

## HIGH-VACUUM RECTIFIER TYPE WL-5973A

The WL-5973A is a two-electrode high-vacuum tube designed for service as a rectifier or surge-limiting diode. Design features include ruggedized anode and filament support structures, an efficient thoriated-tungsten filament, and a low tube-voltage-drop which allows the tube to carry high-average currents without exceeding rated plate dissipation.

In rectifier service, the tube will operate at average currents as high as 1.25 amperes at 40,000 volts and one ampere at higher voltages. In limiter service, ratings as high as 20 amperes at 75,000 volts apply. These ratings make the tube particularly suitable for use in radar as a charging diode to supply d.c. power to magnetrons or as a limiter to restrict fault currents. Other applications include high-voltage power supplies in cable-testing service and smoke precipitators.

### ELECTRICAL

|                                  |                             |       |      |                  |
|----------------------------------|-----------------------------|-------|------|------------------|
| Cathode.....                     | Thoriated-Tungsten Filament |       |      |                  |
| Filament:                        | Min.                        | Bogey | Max. |                  |
| Voltage.....                     | 15.2                        | 16    | 16.8 | Volts            |
| Current at 16 Volts .....        | 18.0                        | 19.1  | 20.2 | Amperes          |
| Starting Current.....            | —                           | —     | 30   | Amperes          |
| Cold Resistance .....            | —                           | 0.1   | —    | Ohms             |
| Heating Time .....               | 30                          | —     | —    | Seconds          |
| Tube Voltage Drop at 5 Amperes:  |                             |       |      |                  |
| Plate Current .....              | 850                         | 950   | 1050 | Volts            |
| Interelectrode Capacitance ..... | —                           | 14    | —    | $\mu\mu\text{f}$ |

### MECHANICAL

|                                 |                     |
|---------------------------------|---------------------|
| Type of Cooling (Note 1).....   | Radiation           |
| Maximum Glass Temperature ..... | 300° C              |
| Maximum Base Temperature .....  | 150° C              |
| Mounting Position .....         | Vertical, Base Down |
| Net Weight (Approx.) .....      | 3 Pounds            |

### RECTIFIER SERVICE

#### MAXIMUM RATINGS

##### Absolute Maximum Values

|                                  |              |                         |
|----------------------------------|--------------|-------------------------|
| Peak Inverse Anode Voltage ..... | 75 max.      | Kilovolts               |
|                                  | 40 KV        | more than               |
| Anode Current:                   | or Less      | 40 KV                   |
| Peak.....                        | 5            | 5 max. Amperes          |
| Average.....                     | 1.25         | 1.00 max. Amperes       |
| Plate Dissipation ..             | 850 (Note 2) | 800 (Note 3) max. Watts |

### LIMITER SERVICE

#### MAXIMUM RATINGS

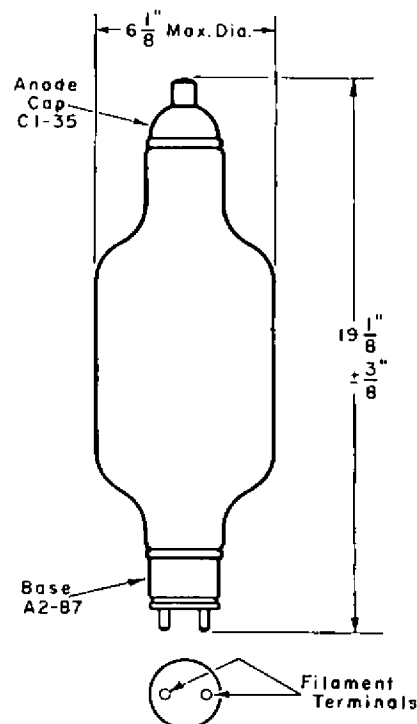
##### Absolute Maximum Values

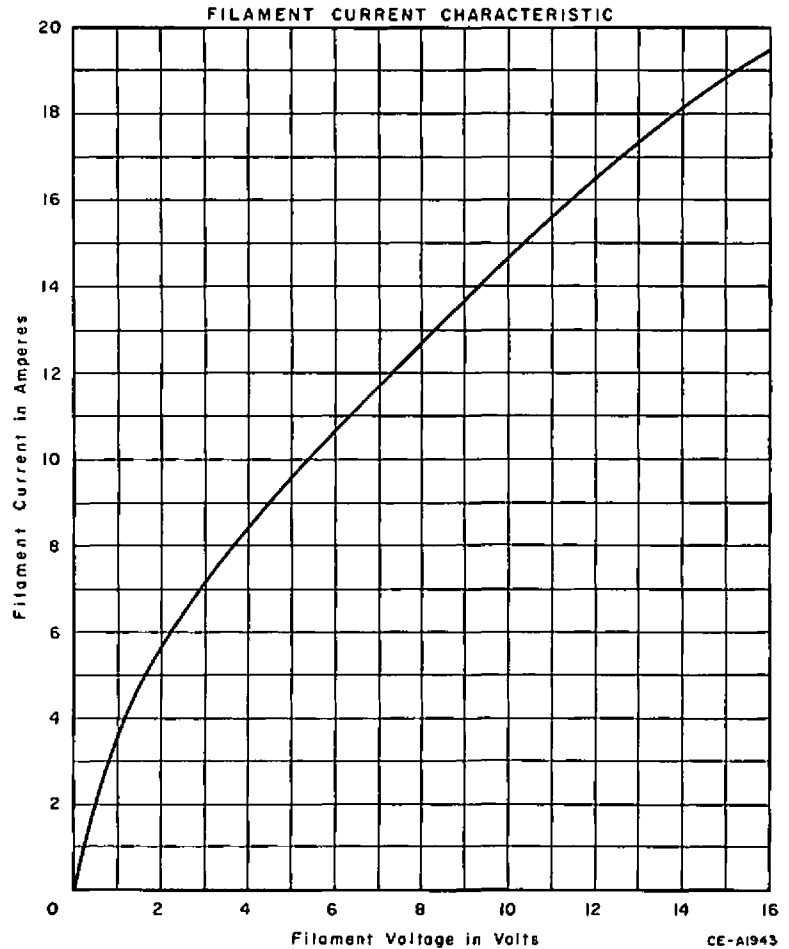
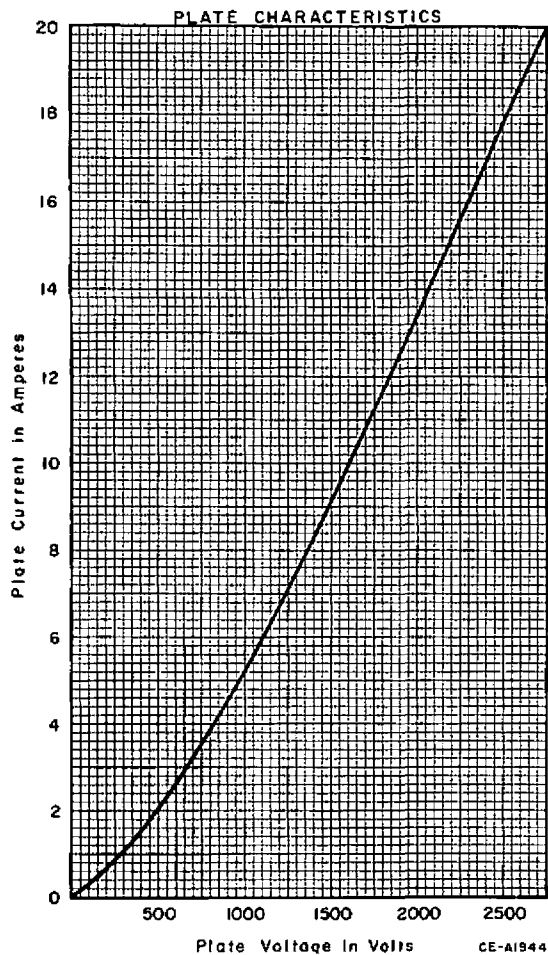
|                                  |          |           |
|----------------------------------|----------|-----------|
| Peak Inverse Anode Voltage ..... | 75 max.  | Kilovolts |
| Peak Anode Current.....          | 20 max.  | Amperes   |
| Plate Dissipation .....          | 800 max. | Watts     |

### NOTES

1. Tubes enclosed or near other tubes may require forced-air cooling to limit bulb and base temperatures to rated values.
2. Observed temperature of 1010° C max. at any point on the anode.
3. Observed temperature of 985° C max. at any point on the anode.

X-Ray Warning: Operation of the WL-5973A at voltages in excess of 16 kilovolts may necessitate x-ray radiation shielding to protect the user from possible danger of personal injury due to prolonged exposure at close range.





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