



870-A

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HALF-WAVE MERCURY-VAPOR RECTIFIER*The 870-A supersedes the Type 870*

Heater	Coated Unipotential Cathode*	
Voltage	5	a-c volts
Current	65	amp.
Starting - The heater current must never exceed 2 times the normal value, even momentarily.		
Maximum Overall Length (Including Flexible Leads)	46-3/4"	
Maximum Diameter	5-9/16"	
Bulb (See Outline Drawing)	Metal Shell	
Terminal Connections [▲]	See Outline Drawing	

*Maximum Ratings Are Absolute Values***MAXIMUM RATINGS**

Peak Inverse Plate Voltage:

For Supply Frequency up to 150 $\sim$:

Cond.-Mercury Temp. 35° to 40°C* 16000 max. volts

Cond.-Mercury Temp. 35° to 50°C* 7500 max. volts

Peak Plate Current

For Supply Frequency above 25 $\sim$

450 max. amp.

Average Plate Current { Averaged over
period of 60 sec.max. }

75 max. amp.

Surge Current for max. of 0.2 sec.

4500 max. amp.

Peak Tube Voltage Drop

10 volts

Cooling

Forced Air

* The cathode should be allowed to come up to operating temperature and the mercury vapor to reach operating pressure before plate voltage is applied. For average conditions, the delay is about 30 minutes.

▲ Metal shell is connected within the tube to the cathode lead.

• With forced-air ventilation. Recommended temperature of condensed mercury 35°C $\pm$ 5°.

For rectifier circuits, and r-f filter circuits,
refer to Type 872-A/872.

The table below classifies suitable rectifier circuits for the 870-A and shows their safe maximum input and maximum output operating conditions for a peak inverse voltage of 16000 volts. The values are based on sine-wave input and the use of a suitable choke preceding any condenser in the filter circuit. If the 870-A is to be used under temperature conditions such that the peak inverse voltage is limited to 7500 volts, the a-c input voltage and d-c output voltage values in the table should be multiplied by a factor of 0.47 to give the maximum values for the 7500-volt conditions.

CIRCUIT	MAXIMUM A-C INPUT VOLTS [■] (RMS)	APPROX. D-C OUTPUT VOLTS TO FILTER	MAX. D-C OUT- PUT CURRENT amperes
SINGLE-PHASE FULL-WAVE (2 tubes) Fig. 1	5650 per tube	5100	150
SINGLE-PHASE FULL-WAVE (4 tubes) Fig. 2	11300 total	10200	150
THREE-PHASE HALF-WAVE Fig. 3	6540 per leg	7650	225
THREE-PHASE DOUBLE-Y PARALLEL Fig. 4	6540 per leg	7650	450
THREE-PHASE FULL-WAVE Fig. 5	6540 per leg	15300	225

■ For maximum peak inverse voltage of 16000 volts.

Dec. 1, 1942

RCA RADOTRON DIVISION
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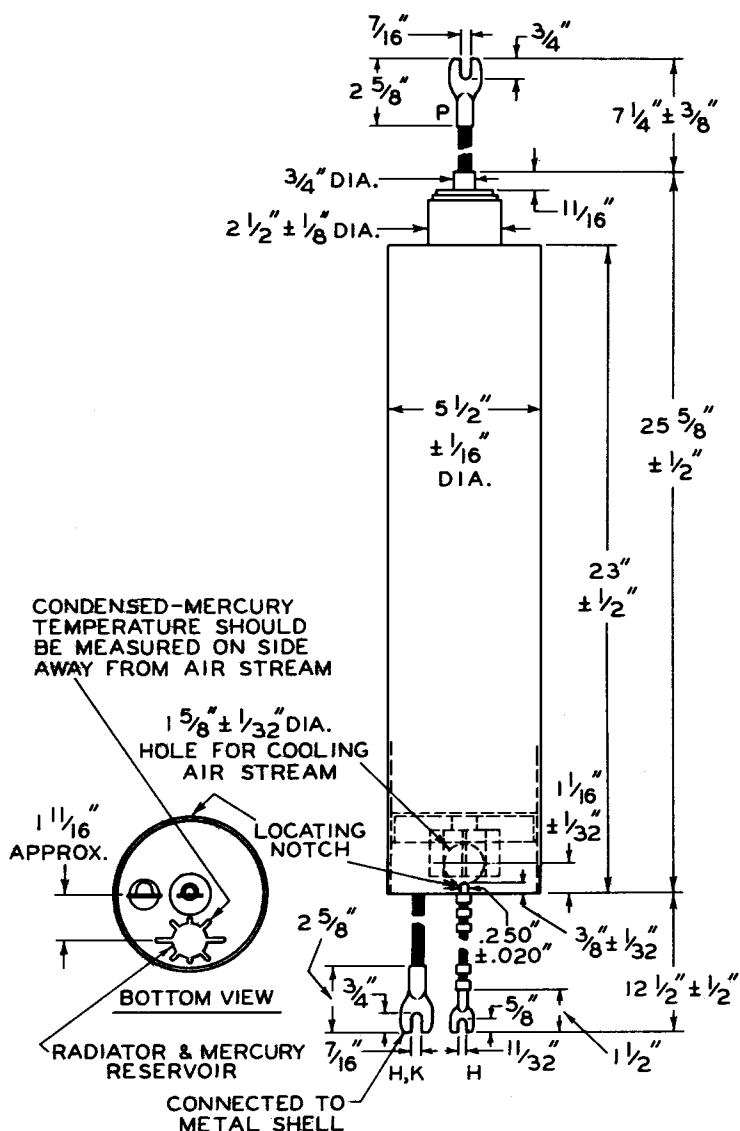
TENTATIVE DATA

870-A



870-A

HALF-WAVE MERCURY-VAPOR RECTIFIER



92C-6372

TUBE SYMBOL AND TERMINAL CONNECTIONS

NOTE: Special end-mountings are required.



P - Plate
H - Heater
K - Cathode
• - Gas Tube Type

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TENTATIVE DATA