

N.U.

ENGINEERING

NEWS RELEASE

ELECTRONIC COMPONENTS

Prepared by Commercial Engineering Division

N.U. 1DP1

MINIATURE CATHODE-RAY TUBE

The 1DP1 is an electrostatic focus and deflection miniature Cathode-Ray tube in a T6½ bulb with a 9 pin miniature base. The tube gives good light output, can withstand the standard shock and vibration tests, and has no exposed exhaust tip. Its low heater power consumption (less than 1.4 watts) and low operating voltages provide a tube which could be incorporated in a wide variety of electronic equipment for built-in, visual monitoring.

MAXIMUM RATINGS

Heater voltage (ac or dc).....	6.3 v.
Cathode current.....	1000 μ a
Grid voltage (cut off).....	-40.0 v.
Deflection potential •	400 v.
Anode 1.....	300 v.
Anode 2.....	600 v.
Grid resistor.....	2 meg.
Deflection resistor.....	2 meg.

- Measured between the two deflection plates of D1-D2 or D3-D4.

INTERELECTRODE CAPACITIES

G1 to all other elements.....	4.0 μ f
K to all other elements.....	2.0 μ f
D1 to D2.....	1.0 μ f
D3 to D4.....	1.0 μ f
D1 to all other elements.....	3.0 μ f
D3 to all other elements.....	3.0 μ f
D1 to all elements except D2.....	2.0 μ f
D2 to all elements except D1.....	2.0 μ f
D3 to all elements except D4.....	2.0 μ f
D4 to all elements except D3.....	2.0 μ f

TYPICAL OPERATING CONDITIONS

Heater voltage (ac or dc).....	6.3 v.
Heater current.....	215 ma
Cathode current.....	500 μ a
Line width.....	0.25 mm
Light output ▲	5.0 ft. lamberts
Grid cutoff voltage.....	-40 v.
A2 voltage.....	600 v.
A1 voltage.....	150 v.
Deflection factor ■ D1-D2.....	280 v/in.
Deflection factor ■ D3-D4.....	280 v/in.

- ▲ Measured with $I_k = 500 \mu$ a, raster $\frac{1}{2}$ " X $\frac{1}{2}$ ", scanning frequencies 60 X 2100 to 6300.

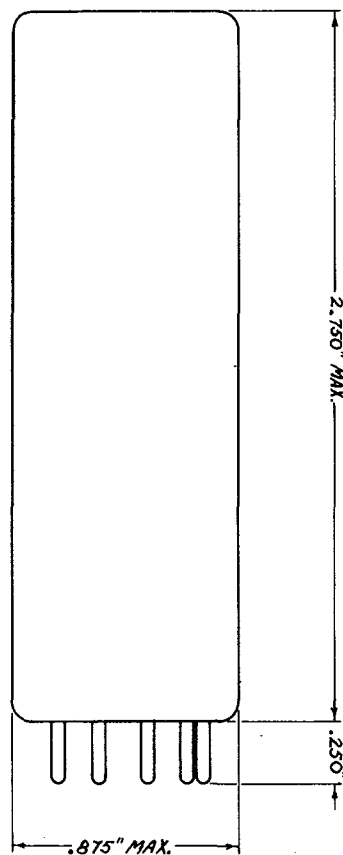
- Deflection factor is defined as the potential difference between a pair of deflection plates necessary to deflect the beam one inch from the undeflected position. This tube requires a deflection signal of about ± 110 v. to sweep the useful screen diameter.

PHYSICAL SPECIFICATIONS

Style.....	Miniature
Bulb.....	T6½
Basing.....	9 CU
Mounting Position.....	any

BASE PIN CONNECTIONS

Pin 1	G1
Pin 2	D1
Pin 3	D3
Pin 4	H
Pin 5	HK
Pin 6	D2
Pin 7	A2
Pin 8	A1
Pin 9	D4



NATIONAL UNION RADIO CORPORATION

MAIN OFFICE: HATBORO, PENNSYLVANIA

N.U. 1DP1 N.U. 1DP4 N.U. 1DP11

MINIATURE CATHODE-RAY TUBES

The 1DP1, 1DP4, 1DP7 and 1DP11 are electrostatically focused and deflected miniature Cathode-Ray tubes in T6½ bulbs with 9-pin miniature bases. These tubes give good light output, can withstand the standard shock and vibration tests, and have no exposed exhaust tip. Their low heater power consumption (less than 1.4 watts) and low operating voltages provide tubes which could be incorporated in a wide variety of electronic equipment for built-in visual monitoring.

MAXIMUM RATINGS

Heater voltage (ac or dc).....	6.3 v.
Cathode current.....	1000 μ a
Grid voltage.....	-100 v.
Deflection potential •.....	400 v.
Anode 1.....	300 v.
Anode 2.....	1000 v.
Grid resistor.....	2 meg.
Deflection resistor.....	2 meg.

- Measured between the two deflection plates of D1-D2 or D3-D4.

INTERELECTRODE CAPACITIES

G1 to all other elements.....	4.0 μ mf
K to all other elements.....	2.0 μ mf
D1 to D2.....	1.0 μ mf
D3 to D4.....	1.0 μ mf
D1 to all other elements.....	3.0 μ mf
D3 to all other elements.....	3.0 μ mf
D1 to all elements except D2.....	2.0 μ mf
D2 to all elements except D1.....	2.0 μ mf
D3 to all elements except D4.....	2.0 μ mf
D4 to all elements except D3.....	2.0 μ mf

TYPICAL OPERATING CONDITIONS

Heater voltage (ac or dc).....	6.3 v.
Heater current.....	215 ma
Cathode current.....	500 μ a
Line width.....	0.25 mm
Grid cutoff voltage.....	-40 v.
A2 voltage.....	600 v.
A1 voltage.....	150 v.
Deflection factor ■ D1-D2.....	350 v/in.
Deflection factor ■ D3-D4.....	300 v/in.

- Deflection factor is defined as the potential difference between a pair of deflection plates necessary to deflect the beam one inch from the undeflected position. This tube requires a deflection signal of about ± 110 v. to sweep the useful screen diameter.

PHOSPHOR

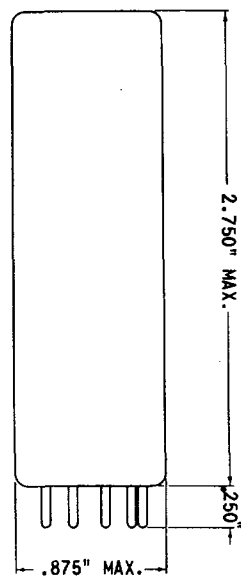
	FLUORESCENCE	PHOSPHORESCENCE	PERSISTENCE
1DP1.....	Green.....	--	Medium
1DP4.....	White.....	--	Medium
1DP7.....	Blue.....	Yellow.....	Long
1DP11.....	Blue.....	--	Short

PHYSICAL SPECIFICATIONS

Style.....	Miniature
Bulb.....	T6½
Basing.....	9 CU
Mounting Position.....	Any
Base Alignment.....	1D2 between Pins 2 and 3
Socket.....	9-pin Noval

BASE PIN CONNECTIONS

Pin 1:	G1	Pin 6:	D2
Pin 2:	D1	Pin 7:	A2
Pin 3:	D3	Pin 8:	A1
Pin 4:	H	Pin 9:	D4
Pin 5:	HK		



March 1962