

RADECHON

5/27/58

WL-7225TENTATIVE DATA

This tube is a 3" storage tube of the barrier grid, electrical in, electrical out type. Electrostatic focus and deflection are employed.

It is of particular use in computer applications or for signal conversion systems. Special features which commend its use in preference to earlier types are:

1. Extreme ruggedness of construction.
2. 2.6" diameter of useful target.
3. A target composed of a material having a higher secondary emission ratio than mica, enabling the tube to be operated at higher ultor voltages.
4. A barrier grid of unique construction and very fine mesh, thus increasing the resolution of the device.
5. An improved electron gun offering a beam focussing to a fine spot.
6. A convenient and rugged coaxial connector for the output terminations making possible a compact mounting not previously attainable.

Constructional features include an electron gun mounted on four multi-form glass beads to which are also attached the deflection plates. This technique makes for great rigidity and good alignment of the components.

While the gun is mounted conventionally at the cathode end, the robust G5 disc is directly secured to the collector ring by four stout support columns, thus forming a particularly rugged assembly.

The mesh - target assembly is strongly constructed in a special manner which insures that the backplate is in continuous and positive contact with the target and the assembly is made integral with the Kovar wall and end-plate of the tube.

GENERAL DATA

Cathode Heater

Voltage	6.3 volts
Current	0.6 amp.

Inter-electrode capacities:

Cathode to all electrodes	15 uuf
G1 to all electrodes	9 uuf
DJ ₁ to all electrodes	13 uuf
DJ ₂ to all electrodes	13 uuf
DJ ₃ to all electrodes	13 uuf
DJ ₄ to all electrodes	13 uuf
DJ ₁ to DJ ₂	5 uuf
DJ ₃ to DJ ₄	7 uuf
Barrier grid to target backing plate	1600 uuf $\pm$ 20%
Note. An alternative type offers	1000 uuf $\pm$ 20%
Barrier grid mesh to collector	18 uuf
Collector to all other electrodes	22 uuf

Focussing Method	Electrostatic
Deflection Method	Electrostatic

Overall Length	11.75"
Greatest diameter of tube:	3.1"
Maximum useful target diameter	2.6"

Base: JETEC B14-45

Mounting Position: Any, except with base up and tube at an angle
of less than 45° to the vertical.

Weight: 1 lb., 1 oz.

OPERATING DATA

1. Uniformity

The ratio of the maximum to minimum signal obtained from the target
at $V_K = -1500$ volts does not exceed 2:1.

2. Resolution

A square wave of 10 volts amplitude is applied to one deflection plate.
At each stationary spot location the information is regenerated 2700 times.
Initially a "one" is stored at one location and a "zero" at the other. The
pulse amplitude is slowly decreased until one spot fails. The "read around"
is then quoted as 2700 at the measured number of spots per target diameter.

The WL7225 under these conditions resolves approximately 130 spots per
target diameter.

MAXIMUM RATINGS

Expressed with respect to the cathode:

Ultor	3000 Max. volts
G1	- 300 Max. volts
G3 - with respect to ultor	1000 Max. volts
Positive bias value	3 volts
Backing electrode to barrier grid	200 Max. volts

MAXIMUM RATINGS (Continued)

Collector with respect to barrier grid	200 Max. volts
Peak Heater to cathode voltage:	
Heater negative with respect to cathode	125 Max. volts
Heater positive with respect to cathode	10 Max. volts

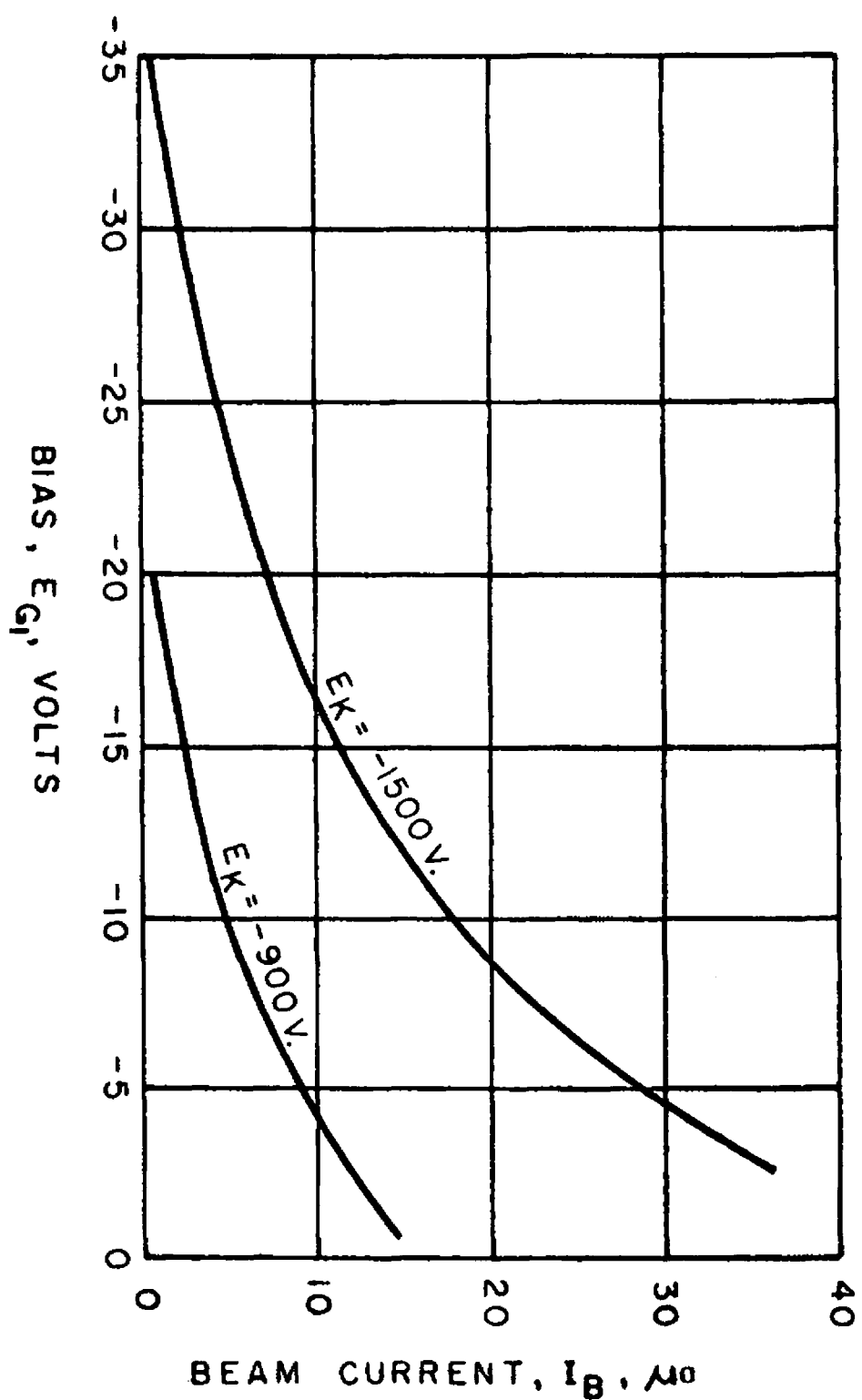
TYPICAL OPERATING CONDITIONS

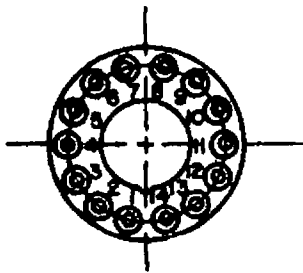
$E_f = 6.3$ volts
 $E_K = -1500$ volts
 $E_{G1} = \text{variable}$
 $E_{G1} \text{ cutoff} = -1540$ volts
 $E_{G2} \text{ cutoff} = +150$ volts
 $E_{G3} \text{ cutoff} = -1000 \pm 10\%$ volts
 $E_{G4} \text{ cutoff} = +150$ volts
 $E_{G5} \text{ (collector)} = +150$ volts

MAXIMUM VALUES OF ELECTRICAL LEAKAGE

Backplate to mesh	10000 Megohms Min.
G3 to all other electrodes in operating condition above	10 uA Max.
G5 to all other electrodes	1500 Megohms
Any one deflection plate to all other electrodes	2000 Megohms

TRANSFER CURVES
BEAM CURRENT VS BIAS VOLTS
WL-7225 RADECHON
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BASE PIN CONNECTIONS

PIN NO. 1	HEATER
2	CATHODE
3	GRID NO. 1
4	INTERNAL CONNECTION
5	GRID NO. 3, FOCUSING ELECTRODE
6	NO CONNECTION
7	DEFLECTING ELECTRODE DJ4
8	DEFLECTING ELECTRODE DJ3
9	GRID NO. 2 & GRID NO. 4
10	DEFLECTING ELECTRODE DJ2
11	DEFLECTING ELECTRODE DJ1
12	NO CONNECTION
13	INTERNAL CONNECTION
14	HEATER

