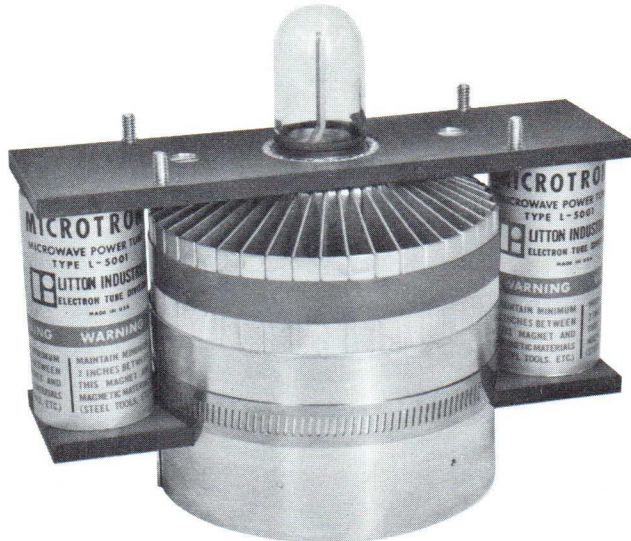


# MICROTRON<sup>®</sup>

microwave power source

## L-5001 CW MAGNETRON



Litton Industries Electron Tube Division offers a variety of CW magnetrons and associated transformers for microwave heating and cooking applications.

The L-5001 is a versatile medium voltage magnetron which can be operated at minimum levels of 1200, 1000, 850 or 650 watts of CW power at 2450 megacycles. The tube has a permanent magnet, is forced air cooled, lightweight and has been designed for ease of mounting and accessibility.

### MECHANICAL DATA

Physical Dimensions	See Outline Drawing
Mounting Position	Cathode Vertical
Weight (Tube Permanent Magnet)	Approx. 7.0 lbs.
Cooling	Forced Air
Air Volume	0.1 cfm/watt nom.
Pressure Drop	See Chart
Inlet Air Temperature	40°C Max.
RF Coupling	Waveguide
Magnetic Field	Permanent Magnet
Anode Temperature	150°C Max.
Cathode Seal Temperature	170°C Max.
Cathode Seal Cooling	Provided in Filter Box

### ELECTRICAL DATA

#### 1200\* Watt Operation (220 V, 14 A System)

Design Ratings	Min.	Avg.	Max.	Units
Heater—Directly heated				
surge current	.....	.....	80	amps
Warmup Time	.....	3	6	sec.
Voltage Standby	4.2	4.6	5.0	volts
Voltage Operate	3.2	3.6	4.0	volts
Current-Standby	.....	20.0	.....	amps
Anode Voltage (Peak)	3.45	3.55	3.65	kv
Anode Current—1200 Watts (Typical Cavity)	.....	725	750	mA
Frequency	2420	2450	2480	Mc
Power Output Flat Load, Note 1	.....	1700	.....	watts
Power Output—Oven Cavity, Note 2	1100	1200*	.....	watts
Mode Boundary, Note 3	1.3	.....	.....	amps

#### 1000\* Watt Operation (220 V, 12 A System)

Design Ratings	Min.	Avg.	Max.	Units
Heater—Directly heated				
surge current	.....	.....	80	amps
Warmup Time	.....	3	6	sec.
Voltage Standby	4.2	4.6	5.0	volts
Voltage Operate	.....	TBS	.....	volts
Current-Standby	.....	20.0	.....	amps
Anode Voltage (Peak)	3.45	3.55	3.65	kv
Anode Current—1000 Watts (Typical Cavity)	.....	625	650	mA
Frequency	2420	2450	2480	Mc
Power Output Flat Load, Note 1	.....	1475	.....	watts
Power Output—Oven Cavity, Note 2	900	1000*	.....	watts
Mode Boundary, Note 3	1.3	.....	.....	amps

#### 850\* Watt Operation (110 V, 20 A System)

Design Ratings	Min.	Avg.	Max.	Units
Heater—Directly heated				
surge current	.....	.....	80	amps
Warmup Time	.....	3	5	sec.
Voltage Standby and Operate	4.2	4.6	5.0	volts
Current	.....	20.0	.....	amps
Anode Voltage (Peak)	3.4	3.5	3.6	kv
Anode Current—850 Watts (Typical Cavity)	.....	550	575	mA
Frequency	2420	2450	2480	Mc
Power Output Flat Load, Note 1	.....	1300	.....	watts
Power Output—Oven Cavity, Note 2	750	850*	.....	watts
Mode Boundary, Note 3	1.3	.....	.....	amps

#### 650\* Watt Operation (110 V, 15 A System)

Design Ratings	Min.	Avg.	Max.	Units
Heater—Directly heated				
surge current	.....	.....	80	amps
Warmup Time	.....	3	5	sec.
Voltage Standby and Operate	4.2	4.6	5.0	volts
Current	.....	20.0	.....	amps
Anode Voltage (Peak)	3.4	3.5	3.6	kv
Anode Current—650 Watts (Typical Cavity)	.....	400	425	mA
Frequency	2420	2450	2480	Mc
Power Output Flat Load, Note 1	.....	950	.....	watts
Power Output—Oven Cavity, Note 2	550	650*	.....	watts
Mode Boundary, Note 3	1.3	.....	.....	amps

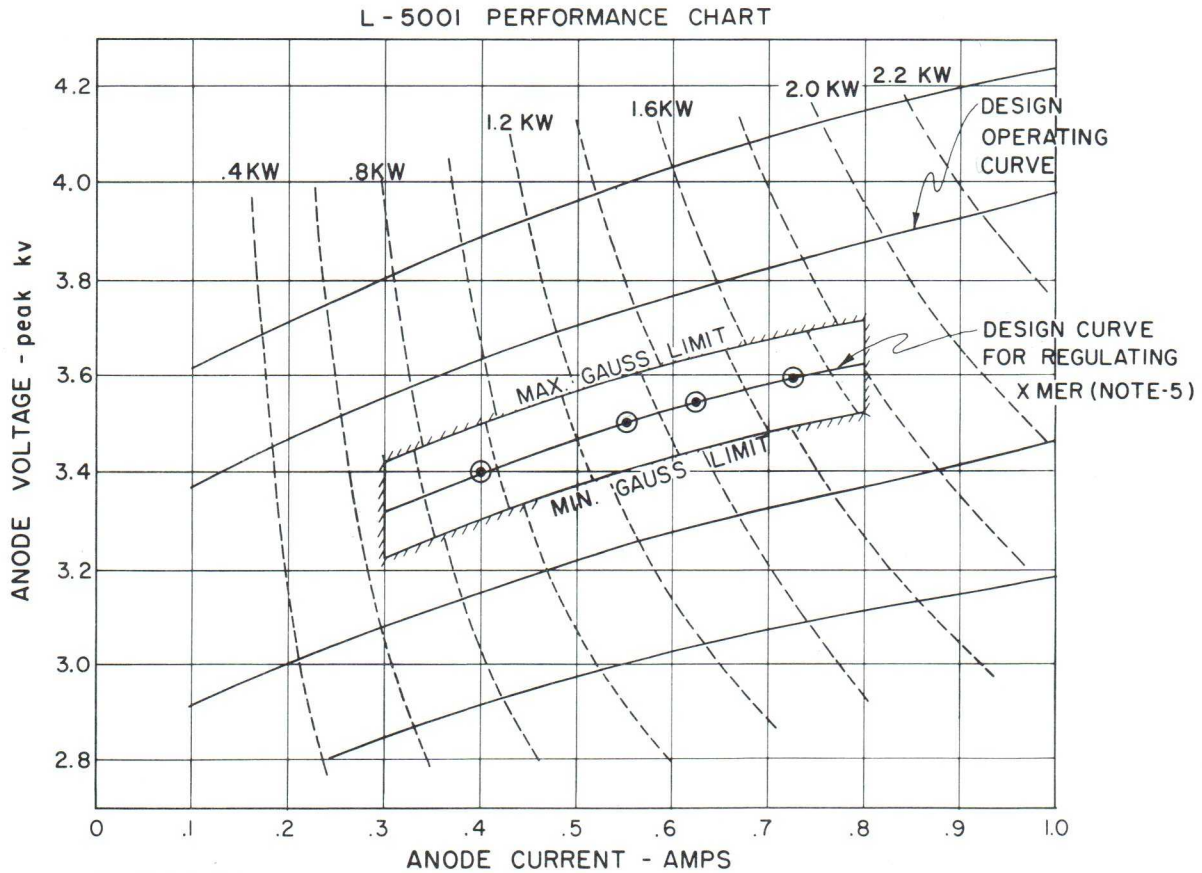
Note 1: Load VSWR 1.1:1 maximum. Power measured at average rated current.

Note 2: Typical coupling to oven 70% of flat load. Power measured at average rated current.

Note 3: No moding at minimum specified current in an approved oven design. (Momentary operation—5 sec. max.)

\*Nominal oven rating. Power rating can be increased by reducing VSWR and increasing cavity coupling factor.

# L-5001 PERFORMANCE DATA



**CONDITIONS:**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>(1) FLAT LOAD 1.1:1 MAX. VSWR.</li> <li>(2) PERMANENT MAGNET</li> <li>(3) ANODE SUPPLY - FULL WAVE, NO FILTER.</li> <li>(4) <math>\zeta_{pk} \approx 3.5 \times I_b</math></li> </ul> | <ul style="list-style-type: none"> <li>(5) INSET AREA APPLIES WITH HIGH IMPEDANCE CURRENT REGULATING TRANSFORMERS <math>\zeta_b \approx 2 \times I_b</math></li> <li>⊙ TRANSFORMER DESIGN POINTS SEE MANUFACTURER FOR SPECIFIC APPLICATION.</li> </ul> |
|--|--|

**L - 5001 RIEKE DIAGRAM**  
( 1.3 KW )

**TEST CONDITIONS:**

- 1. ANODE SUPPLY - RECTIFIED A.C.
- 2. ANODE CURRENT - 550 mA AVERAGE (1.2 A PK)
- 3. ANODE VOLTAGE - 3.5 KV PEAK
- 4. ANODE REGULATION - CURRENT REGULATING TRANSFORMER

