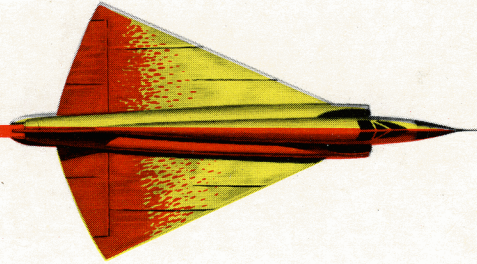
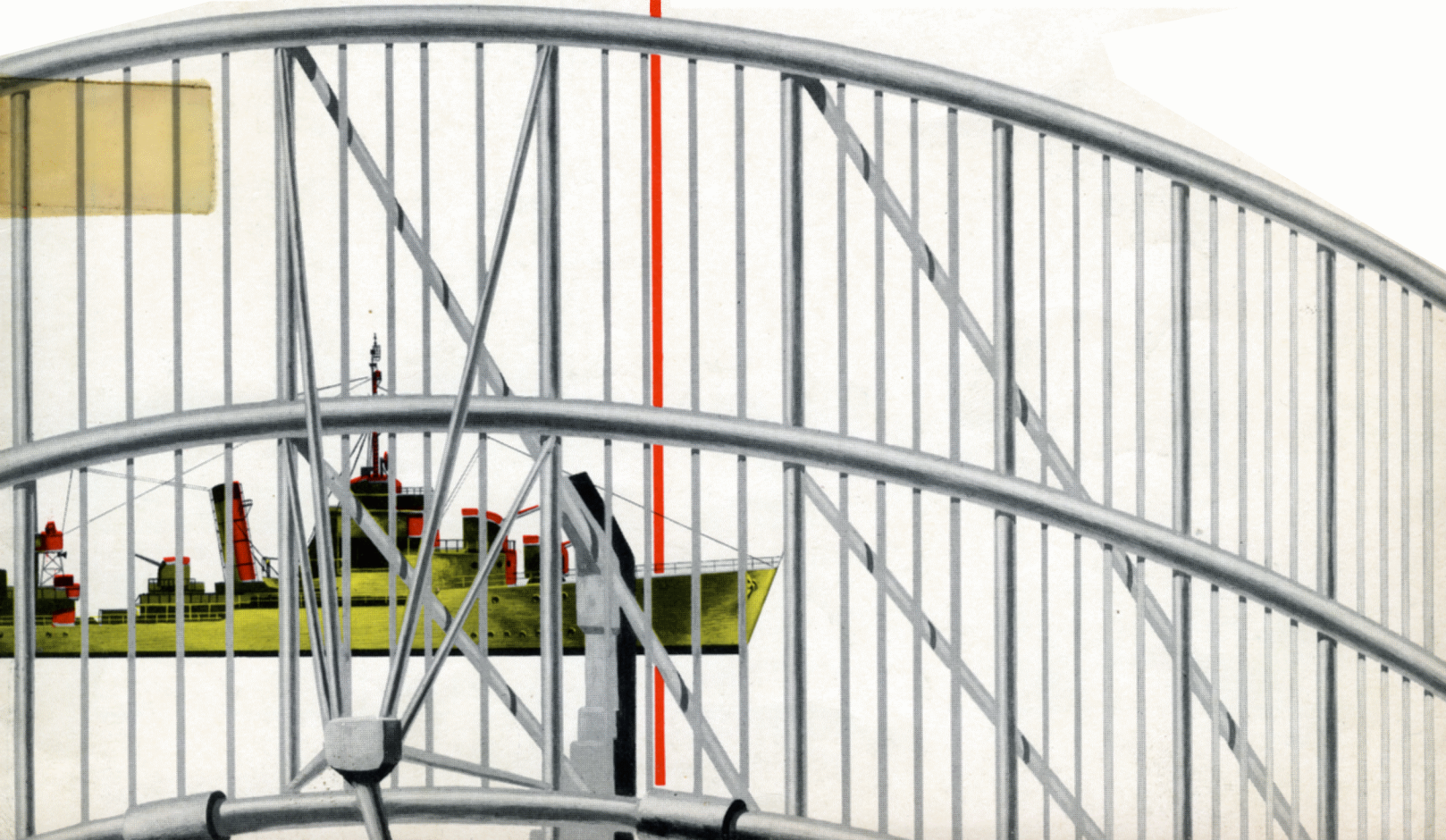


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microwave . . . . **TUBES AND COMPONENTS**









# for maximum uniformity and

## DUAL and TRIPLE TR and ATR TUBES

Band and Type	Tube Designation	Range	Frequency Center	Power Level (KW Max.)	Description
L TR	6634/BL90	1215-1355	1285	2000	Dual Band Pass
L TR	BL618	1220-1365	1292	2000	Dual 6633/BL37 for Sidewall Coupler 150 $\mu$ sec R. T.
L TR	BL626	1220-1365	1292	5000	Dual Band Pass
S TR	BL638	2900-3100	3050	750	Dual 5853, Fixed-Tuned
S TR	6636/BL87	2700-2900	2800	750	Dual Band Pass
S ATR	BL92	2650-2950	2800	750	Dual
C TR	6640/BL60	5400-5900	5650	700	Dual Band Pass
C TR	BL613	5400-5900	5650	3000	BL60 with Ceramic Windows
X TR	6334/BL27	8490-9578	9000	200	Dual 1B63A
X TR	6501	8500-9600	9050	250	Dual 5 Element for Large X Guide
X TR	6564/BL71	8500-9600	9050	500	Dual 4 Element for Large X Guide
X TR	6642/BL600	8490-9578	9000	500	6334/BL27 with Large X In and Small X Out
X TR	6643/BL81	8490-9578	9000	200	6334/BL27 plus Separate Channel 1B63A for Local Oscillator
X TR	6646/BL604	8490-9578	9000	200	Dual 1B63A, 2 $\mu$ sec R. T.
X TR	6647/BL604-H	8490-9578	9000	200	6646/BL604 with Heater
X TR	6648/BL615	8490-9578	9000	200	6334/BL27 with Special Saddle-Type Flange
X TR	BL78	8490-9578	9000	200	6334/BL27 with Tapped Flanges both Ends
X TR	BL607	8490-9578	9000	200	6334/BL27, Special Hole Dimension for Aluminum Flange
X TR	BL624	8490-9578	9000	200	6334/BL27, 11/64" Flanges and 4 Mounting Holes
X TR	BL625	8490-9578	9000	200	6648/BL615, Special Encapsulated Ignitor Structure
X TR	BL631	8490-9578	9000	500	6642/BL600, Large X in Small X Out, Heavy Flanges
X TR	BL636	8490-9578	9000	1000	6642/BL600 Prototype for Higher Power
Ku TR	6560/BL35	15000-17000	16000	100	Dual Band Pass
Ka TR	6685/BL616	33500-36250	34875	100	Dual Band Pass, Single Ignitor

## PRESSURIZING WINDOWS

Tube Designation	Band	Frequency	Wave-Guide Size	Type Mounting	Description
BL105	X	9375	51/u	Choke	Round, Plated, 4 Mounting Holes
BL106	X	9245	52/u	Choke	Round, Plated, 4 Mounting Holes
BL107	X	9310	51/u	Solder	Oval, Kovar Finish
BL112	X	9080	52/u	Choke	Round, Plated
BL114	X	9310	52/u	Solder	Oval, Kovar Finish
BL116	Ku	16500	91/u	Solder	Oval, Kovar Finish
BL117	X	9080	52/u	Choke	Round, Plated
BL119	X	8800	52/u	Choke	Round, Plated
BL122	X	9100	52/u	Choke	Round, Plated, 4 Mounting Holes
BL123	Xb	6500	50/u	Solder	Oval, Kovar Finish
BL124	S	2800	48/u	Solder	Oval, Kovar Finish
BL125	X	9310	52/u	Solder	Oval, Kovar Finish, 0.3db loss
BL126	X	9250-9405	48/u	Solder	Round, Plated, Tapered at Edge
BL127	S		48/u	Solder	Viewing, Optically Clear
BL132	X	8500-9600	52/u	Choke	Mica, Rectangular, Plated 4 Mounting Holes
BL133	Ku	15000-17000	91/u	Choke	Mica, Rectangular, Plated 4 Mtg Holes
BL134	C	5550	50/u	Solder	Oval, Kovar Finish
BL135					Pressure viewing, 1" iris, Deep Drawn Cup
BL136	X	9500	52/u	Solder	BL114 Centered 9500 $\pm$ 100 mcs
BL139	X	9100	51/u	Choke	Round, Plated, 4 Mounting Holes
BL140	Ku	16000	91/u	Solder	Round, Plated
BL141	C	5350	49/u	Solder	Oval, Kovar Finish
BL143	Ku	16000	91/u	Solder	Oval, Kovar Finish
BL144	Ku	16000	91/u	Choke	Oval, 100 kw Power Handling
BL145	X	9375	52/u	Choke	Round, Plated, 4 Mounting Holes
BL704	C	5000	49/u	Solder	1.15 Maximum VSWR
BL705					Special for BL528
BL707	Ku	13500	91/u	Solder	1.3 Maximum VSWR, 200 Watts Peak
BL709	X	9050	51/u	Solder	Rectangular Kovar Finish
BL710	X	9050	52/u	Choke	Modified BL132
BL711	Ku	12500-13500	91/u	Solder	1.10 VSWR
BL712	S	3000	48/u	Solder	Rectangular 1.2 VSWR Maximum $\pm$ 200Mc
BL713	S	3000	48/u	Choke	Round 1.2 VSWR Maximum 200Mc
BL715	K	24000	53/u	Solder	Round
BL719	X	8200-12400	52/u		Mica, 1.08 VSWR

## SPARK GAP TUBES

Tube Designation	Description
1B31	Spark Gap Modulator-Breakdown Voltage 6.8-9.9 KV
1B41	Series Gap Modulator-Breakdown Voltage 8.7-10.2 KV
1B45	Series Gap Modulator-Breakdown Voltage 14.5-16.5 KV

## SURGE PROTECTORS

Tube Designation	Description
BL121	Spark Gap Voltage Control Tube 2.0-2.4 KV
BL137	Modified BL121, 2000 Volts
BL142	Protective Gas Device 3000-4000 Volts
BL146	Special Protective Gas Diode 33000 Volts
BL147	Special BL146, 200-300 Volts
BL700	Special BL146 for 19 $\pm$ 1 KV operation
BL702	Special BL146 for 19 $\pm$ 1KV operation, 1/2" Length
BL703	Special BL137, 2300-2700 Volts
BL706	Special BL137, 100 Volts Hold-off
BL714	Special BL146, 27000 Volts Breakdown, 18000 Hold-off
BL716	Special BL146, 24000-27000 Volts Breakdown
BL717	Special BL700, 8500 Volts Minimum, 10,000 Volts Maximum
BL718	Special BL700, 10500 Volts Minimum, 12000 Volts Maximum
BL724	Special BL700, 7.2 KV Minimum, 7.7 KV Maximum

## SILICON DIODES

Tube Designation	Band	Frequency	Max. Conv. Loss (db)	Noise Ratio	Max. VSWR	IF Impedance (ohms)
IN21B	S	3060	6.5	2.0	—	—
IN21BR	S	3060	6.5	2.0	—	—
IN21C	S	3060	5.5	1.5	—	—
IN21CR	S	3060	5.5	1.5	—	—
IN23B	X	9375	6.5	2.7	—	—
IN23BR	X	9375	6.5	2.7	—	—
IN23C	X	9375	6.0	2.0	1.50	325-475
IN23CR	X	9375	6.0	2.0	1.50	325-475
IN23D	X	9375	5.0	1.7	1.30	350-450
IN23DR	X	9375	5.0	1.7	1.30	350-450
IN53	Ka	34860	8.5	2.5	1.60	400-800
IN78	Ku	16000	7.5	2.5	—	325-625
IN149	X	9375	5.5	1.5	1.50	325-475

The 1N415 and 1N416 series reversible diodes are interchangeable with the 1N21 and 1N 23 series.

## MAGNETRON TUBES

Tube Designation	Description
5780	X Band, Tunable, 250 KW
6551	K Band, Fixed-Tuned, 40 KW, 24000 Mcs
BL50	Millimeter Wave Length, Fixed-Tuned, Frequency Ranges between 5.3 and 5.8 mm
BL202	BL50, Not Packaged, 5.0 mm $\pm$ 5%
BL212	Miniature Tunable C Band, 100 Watts Peak Pulse Power, Medium Shock and Spin Requirements
BL215	Miniature C Band, 400 W Peak Pulse Power, High Shock Requirements

## REFERENCE CAVITIES

Tube Designation	Resonant Frequency	Loaded	Insertion Loss (db)
5846	9280	2150	4-6
6040	9308	2150	4-6
6041	9312	2150	4-6
6301	9270	1250	5-8
6452	9350	1750	4-6
1Q22	9250	2150	4-6
1Q23	9280	2150	4-6
1Q24	9310	2150	4-6
1Q26A	9280	1250	5-8
BL414	11000	2150	4-6
BL415	9400	2150	4-6
BL420	9790	Dual Mode for Discriminator	—
BL422	9270	2150	4-6



# peak performance

## BOMAC SHUTTER TUBES

Band	Tube Designation	Frequency	Power Level (KW Max.)	Shutter Circuit Voltage	Description
X	6565/BL313	8490-9600	100	14 Vdc	Shutter and TR, 6378 Outline
K	6588/BL315	23700-24300	1	14 Vdc	Shutter only, 6282 Outline
X	BL307	8490-9578	200	28 Vdc	Dual Shutter and TR, 6334 Outline
C	6592/BL309	5200-5530	1000	28 Vdc	Shutter and TR, 5925 Outline
X	6593/BL310	8490-9560	1000	28 Vdc	Shutter and TR, BL82 Outline
C	6594/BL311	5395-5905	1000	28 Vdc	Shutter and TR, 5865 Outline
X	6595/BL316	8490-9600	100	3V(ac-dc)	Shutter and TR, 6378 Outline
X	6596/BL317	8490-9578	250	28 Vdc	Dual Shutter and TR, 6334 Outline
X	6597/BL320	8490-9578	250	6V(ac-dc)	Shutter and TR, 1B63A Outline
X	6599/BL322	8490-9578	250	6V(ac-dc)	Shutter and TR, 6334 Tapped Flange Both Ends
X	6600/BL323	8490-9600	1	6V(ac-dc)	Shutter Only, 6378 Outline
X	6601/BL327	8490-9578	250	17-30 Vdc	Dual Shutter and TR, Large X Flange In, Small X Flange Out
S	6602/BL329	3100-3500	750	17-30 Vdc	Shutter and TR, 5927 Outline
Ku	6603/BL330	15000-17000	1	28 Vdc	Shutter Only, BL35 Outline
X	6604/BL509	8490-9578	250	28 Vdc	Duplexer and Shutter, BL507 Outline
X	6613/BL324	8490-9578	250	28 Vdc	Dual Shutter and TR, Short Ignitor Electrode
X	6614/BL314	8490-9578	250	28 Vdc	Shutter and TR, 1B63A with Self-Locking Shutter
X	6615/BL312	8490-9578	250	28 Vdc	Shutter and TR, 1B63A Outline
X	6616/BL326	8490-9578	250	17-30 Vdc	6616/BL326 with 28V Heater and Thermostat
X	BL325	8490-9578	1	28 Vdc	Low Power Shutter only, Band Pass, 1B63A Outline
X	BL331	8490-9578	250	28 Vdc	Dual Shutter and TR, 15 $\mu$ sec. RT. at 3db
X	BL334	8490-9600	1	28 Vdc	Shutter Only, 6378 Outline
X	BL335	8490-9578	500	17-30 Vdc	6601/BL327 Dual TR and Shutter, 9-10 $\mu$ sec RT, K. A. Resistor and Leads Encapsulated
C	BL336	5400-5900	700	28 Vdc	BL60 with Shutter, Dual TR
C	BL337	5395-5905	3000	28 Vdc	BL28 with Shutter
X	BL338	8490-9578	100	28 Vdc	6645/BL95H with Shutter
X	BL339	8490-9578	200	28 Vdc	6647/BL604H with Shutter
X	BL340	8490-9578	250	17-30 Vdc	6616/BL326 Prototype with Opposed Coils
X	BL340H	8490-9578	250	17-30 Vdc	BL340H with Heater
X	BL341	8490-9578	500	24-32 Vdc	BL327 with Magnet Coils of BL312
X	BL344	8490-9578	200	28 Vdc	Dual TR and Shutter, BL307 Prototype, Saddle Type Flange, BL615 Electrical Characteristics
S	BL345	2600-3000	750	17-32 Vdc	1B58 with Shutters
S	BL346	2600-3000	750	17-32 Vdc	Dual TR (BL87) with Shutters
X	BL347	8490-9600	100	6V(ac-dc)	Shutter and TR, 6378 Outline

## REFLEX KLYSTRON TUBES

Tube Designation	Frequency	Resonator Potential DC Volts	Power Output Milliwatts		Type of Tuning
			Min.	Max.	
6780/BL800	8500-10000	300	25	100	Mechanical (Capacitive)
6781/BL800A	8500-10000	300	35	125	Improved Power and Frequency Pulling
BL801	8500-10000	300	25	100	Integral Tunable External Cavity

## EQUIPMENT AND PLUMBING

Band	Tube Designation	Description
X	BL500	K. A. Power Supply, 750 Volts
S	BL507	Complete Dual Hybrid Duplexer
X	BL508	Hybrid
X	6604/BL509	Complete Duplexer and 28 Vdc Shutter
X	BL510	Complete Duplexer with BL307 Shutter
X	BL514	Hybrid with Mating Flanges
X	BL515	Modified BL507
X	BL516	Large X, Complete Duplexer
X	BL517	Large X Hybrids with Mating Flanges
Ku	BL522	Complete Duplexer System with AFC and Mixers
X	BL523	Large X Hybrid
Ku	BL525	Hybrid
Ka	BL526	Hybrid
Ka	BL527	Duplexer
X	BL528	Antenna
X	BL529	ATR Duplexer
X	BL530	Balanced Mixer
C	BL532	Hybrid
X	BL533	Hybrid with Arms
X	BL534	Hybrid
X	BL535	Large X Hybrid
L	BL536	Duplexer
S	BL537	Adaptors for use with BL508
X	BL538	Large X Hybrids with Mating Flanges Both Ends
X	BL539	Duplexer
X	BL542	Duplexer, Large X Input and BL327 Shutter Tube
X	BL543	Discriminator, Center Frequency 9150 Mc, Q = 2000

## HYDROGEN THYRATRONS

Tube Designation	Peak Anode Voltage (KW Max.)	Peak Anode Current (Amps Max.)	Average Anode Current (Ma Max.)	Peak Trigger Voltage (Volts Min.)	Description
1258	1.0	20	50	175	
3C45	3.0	35	45	175	
3C45W					Ruggedized 3C45 High Altitude
6130	3.0	35	45	175	
5959/E41	8.0	35	45	175	
4C35	8.0	90	100	175	
5957/E37	8.0	83	100	175	
E37A	8.0	83	100	175	Base Pin Connectors Top Cap
5C22	16.0	325	200	200	
HT415	16.0	325	200	200	Low Jitter 5C22
BL253	3.0	35	45	175	Miniaturized 3C45
BL254	8.0	90	100	175	Low Jitter 4C35
BL255	3.0	35	45	175	3 Pillar Stem
BL262	8.0	83	100	175	3" Fibre Glass Insulated Leads
4C35A	8.0	90	100	175	Low Jitter 4C35

## TRAVELING WAVE AMPLIFIER TUBES

Tube Designation	Frequency	Saturation Power Output	Gain at Max. Power Output	Small Signal Power Gain	Saturation Gain
6651/BL850	2100-3500	1 Kw	20 db	30-41 db	25-32db
BL851	Similar to BL850 with Control Grid Requiring 350 Volts for Cut Off and Power Output of 800 W				

We invite your inquiries regarding **ENGINEERING DEVELOPMENT PRODUCTION**

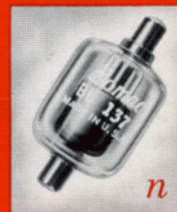
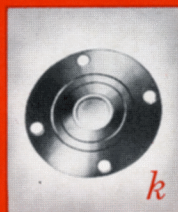
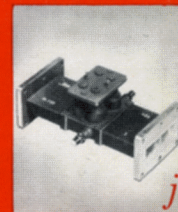
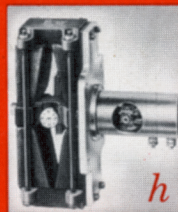
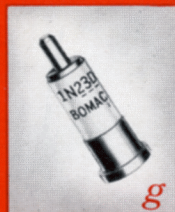
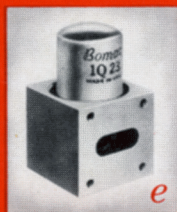
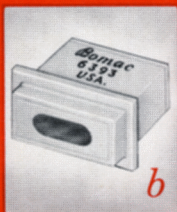
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**LABORATORIES, INC.**  
Beverly, Massachusetts

The above is a partial list of products — other types will be supplied on request.



*a* TR  
*b* ATR  
*c* pre-TR  
*d* shutters  
*e* reference cavities  
*f* thyratrons  
*g* diodes  
*h* magnetrons  
*i* klystrons  
*j* duplexers  
*k* pressurizing windows  
*l* traveling wave  
*m* systems  
*n* surge protectors



Bomac Laboratories, Inc., is one of the country's largest designers and manufacturers of microwave tubes and components. We offer a complete line of products plus a complete engineering and development service. Whatever your needs — a tube or component in production, a modification, or a completely new product — Bomac is able to meet your most exacting requirements.



**B**omac Laboratories, Inc., has a phenomenal record of growth and achievement. It was founded in 1947 and operated in small rented quarters by a staff of eight men. Today Bomac employs over 500 people, and has over 65,000 square feet of modern building space. On the staff are some of the country's leading microwave tube specialists whose records of achievements are outstanding in the industry. The facilities are the most up-to-date in the country and include research and development laboratories, large space for manufacturing and assembly work, and the most advanced test equipment. Every tube, before leaving the plant, is thoroughly tested to insure maximum uniformity and peak performance. Bomac has been a pioneer in many tube developments, and is continually searching for and producing new and improved products. If you have a problem in the engineering, development, or production of microwave tubes or components, Bomac has the experience and facilities to find the answer.



**Bomac**

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*Beverly, Massachusetts*

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