

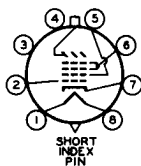
**For Industrial TV Applications  
with Black-and-White TV Cameras**

**DATA**

**General:**

Heater, for Unipotential Cathode:	
Voltage (AC or DC) . . . . .	6.3 ± 10% volts
Current at 6.3 volts. . . . .	0.6 amp
Direct Interelectrode Capacitance:	
Target to all other electrodes. . .	3.1 $\mu\text{f}$
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" ± 0.063"
Greatest Diameter . . . . .	1.125" ± 0.010"
Weight (Approx.). . . . .	.2 oz
Operating Position. . . . .	Any
Bulb. . . . .	T8
Socket. . . . .	Cinch No.54A18088, or equivalent
Base. . . . .	Small-Button Ditetrar 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" x 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 <sup>a</sup> . . . . .	0.6 max.	$\mu$ 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 <sup>b</sup> ) Voltage . . .	200 <sup>c</sup> to 300	volts
Grid-No.2 (Accelerator) Voltage . . . . .	300	volts
Grid-No.1 Voltage for picture cutoff <sup>d</sup> . . .	-45 to -100	volts
Average "Gamma" of Transfer Characteristic for signal-output current between 0.05 $\mu$ a and 0.2 $\mu$ a . . .	0.55	
Target Voltage to produce 0.02 $\mu$ 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 <sup>e</sup> . . . . .	0 to 4	gausses

### Maximum-sensitivity operation

Faceplate Illumination (Highlight) . . . . .	0.5	fc
Target Voltage <sup>f</sup> . . . . .	35 to 70	volts
Dark Current <sup>g</sup> . . . . .	0.2	$\mu$ a
Signal-Output Current: <sup>h</sup>		
Typical . . . . .	0.2	$\mu$ a

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

<sup>b</sup> 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.

<sup>c</sup> 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.

<sup>d</sup> With no blanking voltage on grid No.1.

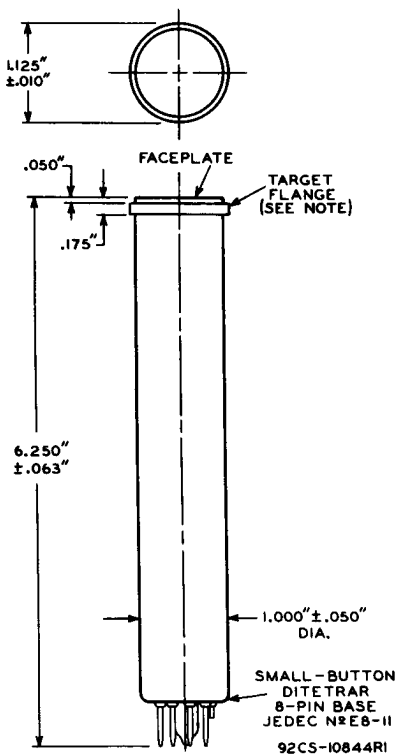
<sup>e</sup> The alignment coil should be located on the tube so that its center is at a distance of 3-11/16 inches from the face of the tube, and be positioned so that its axis is coincident with the axis of the tube, the deflecting yoke, and the focusing coil.

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

<sup>g</sup> 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.

<sup>h</sup> Defined as the component of the highlight target current after the dark-current component has been subtracted.

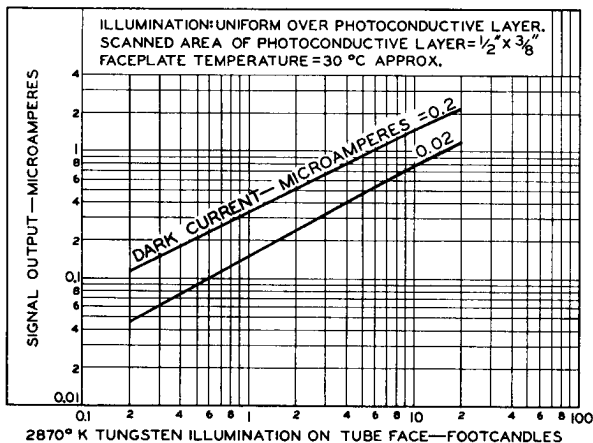




**NOTE:** THE TARGET CONNECTOR MUST BE CAPABLE OF MAKING CONTACT AT ANY POINT ON TARGET FLANGE.



## TYPICAL LIGHT-TRANSFER CHARACTERISTICS



92CS-10847