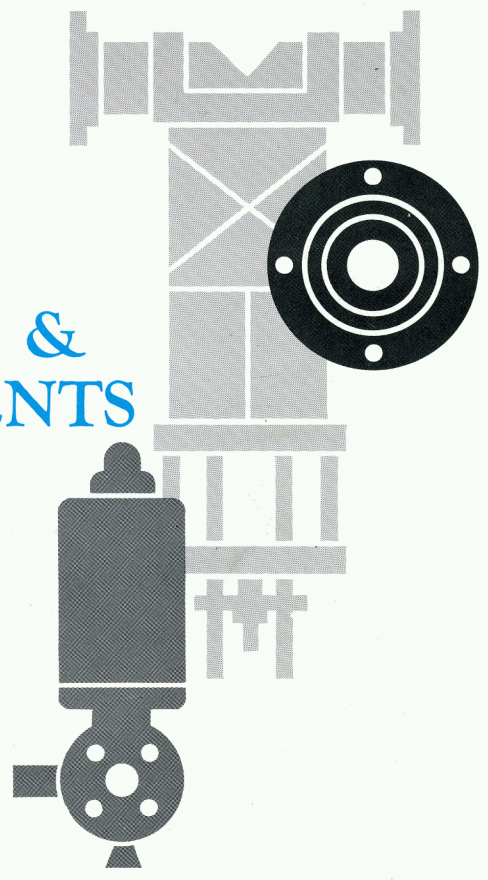


BOM 4

**BOMAC**  
laboratories, inc.  
BEVERLY • MASSACHUSETTS

**GAS SWITCHING TUBES &  
MICROWAVE COMPONENTS**



**CONDENSED  
CATALOG**

**1962**

Since 1947 Bomac has contributed much to enhance the "state of the art" in the microwave field. In January 1959, Bomac combined operations with Varian Associates of California thus bringing together two of the largest producers of microwave specialties in the world today.

Bomac maintains a staff of over 120 engineers and scientists who are sufficiently diversified to work on research, development, or production problems.

Unique production techniques permit single units or large volume production of tubes. These modern techniques are implemented by the most up-to-date equipment, much of it Bomac-designed and built.

Bomac's facilities provide the most modern equipment and techniques in the fields of mechanical processing, gas handling systems for complete high vacuums and gas filling, along with elaborate testing facilities periodically calibrated to rigid standards.

Bomac products include pulse and cw magnetrons, klystrons, reference cavities, solid state devices, a complete line of gas switching tubes, including ATR's, TR's and Pre-TR's, also special purpose vacuum or gas-filled tubes and electronic equipment.

## *Bomac Laboratories, Inc.*

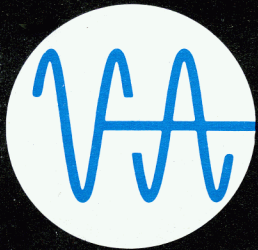


Bomac has recently opened its new 20,000-square-foot research laboratory. The laboratory marks the start of a vigorous new program at Bomac, aimed at broadening the scope of the company's activities in the ever-expanding microwave and allied fields.

The research laboratory is organized as a new division of Bomac, and is fully equipped with its own modern machine shop and a number of individual laboratories serving researchers in a wide variety of basic studies.

Beyond basic research in a number of new and exciting areas, Bomac scientists back up current company operations in order to improve existing products.

The new research building contains seven large, well-equipped laboratories. In the field of atomic frequency standards there are two laboratories devoted to atomic beam tubes and hydrogen masers. The other laboratories include ferrite, microwave, solid state, tube techniques, and plasmas.



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## FREQUENCY STANDARD TUBE BLR-1

The Bomac BLR-1 CESIUM RESONATOR is used as the basic reference element in the most accurate type of atomic frequency standard known at this time. This tube has been designed and built with special attention to those factors which influence accuracy and reliable, long term operation.

Circuit diagrams and application engineering service for the associated electronics to make a complete standard are available on request.



### PERFORMANCE CHARACTERISTICS\*

**Accuracy:** The resonant frequency of the tube is specified in terms of the zero field cesium hyperfine transition frequency to  $\pm 2$  in  $10^{11}$ .

**Long term stability:**  $\pm 1$  in  $10^{11}$ .

**Short term stability:**  $\pm 1$  in  $10^{10}$  for 1 sec. averaging time.

**Full half width of Ramsey resonance:** 370-450 cps.

**Voltage signal to noise:** 500 for a 1 sec. time constant.

**Operating lifetime:** 1 year.

**Shelf life:** 5 years with no voltages applied.

\* Data is tentative and subject to minor changes.

Bomac is rapidly gaining a reputation in the field of ferrite devices. This growth is a result of Bomac's new research facilities having the latest and most modern techniques available. In addition, the engineering and technical support personnel have a diversified background in ferrites.

Bomac offers wide experience in the field of oscillatory and duplexing devices. The requirements of ferrites used in conjunction with klystrons and magnetrons or as replacements for duplexers are under constant development by Bomac Researchers. Already, many new specialties have been reported to complement this ever-expanding line.

We invite you to contact our Sales Department when special requirements are needed.

## FERRITE DEVICES

### 4 PORT CIRCULATORS\*



OPERATING FREQUENCY Gc	ISOLATION db (min)	INSERTION LOSS db (max)	VSWR (max)	POWER kw/watts avg	GUIDE	TYPE NUMBER
8.5-9.6	25	0.5	1.15	Low	RG/52U	BLDX-011
8.5-9.6	20	0.5	1.15	100/100	RG/52U	BLDX-013
16.0-17.5	20	0.5	1.15	100/100	RG/91U	BLDP-010
24.0±0.25	20	0.5	1.3	50/15	RG/53U	BLDK-010

\* Special requirements available on request.

NEW TUBES  
LISTED  
IN COLOR

<b>OPERATING FREQUENCY</b> Gc	<b>ISOLATION</b> db	<b>INSERTION LOSS</b> db	<b>VSWR</b>	<b>LENGTH INCHES</b> ± 1/64	<b>PEAK POWER</b> kw	<b>AVERAGE POWER</b> W	<b>WAVE- GUIDE</b>	<b>FLANGE UG-/U</b>	<b>TYPE NUMBER</b>
4.4-5.0	20	1.0	1.15	4½	—	20	RG-49	149A	<b>BLF-010</b>
5.925-6.425	20	0.5	1.15	4	2	10	RG-50	344	<b>BLF-011</b>
5.925-6.425	40	0.8	1.15	4½	2	10	RG-50	344	<b>BLF-012</b>
5.925-6.425	60	1.0	1.15	5	2	10	RG-50	344	<b>BLF-013</b>
6.575-7.125	20	0.5	1.15	4	2	10	RG-50	344	<b>BLF-014</b>
6.575-7.125	40	0.8	1.15	4½	2	10	RG-50	344	<b>BLF-015</b>
6.575-7.125	60	1.0	1.15	5	2	10	RG-50	344	<b>BLF-016</b>
7.125-7.8	20	0.5	1.15	4	2	10	RG-51	51	<b>BLF-017</b>
7.125-7.8	40	0.8	1.15	4½	2	10	RG-51	51	<b>BLF-018</b>
7.125-7.8	60	1.0	1.15	5	2	10	RG-51	51	<b>BLF-019</b>
7.8-8.5	20	0.5	1.15	4	2	10	RG-51	51	<b>BLF-020</b>
7.8-8.5	40	0.8	1.15	4½	2	10	RG-51	51	<b>BLF-021</b>
7.8-8.5	60	1.0	1.15	5	2	10	RG-51	51	<b>BLF-022</b>
8.2-10.2	30	1.0	1.15	2½	100	100	RG-52	39	<b>BLF-023</b>
9.1±0.2	15	0.5	1.15	1½	2	10	RG-52	39	<b>BLF-024</b>
9.1±0.2	25	1.0	1.15	2½	2	10	RG-52	39	<b>BLF-025</b>
8.8-8.9	30	0.5	1.15	1¾	2	10	RG-52	39	<b>BLF-026</b>
9.3-9.5	15	0.35	1.15	2¾	150	150	RG-52	39	<b>BLF-027</b>
9.2-9.4	15	0.35	1.15	2¾	150	150	RG-52	39	<b>BLF-028</b>
10.7-11.7	20	0.4	1.2	1½	2	10	WR-75	*	<b>BLF-029</b>
10.7-11.7	40	0.7	1.2	2	2	10	WR-75	*	<b>BLF-030</b>
10.7-11.7	60	1.0	1.2	2½	2	10	WR-75	*	<b>BLF-031</b>
12.2-12.7	40	1.0	1.2	5	2	10	RG-52	39	<b>BLF-032</b>
12.2-12.7	25	0.4	1.12	1½	2	10	WR-75	*	<b>BLF-033</b>
12.2-12.7	40	0.6	1.12	2	2	10	WR-75	*	<b>BLF-034</b>
12.2-12.7	60	0.9	1.12	2½	2	10	WR-75	*	<b>BLF-035</b>

\* No designation—standard flange for WR-75 waveguide.

## BROADBAND WAVEGUIDE FERRITE ISOLATORS

OPERATING FREQUENCY Gc	ISOLATION db	INSERTION LOSS db	VSWR	LENGTH inches	WAVEGUIDE	FLANGE UG-U	TYPE NUMBER
3.95-5.85	18	1.0	1.15	8¼	RG-49/U	UG-149A/U	BLF-301
5.85-8.2	20	1.0	1.15	6⅞	RG-50/U	UG-344/U	BLF-302
7.05-10.0	24	1.0	1.2	6¼	RG-51/U	UG-51/U	BLF-303
8.2-12.4	30	1.0	1.15	6¼	RG-52/U	UG-39/U	BLF-304
10.0-15.0	30	1.0	1.15	6½	WR-75	*	BLF-305
12.4-18.0	24	1.0	1.15	5¼	RG-91/U	UG-419/U	BLF-306
18.0-26.0	24	1.0	1.15	4½	RG-53/U	UG-425/U	BLF-307
18.0-26.0	24	1.0	1.15	4½	RG-53/U	UG-595/U	BLF-308

\* No designation—standard flange for WR-75 waveguide.



## BROADBAND COAXIAL ISOLATORS

OPERATING FREQUENCY Gc	ISOLATION db (min)	INSERTION LOSS db (max)	VSWR (max)	LENGTH inches	TYPE NUMBER
1.0-2.0	10*	1.2	1.2	13½	BLF-201
2.0-4.0	15	1.0	1.2	8¾	BLF-202
4.0-8.0	10	1.0	1.25	6-1/32	BLF-203
8.0-11.0	30	1.0	1.4	9	BLF-204
4.0-8.0	10	1.0	1.2	6-1/32	BLF-206

\* When available—engineering required. Input power: 5 kw peak, 10 watts average. Connectors: Type N provided unless otherwise specified.



## SPECIAL PURPOSE COAXIAL ISOLATORS

OPERATING FREQUENCY Gc	ISOLATION db (min)	INSERTION LOSS db (max)	VSWR (max)	LENGTH inches	TYPE NUMBER
1.42	20	1.10	1.12	4¼	BLF-101
1.7-2.1	20	1.10	1.12	8¾	BLF-102
2.0-2.7	20	1.10	1.12	8¾	BLF-103
2.15-2.35	15	0.8	1.1	5¾	BLF-104
2.7-3.6	25	1.0	1.2	8¾	BLF-105
3.6-4.5	25	1.0	1.3	8¾	BLF-106
2.6-3.0	80	5.0	1.2	10¾	BLF-107
4.0-6.0	15	1.0	1.2	6-1/32	BLF-108
6.0-8.0	15	1.0	1.2	6-1/32	BLF-109

Input power: 5 kw peak, 10 watts average. Connectors: Type N provided unless otherwise specified.



NEW TUBES LISTED IN COLOR

## GAS SWITCHING TR

OPERATING FREQUENCY Gc	POWER LEVEL	DESCRIPTION	TYPE NUMBER
0.400-0.450	2 Mw	Fixed tuned, flange mount, 3 1/8 coax.	<b>BL-622</b>
0.400-0.450	2 Mw	Fixed tuned, flange mount, 3 1/8 coax.	<b>BL-693</b> 7309
0.400-0.450	2 Mw	Fixed tuned, flange mount, 3 1/8 coax.	<b>BL-929</b>
0.400-0.450	20 Kw	Fixed tuned, flange mount, 3 1/8 coax.	<b>BL-930</b>
0.400-0.450	2 Mw	Fixed tuned, plug-in mount, 3 1/8 coax.	<b>BL-931</b> 7324
0.400-0.450	2 Mw	Fixed tuned, plug-in mount, 3 1/8 coax.	<b>BL-931A</b>
0.400-0.450	2 Mw	Fixed tuned, plug-in mount, 3 1/8 coax.	<b>BL-991</b>
0.400-0.450	20 Kw	Fixed tuned, plug-in mount, 3 1/8 coax.	<b>BL-994</b>
0.400-0.450	2 Kw	Fixed tuned, plug-in mount, 7/8 coax.	<b>BL-995</b>
0.400-0.450	2 Kw	Fixed tuned, plug-in mount, 7/8 coax.	<b>BL-999</b>
0.400-0.450	2 Mw	Fixed tuned, plug-in mount, 3 1/8 coax.	<b>BLT-004A</b>
0.400-0.450	2 Mw	Fixed tuned, plug-in mount, 3 1/8 coax.	<b>BLT-005</b>
0.400-0.450	2 Kw	Fixed tuned, plug-in mount, 7/8 coax.	<b>BLT-018</b>
0.400-0.450	2 Mw	Fixed tuned, plug-in mount, 3 1/8 coax. Metal reservoir	<b>BLT-019</b>
0.400-0.450	20 Kw	Fixed tuned, plug-in mount, 3 1/8 coax.	<b>BLT-020</b>
0.400-0.450	20 Kw	Fixed tuned, plug-in mount, 7/8 coax.	<b>BLT-021</b>
0.400-0.450	2 Mw	Tunable, plug-in mount, external cavity	<b>BL-690</b>
0.409-0.417	2 Mw	Fixed tuned, plug-in mount, 6 1/8 coax.	<b>BL-959</b>
0.409-0.417	20 Kw	Fixed tuned, plug-in mount, 6 1/8 coax.	<b>BL-984</b>
1.215-1.355	500 Kw	Cell type, tunable, special disc	<b>BL-966</b>
1.215-1.355	450 Kw	Cell type, tunable	<b>BL-25</b> 6322
1.215-1.365	2000 Kw	Broadband TR, 7" overall length	<b>BL-933</b> 7166
1.220-1.365	2000 Kw	Broadband TR pressurizable	<b>BL-37A</b> 6633
—	1 Kw	Electrodeless discharge	<b>1B40</b>
2.600-3.000	750 Kw	Coaxial output TR, broadband	<b>BL-969</b>
2.600-3.000	750 Kw	Bandpass, fixed tuned	<b>1B58A</b>
2.689-2.939	750 Kw	Broadband pressurizable mounting	<b>6117</b>
2.700-3.300	350 Kw	Cell type, fixed tuned, 2 disc	<b>1B62</b>



## GAS SWITCHING TR



OPERATING FREQUENCY Gc	POWER LEVEL kW	DESCRIPTION	TYPE NUMBER
2.700-3.300	350	Cell type, fixed tuned, 2 disc	721B
2.900-3.200	750	Broadband	5853
3.100-3.500	750	Broadband	5927
3.365-3.740	750	Broadband	1B55
—	50	Cell type, tunable, 2 disc	1B27
5.200-5.530	1000	Bandpass, fixed tuned	5925
5.350-5.450	85	Broadband contact type input mount	6624
5.370-5.430	100	Contact mounting seat	BL-605
5.393-5.905	5	Phase controlled $\pm 5^\circ$ tracks with BL-613/6905	BL-643 6906
5.395-5.905	300	Bandpass, fixed tuned	5865
5.540-5.560	20	Tunable, similar to 1B50, no reservoir	BL-46 6639
5.395-5.905	3000	Broadband, fixed tuned	BL-28 6568
6.000-7.100	200	Tunable	1B50
8.490-9.578	100	Short RT, 1.5 $\mu$ s	BL-95 6644
8.490-9.578	100	Short RT, 1.5 $\mu$ s, extended temperature operation, no heater	BL-95A
8.490-9.578	200	1000 hour life	1B63B
8.490-9.578	250	Bandpass for RG51/U guide, 5 element tube, input flange cut, Bell Lab. flanges	5863
8.490-9.578	250	For use in RG51/U guide; Bell Lab. input X output	6232
8.490-9.578	200	Miniaturized contact type mounting	6795
8.490-9.578	100	Extended temperature operation, heater mounted on tube	BL-95H 6645
8.490-9.578	100	1B63A, with controlled phase	BL-948
8.490-9.578	250	VSWR 1.5 max., $-55^\circ\text{C}$ to $+125^\circ\text{C}$ operating temperature	BL-990
8.490-9.578	200	Fixed tuned	1B63A
8.490-9.600	30	Tunable, high Q, integral cavity	1B24A
8.490-9.600	30	No reservoir, miniaturized tunable, similar to 1B24	BL-62 6378
8.541-9.862	75	Cell type, 2 disc fixed tuned	724B



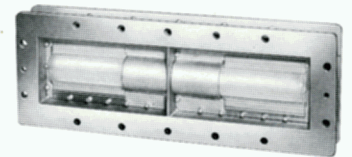
## GAS SWITCHING TR

OPERATING FREQUENCY Gc	POWER LEVEL kW	DESCRIPTION	TYPE NUMBER
9.250-9.350	0.2	Crossed guide duplexer, RT 6 $\mu$ s max.	BL-924
9.325-9.425	40	Crossed guide duplexer, fixed tuned	BL-29
9.325-9.425	10	Crossed guide duplexer, for beacon application, low firing power	BL-47
15.000-17.000	100	Bandpass, fixed tuned	BL-56 6649
15.500-17.500	100	Bandpass, fixed tuned	BL-908
16.200-16.800	40	Tunable, integral cavity	BL-16
16.000-17.000	10	Cad. plated, $\pm 3^\circ$ phase control, operating temperature 100°C max.	BL-967
23.350-24.950	35	Bandpass, fixed tuned	BL-11 6282
23.630-24.500	100	No reservoir	BL-67 6650
23.630-24.580	24	1B26, with miniaturized reservoir	BL-621
23.630-24.580	24	Tunable	1B26

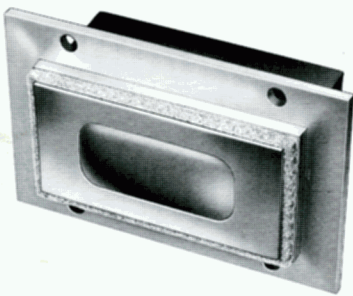


## GAS SWITCHING PRE-TR

OPERATING FREQUENCY Gc	POWER LEVEL kW (max)	DESCRIPTION	TYPE NUMBER
1.250-1.350	2000	Pressurizable, broadband	BL-96A 6605
1.250-1.350	3000	Broadband	BL-612 7152
1.250-1.350	5000	Dual pre-TR has folded cylinder window	BL-920
1.250-1.350	550	Used in pairs, dumbbell type	5939A
1.250-1.350	2000	Used in pairs, dumbbell type	6260
1.250-1.350	5000	Folded cylinder, fits standard L-Band seat	BLW-005
2.650-2.950	750	Broadband	1B38
3.300-3.700	750	Broadband	1B54
5.250-5.750	1000	Dual pre-TR has folded cylinder window, 1½" long	BL-997
5.395-5.755	3000	Will not sustain ionization below 10 watts CW; mechanically similar to BL-28	BL-954
5.400-5.900	40	Will not sustain ionization below 10 watts CW; mechanically similar to BL-60	BL-982
8.500-9.600	250	Dual pre-TR tube used with short slot coupler with RG51/U input, RG52/U output	BL-962



## GAS SWITCHING ATR



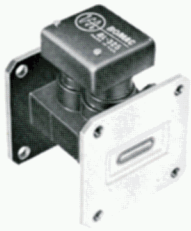
OPERATING FREQUENCY Gc	POWER LEVEL kW (max)	DESCRIPTION	TYPE NUMBER
1.285 ± 5%	2000	Low Q double iris window, ½ height guide	BL-665 6962
1.285 ± 5%	2000	Has flange suitable for pressurization	BL-665A
1.300 ± 5%	2000	Tuned in full height guide, pressurizable	BL-640
2.750	750	Fixed tuned	1B44
2.750	750	Fixed tuned, 15 μs R.T.	BL-41
2.800	750	Fixed tuned	6024
2.800	1000	Fast recovery time, fixed tuned	BL-660
2.850	750	Fixed tuned	1B56
2.850	1000	Fixed tuned	BL-946
2.950	750	Fixed tuned	5792
2.950	1000	Fixed tuned	BL-963
3.050	750	Fixed tuned	5793
3.050	1000	Fixed tuned	BL-964
3.200	750	Fixed tuned	5921
3.325	750	Fixed tuned	1B57
3.400	750	Fixed tuned	5922
3.479	750	Fixed tuned	1B53
3.625	750	Fixed tuned	1B52
5.365	1000	Fixed tuned	6022
5.400	100	Special mounting flange	BL-606
5.400	150	Contact mount flange	6591
5.640	300	Fixed tuned, contact mount flange	BL-61 6455
5.640	300	Fixed tuned	6081
6.425	200	Fixed tuned	1B51
8.800	250	Used with RG51/U guide	BL-54 6629
9.300	250	Contact type flange	BL-43 6304
9.300	250	Miniaturized	BL-68 6393
9.300	250	Used in half-height RG52/U guide	6396
9.375	250	Used with RG51/U guide	BL-55 6630
16.500	40	Fixed tuned	BL-15
24.000	30	1B36, with reduced overall length, countersunk exhaust tube	BL-627
24.000	30	Fixed tuned	1B36

## GAS SWITCHING DUAL TR

OPERATING FREQUENCY Gc	POWER LEVEL Kw (max)	DESCRIPTION	TYPE NUMBER
1.250-1.350	5000	For use with top wall couplers, bandpass, RT 150 $\mu$ s	<b>BL-90</b> 6634
2.700-2.900	750	Dual 1B58, use with sidewall couplers	<b>BL-87</b> 6636
2.900-3.200	750	Dual 5853, use with sidewall couplers	<b>BL-638</b>
3.400-3.700	750	Dual 1B55, use with sidewall couplers	<b>BL-652</b>
5.150-5.410	1000	Broadband	<b>BL-86</b> 6641
5.250-5.310	1000	Broadband	<b>BL-644</b>
5.400-5.900	3000	Ceramic windows, phase control, tracks with BL-643/6906	<b>BL-613</b> 6905
5.400-5.900	700	Dual 5865, broadband	<b>BL-60</b> 6640
8.490-9.578	200	For balanced duplexer application	<b>BL-27</b> 6334
8.490-9.578	250	RG51/U input, RG52/U output	<b>BL-600</b> 6642
8.490-9.578	100	Rec. time 1.5 $\mu$ s max. dual BL-95/6644	<b>BL-604</b> 6646
8.490-9.578	100	Has thermal control heaters, dual BL-95H/6645	<b>BL-604H</b> 6647
8.490-9.578	250	Supplied with heaters and thermostat, RT 3 $\mu$ s	<b>BL-651H</b>
8.490-9.578	100	6334 with controlled phase	<b>BL-947</b>
8.490-9.578	200	Operates at +125°C, 6334 with controlled phase	<b>BLT-014</b>
8.490-9.610	150	"Hot-cold" TR, operating temp. range: -55°C to +125°C	<b>7381</b>
8.500-9.600	250	Used with RG51/U guide, in and out	<b>BL-71</b> 6564
8.500-9.600	500	BL-600/6642 with controlled phase, special input flange	<b>BL-998</b>
15.000-17.000	100	Operating temperature to 125°C	<b>BLT-040</b>
15.000-17.000	100	Bandpass, cadmium plated flanges	<b>BL-35</b> 6560
15.500-17.500	100	Bandpass, dual BL-908	<b>BL-907</b>
16.000-17.000	100	Bandpass, cadmium plated flanges	<b>BL-934</b>
16.000-17.000	100	$\pm 3^\circ$ phase control	<b>BL-934A</b>
23.200-24.800	30	For balanced duplexer-operation	<b>BL-645</b>
23.800-24.270	50	For balanced duplexer operation, fast RT	<b>BLT-036</b>
33.500-36.250	20	For balanced duplexer operation	<b>BL-616</b> 6685



## SHUTTER ONLY

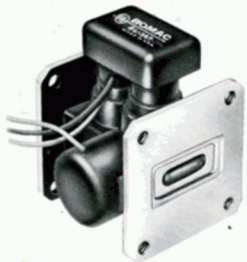


OPERATING FREQUENCY	POWER LEVEL	SHUTTER CIRCUIT VOLTAGE	DESCRIPTION	TYPE NUMBER
Gc	Kw	Vdc		
8.490-9.578	1	28	1B63A outline—shutter only	BL-325
8.490-9.578	1	28	6334 outline	BL-365

## TR & SHUTTER

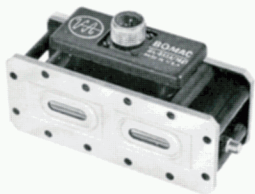


2.664-2.964	750	28	1B58, plus shutter	BL-345
2.900-3.200	750	28	5853, plus shutter	BL-351
3.100-3.500	750	28	5927, plus shutter	BL-329 6602
5.350-5.450	300	28	Shutter circuit uses AN connector	BL-350
5.395-5.905	3000	28	Ceramic window, BL-28 prototype	BL-337
5.395-5.905	300	6	Bandpass, fixed tuned	BL-366
8.490-9.578	250	28	1B63A with shutters	BL-312 6615
8.490-9.578	100	28	BL-95H/6645 with shutters and heaters	BL-338H
8.490-9.578	200	28	6232 with shutter, RG51/U input, RG52/U output	BL-359
8.490-9.600	30	14	Contains one 14-volt coil, plus dropping resistor for 28-volt operation, tunable	BL-313 6565
9.250-9.500	250	28	Shutter and ignitor encapsulated, three lead wires for terminals	BL-367A



## DUAL TR & SHUTTER

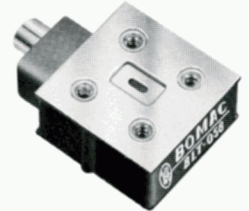
2.700-2.900	750	28	BL-87 with shutter	BL-346
3.400-3.700	750	28	BL-652 with shutter	BL-357
5.400-5.900	700	115(ac)60 ~	Built-in power rectifier, similar to BL-336	BL-362
5.400-5.900	700	28	Contains 12 struts between flanges, terminal board encapsulated, has AN connectors	BL-352A 7447
5.400-5.900	700	28	BL-60/6640 with shutters	BL-336
8.490-9.578	250	28	Tapped holes both flanges, ignitor lead extended through caps	BL-317 6596
8.490-9.578	250	28	RG51/U input, RG52/U output, BL-600/6642 with shutters	BL-327 6601
8.490-9.578	100	28	BL-604H/6647 with shutters and heaters	BL-339H
8.490-9.578	200	28	BL-27/6334 with shutters	BL-392



NEW TUBES  
LISTED  
IN COLOR

## CRYSTAL PROTECTORS

OPERATING FREQUENCY Gc	POWER LEVEL kW (max)	DESCRIPTION	TYPE NUMBER
1.250-1.350	50	Min. firing power 20 watts (peak)	BLS-509
1.250-1.350	10	RT 15 $\mu$ s, used with BL-920	BL-932
1.215-1.365	10	30 $\mu$ s pulse width, recovery time 15 $\mu$ s, phase shift $\pm 5^\circ$ , operating temperature $-28^\circ\text{C}$ to $+65^\circ\text{C}$	BLT-074
2.700-2.900	10	Low firing power 1B58A	BL-670
2.700-2.900	1000	For use with sidewall couplers	BLT-033
5.450-5.825	5	Broadband, low noise figure	BL-971
5.400-5.900	100	TR and shutter, 30 $\mu$ s pulse width	BLT-071
8.500-9.600	100	TR and shutter, 30 $\mu$ s; pulse width, recovery time 15 $\mu$ s; phase shift $\pm 5^\circ$ , operating temperature $-40^\circ\text{C}$ to $+50^\circ\text{C}$	BLT-070
8.500-9.600	10	Crystal protection, used in RG52/U waveguide, $-55^\circ\text{C}$ to $+85^\circ\text{C}$ operating temperature	BL-965
15.0-17.0	10	Overall length 0.450", insertion loss 0.6 db, operating temperature $-55^\circ\text{C}$ to $+100^\circ\text{C}$	BLS-523
16.0-17.0	10	Insertion loss 0.6 db, recovery time 5 $\mu$ s, operating temperature $-55^\circ\text{C}$ to $+85^\circ\text{C}$	BLT-042
16.0-17.0	10	Encapsulated keep alive resistor, recovery time 5 $\mu$ s, operating temperature $-55^\circ\text{C}$ to $+125^\circ\text{C}$	BLT-060
32.9-33.5	10	Insertion loss 0.8 db, recovery time 3 $\mu$ s, operating temperature $-55^\circ\text{C}$ to $+85^\circ\text{C}$	BLT-045
34.5-35.2	10	Insertion loss 0.8 db, recovery time 3 $\mu$ s, operating temperature $-55^\circ\text{C}$ to $+85^\circ\text{C}$	BLT-058
68.75-70.75	3	Insertion loss 0.8 db, recovery time 2 $\mu$ s, operating temperature $-40^\circ\text{C}$ to $+85^\circ\text{C}$	BLS-513



NEW TUBES  
LISTED  
IN COLOR

## REFERENCE CAVITIES



Bomac reference cavities are available in a number of types for a wide variety of applications such as use for secondary frequency standards in radar or beacon receivers.

Both transmission and dual-mode cavities may be furnished as fixed-tuned, multi-channel fixed-tuned (detent), or continuously tuned (calibrated) types. The transmission type finds application in phase-shift-comparator systems. The dual-mode cavities, having two outputs tuned to slightly different frequencies, permit control by use of output voltages from separate crystal detectors. Their use requires less sophisticated circuitry and, at the same time, permits larger frequency ranges.

Representative stock items are listed below; special items are available upon request.

OPERATING FREQUENCY Gc	QL	INSERTION LOSS db	DESCRIPTION	TYPE NUMBER
5.400-5.900	1400	13 max. cavity only	Direct reading tunable dual mode cavity with input transition and attenuator, output attenuators and crystal detectors, calibrated in 0.5 Mc increments	BL-467
5.400-5.900	1400	13 max.	Same as above, but without input transition, attenuator or output crystal detectors or attenuators	BL-476
9.250	1900-2400	4-6	Transmission, copper body, aluminum mounting block, temperature coefficient 0.015 Mc/°C	1Q22
9.280	1900-2400	4-6		1Q23
9.310	1900-2400	4-6		1Q24
9.280	2100	4-6		5846
9.308	2100	4-6		6040
9.312	2100	4-6		6041
The 1Q series shown above may be made to order in the frequency range of 9.230 to 9.330 Gc and with a maximum QL of 3.000 and a corresponding min. IL of 10 db. With relaxed temperature coefficient, the frequency range may be expanded to cover 9,000 to 10,000 Gc.				
9.280	1000-1500	4-8	Small invar transmission cavity with temperature coefficient of 0.006 Mc/°C	1Q26A
9.270	1000-1500	5-8	Small invar transmission cavity with temperature coefficient of 0.006 Mc/°C	6301
9.350	1500-2000	4-8	Small invar transmission cavity with temperature coefficient of 0.006 Mc/°C	6452
*X-band	1950 nominal	5-8	Transmission cavity six-position detent, fixed tuned up to 25 Mc separation. Temperature coefficient 0.009 Mc/°C	BL-468
*X-band	1200-2500	7-13	Dual mode six-position detent, fixed tuned up to 100 Mc separation. Temperature coefficient 0.005 Mc/°C	BL-469

\* Per customer requirements.

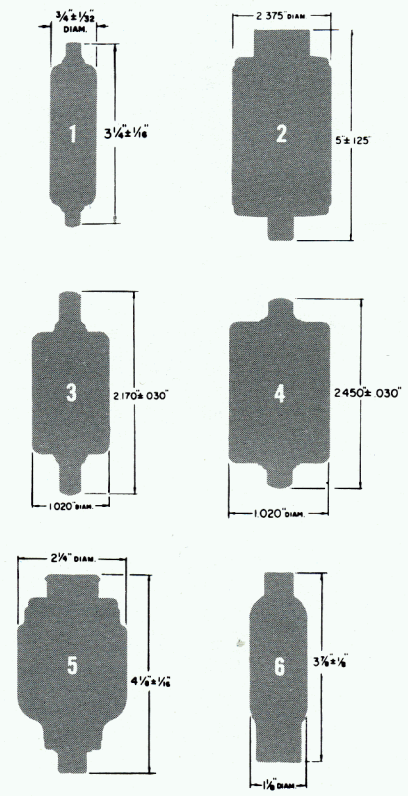
# REFERENCE CAVITIES

OPERATING FREQUENCY Gc	QL	INSERTION LOSS db	DESCRIPTION	TYPE NUMBER
*X-band	90,000 (approx)	"Echo Box"	Dual frequency, fixed tuned, ring time in excess of 20 $\mu$ sec. Difference in ring time between frequencies less than 3 $\mu$ s	BL-471
*X-band	1,000-1,400	8-10	"Plug-in" transmission cavity for quick change of frequency over an 8.500-9.600 Gc range, temperature coefficient 0.006 Mc/°C	BL-472
8.800	1,200-1,800	8 max.	Transmission cavity, fixed tuned, light-weight model temperature coefficient, 0.007 Mc/°C	BL-459
9.280-9.355	1,950 nominal	5-8	Similar to BL-468. Six frequencies 15.0 Mc apart	BL-435
13.3	2,750	6 max.	Small, fixed tuned, transmission cavity, 4 oz.	BL-483
*Ku-band	3,200-4,000	4 max.	Transmission cavity, weight 4 oz., temperature coefficient 0.02 Mc/°C	BL-473
16.280	5,000-8,000	15 max.	Fixed tuned, dual mode cavity, temperature coefficient 0.02 Mc/°C	BL-474
16.230-16.330	5,000-8,000	15 max.	Tunable, dual mode cavity with micrometer calibration, temperature coefficient 0.02 Mc/°C	BL-452

\* Per customer requirements.

# SURGE PROTECTORS

FIG.	BREAKDOWN (Kv)		TYPE NUMBER	FIG.	BREAKDOWN (Kv)		TYPE NUMBER
	min	max			min	max	
1	5	6	BL-745	1	31	40	BLN-003
1	5.5	6.5	BL-752	1	32	35	BL-146
1	6.5	7.5	BLN-005	2	16	18	BL-735
1	7.2	7.7	BL-724	2	19	21	BL-784
1	8.5	10	BL-717	2	23	25	BL-785
1	10.5	12	BL-718	2	39	45	BLN-010
1	11.5	12.6	BL-787	3	1.5	2.5	BL-744
1	14	16	BL-778	3	2.3	3	BLN-006
1	16	18	BLN-001	4	0.2	0.3	BL-779
1	18	20	BL-700	5	6.8	9.9	1B31
1	24	27	BL-716	6	2	3	1B22



## NETWORK SWITCHING TUBE

### APPLICATION and FEATURES

TYPE  
NUMBER

This tube is designed to change pulse forming network connections in radars, 15 kv peak, coil 28 Vdc

**BLN-008**

## IGNITOR POWER SUPPLIES

### APPLICATION and FEATURES

TYPE  
NUMBER



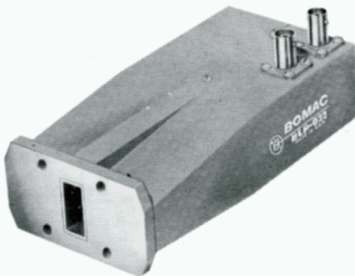
Transistorized ignitor supply, input 28 Vdc (nom), output 750 V at 200  $\mu$ A (nom), miniaturized

**BLN-004**

Ignitor supply, input 115 V—60 cycle AC, output 800 V at 200  $\mu$ A (max.)

**BLN-009A**

## NOISE SOURCES



OPERATING FREQUENCY Gc	NOISE db	OPERATING CURRENT	RECOMMENDED MODE OF OPERATION	TYPE NUMBER
8.200-12.400	15.28 $\pm$ 0.25	200 ma	DC	<b>6357</b>
8.400-12.500	15.28 $\pm$ 0.25	200 ma	DC	<b>BL-721</b>
12.4-18.0	14.5-18.5	115 ma	AC	<b>BLP-033</b>

## RF PACKAGES



OPERATING FREQUENCY Gc	LINE SIZE inches	DESCRIPTION	TYPE NUMBER
5.48-5.62	1.0 x 2.0	Noise figure, 10.5 db, includes: 2 diodes (1N23C) magnetron (BL-244); klystron, TR (6115); duplexer and mixer (BL-46/6639). For AN/SPS-21	<b>BLP-003D</b>
8.5-9.7	0.5 x 1.0	P peak, 250 Kw, includes: balanced duplexer, balanced receiver mixer and balanced AFC mixer	<b>BL-539</b>
15.9-16.9	0.391 x 0.702	P peak, 100 Kw, includes: balanced duplexer, balanced receiver mixer and balanced AFC mixer	<b>BL-557</b>
23.7-24.3	0.25 x 0.5	P peak, 38 to 50 Kw, includes: duplexer, balanced receiver and AFC mixers	<b>BLP-027D</b>



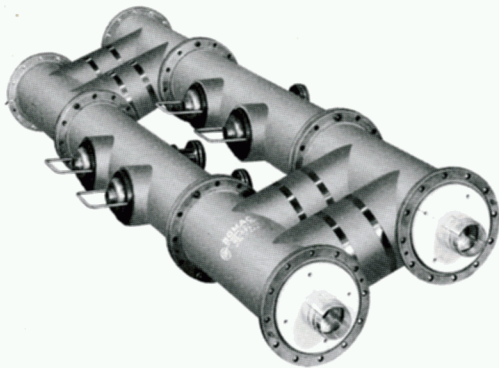


## BOMAC PLUMBING

Bomac manufactures many waveguide components such as phase shifters, power dividers, balanced waveguide duplexers, diplexers, R.F. systems and resonant ring simulators. For special requirements there are directional and bidirectional couplers (both top wall and side wall), waveguide to coaxial adapters with low VSWR, standard mismatches and motor-driven pullers for magnetron testing.

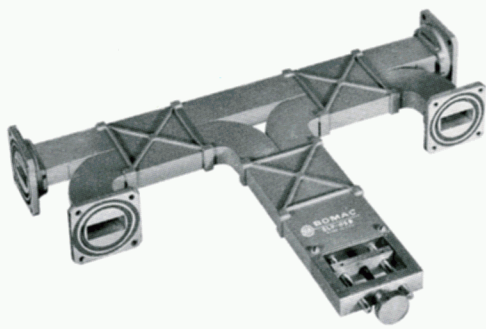
OPERATING FREQUENCY Gc	PRODUCT	LINE SIZE inches	DESCRIPTION	TYPE NUMBER
0.400-0.450	Hybrid	7/8 coaxial	P peak, 200 kw	BL-596
0.400-0.450	Hybrid	3 1/8 coaxial	P peak, 2.0 Mw	BLP-004H
0.400-0.450	Load, dry	1 5/8 coaxial	P peak, 20 kw, P average, 20 w, VSWR 1.2 max.	BL-597
0.406-0.450	Duplexer, branched coaxial line	3 1/8 coaxial	P peak, 3 Mw max., P average, 5 kw max.	BLP-009D
0.406-0.450	Monoplexer	7/8 coaxial	P peak, 30 kw, P average, 50 watts	BLP-010D
0.413 ± 1%	Duplexer	6 1/8 coaxial	P peak, 2.0 Mw, P average, 10 kw, dual balanced	BL-595
0.425	Hybrid	Slabline	3 db coupling "N" and 7/8" coaxial fittings	BLP-012H
1.180-1.220	Duplexer, branch guide	3.41x6.66	P peak, 3 kw, UG60A/U coaxial input and output	BL-506
1.250-1.350	Duplexer, branch guide	3.41x6.66	P peak, 1 Mw, P average, 3 kw, 1 5/8" coaxial input and output	BL-591
1.250-1.350	Duplexer, branch guide	3.41x6.66	P peak, 2 Mw	BLP-005D
2.6-3.4	Power divider, variable	1 1/2x3	P peak, 1.0 Mw unpressurized, 3.0 Mw pressurized	BLP-061
2.6-3.4	Directional coupler, crossguide	1 1/2x3	Incident power, 1.1 Mw, coupling, 20, 30 or 40 db; directivity, 15 db	BLP-066
2.6-3.4	Directional coupler, sidewall	1 1/2x3	Incident power, 2.2 Mw, coupling, 20, 30 or 40 db; directivity, 30 db min.	BLP-071

# MICROWAVE PLUMBING



OPERATING FREQUENCY Gc	PRODUCT	LINE SIZE inches	DESCRIPTION	TYPE NUMBER
2.6-3.4	Directional coupler, topwall	1½x3	Incident power, 1.1 Mw, coupling, 10 or 20 db; directivity, 35 db min.	BLP-076
2.7-2.9	Variable phase shifter	—	P peak, 1.0 Mw unpressurized, 3.0 pressurized	BLP-123
2.72-2.98	Diplexer	1½x3	P peak, 1.0 Mw unpressurized, 3.0 Mw pressurized, insertion loss, 0.3 db max.; isolation, 25 db min.	BL-584
2.84-3.00	Diplexer	1½x3	P peak, 1.0 Mw unpressurized, 3.0 Mw pressurized, insertion loss, 0.3 db max.; isolation, 25 db min.	BL-585
2.98-3.02	Duplexer, branch guide	1½ x 3	P peak, 20 kw, UG46/U coaxial input and output	BL-520
5.2-5.9	Power divider, variable	1 x 2	P peak, 0.6 Mw unpressurized, 3.0 Mw pressurized	BLP-060
5.2-5.9	Diplexer	1 x 2	P peak, 0.9 Mw unpressurized, 3.0 Mw pressurized; isolation, 25 db min.	BLP-087E
5.2-5.9	Transition to coaxial line	1 x 2	Includes N jack, VSWR 1.10 max.	BLP-050T
5.2-5.9	Directional coupler, crossguide	1 x 2	Incident power, 470 Kw, coupling, 20, 30 or 40 db; directivity, 15 db min.	BLP-065
5.2-5.9	Directional coupler, sidewall	1 x 2	Incident power, 940 Kw, coupling, 20, 30 or 40 db; directivity, 30 db min.	BLP-070
5.2-5.9	Directional coupler, topwall	1 x 2	Incident power, 470 Kw, coupling, 10 or 20 db; directivity, 35 db min.	BLP-075
5.25-5.75	Duplexer, balanced	1 x 2	P peak, 1 Mw	BL-594
5.2-6.0	Transition to coaxial line	1 x 2	Includes TNC plug, VSWR 1.10 max.	BLP-049T
5.4-5.9	Transition to coaxial line	1 x 2	Includes Sm plug, VSWR 1.10 max.	BLP-048T
8.3-8.7	Transition to coaxial line	½ x 1	Includes TNC plug, VSWR 1.10 max.	BLP-045T
8.490-9.578	Duplexer, balanced	½ x 1	P peak, 200 Kw max.	BLP-044D
8.490-9.578	Duplexer, balanced	5/8 x 1¼ input ½ x 1 output	P peak, 200 Kw, includes 28V shutter Complete with short-slot hybrids	BL-542
8.5-9.6	Power divider, variable	½ x 1	200 Kw unpressurized, 250 Kw pressurized	BLP-059

NEW TUBES LISTED IN COLOR

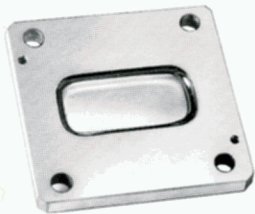


## MICROWAVE PLUMBING

OPERATING FREQUENCY Gc	PRODUCT	LINE SIZE inches	DESCRIPTION	TYPE NUMBER
8.5-9.6	Diplexer	1/2 x 1	Isolation 25 db min., includes termination, 400 Kw (peak) pressurized	BLP-051E
8.5-9.6	Directional coupler, crossguide	1/2 x 1	Incident power, 100 Kw, coupling, 20, 30 or 40 db; directivity, 15 db min.	BLP-063
8.5-9.6	Directional coupler, sidewall	1/2 x 1	Incident power, 200 Kw, coupling, 20, 30 or 40 db; directivity, 30 db min.	BLP-068
8.5-9.6	Directional coupler, topwall	1/2 x 1	Incident power, 100 Kw, coupling, 10 or 20 db; directivity, 35 db min.	BLP-073
8.5-9.6	Power divider, variable	5/8 x 1 1/4	P peak, 350 Kw unpressurized, 1.0 Mw pressurized	BLP-083
8.5-9.6	Diplexer	5/8 x 1 1/4	P peak, 350 Kw unpressurized, 1.0 Mw pressurized; isolation, 25 db min.	BLP-084E
8.5-9.6	Directional coupler, crossguide	5/8 x 1 1/4	Incident power, 175 Kw, coupling, 20, 30 or 40 db; directivity, 15 db min.	BLP-064
8.5-9.6	Directional coupler, sidewall	5/8 x 1 1/4	Incident power, 350 Kw, coupling, 20, 30 or 40 db; directivity, 30 db min.	BLP-069
8.5-9.6	Directional coupler, topwall	5/8 x 1 1/4	Incident power, 175 Kw, coupling, 10 or 20 db; directivity, 35 db min.	BLP-074
8.7-9.1	Transition to coaxial line	1/2 x 1	Includes TNC plug, VSWR 1.10 max.	BLP-046T
9.1-9.5	Transition to coaxial line	1/2 x 1	Includes TNC plug, VSWR 1.10 max.	BLP-047T
16.0-17.0	Directional coupler, crossguide	0.391 x 0.702	Incident power, 60 Kw, coupling, 20, 30 or 40 db; directivity, 15 db min.	BLP-062
16.0-17.0	Directional coupler, sidewall	0.391 x 0.702	Incident power, 120 Kw, coupling, 20, 30 or 40 db; directivity, 30 db min.	BLP-067
16.0-17.0	Directional coupler, topwall	0.391 x 0.702	Incident power, 60 Kw, coupling, 10 or 20 db; directivity, 35 db min.	BLP-072
16.0-17.0	Power divider, variable	0.391 x 0.702	P peak, 120 Kw unpressurized, 240 Kw pressurized	BLP-058
16.0-17.0	Diplexer	0.391 x 0.702	P peak, 120 Kw unpressurized, 240 Kw pressurized; isolation, 25 db min.	BLP-086E
33.50-36.25	Dual TR balanced duplexer with short-slot hybrids	0.112 x 0.224	Integral design with hybrids permanently attached. Power level 20 Kw max.	BL-527
68.75-70.75	Dual TR balanced duplexer with short-slot hybrids	—	Recovery time 2 μs; leakage power 1 Mw; operating temperature -40°C to +85°C	BLP-017D
68.75-70.75	Dual TR balanced duplexer with short-slot hybrids	—	Includes adapter arms to mate with UG-385/U flanges	BLP-136D

NEW TUBES LISTED IN COLOR

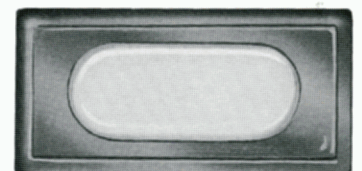
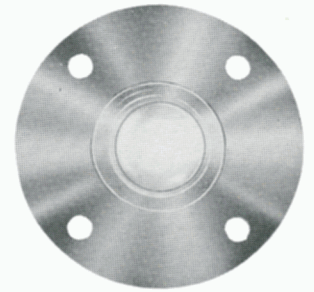
## PRESSURIZING WINDOWS



OPERATING FREQUENCY Gc	VSWR max	PEAK POWER Kw	WAVEGUIDE SIZE RG	MATES WITH UG	MOUNTING	TYPE NUMBER
2.6-3.7	1.20	1000	48/U	54A/U	Flange	BL-713
2.675-2.925	1.10	1000	48/U	—	Solder	BL-124
2.7-2.9	1.20	750	48/U	53/U	Flange	BL-741
2.8-3.2	1.20	1000	48/U	53/U	Flange	BL-712
3.2-3.4	1.10	1000	48/U	—	Solder	BLW-065
—	1.10	1000	48/U	—	Solder	BL-743
4.9-5.1	1.15	100	49/U	—	Solder	BL-704
4.9-5.1	1.15	100	49/U	—	Solder	BL-730
4.9-5.1	1.15	100	49/U	—	Solder	BL-769
5.1-5.32	1.10	100	49/U	—	Solder	BL-141
5.1-5.9	1.25	100	49/U	—	Solder	BL-738
5.25-5.31	1.05	500	49/U	—	Solder	BL-746
5.2-5.9	1.20	75	49/U	—	Solder	BL-134
5.35-5.45	1.12	750	49/U	—	Solder	BL-780
5.45-5.825	1.12	750	49/U	—	Solder	BL-742
6.15-6.85	1.30	100	50/U	—	Solder	BL-123
8.1-12.4	1.15	200	52/U	40A/U	Flange	BLW-026
8.83-9.33	1.10	200	52/U	40/U	Flange	BL-112
8.83-9.33	1.10	200	52/U	40A/U	Flange	BL-117
8.49-9.578	1.12	200	52/U	40A/U	Flange	BL-132
8.49-9.578	1.12	200	51/U	52A/U	Flange	BL-722
8.4-9.6	1.20	200	52/U	—	Solder	BL-794
8.49-9.6	1.15	250	51/U	52A/U	Flange	BL-139
8.5-9.6	1.12	200	52/U	52A/U	Flange	BL-710
8.645-9.555	1.15	200	52/U	40A/U	Flange	BL-122

## PRESSURIZING WINDOWS

OPERATING FREQUENCY Gc	VSWR max	PEAK POWER Kw	WAVEGUIDE SIZE RG	MATES WITH UG	MOUNTING	TYPE NUMBER
8.7-8.9	1.10	200	52/U	40/U	Flange	BL-119
8.85-9.15	1.20	100	52/U	—	Solder	BL-755
8.99-9.21	1.10	150	52/U	—	Solder	BL-789
9.15-9.6	1.10	200	51/U	52A/U	Flange	BL-145
9.2-9.4	1.10	150	52/U	—	Solder	BL-764
9.2-9.42	1.10	150	52/U	—	Solder	BL-114
9.2-9.42	1.10	150	52/U	—	Solder	BL-125
9.21-9.41	1.10	100	51/U	—	Solder	BL-107
9.29-9.51	1.10	150	52/U	—	Solder	BL-788
9.4-9.6	1.20	150	52/U	—	Solder	BL-136
9.6-10.2	1.10	150	52/U	—	Solder	BL-774
10.25-10.50	1.20	7.5 Kw (cw)	51/U	—	Flange	BLW-040
12.4-18.0	1.12	100	91/U	—	Flange	BL-777
12.5-13.5	1.25	50	91/U	—	Solder	BL-711
13.45-13.55	1.10	50	91/U	—	Solder	BL-707
15.0-17.0	1.15	75	91/U	—	Flange	BL-133
15.84-16.16	1.08	100	91/U	—	Flange	BL-144
13.45-13.55	1.10	50	91/U	—	Solder	BL-731
13.48-13.51	1.07	50	91/U	—	Solder	BL-729
15.92-16.08	1.10	50	91/U	—	Solder	BL-143
16.0-16.2	1.10	80	91/U	—	Solder	BL-754
16.3-16.7	1.10	50	91/U	—	Solder	BL-116
23.1-24.9	1.20	50	53/U	—	Solder	BL-715
34.2-34.8	1.15	20	96/U	600/U	Solder	BL-737
34.6-35.2	1.15	20	96/U	600/U	Solder	BL-760



NEW TUBES  
LISTED  
IN COLOR

## ORDERING

Orders are normally placed through the Bomac representative in your area, but may be placed directly with the factory. It is to your advantage to place orders through your Bomac representative . . . by so doing, you can take advantage of a complete local order service. The Bomac type number must be specified when possible.

## SPECIFICATIONS

Bomac tubes are fully specified and copies of the Bomac test specifications, which are usually printed in the same format as used by government services (MIL-E-1), are available upon request. Proper system operation should not depend upon tube characteristics which are not covered by the tube specifications. Bomac guarantees only those characteristics covered in our specifications. If additional specification items are required for your application, please contact your Bomac field representative. Your specifications and/or drawings should be referenced on your order only if approved by Bomac.

## SHIPPING

Air Express and Air Parcel Post are generally recommended for light-weight shipments and will insure careful handling. Truck or rail handling is recommended for large shipments.

## DELIVERY

Delivery schedules vary depending on the tube and quantity ordered. Prompt shipment from stock on orders for small quantities of most standard tube types is general practice. Orders for large quantities require from 90 to 120 days lead time, depending on tube type and size of order.

## RETURNS

Items should be returned to the factory **only** after authorization has been obtained from the factory or your Bomac representative. In requesting authorization, give the Bomac type number, serial number and complete information concerning the reason for return. Items which have exceeded the applicable warranty period should not be returned. A copy of the authorization should be returned with the tube. Allow 30 days for testing and analysis. Adjustments on tubes with manufacturing defects are made on a pro-rata basis, provided the tube has been operated within published limits and is within the warranty period.

## PRICES

All prices are net and are not subject to trade or other discounts. Quantity prices are offered on most standard production items. Multiple orders for a single tube type must be mailed simultaneously in order to qualify for quantity prices.

## TERMS

Payment terms are net 30 days.

## WARRANTIES

All Bomac products are fully tested before shipment and are warranted to perform satisfactorily. Terms are available in a published warranty form. Should any product prove unsatisfactory, please contact your Bomac field representative.

## APPLICATIONS ENGINEERING

A staff of engineers, specially qualified in the application of microwave tubes to modern systems, is available to assist you with your special applications problems. This service is offered not only to the designer of new systems, but to the manufacturer during production and to the end-user of Bomac products.

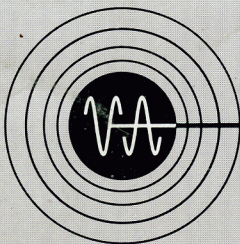
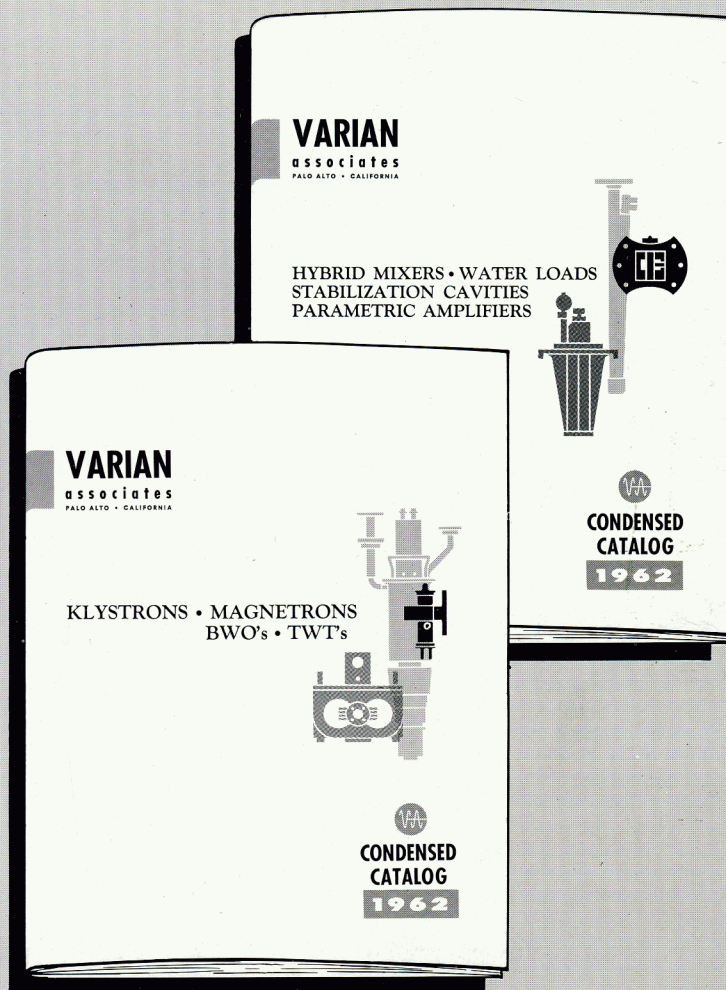
## GENERAL SALES INFORMATION

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				BLT-005	7	BL-600/6642	11	BLT-074	13	BL-557	16	BL-122	20
				BLT-018	7	BL-604/6646	11	<b>Reference Cavities</b>		BLP-003D	16	BL-123	20
				BLT-019	7	BL-604H/		1Q22	14	BLP-027D	16	BL-124	20
				BLT-020	7	6647	11	1Q23	14	<b>Microwave Plumbing</b>		BL-125	21
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BLF-011	5	1B40	7	<b>Gas Switching Pre-TR</b>		BL-616/6685	11	1Q26A	14	BL-520	18	BL-133	21
BLF-012	5	1B50	8			BL-638	11	5846	14	BL-527	19	BL-134	20
BLF-013	5	1B55	8	1B38	9	BL-644	11	6040	14	BL-542	18	BL-136	21
BLF-014	5	1B58A	7	1B54	9	BL-645	11	6041	14	BL-584	18	BL-139	20
BLF-015	5	1B62	7	5939A	9	BL-651H	11	6301	14	BL-585	18	BL-141	20
BLF-016	5	1B63A	8	6260	9	BL-652	11	6452	14	BL-591	17	BL-143	21
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BLF-019	5	724B	8	BL-920	9	BL-934A	11	BL-459	15	BL-596	17	BL-704	20
BLF-020	5	5853	8	BL-954	9	BL-947	11	BL-467	14	BL-597	17	BL-707	21
BLF-021	5	5863	8	BL-962	9	BL-998	11	BL-468	14	BLP-004H	17	BL-710	20
BLF-022	5	5865	8	BL-982	9	BLT-014	11	BL-469	14	BLP-005D	17	BL-711	21
BLF-023	5	5925	8	BL-997	9	BLT-036	11	BL-471	15	BLP-009D	17	BL-712	20
BLF-024	5	5927	8	BLW-005	9	BLT-040	11	BL-472	15	BLP-010D	17	BL-713	20
BLF-025	5	6117	7	<b>Gas Switching ATR</b>		<b>Shutter Only</b>		BL-473	15	BLP-012H	17	BL-715	21
BLF-026	5	6232	8			BL-325	12	BL-474	15	BLP-017D	19	BL-722	20
BLF-027	5	6624	8	1B36	10	BL-365	12	BL-476	14	BLP-044D	18	BL-729	21
BLF-028	5	6795	8	1B44	10	<b>TR &amp; Shutter</b>		BL-483	15	BLP-045T	18	BL-730	20
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BLF-030	5	BL-16	9	1B52	10	BL-313/6565	12	1B22	15	BLP-047T	19	BL-737	21
BLF-031	5	BL-25/6322	7	1B53	10	BL-329/6602	12	1B31	15	BLP-048T	18	BL-738	20
BLF-032	5	BL-28/6568	8	1B56	10	BL-337	12	BL-146	15	BLP-049T	18	BL-741	20
BLF-033	5	BL-29	9	1B57	10	BL-338H	12	BL-700	15	BLP-050T	18	BL-742	20
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		BL-62/6378	8	6022	10	BL-366	12	BL-735	15	BLP-061	17	BL-760	21
BLF-301	6	BL-67/6650	9	6024	10	BL-367A	12	BL-744	15	BLP-062	19	BL-764	21
BLF-302	6	BL-95/6644	8	6081	10	<b>Dual TR &amp; Shutter</b>		BL-745	15	BLP-063	19	BL-769	20
BLF-303	6	BL-95A	8	6396	10	BL-317/6596	12	BL-752	15	BLP-064	19	BL-774	21
BLF-304	6	BL-95H/6645	8	6591	10	BL-327/6601	12	BL-778	15	BLP-065	18	BL-777	21
BLF-305	6	BL-605	8	BL-15	10	BL-336	12	BL-779	15	BLP-066	17	BL-780	20
BLF-306	6	BL-621	9	BL-41	10	BL-339H	12	BL-784	15	BLP-067	19	BL-788	21
BLF-307	6	BL-622	7	BL-43/6304	10	BL-346	12	BL-785	15	BLP-068	19	BL-789	21
BLF-308	6	BL-643/6906	8	BL-54/6629	10	BL-352A/		BL-787	15	BLP-069	19	BL-794	20
		BL-690	7	BL-55/6630	10	7447	12	BLN-001	15	BLP-070	18	BLW-026	20
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In addition to the tubes described in this Catalog, Varian Associates manufactures many other products. Two additional 1962 microwave catalogs are now available and can be obtained from any Varian Sales Office, Representative or direct from the home offices. Send for your copies today.

For information on other products manufactured in Palo Alto, California, such as NMR and EPR Spectrometers, Magnetometers, Frequency Standards, Electromagnet Systems, and Graphic Recorders, contact Varian Instrument Division. ■ For Linear Accelerators, Power Amplifiers, and Power Supplies, contact Radiation Division. ■ For Vaclon® Pumps, Leak Detectors, and High Vacuum Systems, contact the Vacuum Products Division.



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