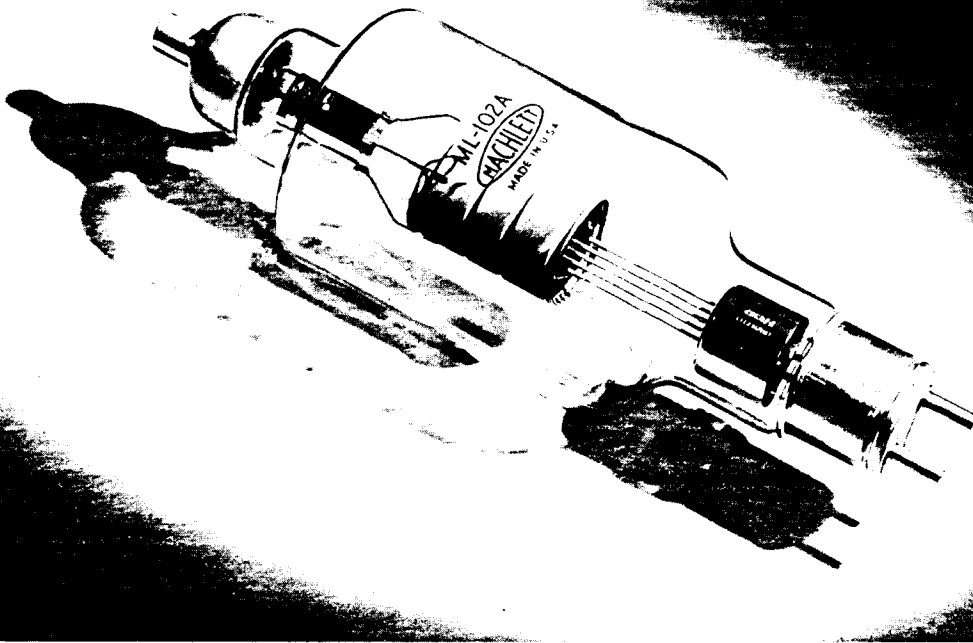




ML-102A

DESCRIPTION AND RATINGS



DESCRIPTION

The ML-102A is a high-vacuum rectifier tube having maximum ratings of 75 PKV inverse voltage and 750 MA peak anode current. It is especially adaptable to electrostatic particle precipitation service of moderately high power requirements, where its low initial cost, long life and high current capacity make it highly practical and economical to employ thermionic rectification for such service.

This tube incorporates those special features of construc-

tion which characterize Machlett high-vacuum rectifiers for high-power-level applications. These features insure ruggedness, long life, low internal voltage drop and high average load current capacity. The cathode is a pure tungsten filament of the catenary type, allowing close anode-to-cathode spacing without distortion of the filament by electrostatic forces. The anode is a cylindrical tantalum plate treated to insure a maximum rate of heat dissipation, providing a high safety factor against accidental overload.

GENERAL CHARACTERISTICS

ELECTRICAL

Filament Voltage	20 Volts
Filament Current, approximate	19 Amps
Filament Heating Time, minimum (Before applying Plate Voltage)	30 Secs
Tube Voltage Drop, maximum ($I_b=0.75$ ampere)	400 Volts

MECHANICAL

Mounting Position	Optional
Type of Cooling	Radiation
Insulating Medium	Air
Net Weight, approximate	2 lbs

MAXIMUM RATINGS

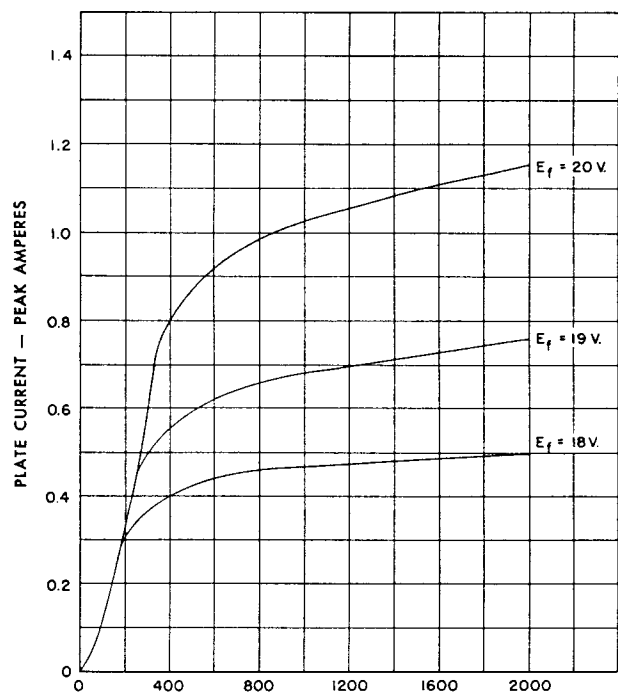
Peak Inverse Anode Voltage	75000 Volts
Peak Anode Current	0.75 Amp
Plate Dissipation	750 Watts

WARNING: Operation of this tube may produce x-rays, which constitute a health hazard. Adequate rayproof shielding must therefore be provided in the equipment.

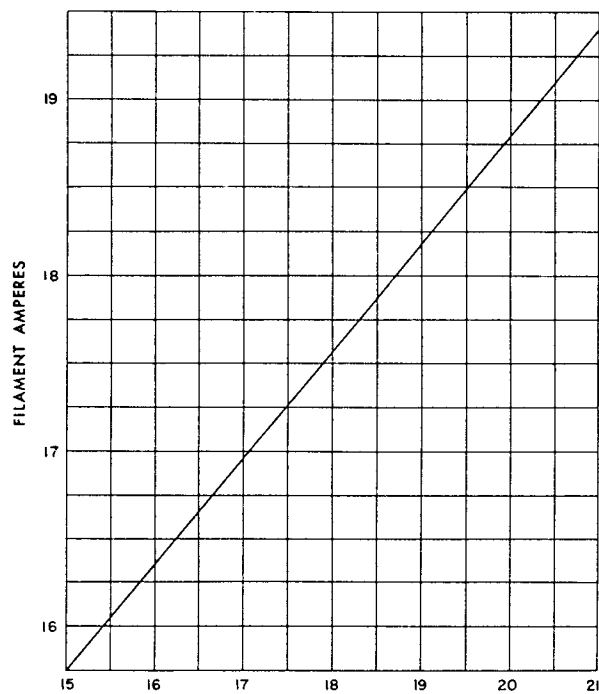
LOAD CURRENT RATINGS (Average Direct Current Delivered To Load)

Circuit	Filament Voltage Volts	Peak Anode Current Milliamperes	Load Current Rating	
			Unfiltered*	Filtered**
Single-Phase, Two-Tube, Half Wave	20	750	240	
	19	450	143	
	18	300	95	
Single-Phase, Four-Tube, Full Wave	20	750	480	750
	19	450	286	450
	18	300	190	300
Three-Phase, Double-Y, Parallel	20	750	1440	1500
	19	450	860	900
	18	300	570	600
Three-Phase, Full Wave	20	750	720	750
	19	450	430	450
	18	300	285	300

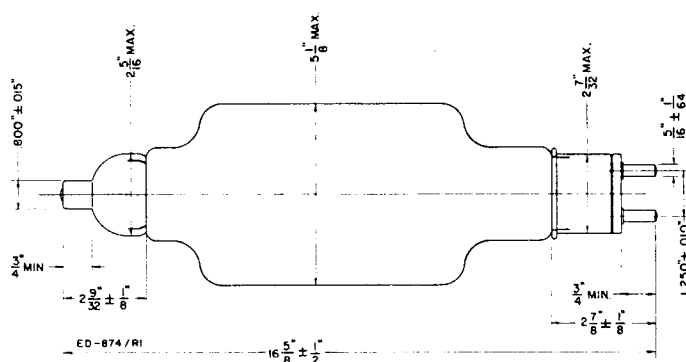
- * Unfiltered Load Current Ratings are based on sine-wave voltage input and resistance load without inductive or capacitive effects.
 ** Filtered Load Current Ratings are based on sine-wave voltage input and infinite inductance choke input filter.



A-8474
PLATE CURRENT CHARACTERISTICS



A-8473
FILAMENT CHARACTERISTICS



DIMENSIONS—ML-102A

THE MACHLETT LABORATORIES, INC.

a division of Raytheon Company

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