OSCLLOGRAPH TUBE
MAGNETIC FOCUS MAGNETIC DEFLECTION

DATA

General:
Heater, for Unipotential Cathode:
Voltage ........................................ 6.3 ac or dc volts
Current ........................................ 0.6 ± 10% amp
Direct Interelectrode Capacitances (Approx.):
Grid No.1 to all other electrodes ........... 6 µf
Cathode to all other electrodes ............. 5 µf
Faceplate ..................................... Filterglass
Light transmission (Approx.) .................. 76%
Phosphor (for curves, see front of this section) ................................................. P7
Fluorescence ................................... Blue
Phosphorescence ................................ Greenish-Yellow
Persistence .................................... Long
Focusing Method ................................ Magnetic
Deflection Method ................................ Magnetic
Deflection Angle (Approx.) .................... 50°
Tube Dimensions:
Overall length ................................ 17-5/8" ± 3/8"
Diameter:
At faceplate ................................... 10-1/2" ± 1/16"
Maximum, at faceplate seal .................. 10-5/8"
Minimum Useful Screen Diameter .......... 9"
Weight (Approx.) ................................ 10 lbs
Operating Position ............................ Any
Cap .............................................. Recessed Small Cavity (JETEC No.J1-21)
Bulb ............................................. J-84
Base ............................................. Small-SHELL DUODECAL 5-Pin (JETEC No.B5-57)
Basing Designation for BOTTOM VIEW .... 12D

Pin 1-Heater
Pin 2-Grid No.1
Pin 10-Grid No.2
Pin 11-Cathode

Pin 12-Heater
Cap-Ulter
(Grid No.3,
Collector)

Maximum Ratings, Design-Center Values:
ULTOR VOLTAGE ............................... 10000 max. volts
GRID-No.2 VOLTAGE:
Positive value (DC or Peak AC) ............... 700 max. volts
Negative value# (DC or Peak AC) ............. 180 max. volts
GRID-No.1 VOLTAGE:
Negative bias value ................................ 180 max. volts
Positive bias value# ................................ 0 max. volts
Positive peak value ............................ 2 max. volts
PEAK GRID-No.1 DRIVE FROM CUTOFF .... 65 max. volts
PEAK HEATER-CATHODE VOLTAGE:
Heater negative with respect to cathode .......... 125 max. volts
Heater positive with respect to cathode .......... 125 max. volts

#A: see next page.
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Equipment Design Ranges:

For any ultraviolet \( E_{c3} \) between 7000* and 10000 volts
and grid-No.2 voltage \( E_{c2} \) between 150 and 700 volts

Grid-No.1 Voltage for Visual
Extinction of Undelected
Focused Spot .......... -10.8% to -25.2% of \( E_{c2} \) volts
Grid-No.2 Current ......... -15 to +15 \( \mu \)A

Focusing-Coil Current (DC)oo. \[ \sqrt{\frac{E_{c3}}{7000}} \times 99 \pm 15\% \] ma

Spot Position ............... #

Examples of Use of Design Ranges:

For ultraviolet of 7000 9000 volts
and grid-No.2 voltage of 250 250 volts

Grid-No.1 Voltage for Visual
Extinction of Undelected
Focused Spot .......... -27 to -63 -27 to -63 volts
Focusing-Coil Current (DC) oo. 99 \pm 15\% 112 \pm 15\% ma

Maximum Circuit Values:

Grid-No.1 Circuit Resistance ...... 1.5 max. megohms

# This value has been specified to take care of applications where
grid No.2 is modulated.

▲ At or near this rating, the effective resistance of the ultraviolet supply
should be adequate to limit the ultraviolet input power to 6 watts.

* Brilliance and definition decrease with decreasing ultraviolet voltage. In
general, the ultraviolet voltage should not be less than 7000 volts.

oo For specimen focusing coil similar to JETEC Focusing Coil No.106
positioned with air gap toward faceplate and center line of air gap
3-1/4" from Reference Line (See Dimensional Outline) and ultraviolet current
of 200 microamperes.

## The center of the undeflected, unfocused spot will fall within a circle
having an 18-mm radius concentric with the center of the tube face.
NOTE 1: THE PLANE THROUGH THE TUBE AXIS AND VACANT PIN POSITION No. 3 MAY VARY FROM THE PLANE THROUGH THE TUBE AXIS AND ULTOR TERMINAL BY AN ANGULAR TOLERANCE (MEASURED ABOUT THE TUBE AXIS) OF ± 10°. ULTOR TERMINAL IS ON SAME SIDE AS VACANT PIN POSITION No. 3.

NOTE 2: REFERENCE LINE IS DETERMINED BY POSITION WHERE REFERENCE-LINE GAUGE (JETEC No. 112) 1.500" ± .003" - .000" I.D. AND 2" LONG WILL REST ON BULB CONE.

NOTE 3: SOCKET FOR THIS BASE SHOULD NOT BE RIGIDLY MOUNTED; IT SHOULD HAVE FLEXIBLE LEADS AND BE ALLOWED TO MOVE FREELY. BOTTOM CIRCUMFERENCE OF BASE SHELL WILL FALL WITHIN CIRCLE CONCENTRIC WITH BULB AXIS AND HAVING DIAMETER OF 1-7/8".

NOTE 4: TUBE SUPPORT MUST BE KEPT AT LEAST 2" AWAY FROM ULTOR CAP.
AVGAGE GRID-DRIVE CHARACTERISTICS

--- ULTOR CURRENT ---

$E_f = 6.3$ VOLTS
ULTOR VOLTS = 7000 - 10000
GRID N°1 BIASED TO CUTOFF OF UNDEFELECTED FOCUSED SPOT.

--- HIGHLIGHT BRIGHTNESS ---

$E_f = 6.3$ VOLTS
ULTOR VOLTS = 9000
GRID N°1 BIASED TO CUTOFF OF UNDEFELECTED FOCUSED SPOT.
RASTER SIZE = 14 CM X 14 CM