

**TUNG-SOL**

## CATHODE RAY

THE 16AP4 AND 16AP4A ARE DIRECT-VIEW PICTURE TUBES DESIGNED FOR USE IN TELEVISION APPLICATIONS. THEY ARE IDENTICAL *EXCEPT* FOR THE FROSTED GREY FILTER FACEPLATE USED ON THE 16AP4A. THEIR COMMON FEATURES INCLUDE: ←

UNIPOTENTIAL CATHODE      ROUND METAL CONSTRUCTION  
MAGNETIC FOCUS & DEFLECTION      EXTERNAL DOUBLE FIELD ION TRAP  
10" X 13 1/4" RASTER SIZE

**ELECTRICAL DATA**

FOCUSING METHOD		MAGNETIC
DEFLECTING METHOD		MAGNETIC
DEFLECTION ANGLE (APPROX.)	53	DEGREES
DIRECT INTERELECTRODE CAPACITANCES (APPROX.):		
CATHODE TO ALL OTHER ELECTRODES	5.0	μf
GRID #1 TO ALL OTHER ELECTRODES	6.0	μf

**OPTICAL DATA**

PHOSPHOR NUMBER		NO. 4
FLUORESCENT COLOR		WHITE
PHOSPHORESCENT COLOR		WHITE
PERSISTENCE		MEDIUM
FACEPLATE LIGHT TRANSMISSION AT CENTER (APPROX.) 16AP4A	66	PERCENT

**RATINGS**

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM

HEATER VOLTAGE	6.3	VOLTS
HEATER CURRENT	0.6	AMP.
MAXIMUM DC ANODE, GRID #3 VOLTAGE	14 000	VOLTS
MAXIMUM DC GRID #2 VOLTAGE	410	VOLTS
MAXIMUM GRID #1 VOLTAGE:		
DC NEGATIVE-BIAS VALUE	125	VOLTS
DC POSITIVE-BIAS VALUE <sup>A</sup>	0	VOLTS
POSITIVE-PEAK VALUE	2	VOLTS
MAXIMUM DC PEAK HEATER-CATHODE VOLTAGE:		
HEATER NEGATIVE WITH RESPECT TO CATHODE		
DURING WARM-UP PERIOD NOT TO EXCEED 15 SECONDS	410	VOLTS
AFTER EQUIPMENT WARM-UP PERIOD	150	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE	150	VOLTS
MAXIMUM GRID #1 CIRCUIT RESISTANCE	1.5	MEG OHMS

<sup>A</sup> CATHODE SHOULD BE RETURNED TO ONE SIDE OR TO THE MID-TAP OF THE HEATER TRANSFORMER WINDING.

**TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS**

DC ANODE, GRID #3 VOLTAGE <sup>B</sup>	12 000	VOLTS
DC GRID #2 VOLTAGE	300	VOLTS
DC GRID #1 VOLTAGE <sup>C</sup>	-33 TO -77	VOLTS
DC FOCUSING COIL CURRENT <sup>D</sup> (APPROX.)	85 ± 20%	MA.

<sup>B</sup> BRILLIANCE AND DEFINITION DECREASE WITH DECREASING ANODE VOLTAGE. IN GENERAL, THE ANODE VOLTAGE SHOULD NOT BE LESS THAN 9000 VOLTS.

<sup>C</sup> VISUAL EXTINCTION OF UNDEFLECTED FOCUSED SPOT.

<sup>D</sup> FOR STANDARD FOCUS COIL #109, OR EQUIVALENT, WITH THE COMBINED GRID #1 BIAS VOLTAGE AND VIDEO SIGNAL VOLTAGE ADJUSTED TO PRODUCE A HIGHLIGHT BRIGHTNESS OF 30 FOOT LAMBERTS ON A 10" BY 13 1/4" PICTURE SIZE. DISTANCE FROM REFERENCE LINE TO CENTER OF AIR GAP ON FOCUS COIL SHALL BE 3 INCHES.

→ INDICATES A CHANGE.

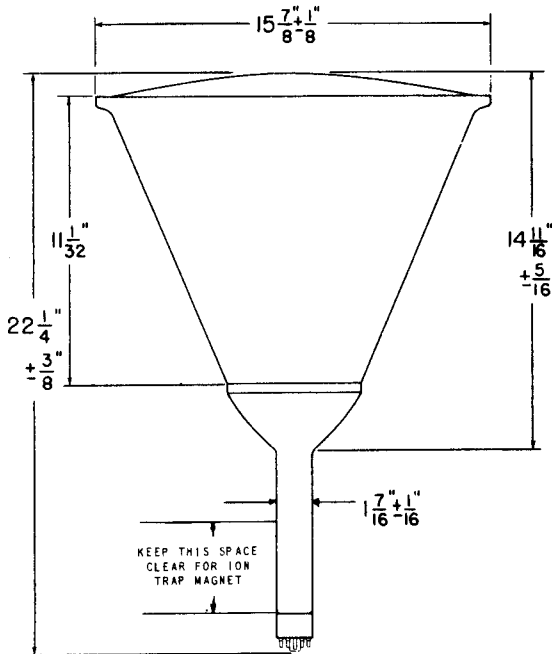
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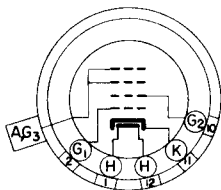
**MECHANICAL DATA**

OVERALL LENGTH	22 1/4 ± 3/8	INCHES
GREATEST DIAMETER OF BULB	15 7/8 ± 1/8	INCHES
MINIMUM USEFUL SCREEN DIAMETER	14 3/8	INCHES
BULB CONTACT	METAL SHELL LIP	
BASE	SMALL SHELL DUODECAL 5 PIN	B5-57
BASING		12D



**PIN CONNECTIONS**

- PIN 1 - HEATER
- PIN 2 - GRID NO. 1
- PIN 10 - GRID NO. 2
- PIN 11 - CATHODE



- PIN 12 - HEATER
- METAL SHELL LIP:
- ANODE
- GRID NO. 3

BOTTOM VIEW