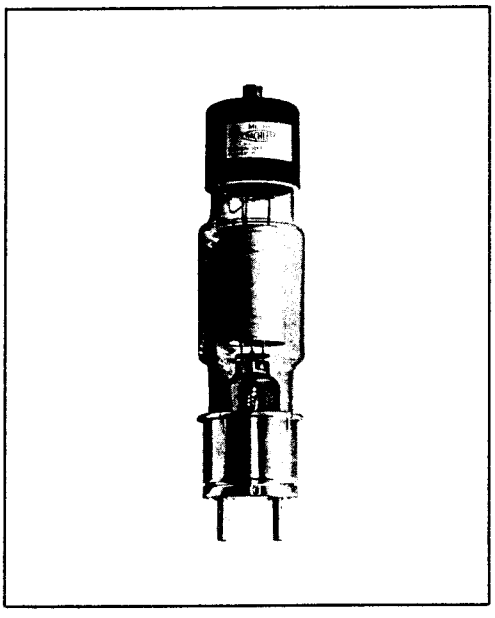


ISSUED 12-64

ML-141

High-Voltage Rectifier

125 PKV

MACHLETT

ELECTRON TUBE SPECIALIST

DESCRIPTION

The ML-141 is a high-vacuum rectifier tube having a maximum inverse voltage rating of 125 PKV using oil insulation or 80 PKV using air insulation and a maximum peak anode current rating of 750 MA. It is especially adaptable to electrostatic particle percipitation 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 construction 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 low-wattage, thoriated-tungsten, catenary-type filament, allowing close anode-to-cathode spacing without distortion of the filament by electrostatic forces. The cylindrical molybdenum anode provides a high rate of heat dissipation, with adequate safety factor against accidental overload.

GENERAL CHARACTERISTICS

ELECTRICAL

Filament Voltage	5.5 Volts*
Filament Current at 5.5 Volts, approximate	6.5 Amps
Filament Heating Time, minimum (Before applying anode voltage)	2 Secs
Tube Voltage Drop, maximum (I_b—0.750 Ampere)	650 Volts

* Applied filament voltage must be held within ± 5% of rated voltage. For maximum life, filament voltage should be maintained as close as possible to rated voltage under all conditions of operation.

MECHANICAL

Mounting Position	Optional
Type of Cooling	Radiation and Forced-Air**
Insulating Medium	Oil or Air
Net Weight	14½ Ounces

** A forced-air flow of 50 cfm should be directed at the bulb when the tube is operated in air.

MAXIMUM RATINGS

Peak Inverse Anode Voltage			
Oil Insulation		125,000	Volts
Air Insulation		80,000	Volts
Peak Anode Current		0.75	Amp
Anode Dissipation		100	Watts
Load Current (Average D-C)			
Circuit Application	Unfiltered†	Filtered‡	
Single-phase, two-tube, half-wave	.200	.....	Amp
Single-phase, four-tube, full-wave	.400	.470	Amp
Three-phase, double-Y parallel	1.200	1.200	Amps
Three-phase, full-wave	.600	.600	Amp

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

WARNING: Operation of this tube may produce x-rays. Adequate rayproof shielding must therefore be provided in the equipment.

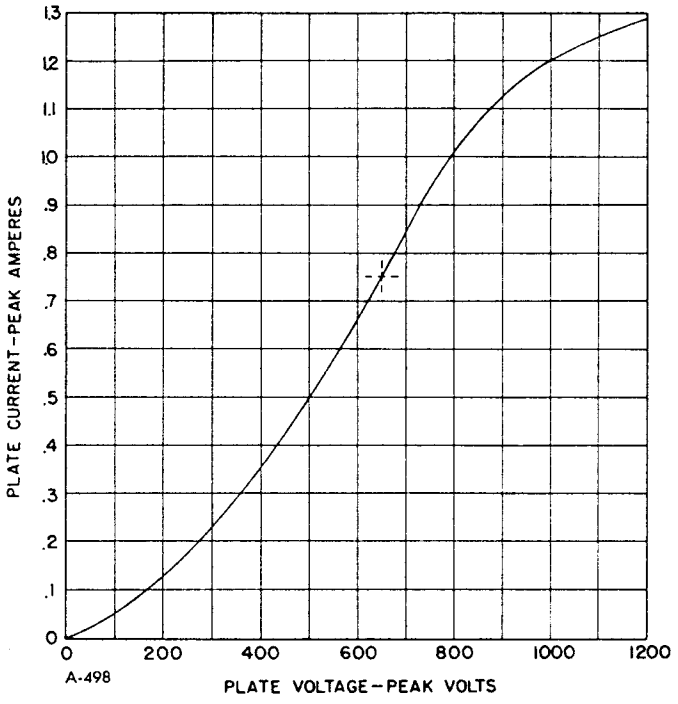
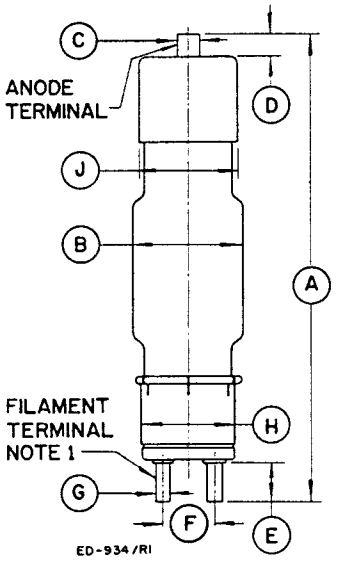


PLATE CURRENT CHARACTERISTICS

DIMENSIONS FOR OUTLINE

Ref.	INCHES		
	Minimum	Nominal	Maximum
A	10.65	10.75	10.85
B	—	—	2.75
C	.485	.500	.510
D	.44	.50	.56
E	.82	.88	.94
F	1.235	1.250	1.265
G	.292	.312	.332
H	—	2.19	—
J	—	2.25	—



NOTE:
1. Cathode base fits Machlett mounting socket part P-8835.

DIMENSIONS — ML-141

THE MACHLETT LABORATORIES, INC.
An Affiliate of Raytheon Company
SPRINGDALE MACHLETT CONNECTICUT

ST-1975 5M 12-64

Printed in U.S.A.