

AMPEREX MERCURY VAPOR RECTIFIER 869-B

FILAMENT

A.C. Voltage	5.0
Current (amperes)	18.0
Preheating Period (Seconds)*	60

*Before plate voltage is applied.

MAXIMUM RATINGS

For Operation at Supply Frequency Up to 150 Cycles

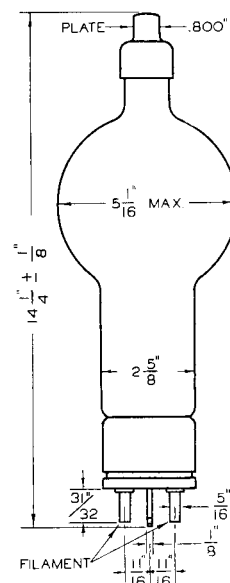
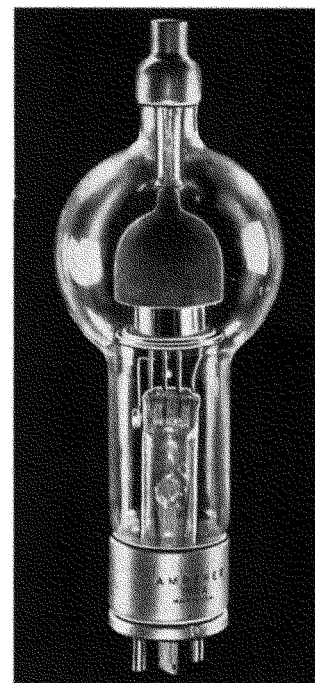
	Filament Excitation In Phase Condensed Mercury Temperature Range		Filament Excitation Out of Phase (90° ± 30°) Condensed Mercury Temperature Range
	30°C. to 40°C.	25°C. to 60°C.	30°C. to 40°C.
Peak Inverse Voltage . . .	20000	15000	15000
Peak Plate Current (amperes)	10.0	10.0	15.0
Average Plate Current (amperes)*	2.5	2.5	5.0
Approx. Tube Voltage Drop .	10.0	10.0	10.0

*Averaged over period of 30 seconds.

MAXIMUM OUTPUTS IN TYPICAL CIRCUITS

	Filament Excitation in Phase			Filament Excitation Out of Phase		
	A.C. Input Volts R.M.S.	D.C. Output Volts to Filter	Max. D.C. Load Current Amperes	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)	7000*	6300	5.0	5250*	4725	10.0
Single-Phase Full Wave Bridge (4 Tubes)	14000†	12600	5.0	10500†	9450	10.0
Three-Phase Half Wave (3 Tubes)	8150‡	9550	7.5	6100‡	7150	15.0
Three-Phase Double Y-Parallel (6 Tubes)	8150‡	9550	15.0	6100‡	7150	30.0
Three-Phase Full Wave (6 Tubes)	8150‡	19100	7.5	6100‡	14300	15.0

*Per Tube. †Total. ‡Per Leg.



AMPEREX

869-B

869-B — AMPEREX MERCURY VAPOR RECTIFIER

RECTIFIER CIRCUIT					
Conditions assumed for following relations 1. Sine-Wave Supply 2. Balanced Phase Voltages 3. Zero Tube Drop 4. Pure Resistance Load 5. No Filter Used NOTE: All rectifier filaments supplied by single phase transformers, with secondaries insulated for voltages greater than the Maximum Peak Inverse Voltage.					
SINGLE PHASE FULL-WAVE 2 TUBES	FIG. 1 	SINGLE PHASE FULL-WAVE 4 TUBES	FIG. 2 	THREE PHASE HALF-WAVE	FIG. 3
				THREE PHASE DOUBLE-Y	FIG. 4
				THREE PHASE FULL-WAVE	FIG. 5
E Average	.450 E_{rms} .318 E_{max}	.900 E_{rms} .636 E_{max}	1.170 E_{rms} .827 E_{max}	1.170 E_{rms} .827 E_{max}	2.34 E_{rms} 1.65 E_{max}
E Inverse	3.14 E_{avg}	1.57 E_{avg}	2.09 E_{avg}	2.09 E_{avg}	1.045 E_{avg}
I Average	.636 I_{max}	.636 I_{max}	.827 I_{max}	1.91 I_{max}	.955 I_{max}
Ripple Frequency	2 X Supply Freq.	2 X Supply Freq.	3 X Supply Freq.	6 X Supply Freq.	6 X Supply Freq.
Ripple Voltage (Rms)	48.3%	48.3%	18.3%	4.2%	4.2%
+ Ratio Secondary K_{va} D.C. Output-Kw	1.57	1.11	1.48	1.48	1.05
+ Ratio Primary K_{va} D.C. Output-Kw	1.11	1.11	1.21	1.05	1.05

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