

LE CATHOSCOPE FRANÇAIS

50, Rue J.-P. Timbaud - COURBEVOIE - FRANCE

21 EZ P4

1st Sept. 1960

Cathode Ray Tube

Electrostatic focus	19.1/6" x 15.1/16" screen
Magnetic deflection	12.13/16" length
110 degree deflection angle	aluminized screen

GENERAL DESCRIPTION

The 21 EZ P4 is an electrostatic focus and magnetic deflection, direct viewing picture tube. Feature of this tube include a very short overall length, a small neck diameter, an aluminized screen and a non-ion trap gun.

Heater, for unipotential cathode

Heater voltage (a.c. or d.c.)	6.3 volts
Heater current	0.3 amp.
Warm-up time (average)	11 seconds (*)

Direct interelectrode capacitances

Grid n°1 to all other electrodes	6 uuF
Cathode to all other electrodes	5 uuF
External conductive coating to anode	
maximum	2500 uuF
minimum	2000 uuF

Phosphor : P4 sulfide type

Fluorescence	white
Phosphorescence	white
Persistence	short

Focusing method : electrostatic

Deflecting method : magnetic

Deflection angle (approx.)

diagonal	110°
horizontal	105°
vertical	87°

Electron gun : type requiring non ion-trap magnet.

Tube dimensions

overall length	12.13/16" $\pm$ 5/16"
greatest width	20.1/4" $\pm$ 1/8"
greatest height	16.3/8" $\pm$ 1/8"
Diagonal	21.3/8" $\pm$ 1/8"
Neck length	3.9/16" $\pm$ 1/8"

Screen dimensions (minimum)

Greatest width	19.1/16"
Greatest height	15.1/16"
Diagonal	20.1/4"
Projected area	262 sq. in
Weight (approx.)	23 lbs.
Bulb	J 171-G1
Cap	Recessed small cavity (JEDEC n°J1-21)
Base	B7-208
Basing	8 JR

Socket connections

Pin n°1	= Heater
Pin n°2	= Grid n°1
Pin n°3	= Grid n°2
Pin n°4	= Grid n°3
Pin n°6	= internal connection - do not use
Pin n°7	= Cathode
Pin n°8	= Heater
Cap	= Anode

(*) The time required for the voltage across the heater to reach 80 per cent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

MAXIMUM RATINGS

Design Center Values

Cathode Drive Service

Unless otherwise specified, voltage values are positive with respect to grid n°1.

Anode to grid n°1 voltage	18 000 max. volts
(1)	12 000 min. volts
Grid n°3 to grid n°1 voltage	650 max. volts
Grid n°2 to grid n°1 voltage	690 max. volts
Grid n°2 to cathode voltage	550 max. volts
	300 min. volts
Cathode to grid n°1 voltage	
Positive peak value	200 max. volts
Positive bias value	140 max. volts
Negative bias value	0 max. volt
Negative peak value	2 max. volts

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Peak heater cathode voltage

- Heater negative with respect to cathode :

during equipment warm-up period not exceeding 15 seconds 410 max. volts

After equipment warm-up period 180 max. volts

- Heater positive with respect to cathode 180 max. volts

Grid n°1 circuit resistance 1.5 max. megohms

TYPICAL OPERATING CONDITIONS

Cathode drive Service

Anode to grid n°1 voltage	16 000	18 000 volts
Grid n°2 to grid n°1 voltage	400	500 volts
Grid n°2 current	-15 to +15	-15 to +15 ua
Grid n°3 to grid n°1 voltage	0 to 400	0 to 400 volts
Grid n°3 current	-25 to +25	-25 to +25 ua
Cathode to grid n°1 voltage for visual extinction of focused raster	34 to 56	41 to 69 volts
Field strength of adjustable centering magnet.	0 to 8	0 to 8 gauss

(1) absolute minimum.

Note 1 - The plane through the tube axis and pin 4 may vary from the plane through the tube axis and anode terminal by angular tolerance (measured about the tube axis) of $\pm 30^\circ$. Anode terminal is on same side as pin 4.

Note 2 - Socket for this base should not be rigidly mounted; it should have flexible leads and be allowed to move freely. The design of the socket should be such that the circuit wiring cannot impress lateral strains through the socket contacts on the base pins. Bottom circumference of base wafer will fall within a circle concentric with bulb axis and having a diameter of $1.3/4$ ".

Note 3 - Width of undisturbed region between mold-match line and splice line is $3/4$ " minimum. This should be the maximum width of tube support band.

Remplace :

