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.
PERFORMANCE CHART

PULSE REPTITION FREQUENCY: 180 PULSES/SECOND
PULSE WIDTH: 7 MICROSECONDS

NOTE: MW = Megawatt