

*Excellence in Electronics*

TYPE

10UP7A

10UP14A

The type 10UP— is a 10 inch aluminized electrostatic focus and magnetic deflection cathode-ray tube suitable for radar applications. A low-voltage electrostatic focus lens is employed, designed to operate at near cathode potential to afford substantially automatic focus, independent of accelerator voltage variations. In addition, the 10UP7A employs a high resolution gun.

The 10UP— utilizes a metallized screen for greater light output, improved contrast, and to minimize screen charging effects.

MECHANICAL DATA

BASE: Small Shell Duodecal 6-Pin

CAP: Recessed Small Cavity

TERMINAL CONNECTIONS:

Pin 1 Heater
Pin 2 Grid #1
Pin 6 Grid #4
Pin 10 Grid #2

Pin 11 Cathode
Pin 12 Heater
Cap Grids #3 and #5
(Collector)

GENERAL DATA

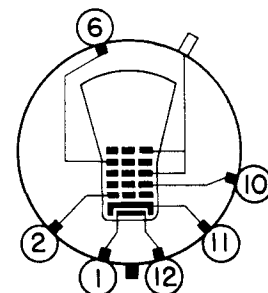
Phosphor
Fluorescence
Phosphorescence
Persistence
Focusing Method
Deflecting Method
Deflection Angle

10UP7A

#7
Blue
Yellow
Long
Electrostatic
Magnetic
50°

10UP14A

#14
Blue
Orange
Medium-Long
Electrostatic
Magnetic
50°



BOTTOM VIEW

12M

ELECTRICAL DATA

HEATER CHARACTERISTICS:

Heater Voltage	6.3 volts
Heater Current	0.6 ± 10% amps.
Peak Heater - Cathode Voltage: ♦	
Heater Negative with Respect to Cathode	180 volts DC
Heater Positive with Respect to Cathode	180 volts DC

DIRECT INTERELECTRODE CAPACITANCES: (μmfs.) (approx.)

Grid #1 to all other electrodes	6.5
Cathode to all other electrodes	5

DESIGN CENTER MAXIMUM RATINGS:

Collector Voltage ▲	12,000 volts DC
Grid #4 Voltage (Focusing Electrode)	-500 to +1000 volts DC
Grid #2 Voltage	700 volts DC
Grid #1 Voltage:	
Negative - Bias Value	180 volts DC
Positive - Bias Value *	0 volts DC
Positive - Peak Value	0 volts DC

CHARACTERISTICS AND TYPICAL OPERATION:

Collector Voltage ▲	10,000 volts DC
Grid #4 Voltage (Focusing Electrode) ●	-150 to +150 volts DC
Grid #2 Voltage	300 volts DC
Grid #1 Voltage ⊕	-28 to -72 volts DC
Line Width ■	0.015 inch max.
Spot Position (undeflected) □	0.50 inch

MAXIMUM CIRCUIT VALUES:

Grid #1 Circuit Resistance	1.5 max. Megohm
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Tentative Data

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CATHODE RAY TUBE

- * *At or near this rating, the effective resistance of the collector supply should be adequate to limit the collector input power to 6 watts.*
- ▲ *Collector, Grids #3 and #5 are connected internally and referred to as Collector. Brilliance and definition decrease with decreasing collector voltages. In general collector voltage should not be less than 7,000 volts.*
- ◆ *Cathode should be returned to one side or to the mid-tap of the heater transformer winding.*
- *With grid #1 voltage adjusted to produce a collector current of 100 μ A., with the pattern adjusted for best overall focus. Measured with a 525-line interlaced and synchronized 6 X 8 inch pattern, with interlaced line blanking (current measured before applying blanking).*
- ⊕ *Visual extinction of focused 6 X 8 inch raster pattern.*
- *Measured with a 525-line interlaced and synchronized pattern with interlaced line blanking. Pattern width adjusted to 90% of minimum useful screen diameter. Ib = 100 μ A., measured before applying blanking. Line width is the merged raster height divided by the number of lines (262.5) (measured in center of tube face). The line width under this condition will be 0.015 inch maximum (current measured before applying).*
- *The center of the undeflected, focused spot will fall within a circle of 1/2-inch radius concentric with the center of the tube face, with tube shielded.*

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CATHODE RAY TUBE

