6326
VIDICON

600-LINE RESOLUTION
For film pickup
with color or black-and-white TV cameras

DATA

General:
Heater, for Unipotential Cathode:
Voltage .................. 6.3 ± 10% ........ ac or dc volts
Current ................... 0.6 ............... amp
Direct Interelectrode Capacitance:
Target (Signal electrode) to all
other electrodes .................. 4.5 μf
Spectral Response .................. See curves
Photoconductive Layer:
Maximum useful diagonal of rectangular
image (4 x 3 aspect ratio) .................. 0.62"
Orientation of quality rectangle—Proper orientation is ob-
tained 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 (Excluding side tip) .......... 1.125" ± 0.010"
Maximum Radius (Including side tip) .......... 0.805"
Weight (Approx.) .................. 2 oz
Operating Position .................. Approx. horizontal, or faceplate up
Bulb .................. Approx. T8
Base Connector .................. Cinch No. 54A18088, or equivalent
Base .................. Small-Button Ditettr 8-Pin (JETEC No. E8-11)
Basing Designation for BOTTOM VIEW .................. BHL

Pin 1—Heater
Pin 2—Grid No. 1
Pin 3—Grid No. 3
Pin 4—Internal
Pin 5—Grid No. 2
Pin 6—Grid No. 4,
Grid No. 5

Pin 7—Cathode
Pin 8—Heater
Flange—Target (Signal
Electrode)
Short Index Pin—
Internal
Connection—
Do Not Use

DIRECTION OF LIGHT;
INTO FACE END OF TUBE

Maximum Ratings, Absolute Values:
For scanned area of 1/2" x 3/8"
GRID-No. 5 & GRID-No. 4 VOLTAGE ........... 350 max. volts
GRID-No. 3 VOLTAGE ........... 350 max. volts
GRID-No. 2 VOLTAGE ........... 350 max. volts

*: See next page.

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GRID—No. 1 VOLTAGE:
  Negative bias value .............. 125 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

DARK CURRENT ................................ 0.025 max. μA

PEAK TARGET (SIGNAL—ELECTRODE) CURRENT ... 0.5 max. μA

FACEPLATE:
  Illumination ............................ 1000 max. ft-c
  Temperature ................................ 60 max. °C

Typical Operation:

  Grid No. 3 connected to grids No. 4 and No. 5; scanned area of
  1 1/2" x 3 1/8"; faceplate temperature of 30° to 35° C

Faceplate Illumination:
  Average highlight*, for pickup
    from film ................................ 50 to 300 ft-c
  Constant highlight, for pickup
    from live scenes ....................... 20 ft-c

Maximum Target (Signal—Electrode) Voltage:
  Voltage required to produce
  dark current of 0.02 μA in
  any tube** ................................ 100 volts

Target (Signal—Electrode) Voltage:†
  For pickup from film ................... 20 to 40 volts
  For pickup from live scenes .......... 40 to 70 volts

Grid-No. 5 (Decelerator) and
Grids—No. 4 & No. 3 (Beam—
Focus—Electrodes) Voltage .... 250* to 300 volts

Grid-No. 2 (Accelerator) Voltage .. 300 volts

Grid-No. 1 Voltage for picture cutoff‡
  Peak ...................................... 0.3 to 0.4 μA
  Average ................................... 0.1 to 0.2 μA

Dark Current:
  For pickup from film .............. 0.004 μA
  For pickup from live scenes ....... 0.02 μA

Average "Gamma" of Transfer
  Characteristic for signal—
  output current between 0.02 μA
  and 0.2 μA .............................. 0.65

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 of
  Focusing Coil (Approx.) ........... 40 gausses

Field Strength of Adjustable
  Alignment Coil§ ................... 0 to 4 gausses

*indicates a change.

[Image 0x0 to 276x482]
This capacitance, which effectively is the output impedance of the 6326, is increased when the tube is mounted in the deflecting-yoke and focusing-coil assembly. The resistive component of the output impedance is in the order of 100 megohms.

Averaged over the time of one TV frame.

** The target (signal-electrode) voltage for each 6326 must be adjusted to that value which gives the desired operating dark current.

† Indicated range for each type of service serves only to illustrate the operating target- (signal-electrode-) voltage range normally encountered.

# Beam focus is obtained by combined effect of grids-No. 4 & No. 3 voltage which should be adjustable over indicated range, and a focusing coil having an average field strength of 40 gauss. If desired, grid No. 3 may be operated separately to permit vernier control of focus. Under such conditions, the instantaneous grid-No. 3 voltage must always be equal to or greater than the grid-No. 4 voltage.

@ Definition, focus uniformity, and picture quality decrease with decreasing grids-No. 5 & No. 4 & No. 3 voltage. In general, grids No. 5 & No. 4 & No. 3 should not be operated below 250 volts.

● With no blanking voltage on grid No. 1.

Defined as the component of the target (signal-electrode) current after the dark-current component has been subtracted.

Measured with high-gain, low-noise, cascode-type amplifier having bandwidth of 5 Mc. Because the noise in such a system is predominately of the high-frequency type, the visual equivalent signal-to-noise ratio is taken as the ratio of highlight video-signal current to rms noise current, multiplied by a factor of 3.

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.

** TYPICAL CHARACTERISTIC

TARGET VOLTS = CONSTANT
SCANNED AREA OF PHOTOCONDUCTIVE LAYER = 1/2 x 3/8

FACELPLATE TEMPERATURE - °C

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92CS-9540
SPECTRAL-SENSITIVITY CHARACTERISTICS

CURVE A: FOR EQUAL VALUES OF SIGNAL-OUTPUT CURRENT AT ALL WAVELENGTHS.

- SIGNAL-OUTPUT MICROAMPERES FROM SCANNED AREA OF \( \frac{1}{2}'' \times \frac{3}{4}'' = 0.02 \)
- DARK CURRENT (MICROAMPERES) = 0.02

CURVE B: SPECTRAL CHARACTERISTIC OF AVERAGE HUMAN EYE.

CURVE C: FOR EQUAL VALUES OF SIGNAL-OUTPUT CURRENT WITH RADIANT FLUX FROM TUNGSTEN SOURCE AT 2870° K.

[Graph showing wavelength vs. radiant energy with curves labeled A, B, and C.]
TYPICAL LIGHT-TRANSFER CHARACTERISTICS

ILLUMINATION: 2870°K TUNGSTEN UNIFORM OVER PHOTOCONDUCTIVE LAYER.
SCANNED AREA OF PHOTOCONDUCTIVE LAYER = 1/2" x 3/8"

ILLUMINATION ON TUBE FACE—FOOT—CANDLES

TYPICAL PERSISTENCE CHARACTERISTIC

INITIAL HIGHLIGHT SIGNAL-OUTPUT MICROAMPERES = 0.35
SCANNED AREA OF PHOTOCONDUCTIVE LAYER = 1/2" x 3/8"
FACEPLATE TEMPERATURE = 30° C APPROX.
TYPICAL CHARACTERISTIC

ILLUMINATION: 2870° K INCANDESCENT.
HIGHLIGHT SIGNAL-OUTPUT MICROAMPERES = 0.35
SCANNED AREA OF PHOTOCONDUCTIVE LAYER = 1/2" x 3/8"
FACEPLATE TEMPERATURE = 30° C APPROX.
TYPICAL DARK-CURRENT CHARACTERISTIC

SCANNED AREA OF PHOTOCONDUCTIVE LAYER = 1/2" x 3/8"
FACEPLATE TEMPERATURE = 30°C APPROX.

TARGET VOLTS

DARK CURRENT – MICROAMPERES

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TYPICAL CHARACTERISTICS

HIGHLIGHT SIGNAL-OUTPUT MICROAMPERES = 0.3
DARK CURRENT (MICROAMPERES) = 0.004
SCANNED AREA OF PHOTOCONDUCTIVE LAYER = 1/2" x 3/8"

CURVE A: TARGET VOLTAGE REQUIRED TO MAINTAIN DARK CURRENT OF 0.004 µA.
CURVE B: 2870°K INCANDESCENT ILLUMINATION REQUIRED TO PRODUCE SIGNAL-OUTPUT CURRENT OF 0.3 µA.