

MICROTRON[®]

microwave power source

L-3189 CW MAGNETRON



Litton Industries Electron Tube Division offers a variety of CW magnetrons and complete power packages for microwave heating and cooking applications.

The L-3189 provides 1000 watts of CW power at 2450 megacycles. The tube is liquid cooled. Other similar magnetrons are available at other power levels in both liquid and air cooled as well as permanent magnet design.

ELECTRICAL DATA

Design Ratings	Conditions	Min.	Nom.	Max.	Units
Heater—Thoriated Tungsten					
Cold Resistance		....	0.04	....	ohms
Surge Current		....	82	....	amps
Warm-up Time		7.5	8.0	....	sec.
Preheat Voltage		4.8	5.0	5.2	volts
Operate Voltage		4.8	5.0	5.2	volts
Current	Note 1	15.5	16.0	17.0	amps
Anode Voltage Peak	Note 2	....	7.0	....	kv
Anode Current—Avg	Note 2, 3	....	300	325	mA
Anode Current—Peak	Note 2	....	2.2	....	amps
Frequency	Note 4	2420	2450	2470	Mc
Power Output Flat Load (Load VSWR=1.1:1 Max.)		....	1350	....	watts
Power Output—Oven	Note 3	892	927	962	watts
Mode Boundary No Load	Note 5	350	....	....	mA
Mode Boundary With Load	Note 5	350	....	....	mA
Shelf Test	Note 6	1.0	....	....	year
Life Test	Note 7	500	....	....	hours

Note 1: The filament current shall be measured with a filament voltage (E_f)=5.0 volts.

Note 2: Tested in an approved oven design operated half-wave at rated transformer tap voltage of 208, 224 or 240 volts.

Note 3: Power output shall be determined in the cooking enclosure of an approved oven design by observing the temperature rise in a 1 liter Pyrex beaker of water centrally located.

$$P_o = 35 \times \Delta T^\circ \text{C (for 2 minutes)}$$

The high tap on the power transformer is used and the anode current is adjusted to a value necessary to obtain nominal value of 927 watts, to be measured within $\pm 1^\circ \text{C}$.

Note 4: Frequency must be under power output test conditions (Note 3) and will be designated as the mean value of the maximum and minimum frequency observed by manually rotating the mode stirrer.

Note 5: Both the starting mode and normal mode boundary shall be greater than 350 mA.

Note 6: The tube must be capable of "snap-on" operation without aging.

Note 7: The tube must meet the following life objectives:

- 500 plate hours min.
- 20,000 plate cycles min.
- 4,000 filament cycles min.

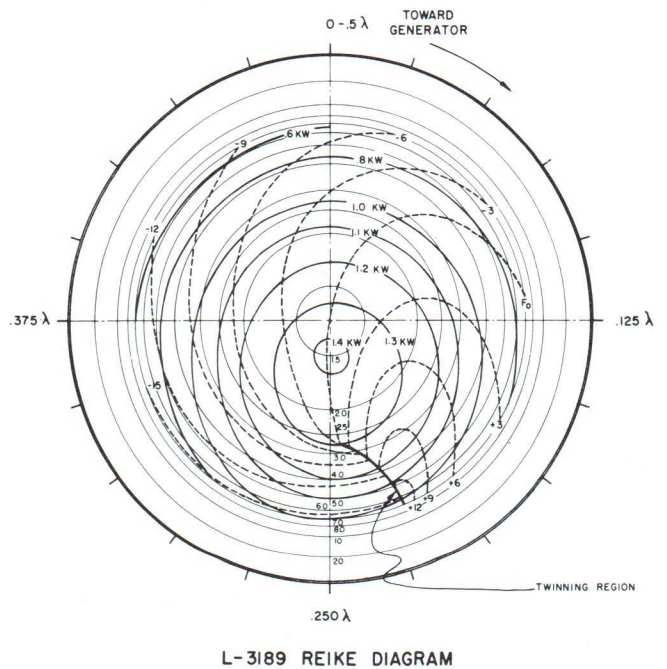
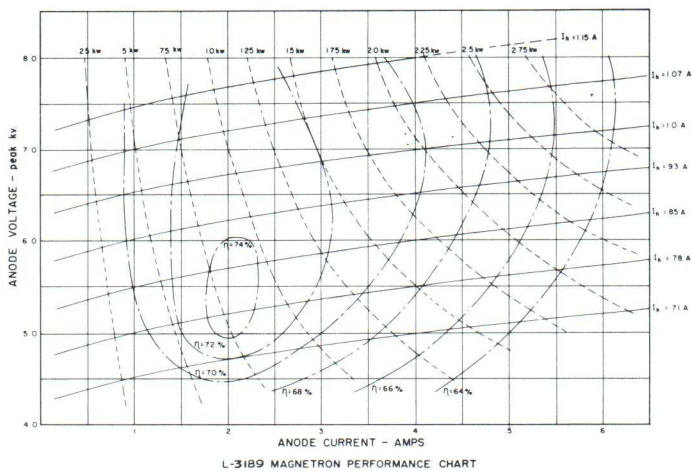
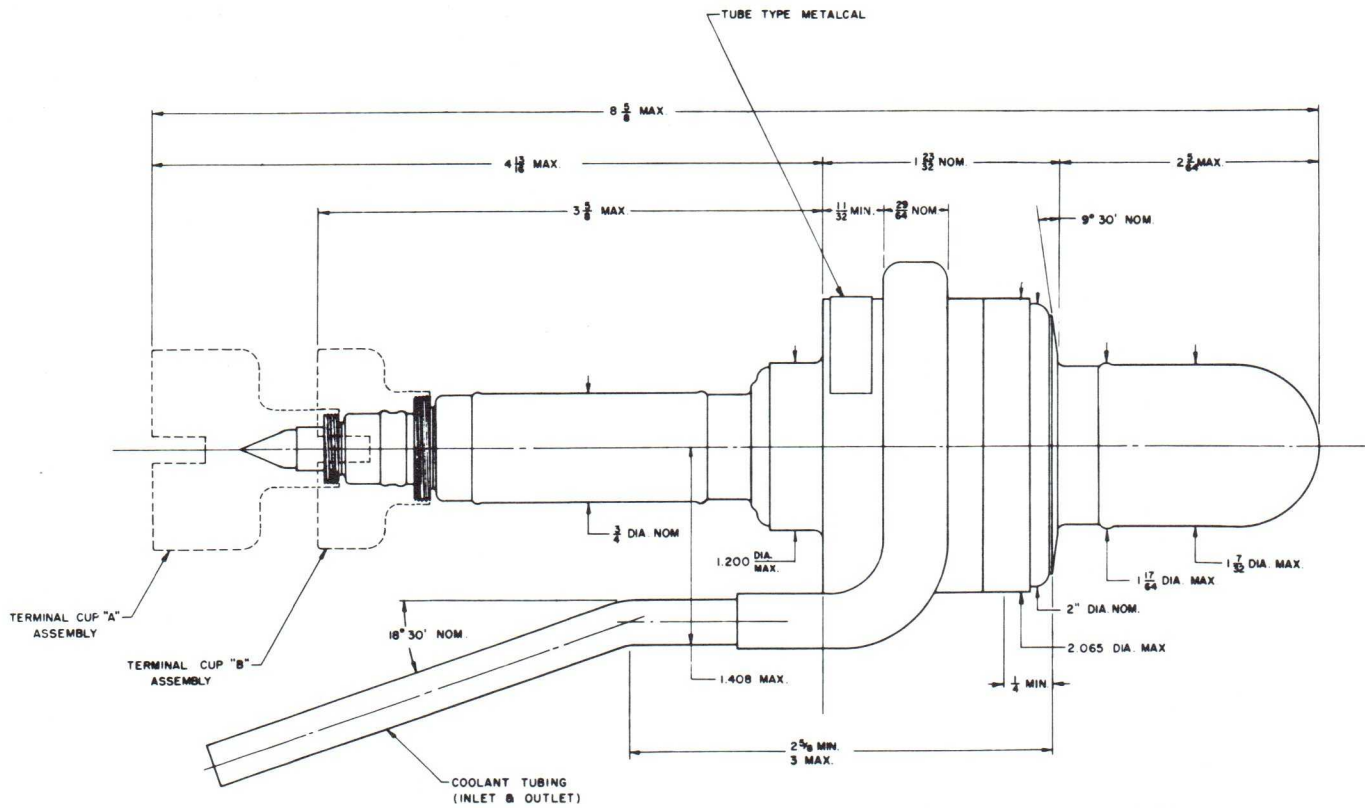
The average plate-on period is 1.5 minutes. The filament-off period must be at least 5.0 minutes.

MECHANICAL DATA

Physical Dimensions	See outline drawing
Mounting Position	Cathode vertical
Weight	Approx. 1¼ lbs.
Cooling	Liquid
Coolant flow	55 GPM Min.
Pressure	30 lbs. Max.
Outlet coolant	85° Max.
RF Coupling	Antenna into waveguide (determined by waveguide feed)
Magnetic Field	Electromagnet, Utrad Part No. 2774
Anode Temperature	90°C Max.
Cathode Seal Temperature	170°C Max.
Cathode Seal Cooling	Convection cooling

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CONDITIONS:

- (1) MATCHED LOAD
- (2) ANODE SUPPLY - AC
- (3) $\Delta pk \approx 7 \times lb$
- (4) D. C. FIELD SUPPLY (5% RIPPLE)
- (5) I_f = FIELD CURRENT IN 2774 ELECTROMAGNET

TEST CONDITIONS:

1. ANODE SUPPLY - 60 \angle A.C. (NOT RECTIFIED).
2. ANODE CURRENT = 300 MA, AVE. (1.86 A PK).
3. ANODE VOLTAGE 6.6 KV PEAK
4. D.C. FIELD SUPPLY - (5% RIPPLE)



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