

BOMAC LABORATORIES, INC. Beverly, Mass.

May 4, 1955

TYPE DESIGNATION REGISTRATION FORM

SHUTTER AND TR TUBE

Manufacturer: Bomac Laboratories, Inc.
Beverly, Massachusetts

Mfr's Type No. - BL-312

Tentative JETEC Type No. 6615

The Bomac 6615/BL-312 is a combined shutter and standard broad-band TR tube (type 1B63A) for use with RG-52/U size waveguide. The shutter mechanism consists of two electro-magnetically operated plungers which short the two fixed-tuned gaps inside the tube when the coils are not energized. When the shutter is closed, protection is provided for the receiver crystal when the radar set is not in use. When the shutter is open, the TR tube functions normally and provides decoupling of the receiver from a common transmitting and receiving antenna during a period of transmission. It is an integral cavity type with fixed tuned gaps. Its operational band is from 8490 Mc to 9578 Mc.

ELECTRICAL DATA - GENERAL

TR Tube (With Shutters Open)

Operational Band	
VSWR 1.9 maximum	8490 to 9578 Mc.
VSWR 1.4 maximum	8565 to 9487 Mc.
Ignitor Starting Voltage	-700 Vdc max.
Ignitor Voltage Drop at 100 μ Adc of ignitor current	200 to 375 Vdc.
Spike Leakage Energy	0.3 erg max.
$p_o = 40$ kw; $p_{rr} = 1000$ pps;	
$F = 9000$ Mc; $tp_1 = 1.0$ μ s;	
$tp_2 = 0.5$ μ s; $I_i = 100$ μ Adc	
Flat Leakage Power	40 mw max.
(See Spike Leakage for conditions.)	
Insertion Loss at 9000 Mc and $I_i = 0$	0.7 db max.
Ignitor Interaction at 9000 Mc and $I_i = 100$ μ Adc	0.2 db max.
Recovery Time at 200 kw peak; 3 db down	10 μ s max.

BL-312 REGISTRATION FORM - Page 2Shutter Tube

Attenuation	8490 Mc to 9578 Mc (shutters closed)	40 db min.
Shutter Circuit Voltage (nom.)		28 Vdc
Shutter Circuit Pull-In Current (min.)		110 mAdc
Shutter Circuit Holding Current (min.)		30 mAdc

MECHANICAL DATA - GENERAL

Mounting Position	Any
Number of Ignitors	One
Ambient Temperature Range (non-operating)	-40 to +100 °C
Net Weight, approximately	5 oz.

MAXIMUM RATINGS

Transmitter Peak Power (Note 1)	250 kw.
Shutter Circuit Holding Current	160 mAdc.
Ignitor Current	200 μ Adc

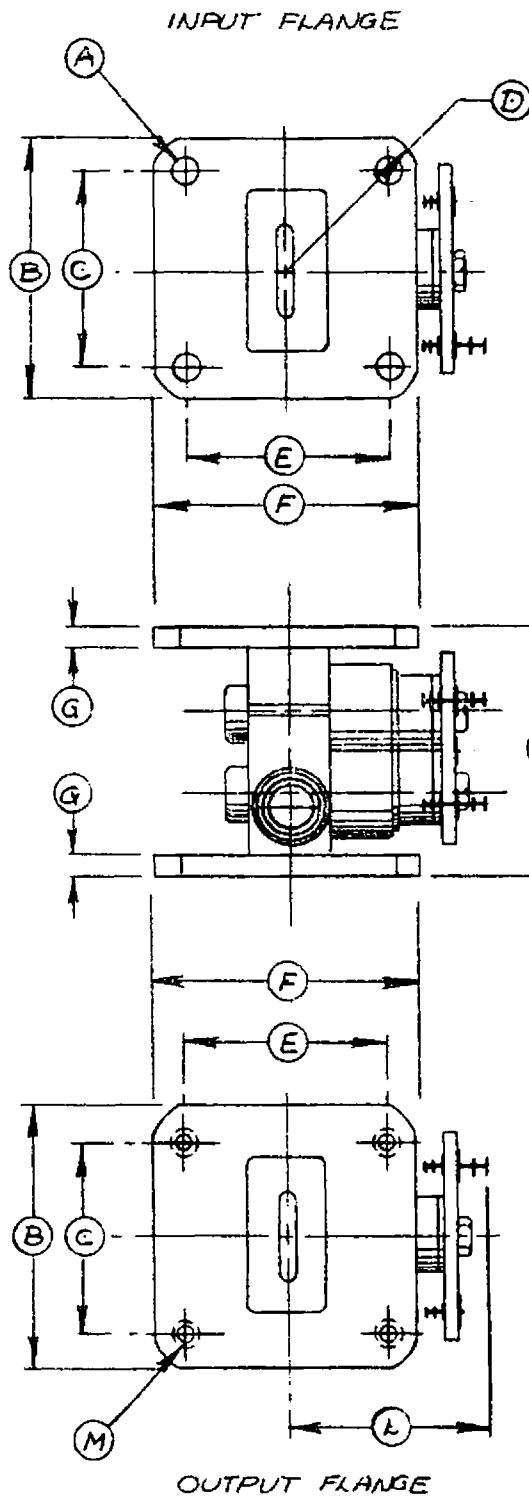
(Note 1) The shutter is not intended for applications involving the switching of peak power greater than one kilowatt, therefore, the rating applies only when the shutter is open.

OUTLINE DRAWING

As per attached drawing dated 3/29/55.

ELECTRICAL AND MECHANICAL DATA

	<u>Min.</u>	<u>Bogey</u>	<u>Max.</u>
Effective Short Plane (Measured from outer surface of input flange)	.058	.065	.072 inches



EXHAUST MUST NOT EXTEND BEYOND FLANGES MORE THAN 1/4"

REF.	DIMENSIONS
A	.1695 DR (4) HOLES
B**	1 5/8
C*	1.220
D**	1 1/16 R
E*	1.280
F**	1 5/8
G**	3/32
H	1.555 ±010
J**	.250 DIA NOM
K*	1 1/2 MAX.
L*	1 5/8 MAX.
M	ØB-32 NC (4) HOLES

SPECIFICATION SHEET

OUTLINE

6615/BL-312, 6597/BL-320

BOMAC LABORATORIES INC.
SALEM ROAD
BEVERLY, MASSACHUSETTS

3-29-55

E.D.