

**For Industrial TV Applications
with Black-and-White TV Cameras**

DATA

General:

Heater, for Unipotential Cathode:

Voltage (AC or DC) $6.3 \pm 10\%$ volts

Current at 6.3 volts. 0.6 amp

Direct Interelectrode Capacitance:

Target to all other electrodes. 3.1 μf

Spectral Response S-18

Wavelength of Maximum Response. $4500 + 500 - 300$ angstroms

Radiant Sensitivity at 4500 angstroms. 0.08 $\mu\text{a}/\mu\text{watt}$

Photoconductive Layer:

Maximum useful diagonal of
rectangular image (4 x 3
aspect ratio) 0.625"

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. $6.250" \pm 0.063"$

Greatest Diameter $1.125" \pm 0.010"$

Weight (Approx.).2 oz

Operating Position. Any

Bulb. T8

Socket. Cinch No. 54A18088, or equivalent

Base. Small-Button Ditetra 8-Pin (JEDEC No. E8-11)

Basing Designation for BOTTOM VIEW. 8HM

Pin 1—Heater

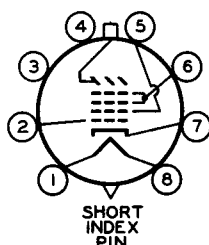
Pin 2—Grid No.1

Pin 3—Internal Con-
nection—
Do Not Use

Pin 4—Same as Pin 3

Pin 5—Grid No.2

Pin 6—Grid No.4,
Grid No.3



DIRECTION OF LIGHT:
INTO FACE END OF TUBE

Pin 7—Cathode

Pin 8—Heater

Flange—Target
Short Index Pin—
Same as
Pin 3

Maximum Ratings, Absolute-Maximum Values:

For scanned area of $1/2" \times 3/8"$

GRID-No.3 & GRID-No.4 VOLTAGE. 750 max. volts

GRID-No.2 VOLTAGE. 750 max. volts

GRID-No.1 VOLTAGE:

Negative-bias value. 300 max. volts

Positive-bias value. 0 max. volts

PEAK HEATER-CATHODE VOLTAGE:

Heater negative with respect to cathode. 125 max. volts

Heater positive with respect to cathode. 10 max. volts



PEAK TARGET CURRENT ^a	0.6 max.	μ a
FACEPLATE:		
Illumination	500 max.	fc
Temperature	71 max.	°C

Typical Operation:

*For scanned area of 1/2" x 3/8" and
faceplate temperature of 30° to 35° C*

Grid-No.4 (Decelerator) & Grid-No.3 (Beam-Focus-Electrode ^b) Voltage . . .	200 ^c to 300	volts
Grid-No.2 (Accelerator) Voltage	300	volts
Grid-No.1 Voltage for picture cutoff ^d .	-45 to -100	volts
Average "Gamma" of Transfer Characteristic for signal-output current between 0.05 μ a and 0.2 μ a . .	0.55	
Target Voltage to produce 0.02 μ a dark current:		
Maximum	30	volts
Typical	25	volts
Minimum Peak-to-Peak Blanking Voltage:		
When applied to grid No.1	30	volts
When applied to cathode	10	volts
Field Strength at center of focusing coil (Approx.)	40	gausses
Field Strength of Adjustable Alignment Coil ^e	0 to 4	gausses

Maximum-sensitivity operation

Faceplate Illumination (Highlight) . .	0.5	fc
Target Voltage ^f	35 to 70	volts
Dark Current ^g	0.2	μ a
Signal-Output Current: ^h		
Typical	0.2	μ a

^a Video amplifiers must be designed properly to handle target currents of this magnitude to avoid amplifier overload or picture distortion.

^b Beam focus is obtained by combined effect of grid-No.3 voltage which should be adjustable over indicated range, and a focusing coil having an average field strength of 40 gauss.

^c Definition, focus uniformity, and picture quality decrease with decreasing grid-No.4 and grid-No.3 voltage. In general, grid No.4 and grid No.3 should be operated above 250 volts.

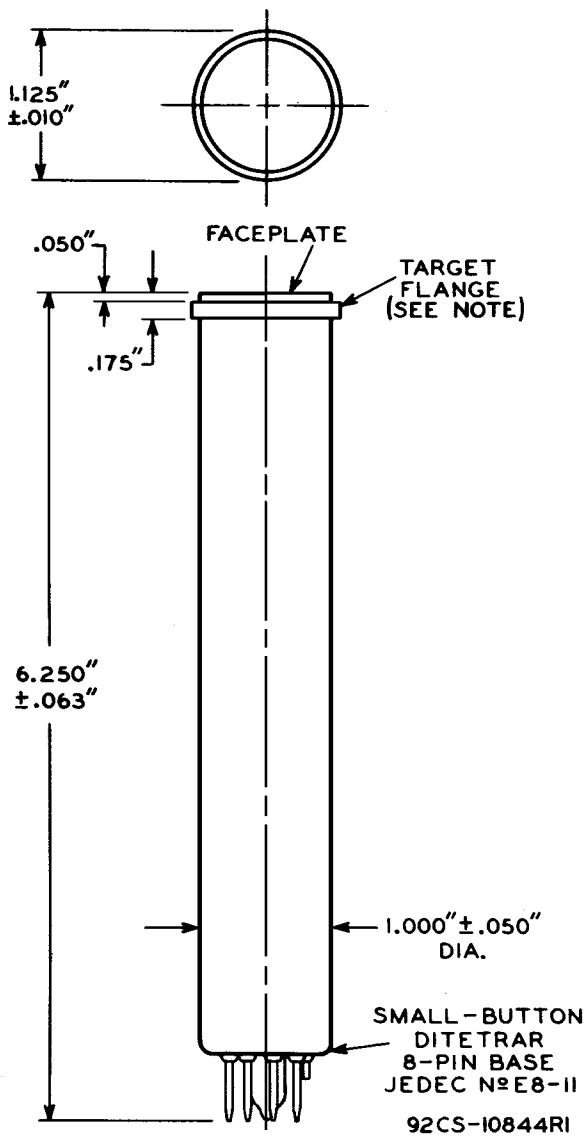
^d With no blanking voltage on grid No.1.

^e The alignment coil should be located on the tube so that its center is at a distance of 3-11/16 inches from the face of the tube, and be positioned so that its axis is coincident with the axis of the tube, the deflecting yoke, and the focusing coil.

^f The target voltage for each 7697 must be adjusted to that value which gives the desired operating dark current.

^g The deflecting circuits must provide extremely linear scanning for good black-level reproduction. Dark-current signal is proportional to the scanning velocity. Any change in scanning velocity produces a black-level error in direct proportion to the change in scanning velocity.

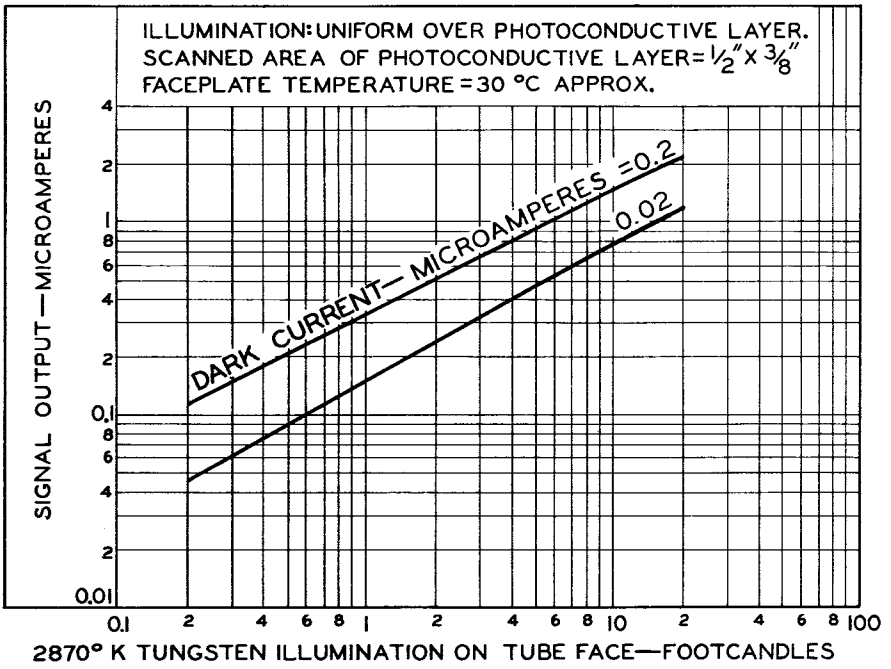
^h Defined as the component of the highlight target current after the dark-current component has been subtracted.



NOTE: THE TARGET CONNECTOR MUST BE CAPABLE OF MAKING CONTACT AT ANY POINT ON TARGET FLANGE.



TYPICAL LIGHT-TRANSFER CHARACTERISTICS



92CS-10847