 3.13                   | 0.954                   | 3.38               |
| 88.0            | 3.187                  | 0.971                   | 3.32               |
| 100.0           | 3.406                  | 1.038                   | 3.1                |
| 108.0           | 3.546                  | 1.081                   | 2.98               |
| 150.0           | 4.214                  | 1.285                   | 2.51               |
| 174.0           | 4.558                  | 1.389                   | 2.32               |
| 200.0           | 4.908                  | 1.496                   | 2.15               |
| 204.0           | 4.96                   | 1.512                   | 2.13               |
| 300.0           | 6.095                  | 1.858                   | 1.73               |
| 400.0           | 7.121                  | 2.17                    | 1.48               |
| 450.0           | 7.592                  | 2.314                   | 1.39               |
| 460.0           | 7.684                  | 2.342                   | 1.37               |
| 500.0           | 8.042                  | 2.451                   | 1.31               |
| 512.0           | 8.148                  | 2.483                   | 1.3                |
| 600.0           | 8.891                  | 2.71                    | 1.19               |
| 700.0           | 9.683                  | 2.951                   | 1.09               |
| 800.0           | 10.431                 | 3.179                   | 1.01               |

# RSJ4RK-5OLF

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|               |        |        |      |
|---------------|--------|--------|------|
| <b>824.0</b>  | 10.605 | 3.232  | 1    |
| <b>894.0</b>  | 11.101 | 3.383  | 0.95 |
| <b>960.0</b>  | 11.555 | 3.522  | 0.91 |
| <b>1000.0</b> | 11.824 | 3.604  | 0.89 |
| <b>1218.0</b> | 13.226 | 4.031  | 0.8  |
| <b>1250.0</b> | 13.423 | 4.091  | 0.79 |
| <b>1500.0</b> | 14.906 | 4.543  | 0.71 |
| <b>1700.0</b> | 16.027 | 4.885  | 0.66 |
| <b>1794.0</b> | 16.537 | 5.04   | 0.64 |
| <b>1800.0</b> | 16.57  | 5.05   | 0.64 |
| <b>2000.0</b> | 17.624 | 5.371  | 0.6  |
| <b>2100.0</b> | 18.137 | 5.528  | 0.58 |
| <b>2200.0</b> | 18.641 | 5.682  | 0.57 |
| <b>2300.0</b> | 19.138 | 5.833  | 0.55 |
| <b>2500.0</b> | 20.11  | 6.129  | 0.53 |
| <b>2700.0</b> | 21.056 | 6.418  | 0.5  |
| <b>3000.0</b> | 22.432 | 6.837  | 0.47 |
| <b>3400.0</b> | 24.198 | 7.375  | 0.44 |
| <b>3600.0</b> | 25.055 | 7.636  | 0.42 |
| <b>3700.0</b> | 25.478 | 7.765  | 0.41 |
| <b>3800.0</b> | 25.898 | 7.893  | 0.41 |
| <b>3900.0</b> | 26.314 | 8.02   | 0.4  |
| <b>4000.0</b> | 26.727 | 8.146  | 0.4  |
| <b>4100.0</b> | 27.136 | 8.271  | 0.39 |
| <b>4200.0</b> | 27.542 | 8.394  | 0.38 |
| <b>4300.0</b> | 27.946 | 8.517  | 0.38 |
| <b>4400.0</b> | 28.346 | 8.639  | 0.37 |
| <b>4500.0</b> | 28.744 | 8.761  | 0.37 |
| <b>4600.0</b> | 29.139 | 8.881  | 0.36 |
| <b>4700.0</b> | 29.531 | 9.001  | 0.36 |
| <b>4800.0</b> | 29.921 | 9.119  | 0.35 |
| <b>4900.0</b> | 30.308 | 9.238  | 0.35 |
| <b>5000.0</b> | 30.693 | 9.355  | 0.34 |
| <b>6000.0</b> | 34.427 | 10.493 | 0.31 |
| <b>8000.0</b> | 41.403 | 12.619 | 0.26 |

# RSJ4RK-50LF

|         |        |        |      |
|---------|--------|--------|------|
| 8800.0  | 44.054 | 13.427 | 0.24 |
| 10000.0 | 47.914 | 14.603 | 0.22 |

## Material Specifications

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

## Mechanical Specifications

|  |                         |
|--|-------------------------|
| <b>Minimum Bend Radius, multiple Bends</b> | 31.75 mm   1.25 in      |
| <b>Minimum Bend Radius, single Bend</b>    | 31.75 mm   1.25 in      |
| <b>Number of Bends, minimum</b>            | 12                      |
| <b>Number of Bends, typical</b>            | 15                      |
| <b>Tensile Strength</b>                    | 79 kg   174.165 lb      |
| <b>Bending Moment</b>                      | 2.6 N-m   23.012 in lb  |
| <b>Flat Plate Crush Strength</b>           | 2 kg/mm   111.995 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>  | d1  |
| <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 60754-2                                       |

## Packaging and Weights

# RSJ4RK-5OLF

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**Cable weight**

0.15 kg/m | 0.101 lb/ft