DESCRIPTION

The Du Mont Chroma-Sync Teletron B1103 is a 12-inch, three-color picture tube employing 60° magnetic deflection and electrostatic focus and convergence. It provides for a useful picture size measuring 12-9/16" x 16-9/16", or 189 square inches stated in screen area. Its design combines large screen size with short overall length; construction simplicity with mechanical and electrical stability.

The three color phosphors are applied directly to the inside surface of the viewing screen. A domed, self-supporting and self-biasing shadow mask completes the face assembly. The three-beam electron gun assembly used in the B1103 is a new Du Mont development incorporating the Du Mont Hi-R principle to achieve synchronism convergence of the three color beams with a single convergence lens.

GENERAL CHARACTERISTICS

Electrical Data
- Electron guns, three
- Focusing Method: Electrostatic
- Convergence Method: Electromagnetic
- Deflection Angle, Approximate: 60 Degrees

Direct Inter-electrode Capacitance, Approximate:
- All anodes (connected together externally) to all other electrodes: 16.5 ufd
- Grid No. 1 (of any gun) to all other electrodes (except the No. 1 Grids of the other two guns): 6.0 ufd
- Focusing electrode (floating electrode of each gun tied together within tube) to all other electrodes: 8.5 ufd
- Convergence electrode (common to the three guns) to all other electrodes: 10.0 ufd
- External conductive coating to Accelerator: 3,000 max. ufd
- 1,500 min. ufd

Optical Data
- Fluorescent Color of the separate phosphors: Red Blue Green
- Phosphorescent Color of the separate phosphors: Red Blue Green
- Persistence: Medium
- Medium Medium Medium
- Screen (an envelope face panel): Metal-backed
- Tri-color Phosphor-Dot Type
- Phosphor-Dot Arrangement: Approximately 438,000 triangular groups, each consisting of a blue dot, green dot, and red dot (total of 1,314,000 dots)

Size
- Area: 16 9/16 x 12 7/16 inches, 390 sq. inches

Mechanical Data
- Overall Length: 25 x 3/8 inches
- Greatest Diameter of Bulb: 19 1/16 x 3/16 inches
- Greatest Diameter of Metal Flange: 20.800 inches max.
- Neck Length: 9 15/16 x 3/4 inches
- Bulb Contact: Metal flange
- Base (small-shelf side of 4-pin): B14-113
- Preferred Rotation: With any single gun on top

RATINGS (Design Center Values)
- Heater Voltage: 6.3 volts
- Heater Current at 6.3 volts: 1.8 ± 10% amperes
- Accelerator Voltage: 20,000 volts max., volts DC
- Convergence Electrode Voltage (Grid No. 4): 12,000 volts max., volts DC
- Focusing Electrode Voltage (Grid No. 3): 9,000 volts max., volts DC
- Grid No. 2 Voltage (each gun): 500 volts max., volts DC
- Grid No. 1 Voltage (each gun): 200 volts max., volts DC
- Negative Bias Voltage: 200 volts max., volts DC
- Positive Bias Voltage: 0 volts max., volts DC
- Positive Peak Value: 2 volts max.

Typical Operating Conditions
- Peak Heater-Cathode Voltage (each gun): 410 volts, max, volts DC
- Convergence Electrode Voltage (Note 1): 9,300 volts
- Focusing Electrode Voltage: 3,100 volts
- Grid No. 2 Voltage: 200 volts
- Grid No. 1 Voltage for visual extinction of focused raster: -45 to -100 volts

Circuit Values
- Grid No. 1 Circuit Resistance (each gun): 1.5 max., megohms
- Dynamic Converging Voltage, Approximate (Note 2): 1,200 volts
- Dynamic Focusing Voltage, Approximate (Note 2): 400 volts

Notes
1. For convergence in center of screen.
2. Peak to peak value. This ac voltage having essentially parabolic waveform is synchronized with scanning and does not include any voltage developed during the blanking time.
BI103
CATHODE-RAY TUBE

20.800 MAX.

19 5/16

31 1/2 R.

METAL FLANGE

REFERENCE LINE
DETERMINED BY POSITION
WHERE A CYLINDRICAL
GAUGE 2.400 ±.001 I.D.
WHICH IS HELD CONCENTRIC
WITH TUBE NECK AXIS WILL
REST ON GLASS FUNNEL.

25 ± 3/8

15 ± 1/4

9 1/2 ± 1/4

2 ± 1/16

SMALL SHELL BISECAL
14 PIN BASE
(814-103)

PLANE THROUGH PIN NO. 2
AXIS AND TUBE AXIS

RED GUN

GREEN GUN

BLUE GUN

HORIZONTAL CENTER LINE
OF SCREEN

PIN NO. ELEMENT
1 - HEATER
2 - CATHODE OF RED GUN
3 - GRID NO. 1 OF RED GUN
4 - GRID NO. 2 OF RED GUN
6 - FOCUSING ELECTRODES
7 - CATHODE OF GREEN GUN
9 - GRID NO. 1 OF GREEN GUN
9 - GRID NO. 2 OF GREEN GUN
13 - CONVERGENCE ELECTRODE
17 - GRID NO. 2 OF BLUE GUN
18 - GRID NO. 1 OF BLUE GUN
19 - CATHODE OF BLUE GUN
20 - HEATER
METAL FLANGE - ACCELERATOR

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Courtesy of Steve Dichter