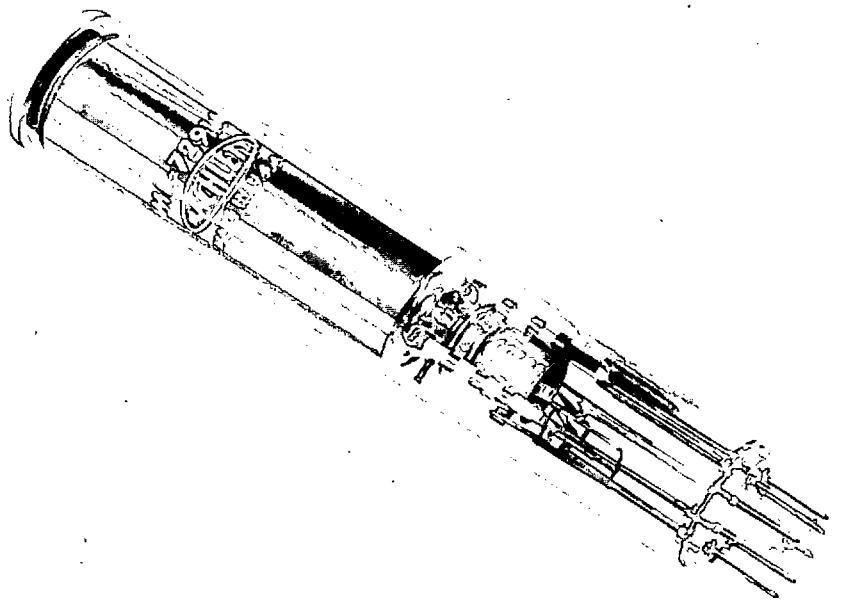


MACHLETT

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.

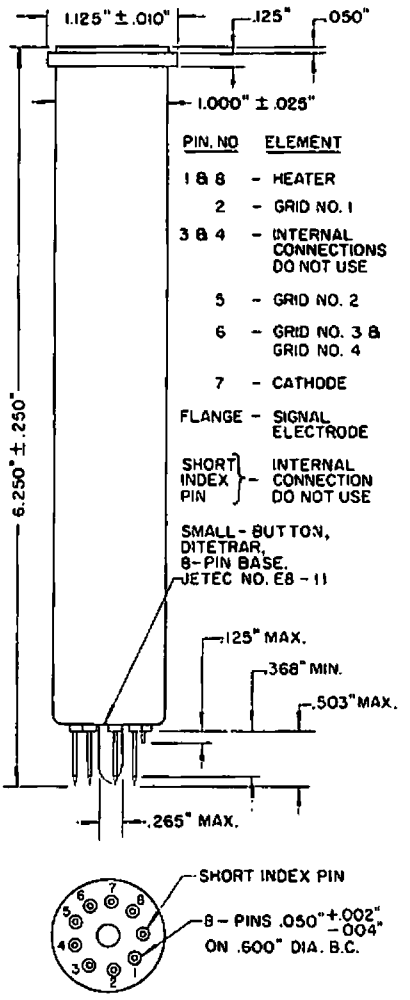
No alignment correction is required. The novel design of the gun gives good alignment of the beam without auxiliary alignment correcting coils or magnets. This feature also protects the beam from misalignment due to stray magnetic fields.

GENERAL CHARACTERISTICS

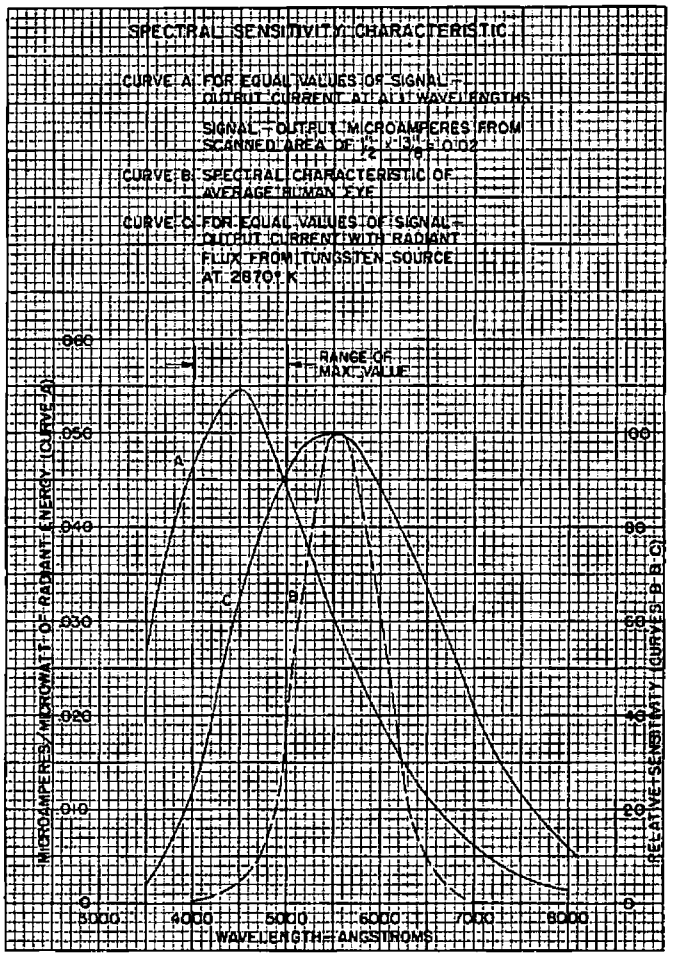
Heater, for Unipotential Cathode:		
Voltage (AC or DC)	6.3 ± 10%	volts
Current	0.6	amp
Direct Interelectrode Capacitance:‡		
Target to All Other Electrodes	4.6	$\mu\mu f$
Spectral Response	S-18	(See Curve)
Photoconductive Layer:		
Maximum Useful Diagonal of Rectangular Image (4 x 3 aspect ratio)	0.62	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 Ditetrar 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	μa
Target current	0.45	μa
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	μamp
Dark Current	0.01	μamp
Average "Gamma" of Transfer Characteristic for signal-output current between 0.1 μa and 0.2 μa	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	gausses

†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.