Heater Coated Unipotential Cathode
Voltage 6.3 a-c or d-c volts
Current 0.6 amp.
Deflection Magnetic
Type of Pickup Direct
Direct Interelectrode Capacitance:
Signal Plate to Collector & Anode No.2
(with external shielding) 10 approx. μF
Control Grid to All Other Electrodes 12 max. μF
Dimensions See Outline Drawing
Caps (two) Small Metal
Base Dwarf Metal Shell Octal 8-Pin

MAXIMUM RATINGS and TYPICAL OPERATING CONDITIONS
High-Voltage Electrode (Anode No.2) & Collector Voltage 1200 max. volts
Accelerating Electrode (Grid No.2) Voltage 1200 max. volts
Focusing Electrode (Anode No.1) Voltage 400 max. volts
Control Electrode (Grid No.1) Voltage Never Positive
Grid No.1 Volt. for Current Cut-Off -50 approx. volts
Anode No.2 & Collector Current 0.5 max. μAmp.
Ambient Temperature 40 max. °C

Typical Operation:
Heater Voltage 6.3 volts
Anode No.2 & Collector Voltage 1000 volts
Grid No.2 Voltage 1000 volts
Anode No.1 Voltage 300 approx. volts
Grid No.1 Voltage 40 approx. volts
Anode No.2 & Collector Current 0.1 approx. μAmp.

- Design maximum for 117-volt line.
- When this current is measured, the mosaic should not be illuminated.
- The cathode should be connected to one side of, preferably, to the mid-tap of the heater winding.
- Should be adjusted and set at largest negative value which will provide sufficient video output.
- Maximum d-c resistance in the grid circuit should not exceed 1 megohm.
- Should be adjusted and set at value giving best focus.

NOTE: Signal plate-to-collector impedance is a function of bias light, image brilliance, and beam current, and is in the order of a few megohms for normal operation. Normal beam current is in the order of 0.25 microampere.

The signal-plate resistive load should be approximately one-tenth of the signal-plate-to-collector impedance if constant signal output without phase shift is required in all frequencies of the picture signal.

A practical design value of signal-plate load impedance is in the order of 0.1 to 0.5 megohm. With low values of load resistance, gain and signal output-to-noise ratio are low. With high values, gain and signal output-to-noise ratio are increased. In either case, the low video frequency are over-emphasized and must be equalized by a video stage having low low-frequency gain.

Signal output current varies with beam current, illumination level, and bias lighting, but is in the order of 0.15 microampere peak to peak. Good operation can be obtained with a highlight illumination level on the mosaic in the order of 7 foot-candles.

The spectral sensitivity of the 1848 is adjusted for outdoor pickup.

The d-c resistance in the signal-plate circuit should be limited to one megohm.

April 15, 1940  TENTATIVE DATA