

RFS Waveguides and Accessories

A Comprehensive **Selection Guide**

Edition 2



RADIO FREQUENCY SYSTEMS
The Clear Choice®



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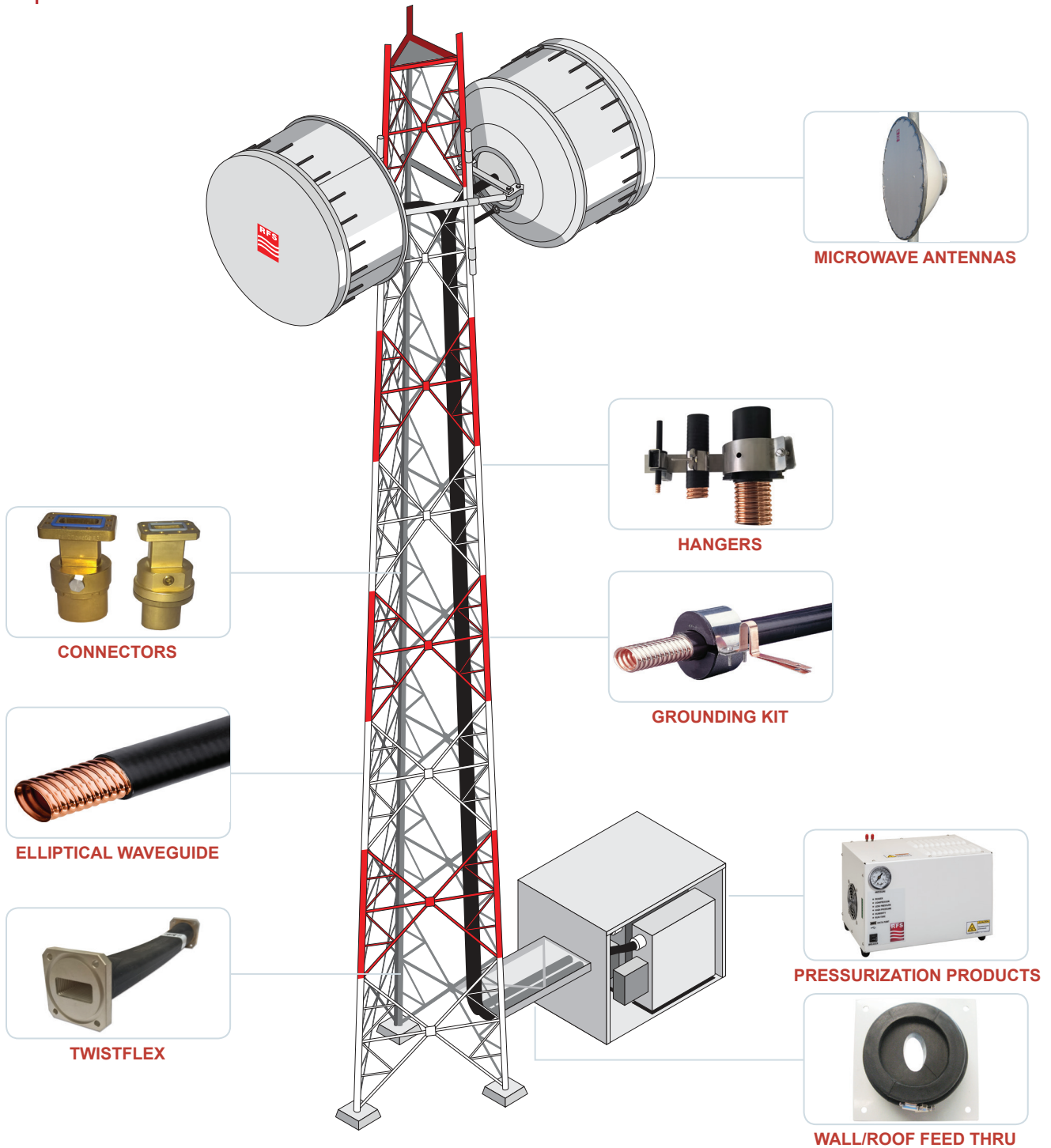
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Complete Microwave Site Solutions From RFS



RFS offers a complete portfolio of the highest quality, best performing and most reliable elliptical waveguides and accessories in the industry



Radio Frequency Systems (RFS) is the originator and designer of continuous seam welded corrugated transmission lines. RFS' FLEXWELL® products – which have been used in thousands of successful installations worldwide – are the highest quality, best performing, and most reliable elliptical waveguides in the industry.

For more than 40 years, FLEXWELL elliptical waveguides have successfully supplemented traditional rigid rectangular and circular waveguide configurations for the transmission of RF energy at microwave frequencies. Available in a wide variety of premium and standard models, FLEXWELL is constructed of longitudinally continuous seam welded, highly conductive copper tube, corrugated and precision formed into an elliptical cross section. It is manufactured in continuous lengths using a special seam welding process developed exclusively by RFS.

RFS provides trusted and reliable solutions for all long haul, mobile, satellite and radar application needs through its broad portfolio of high quality FLEXWELL® Elliptical Waveguides, Connectors, Components, Tools and Pressurization Products.

With FLEXWELL, RFS customers benefit from:

- ⊕ Portfolio of elliptical waveguides that cover the entire range of microwave frequencies
- ⊕ Unique corrugation design for maximum strength and flexibility
- ⊕ Excellent electrical performance
- ⊕ Low attenuation and good return loss (VSWR as low as 1.06); highest average power
- ⊕ 24 hour pressure test performed on every waveguide
- ⊕ Reduced installation cost compared to rigid rectangular waveguides due to flexibility
- ⊕ Easy transportation in coils or on drums
- ⊕ Training and superior technical support

Additionally, RFS offers a full range of options, connectors, pressurization equipment and accessories to support your end-to-end radio link network. RFS offers tuneable connectors for premium performance waveguides and non-tuneable connectors for standard performance waveguides according to the EIA standard. These connectors are manufactured from brass forgings and are very simple and easy to install with basic hand tools, no expensive flanging tools are required. RFS connectors based on the IEC standard are all fixed tuned. Together with the dedicated flanging tools and premium performance waveguides, these connectors meet the highest VSWR / return loss requirements over the complete frequency band without tuning.

RFS offers the widest portfolio of standard and premium elliptical waveguides

| | | 4 GHz | | 5 GHz | | 6 GHz | | | 7/8 GHz | | | | 10/11 GHz | | | | 15 GHz | | 18 GHz | | 23 GHz | | 25 GHz | | 28/30 GHz | | 38 GHz | | | | | | | | | | | | | |
|----------------------------|----------|-------|-----|-------|-----|-------|-----|------|---------|-------|-----|-------|-----------|-----|-------|------|--------|------|--------|------|--------|------|--------|------|-----------|-------|--------|------|------|------|------|--|-----|--|-----|--|-----|--|-----|--|
| | | 3.1 | 3.4 | 3.6 | 4.2 | 4.4 | 5.0 | 5.6 | 5.9 | 6.425 | 7.1 | 7.125 | 7.75 | 8.5 | 9.0 | 10.0 | 10.7 | 11.7 | 13.25 | 13.4 | 15.35 | 17.3 | 19.7 | 21.2 | 23.6 | 24.25 | 26.5 | 27.5 | 33.4 | 37.5 | 39.5 | | | | | | | | | |
| RFS Antenna Frequency Code | | 36 | | 44 | | 59 | | | 65 | | | | 71 | | | | 78 | | | | 103 | | 107 | | 127 | | 142 | | 180 | | 220 | | 250 | | 280 | | 320 | | 380 | |
| | | W60 | | W71 | | | | W100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elliptical Waveguides | Standard | E38 | | ES46 | | E65 | | | E130 | | | | E150 | | E185 | | E220 | | E250 | | E300 | | E380 | | | | | | | | | | | | | | | | | |
| | Premium | EP38 | | ESP46 | | EP65 | | | EP100 | | | | EP130 | | EP150 | | EP185 | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | E60 | | | E78 | | | | E105 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | EP60 | | | EP78 | | | | EP105 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | EP70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

FLEXWELL® Elliptical Waveguide

E38 Series: 3.1-4.2 GHz

IEC: R32, R40 / EIA: WR284, WR229



Ordering Information

| MAXIMUM FREQUENCY BAND, GHZ | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|--------------------------------|
| 3.00-4.20 | E38J | EP38J |

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|-----------|-----------|
| Dimensions over Jacket | mm, in | 84 x 48 | 3.3 x 1.9 |
| Weight | kg/m, lb/ft | 2.1 | 1.4 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 300 | 12 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 800 | 31 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 400 | 16 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 1000 | 39 |
| Jacket Type | J | PE, Black | |
| Max. Twist | degree/m, degree/ft | 1.5 | 0.46 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 100 | 305 |
| Standard Hanger Spacing | m, ft | 1.2 | 4 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|------------|-------------|
| | | EP38J | E38J |
| Operating Frequency Band | GHz | 3.6-4.2 | 3.1-4.2 |
| Low Band Attenuation | dB/100m, dB/100ft | 2.55, 0.78 | 2.9, 0.88 |
| Mid Band Attenuation | dB/100m, dB/100ft | 2.3, 0.7 | 2.4, 0.73 |
| High Band Attenuation | dB/100m, dB/100ft | 2.1, 0.64 | 2.1, 0.64 |
| Max. VSWR / Return Loss | - / dB | 1.083 / 28 | 1.15 / 23.1 |

Accessories

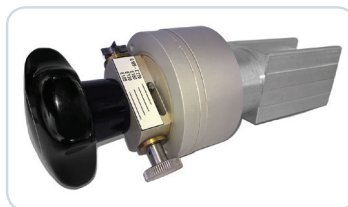
| IEC ACCESSORIES | |
|-------------------------------|---|
| MODEL # | DESCRIPTION |
| D32-038FP | Connector 154 IEC-PDR 32 (3.1-3.5 GHz) |
| D40-038FP-U | Connector 154 IEC-PDR 40 (3.6-4.2 GHz) |
| PW040-V-1 | Pressure window, light type, UDR 40, copper |
| SHIM040-D-1 | SHIM R 40 for PDR 40 |
| FDIE-U038 | Flanging die for basic tool FTOOL-U038130 |
| FTOOL-U038130 | Basic Flanging Tool for E38 to E130 waveguide |
| P2000-002 | Tube of Plast 2000 70ccm |
| P2000-003 | Injection tool for Plast 2000 |
| HOIST2-L08 | Hoisting grip, open, E38 |

| STANDARD ACCESSORIES | |
|-----------------------------|--|
| MODEL # | DESCRIPTION |
| GKIT-24-038 | Grounding kit, Grounding wire 6AWG (13 mm ²) 24" |
| GKIT-60-038 | Grounding kit, Grounding wire 6AWG (13 mm ²) 60" |
| CLAMP-038 | Clamp, bolt-on (kit of 10) |

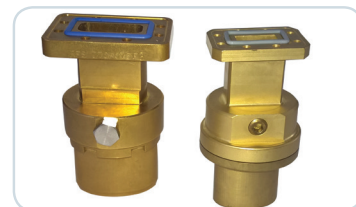
| PREMIUM ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| WF-038 | Wall/Roof Feed-Through System |
| GKIT-ST-038 | Grounding kit, Grounding wire (16 mm ²) 12" |
| CLAMP-R-038 | Universal clamp with clamp lining (Kit of 10) |



CLAMPS



COMPACT TOOL



CONNECTORS

FLEXWELL® Elliptical Waveguide

ES46 Series: 4.4-5.0 GHz

IEC: R48 / EIA: WR187



Ordering Information

| MAXIMUM FREQUENCY BAND, GHZ | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|--------------------------------|
| 3.90-5.00 | ES46J | ESP46J |

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|----------------------------|-----------|
| Dimensions over Jacket | mm, in | 68 x 41 | 2.7 x 1.6 |
| Weight | kg/m, lb/ft | 1.6 | 1.08 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 150 | 6 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 500 | 20 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 150 | 6 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 600 | 24 |
| Jacket Type | J | PE, Black | |
| | JFN | PE, Flame retardant, Black | |
| Max. Twist | degree/m, degree/ft | 2 | 0.6 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 100 | 305 |
| Standard Hanger Spacing | m, ft | 1.2 | 4 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|-------------|--------------|
| Operating Frequency Band | GHz | 4.4-5.0 | |
| Low Band Attenuation | dB/100m, dB/100ft | 3.7 | 1.13 |
| Mid Band Attenuation | dB/100m, dB/100ft | 3.6 | 1.1 |
| High Band Attenuation | dB/100m, dB/100ft | 3.5 | 1.07 |
| Max. VSWR / Return Loss | - / dB | ES46J | ESP46J |
| | | 1.15 / 23.1 | 1.073 / 29.1 |

Accessories

| IEC ACCESSORIES | |
|-------------------------------|---|
| MODEL # | DESCRIPTION |
| D48-S46FP | Connector 154 IEC-PDR 48 (4.4-5.0 GHz) |
| PW048-V-1 | Pressure window, light type, UDR 48, copper |
| SHIM048-D-1 | SHIM R 48 for PDR 48 |
| FDIE-US46 | Flanging die for basic tool FTOOL-U038130 |
| FTOOL-U038130 | Basic Flanging Tool for E38 to E130 waveguide |
| P2000-001 | Tube of Plast 2000 20ccm |
| HOIST1-214L | Hoisting grip, open, ES46 |

| EIA ACCESSORIES | |
|--|--|
| MODEL # | DESCRIPTION |
| C187-S46FG | Connector CPR 187G (4.4-5.0 GHz) non-tunable |
| C187-S46TG | Connector CPR 187G (4.4-5.0 GHz) tunable |
| PW187-C-1 or PW-C187 | Pressure window CPR 187G, brass |

| STANDARD ACCESSORIES | |
|-----------------------------|--|
| MODEL # | DESCRIPTION |
| BOOT4-046 | Wall-/Roof Feed-Through for Plate FTP4-xx |
| GKIT-24-046 | Grounding kit, Grounding wire 6AWG (13 mm ²) 24" |
| GKIT-60-046 | Grounding kit, Grounding wire 6AWG (13 mm ²) 60" |
| CLAMP-046 | Clamp, bolt-on (kit of 10) |

| PREMIUM ACCESSORIES | |
|------------------------------|---|
| MODEL # | DESCRIPTION |
| WF-046 | Wall/Roof Feed-Through System |
| GKIT-ST-S46 | Grounding kit, Grounding wire (16 mm ²) 11" |
| CLAMP-R-S046 | Universal clamp with clamp lining (Kit of 10) |

FLEXWELL® Elliptical Waveguide

E60 Series: 5.6-6.425 GHz

IEC: R70 / EIA: WR137



Ordering Information

| MAXIMUM FREQUENCY BAND, GHz | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|--------------------------------|
| 4.50-6.425 | E60J | EP60J |

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|----------------------------|-----------|
| Dimensions over Jacket | mm, in | 55 x 33 | 2.2 x 1.3 |
| Weight | kg/m, lb/ft | 1.1 | 0.74 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 200 | 8 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 550 | 22 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 300 | 12 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 800 | 31 |
| Jacket Type | J | PE, Black | |
| | JFN | PE, Flame retardent, Black | |
| Max. Twist | degree/m, degree/ft | 4 | 1.2 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 100 | 305 |
| Standard Hanger Spacing | m, ft | 0.9 | 3 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|--------------|-------------|
| Operating Frequency Band | GHz | 5.6-6.425 | |
| Low Band Attenuation | dB/100m, dB/100ft | 4.15 | 1.26 |
| Mid Band Attenuation | dB/100m, dB/100ft | 3.95 | 1.2 |
| High Band Attenuation | dB/100m, dB/100ft | 3.8 | 1.16 |
| Max. VSWR / Return Loss | - / dB | EP60 | E60 |
| | | 1.062 / 30.5 | 1.15 / 23.1 |

Accessories

| IEC ACCESSORIES | |
|-------------------------------|---|
| MODEL # | DESCRIPTION |
| D70-060FP-W | Connector 154 IEC-PDR 70 (5.6-6.425 GHz) |
| PW070-V-1 | Pressure window, light type, UDR 70, copper |
| SHIM070-D-1 | Shim for PDR 70, copper beryllium |
| FDIE-U060 | Flanging die for basic tool FTOOL-U038130 |
| FTOOL-U038130 | Basic Flanging Tool for E38 to E130 waveguide |
| P2000-001 | Tube of Plast 2000 20ccm |
| HOIST1-158L | Hoisting grip, open, E58, E60, E65 |

| EIA ACCESSORIES | |
|--|---|
| MODEL # | DESCRIPTION |
| C137-060FG | Connector CPR 137G (5.725-6.425 GHz) non-tunable |
| C137-060TG | Connector CPR 137G (5.925-6.425 GHz) tunable |
| G343-060FG | Connector UG-343/344U (5.925-6.425 GHz) non-tunable |
| PW137-C-1 or PW-C137 | Pressure window CPR 137G, brass |
| PW137-G-1 | Pressure window UG-343/344/U, brass |

| STANDARD ACCESSORIES | |
|-----------------------------|--|
| MODEL # | DESCRIPTION |
| CLAMP-060 | Clamp, bolt -on (kit of 10), stainless steel |
| GKIT-24-060 | Grounding kit, Grounding wire 6AWG (13 mm ²) 24" |
| GKIT-60-060 | Grounding kit, Grounding wire 6AWG (13 mm ²) 60" |
| BOOT4-060 | Wall/Roof Feed-Trough for Plate FTP4-xx |

| PREMIUM ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| CLAMP-R-060 | Universal clamp with clamp lining (kit of 10), galvanized steel |
| GKIT-ST-060 | Grounding kit, Grounding wire (16 mm ²) 10" |
| WF-058/060 | Wall/Roof Feed-Trough System |

FLEXWELL® Elliptical Waveguide

E65 Series: 5.9-7.125 GHz

IEC: R70 / EIA: WR137



Ordering Information

| MAXIMUM FREQUENCY BAND, GHz | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|----------------------------------|
| 5.00-7.125 | E65J / E65JFN* | EP65J / EP65JFN* |

* Flame and fire retardant jacket optional with MOQ (1500 m) available

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|----------------------------|-----------|
| Dimensions over Jacket | mm, in | 51 x 30 | 2.0 x 1.2 |
| Weight | kg/m, lb/ft | 0.75 | 0.5 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 200 | 8 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 500 | 20 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 300 | 12 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 600 | 24 |
| Jacket Type | J | PE, Black | |
| | JFN | PE, Flame retardant, Black | |
| Max. Twist | degree/m, degree/ft | 5 | 1.5 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 100 | 305 |
| Standard Hanger Spacing | m, ft | 0.9 | 3 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|--------------|-------------|
| Operating Frequency Band | GHz | 5.9-7.125 | |
| Low Band Attenuation | dB/100m, dB/100ft | 4.9 | 1.49 |
| Mid Band Attenuation | dB/100m, dB/100ft | 4.5 | 1.37 |
| High Band Attenuation | dB/100m, dB/100ft | 4.25 | 1.3 |
| Max. VSWR / Return Loss | - / dB | EP65J | E65J |
| | | 1.062 / 30.5 | 1.15 / 23.1 |

Accessories

| IEC ACCESSORIES | |
|-------------------------------|---|
| MODEL # | DESCRIPTION |
| D70-065FG | Connector 154 IEC-PDR 70 (5.9-7.15 GHz) |
| PW070-V-1 | Pressure window, light, type, UDR 70, copper |
| SHIM070-D-1 | SHIM R 70 for PDR 70 |
| FDIE-U065 | Flanging die for basic tool FTOOL-U038130 |
| FTOOL-U038130 | Basic Flanging Tool for E38 to E130 waveguide |

| EIA ACCESSORIES | |
|--|--|
| MODEL # | DESCRIPTION |
| C137-065FG | Connector CPR 137G (5.725-7.125 GHz) non-tunable |
| C137-065TG | Connector CPR 137G (5.725-7.125 GHz) tunable |
| G343-065FG | Connector UG-343/344/U (6.425-7.125 GHz) non-tunable |
| G343-065TG | Connector UG-343/344/U (5.725-7.125 GHz) tunable |
| PW137-C-1 or PW-C137 | Pressure window CPR 137G, brass |
| PW137-G-1 or PW-G137 | Pressure window UG-343/344/U, brass |

| STANDARD ACCESSORIES | |
|-----------------------------|--|
| MODEL # | DESCRIPTION |
| BOOT4-065 | Wall-/Roof Feed-Through for Plate FTP4-xx |
| GKIT-24-065 | Grounding kit, Grounding wire 6AWG (13 mm ²) 24" |
| GKIT-60-065 | Grounding kit, Grounding wire 6AWG (13 mm ²) 60" |
| CLAMP-114 | Clamp, bolt-on (kit of 10) |

| PREMIUM ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| WF-065 | Wall/Roof Feed-Through System |
| GKIT-ST-065 | Grounding kit, Grounding wire (16 mm ²) 10" |
| CLAMP-R-065 | Universal clamp with clamp lining (Kit of 10) |

FLEXWELL® Elliptical Waveguide E70 Series: 6.4-7.75 GHz

IEC: R70 / EIA: WR137



Ordering Information

| MAXIMUM FREQUENCY BAND, GHz | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|----------------------------------|
| 5.40-7.75 | N/A | EP70J / EP70JFN* |

* Flame and fire retardant jacket optional with MOQ (1500 m) available

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|----------------------------|-----------|
| Dimensions over Jacket | mm, in | 48 x 28 | 1.9 x 1.1 |
| Weight | kg/m, lb/ft | 0.9 | 0.6 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 200 | 8 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 500 | 20 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 300 | 12 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 600 | 24 |
| Jacket Type | J | PE, Black | |
| | JFN | PE, Flame retardant, Black | |
| Max. Twist | degree/m, degree/ft | 5 | 1.5 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 100 | 305 |
| Standard Hanger Spacing | m, ft | 0.9 | 3 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|--------------|------|
| Operating Frequency Band | GHz | 6.4-7.75 | |
| Low Band Attenuation | dB/100m, dB/100ft | 5.5 | 1.68 |
| Mid Band Attenuation | dB/100m, dB/100ft | 4.9 | 1.49 |
| High Band Attenuation | dB/100m, dB/100ft | 4.8 | 1.46 |
| Max. VSWR / Return Loss | - / dB | EP70J | |
| | | 1.062 / 30.5 | |

Accessories

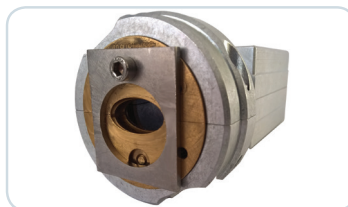
| IEC ACCESSORIES | |
|-------------------------------|--|
| MODEL # | DESCRIPTION |
| D70-070FP | Connector 154 IEC-PDR 70 (6.4-7.8 GHz) |
| PW070-V-1 | Pressure window, light type, UDR 70, copper |
| PW070-DV-1 | Pressure window, heavy type, PDR/UDR 70, brass |
| SHIM070-D-1 | Shim for PDR 70, copper beryllium |
| FDIE-U070 | Flanging die for basic tool FTOOL-U038130 |
| FTOOL-U038130 | Basic Flanging Tool for E38 to E130 waveguide |
| P2000-001 | Tube of Plast 2000 20ccm |
| HOIST1-114L | Hoisting grip, open, E70, E78 |

| STANDARD ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| BOOT4-070 | Wall-/Roof Feed-Through for Plate FTP4-xx |
| GKIT-60-070 | Grounding kit, Grounding wire 6AWG (13 mm²) 60" |
| CLAMP-114 | Clamp, bolt-on (kit of 10) |

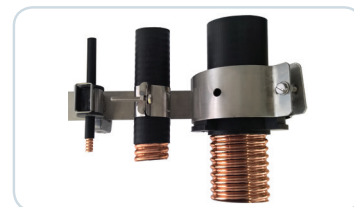
| PREMIUM ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| WF-070 | Wall-/Roof Feed-Through System |
| GKIT-ST-070 | Grounding kit, Grounding wire (16 mm²) 10" |
| CLAMP-R-070 | Universal clamp with clamp lining (Kit of 10) |



WALL/ROOF FEED-THROUGH



FLANGING DIE



CLAMPS

FLEXWELL® Elliptical Waveguide

E78 Series: 7.1-8.5 GHz

IEC: R70, R84 / EIA: WR137, WR112



Ordering Information

| MAXIMUM FREQUENCY BAND, GHz | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|----------------------------------|
| 5.90-8.50 | E78J | EP78J / EP78JFN* |

* Flame and fire retardant jacket optional with MOQ (1500 m) available

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|----------------------------|-----------|
| Dimensions over Jacket | mm, in | 44 x 26 | 1.7 x 1.0 |
| Weight | kg/m, lb/ft | 0.6 | 0.4 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 200 | 8 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 500 | 20 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 250 | 10 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 600 | 24 |
| Jacket Type | J | PE, Black | |
| | JFN | PE, Flame retardant, Black | |
| Max. Twist | degree/m, degree/ft | 5 | 1.5 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 100 | 305 |
| Standard Hanger Spacing | m, ft | 0.9 | 3 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|--------------|-------------|
| Operating Frequency Band | GHz | 7.1-8.5 | |
| Low Band Attenuation | dB/100m, dB/100ft | 6.2 | 1.89 |
| Mid Band Attenuation | dB/100m, dB/100ft | 5.8 | 1.77 |
| High Band Attenuation | dB/100m, dB/100ft | 5.6 | 1.71 |
| Max. VSWR / Return Loss | - / dB | EP78J | E78J |
| | | 1.062 / 30.5 | 1.15 / 23.1 |

Accessories

| IEC ACCESSORIES | |
|-------------------------------|--|
| MODEL # | DESCRIPTION |
| D70-078FG | Connector 154 IEC-PDR 70 (7.1 - 8.5 GHz) |
| D84-078FG | Connector 154 IEC-PDR 84 (7.1 - 8.5 GHz) |
| B84-078FG | Connector 154 IEC-PBR 84 (7.1-8.5 GHz) |
| PW070-V-1 | Pressure window, light type, UDR 70, copper |
| PW070-DV-1 | Pressure window, heavy type, PDR/UDR 70, brass |
| PW084-V-1 | Pressure window, light type, UDR 84, copper |
| PW084-W-1 | Pressure window, light type, UBR 84, copper |
| PW084-DV-1 | Pressure window, heavy type, PDR/UDR 84, brass |
| PW084-BW-1 | Pressure window, heavy type, PBR/UBR 84, brass |
| SHIM070-D-1 | Shim for PDR 70, copper beryllium |
| SHIM084-D-1 | Shim for PDR 84, copper beryllium |
| FDIE-U078 | Flanging die for basic tool FTOOL-U038130 |
| FTOOL-U038130 | Basic Flanging Tool for E38 to E130 waveguide |
| HOIST1-114L | Hoisting grip, open, E70, E78 |

| STANDARD ACCESSORIES | |
|-----------------------------|--|
| MODEL # | DESCRIPTION |
| BOOT4-078 | Wall-/Roof Feed-Through for Plate FTP4-xx |
| GKIT-24-078 | Grounding kit, Grounding wire 6AWG (13 mm ²) 24" |
| GKIT-60-078 | Grounding kit, Grounding wire 6AWG (13 mm ²) 60" |
| CLAMP-078 | Clamp, bolt-on (kit of 10) |

| EIA ACCESSORIES | |
|--|--|
| MODEL # | DESCRIPTION |
| C112-078FG | Connector CPR 112G (7.125-8.5 GHz) non-tunable |
| C112-078TG | Connector CPR 112G (7.125-8.5 GHz) tunable |
| C137-078FG | Connector CPR 137G (7.125-7.75 GHz) non-tunable |
| C137-078TG | Connector CPR 137G (7.125-7.75 GHz) tunable |
| G51-078FG | Connector UG-51/52/U (7.125-8.5 GHz) non-tunable |
| G51-078TG | Connector UG-51/52/U (7.125-8.5 GHz) tunable |
| PW137-C-1 or PW-C137 | Pressure window CPR 137G, brass |
| PW112-G-1 or PW-G112 | Pressure window UG-51/52/U, brass |

| PREMIUM ACCESSORIES | |
|-------------------------------|---|
| MODEL # | DESCRIPTION |
| WF-078 | Wall/Roof Feed-Through System |
| GKIT-ST-078 | Grounding kit, Grounding wire (16 mm ²) 10" |
| CLAMP-R-078-E | Universal clamp with clamp lining (Kit of 10) |

FLEXWELL® Elliptical Waveguide

E100 Series: 8.5-10.0 GHz

IEC: R100 / EIA: WR90



Ordering Information

| MAXIMUM FREQUENCY BAND, GHz | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|------------------------------------|
| 8.00-10.00 | N/A | EP100J / EP100JFN* |

* Flame and fire retardant jacket optional with MOQ (1500 m) available

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|----------------------------|-----------|
| Dimensions over Jacket | mm, in | 34 x 23 | 1.3 x 0.9 |
| Weight | kg/m, lb/ft | 0.5 | 0.34 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 150 | 6 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 350 | 14 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 200 | 8 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 400 | 16 |
| Jacket Type | J | PE, Black | |
| | JFN | PE, Flame retardant, Black | |
| Max. Twist | degree/m, degree/ft | 6 | 1.8 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 100 | 305 |
| Standard Hanger Spacing | m, ft | 0.6 | 2 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

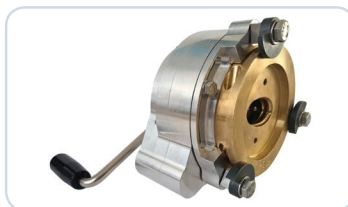
| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|------------|------|
| Operating Frequency Band | GHz | 8.5-10.0 | |
| Low Band Attenuation | dB/100m, dB/100ft | 10.4 | 3.17 |
| Mid Band Attenuation | dB/100m, dB/100ft | 9.5 | 2.90 |
| High Band Attenuation | dB/100m, dB/100ft | 8.4 | 2.56 |
| Max. VSWR / Return Loss | - / dB | EP100J | |
| | | 1.105 / 26 | |

Accessories

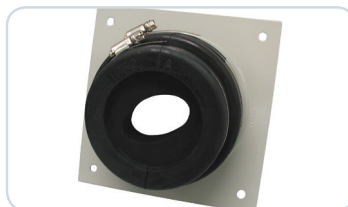
| IEC ACCESSORIES | |
|-------------------------------|---|
| MODEL # | DESCRIPTION |
| B100-100FP-U | Connector 154 IEC-PBR 100 (9-10 GHz) |
| PW100-W-1 | Pressure window, light type, UBR 100, copper |
| SHIM100-B-1 | Shim for PBR 100, copper beryllium |
| FDIE-U100 | Flanging die for basic tool FTOOL-U038130 |
| FTOOL-U038130 | Basic Flanging Tool for E38 to E130 waveguide |
| P2000-001 | Tube of Plast 2000 20ccm |
| HOIST1-78L | Hoisting grip, open, E100, E105 |

| STANDARD ACCESSORIES | |
|---------------------------|----------------------------|
| MODEL # | DESCRIPTION |
| CLAMP-105 | Clamp, bolt-on (kit of 10) |

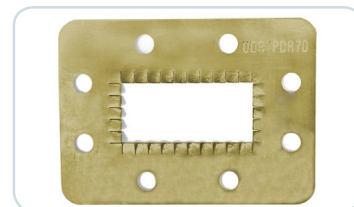
| PREMIUM ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| WF-100 | Wall/Roof Feed-Through System |
| GKIT-ST-100 | Grounding kit, Grounding wire (16 mm ²) 10" |
| CLAMP-R-100 | Universal clamp with clamp lining (Kit of 10) |



BASIC FLANGING TOOL



WALL/ROOF FEED-THROUGH



SHIM

FLEXWELL® Elliptical Waveguide

E105 Series: 10.0-11.7 GHz

IEC: R100 / EIA: WR90



Ordering Information

| MAXIMUM FREQUENCY BAND, GHz | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|--------------------------------|
| 8.10-11.70 | E105J | EP105J |

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|-----------|-----------|
| Dimensions over Jacket | mm, in | 33 x 20 | 1.3 x 0.8 |
| Weight | kg/m, lb/ft | 0.5 | 0.34 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 130 | 5 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 280 | 11 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 150 | 6 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 300 | 12 |
| Jacket Type | J | PE, Black | |
| Max. Twist | degree/m, degree/ft | 6 | 1.8 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 100 | 305 |
| Standard Hanger Spacing | m, ft | 0.6 | 2 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|------------------------|----------------------|
| Operating Frequency Band | GHz | 10.0 - 11.7 | |
| Low Band Attenuation | dB/100m, dB/100ft | 9.4 | 2.87 |
| Mid Band Attenuation | dB/100m, dB/100ft | 9.1 | 2.77 |
| High Band Attenuation | dB/100m, dB/100ft | 8.9 | 2.71 |
| Max. VSWR / Return Loss | - / dB | EP105J 1.062 / 30.5 | E105J 1.15 / 23.1 |

Accessories

| IEC ACCESSORIES | |
|-------------------------------|--|
| MODEL # | DESCRIPTION |
| D100-105FG | Connector 154 IEC-PDR 100 (10-11.7 GHz) |
| B100-105FG | Connector 154 IEC-PBR 100 (10-11.7 GHz) |
| PW100-V-1 | Pressure window, light type, UDR 100, copper |
| PW100-W-1 | Pressure window, light type, UBR 100, copper |
| SHIM100-D-1 | Shim for PDR 100, copper beryllium |
| SHIM100-B-1 | Shim for PBR 100, copper beryllium |
| FDIE-C105 | Flanging die for compact tool |
| FTOOL-C105380 | Compact Flanging Tool for E105 to E380 waveguide |
| FDIE-U105 | Flanging die for basic tool FTOOL-U038130 |
| FTOOL-U038130 | Basic Flanging Tool for E38 to E130 waveguide |
| HOIST1-78L | Hoisting grip, open, E100, E105 |

| EIA ACCESSORIES | |
|--|---|
| MODEL # | DESCRIPTION |
| C90-105FG | Connector CPR 90G (10.5-11.7 GHz) non-tunable |
| C90-105TG | Connector CPR 90G (10.5-11.7 GHz) tunable |
| PW090-C-1 or PW-C090 | Pressure window CPR 90G, brass |

| PREMIUM ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| WF-105 | Wall/Roof Feed-Through System |
| GKIT-ST-105 | Grounding kit, Grounding wire (16 mm ²) 10" |
| RSB-105 | RSB-Clip with clamp lining (Kit of 10) |
| CLAMP-R-105 | Universal clamp with clamp lining (Kit of 10) |

| STANDARD ACCESSORIES | |
|-----------------------------|--|
| MODEL # | DESCRIPTION |
| BOOT4-105 | Wall-/Roof Feed-Through for Plate FTP4-xx |
| GKIT-24-105 | Grounding kit, Grounding wire 6AWG (13 mm ²) 24" |
| GKIT-60-105 | Grounding kit, Grounding wire 6AWG (13 mm ²) 60" |
| CLAMP-105 | Clamp, bolt-on (kit of 10) |

FLEXWELL® Elliptical Waveguide

E130 Series: 10.7-13.25 GHz

IEC: R120 / EIA: WR75



Ordering Information

| MAXIMUM FREQUENCY BAND, GHz | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|--------------------------------|
| 9.30-13.25 | E130J | EP130J |

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|----------------------------|-----------|
| Dimensions over Jacket | mm, in | 29 x 18 | 1.1 x 0.7 |
| Weight | kg/m, lb/ft | 0.4 | 0.27 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 130 | 5 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 280 | 11 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 150 | 6 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 300 | 12 |
| Jacket Type | J | PE, Black | |
| | JFN | PE, Flame retardent, Black | |
| Max. Twist | degree/m, degree/ft | 6 | 1.8 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 100 | 305 |
| Standard Hanger Spacing | m, ft | 0.6 | 2 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|------------|-------------|
| Operating Frequency Band | GHz | 10.7-13.25 | |
| Low Band Attenuation | dB/100m, dB/100ft | 12.7 | 3.87 |
| Mid Band Attenuation | dB/100m, dB/100ft | 11.5 | 3.51 |
| High Band Attenuation | dB/100m, dB/100ft | 11.2 | 3.41 |
| Max. VSWR / Return Loss | - / dB | EP130J | E130J |
| | | 1.083 / 28 | 1.15 / 23.1 |

Accessories

| IEC ACCESSORIES | |
|-------------------------------|--|
| MODEL # | DESCRIPTION |
| D120-130FG-L | Connector 154 IEC-PDR 120 (10.7-12.75 GHz) |
| D120-130FG-U | Connector 154 IEC-PDR 120 (12.2-13.25 GHz) |
| B120-130FG-U | Connector 154 IEC-PBR 120 (12.2-13.25 GHz) |
| PW120-V-1 | Pressure window, light type, UDR 120, copper |
| PW120-W-1 | Pressure window, light type, UBR 120, copper |
| SHIM120-D-1 | Shim for PDR 120, copper beryllium |
| SHIM120-B-1 | Shim for PBR 120, copper beryllium |
| FDIE-C130 | Flanging die for compact tool |
| FTOOL-C105380 | Compact Flanging Tool for E105 to E380 waveguide |
| FDIE-U130 | Flanging die for basic tool FTOOL-U038130 |
| FTOOL-U038130 | Basic Flanging Tool for E38 to E130 waveguide |
| HOIST1-58L | Hoisting grip, open, E130, E150 |

| EIA ACCESSORIES | |
|--|---|
| MODEL # | DESCRIPTION |
| G75-130FG | Connector WR75 choke/cover (11.7-13.25 GHz) non-tunable |
| G75-130TG | Connector WR75 choke/cover (11.7-13.25 GHz) tunable |
| PW075-G-1 or PW-G075 | Pressure window WR75 choke/cover, brass |

| STANDARD ACCESSORIES | |
|-------------------------------|--|
| MODEL # | DESCRIPTION |
| BOOT4-130 | Wall/Roof Feed-Through for Plate FTP4-xx |
| GKIT-24-130 | Grounding kit, Grounding wire 6AWG (13 mm ²) 24" |
| GKIT-60-130 | Grounding kit, Grounding wire 6AWG (13 mm ²) 60" |
| CLAMP-130/150 | Clamp, bolt-on (kit of 10) |

| PREMIUM ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| WF-130 | Wall/Roof Feed-Through System |
| GKIT-ST-130 | Grounding kit, Grounding wire (16 mm ²) 10" |
| RSB-130 | RSB-Clip with clamp lining (Kit of 10) |
| CLAMP-R-130 | Universal clamp with clamp lining (Kit of 10) |

FLEXWELL® Elliptical Waveguide

E150 Series: 13.4-15.35 GHz

IEC: R120, R140 / EIA: WR75, WR62



Ordering Information

| MAXIMUM FREQUENCY BAND, GHz | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|--------------------------------|
| 10.80-15.35 | E150J | EP150J |

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|----------------------------|-----------|
| Dimensions over Jacket | mm, in | 26 x 16 | 1.0 x 0.6 |
| Weight | kg/m, lb/ft | 0.4 | 0.27 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 130 | 5 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 280 | 11 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 150 | 6 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 300 | 12 |
| Jacket Type | J | PE, Black | |
| | JFN | PE, Flame retardent, Black | |
| Max. Twist | degree/m, degree/ft | 7 | 2.1 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 100 | 305 |
| Standard Hanger Spacing | m, ft | 0.6 | 2 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|------------|-------------|
| Operating Frequency Band | GHz | 13.4-15.35 | |
| Low Band Attenuation | dB/100m, dB/100ft | 14.6 | 4.45 |
| Mid Band Attenuation | dB/100m, dB/100ft | 14.2 | 4.33 |
| High Band Attenuation | dB/100m, dB/100ft | 13.7 | 4.18 |
| Max. VSWR / Return Loss | - / dB | EP150J | E150J |
| | | 1.083 / 28 | 1.15 / 23.1 |

Accessories

| IEC ACCESSORIES | |
|-------------------------------|--|
| MODEL # | DESCRIPTION |
| D120-150FP | Connector 154 IEC-PDR 120 (13.4-14.5 GHz) |
| B120-150FP | Connector 154 IEC-PBR 120 (14.0-14.5 GHz) |
| D140-150FP | Connector 154 IEC-PDR 140 (14.0-15.35 GHz) |
| B140-150FP | Connector 154 IEC-PBR 140 (14.0-15.35 GHz) |
| PW120-V-1 | Pressure window, light type, UDR 120, copper |
| PW120-W-1 | Pressure window, light type, UBR 120, copper |
| PW120-DV-1 | Pressure window, heavy type, PDR/UDR 120, brass |
| PW120-BW-1 | Pressure window, heavy type, PBR/UBR 120, brass |
| PW140-V-1 | Pressure window, light type, UDR 140, copper |
| PW140-W-1 | Pressure window, light type, UBR 140, copper |
| PW140-BW-1 | Pressure window, heavy type, PBR/UBR 140, brass |
| SHIM120-D-1 | Shim for PDR 120, copper beryllium |
| SHIM120-B-1 | Shim for PBR 120, copper beryllium |
| SHIM140-D-1 | Shim for PDR 140, copper beryllium |
| SHIM140-B-1 | Shim for PBR 140, copper beryllium |
| FDIE-C150 | Flanging die for compact tool |
| FTOOL-C105380 | Compact Flanging Tool for E105 to E380 waveguide |
| P2000-001 | Tube of Plast 2000 20ccm |
| HOIST1-58L | Hoisting grip, open, E130, E150 |

| EIA ACCESSORIES | |
|--|---|
| MODEL # | DESCRIPTION |
| K75-150TG | Connector WR75 contact (14.4-15.35 GHz) tunable |
| Z75-150FG | Connector WR75 choke/cover (13.4-15.35 GHz) non-tunable |
| Z75-150TG | Connector WR75 choke/cover (13.4-14.5 GHz) tunable |
| PW062-G-1 or PW-G062 | Pressure window UG-419/541/U, brass |

| STANDARD ACCESSORIES | |
|-------------------------------|---|
| MODEL # | DESCRIPTION |
| BOOT4-150 | Wall-/Roof Feed-Through for Plate FTP4-xx |
| GKIT-24-150 | Grounding kit, Grounding wire 6AWG (13 mm²) 24" |
| GKIT-60-150 | Grounding kit, Grounding wire 6AWG (13 mm²) 60" |
| CLAMP-130/150 | Clamp, bolt-on (kit of 10) |

| PREMIUM ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| WF-150 | Wall/Roof Feed-Through System |
| GKIT-ST-150 | Grounding kit, Grounding wire (16 mm²) 10" |
| RSB-150 | RSB-Clip with clamp lining (Kit of 10) |
| CLAMP-R-150 | Universal clamp with clamp lining (Kit of 10) |

FLEXWELL® Elliptical Waveguide

E185 Series: 17.3-19.7 GHz

IEC: R180, R220 / EIA: WR51, WR42



Ordering Information

| MAXIMUM FREQUENCY BAND, GHZ | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|--------------------------------|
| 13.70-19.70 | E185J | EP185J |

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|-----------|-----------|
| Dimensions over Jacket | mm, in | 21 x 13 | 0.8 x 0.5 |
| Weight | kg/m, lb/ft | 0.3 | 0.2 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 130 | 5 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 280 | 11 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 130 | 5 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 300 | 12 |
| Jacket Type | J | PE, Black | |
| Max. Twist | degree/m, degree/ft | 8 | 2.4 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 100 | 305 |
| Standard Hanger Spacing | m, ft | 0.6 | 2 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|----------------------|----------------------|
| Operating Frequency Band | GHz | 17.3-19.7 | |
| Low Band Attenuation | dB/100m, dB/100ft | 20.3 | 6.19 |
| Mid Band Attenuation | dB/100m, dB/100ft | 19.5 | 5.94 |
| High Band Attenuation | dB/100m, dB/100ft | 18.9 | 5.76 |
| Max. VSWR / Return Loss | - / dB | EP185J 1.083 / 28 | E185J 1.15 / 23.1 |

Accessories

| IEC ACCESSORIES | |
|-------------------------------|--|
| MODEL # | DESCRIPTION |
| D180-185FP | Connector 154 IEC-PDR 180 (17.3-19.7 GHz) |
| B220-185FP | Connector 154 IEC-PBR 220 (17.7-19.7 GHz) |
| PW180-V-1 | Pressure window, light type, UDR 180, copper |
| PW220-W-1 | Pressure window, light type, UBR 220, copper |
| PW220-BW-1 | Pressure window, heavy type, PBR/UBR 220, brass |
| SHIM180-D-1 | Shim for PDR 180, copper beryllium |
| SHIM220-B-1 | Shim for PBR 220, copper beryllium |
| FDIE-C185 | Flanging die for compact tool |
| FTOOL-C105380 | Compact Flanging Tool for E105 to E380 waveguide |
| P2000-001 | Tube of Plast 2000 20ccm |

| EIA ACCESSORIES | |
|--|---|
| MODEL # | DESCRIPTION |
| G595-185TG | Connector UG-595/596/U (17.7-19.7 GHz) tunable |
| PW042-G-L-0 or PW-G042-L | Pressure window UG-595/596/U, brass (17.7-19.7 GHz) |

| PREMIUM ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| WF-185 | Wall/Roof Feed-Through System |
| GKIT-ST-185 | Grounding kit, Grounding wire (16 mm ²) 10" |
| RSB-185 | RSB-Clip with clamp lining (Kit of 10) |
| CLAMP-R-185 | Universal clamp with clamp lining (Kit of 10) |

| STANDARD ACCESSORIES | |
|-----------------------------|--|
| MODEL # | DESCRIPTION |
| BOOT4-185 | Wall-/Roof Feed-Through for Plate FTP4-xx |
| GKIT-24-185 | Grounding kit, Grounding wire 6AWG (13 mm ²) 24" |
| GKIT-60-185 | Grounding kit, Grounding wire 6AWG (13 mm ²) 60" |
| CLAMP-185 | Clamp, bolt-on (kit of 10) |

FLEXWELL® Elliptical Waveguide

E220 Series: 21.2-23.6 GHz

IEC: R220 / EIA: WR42



Ordering Information

| MAXIMUM FREQUENCY BAND, GHz | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|--------------------------------|
| 16.70-23.60 | E220J | N/A |

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|----------------------------|-----------|
| Dimensions over Jacket | mm, in | 18 x 12 | 0.7 x 0.5 |
| Weight | kg/m, lb/ft | 0.3 | 0.2 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 110 | 4 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 230 | 9 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 130 | 5 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 250 | 10 |
| Jacket Type | J | PE, Black | |
| | JFN | PE, Flame retardent, Black | |
| Max. Twist | degree/m, degree/ft | 8 | 2.4 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 100 | 305 |
| Standard Hanger Spacing | m, ft | 0.6 | 2 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

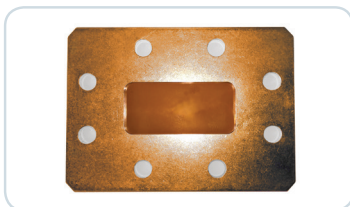
| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|----------------------|------|
| Operating Frequency Band | GHz | 21.2-23.6 | |
| Low Band Attenuation | dB/100m, dB/100ft | 28.8 | 8.78 |
| Mid Band Attenuation | dB/100m, dB/100ft | 28.3 | 8.63 |
| High Band Attenuation | dB/100m, dB/100ft | 28.1 | 8.56 |
| Max. VSWR / Return Loss | - / dB | E220J 1.15 / 23.1 | |

Accessories

| IEC ACCESSORIES | |
|-------------------------------|---|
| MODEL # | DESCRIPTION |
| B220-220FP | Connector 154 IEC-PBR 220 (21.2-23-6 GHz) |
| PW220-W-1 | Pressure window, light type, UBR 220, copper |
| PW220-BW-1 | Pressure window, heavy type, PBR/UBR 220, brass |
| SHIM220-B-1 | Shim for PBR 220, copper beryllium |
| FDIE-C220 | Flanging die for compact tool |
| FTOOL-C105380 | Compact Flanging Tool for E105 to E380 waveguide |
| P2000-001 | Tube of Plast 2000 20ccm |
| HOIST1-12L | Hoisting grip, open, E220, E250, E300, EO38, E380 |

| EIA ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| PW042-G-H-0 | Pressure window UG-595/596/U, brass (21.2-23.6 GHz) |

| PREMIUM ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| WF-220/L38 | Wall/Roof Feed-Through System |
| GKIT-ST-220 | Grounding kit, Grounding wire (16 mm ²) 10" |
| RSB-220 | RSB-Clip with clamp lining (Kit of 10) |
| CLAMP-R-220 | Universal clamp with clamp lining (Kit of 10) |



PRESSURE WINDOW



FLANGE ADAPTOR



WALL/ROOF FEED-THROUGH

FLEXWELL® Elliptical Waveguide E250 Series: 24.25-26.5 GHz

IEC: R220, R260 / EIA: WR42, WR34



Ordering Information

| MAXIMUM FREQUENCY BAND, GHz | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|--------------------------------|
| 19.00-26.50 | E250J | N/A |

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|-----------|-----------|
| Dimensions over Jacket | mm, in | 16 x 11 | 0.6 x 0.4 |
| Weight | kg/m, lb/ft | 0.2 | 0.13 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 90 | 4 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 150 | 6 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 100 | 4 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 180 | 7 |
| Jacket Type | J | PE, Black | |
| Max. Twist | degree/m, degree/ft | 8 | 2.4 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 50 | 164 |
| Standard Hanger Spacing | m, ft | 0.5 | 1.6 |

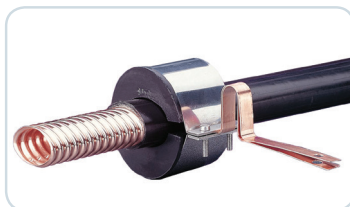
| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|----------------------|-------|
| Operating Frequency Band | GHz | 24.25-26.5 | |
| Low Band Attenuation | dB/100m, dB/100ft | 33.2 | 10.12 |
| Mid Band Attenuation | dB/100m, dB/100ft | 32.4 | 9.88 |
| High Band Attenuation | dB/100m, dB/100ft | 32 | 9.75 |
| Max. VSWR / Return Loss | - / dB | E250J 1.15 / 23.1 | |

Accessories

| IEC ACCESSORIES | |
|-------------------------------|---|
| MODEL # | DESCRIPTION |
| B220-250FP | Connector 154 IEC-PBR 220, gasket sealing |
| B260-250FP | Connector 154 IEC-PBR 260, gasket sealing |
| PW220-W-1 | Pressure window, light type, UBR 220, copper |
| PW220-BW-1 | Pressure window, heavy type, PBR/UBR 220, brass |
| PW260-W-1 | Pressure window, light type, UBR 260, copper |
| PW260-BW-1 | Pressure window, heavy type, PBR/UBR 260, brass |
| SHIM220-B-1 | Shim for PBR 220, copper beryllium |
| SHIM260-B-1 | Shim for PBR 260, copper beryllium |
| FDIE-C250 | Flanging die for compact tool |
| FTOOL-C105380 | Compact Flanging Tool for E105 to E380 waveguide |
| HOIST1-12L | Hoisting grip, open, E220, E250, E300, EO38, E380 |

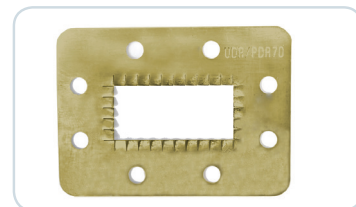
| PREMIUM ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| WFS-2 | Wall/Roof Feedthrough |
| GKIT-ST-250 | Grounding kit, Grounding wire (16 mm ²) 10" |
| RSB-250 | RSB-Clip with clamp lining (kit of 10) |



GROUNDING KIT



CONNECTOR



SHIM

FLEXWELL® Elliptical Waveguide E300 Series: 27.5-33.4 GHz

IEC: R260, R320 / EIA: WR34, WR28



Ordering Information

| MAXIMUM FREQUENCY BAND, GHz | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|--------------------------------|
| 24.00-33.40 | E300J | N/A |

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|-----------|------------|
| Dimensions over Jacket | mm, in | 14 x 10 | 0.55 x 0.4 |
| Weight | kg/m, lb/ft | 0.15 | 0.1 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 90 | 4 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 150 | 6 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 100 | 4 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 180 | 7 |
| Jacket Type | J | PE, Black | |
| Max. Twist | degree/m, degree/ft | 8 | 2.4 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 50 | 164 |
| Standard Hanger Spacing | m, ft | 0.5 | 1.6 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|----------------------|-------|
| Operating Frequency Band | GHz | 27.5-33.4 | |
| Low Band Attenuation | dB/100m, dB/100ft | 50 | 15.24 |
| Mid Band Attenuation | dB/100m, dB/100ft | 46 | 14.02 |
| High Band Attenuation | dB/100m, dB/100ft | 44.4 | 13.53 |
| Max. VSWR / Return Loss | - / dB | E300J 1.15 / 23.1 | |

Accessories

| IEC ACCESSORIES | |
|-------------------------------|---|
| MODEL # | DESCRIPTION |
| B320-300FP | Connector 154 IEC-PBR 320, gasket sealing |
| B260-300FP | Connector 154 IEC-PBR 260, gasket sealing |
| PW260-W-1 | Pressure window, light type, UBR 260, copper |
| PW260-BW-1 | Pressure window, heavy type, PBR/UBR 260, brass |
| PW320-W-1 | Pressure window, light type, UBR 320, copper |
| PW320-BW-1 | Pressure window, heavy type, PBR/UBR 320, brass |
| SHIM260-B-1 | Shim for PBR 260, copper beryllium |
| SHIM320-B-1 | Shim for PBR 320, copper beryllium |
| FDIE-C300 | Flanging die for compact tool |
| FTOOL-C105380 | Compact Flanging Tool for E105 to E380 waveguide |
| HOIST1-12L | Hoisting grip, open, E220, E250, E300, EO38, E380 |

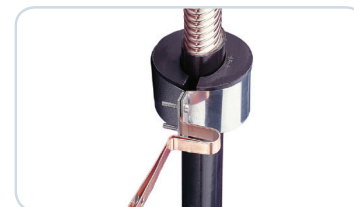
| PREMIUM ACCESSORIES | |
|-----------------------------|---|
| MODEL # | DESCRIPTION |
| WFS-2 | Wall/Roof Feedthrough |
| GKIT-ST-300 | Grounding kit, Grounding wire (16 mm ²) 10" |
| RSB-300/380 | RSB-Clip with clamp lining (Kit of 10) |



WALL/ROOF FEED-THROUGH



CONNECTOR



GROUNDING KIT

FLEXWELL® Elliptical Waveguide

E380 Series: 37.0-39.5 GHz

IEC: R320 / EIA: WR28



Ordering Information

| MAXIMUM FREQUENCY BAND, GHz | STANDARD WAVEGUIDE MODEL NUMBER | PREMIUM WAVEGUIDE MODEL NUMBER |
|-----------------------------|---------------------------------|--------------------------------|
| 29.0-39.5 | E380J | N/A |

Product Specifications

| GENERAL SPECIFICATIONS | | | |
|---|---------------------|-----------|-----------|
| Dimensions over Jacket | mm, in | 12 x 9 | 0.5 x 0.3 |
| Weight | kg/m, lb/ft | 0.1 | 0.07 |
| Min. Bending Radii, without rebending E-Plane | mm, in | 80 | 3 |
| Min. Bending Radii, without rebending H-Plane | mm, in | 140 | 6 |
| Min. Bending Radii, with rebending E-Plane | mm, in | 90 | 4 |
| Min. Bending Radii, with rebending H-Plane | mm, in | 150 | 6 |
| Jacket Type | J | PE, Black | |
| Max. Twist | degree/m, degree/ft | 8 | 2.4 |
| Max. Operating Pressure | bar, psi | 0.5 | 7 |
| Max. Pulling Length per Hoisting Grip | m, ft | 50 | 164 |
| Standard Hanger Spacing | m, ft | 0.3 | 1 |

| TEMPERATURE SPECIFICATIONS | | | |
|----------------------------|--------|-----------|------------|
| Installation | °C, °F | -40 to 60 | -40 to 140 |
| Storage | °C, °F | -70 to 85 | -94 to 185 |
| Operation | °C, °F | -50 to 85 | -58 to 185 |

| ELECTRICAL SPECIFICATIONS | | | |
|---------------------------|-------------------|----------------------|-------|
| Operating Frequency Band | GHz | 37.0-39.5 | |
| Low Band Attenuation | dB/100m, dB/100ft | 61.9 | 18.87 |
| Mid Band Attenuation | dB/100m, dB/100ft | 60.7 | 18.5 |
| High Band Attenuation | dB/100m, dB/100ft | 60 | 18.29 |
| Max. VSWR / Return Loss | - / dB | E380J 1.15 / 23.1 | |

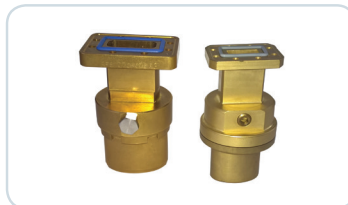
Accessories

| IEC ACCESSORIES | |
|-------------------------------|---|
| MODEL # | DESCRIPTION |
| B320-380FP | Connector 154 IEC-PBR 320, gasket sealing |
| PW320-W-1 | Pressure window, light type, UBR 320, copper |
| PW320-BW-1 | Pressure window, heavy type, PBR/UBR 320, brass |
| SHIM320-B-1 | Shim for PBR 320, copper beryllium |
| FDIE-C380 | Flanging die for compact tool |
| FTOOL-C105380 | Compact Flanging Tool for E105 to E380 waveguide |
| HOIST1-12L | Hoisting grip, open, E220, E250, E300, EO38, E380 |

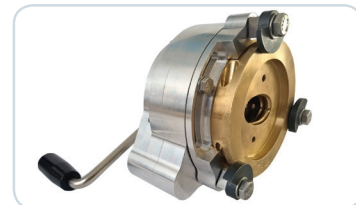
| PREMIUM ACCESSORIES | |
|-----------------------------|--|
| MODEL # | DESCRIPTION |
| WFS-2 | Wall/Roof Feedthrough |
| GKIT-ST-380 | Grounding kit, Grounding wire (16 mm ²) 4" |
| RSB-300/380 | RSB-Clip with clamp lining (Kit of 10) |



FLANGING DIE



CONNECTOR



FLANGING TOOL

RFS Twistflex Selection Guide

RFS twistflex is fabricated from spiral wound silver plated bronze strip. Includes pressure tight (15 psig) protective neoprene jacket. Allowable twist is 100%/ft for WR75 to 45°/ft. for WR229. Includes mounting hardware for one flange connection except, in cases where flanges are different on each end, hardware is supplied for both flanges. Standard lengths are 12", 24" and 36." Contact factory for special lengths.



IEC Twistflex

| Frequency, GHz | Twistflex | R | Flange 1 | Flange 2 | Plating | Length, cm | | | | |
|----------------|-----------|-----|----------|----------|---------|------------|------|------|------|------|
| | | | | | | 30 | 60 | 90 | 120 | 180 |
| 3.3 - 4.9 | TF | 040 | D | V | 1- | - | 060M | 090M | - | - |
| 3.95 - 5.85 | | 048 | D | V | | - | 060M | 090M | 120M | - |
| 5.85 - 8.2 | | 070 | D | V | | 030M | 060M | 090M | 120M | 180M |
| | | | | D | | 030M | 060M | 090M | 120M | 180M |
| 7.05 - 10 | | 084 | D | V | | - | 060M | 090M | 120M | - |
| | | | | D | | - | - | 090M | 120M | - |
| | | | B | W | | - | 060M | 090M | 120M | - |
| | | | | B | | - | 060M | 090M | 120M | - |
| 8.2 - 12.4 | | 100 | D | V | | 030M | 060M | 090M | 120M | - |
| | | | | D | | - | - | 090M | - | - |
| | | | B | W | | 030M | 060M | 090M | 120M | - |
| | | | | B | | - | - | 090M | 120M | 180M |
| 10 - 15 | | 120 | D | V | | - | 060M | 090M | 120M | - |
| | | | | W | | 030M | 060M | 090M | 120M | - |
| | | | B | B | | - | 060M | 090M | 120M | 180M |
| | | | | B | | - | 060M | 090M | 120M | - |
| 12.4 - 18 | | 140 | D | V | | - | 060M | 090M | 120M | - |
| | | | | D | | - | - | 090M | - | - |
| | | | B | W | | 030M | 060M | 090M | 120M | - |
| | | | | B | | - | 060M | 090M | 120M | - |
| 18 - 26.5 | 220 | B | W | 030M | 060M | 090M | 120M | - | | |
| | | | B | 030M | 060M | 090M | 120M | - | | |
| 22 - 33 | 260 | B | W | 030M | 060M | 090M | 120M | - | | |
| | | | B | 030M | 060M | 090M | 120M | - | | |
| 26.5 - 40 | 320 | B | W | 030M | 060M | 090M | 120M | - | | |
| | | | B | 030M | 060M | 090M | 120M | - | | |
| 40.5 - 43.5 | 400 | U | U | - | - | 090M | - | 180M | | |
| | | X | X | - | - | 090M | - | - | | |

| IEC Flange | | |
|------------|---|-------------|
| | D | PDR |
| | V | UDR |
| | B | PBR |
| | W | UBR |
| | X | UG modified |
| | U | UG Cover |

IEC Model Name Example

TF 084 - D V 1 - 090M

Twistflex size R84, flange PDR/UDR, length 900 mm, plating brass coated

EIA Twistflex

| Frequency, GHz | Twistflex | WR | Flange 1 | Flange 2 | Plating | Length, in | | | | |
|----------------|-----------|-----|----------|----------|---------|------------|----------|----------|------|------|
| | | | | | | 12 | 24 | 36 | 48 | 60 |
| 3.3 - 4.9 | TF | 229 | C | C | 1- | 012I | 024I | 036I | - | - |
| 3.95 - 5.85 | | 187 | C | C | | 012I | 024I | 036I | - | - |
| | | | U | Z | | 012I | 024I | 036I | - | - |
| 4.9 - 7.05 | | 159 | C | C | | - | 024I | 036I | - | - |
| 5.85 - 8.2 | | 137 | C | C | | 012I | 024I | 036I | 048I | 060I |
| | | | | M | | U | 012I | 024I | 036I | - |
| | | | M | U | | 012I | 024I | 036I | - | - |
| | | | | Z | | 012I | 024I | 036I | - | - |
| 7.05 - 10 | | 112 | C | C | | 012I | 024I | 036I | 048I | - |
| | | | | U | | Z | - | 024I | - | - |
| 8.2 - 12.4 | | 090 | C | C | | 012I | 024I | 036I | 048I | 060I |
| | | | | U | | Z | 012I | 024I | 036I | - |
| 10 - 15 | | 075 | U | Z | | 012IW | 024IW | 036IW | - | - |
| | | | | Z | | 012I* | 024I* | 036I* | - | - |
| 18 - 26.5 | | 042 | U | Z | | 012IL** | 024IL** | 036IL** | - | - |
| | | | | Z | | 012IH*** | 024IH*** | 036IH*** | - | - |

| EIA Flange | | |
|------------|---|----------|
| | C | CPR G |
| | M | CMR |
| | U | UG Cover |
| | Z | UG Choke |

EIA Model Name Example

TF 112 - C C 1 - 036I

Twistflex size WR112, flange CPR/CPR, length 36 inch, plating brass coated

* Frequency range = 12.2-13.2 GHz
 ** Frequency range = 17.7-19.7 GHz
 *** Frequency range = 21.2-23.6 GHz

RFS Dehydration Systems For Large, Medium and Small Capacity

Prevent moisture condensation and degradation in performance

The RFS digital dehydrator allows for increased system flexibility to suit individual customer requirements – easily configure options in the field as needed!

The APD-D Series Automatic Pressurization Dehydrator is available in standard system capacity and large system capacity models. The APD-D Series will provide reliable pressurization of elliptical waveguide, coaxial cable and rigid transmission line systems – and the new digital design will now enable easy on-site configuration of options such as humidity alarm, high pressure alarm, run time alarm and system purge.

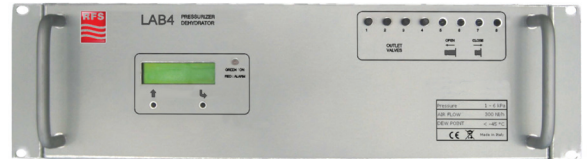
The APD-D dehydrator includes a self-contained, completely automated air drying system that utilizes a pressure swing adsorption cycle to provide pressurized dry air while continuously purging the collected moisture to the atmosphere. It can be retrofitted into any existing RFS dehydrator installation, easily integrating with existing microwave antenna system equipment. It also supports easy option upgrades with no system downtime required by enabling options to be added to the base model or reset based on customer specifications in the factory or in the field by working with RFS.

For applications where only DC power is available, RFS offers medium and small capacity dehydrators operating with voltage between 48 and 60 VDC.

These fully automatic dehydrators are factory pre-configured and include low / high pressure, high humidity and system and power alarms. An optional module for remote monitoring over Ethernet is available. The LAB4 dehydrator has 4 pressure ports and the MINILAB is delivered with 6 pressure ports that can be individually opened and closed.



RFS APD-D DIGITAL DEHYDRATOR SERIES



LAB4DC-B DEHYDRATOR

| | Model Number | Air Flow | | Power Supply | Output Pressure | |
|-----------------|----------------------------|----------|------|--------------|-----------------|-----------|
| | | NI/h | SCFM | V | kPa | psig |
| Large Capacity | APD70-D | 1190 | 0.7 | 115 AC/60Hz | 6.9-68.9 | 1-10 |
| | APD72-D | 990 | 0.58 | 230 AC/50Hz | 6.9-68.9 | 1-10 |
| Medium Capacity | APD20-D | 340 | 0.2 | 115 AC/60Hz | 6.9-68.9 | 1-10 |
| | APD22-D | 280 | 0.17 | 230 AC/50Hz | 6.9-68.9 | 1-10 |
| | LAB4DC-B | 300 | 0.18 | 48-60 DC | 1-6 | 0.15-0.87 |
| Small Capacity | MINILAB-DC | 150 | 0.09 | 48-60 DC | 2 | 0.3 |

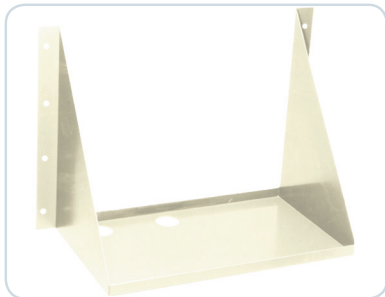
RFS Pressurization Products

Complete End-To-End Solutions

A vast array of products for installation, operation and maintenance



Gas Distribution Manifolds are used for pressure distribution to several transmission lines. They allow easy maintenance checks of individual lines. Includes 1/8" FPT input, distribution manifold block and one needle release valve. 0-15 psig pressure gauge, 15 ft. (4.5m) 3/8" plastic tubing for each outlet. Also included are four 3/8" plastic tubing racks (10 slots per rack), one roll of teflon tape and 24 nylon ties. Designate number of outlets by suffix number, i.e., GDM-2 for two outlets, GDM-4 for four outlets, etc.



Products for APD Dehydrator-Series

| Model Number | Description |
|-----------------------------|---|
| GDM-2 | Gas Distribution Manifold 2-ports |
| GDM-4 | Gas Distribution Manifold 4-ports |
| GDM-6 | Gas Distribution Manifold 6-ports |
| GDM-8 | Gas Distribution Manifold 8-ports |
| SHELF-APD-D | Shelf, Wall / Rack Mount for APD-D series dehydrators |



RFS offers all the necessary components to connect the LAB4 and MINILAB dehydrators to the waveguide connectors. A flexible butyl hose is available in 10m and 50m length with all necessary adapters and clamps for secure air connection.

Products for LAB and MINILAB Dehydrator-Series

| Model Number | Description |
|------------------------------|--|
| TUBE-01-010M | Butyl Hose, 6mm inner diameter, 10m length |
| TUBE-01-050M | Butyl Hose, 6mm inner diameter, 50m length |
| TUBE-01-G18 | Tube Adaptor with G 1/8" thread for TUBE-01-xxxM |
| TUBE-SEAL | Teflon Sealing Tape |
| TUBE-0816 | Hose Clamp from 8mm to 16mm |



For waveguides with small air volume (< 2 liter) a humidity monitoring kit is deemed sufficient after filling the waveguide with dry air or nitrogen. For these applications RFS offers the cost-effective DC-Kits in several sizes. These kits can be used for 6m of RFS E105 waveguide and up to 75m of RFS E380 waveguide.

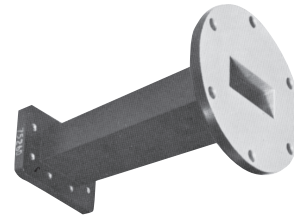
Desiccant cartridge Kits for moisture monitoring

| Model Number | Description |
|----------------------------|--|
| DC-KIT-B | For E100 to E220 |
| DC-KIT-220 | For E250 and connectors with PBR220 flange |
| DC-KIT-260 | For E250 and E300 with connectors with PBR260 flange |
| DC-KIT-320 | For E300 and E380 with connectors with PBR320 flange |

RFS Rectangular Waveguide Components Adaptors, Transitions, Twist and Bends

A complete portfolio for every type of deployment scenario

During site renovations, it is not uncommon to come across a mixture of different connector types or sizes between the antenna and the transmitter. For these cases RFS offers a large variety of rectangular waveguide components like flange adaptors, transitions, twist sections and E- and H-Bends.



IEC Components

| Component type | R | Flange 1 | Flange 2 | Plating | Color | Length, cm | Product Description |
|----------------|---------|----------|----------|---------|-------|------------|--|
| HB | 040-120 | -D | V | -1 | -B | | 90 degree H-Bend |
| | 084-320 | -B | W | | -B | | |
| EB | 040-120 | -D | V | | -B | | 90 degree E-Bend |
| | 084-320 | -B | W | | -B | | |
| TS | 040-120 | -D | V | | -B | | 90 degree twist section |
| | 084-320 | -B | W | | -B | | |
| SW | 070-084 | -D | V | | -B | -010M | straight waveguide section (other lengths available on request) |
| | 084-320 | -B | W | | -B | -010M | |
| FADP | 048-070 | -D | P | | -B | -005M | Flange adaptor |
| | 084-220 | -D | B | | -B | -005M | |
| NADP | 040-140 | -D | N-Female | | -B | | Waveguide to Coax adaptor |
| | 040-140 | -B | N-Female | | -B | | |
| TRAN | N/A | -D040 | -D048 | | -B | -010M | Transition from one waveguide size to another |
| | | -D070 | -D084 | | -B | -010M | |
| | | -D070 | -B084 | -B | -010M | | |
| | | -B084 | -B100 | -B | -010M | | |
| | | -B100 | -B120 | -B | -004M | | |
| | | -D120 | -D140 | -B | -004M | | |
| | | -B120 | -B140 | -B | -004M | | |
| | | -B140 | -B180 | -B | -004M | | |
| | | -B180 | -B220 | -B | -004M | | |
| | | -B220 | -B260 | -B | -004M | | |

EIA Components

| Component type | R | Flange 1 | Flange 2 | Plating | Product Description |
|----------------|---------|----------|----------|---------|--|
| HB | 229-090 | -C | C | -1 | 90 degree H-Bend |
| | 075-028 | -Z | U | | |
| EB | 229-090 | -C | C | | 90 degree E-Bend |
| | 075-028 | -Z | U | | |
| TS | 229-090 | -C | C | | 90 degree twist section |
| | 075-028 | -Z | U | | |
| SW | 229-090 | -C | C | | straight waveguide section (other lengths available on request) |
| | 075-028 | -Z | U | | |
| FADP | N/A | -229C | -229M | | Flange adaptor |
| | | -090C | -090M | | |
| | | -075Z | -075U | | |
| | | -042Z | -042U | | |
| TRAN | N/A | -C137 | -C112 | | Transition from one waveguide size to another |
| | | -C112 | -C090 | | |
| | | -C090 | -U075 | | |
| | | -U075 | -U062 | | |
| | | -U062 | -U051 | | |
| | | -U051 | -U042 | | |

| IEC Flange | | |
|------------|---|-----|
| | D | PDR |
| | V | UDR |
| | B | PBR |
| | W | UBR |
| | P | PAR |

| EIA Flange | | |
|------------|---|----------|
| | C | CPR G |
| | M | CMR |
| | U | UG Cover |
| | Z | UG Choke |

| Plating | 1 | brass coated |
|---------|---|--------------|
| | 3 | tin plated* |

* only available on request

Why RFS?



Radio Frequency Systems (RFS) is a global designer and manufacturer of cable, antenna and tower systems, plus active and passive RF conditioning modules, providing total-package solutions for wireless outdoor and indoor infrastructure.

RFS serves OEMs, distributors, system integrators, operators and installers in the broadcast, wireless communications, land-mobile and microwave market sectors. As an ISO compliant organization with manufacturing and customer service facilities that span the globe, RFS offers cutting-edge engineering capabilities, superior field support and innovative product design. RFS is a leader in wireless infrastructure.

Serious about services

Customers know they can count on RFS for comprehensive logistical capabilities, flawless execution and outstanding technical skills and support. The company's dedicated shipment coordinators, hotline staff and on-site engineers go well beyond mere technology, striving to offer tailored solutions to meet even the most complex site-engineering and delivery challenges.

RFS' value-added services match the exact needs of business partners large and small.

Ever-present quality guarantee

From design to manufacture, ISO 9001 and ISO 14001 certification standards encompass all aspects of RFS' business worldwide. Every product RFS ships has stood up to the most stringent technical, environmental and quality control tests, continuously meeting and surpassing the expectations of a long list of wireless carriers, transportation and utility operators, and broadcasters.

RFS backs every product bearing its name with a quality guarantee that is unrivaled in the market.

A tradition of innovation

For over a century, RFS has been at the forefront of the wireless communication industry through its unwavering commitment to design and develop the world's most advanced technology in the field. Dedicated R&D teams, along with a privileged partnership with Bell Labs, are at the source of breakthroughs that are ensuring the mobility of an increasingly wireless world.

RFS is at the frontier of wireless technology innovation, sustaining the boldest ventures to enhance the way people communicate and live.

A truly global company

With on-the-ground personnel in more than 20 countries and on every continent, RFS always delivers on its commitments, providing a comprehensive range of premium products, systems and services. Its clients benefit from all the advantages of a global supplier, while relying on dedicated support from RFS' local engineering, manufacturing and shipping teams.

RFS' products, systems and personnel can be found in every corner of the planet. As a global group, RFS is committed to upholding the most stringent environmental, health and safety standards, and seeks to integrate green initiatives in every aspect of its business.

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