



WAVEGUIDE PRESSURE WINDOWS

We have developed a range of pressure windows to suit most applications.

- The kapton range has extremely good electrical performance over the full waveguide band.
- The glass reinforced PTFE range typically has higher power handling and pressure differential.
- The quartz range is usually tailored to a particular customer requirements or a standard band. Very high power, very low loss and high pressure differential can be achieved.

Standard frames are made from brass or aluminium and a range of finishes can be applied. The pressure windows can be supplied to mate with most flange outlines.

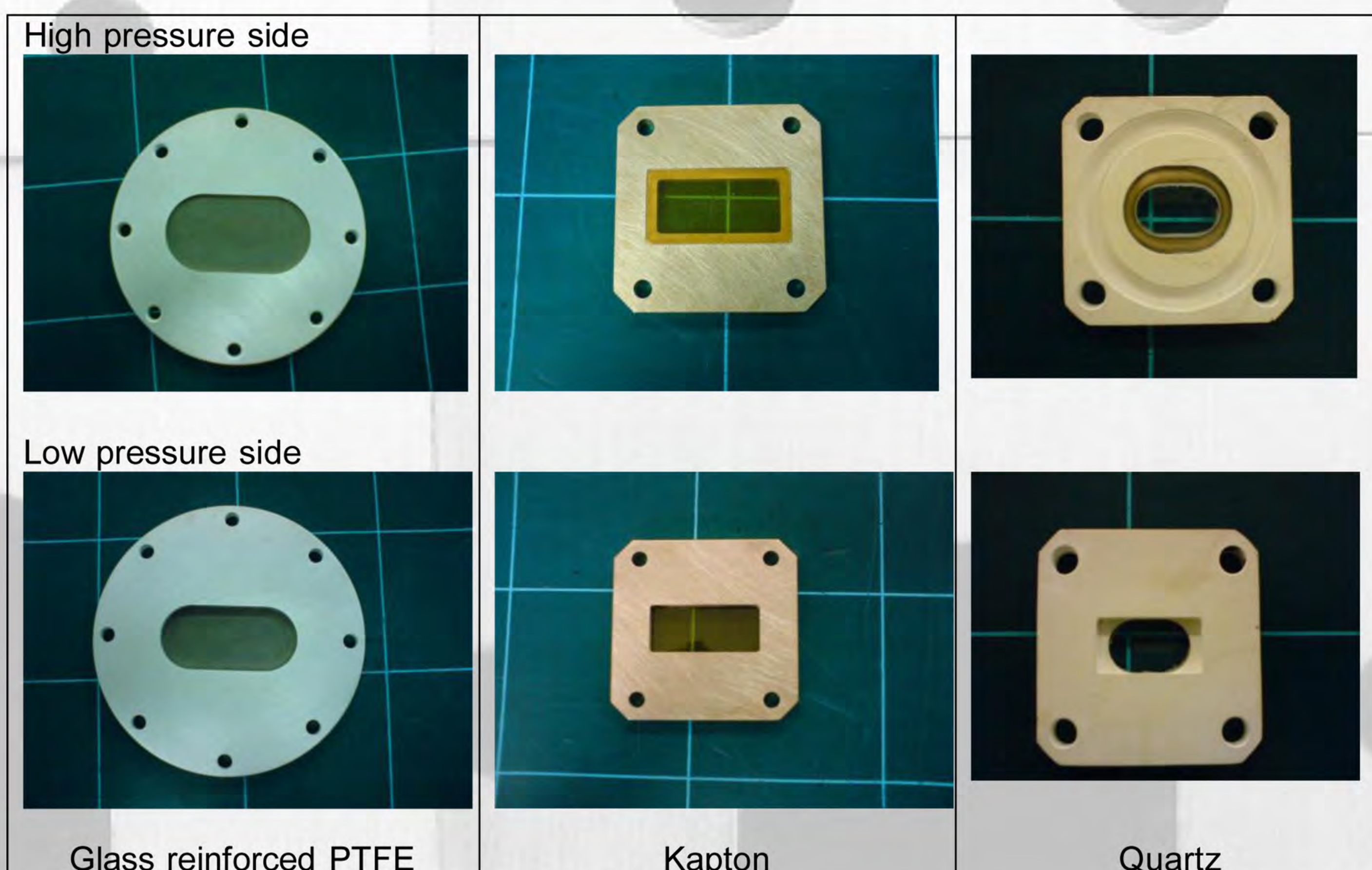
Pressure windows enable the waveguide to be pressurised - to eliminate moisture or dust, and to improve power handling.

Our pressure windows meet the requirements of RoHS – non approved finishes and materials may be available for certain legacy applications please contact the factory for details.

Standard products for use or integration with pressure windows include Inlet Sections, Air Inlet Flanges, Dessicants and hardware kits.

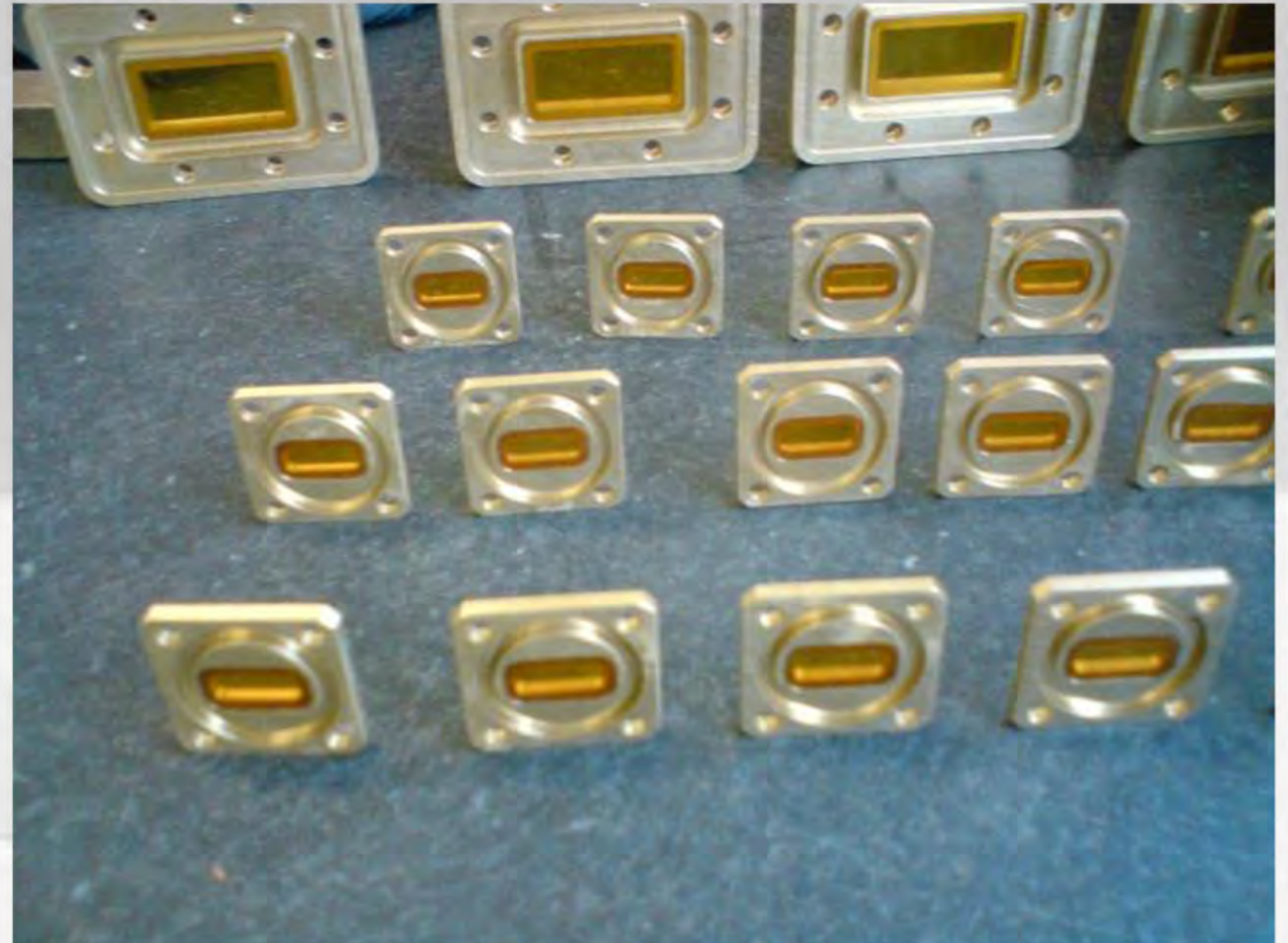
Fitting considerations

Most pressure windows have one side matched to the waveguide, and on the other side an iris which compensates for the electrical effect of the window material. The window material is normally fitted into the iris side. Although it doesn't matter which way the windows are fitted into the waveguide run from an electrical viewpoint, for best pressure performance the window should be fitted with the side that the window material has been fitted from towards the high pressure side. The pressure then pushes the window material into the frame. It is also important not to fit additional gasket material on the iris side as it may exude into the iris cavity and detune the window.



Kapton pressure windows

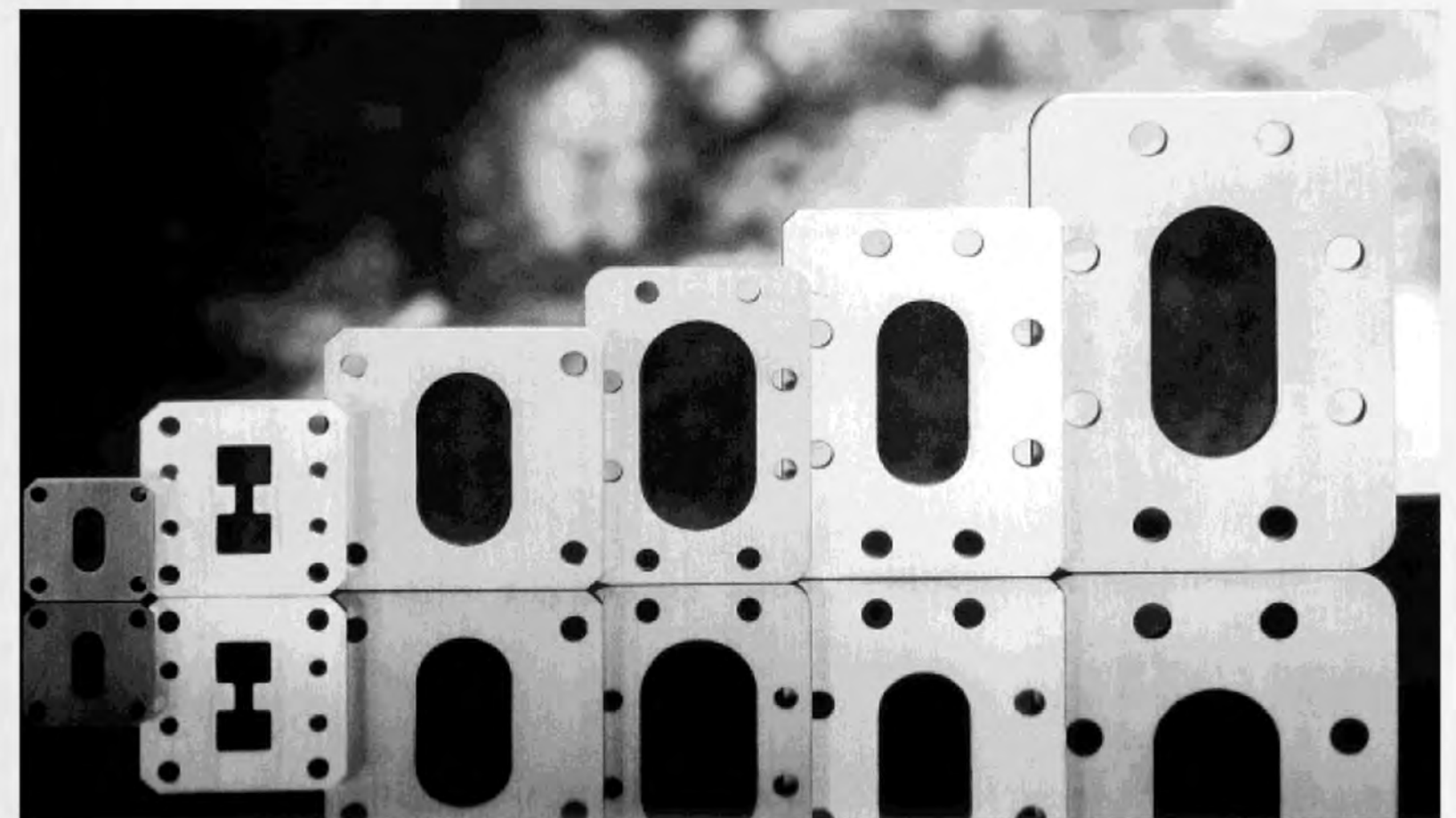
These offer the best electrical performance, with a match of better than 1.05:1 over the entire waveguide band.



Glass reinforced PTFE pressure windows

Windows for standard rectangular waveguide sizes have a VSWR better than 1.10:1 over the full waveguide bandwidth, or 1.05:1 over a 50% bandwidth.

Double Ridge sizes have a VSWR better than 1.10:1 over an octave bandwidth, or 1.15:1 over the full frequency band.



Quartz pressure windows

Quartz windows offer the highest power handling and the lowest loss. The thickness of the quartz is determined by the pressure requirement, and this is a trade-off with the bandwidth. The windows are normally designed especially for a particular application. In addition to brass and aluminium frames, other materials are available (e.g. stainless steel) for high temperature applications. Typical match is 1.1:1 e.g. for a satellite band.



Window thickness

Where a thickness is given, it is for a plain / plain flange combination. Where an "O" ring / plain or "O" ring / "O" ring combination is specified, the thickness will need to be increased to accommodate the depth of the grooves. Windows incorporating choke grooves may be possible depending on flange size, but are not recommended for electrical reasons.

PRESSURE WINDOWS

Standard Rectangular

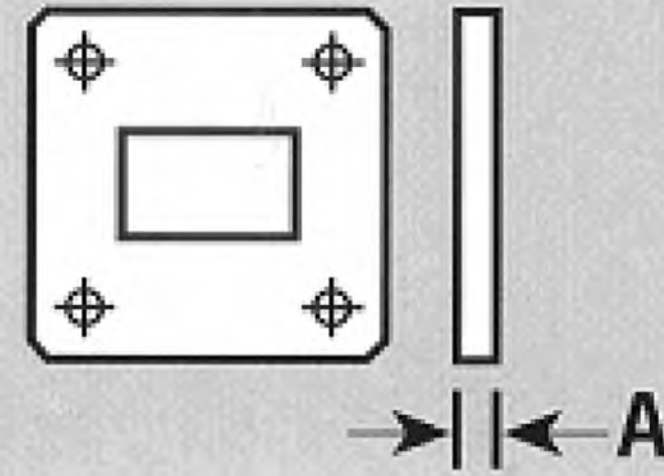
Specification:

Body Material: Brass

Window Material: PTFE

Finish: Unplated

Pressure: 40psi Maximum



Operating Frequency Band (GHz)	Waveguide Designation			PART NUMBER	Max V.S.W.R.	Power Average (cw) KW max	Power Peak KW max	Thickness "A" (mm)
	UK WG	IEC R	E.I.A. WR					
2.60 – 3.95	10	32	284	RW 10 –SZZ- (**-**-**-)-B-(**)	1.1	2.0	2,000	7.2
3.30 – 4.90	11A	40	229	RW 11A –SZZ- (**-**-**-)-B-(**)	1.1	2.0	2,000	6.15
3.95 – 5.85	12	48	187	RW 12 –SZZ- (**-**-**-)-B-(**)	1.1	1.5	1,500	4.8
4.90 – 7.05	13	58	159	RW 13 –SZZ- (**-**-**-)-B-(**)	1.1	1.3	1,300	4.0
5.85 – 8.20	14	70	137	RW14 –SZZ- (**-**-**-)-B-(**)	1.1	1.0	1,000	3.4
7.05 – 10.0	15	84	112	RW 15 –SZZ- (**-**-**-)-B-(**)	1.1	0.8	800	2.8
8.20 – 12.40	16	100	90	RW 16 –SZZ- (**-**-**-)-B-(**)	1.1	0.5	500	2.3
10.0 – 15.0	17	120	75	RW 17 –SZZ- (**-**-**-)-B-(**)	1.1	0.3	300	1.9
12.4 – 18.0	18	140	62	RW 18 –SZZ- (**-**-**-)-B-(**)	1.1	0.15	150	1.5
18.0 – 26.5	20	220	42	RW 20 –SZZ- (**-**-**-)-B-(**)	1.15	0.1	100	1.1
26.5 – 40.0	22	320	48	RW 22 –SZZ- (**-**-**-)-B-(**)	1.15	0.06	60	0.76

*** For 3 Digit Rectangular Flange part number, refer to the Flange catalogue, or consult the factory.

FIXED ATTENUATOR (Range 0-40 dB)

Double Ridge

Specification:

Body Material: Aluminium Alloy

Window Material: PTFE

Finish: Chromate

Pressure: 40psi Maximum

Operating Frequency Band (GHz)	Waveguide Designation	PART NUMBER	Max V.S.W.R.	Power Average (cw) KW max	Power Peak KW max	Thickness "A" (mm)
5.8 – 16.0	WRD580 D28	RW 580 –SZH- (**-**-**-)-A	1.15	250	20	3.3
6.5 – 18.0	WRD650 D28	RW 650 –SZH- (**-**-**-)-A	1.20	250	20	3.2
7.5 – 18.0	WRD750 D24	RW 750 –SZH- (**-**-**-)-A	1.15	250	20	3.2

*** For 3 Digit Rectangular Flange part number, refer to the Flange catalogue, or consult the factory.

RW 16 S Z Z 402 B

MATERIAL

A = ALUMINIUM (STANDARD FOR DOUBLE RIDGE WAVEGUIDE)
B = BRASS (STANDARD FOR RECTANGULAR WAVEGUIDE)

FLANGE X

SELECT THE REQUIRED FLANGE BY SELECTING THE LAST 3 DIGITS OF THE FLANGE PART No.
 E.g. 402= UBR FLANGE

FINISH

Z = UNPLATED (STANDARD FOR BRASS MATERIAL)
H = CHROMATE (OPTIONAL FOR ALUMINIUM MATERIAL)
F = IRIDITE (STANDARD FOR ALUMINIUM MATERIAL)
A = TIN (OPTIONAL FOR BRASS MATERIAL)
B = SILVER (OPTIONAL FOR BRASS MATERIAL)

PAINT

Z = UNPAINTED (STANDARD FOR BRASS MATERIAL)
Q = BLUE
B = MATT BLACK

TYPE

S = GLASS REINFORCED PTFE
K = KAPTON
H = QUARTZ

WAVEGUIDE SIZE

USE THE BRITISH WG SIZE FOR RECTANGULAR WAVEGUIDE or THE MIL SPEC. WRD SIZE FOR DOUBLE RIDGE WAVEGUIDE E.g. 16= WAVEGUIDE SIZE WG16
 750 = WRD750

PRODUCT CODE

RW = PRESSURE WINDOW

