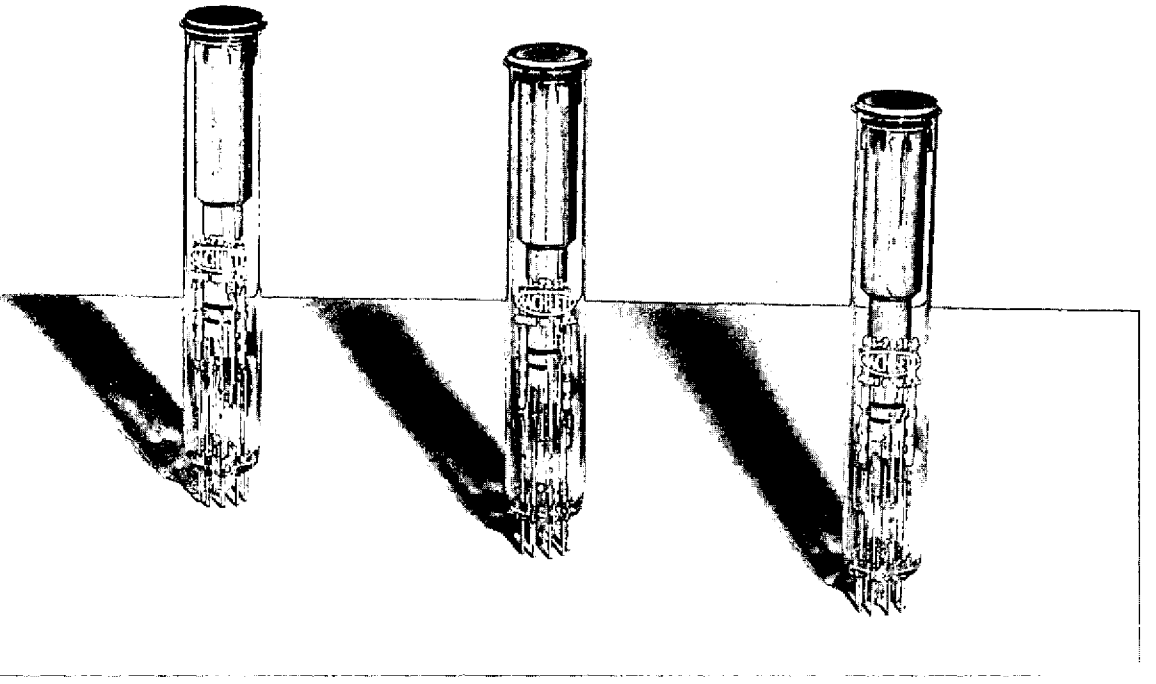


MACHLETT

# ML-7351A VIDICON

**DESCRIPTION & RATINGS**

## DESCRIPTION

The ML-7351A is a small television camera tube designed primarily for use at low light level in industrial applications with limited subject motion. Its target storage characteristics permit operation under slow-scan conditions. Its resolution under typical operating condition is about 500 lines. Resolution can be increased to over 800 lines with elevated focusing potentials. Using a photoconductive layer as its light sensitive element, the ML-7351A has a sensitivity which permits televising scenes with about 0.05 foot-candles illumination on the faceplate of the tube. For average scenes, this corresponds to approximately 5 foot-candles illumination on the scene when using an *f*/2 lens. The spectral response characteristic of the photoconductive layer exhibits a peak in the red and is somewhat dependent on dark current. The signal decay rate of the ML-7351A is approximately half that of a standard light-sensitive vidicon.

## GENERAL CHARACTERISTICS

| | | |
|---|---|---|
| Heater, for Unipotential Cathode: | | |
| Voltage (AC or DC) | 6.3 ± 10% | volts |
| Current | 0.6 | ampere |
| Direct Interelectrode Capacitance: | | |
| Signal Electrode to All Other Electrodes | 4.5 | $\mu\mu f$ |
| Spectral Response | See Curve | |
| Photoconductive Layer: | | |
| Maximum Useful Diagonal of Rectangular Image (4 x 3 Aspect Ratio) | 0.62 | inch |
| Orientation of Quality Rectangle — 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 | 6¼″ ± ¼″ | |
| Greatest Diameter | 1.125″ ± 0.010″ | |
| Bulb | T-8 | |
| Base | Small-Button Ditetrar 8-Pin (JEDEC No. E8-11) | |
| Socket | Cinch No. 54A18088, or equivalent | |
| Operating Position | Any | |
| Weight (Approx.) | 2 oz. | |

from JEDEC release #4174, March 4, 1963

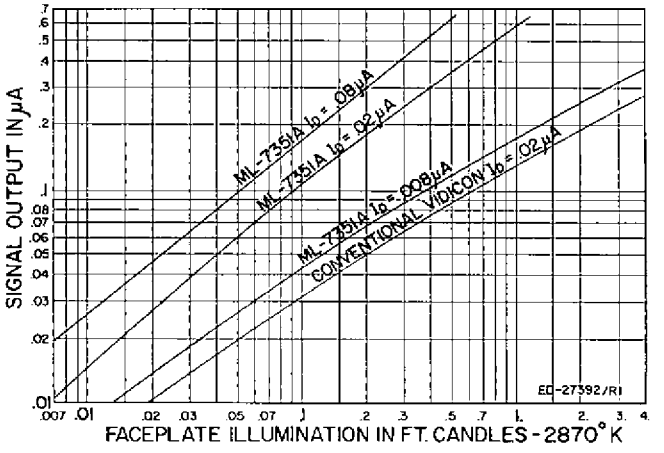
## TYPICAL OPERATING CONDITIONS

| | | |
|---|---|---|
| Typical Operation | | |
| Faceplate Illumination (Highlight) | 0.3 to 0.7 | ft-c |
| Signal-Electrode Voltage | 10 to 25 | volts |
| Maximum Rating | 40 | volts |
| Grid No. 4 (Decelerator) & Grid No. 3 (Beam Focus) Voltage | 250† 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 | 0.2 to 0.4 | μamps |
| Maximum Dark Current | 0.08 | μamp |
| Uniform 2870°K Tungsten Illumination on Tube Face to Produce Signal-Output Current of 0.1 to 0.2 μamp | 0.1 to 0.3 | ft-c |
| "Gamma" of Transfer Characteristic | 0.6 to 0.7 | |
| Visual Equivalent Signal-to-Noise Ratio (Approx.)* | 300:1 | |
| Minimum Peak-to-Peak Blanking Voltage: | | |
| When applied to grid No. 1 | 40 | volts |
| When applied to cathode | 10 | volts |
| Field Strength at Center Focusing Device | 40 | gausses |
| Field Strength of Adjustable Alignment Coil | 0 to 4 | gausses |

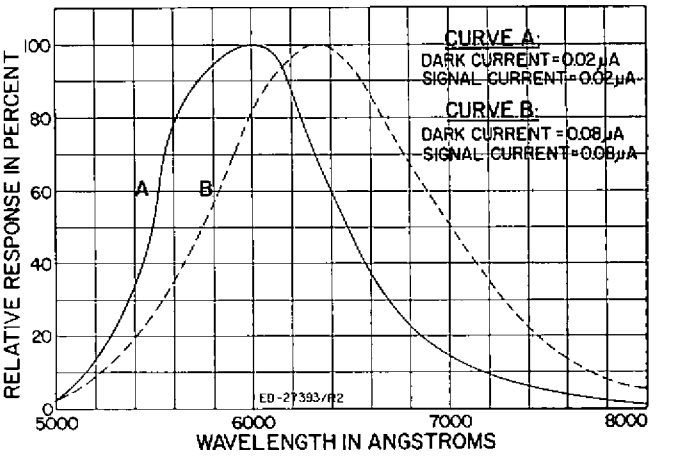
†Definition, focus uniformity, and picture quality decrease with decreasing grid No. 3 and grid No. 4 voltage. In general, grid No. 3 and grid No. 4 should not be operated below 250 volts.

‡With no blanking voltage on grid No. 1.

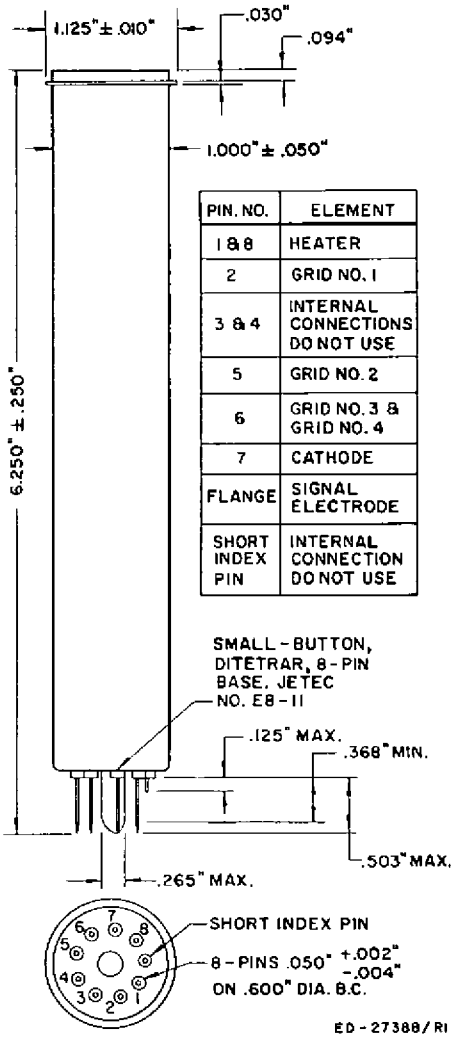
*Measured with a high-gain, low-noise, cascode-input amplifier having bandwidth of 5 Mc.




ML-7351A TRANSFER CHARACTERISTICS




ML-7351A SPECTRAL RESPONSE CHARACTERISTICS




| PIN. NO. | ELEMENT |
|---|---|
| 1 & 8 | HEATER |
| 2 | GRID NO. 1 |
| 3 & 4 | INTERNAL CONNECTIONS DO NOT USE |
| 5 | GRID NO. 2 |
| 6 | GRID NO. 3 & GRID NO. 4 |
| 7 | CATHODE |
| FLANGE | SIGNAL ELECTRODE |
| SHORT INDEX PIN | INTERNAL CONNECTION DO NOT USE |

DIMENSIONS — ML-7351A

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