

# AMPEREX TUBE TYPE 6757

The 6757 is a three electrode, forced air-cooled tube designed with special characteristics as a low impedance, RF industrial oscillator to deliver maximum power under varying load conditions.

The filament is thoriated tungsten. The anode is capable of dissipating 15 KW.

The 6757 has a heavy wall, high heat dissipation and heat storage copper anode and an extremely rigid coaxial grid structure.

Filament connections are made with heavy, heat dissipating, permanently attached, flexible leads eliminating difficulties due to contact resistance at the terminals.

The tube design also incorporates wide spacings between the elements which, together with the rugged mechanical supports, prevent internal shorting.

Features of this tube are -

Greatly prolonged filament life.

Flat grid current characteristic, no load to full load without external grid stabilization circuitry.

High transconductance and low  $\mu$  characteristics for industrial service.

Extra heavy wall copper anode to absorb short-time overload operation.

Platinum-clad grid for stable grid operation.

Rugged "powdered-glass" stem construction.

Coaxial grid seal for efficient, high frequency performance and maximum physical strength.

AMPEREX designed gettering material.

## GENERAL CHARACTERISTICS

### ELECTRICAL DATA

|                                                               |                    |  |  |
|---------------------------------------------------------------|--------------------|--|--|
| Filament                                                      | Thoriated tungsten |  |  |
| Filament Voltage                                              | 7.5 volts          |  |  |
| Filament Current                                              | 100 amperes        |  |  |
| Starting Current (cannot be exceeded even momentarily)        | 210 amperes        |  |  |
| Peak Cathode Current <sup>1</sup>                             | 28 amperes         |  |  |
| Amplification Factor ( $I_b = 3$ amperes, $E_b = 4000$ volts) | 13.5               |  |  |
| Transconductance ( $I_b = 3$ amperes, $E_b = 4000$ volts)     | 11,400 micromhos   |  |  |
| Plate Resistance ( $I_b = 3$ amperes, $E_b = 4000$ volts)     | 1180 ohms          |  |  |
| Direct Interelectrode Capacitances                            |                    |  |  |
| Grid to Plate                                                 | 47.6 mmf           |  |  |
| Grid to Filament                                              | 25.1 mmf           |  |  |
| Plate to Filament                                             | 1.5 mmf            |  |  |

### COOLING CHARACTERISTICS (Forced Air)

|                   |     |     |      |                 |
|-------------------|-----|-----|------|-----------------|
| Plate Dissipation | 8   | 10  | 15   | KW              |
| Air Flow          | 500 | 700 | 1050 | CFM             |
| Static Pressure   | 0.6 | 0.9 | 1.8  | inches of water |

<sup>1</sup> Represents maximum usable cathode current for any condition of operation.

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## MECHANICAL DATA

### Maximum Overall Dimensions

Length (without leads)

Diameter

Mounting Position

Net Weight (approx.)

17 1/8 inches

11 inches

Vertical, anode down

56½ lbs.

## ACCESSORIES

External Grid Connector (furnished with tube without charge)

Amperex No. Y-13326

## MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS

### Oscillator, Class C - Three Phase, Full-Wave Supply

Maximum Ratings, Absolute Values (per tube)

|                             | <u>CCS</u>          |
|-----------------------------|---------------------|
| DC Plate Voltage            | 12500 volts max.    |
| DC Plate Current            | 3.5 amperes max.    |
| DC Grid Voltage             | -2000 volts max.    |
| DC Grid Current (full load) | 0.220 amperes max.  |
| DC Grid Current (no load)   | 0.300 amperes max.  |
| Plate Input                 | 42.0 kilowatts max. |
| Plate Dissipation           | 15.0 kilowatts max. |

### Typical Operation (per tube)

|                    | <u>CCS</u><br><u>Full Load</u> | <u>CCS</u><br><u>2A Load</u> | <u>CCS</u><br><u>No Load</u> |
|--------------------|--------------------------------|------------------------------|------------------------------|
| DC Plate Voltage   | 12000                          | 12000                        | 12000 volts d-c              |
| DC Plate Current   | 3.5                            | 2.0                          | 0.430 amperes d-c            |
| DC Grid Voltage    | -1220                          | -1380                        | -1710 volts d-c              |
| RF Grid Voltage    | 2050                           | 2030                         | — volts                      |
| DC Grid Current    | 0.210                          | 0.238                        | 0.295 amperes d-d            |
| Grid Resistor      | 5.8                            | 5.8                          | 5.8 kilohms                  |
| Plate Input        | 42.0                           | 24.0                         | 5.16 kilowatts               |
| Plate Dissipation  | 11.25                          | 4.9                          | — kilowatts                  |
| Plate Power Output | 30.75                          | 19.1                         | — kilowatts                  |
| Efficiency         | 73.30                          | 79.4                         | — per cent                   |
| Load Impedance     | 1755                           | 3120                         | — ohms                       |

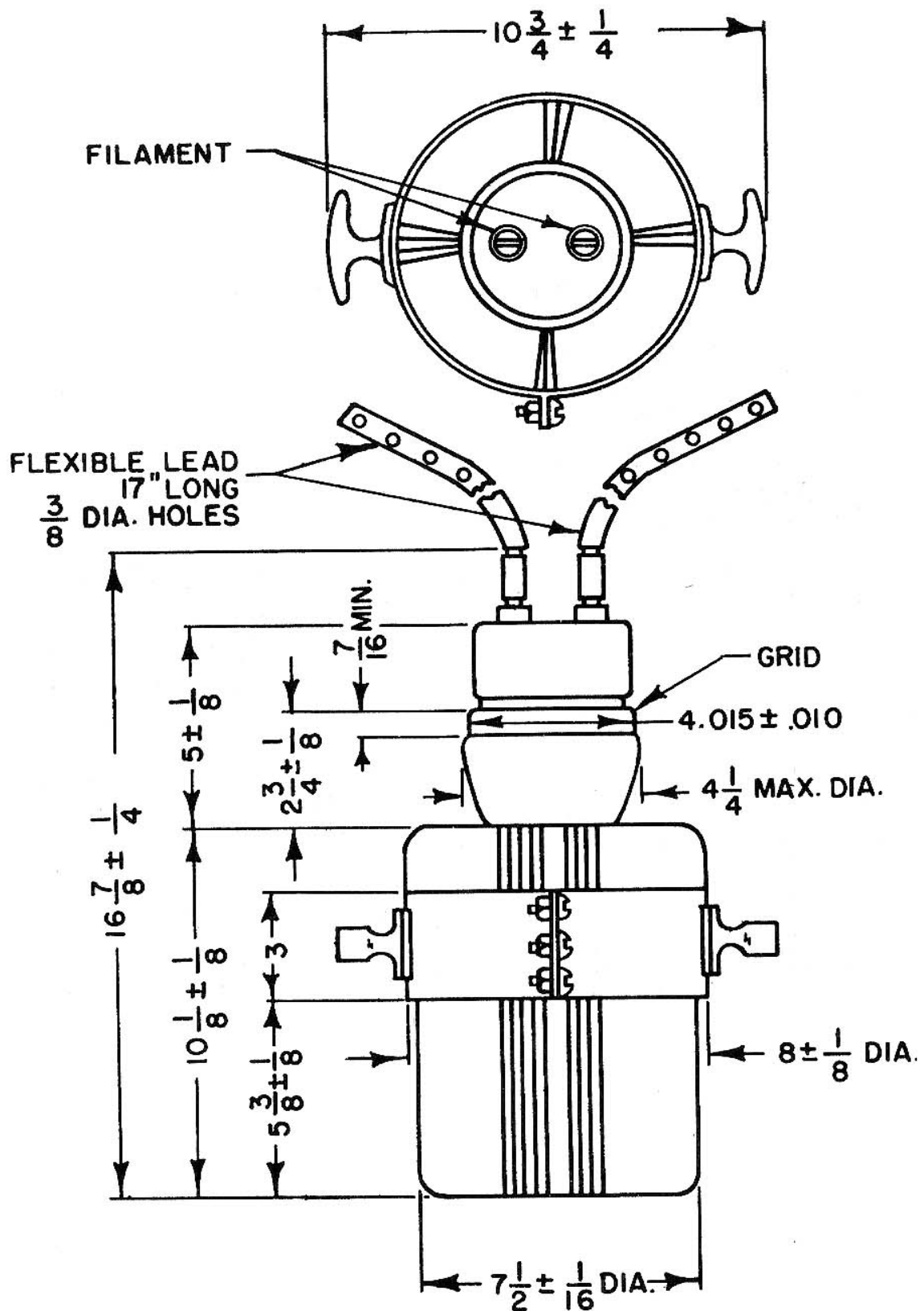
## MEASURED

|                    |       |       |             |
|--------------------|-------|-------|-------------|
| Plate Dissipation  | 11.36 | 6.87  | — kilowatts |
| Plate Power Output | 30.64 | 17.13 | — kilowatts |
| Plate Efficiency   | 73.0  | 71.40 | — per cent  |

<sup>2</sup> No load condition is valid for plate current of 0.500 amperes d-c or less.

<sup>3</sup> Measured in an industrial R.F. oscillator.

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CONSTANT CURRENT CHARACTERISTICS

