

WL-6285
L-BAND MAGNETRON

September 12, 1956

The WL-6285 is a very high power magnetron designed for pulse operation at 1310 mc. It is capable of peak power outputs up to 10 megawatts. It has been tested at pulse widths up to 10 microseconds at .0018 duty. This represents the highest obtainable power-duty product for magnetrons.

This magnetron is a fixed frequency tube employing a hole and slot anode with 10 resonators, doubly strapped. It is designed to operate with voltages up to 70kv and with peak anode currents of 350 amperes. The magnetic field required at maximum voltage is approximately 1600 gauss with a proportionally lower field required at lower voltage. Because of the size and weight of the magnet, it is not "packaged" with the tubes. The weight of the magnetron is approximately 60 pounds.

The magnetron operates into 6-1/2" diameter circular waveguide with no pressurizing or gas insulation required. The anode and end covers are water cooled. Forced air cooling is required for the output window.

The cathode is an indirectly heated cermet composed of pressed and sintered thoria and tungsten powder. The cathode heating power required for starting is 4kw. This heater power is reduced during oscillation to 1-3kw depending upon the average anode input power.

The cathode-heater assembly in this magnetron is designed to permit operation of the tube in any mounting position.

The efficiency varies from 40-50% depending upon the particular operating point chosen.

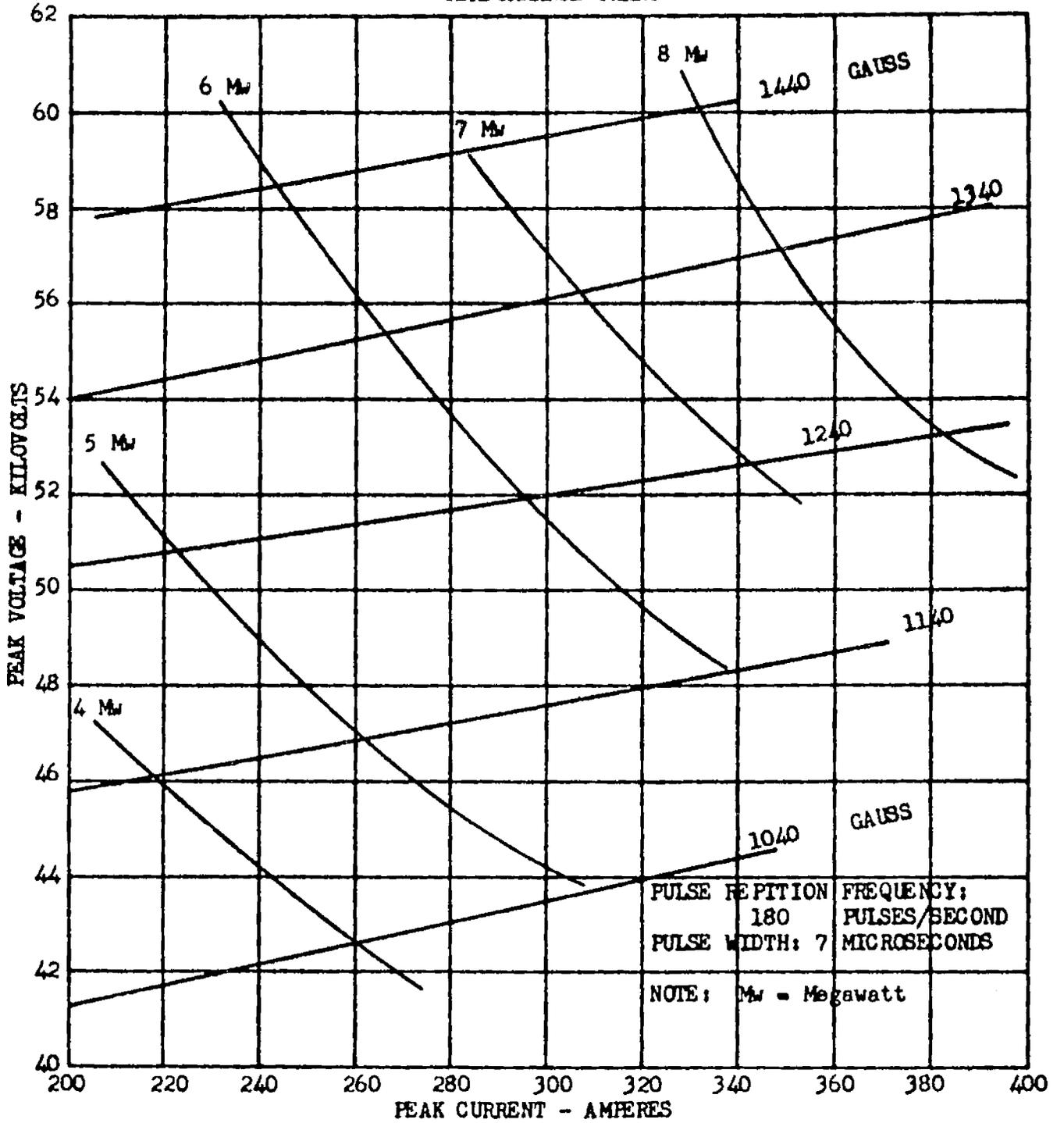
A set of typical operating values are:

pulse width	7 u sec
repetition rate	180 pulses per second
peak current	280 amperes
peak voltage	56 kilovolts
peak power out	6.5 megawatts
efficiency	43%
magnetic field	1300 gauss
cathode power (oscillating condition)	2.3 kilowatts

A performance chart is shown on the next page for a typical tube.

WL-6285

PERFORMANCE CHART



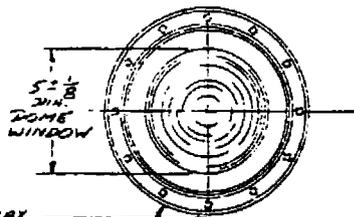
NOTE 1: USE GASKET WITH PRESSURIZED WAVEGUIDE. MATERIAL NOT SUPPLIED BY WESTINGHOUSE.

NOTE 2: $6 \frac{25}{32} \pm \frac{1}{64}$ RECOMMENDED

AIR GAP IN MAGNET.

NOTE 4: PULSE VOLTAGE MUST BE APPLIED TO THIS LEAD.

PLANE OF POLARIZATION FOR TE₁₁ MODE IN CIRCULAR GUIDE



$19 \frac{5}{8}$ MAX.

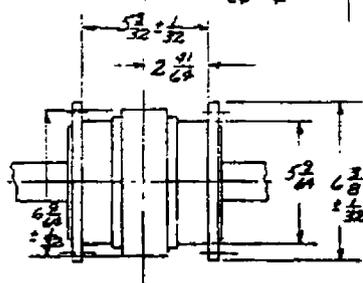
$41 \frac{13}{16}$ MAX.

FLANGE MAY BE ROTATED BY REMOVING SCREWS.

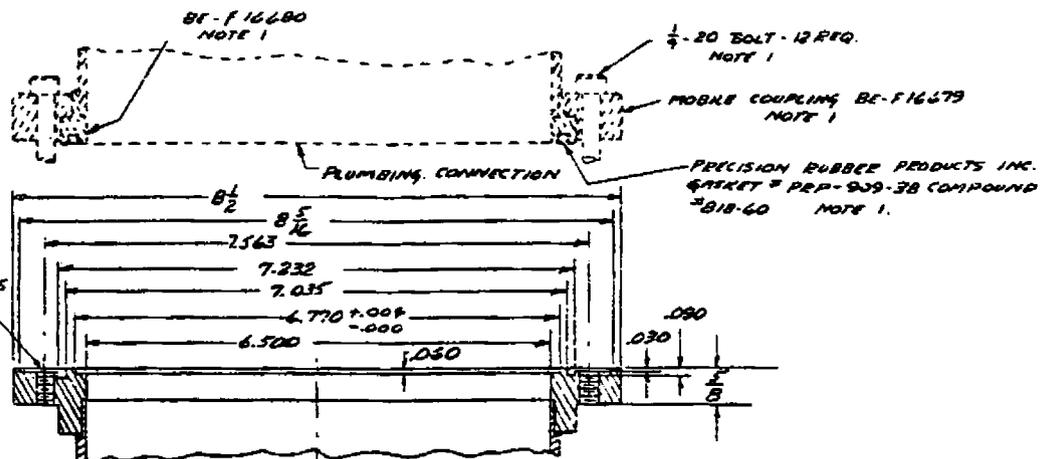
SOCKET CONNECTION FOR USE WITH HANSEN SOCKET (REMOVABLE FOR MOUNTING MAGNETRON IN MAGNET)

GLASS T. ROFF & GETER PROTECTOR

POWER SUPPLY FOR CONDUCTION GETTER.



$\frac{1}{4}$ -20-12 HOLS
30° RPNET



SOCKET CONNECTION FOR USE WITH HANSEN SOCKET.

GLASS DOME COOLING TERMINAL.

NOTE 3: FOR SHIPPING & STORAGE, CAREFULLY DISCONNECT GLASS DOME COOLING TERMINAL FROM THE MAGNETRON AND REPLACE BY PROTECTIVE CAP (BE 1839) USING THE ORIGINAL SOCKET HD. CAP SCREWS - FINGER TIGHTENED.

$\frac{17}{64}$ DRILL $\frac{13}{32}$ C.T. SQUARE
 $\frac{1}{8}$ DR. 4 HOLES

$24 \pm \frac{1}{8}$

HANSEN QUICK CONNECTIVE SOCKET NO. 8-527 WITH $\frac{1}{8}$ " NOSE STEM (NOTE 1) 3 REQ.

REDRILL TO $\frac{13}{32}$ HOLE
S-225-A COPPER LUG

$\frac{17}{32}$ HOLE
S-225-A COPPER LUG

END VIEW WITH SHIELDS & CABLES REMOVED

FROM CENTER TO CENTER OF LUG HOLES $18 \pm \frac{1}{2}$

FROM CENTER TO CENTER OF LUG HOLES $21 \pm \frac{1}{2}$

#8 (.22) DRILLED HOLES

END VIEW OF TERMINAL END OF CATHODE

Sub 23 - F.B. HG - R-15-55 P. 10-00
Sub 23 - K.B. - HG - 3-15-55 P. 14-00

WESTINGHOUSE ELECTRIC CORPORATION ELECTRONIC TUBE DIVISION STAMFORD, CONN.			
PRINTS	TITLE	DESIGN SPECIFICATION	OUTLINE (TENTATIVE)
	TUBE	(W13207) C285	
	DESIGN	E.S.	CHECKED
	APPROVED		DATE 9-26-51
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE SPECIFIED		FRACTIONS $\frac{1}{16}$ & $\frac{1}{32}$	
ORIGINALS 1-005		RE-816-288	