

TUNG-SOL

CATHODE RAY

THE 21CHP4 IS A DIRECT-VIEW PICTURE TUBE DESIGNED FOR TELEVISION APPLICATIONS. ITS FEATURES INCLUDE:

ELECTROSTATIC FOCUS	ALUMINIZED SCREEN
UNIPOENTIAL CATHODE	MAGNETIC DEFLECTION
GRAY FILTER FACEPLATE	EXTERNAL CONDUCTIVE COATING
RECTANGULAR GLASS CONSTRUCTION	19 1/16" X 15 1/16 RASTER SIZE
DOES NOT REQUIRE ION TRAP	

ELECTRICAL DATA

FOCUSING METHOD		ELECTROSTATIC
DEFLECTING METHOD		MAGNETIC
DEFLECTION ANGLE (APPROX.):		
HORIZONTAL	85	DEGREES
VERTICAL	68	DEGREES
DIAGONAL	90	DEGREES
DIRECT INTERELECTRODE CAPACITANCES (APPROX.):		
CATHODE TO ALL OTHER ELECTRODES	5	$\mu\mu\text{f}$
GRID #1 TO ALL OTHER ELECTRODES	6	$\mu\mu\text{f}$
MAXIMUM EXTERNAL CONDUCTIVE COATING TO ANODE	2500	$\mu\mu\text{f}$
MINIMUM EXTERNAL CONDUCTIVE COATING TO ANODE	2000	$\mu\mu\text{f}$

OPTICAL DATA

PHOSPHOR NUMBER	P-4
FLUORESCENT COLOR	WHITE
PHOSPHORESCENT COLOR	WHITE
PERSISTENCE	SHORT
FACEPLATE TRANSMISSION AT CENTER (APPROX.):	74 PERCENT

RATINGS

INTERPRETED ACCORDING TO DESIGN CENTER SYSTEM
CATHODE DRIVE SERVICE

HEATER VOLTAGE	6.3	VOLTS
HEATER CURRENT	0.6	AMP.
MAXIMUM DC ANODE VOLTAGE*	20 000	VOLTS
MAXIMUM DC GRID #4 VOLTAGE	-500 TO +1000	VOLTS
MAXIMUM DC GRID #2 VOLTAGE	200	VOLTS
MAXIMUM GRID #1 VOLTAGE:		
DC NEGATIVE-BIAS VALUE	125	VOLTS
DC POSITIVE-BIAS VALUE	0	VOLTS
POSITIVE-PEAK VALUE	0	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	180	VOLTS
HEATER POSITIVE WITH RESPECT TO CATHODE	180	VOLTS
MAXIMUM GRID #1 CIRCUIT RESISTANCE	1.5	MEG OHMS

TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS

CATHODE DRIVE^A

DC ANODE VOLTAGE	18 000	VOLTS
DC GRID #4 VOLTAGE	-50 TO +350	VOLTS
DC GRID #2 VOLTAGE	110	VOLTS
DC GRID #1 VOLTAGE ^B	-37 TO -50	VOLTS

^A THIS TUBE MAY BE OPERATED IN GRID DRIVE IF DESIRED, WITH SOME LOSS IN EFFICIENCY. AVERAGE RASTER CUTOFF, USING DRIVE, MAY BE CALCULATED: $E_{g1c} = .502 E_{g2} + 5.8$

^B VISUAL EXTINCTION OF FOCUSED RASTER.

*BRILLIANCE AND DEFINITION DECREASE WITH DECREASING ANODE VOLTAGE. IN GENERAL, ANODE VOLTAGE SHOULD NOT BE LESS THAN 14,000 VOLTS.

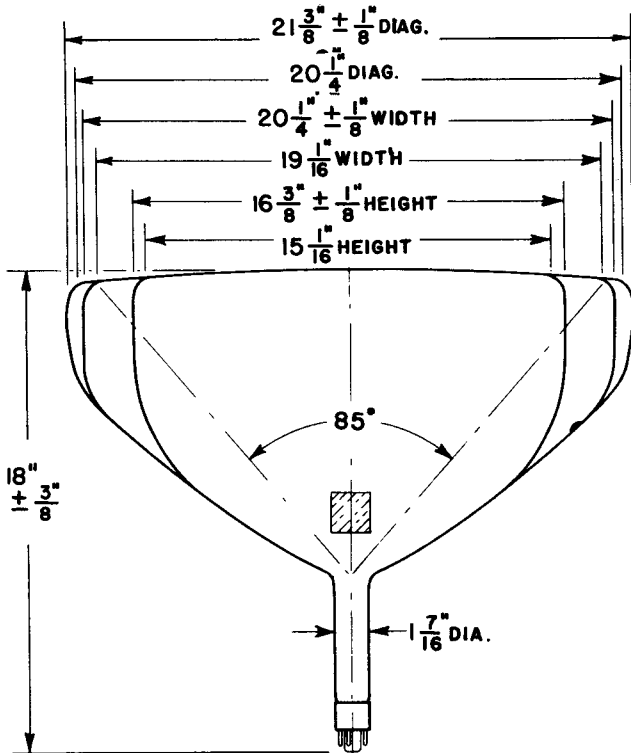
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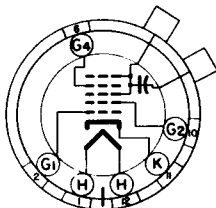
MECHANICAL DATA

OVERALL LENGTH	$18 \pm 3/8$	INCHES
GREATEST DIMENSIONS OF BULB:		
DIAGONAL	$21 \ 3/8 \pm 1/8$	INCHES
WIDTH	$20 \ 1/4 \pm 1/8$	INCHES
HEIGHT	$16 \ 3/8 \pm 1/8$	INCHES
MIN. USEFUL SCREEN DIMENSIONS:		
DIAGONAL	$20 \ 1/4$	INCHES
WIDTH	$19 \ 1/16$	INCHES
HEIGHT	$15 \ 1/16$	INCHES
BULB CONTACT	RECESSED SMALL CAVITY CAP	J1-21
BASE	SMALL SHELL DUODECAL 6 PIN	B6-63
BASING		12L
BULB CONTACT ALIGNMENT		
J1-21 CONTACT ALIGNS WITH PIN POSITION #6 ± 30 DEGREES		



PIN CONNECTIONS

- PIN 1 - HEATER
- PIN 2 - GRID #1
- PIN 6 - GRID #4
- PIN 10 - GRID #2
- PIN 11 - CATHODE



- PIN 12 - HEATER
- ANODE CAP:
- GRID NO. 3
- GRID NO. 5

BOTTOM VIEW