



## ESU111

## HALF WAVE MERCURY VAPOUR RECTIFIER ←

## GENERAL

The ESU111 is an indirectly heated half wave Mercury Vapour Rectifier having a cathode heating delay time of 3 minutes. Two rectifiers in a full wave circuit will give an output of 6 amps at 6.3kV. This rectifier may be operated with condensed mercury temperatures in the range +25°C to +70°C.

## RATING

|                                     |                |              |   |
|-------------------------------------|----------------|--------------|---|
| Heater Voltage (volts)              | $V_h$          | 5.0          |   |
| Heater Current (amps)               | $I_h$          | 12.0         | ← |
| Maximum Peak Inverse Voltage (kV)   | $PIV_{max}$    | 20.0*        |   |
| Maximum Peak Anode Current (amps)   | $I_{a(pk)max}$ | 15.0*        |   |
| Maximum Mean Anode Current (amps)   | $I_{a(av)max}$ | 3.0*         |   |
| Maximum Voltage Drop (volts)        |                | 15.0         |   |
| Minimum Heating Time (mins)         |                | 3            | ← |
| Condensed Mercury Temperature Range |                | +25 to +70°C |   |

\* See "Typical Operation" for temperature derating.

## DIMENSIONS

|                           |       |     |   |
|---------------------------|-------|-----|---|
| Maximum Overall Length    | (mm)  | 337 | ← |
| Maximum Seated Height     | (mm)  | 310 | ← |
| Maximum Diameter          | (mm)  | 78  |   |
| Approximate Nett Weight   | (lbs) | 1   |   |
| Approximate Packed Weight | (lbs) | 8½  |   |

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MOUNTING POSITION—Vertical, base downwards

## TYPICAL OPERATION

A full wave Rectifier using 2 valves can deliver an output of 6.0. amps at 6.3kV.

|                                     |           |                |                |                |                |   |
|-------------------------------------|-----------|----------------|----------------|----------------|----------------|---|
| Condensed Mercury Temperature (°C)  |           | 70<br>to<br>25 | 65<br>to<br>25 | 60<br>to<br>25 | 55<br>to<br>25 | ← |
| Maximum Peak Inverse Voltage (kV)   | PIV(max)  | 5              | 10             | 15             | 20             |   |
| Maximum Peak Cathode Current (amps) | Ik(pk)max | 25             | 20             | 18             | 15             | ← |
| Maximum Mean Cathode Current (amps) | Ik(av)max | 6              | 5              | 4              | 3              | ← |

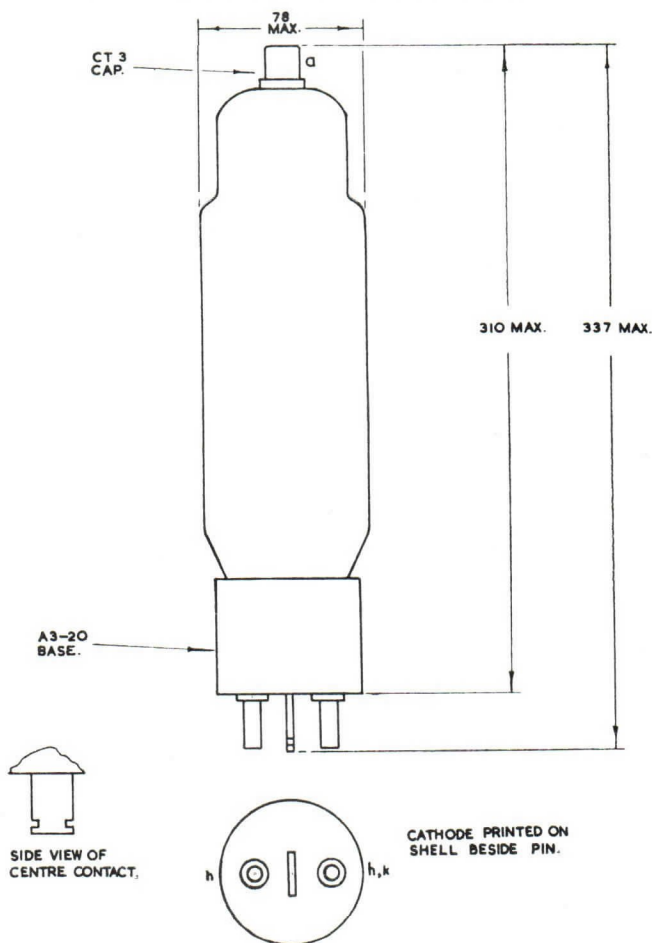
## NOTES.—

The cathode of this rectifier should be allowed an adequate heating time, preferably longer than the specified absolute minimum but in any circumstances no shorter, before the application of anode voltage.

The condensed mercury temperature, which may be measured with a thermocouple attached to the coolest part of the bulb, should never pass outside the specified limits during operation.

After transportation, or a period of storage, or when first placed in service, an initial cathode heating time of 30 minutes should be allowed to ensure the correct distribution of the mercury within the valve.

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**HALF-WAVE MERCURY VAPOUR RECTIFIER**



SIDE VIEW OF  
CENTRE CONTACT.

VIEW OF FREE END.

All dimensions in mm.

**BASE—RMA A3-20**

**TOP CAP CONNECTOR—AEI TC433**

