5826

5826

IMAGE ORTHICON

MAGNETIC FOCUS MAGNETIC DEFLECTION

DATA

General:

Heater, for Unipotential Cathode:

Voltage	6.3 ± 10%	ac or dc volts
Current	0.6	amp

Direct Interelectrode Capacitance:

Anode to All Other Electrodes	20	μμf

Photocathode, Semi-Transparent:

Response . . . . . See Curve

Useful Size of Rectangular Image (4 x 3 aspect ratio) . . . . . 1.6" max. diagonal

Orientation of Rectangular Image— Proper orientation is obtained when the vertical scan is essentially parallel to the plane passing through center of face plate and pin No.7 of the shoulder base.

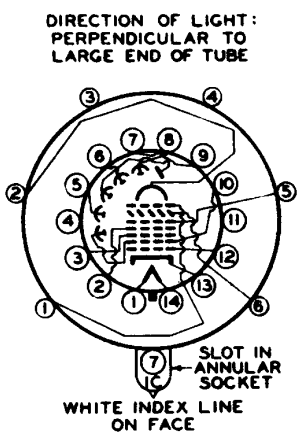
Focusing Method	Magnetic
Deflection Method	Magnetic
Overall Length	15-1/4" ± 1/4"
Greatest Diameter of Bulb	3" ± 1/16"
Minimum Deflecting-Coil Inside Diameter	2-1/8"
Deflecting-Coil Length	5"
Focusing-Coil Length	10"
Alignment-Coil Length	15/16"
Photocathode Distance Inside End of Focusing Coil	1/2"

Operating Position: Any except with diheptal base up and tube axis at angle of less than 20° from vertical

End Base . . . . . Small-Shell Diheptal 14-Pin

Pin 1 - Heater
Pin 2 - Grid No.4
Pin 3 - Grid No.3
Pin 4 - Internal Connection—Do Not Use
Pin 5 - Dynode No.2
Pin 6 - Dynode No.4
Pin 7 - Anode
Pin 8 - Dynode No.5
Pin 9 - Dynode No.3
Pin 10 - Dynode No.1, Grid No.2
Pin 11 - Internal Connection—Do Not Use
Pin 12 - Grid No.1
Pin 13 - Cathode
Pin 14 - Heater

BOTTOM VIEW



Shoulder Base . . . . . Keyed Jumbo Annular 7-Pin

Pin 1 - Grid No.6
Pin 2 - Photocathode
Pin 3 - Internal Connection—Do Not Use
Pin 4 - Internal Connection—Do Not Use
Pin 5 - Grid No.5
Pin 6 - Target
Pin 7 - Internal Connection—Do Not Use

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Maximum Ratings, *Absolute Values*:		
PHOTOCATHODE VOLTAGE	−550 max.	volts
PHOTOCATHODE ILLUMINATION	50 max.	ft-c
OPERATING TEMPERATURE OF ANY PART OF BULB	65 max.	°C
OPERATING TEMPERATURE OF BULB AT LARGE END OF TUBE (Target Section)	45 min.	°C
TEMPERATURE DIFFERENCE BETWEEN TARGET SECTION AND ANY PART OF BULB HOTTER THAN TARGET SECTION	5 max.	°C
GRID-NO.6 VOLTAGE	−550 max.	volts
TARGET VOLTAGE:		
Positive value	50 max.	volts
Negative value	50 max.	volts
GRID-No.5 VOLTAGE	150 max.	volts
GRID-No.4 VOLTAGE	300 max.	volts
GRID-No.3 VOLTAGE	400 max.	volts
GRID-No.2 & DYNODE-No.1 VOLTAGE	350 max.	volts
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
ANODE-SUPPLY VOLTAGE⊕	1500 max.	volts
VOLTAGE PER MULTIPLIER STAGE	350 max.	volts

Typical Operation:		
Photocathode Voltage (Image Focus)	−300 to −500	volts
Grid-No.6 Voltage (Accelerator)— 80% of photocathode voltage	−240 to −400	volts
Target Voltage●	0	volts
Grid-No.5 Voltage (Decelerator)●●	0 to 100	volts
Grid-No.4 Voltage (Beam Focus)	160 to 240	volts
Grid-No.3 Voltage##	225 to 330	volts
Grid-No.2 & Dynode-No.1 Voltage	300	volts
Grid-No.1 Voltage (For Picture Cutoff)	−45 to −115	volts
Dynode-No.2 Voltage	600	volts
Dynode-No.3 Voltage	800	volts
Dynode-No.4 Voltage	1000	volts
Dynode-No.5 Voltage	1200	volts
Anode Voltage	1250	volts
Anode Current	50	μa
Target Temperature Range	45 to 60	°C

⊕ Ratio of dynode voltages is shown under Typical Operation.

● Adjustable from −3 to + 5 volts with blanking voltage off.

●● Taps at 0, 30, 60, and 90 volts are recommended. Set at voltage giving most uniform resolution and signal output over entire picture area.

Adjust to give the most uniformly shaded picture near maximum signal.

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Highlight Illumination on Photocathode for Maximum Signal Output: With 2870°K Tungsten Illumination, White Fluorescent Illumination, or Daylight. .	0.04	ft-c
Ratio of Peak-to-Peak Highlight Video-Signal Cur. to RMS Noise Current (Approx.)	70	
Minimum Peak-to-Peak Blanking Voltage. . . .	10	volts
Field Strength at Center of Focusing Coil. .	75	gausses
Focusing-Coil Current (Approx. for coil listed below)□.	75	ma
Deflecting-Coil Current (Approx. for assembly listed below):		
Horizontal (Peak to Peak).	625	ma
Vertical (Peak to Peak).	290	ma
Alignment-Coil Current (Approx. for coil listed below)	0 to 30	ma

Components:

Deflecting-Coil Assembly (Includes Keyed Jumbo Annular 7-Pin Socket). . .	RCA Type No. 201D75
Focusing-Coil Assembly	RCA Type No. 202D75
Alignment-Coil Assembly.	RCA Type No. 204D75
Hor. Deflection Output Transformer . . .	RCA Type No. 204T1
Ver. Deflection Output Transformer . . .	RCA Type No. 204T2

□ Direction of current should be such that a north-seeking pole is attracted to the image end of focusing coil.

OPERATING NOTES

After the 5826 has been inserted in its sockets and the voltages applied, allow it to warm up for 1/2 to 1 hour with the camera lens iris closed. Then, proceed with normal operating adjustments.

When the equipment design or operating conditions are such that the maximum temperature rating or maximum temperature difference will be exceeded, provision should be made to direct a blast of cooling air from the diheptal-base end of the tube along the entire length of the bulb surface, i.e., through the space between the bulb surface and the surrounding deflecting coil and its extension. For this purpose, a small blower is satisfactory, but it should run at low speed to prevent vibration of the 5826 and the associated amplifier equipment. Unless vibration is prevented, distortion of the picture may occur. To keep the operating temperature of the large end of the tube from falling below 45°C, some form of controlled heating should be employed. Ordinarily, adequate heat will be supplied by the focusing coil, deflecting coils, and associated amplifier tubes so that the temperature can be controlled by the amount of cooling air directed along the bulb surface.

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RCA

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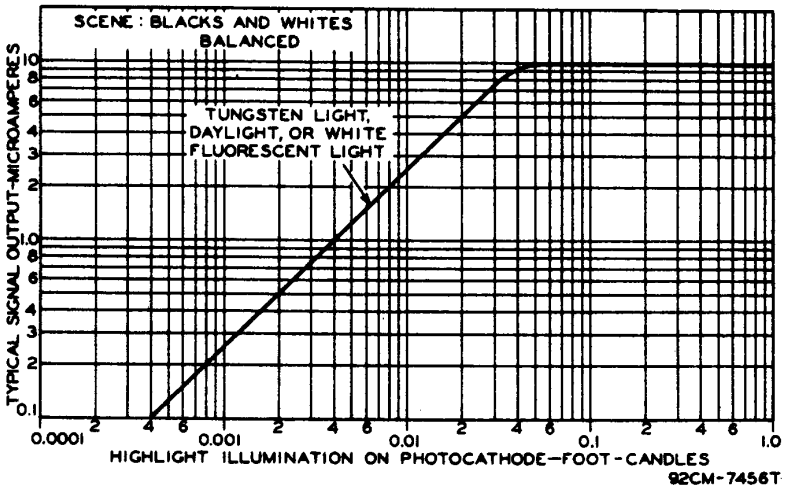
IMAGE ORTHICON

Resolution of better than 500 lines at the center of the picture can be produced by the 5826 when the highlight illumination from an RMA Standard Test Chart is above the knee of the typical signal-output curve for this type. To utilize such resolution capability in the horizontal direction with the standard scanning rate of 525 lines, it is necessary to use a video amplifier having a bandwidth of at least 6 megacycles. The maximum resolution obtainable is limited by the mesh-screen portion of the target.

TYPICAL SIGNAL OUTPUT



SPECTRAL SENSITIVITY CHARACTERISTIC
and
OUTLINE DIMENSIONS
are the same as those shown for Type 5820

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