

AMPEREX MERCURY VAPOR RECTIFIER 857-B

FILAMENT

A.C. Voltage	5.0
Current (amperes)	30.0
Preheating Period (Seconds)*	300

*Before plate voltage is applied.

MAXIMUM RATINGS

For Operation at Supply Frequency Up to 150 Cycles

	Condensed Mercury Temperature Range	
	25°C. to 60°C.	30°C. to 40°C.
Peak Inverse Voltage	10000	22000
Peak Plate Current (amps)	40.0	40.0
Average Plate Current (amps)*	10.0	10.0
Approx. Tube Voltage Drop	10	10

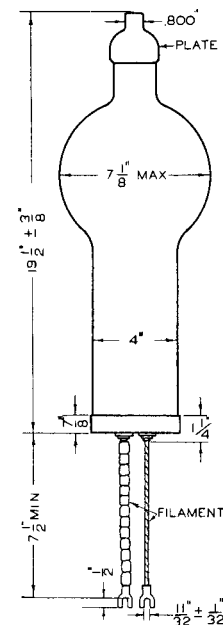
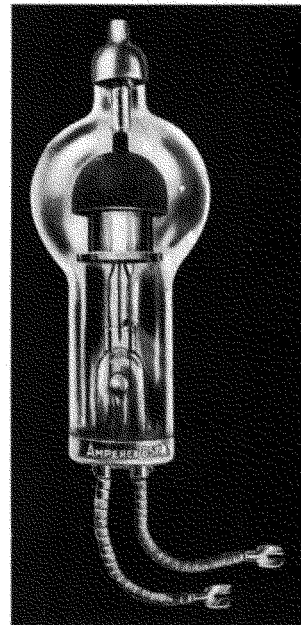
*Averaged over period of 30 seconds.

MAXIMUM OUTPUTS IN TYPICAL CIRCUITS

	A.C. Input Volts R.M.S.	D.C. Output Volts to Filter	Max. D.C. Load Current Amperes
Single-Phase Full Wave (2 Tubes) . . .	7750*	7000	20
Single-Phase Full Wave Bridge (4 Tubes)	15500†	14000	20
Three-Phase Half Wave (3 Tubes) . . .	9000‡	10500	30
Three-Phase Double Y-Parallel (6 Tubes)	9000‡	10500	60
Three-Phase Full Wave (6 Tubes) . . .	9000‡	21000	30

*Per Tube. †Total. ‡Per Leg.

NOTE: For Out-Of-Phase Filament Excitation information see "Maximum Peak Plate Current" and "Maximum Average Plate Current", pp. 3 and 4, "General Information and Application Notes" section, "Mercury Vapor High Voltage RECTIFIER TUBES".



AMPEREX

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857-B — AMPEREX MERCURY VAPOR RECTIFIER

RECTIFIER CIRCUIT						
<p>Conditions assumed for following relations</p> <ol style="list-style-type: none"> 1. Sine-Wave Supply 2. Balanced Phase Voltages 3. Zero Tube Drop 4. Pure Resistance Load 5. No Filter Used <p>NOTE: All rectifier filaments supplied by single phase transformers, with secondaries insulated for voltages greater than the Maximum Peak Inverse Voltage.</p>	<p>SINGLE PHASE FULL-WAVE 2 TUBES</p> <p>FIG. 1</p>	<p>SINGLE PHASE FULL-WAVE 4 TUBES</p> <p>FIG. 2</p>	<p>THREE PHASE HALF-WAVE</p> <p>FIG. 3</p>	<p>THREE PHASE DOUBLE-Y</p> <p>FIG. 4</p>	<p>THREE PHASE FULL-WAVE</p> <p>FIG. 5</p>	
	<p>E Average</p>	<p>.450 E_{rms} .318 E_{max}</p>	<p>.900 E_{rms} .636 E_{max}</p>	<p>1.170 E_{rms} .827 E_{max}</p>	<p>1.170 E_{rms} .827 E_{max}</p>	<p>2.34 E_{rms} 1.65 E_{max}</p>
	<p>E Inverse</p>	<p>3.14 E_{avg}</p>	<p>1.57 E_{avg}</p>	<p>2.09 E_{avg}</p>	<p>2.09 E_{avg}</p>	<p>1.045 E_{avg}</p>
	<p>I Average</p>	<p>.636 I_{max}</p>	<p>.636 I_{max}</p>	<p>.827 I_{max}</p>	<p>1.91 I_{max}</p>	<p>.955 I_{max}</p>
	<p>Ripple Frequency</p>	<p>2 X Supply Freq.</p>	<p>2 X Supply Freq.</p>	<p>3 X Supply Freq.</p>	<p>6 X Supply Freq.</p>	<p>6 X Supply Freq.</p>
<p>Ripple Voltage (Rms)</p>	<p>48.3%</p>	<p>48.3%</p>	<p>18.3%</p>	<p>4.2%</p>	<p>4.2%</p>	
<p>+ Ratio $\frac{Secondary\ K_{VA}}{D.C.\ Output-KW}$</p>	<p>1.57</p>	<p>1.11</p>	<p>1.48</p>	<p>1.48</p>	<p>1.05</p>	
<p>+ Ratio $\frac{Primary\ K_{VA}}{D.C.\ Output-KW}$</p>	<p>1.11</p>	<p>1.11</p>	<p>1.21</p>	<p>1.05</p>	<p>1.05</p>	

† These ratios assume that a choke input filter is used to maintain the output current substantially constant.