



NEC
Image Orthicon
7295A

NEC-7295A is a 4-¹/₂-inch camera tube of the image-orthicon type intended for use in high-quality black-and-white TV cameras. The 7295A requires only a very narrow range of camera control adjustment for optimum performance and stable day-to-day operation. Because of its excellent performance capability over a wide range of different lighting conditions, the 7295A is well suited for either outdoor or studio pickup.

The 7295A features high signal-to-noise ratio, excellent resolution capability, and extremely tight limits on such important performance characteristics as sensitivity, and uniformity of sensitivity and background.

The spectral response of the 7295A approaches that of the eye. It has high blue sensitivity, high green sensitivity, and negligible infrared sensitivity.



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D A T A

General :

Heater Voltage	6.3 ± 10%	volts
Heater Current	0.6	ampere
Direct Interelectrode Capacitance Anode to all other electrodes	12	μF
Target-to-Mesh Spacing	0.056	mm.
Spectral Response	S - 10	
Wavelength of Maximum Response	4500 ± 300	angstroms
Focusing Methode	Magnetic	
Deflection Methode	Magnetic	
Overall Length	492 ± 8	mm
Greatest Diameter of Bulb	114.3 ± 2.4	mm
Envelope Terminals	5	
End Base	Small-Shell Diheptal 14-Pin Base (JETEC Group 5 No. B14-45)	
Weight (Approx.)	1	kg
Minimum Deflecting-Coil Inside Diameter	81.9	mm
Deflecting-Coil Length	177.8	mm
Focusing-Coil Length	381	mm
Alignment Coil: position on neck	Centerline of magnetic fields should be located 235 mm from the flat area of the shoulder.	



Typical Operating Values:

Photocathode Voltage	-600	volts
Grid-No.6 Voltage (Image Focus)		
Approx. 50% of photocathode voltage	-250 to -300	volts
Target Voltage Above Cutoff ^o	2 to 3	volts
Field Mesh Voltage##	15 to 25	volts
Grid-No.5 Voltage (Decelerator)	40	volts
Grid-No.4 Voltage (Beam Focus)	70 to 90	volts
Grid-No.3 Voltage	250 to 275	volts
Grid-No.2 & Dynode-No.1 Voltage	280	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
Target Temperature Range	35 to 45	°C
Minimum Peak-to-Peak Blanking Voltage	5	volts
Field Strength of Focusing Coil: [△]		
At center of scanning section		
(Approx.)	60	gausses
In plane of photocathode (Approx.)	120	gausses
Field Strength of Alignment coil	0 to 3	gausses



Performance Data:

	Min.	Average	Max.	
Luminous Sensitivity	30	60	-	$\mu\text{A}/\text{cm}^2$
Signal-Output Current	10	-	40	μA
Ratio of Peak-to-Peak Highlight Video-signal Current to RMS Noise Current for Bandwidth of 4.5 MC	-	65.1	-	
Photocathode illumination at 2870°K Required to Reach "Knee" of Light Transfer Characteristic	-	0.4	-	lx.
Amplitude Response at 400 TV Lines per Picture Height (Percent of large-area black to large-area white)**	-	65	-	%

With respect to grid No.4

Dynode-Voltage Values are shown under Typical Operating values.

[] Adjust for optimum focus.

o The target supply voltage should be adjustable from -5 to +5 volts.

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

△ Direction of current should be such that a northseeking pole is attracted to the image end of the focusing coil, with the indicator located outside of and at the image end of the focusing coil.

** Measured with amplifier having flat frequency response.