

**MACHLETT**

**ML-7291A**  
**VIDICON**

DESCRIPTION & RATINGS

## DESCRIPTION

The ML-7291A is a small television camera tube designed primarily for use in television broadcasting for film pick-up. It will retain a minimum center resolution of 600 lines at 0.4 microamperes signal current from a standard RETMA test pattern chart. The photoconductive layer is characterized by a spectral response approaching that of the human eye.

Featured in the design of the ML-7291A are an extremely flat faceplate free from optical distortion and an envelope

without a side tip. The tipless envelope allows the use of a longer deflecting yoke. In addition, the tipless structure simplifies the layout of optical arrangements for light splitting in a color camera.

No alignment correction is required. The novel design of the gun gives good alignment of the beam without auxiliary alignment correcting coils or magnets. This feature also protects the beam from misalignment due to stray magnetic fields.

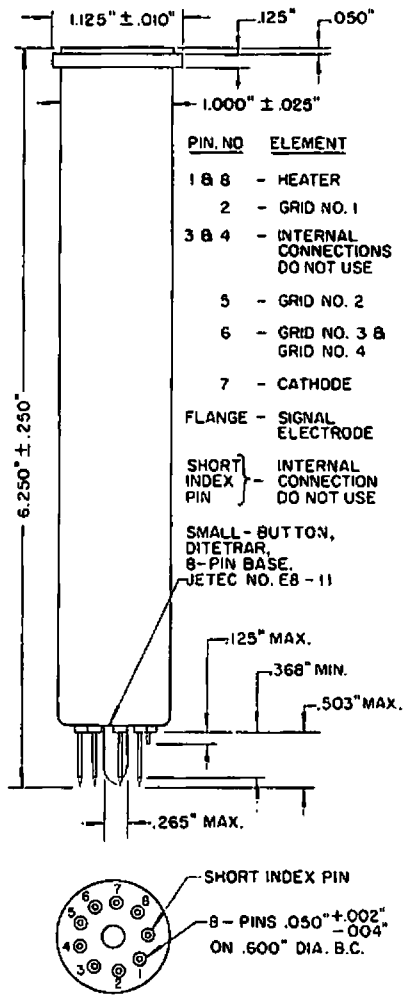
## GENERAL CHARACTERISTICS

Heater, for Unipotential Cathode:		
Voltage (AC or DC) .....		6.3 ± 10% volts
Current .....		0.6 amp
Direct Interelectrode Capacitance: ‡		
Target to All Other Electrodes .....		4.6 μf
Spectral Response .....		S-18 (See Curve)
Photoconductive Layer:		
Maximum Useful Diagonal of Rectangular Image (4 x 3 aspect ratio) .....		0.62 inch
Orientation of Quality Rectangular — Proper orientation is obtained when the horizontal scan is essentially parallel to the plane passing through the tube axis and short index pin.		
Focusing Method .....		Magnetic
Deflection Method .....		Magnetic
Overall Length .....		6.25" ± 0.25"
Greatest Diameter .....		1.125" ± 0.010"
Bulb .....		T8
Base .....	Small-Button Ditetra 8-Pin (JETEC No. E8-11)	
Socket .....	Cinch No. 54A18088, or equivalent	
Operating Position .....		Any
Weight (Approx.) .....		2 oz.

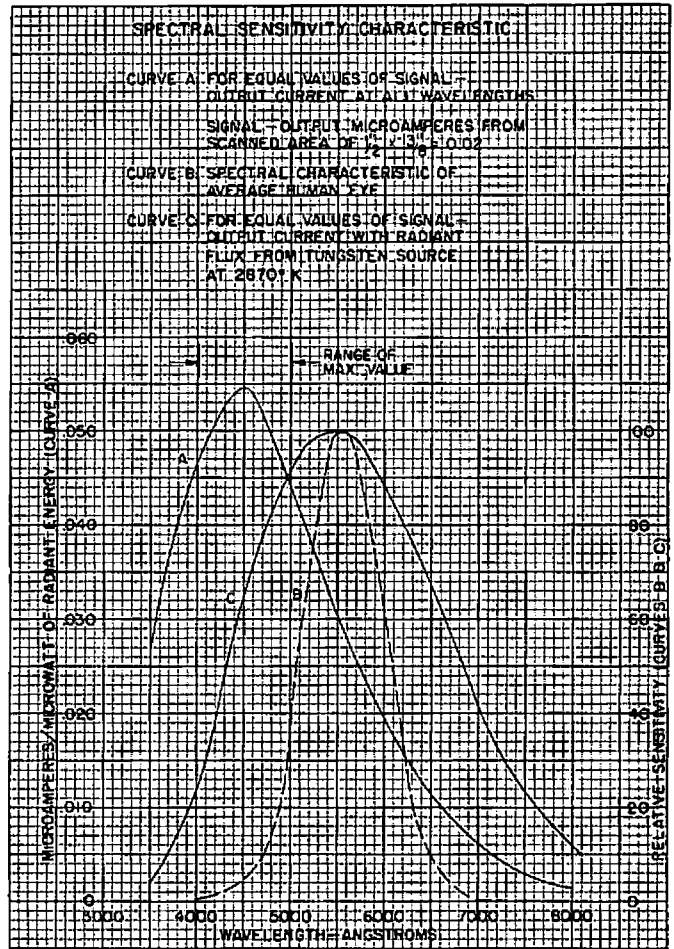
**MAXIMUM RATINGS**

Maximum Ratings, Absolute Values

Signal-Electrode Voltage .....	75 volts
Grid No. 4 & Grid No. 3 Voltage .....	350 volts
Grid No. 2 Voltage .....	350 volts
Grid No. 1 Voltage	
Negative bias value .....	125 volts
Positive bias value .....	0 volts
Peak Heater-Cathode Voltage:	
Heater negative with respect to cathode .....	125 volts
Heater positive with respect to cathode .....	10 volts
Dark current .....	0.05 $\mu$ a
Target current .....	0.45 $\mu$ a
Faceplate temperature .....	60 °C



DIMENSIONS — ML-7291A



**TYPICAL OPERATING CONDITIONS**

Typical Operation

Signal-Electrode Voltage .....	15 to 35 volts
Grid No. 4 (Decelerator) & Grid No. 3 (Beam Focus) Voltage .....	200† to 300 volts
Grid No. 2 (Accelerator) Voltage .....	300 volts
Grid No. 1 Voltage (For picture cutoff) ‡	-45 to -100 volts
Highlight Signal-Output Current .....	0.1 to 0.35 $\mu$ amp
Dark Current .....	0.01 $\mu$ amp
Average "Gamma" of Transfer Characteristic for signal-output current between 0.1 $\mu$ a and 0.2 $\mu$ a .....	0.55
Visual Equivalent Signal to Noise Ratio (Approx.)* .....	300:1
Minimum Peak-to-Peak Blanking Voltage:	
When applied to grid No. 1 .....	75 volts
When applied to cathode .....	20 volts
Field Strength at Center of Focusing Device .....	40 gauss

†Definition, focus uniformity, and picture quality decrease with decreasing grid No. 3 and No. 4 voltage. In general, grid No. 3 and grid No. 4 should not be operated below 200 volts.

‡With no blanking voltage on grid No. 1.

\*Measured with a high-gain, low-noise, cascode input amplifier having bandwidth of 5 Mc.

**MACHLETT LABORATORIES, INC.**

SPRINGDALE



CONNECTICUT

U. S. A.