TELEVISION PICTURE TUBE TYPE 19AHP4

114° Magnetic Deflection
Rectangular Glass
Aluminized Screen
Gray Filter Glass

6.3 Volt, 450 Ma. Heater
Electrostatic Focus
Short Neck Length

ELECTRICAL:
Focusing Method .................................. Low Voltage Electrostatic
Deflection Method ................................ Magnetic
Deflection Angles (Approx.):
Horizontal ..................................... 103 Degrees
Vertical ....................................... 86 Degrees
Diagonal ........................................ 114 Degrees
Direct Inter-electrode Capacitances:
Cathode to all other electrodes, (Approx.) .... 5 µµf
Grid 1 to all other electrodes, (Approx.) iron 6 µµf
External Conductive Coating to Anode:
Maximum ..................................... 1500 µµf
Minimum ....................................... 1000 µµf
Heater Current at 6.3 volts ....................... 450 ± 5% Ma.
Heater Warm-up Time* .......................... 11 Seconds

OPTICAL:
Phosphor Number .................................. Aluminized P4
Light Transmittance at Center, Approximate 78 Percent

MECHANICAL:
Overall Length ................................. 11-3/8 ± 1/4 Inches
Greatest Dimensions of Tube:
Diagonal ........................................ 18-5/8 ± 1/8 Inches
Width ........................................... 16-13/32 ± 1/8 Inches
Height .......................................... 13-11/32 ± 1/8 Inches
Minimum Useful Screen Dimensions (Projected):
Diagonal ........................................ 17-9/16 Inches
Horizontal ..................................... 15-1/8 Inches
Vertical ........................................ 12 Inches
Area ............................................. 172 Sq. Inches
Neck Length .................................... 4-1/8 ± 1/8 Inches
Bulb ............................................. J149
Bulb Contact ................................... J1-21
Base ............................................. B7-208
Basing .......................................... 8HR
Weight .......................................... 13-1/2 Lbs.

RATINGS:
Design Maximum System
Unless Otherwise Specified, Voltage Values are Positive
with Respect to Grid 1.
Maximum Anode Voltage ......................... 17600 Volts
Minimum Anode Voltage A ...................... 12000 Volts
Maximum Grid 4 Voltage (Focusing 
Electrode) .................................... ±1100, -550 Volts
Maximum Grid 2 Voltage ....................... 650 Volts
Cathode Voltage:
Maximum Negative Value ....................... 0 Volts DC
Maximum Negative Peak Value ................ 2 Volts
Maximum Positive Value ...................... 154 Volts DC
Maximum Positive Peak Value ............... 220 Volts
Maximum Heater-Cathode Voltage
Heater negative with respect to cathode
During warm-up period not to exceed
15 seconds .................................. 450 Volts
After equipment warm-up period ............ 200 Volts
Heater positive with respect to cathode .... 200 Volts

TYPICAL OPERATING CONDITIONS:
CATHODE DRIVE SERVICE:
Unless Otherwise Specified, All Voltage Values
are Positive with Respect to Grid 1.
Anode Voltage .................................. 14000 Volts DC
Grid 4 Voltage (Focusing Electrode) ......... 0 to 400 Volts DC
Grid 2 Voltage .................................. 500 Volts DC
Cathode Voltage for raster cutoff ........... 40 to 63 Volts DC

LIMITING CIRCUIT VALUES:
Maximum Grid 1 Circuit Resistance ........... 1.5 Megohms
Minimum Grids 2 & 4 Circuit Resistance 1 ..... 10000 Ohms

* Heater warm-up time is defined as the time required for the
voltage across the heater to reach 88% of its rated value after
applying 4 times rated heater voltage to a circuit consisting of
the tube heater in series with a resistance equal to 3 times rated
heater voltage divided by rated heater current.

Brilliance and definition decrease with decreasing anode voltage.
Operation with anode voltage less than 12000 volts is not rec-
ommended.

1 Protective resistance in the grid 2 and grid 4 (fouc electrode)
circuits is advisable to prevent damage to the tube.

X-RAY WARNING: Operation with voltages in excess of 16KV may
require shielding to limit radiation of very soft x-rays.

Television Picture Tube Section

WESTINGHOUSE ELECTRIC CORPORATION, ELECTRONIC TUBE DIVISION, ELMIRA, NEW YORK

from JEDEC release #3046, Nov. 28, 1960
NOTE 1: Yoke Reference Line is determined by plane surface of flared end of JEDEC Reference Line Gauge No. 126 when seated on funnel of tube. With a minimum neck length tube, the PM centering magnet (0 to 8 gauss) should extend no more than 2-1/8" from Yoke Reference Line.

NOTE 2: Lateral strains on the base pins must be avoided. The socket should have flexible leads permitting free movement. The perimeter of the base washer will be inside a 1-3/8" diameter circle concentric with tube axis.

NOTE 3: External conductive coating forms supplementary filter capacitor and must be grounded.

NOTE 4: Neck diameter may be a maximum of 1.168" at the splice.

NOTE 5: Anode terminal alignment with pin 4 has angular tolerance about tube axis of ± 30°.