MICROTRON®
microwave power source

L-3858
CW MAGNETRON

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

The L-3858 provides more than 2500 watts of CW power at 2450 megacycles. The tube is liquid cooled. Other similar magnetrons are available at different power levels in both liquid and air cooled as well as permanent magnet designs.

ELECTRICAL DATA

Design Ratings	Conditions	Min.	Nom.	Max.	Units
Heater—Thoriated Tungsten					
Cold Resistance		....	.06	....	ohm
Surge Current		....	82	....	amps
Warm-up Time		7.5	8	....	sec.
Preheat Voltage		7.8	8.2	8.4	volts
Operate Voltage—2 Kw		4.8	5.0	5.2	volts
Operate Voltage—1 Kw		6.3	6.5	6.7	volts
Current—Preheat	Note 4	15.5	16.0	17.0	amps
Anode Voltage Peak	Note 3	....	7.2	....	kv
Anode Current—Avg	Note 3, 5	....	560	600	mA
Anode Current—Peak	Note 3	....	2.0	....	amps
Frequency	Note 6	2420	2450	2470	Mc
Power Output Flat Load	Note 7	....	2650	....	watts
Power Output—Oven	Note 5	1900	2000	....	watts
Power Output—Oven	Note 8	....	927	....	watts
Mode Boundary No Load	Note 9	700	....	....	mA
Mode Boundary With Load	Note 9	700	....	....	mA
Shelf Test		1	....	....	year
Life Test					
Plate hours		1000	....	....	hours
Plate cycles		50,000	....	....	cycles

Note 1: Determined by waveguide feed in Tappan R-2000 oven. See manufacturer for specific applications.

Note 2: Electromagnet is part of Microtron® Unit L-3892. Utrad Part No. 3886.

Note 3: Tested in Tappan R-2000 oven operated full-wave at rated transformer tap voltage of 208, 224 or 240 volts.

Note 4: The filament current shall be measured with a filament voltage (E_f)=8.2 volts at the filament terminals.

Note 5: Power output is determined in the cooking enclosure of Tappan Electronic Range Model No. R-2000 by observing the temperature rise in a 1 liter Pyrex beaker of water centrally located.

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

The high voltage position of the range switch is used and the anode current is adjusted to a value necessary to obtain nominal value of 2000 watts. (To be measured within $\pm 1^\circ C$). This value of anode current must be less than 600 mA.

Note 6: Frequency must be measured under power output test conditions (Note 5) and will be designated as the mean value of the maximum and minimum frequency observed by manually rotating the mode stirrer.

Note 7: At nominal voltage of 7.5 kv and 560 mA.

Note 8: Measured on low position of range switch after setting on high range.

Note 9: Both the starting mode and normal mode boundary shall be greater than 700 mA.

MECHANICAL DATA

Physical Dimensions	See Outline Drawing
Mounting Position	Cathode Vertical
Weight	Approx. 2¼ lbs.
Cooling	Liquid
Coolant flow	1.0 GPM Min.
Pressure	30 lbs. Max.
Outlet coolant	85° Max.
RF Coupling, Note 1	Antenna into waveguide
Magnetic Field, Note 2	Electromagnet
Anode Temperature	90°C Max.
Cathode Seal Temperature	170°C Max.
Cathode Seal Cooling	Convection cooling

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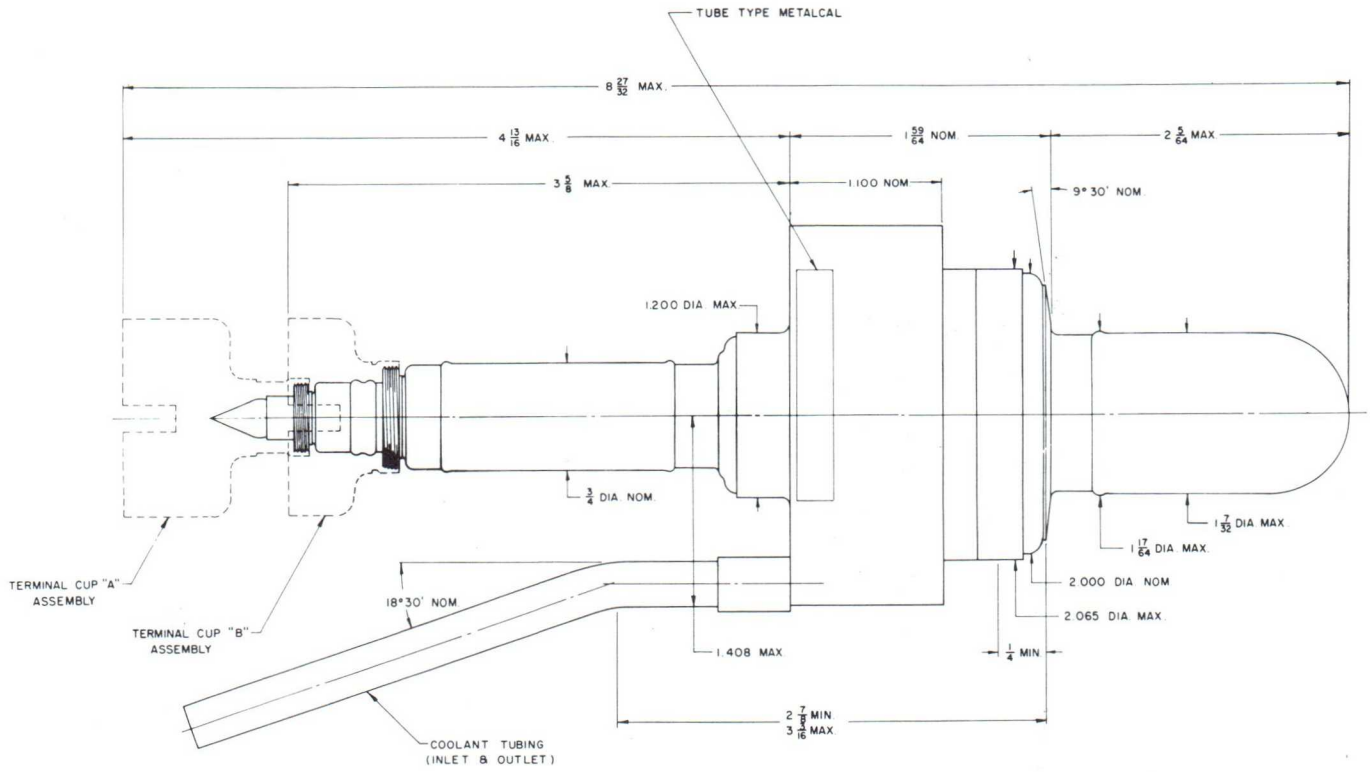

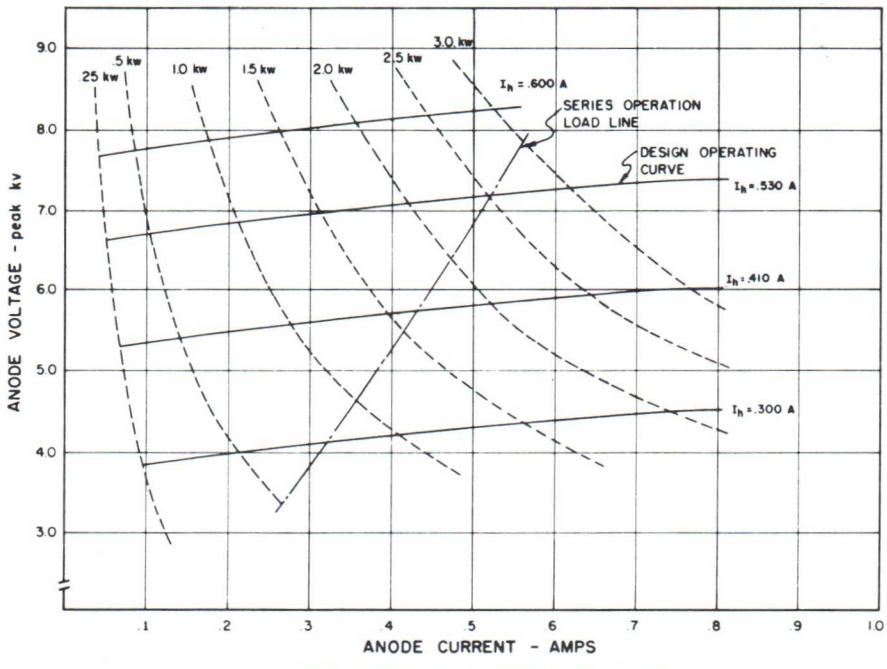

L-3858 MAGNETRON PERFORMANCE CHART

CONDITION:

(1) MATCHED LOAD
(2) ANODE SUPPLY - FULL WAVE RECTIFICATION (NO FILTER)
(3) $\ell_{pk} \simeq 3.3 \times I_b$
(4) D.C. FIELD SUPPLY (5% RIPPLE)
(5) I_h = FIELD CURRENT IN 3886 ELECTROMAGNET