

TYPE 975-A

HALF-WAVE MERCURY RECTIFIER

ENGINEERING INFORMATION

GENERAL RATINGS

Number of Electrodes 2

Filament:

Voltage 5.0 volts

Current 10.0 amperes

Type Shielded Coated

Heating Time 30 seconds

Condensed Mercury Temperature Range 20° to 60° C.

Maximum Peak Inverse Voltage 15000 volts

Maximum Peak Plate Current 6.0 amperes

Supply Frequency up to 150 cycles

Maximum Average Plate Current

(Averaged over period of 15 seconds).....1.5 amperes

Approximate Tube Voltage Drop 10 volts

Maximum Overall Dimensions:

Length 11 1/16 inches

Diameter 3 1/16 inches

Bulb T-24

Cap Skirted Medium

Base* Jumbo 4-Large Pin

Type of Cooling Air

Net Weight 12 oz.

*Base shell not connected to any element of the tube.

INSTALLATION

The base of the UNITED 975-A is designed for mounting in a standard "50 watt" socket of the four-pin, bayonet type. The tube should always be mounted vertically with ample air space provided for ventilation. The condensed mercury temperature should not be less than 20° C. (68° F.) and not more than 60° C. (140° F.) depending on the peak inverse voltage used.

The filament of the 975-A should be operated on alternating current at the rated value of 5.0 volts. The socket should make good contact to the tube pins and adequate current-carrying capacity leads to the secondary winding of the power transformer should be used. Operation of the filament at less than the rated voltage may result in a high internal voltage drop with subsequent loss of emission. A filament voltmeter should be connected permanently across the filament circuit at the socket terminals in order that the filament voltage can be maintained at 5.0 volts. **Caution—The filament winding is at high potential.**

Because the mercury may be splashed on the tube elements due to shipment or handling, the filament of the 975-A should be operated at rated voltage for approximately 15 minutes without plate voltage in order to distribute the mercury properly when the tube is first placed in service. The above procedure need not be repeated unless the tube is removed from the socket and during handling the mercury becomes splashed on the tube elements.

The condensed mercury temperature should be at least 15° C. before the plate voltage is applied. This may be ordinarily accomplished by introducing a time lag of at least 30 seconds between the application of the filament and the plate voltages. It is advisable, however, to pre-heat the filament for 15 minutes before placing the 975-A in operation. During "standby" periods, the filament should be kept at rated voltage.

When the 975-A is subjected during operation to external high voltage or high frequency fields, shielding and r-f filter circuits should be provided.

FULLY SHIELDED CONSTRUCTION EFFECTIVELY ISOLATES FILAMENT FROM EXTRANEIOUS FIELDS. THE SHIELD MEMBER IS OF SUFFICIENT SIZE NEVERTHELESS TO PERMIT ADEQUATE THERMAL RADIATION FROM THE FILAMENT.

The above and other considerations contribute to longer and more stable life in tubes of this improved design.

All ratings given are for continuous service. Higher ratings are permissible for intermittent operation. Additional data will be furnished upon request.



INTERCHANGES WITH TYPE 375-A or 575-A

Oxide coated filaments are so suspended as to prevent sag and vibration in keeping with the general ruggedness of design. A minimum amount of mercury and getters is used, allowing greater heat radiation through clearer glass envelope.

