

## The Waveguide Solution

# Waveguide Load Terminations

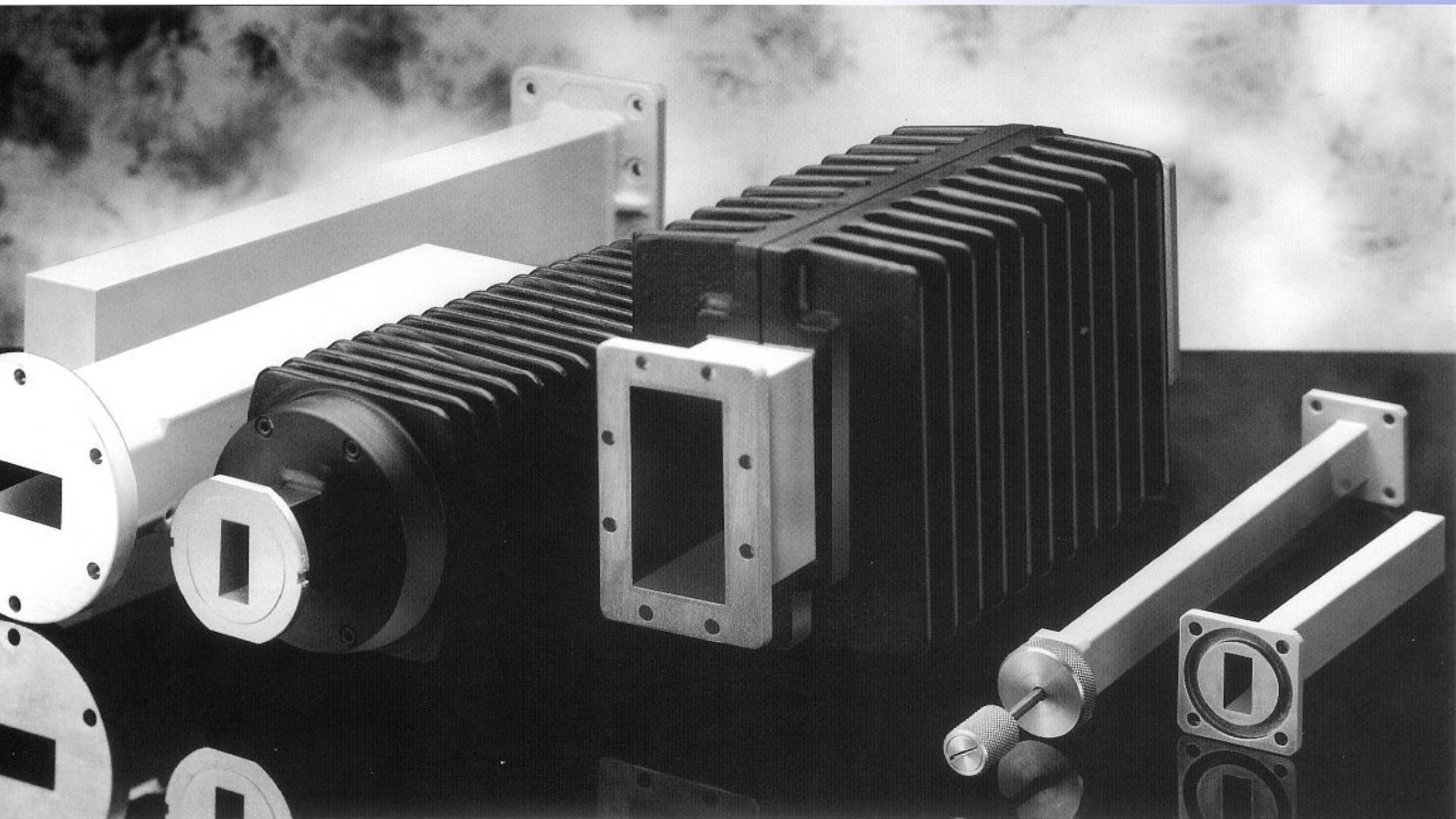


Fixed Loads

FL SERIES

Sliding Loads

SL SERIES



The Waveguide Solution range of Low Power and Sliding load terminations has been designed to offer optimum Return Loss Performance. The dissipative element is mounted in the waveguide in such a way as to give minimal reflection over the full band WG range. The FL and SL series of loads are manufactured to the highest quality standards. Loads are manufactured with the full range of International Flange Styles as shown in the TWS Flange Catalogue and can be offered with alternative plated finishes on request. All TWS Loads are offered with an attractive, hardwearing, epoxy paint finish. The Waveguide Solution facility is approved to ISO 9001: 2000.

## TWS Waveguide Load Terminations

### Standard Fixed Loads

These devices are manufactured from selected waveguide tube. The flange interface is precisely controlled to offer the optimum performance.

### Sliding Loads

The standard sliding loads are assembled in the same way as the standard fixed loads using selected waveguide tube and precise positioning of the flange interface. Operation of the sliding element is by a push/pull mechanism and a locking screw is provided for repetitive measurements.

### High Power Loads

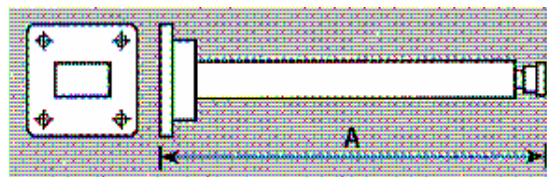
Designs for a limited range of rectangular high power/medium power loads are available on request.

## SLIDING LOADS

### Standard Rectangular

#### Specification:

VSWR:	See table (based on spot frequency Operation)
Material:	Brass
Load Material:	Iron Loaded Resin
Finish:	Blue Paint, Silver Plated Flanges



Operating Frequency Band (GHz)	Waveguide Designation			TWS PART NUMBER	Max V.S.W.R.	Max Power Watts C.W.	Overall Length "A" (mm)
	UK WG	IEC R	E.I.A. WR				
2.60 – 3.95	10	32	284	SL 10 –SQB- (***)-B	1.01	3	790
3.30 – 4.90	11A	40	229	SL 11A –SQB- (***)-B	1.01	2	526
3.95 – 5.85	12	48	187	SL 12 –SQB- (***)-B	1.01	2	414
4.90 – 7.05	13	58	159	SL 13 –SQB- (***)-B	1.01	2	332
5.85 – 8.20	14	70	137	SL 14 –SQB- (***)-B	1.01	1	336
7.05 – 10.0	15	84	112	SL 15 –SQB- (***)-B	1.01	1	323
8.20 – 12.40	16	100	90	SL 16 –SQB- (***)-B	1.01	0.8	331
10.0 – 15.0	17	120	75	SL 17 –SQB- (***)-B	1.01	0.8	321
12.4 – 18.0	18	140	62	SL 18 –SQB- (***)-B	1.01	0.6	321
15.0 – 22.0	19	180	51	SL 19 –SQB- (***)-B	1.02	0.6	225
18.0 – 26.5	20	220	42	SL 20 –SQB- (***)-B	1.02	0.6	107
22.0 – 33.0	21	260	34	SL 21 –SQB- (***)-B	1.02	0.6	107
26.5 – 40.0	22	320	28	SL 22 –SQB- (***)-B	1.035	0.5	100

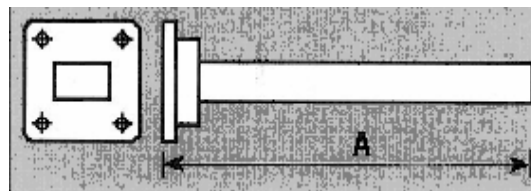
\*\*\* For 3 Digit Rectangular Flange part number, refer to the 1999 Catalogue, or consult the factory.

## FIXED LOADS

### Standard Rectangular

**Specification:**

Body Material:	Brass
Load Material:	Iron Loaded Resin
Finish:	Blue Paint, Silver Plated Flanges



Operating Frequency Band (GHz)	Waveguide Designation			TWS PART NUMBER	Max V.S.W.R.	Max Power Watts C.W.	Overall Length "A" (mm)
	UK WG	IEC R	E.I.A. WR				
2.60 – 3.95	10	32	284	FL 10 –SQB- (***)-B	1.02	5	540
3.30 – 4.90	11A	40	229	FL 11A –SQB- (***)-B	1.02	4	440
3.95 – 5.85	12	48	187	FL 12 –SQB- (***)-B	1.02	3.5	407
4.90 – 7.05	13	58	159	FL 13 –SQB- (***)-B	1.02	3.5	350
5.85 – 8.20	14	70	137	FL 14 –SQB- (***)-B	1.02	2	305
7.05 – 10.0	15	84	112	FL 15 –SQB- (***)-B	1.02	2	250
8.20 – 12.40	16	100	90	FL 16 –SQB- (***)-B	1.02	1.3	210
10.0 – 15.0	17	120	75	FL 17 –SQB- (***)-B	1.02	1.3	195
12.4 – 18.0	18	140	62	FL 18 –SQB- (***)-B	1.02	1	169
15.0 – 22.0	19	180	51	FL 19 –SQB- (***)-B	1.025	1	150
17.7 – 26.5	20	220	42	FL 20 –SQB- (***)-B	1.035	0.8	128
22.0 – 33.0	21	260	34	FL 21 –SQB- (***)-B	1.035	0.8	128
26.5 – 40.0	22	320	28	FL 22 –SQB- (***)-B	1.05	0.6	100

\*\*\* For 3 Digit Rectangular Flange part number, refer to the 1999 Catalogue, or consult the factory.

## FIXED LOADS

### Double Ridge

**Specification:**

Body Material:	Aluminium Alloy
Load Material:	Iron Loaded Alloy
Finish:	Blue Paint, Chromated Aluminium Flanges

Operating Frequency Band (GHz)	Waveguide Designation	TWS Part Number	Max V.S.W.R.	Max Power Watts C.W.	Overall Length "A" (mm)
4.75 – 11.0	WRD475 D24	FL 475–SQH- (***)-A	1.04	11	386
5.8 – 16.0	WRD580 D28	FL 580 –SQH- (***)-A	1.04	8	300
6.5 – 18.0	WRD650 D28	FL 650 –SQH- (***)-A	1.05	7	252
7.5 – 18.0	WRD750 D24	FL 750 –SQH- (***)-A	1.05	7	237
18.0 – 40.0	WRD180 C24	FL 180 –SQH- (***)-A	1.06	5	128

\*\*\* For 3 digit Double Ridge Waveguide Flange Part number, please consult the factory.

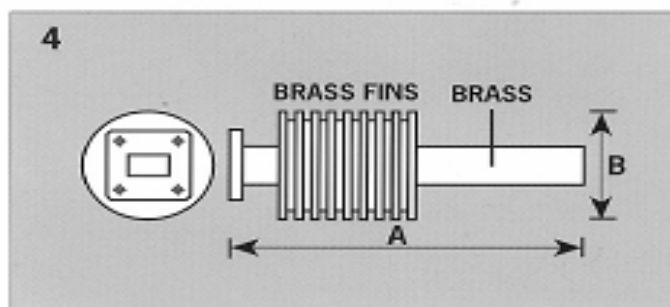
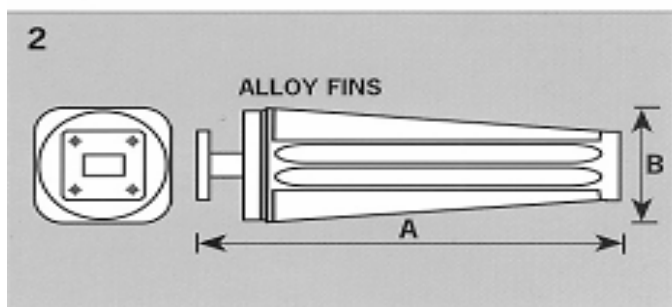
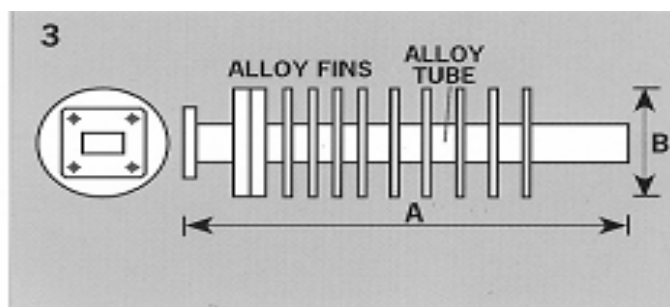
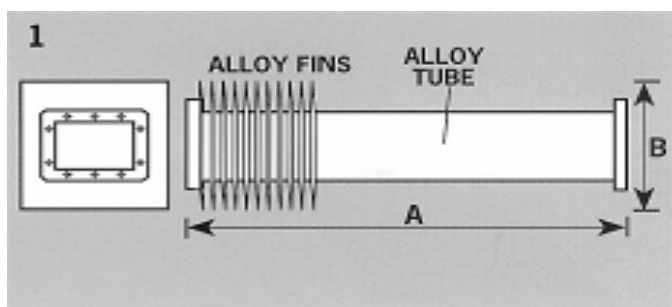
Various lengths available on request.

## HIGH POWER FIXED LOADS

### Standard Rectangular

**Specification:**

Pressurisation:	Up to 50psi if required
Body Material:	Brass/Aluminium Alloy Tube/Cast Aluminium Alloy
Load Material:	Graphite Loaded Alumina Cement
Finish:	Matt Black Paint Silver Plated or Chromated Aluminium Flanges



Operating Frequency Band (GHz)	Waveguide Designation			TWS PART NUMBER	Max V.S.W.R.	Max Power Watts C.W.	Overall Length "A" (mm)	Overall Width "B" (mm)	Outline Style
	UK WG	IEC R	E.I.A. WR						
2.60 – 3.95	10	32	284	FL 10 –HBH- (***)-B	1.0187	1000	774	178	1
3.30 – 4.90	11A	40	229	FL 11A –HBH- (***)-B	1.087	1000	576	159	2
3.95 – 5.85	12	48	187	FL 12 –HBH- (***)-B	1.087	750	514	159	2
4.90 – 7.05	13	58	159	FL 13 –HBH- (***)-B	1.087	600	471	127	3
5.85 – 8.20	14	70	137	FL 14 –HBH- (***)-B	1.087	500	335	92	2
7.05 – 10.0	15	84	112	FL 15 –HBH- (***)-B	1.087	300	315	88	2
8.20 – 12.40	16	100	90	FL 16 –HBH- (***)-B	1.087	250	314	76	2
10.0 – 15.0	17	120	75	FL 17 –HBB- (***)-B	1.087	150	189	51	4
12.4 – 18.0	18	140	62	FL 18 –HBB- (***)-B	1.087	50	183	51	4
18.0 – 26.5	20	220	42	FL 20 –HBB- (***)-B	1.02	25	148	40	4
26.5 – 40.0	22	320	28	FL 22 –HBB- (***)-B	1.035	12	96	23	4

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

## LOAD TERMINATIONS



The Waveguide Solution offers standard and custom Waveguide Load Terminations. All designs have been optimised to offer high performance within a compact outline.

Contact our Sales Department for more information.

## Ordering Information

FL 16	S	Q	B	402	B
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**WAVEGUIDE SIZE**  
USE THE BRITISH WG SIZE FOR RECTANGULAR WAVEGUIDE or THE MIL SPEC. WRD SIZE FOR DOUBLE RIGDE WAVEGUIDE  
E.g. 16= WAVEGUIDE SIZE WG16  
750 = WRD750

**PRODUCT CODE**  
FL = FIXED LOAD  
SL = SLIDING LOAD

**TYPE**  
T = HIGH POWER (RECTANGULAR WG ONLY) (On request)  
S = STANDARD

**PAINT**  
Q = TWS BLUE (STANDARD FOR 'S' AND 'E' TYPES)  
B = BLACK (STANDARD FOR 'H' TYPE, OPTIONAL FOR 'S' AND 'E' TYPES)  
G = GREY (OPTIONAL NON-STANDARD)

**FINISH**  
Z = UNPLATED (OPTIONAL NON STANDARD)  
H = CHROMATE  
F = IRIDITE  
A = TIN PLATE (OPTIONAL FOR BRASS MATERIAL)  
B = SILVER PLATE (STANDARD FOR BRASS MATERIAL)

**FLANGE TYPE**  
SELECT THE REQUIRED FLANGE BY SELECTING THE LAST 3 DIGITS OF THE TWS FLANGE PART No.Eg. 402= UBR FLANGE

**MATERIAL**  
A= ALUMINIUM (STANDARD FOR DOUBLE RIDGE WAVEGUIDE)  
B= BRASS (STANDARD FOR RECTANFULAR WAVEGUIDE)

**Notes:**  
1) The flange material should match the material of the device to remain standard.

For assistance selecting RoHS compliant options please contact the factory



## The Waveguide Solution

### The Waveguide Solution Limited

King Charles Business Park • Old Newton Road • Heathfield • Newton Abbot  
Devon TQ12 6UT • United Kingdom

T: +44 (0) 1626 835255

F: +44 (0) 1626 836166

E-mail: [enquiries@waveguidesolution.co.uk](mailto:enquiries@waveguidesolution.co.uk)  
[www.waveguidesolution.co.uk](http://www.waveguidesolution.co.uk)

Specifications shown on this document are offered as a guide only. Components may be modified to suit the mechanical or electrical parameters requested, or may be optimized to suit the operating frequency range. Frequency range of operation shall be advised when ordering.

Information provided in this brochure is for reference only. Dimensions or specifications are typical values. All designs, specifications and availabilities of products and services presented in this document may be subject to change without notice. For confirmation of details please consult your agent or manufacturer. Issue 1.0c