



ELECTRON TUBE DEPARTMENT ■ COMPONENTS DIVISION
INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION, CLIFTON, NEW JERSEY

F-7173
IATRON *

T E N T A T I V E

DESCRIPTION:

THE F-7173 IS A 4 INCH IATRON (DIRECT VIEW STORAGE CATHODE-RAY TUBE) THAT PRODUCES A BRIGHT VISUAL DISPLAY OF ELECTRICALLY STORED INFORMATION. IT IS ELECTROMAGNETICALLY FOCUSED AND DEFLECTED. THE TUBE DISPLAYS BRIGHT IMAGES ON A DARK BACKGROUND, CAN BE VIEWED IN DIRECT SUNLIGHT, AND FEATURES THE ABILITY TO WRITE, STORE, AND ERASE INFORMATION AT WILL. GREY SHADES ARE PRODUCED IN ACCORDANCE WITH AMPLITUDE VARIATIONS OF THE INPUT SIGNAL. THE TUBE HAS TWO ELECTRON GUNS, A WRITING GUN, WHICH WRITES THE INPUT SIGNAL ON A STORAGE MESH, AND A FLOOD GUN WHICH ILLUMINATES THE PHOSPHOR IN ACCORDANCE WITH THE STORED SIGNAL.

GENERAL:

DIMENSIONS

NOMINAL TUBE DIAMETER

MINIMUM USEFUL DISPLAY DIAMETER

PHOSPHOR

OPERATING POSITION

CATHODE PRE-HEATING TIME

FOCUS

DEFLECTION

SEE OUTLINE AND FUNCTIONAL SCHEMATIC

4 INCHES

3 INCHES

P-20 ALUMINIZED

ANY

60 SECONDS

MAGNETIC

MAGNETIC

DIRECT INTERELECTRODE CAPACITANCES WITHOUT EXTERNAL SHIELD (APPROX.)

GRID #1 TO ALL OTHER ELECTRODES 2.5 UUF

WRITE CATHODE TO ALL OTHER ELECTRODES 8.0 UUF

FLOOD CATHODE TO ALL OTHER ELECTRODES 3.0 UUF

MAXIMUM RATINGS:

VIEWING SCREEN

10 KV DC

BACKING ELECTRODE

25 VDC

COLLECTOR

200 VDC

ANODE #2

75 VDC

GRID #3

INTERNALLY CONNECTED TO ANODE #2

GRID #2

250 VDC

RESPECT WRITE CATHODE

GRID #1

0 VDC

RESPECT WRITE CATHODE

WRITE CATHODE

-1000 VDC

HEATER-CATHODE

125 VDC

FLOOD CATHODE

200 VDC

* TRADEMARK OF THE INTERNATIONAL TELEPHONE & TELEGRAPH CORPORATION

TYPICAL OPERATING VALUES:

	<u>FLOOD SECTION</u>			
VIEWING SCREEN	/ 7	KV	DC	700 UA MAXIMUM
BACKING ELECTRODE	/ 10	VDC	AND ERASE PULSES	
COLLECTOR	/ 125	VDC		
ANODE #2	/ 44	VDC		
ANODE #1	/ 60	VDC		
CATHODE	0	VDC		
HEATER	6.3	V	AC OR DC	1.4 A

	<u>WRITE SECTION</u>			
HEATER	6.3	V	AC OR DC	.6A
CATHODE	-450	VDC		3 MA
GRID #1 (NOTE 1)	-40	VDC	RESPECT WRITE CATHODE	
GRID #2	-150	VDC	RESPECT WRITE CATHODE	
GRID #3	INTERNALLY CONNECTED TO ANODE #2			

RANGE OF OPERATING ADJUSTMENTS:

ANODE #2	/35 TO /50	VDC	ADJUST FOR BEST COLLIMATION	
GRID #1 (CUTOFF - NOTE 1)	-32 TO -45	VDC	RESPECT WRITE CATHODE	
ERASE PULSES	4-10 VOLTS	100-5000 PRF	.5 U/SEC.	WIDE

TYPICAL PERFORMANCE:

RESOLUTION (NOTE 2)		
MINIMUM BRIGHTNESS	120	LINES/INCH
MAXIMUM BRIGHTNESS	50	LINES/INCH
LIGHT OUTPUT	2800	FT. LAMBERTS
WRITING SPEED TO 90% BRIGHTNESS	40000	IN/SEC.
ERASE TIME (NOTE 3)	3	MILLISECONDS
VIEWING TIME (NOTE 4)	30	SECONDS

NOTES:

1. VISUAL CUTOFF OF THE STORED, FOCUSED, UNDEFLECTED SPOT.
2. RESOLUTION IS MEASURED BY THE SHRINKING RASTER METHOD AT THE CENTER OF THE VIEWING SCREEN.
3. ERASE TIME IS THE SHORTEST TIME IN WHICH INFORMATION CAN BE REMOVED FROM THE TUBE AFTER BEING STORED AT FULL BRIGHTNESS.
4. VIEWING TIME IS THE TIME THAT A SIGNAL STORED AT FULL BRIGHTNESS ANYWHERE IN THE DISPLAY AREA CAN BE VIEWED WITH ERASE PULSES APPLIED TO COUNTERACT ION WRITING.

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SPECIAL PRECAUTIONS:

OBSERVE MAXIMUM RATINGS TO AVOID POSSIBLE DAMAGE TO THE TUBE. IN PARTICULAR THE VIEWING SCREEN VOLTAGE SHOULD BE LIMITED SO AS TO NEVER EXCEED 10 KV.

THE FULL VOLTAGE SHOULD NOT BE APPLIED TO THE VIEWING SCREEN INSTANTANEOUSLY. AN ORDINARY RC FILTER AT THE OUTPUT OF THE POWER SUPPLY WILL PROVIDE ADEQUATE ASSURANCE THAT THE VOLTAGE BUILD UP WILL NOT BE TOO ABRUPT. THE VIEWING SCREEN POWER SUPPLY SHOULD HAVE A SERIES RESISTANCE OF AT LEAST 1 MEG OHM.

REPEATED BOMBARDMENT WITH A HIGH CURRENT FOCUSED BEAM ON A SMALL AREA OF THE STORAGE SURFACE CAN BURN A DARK IMAGE INTO THE DISPLAY WHICH MAY REMAIN FOR SEVERAL HOURS OR EVEN PERMANENTLY. THEREFORE, THE DEFLECTION VOLTAGES SHOULD BE APPLIED BEFORE OPERATING THE WRITING BEAM.

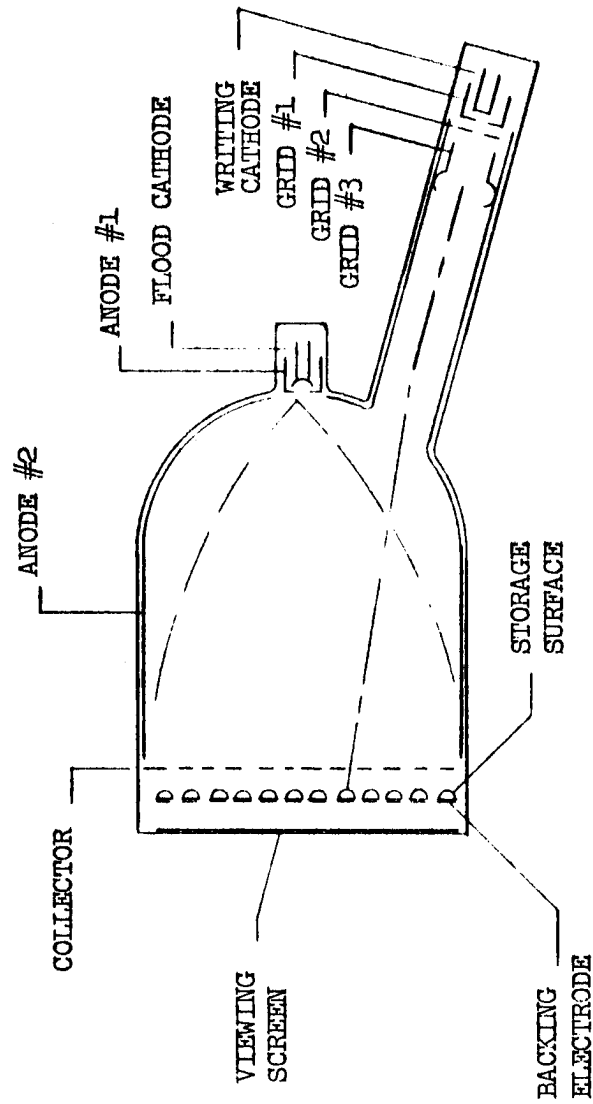
ADDITIONAL INFORMATION FOR SPECIFIC APPLICATIONS CAN BE OBTAINED FROM THE

ELECTRON TUBE APPLICATIONS SECTION
ITT COMPONENTS DIVISION
Post Office Box 412
CLIFTON, NEW JERSEY

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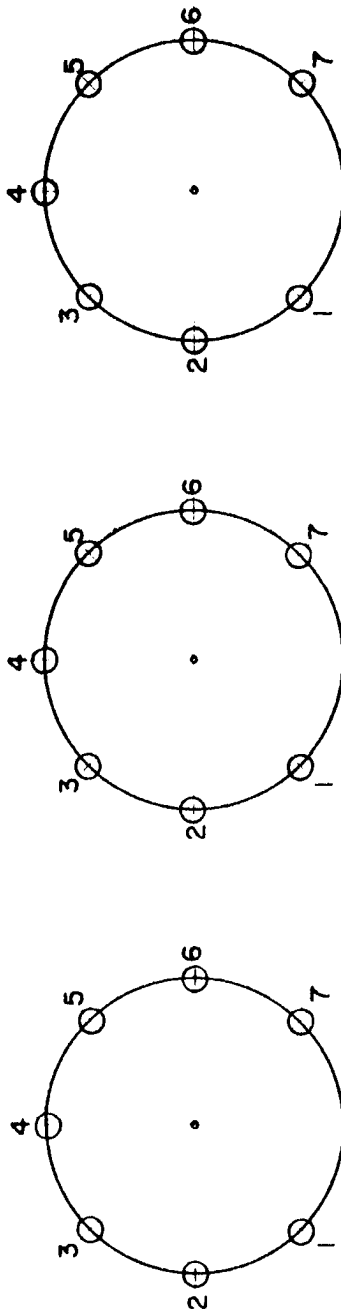


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FUNCTIONAL SCHEMATIC

F-7173



BOTTOM VIEW

BOTTOM VIEW

BOTTOM VIEW

7 PIN PLUG FOR BULB CONNECTIONS

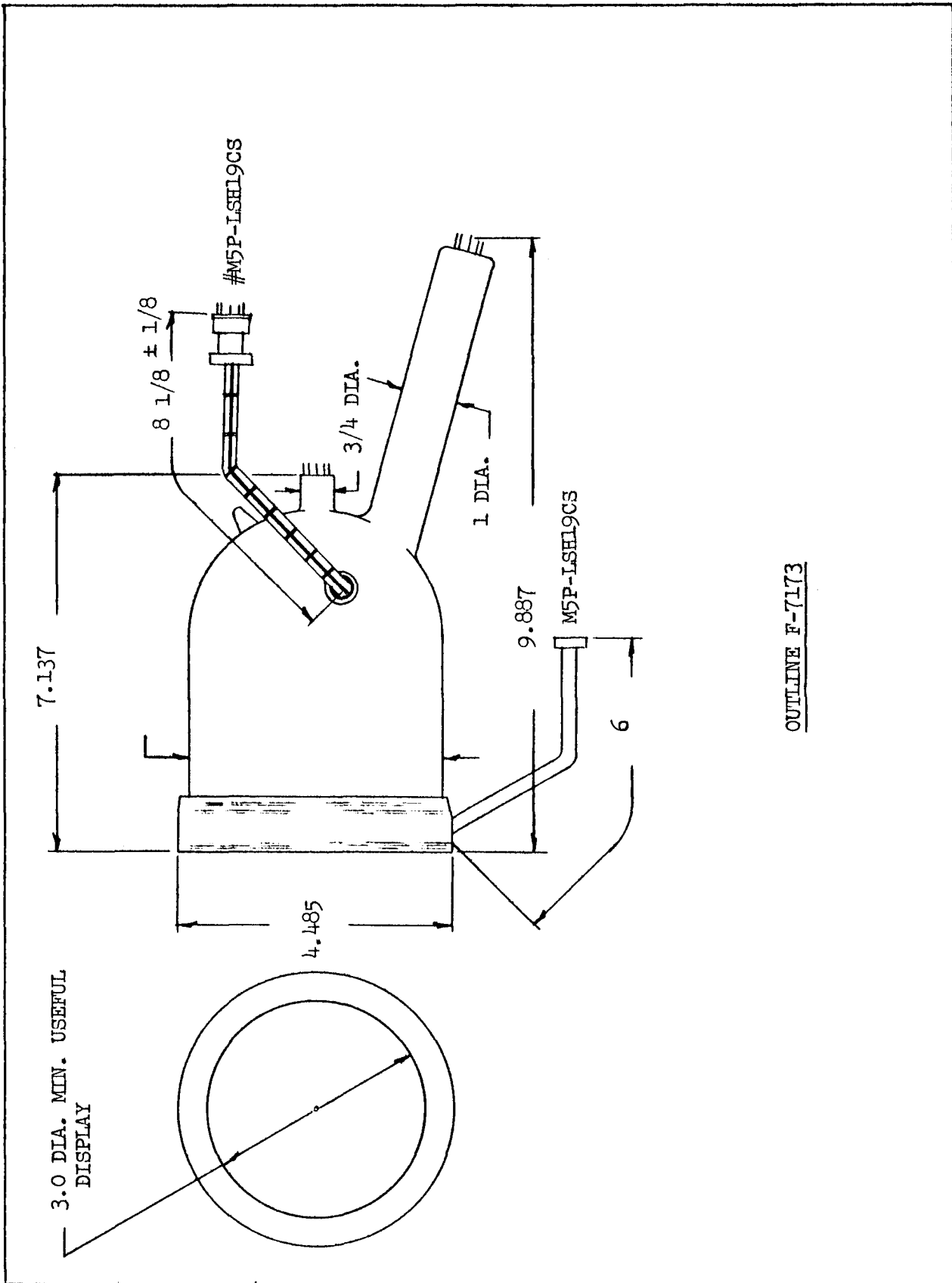
WRITE GUN

FLOOD GUN

Pin	Element	Pin	Element	Pin	Element
1	Anode #1	1	Grid #1	1	Electrode
2	N/C	2	N/C	2	Backing Electrode
3	Heater	3	Heater	3	N/C
4	Heater	4	Heater	4	N/C
5	Anode #1	5	Grid #3	5	Anode #2
6	N/C	6	Grid #2	6	N/C
7	Cathode	7	Cathode	7	Collector

7L73 PIN CONNECTIONS





OUTLINE F-7173