### CINTEL

# CATHODE RAY TUBES AND PHOTOELECTRIC CELLS

### RANK CINTEL LIMITED

WORSLEY BRIDGE ROAD, LOWER SYDENHAM, LONDON, S. E. 26

TELEPHONE: HITHER GREEN 4600 TELEGRAMS: TELEVISOR, FOREST, LONDON.

### British Services C.V. and American Type Numbers.

### **Cathode Ray Tubes**

C.V. TYPE NUMBER	AMERICAN TYPE NUMBER	CINTEL TYPE NUMBER
252 ✓		√ 6 EY7
254 √		9 LD1 *
262 V		9 MD6 *
282 1		√ 6 EO7
407		✓ 90 EB9P *
429		12 TO4A *
464		9 LO1A
516	3 GPI	3 EG2
718 √	5 FP7	√ 5 TD3
884 🗸	7BP7A	√ 7 TD3A
960 🗸		√ 6 EG7B *
966		6 ED8 *
1140 √		12 MD4 *
1385 ✓		6 EG4
1397 √		√ 6 ED6 *
1521		90 ED4
1524 4		√ 90 ED9P *
1526		√ 3 EG1
1529		90 EB4
1530	1990	6 LY1A
1546 √	3912	/ 12 MD6 *
1547 🗸	E DIOLE	√ 90 EO9P *

<sup>\*</sup> Data Sheet is not in the catalogue.

### British Services C.V. and American Type Numbers.

### Cathode Ray Tubes

C.V. TYPE NUMBER	AMERICAN TYPE NUMBER	CINTEL TYPE NUMBER
1507		/ 90 EG4 /
1587		/ 15 LO3A V
1744		5 TO3A
1868 V		12 TO1A * v
1869 🗸		9 MO7A *
2108		6 ED6 *
2137		7 12 LO3A
2162		4
2184		3 EY1 /
2192 /		C 102B *
2228 🗸		90 EO4 /
2280 ✓		3 ED1
2286		90 EY6P *
2301		90 EY4 ✓
2314		/ 12 TD4A * ~
2328		12 TO3A 🗸
2419		J 3 ED3 * √
2810		√ 6 ED6B * ✓
2897 √		√ C 211—Q1 *
2904 🗸		C 214—L1 *
3678 J	2BP1	2 EG1 V
5004	3JP2	3 EY3P
5035 🗸	5ADP1	√ 5 EG1P ✓

<sup>\*</sup> Data Sheet is not in the Catalogue

#### 2EBI

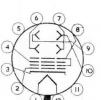
### Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

#### DATA

	DATA			
GENERAL:				
Heater: Voltage	. 6.3			a.c. or d.c. volts.
Current				The second secon
Direct Inter-electrode Cap	acitances.			т.
Modulator to all other ele	ectrodes			$11.0\mu\mu f$ .
Each X Plate to all other	electrodes			$11.0\mu\mu f.$
Each Y Plate to all other	electrodes			10.0uuf.
Deflector Plates XI to X2				4μμf.
Deflector Plates Y1 to Y2				4μμf.
Screen:				. [[
Fluorescence				Blue.
Persistence				Very Short.
	(10μ sec. 1	nax. for	1%	initial brightness).
Focusing Method				
Deflecting Method				Electrostatic.
Overall Length				194 + 5 mm
Greatest Diameter of Bulb				52.4 mm.
Minimum Useful Screen I	Diameter			44 mm.
Mounting Position .				Any.
Base			٠.	B.12.A.
Pin 1—Heater.	6 7		Pin	n 7—Y2.
Pin 2—Modulator.	5	(8)		n 8—Anode 1 and
Pin 3—Cathode.		To		Anode 3.

Pin 1—Heater.
Pin 2—Modulator.
Pin 3—Cathode.
Pin 4—Anode 2.
Pin 5—Pin omitted.
Pin 6—Y1.



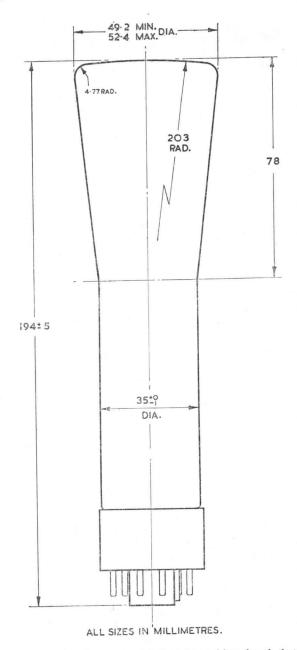
Pin 7—Y2.
Pin 8—Anode 1 and Anode 3.
Pin 9—X2.
Pin 10—X1.
Pin 11—Pin omitted.
Pin 12—Heater.

### **Typical Operating Conditions:**

Anode 1 (2500v. max.) Anode 2 Anode 3 (2500v. max.) Modulator volts for cut-off	. 1000 volts. 150/280 volts. . 1000 volts.	2000 volts. 300/560 volts. 2000 volts.
	-65 volts. max.	-130 volts max.

Deflection Sensitivity:				mm/volt.	mm/volt.
X Plate				0.16 to 0.22	0.08 to 0.11
Y Plate			,	0.25 to 0.34	0.125 to 0.17

- Note 2. The angle between the traces produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 5 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that Pin No. 1 is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

#### DIAMETER 2" NOMINAL

#### 2EGI

### Oscilloscope Tube

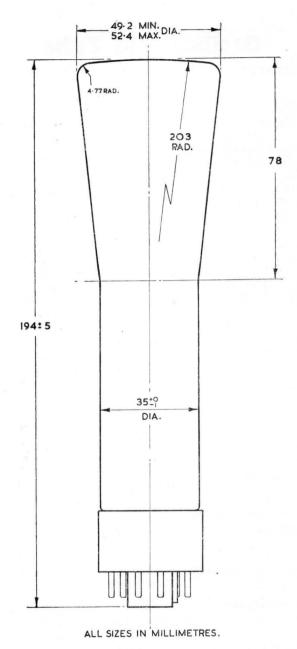
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

#### DATA

	1	JAIA				
GENERAL:						
Heater: Voltage . Current .		6.3				a.c. or d.c. volts.
Direct Inter-electrode Ca	naoita.	0.0	•			amp.
Modulator to all other al	pacitai	ices.				11.0
Modulator to all other el	ectrod	es		•	*	$11.0\mu\mu f$ .
Each X Plate to all other	electro	odes		•		$11.0\mu\mu f.$
Each Y Plate to all other Deflector Plates XI to X2 Deflector Plates Y1 to Y2	electre	odes	•			$10.0\mu\mu f$ .
Deflector Plates XI to XZ					•	1.1
Someon :	2 .			100		4μμf.
Screen:						
Fluorescence						Green.
Persistence						Short
(10m sec. min	./100m	sec	max	for	10/	initial brightness)
Focusing Method Deflecting Method Overall Length						Electrostatic
Deflecting Method						Electrostatic
Overall Length Greatest Diameter of Bul						194 + 5 mm
Greatest Diameter of Bul	b .					52.4 mm
Minimum Useful Screen	Diame	ter				44 mm
Mounting Position .						
Base		•				B.12.A.
			•	•	•	D.12.A.
Pin 1—Heater.					-	
	6	(7)				n 7—Y2.
Pin 2—Modulator.	5	2	(8)			18—Anode 1 and
Pin 3—Cathode.			19		1	Anode 3.
Pin 4—Anode 2.	7		1		Pir	n 9—X2.
Pin 5—Pin omitted.	3/2		10		Pir	n 10—X1.
Pin 6Y1.	X	$\wedge$	7			11—Pin omitted.
This II.	(2)	12	(11)			12—Heater.
	C	-(12)			rn	112—Heater.
T : 10						
Typical Operating Condition						
Anode 1 (2500v. max.) .		1000	volts			2000 volts.
Anode 2	150	)/280	volts			300/560 volts.
Anode 3 (2500y max)		1000	volte.			2000 volts.

Typical Ope	rating	Cond	itio	ns:	
Anode 1 (25 Anode 2 Anode 3 (25 Modulator v	00v. m	ax.)		. 1000 volts. 150/280 volts. . 1000 volts.	2000 volts. 300/560 volts. 2000 volts.
				-65 volts max.	-130 volts max.
Deflection Se	ensitivi	ty:		mm/volt.	mm/volt.
X Plate				0.16 to 0.22	0.08 to 0.11
Y Plate				0.25 to 0.34	0.125 to 0.17

- Note 2. The angle between the traces produced by X1 and X2 and trace the produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 5 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that Pin No. 1 is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

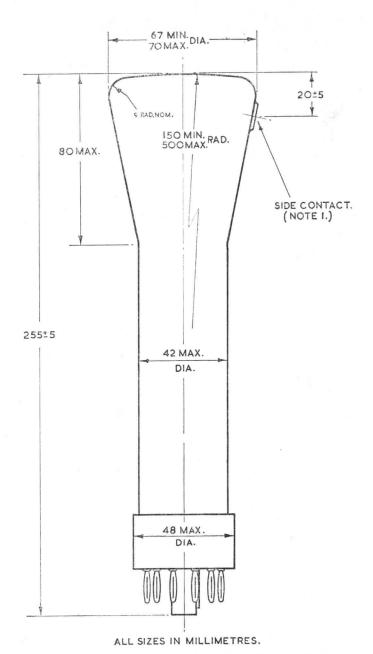
#### DIAMETER 23" NOMINAL

#### 3EBI

### Oscilloscope Tube

	DATA		
GENERAL:	DATA		
Heater: Voltage .	4.0		a.c. or d.c. volts.
Current .	1.0		amp.
Direct Inter-electrode (	Capacitances		amp.
Modulator to all other	electrodes		. 13μμf.
Each X Plate to all oth	er electrodes		. 21μμf.
Each Y Plate to all oth			. 21μμf.
One X to one Y Deflec			. 4μμf.
Cathode to all other ele	ectrodes .		. 12μμf.
Screen:	cerrodes .		12/4/1.
Fluorescence			Blue.
i disistence	· (10μ sec.	may for l	1% initial brightness).
Focusing Method	(10μ 300)		Electrostatic.
Deflecting Method .			Electrostatic.
Overall Length .			255 ± 5 mm.
Overall Length Greatest Diameter of B	 Bulh		70 mm.
Minimum Useful Scree	n Diameter		55 mm.
Mounting Position	ii Diametei		
Mounting Position Anode Cap			Any. Recessed Small Ball.
Base			
Base			B.12.B.
Pin 1—Cathode.	SEE	NOTE I.	Pin 8—X2.
Pin 2-Modulator.	6 (7)		Pin 9—Anode 1,
Pin 3—Heater.	5		Anode 3 and Internal
Pin 4—Heater.	A   = = =	est to	Conductive coating.
Pin 5—Anode 2.			Pin 10—X1.
Pin 6—Pin omitted.	3	l (lo) I	Pin 11—Y1.
Pin 7—Y2.	2		Pin 12—Pin omitted.
	1) 12		Cap—Anode 4 P.D.A.
	00		
Typical Operating Cond			
Anode 1 (2500v. max.)		volts.	1300 volts.
Anode 2			100 volts.
Anode 3 (2500v. max.)	2000	volts.	1300 volts.
Anode 4 Post Deflector	Accelerator (	5KV max.)	
		volts.	2500 volts.
Modulator volts for cut			
	−65 to −145	volts.	-45 to $-100$ volts.
<b>Deflection Sensitivity:</b>	mm	/volt.	mm/volt.
X Plate		125	0.190
Y Plate		145	0.190
	. 0.	110	0.220

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 7 mm. radius concentric with the centre of the tube face.



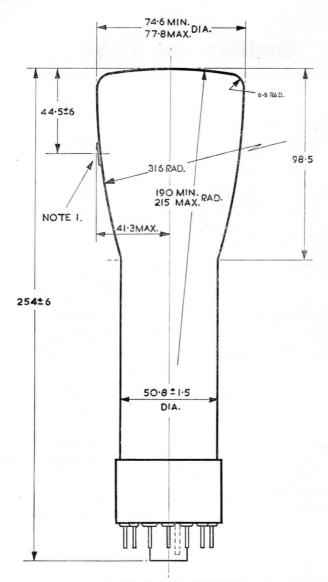
Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

# SEBSA

### **3EB3P**

### Oscilloscope Tube

	DATA	
GENERAL:	2	
Heater: Voltage .		. a.c. or d.c. volts.
Current .	0.6 .	amp.
Direct Inter-electrode C	apacitances:	
Modulator to all ot		10.5μμf.
Each X Plate to all		
Each Y Plate to all		. 9.0µµf.
Deflector Plates X1	to X2	. 4.0μμf.
Deflector Plates Y1	to Y2	3.5μμf.
Screen:		
Fluorescence .		Blue.
Persistence .		Very Short
	(10usec. max. for	1% of initial brightness).
Focussing Method	(10)0000 1111111 101	Electrostatic.
		. Electrostatic.
Overall Length . Greatest Diameter of Br	ulb	
Greatest Diameter of Br Minimum Useful Screen	Diameter	60 () mm
Mounting Position	i Diametei .	Any.
Anode Cap		Recessed Ball
Anode Cap		BSS448/CT7.
Daga		. B.14A.
Base		В.14А.
Pin 1—Heater.	SEE NOTE I.	Pin 8—Y2.
Pin 2—Cathode.	(7) (B)	Pin 9—Anode 1 and
Pin 3—Modulator.	-1-9	Anode 3.
Pin 4—No connection.	5 < >	© Pin 10—X2.
Pin 5—Anode 2.		Pin 11—X1.
		Pin 12—No connection.
Pin 7—Y1.	3	Pin 14—Heater.
	2	Cap—Anode 4 P.D.A.
		Cap—Allode 4 F.D.A.
Typical Operating Cond	litions •	
		1500 14-
Anode 1 and Anode 3 (		1500 volts.
Anode 2 Anode 4 P.D.A. (5000 v		. 350/500 volts. . 3000 volts.
Anode 4 P.D.A. (5000)	volts max.) .	
Modulator volts for cut	t-off	65 volts max.
Defloation Sonsitivity		
Deflection Sensitivity:		mm./volt
X Plate		. 0.15 to 0.2
Tr Di .		. 0.13 to 0.27
Y Plate		0.2 10 0.27



ALL SIZES IN MILLIMETRES.

- Note 1. The angle between the trace produced by X1, X2 and a plane through the tube axis, Pin 5 and the P.D.A. Cap may vary by an angular tolerance of 10°. The P.D.A. Cap is on the same side of the tube as Pin 5.
- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 7 m.m. radius concentric with the centre of the tube face.
- Note 4. When viewing the screen with the tube positioned such that Pin No. 5 is on the left, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

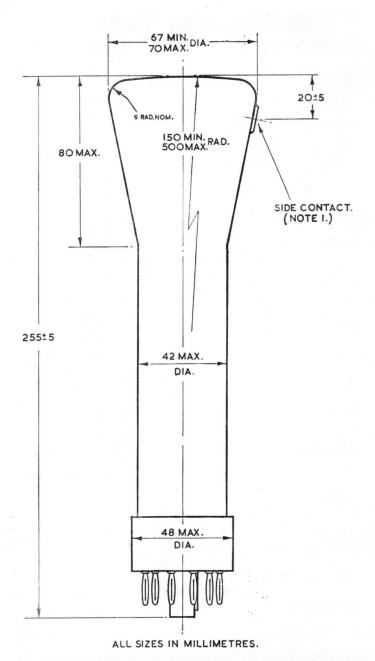
#### DIAMETER 23" NOMINAL

#### 3EDI

### Oscilloscope Tube

	DAT			
GENERAL:				
Heater: Voltage . Current .	40		. a.c. or d.c. volts.	
Current .	1.0		amp.	
Direct Inter-electrode (			· ump.	
Modulator to all other			. 13μμf.	
Each X Plate to all oth	er electrodes		. 21μμf.	
Each Y Plate to all oth	er electrodes		. 21μμf.	
One X to one Y Deflect	tor Plate .			
Cathode to all other ele			. 12μμf.	
Screen:			1-(-(-11-	
Fluorescence Afterglow Persistence of Afterglow			. Blue.	
Afterglow			. Yellow.	
Persistence of Afterglov	w		. Long.	
(10 sec.	min./100 see	c. max. for	1% initial brightness).	
Focusing Method			. Electrostatic.	
Focusing Method Deflecting Method .			Flectrostatic	
Overall Length Greatest Diameter of B Minimum Useful Scree Mounting Position			$255 \pm 5 \text{ mm}$	
Greatest Diameter of B	Sulb		. 70 mm.	
Minimum Useful Scree	n Diameter		. 55 mm.	
Mounting Position			. Any.	
Anode Cap			. Recessed Small Ball	
Base			. B.12.B.	
Pin 1—Cathode.	s	EE NOTE I.	Pin 8—X2.	
Pin 2—Modulator.	(6) K			
Pin 3—Heater.	5	8	Pin 9—Anode 1, Anode 3 and Internal	
Pin 4—Heater.	4	(e)	Conductive coating.	
Pin 5—Anode 2.	9/1=		Pin 10—X1.	
Pin 6—Pin omitted.	(3)	10)	Pin 11—Y1.	
Pin 7—Y2.	2		Pin 12—Pin omitted.	
1 m /—12.		2	Cap-Anode 4 P.D.A.	
Typical Operating Cond	itions :			
Anode 1 (2500v. max.)		0 volts.	1300 volts.	
Anode 2	13	0 volts.	100 volts.	
Anode 3 (2500v. max.)	200	0 volts.	1300 volts.	
Anode 4 Post Deflector	Accelerator	(5KV max	i)	
		0 volts.	2500 volts.	
Modulator volts for cut				
	-50 to $-10$	5 volts.	-35 to $-70$ volts.	
<b>Deflection Sensitivity:</b>	m	m/volt.	mm/volt.	
X Plate		0.125	0.190	
Y Plate		0.145	0.220	

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ}\pm3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 7 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

#### 3ED2

### Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

#### DATA

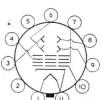
#### GENERAL: Heater: Voltage . 6.3 a.c. or d.c. volts. Current . 0.6 amp. Direct Inter-electrode Capacitances: Modulator to all other electrodes 12µµf. Each X Plate to all other electrodes . 16μμf. Each Y Plate to all other electrodes 11 uuf. Deflector Plates X1 to X2 2.5uuf. Deflector Plates Y1 to Y2 2.5µµf. Screen: Fluorescence . Blue. Afterglow Yellow. Persistence of Afterglow . . . Long (10 sec. min./100 sec. max. for 1% initial brightness). Focussing Method . . . Electrostatic. Deflecting Method . Electrostatic. Overall Length. 292 ± 9 mm. Greatest Diameter of Bulb . Greatest Diameter of Bulb . . . Minimum Useful Screen Diameter 77.8 mm. 69.0 mm. Mounting Position . . . . Anv. 11 Pin Magnal. Base Pin 1-Heater. Pin 6-Y2.

Pin 2-No connection.

Pin 3—X1.

Pin 4—Anode 2.

Pin 5-No connection.



Pin 7-Anode 1 and 3.

Pin 8-X2.

Pin 9-Y1.

Pin 10-Modulator.

Pin 11-Heater and Cathode.

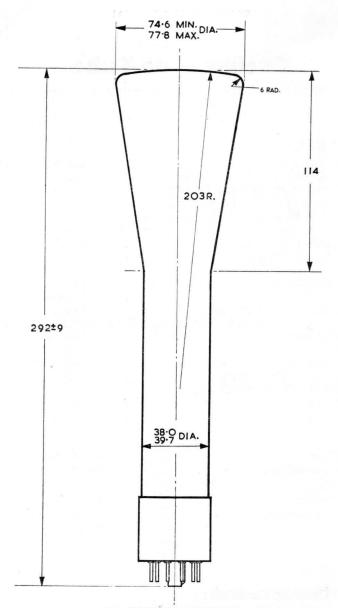
### **Typical Operating Conditions:**

Anode 1 and 3 (2500 volts max.)

					1000 volts	2000 volts.
Anode 2					200/280 volts	400/560 volts.
Modulator	volt	s for	cut	-off	−50 volts max.	-100 volts max.

#### **Deflection Sensitivity:**

			IIIIII/ VOIL	mm./voit.
X Plate			0.26 to 0.4	0.13 to 0.2
Y Plate			0.3 to 0.45	0.15 to 0.22



ALL SIZES IN MILLIMETRES.

- Note 1. When viewing the screen with the tube positioned such that the spigot key is uppermost, a positive voltage applied to terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.
- The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ . The undeflected focused spot will fall within a circle having a 7 m.m. Note 2.
- Note 3. radius concentric with the centre of the tube face.
- Note 4. The angle between the trace produced by the deflector plates Y1, Y2 and a plane through the tube axis and Pin No. 6, may vary by an angular tolerance of 10°.

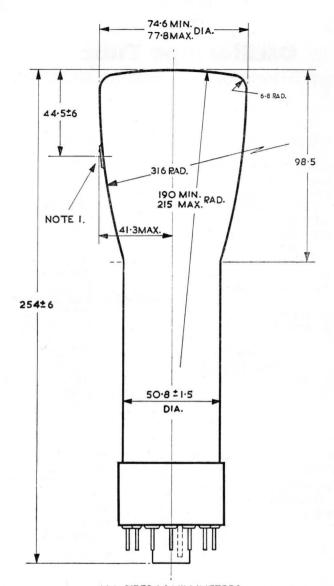
#### DIAMETER 3" NOMINAL

### 3ED3P

SEDSA

### Oscilloscope Tube

DATA
GENERAL:
Heater: Voltage 6.3 a.c. or d.c. volts. Current 0.6 amp.
Direct Inter-electrode Capacitances:
Modulator to all other electrodes 10.5μμf.
Each X Plate to all other electrodes 11.0μμf.
Each Y Plate to all other electrodes . 9.0μμf.
Deflector Plates X1 to X2 4.0μμf.
Deflector Plates Y1 to Y2 3.5μμf.
Screen:
Fluorescence Blue.
Afterglow Yellow.
Afterglow Yellow.  Persistence of Afterglow Long  (100 persistence for 100 initial brightness)
(10 sec. min./100 sec. max. for 1% initial brightness).
Focussing Method Electrostatic.
Deflecting Method Flectrostatic
Overall Length
Greatest Diameter of Bulb 77.8 mm.
Greatest Diameter of Bulb
Mounting Position Any
Anode Cap Recessed Ball
B55448/C17.
Base
Pin 1—Heater. SEE NOTE 1. Pin 8—Y2.
Pin 2—Cathode. Pin 3—Modulator. Pin 3—Modulator. Pin 3—Modulator.
Pin 4—No connection.  5 Pin 10—X2.
Pin 4—No connection.
Pin 5—Anode 2.
Pin 7—Y1.  Pin 12—No connection Pin 14—Heater.
Cap—Anode 4 P.D.A.
Cap—Allode 4 F.D.A.
Typical Operating Conditions:
Anode 1 and Anode 3 (2500 volts max.) 1500 volts.
Anode 2
Anode 4 P.D.A. (5000 volts max.) 3000 volts.
Anode 1 and Anode 3 (2500 volts max.) Anode 2
Deflection Sensitivity:
mm./volts.
X Plate 0.15 to 0.2 Y Plate 0.2 to 0.27
Y Plate 0.2 to 0.27



ALL SIZES IN MILLIMETRES.

- Note 1. The angle between the trace produced by X1, X2 and a plane through the tube axis, Pin 5 and the P.D.A. Cap may vary by an angular tolerance of 10°. The P.D.A. Cap is on the same side of the tube as Pin 5.
- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 7 m.m. radius concentric with the centre of the tube face.
- Note 4. When viewing the screen with the tube positioned such that Pin No. 5 is on the left, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

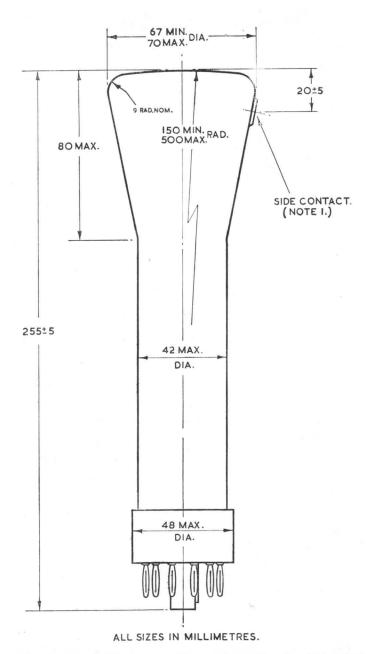
### SEC

### 3EGI

### Oscilloscope Tube

	DATA	
GENERAL:	DATA	
Heater: Voltage .	4.0	
Current .	1.0	. a.c. or d.c. volts.
Direct Inter-electrode C	operators	. amp.
Modulator to all other	apacitances.	12 0
Each X Plate to all other	1	$13\mu\mu f$ .
Each Y Plate to all other	er electrodes	. 21μμf.
One V to one V Defect	er electrodes	. 21μμf.
One X to one Y Deflect	or Plate	. 4μμf.
Cathode to all other electrons	ctrodes	$12\mu\mu f$ .
Fluorescence		. Green.
Persistence		Short
(10m sec. mi	n./100m sec. max. for	1% initial brightness).
I Ocusing Mellion		. Electrostatic.
Deflecting Method .		. Electrostatic
Overall Length Greatest Diameter of Bu Minimum Useful Screen		$255 \pm 5 \text{ mm}$ .
Greatest Diameter of Bu	ılb	70 mm
Minimum Useful Screen	Diameter	55 mm
Mounting Position		. Any.
Anode Cap		-
Base		<ul> <li>Recessed Small Ball.</li> <li>B.12.B.</li> </ul>
Pin 1—Cathode. Pin 2—Modulator.	SEE NOTE I.	Pin 8—X2.
Pin 3—Heater	(5) (B)	Pin 9 — Anode 1,
Pin 4—Heater.		Anode 3 and Internal Conductive coating.
Pin 5—Anode 2.	4 3 3	Pin 10—X1.
	3 10	Pin 10—X1. Pin 11—Y1.
Pin 6—Pin omitted.		
Pin 7—Y2.	2	Pin 12—Pin omitted.
	1) 12	Cap—Anode 4 P.D.A.
Typical Operating Condi	tions ·	
Anode 1 (2500v. max.)	. 2000 volts.	1200
Anode 2	. 130 volts.	1300 volts.
Anode 3 (2500v. max.)	130 voits.	100 volts.
Anode 4 Post Deflect	. 2000 volts.	1300 volts.
Anode 4 Post Deflector	Accelerator (5KV max	
Madulatas 14 C	4000 volts.	2500 volts.
Modulator volts for cut-		
	−65 to −145 volts.	-45 to $-100$ volts.
Deflection Sensitivity:	mm /volt.	
X Plate	. 0.125	
V Di-	. 0.125	0.190
	. 0.143	0.220
Note 2. The angle between	the trace produced by X	11 and X2 and the trace

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 7 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

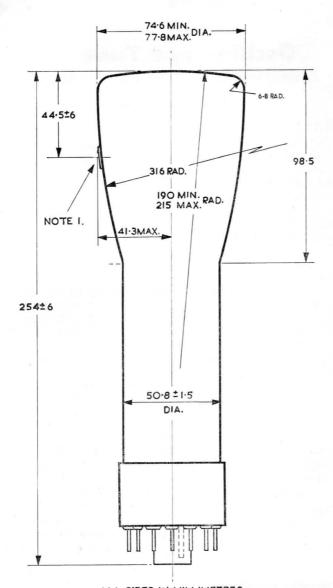
#### DIAMETER 3" NOMINAL

### 3EG3P

SECSA

### **Oscilloscope Tube**

DATA
GENERAL:
Heater: Voltage 6.3 a.c. or d.c. volts.
Current 0.6 amp.
Direct Inter-electrode Canacitances:
Modulator to all other electrodes 10 5uuf
Each X Plate to all other electrodes 11.0μμf.
Each Y Plate to all other electrodes 9 Quif
Deflector Plates X1 to X2 4.0μμf.
Deflector Plates Y1 to Y2 $3.5\mu\mu f$ .
Screen:
Fluorescence Green.
Persistence Short
Persistence Short (10m. sec. min./100m. sec. max. for 1% initial brightness).
Focussing Method Electrostatic.
Focussing Method Electrostatic.  Deflecting Method Electrostatic.
Overall Length
Greatest Diameter of Bulb
Overall Length
Mounting Position Any.
Mounting Position Any. Anode Cap
BSS448/CT7.
Base
Dusc
Pin 1—Heater. See NOTE I. Pin 8—Y2.
Pin 2—Cathode. 7 (8) Pin 9—Anode 1 and
Pin 3—Modulator.  Pin 3—Modulator.  Anode 3.
Till 5—Woddiator.
This 4—No connection.
Pin 7—Y1. Pin 12—No connection.
Pin 14—Heater.
Cap—Anode 4 P.D.A.
Trusteed Orace the G. 188
Typical Operating Conditions:
Anode 1 and Anode 3 (2500 volts max.) 1500 volts.
Anode 2
Anode 4 P.D.A. (5000 volts max.) 3000 volts.
Anode 1 and Anode 3 (2500 volts max.)
Deflection Sensitivity:
mm./volt.
X Plate



ALL SIZES IN MILLIMETRES.

- Note 1. The angle between the trace produced by X1, X2 and a plane through the tube axis, Pin 5 and the P.D.A. Cap may vary by an angular tolerance of 10°. The P.D.A. Cap is on the same side of the tube as Pin 5.
- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 7 m.m. radius concentric with the centre of the tube face.
- Note 4. When viewing the screen with the tube positioned such that Pin No. 5 is on the left, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

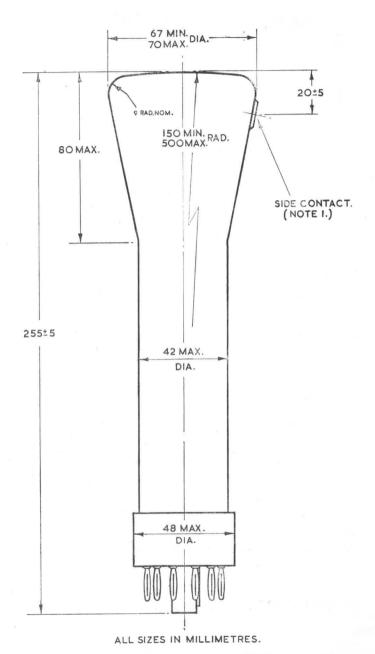
### 360

### 3E01

### Oscilloscope Tube

	DATA		
GENERAL:			
Heater: Voltage .	4.0 .		a.c. or d.c. volts.
Current .	1.0 .		
Direct Inter-electrode	Capacitances.		
Modulator to all other	electrodes		13μμf.
Each X Plate to all oth	ner electrodes		
Each Y Plate to all oth	ner electrodes .		
One X to one Y Defle	ctor Plate		, , ,
Cathode to all other el			12μμf.
Screen:	icerroues		12μμ1.
			0=0=0
Fluorescence Afterglow			
Persistence of Afterglo			Orange.
(10 see	w	· · ·	Long.
Focusing Method	. min./100 sec. max.	for 1%	initial brightness).
Deflecting Method			Electrostatic.
Deflecting Method . Overall Length .			Elcterostatic.
Greatest Diameter of I	· · · · ·		$255 \pm 5 \text{ mm}.$
Overall Length Greatest Diameter of I Minimum Useful Screen	Suio		70 mm.
Manufina Davidia			55 mm.
Mounting Position			Any.
Anode Cap			Recessed Small Ball.
Base			B.12.B.
Pin 1—Cathode.	SEE NOTE I.	Pi	n 8—X2.
Pin 2—Modulator.	6 (7)		n 9—Anode 1.
Pin 3—Heater.	(5) = 1 (8)		node 3 and Internal
Pin 4—Heater	4		onductive coating.
Pin 5—Anode 2.			n 10—X1.
Pin 6—Pin omitted.	3 \ \=== \ \( \to \)	Pin	n 11—Y1.
Pin 7—Y2.	2	Pi	n 12—Pin omitted.
1m /—12.		Ca	p—Anode 4 P.D.A.
			•
Typical Operating Cond	litions :		
Anode 1 (2500v. max.)	2000 volts		1300 volts.
Anode 2	130 volts.		100 volts.
Anode 3 (2500v. max.)	2000 volts.		1300 volts.
Anode 4 Post Deflector	Accelerator (5KV.	max.)	1000 ,010.
	4000 volts.		4000 volts.
Modulator volts for cu			
	-65 to -145 volts.		-45 to -100 volts.
Deflection Sensitivity:	mm/volt.		
V DI	. 0.125		mm/volt.
Y Plate	. 0.123		0.190 0.220
I I late	. 0.143		0.220

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ}\pm3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 7 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

### 3**EO**3P

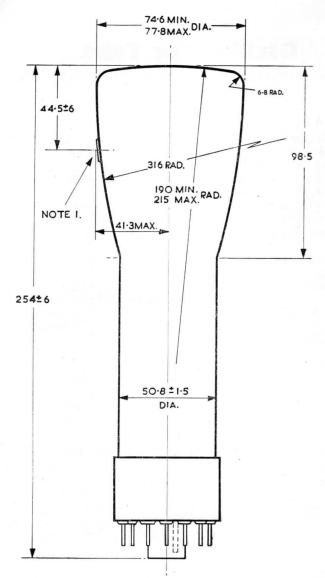
JEO3A

### **Oscilloscope Tube**

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

#### DATA

DATA
GENERAL:
Heater: Voltage 6.3 a.c. or d.c. volts.
Current 0.6 amp.
Direct Inter-electrode Capacitances:
Modulator to all other electrodes $10.5\mu\mu f$ .
Each X Plate to all other electrodes 11.0μμf.
Each Y Plate to all other electrodes . 9.0μμf.
Deflector Plates X1 to X2 4.0μμf.
Deflector Plates Y1 to Y2 3.5μμf.
Screen:
Fluorescence Orange.
Afterglow Orange. Persistence of Afterglow Long
Persistence of Afterglow Long
(10 sec. min/100 sec. max. for 1% initial brightness).
Focussing Method Electrostatic.
Deflecting Method Flectrostatic
Overall Length
Greatest Diameter of Bulb 77.8 mm.
Minimum Useful Screen Diameter 69.0 mm.
Mounting Position Any. Anode Cap Recessed Ball
Anode Cap Recessed Ball
BSS448/CT7.
Base B14A.
Pin 1—Heater. SEE NOTE 1: Pin 8—Y2.
Pin 2—Cathode. Pin 3—Modulator. Pin 3—Modulator. Pin 9—Anode 1 and Anode 3.
Pin 4—No connection.  Solution Pin 10—X2.
Tim 4—140 connection.
D' 10 N
Pin 7—Y1.  3 Pin 12—No connection. Pin 14—Heater.
, (2)
Cap—Anode 4 P.D.A.
Typical Operating Conditions:
Anode 1 and Anode 3 (2500 volts max.) 1500 volts.
Anode 2
Anode 4 P.D.A. (5000 volts max.) 3000 volts.  Modulator volts for cut-off
Modulator volts for cut-off65 volts max.
D. G. Alex Co. 141.14
Deflection Sensitivity:
mm./volt.
X Plate
Y Plate 0.2 to 0.27



ALL SIZES IN MILLIMETRES.

- Note 1. The angle between the trace produced by X1, X2 and a plane through the tube axis, Pin 5 and the P.D.A. Cap may vary by an angular tolerance of 10°. The P.D.A. Cap is on the same side of the tube as Pin 5.
- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 7 m.m. radius concentric with the centre of the tube face.
- Note 4. When viewing the screen with the tube positioned such that Pin No. 5 is on the left, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

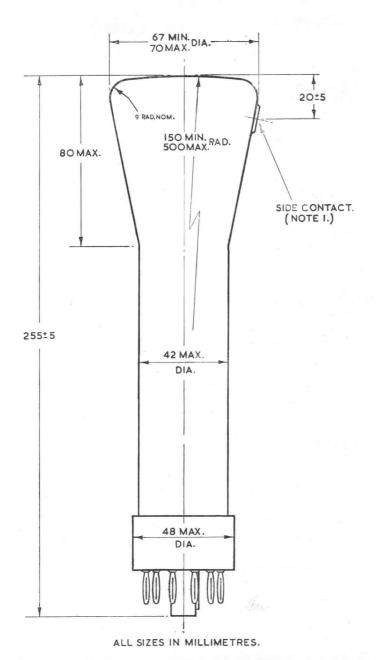
### SEL.

#### 3EWI

### Oscilloscope Tube

	DATA		
GENERAL:	DATA		
Heater: Voltage .	4.0 .		a.c. or d.c. volts.
Current .	1.0 .		
Direct Inter-electrode C			amp.
Modulator to all other	apacitances.		126
Each X Plate to all oth	erectiones .		$13\mu\mu f$ .
Each Y Plate to all oth	er electrodes .	y• •	
One X to one Y Deflec			
Cathode to all other ele	ectrodes		12μμf.
Screen:			****
n			White.
Persistence	:		Short.
(5m sec. n	nin./25m sec. max.	for 1%	
Focusing Method			Electrostatic.
Deflecting Method .			
Overall Length .			$255 \pm 5$ mm.
Overall Length . Greatest Diameter of B Minimum Useful Screen	ulb		70 mm.
William Userul Screen	i Diameter .		55 mm.
Mounting Position			Any.
Anode Cap			Recessed Small Ball.
Base			B.12.B.
Pin 1—Cathode.	SEE NOTE I.	n:	n 8—X2.
Pin 2—Modulator.	6 (7)		
Pin 3—Heater.	(5) ———— (B)		n 9—Anode 1, node 3 and Internal
Pin 4—Heater.	4		onductive coating.
Pin 5—Anode 2.			10—X1.
Pin 6—Pin omitted.	(3) \=== \ \( \) \( \) \( \)		1 10—XI. 1 11—YI.
Pin 7—Y2.			
rm /—12.	2 11		12—Pin omitted.
	(1)-(12)	Ca	p—Anode 4 P.D.A.
<b>Typical Operating Cond</b>	itions :		
Anode 1 (2500v. max.)			1300 volts.
			100 volts.
Anode 2 Anode 3 (2500v. max.)	2000 volts		1300 volts.
Anode 4 Post Deflector	Accelerator (5KV	max )	1500 10165.
	4000 volts		2500 volts.
Modulator volts for cut			2300 Voits.
	-65 to -145 volts		-45 to -100 volts.
Deflection Sensitivity:	mm/volt		mm/volt.
X Plate	. 0.125		0.190
Y Plate	. 0.145		0.220

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 7 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

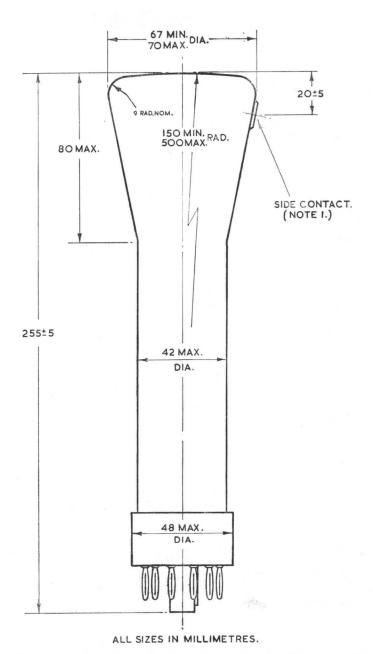
### SEL

### 3EYI

### Oscilloscope Tube

	DATA	
GENERAL:	2	
Heater: Voltage .	4.0	. a.c. or d.c. volts.
Heater: Voltage . Current .	1.0	
Direct Inter-electrode (	anacitances	
Modulator to all other Each X Plate to all oth	electrodes	. 13μμf.
Each X Plate to all oth	er electrodes	. 21μμf.
Each Y Plate to all oth	er electrodes	. 21uuf
One X to one Y Deflec	tor Plate	. 4μμf.
Cathode to all other ele	ectrodes	. 12μμf.
Screen:		
Fluorescence		. Yellow.
Afterglow Persistence of Afterglow		. Yellow.
Persistence of Afterglov	v	. Long.
(1 sec. min./	10 sec. max. for 1% in	nitial brightness
Focusing Method Deflecting Method.		. Electrostatic.
Deflecting Method .		. Electrostatic.
Overall Length .		. 255 ± 5 mm.
Greatest Diameter of B	ulb	. 70 mm.
Overall Length Greatest Diameter of B Minimum Useful Screen	n Diameter	. 55 mm.
Mounting Position		. Any.
Anode Cap		
Base		. B.12.B.
	SEE NOTE I.	
Pin 1—Cathode.	(6) (7)	Pin 8—X2.
Pin 2—Modulator.	(5) = 1 = (8)	Pin 9—Anode 1,
Pin 3—Heater.	-XX XX-	Anode 3 and Internal
Pin 4—Heater.	4) (3)	Conductive coating.
Pin 5—Anode 2.	3 \=== \	Pin 10—X1.
Pin 6—Pin omitted.		Pin 11—Y1.
Pin 7—Y2.	2	Pin 12—Pin omitted.
		Cap—Anode 4 P.D.A.
Typical Operating Condi	itions :	
Anode 1 (2500v. max.)	2000 volts.	1300 volts.
Anode 2	100 1	100 volts.
Anode 3 (2500v. max.)		1300 volts.
Anode 4 Post Deflector	Accelerator (5KV ma	1500 VOIIS.
The second series of the secon	4000 volts.	2500 volts.
Modulator volts for cut-		2500 voits.
The state of the s	-65 to -145 volts.	−45 to −100 volts.
Deflection Sensitivity:		
X Plate	mm/volt.	mm/volt.
V DI	. 0.125	0.190
Y Plate	. 0.143	0.220

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 7 mm. radius concentric with the centre of the tube face.



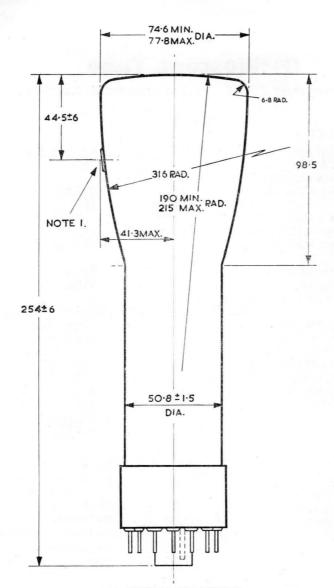
Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

## SETSA

### 3EY3P

### **Oscilloscope Tube**

	DATA	
GENERAL:	DATA	
Heater: Voltage . Current .	6.3	. a.c. or d.c. volts.
Current .	0.6	. amp.
Direct Inter-electrode (	Capacitances:	
Modulator to all o	Capacitances: other electrodes il other electrodes	. $10.5\mu\mu f$ .
Each X Plate to al	l other electrodes .	. 11.0μμf.
Each Y Plate to al	l other electrodes .	9 Ouuf
Deflector Plates X	1 to X2	. 9.0μμf. . 4.0μμf.
Deflector Plates Y	1 to V2	. 3.5μμf.
Screen:	1 to 12	$.$ $5.5\mu\mu$ 1.
		V-11
A francisconce .		. Tellow.
Altergiow .		. Yellow.
Persistence of Afte	erglow	. Long
(1 sec.	min./10 sec. max. fo	Yellow. Long 1% initial brightness).
Focussing Method Deflecting Method		. Electrostatic.
Deflecting Method		. Electrostatic.
Overall Length .		$254 \pm 6 \text{ mm}$ .
Greatest Diameter of F	Bulb	. 77.8 mm.
Minimum Useful Scree	en Diameter	. 69.0 mm.
Overall Length Greatest Diameter of I Minimum Useful Scree Mounting Position Anode Cap		. Any.
Anode Can		. Recessed Ball
Amout cup		BSS448/CT7.
Base		. B14A
Dasc		. B14A
Dia 1 Hanton	SEE NOTE :	D'- 0 V2
Pin 1—Heater.		Pin 8—Y2.
Pin 2—Cathode. Pin 3—Modulator.	(7) (8) (-1-) 9	Pin 9—Anode 1 and Anode 3.
Pin 4—No connection.	(5) ( > (0)	Pin 10—X2.
Pin 5—Anode 2.		Pin 11—X1.
		Pin 12—No connection.
Pin 7—Y1.	3 (12)	Pin 14—Heater.
	(2) (14)	4
		Cap—Anode 4 P.D.A.
Typical Operating Con-	ditions •	
	(2500 1.	1500 14-
Anode 1 and Anode 3	(2500 volts max.) .	. 1500 volts.
Anode 2		350/500 volts.
Anode 4 P.D.A. (5000)	volts max.)	. 3000 volts.
Modulator volts for cu	ıt-off	. $-65$ volts max.
Anode 1 and Anode 3 Anode 2 Anode 4 P.D.A. (5000 Modulator volts for cu		
<b>Deflection Sensitivity:</b>		4 1:
		mm./volt.
X Plate		. 0.15 to 0.2 . 0.2 to 0.27
Y Plate		. 0.2 to 0.27



ALL SIZES IN MILLIMETRES.

- Note 1. The angle between the trace produced by X1, X2 and a plane through the tube axis, Pin 5 and the P.D.A. Cap may vary by an angular tolerance of 10°. The P.D.A. Cap is on the same side of the tube as Pin 5.
- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 7 m.m. radius concentric with the centre of the tube face.
- Note 4. When viewing the screen with the tube positioned such that Pin No. 5 is on the left, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

### 5EB2P

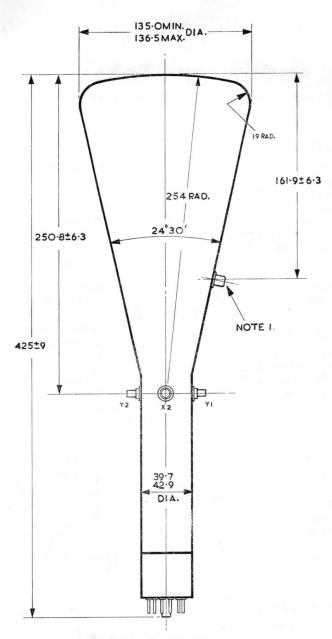
SEBAR

### **Oscilloscope Tube**

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

#### DATA

	DATA	
GENERAL:		
Heater: Voltage .	6.3 .	. a.c. or d.c. volts.
Current .	0.6 .	amp.
Direct Inter-electrode C	apacitances:	
Modulator to all ot	her electrodes	12.0μμf.
Each X Plate to all	other electrodes	5.0µµf.
Each Y Plate to all		5.0μμf.
Deflector Plates X1		2.3μμf.
Deflector Plates Y1	to Y2	2.3μμf.
Screen:		
Fluorescence .		Blue.
Persistence .	1	
	(10usec max for	1% of initial brightness).
Focussing Method .		Electrostatic.
Deflecting Method .		. Electrostatic.
Overall Length Greatest Diameter of Bu	ılh	425 ± 9 mm. 136.5 mm.
Greatest Diameter of Bu Minimum Useful Screen	Diameter	150.5 IIIII.
Mounting Position	Diameter .	114 IIIII.
Mounting Position . Anode Cap		<ul><li>Any.</li><li>English BSS448/CT2.</li></ul>
		. English BSS448/CT2.
base		. 11 Pin Magnal.
Pin 1—Heater. Pin 2—No connection. Pin 3—No connection. Pin 4—Anode 2. Pin 5—No connection. Pin 6—No connection.	3 2 100	Pin 7—Anode 1 and Anode 3. Pin 8—No connection. Pin 9—No connection. Pin 10—Modulator. Pin 11—Heater and Cathode. Cap—Anode 4 P.D.A. BSS448/CT1 caps on neck connect to X1, X2, Y1 and Y2.
Typical Operating Condi	tions .	
		2000
Anode 1 and 3 (2500 vo		2000 volts.
Anode 2 Anode 4 (5000 volts max		. 450/570 volts.
Anode 4 (5000 voits max	K.)	
Modulator volts for cut-	off	105 volts max.
Deflection Sensitivity:		/
X Plate		mm./volt.
N/ Di		. 0.22 to 0.33 . 0.22 to 0.33
Y Plate		. 0.22 to 0.33



#### ALL SIZES IN MILLIMETRES.

Note 1. The angle between the trace produced by Y1, Y2 and a plane through the tube axis, spigot key and the P.D.A. Cap, may vary by an angular tolerance of 10°. The spigot key is on the same side of the tubes as the P.D.A. Cap.

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .

Note 3. The undeflected focused spot will fall within a circle having a 7 m.m. radius concentric with the centre of the tube face.

Note 4. When viewing the screen with the tube positioned such that the spigot key is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

### 5ED2P

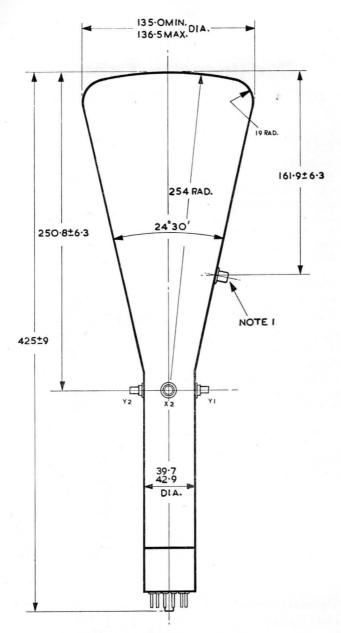
SED ZA

### **Oscilloscope Tube**

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

#### DATA

DATA	
GENERAL:	
Heater: Voltage 6.3	. a.c. or d.c. volts.
Current 0.6	. amp.
Direct Inter-electrode Capacitances:	1
Modulator to all other electrodes .	. 12.0μμf.
Each X Plate to all other electrodes .	. 5.0µµf.
Each Y Plate to all other electrodes .	. 5.0µµf.
Deflector Plates X1 to X2	2 2£
Deflector Plates Y1 to Y2	$2.3\mu\mu f$ .
Screen:	
Fluorescence	. Blue.
Afterglow	. Yellow.
Persistence of Afterglow	. Long
(10 sec. min./100 sec. max. for 1	1% initial brightness).
Focussing Method	Electrostatic
Deflecting Method	. Electrostatic.
Overall Length	. $425 \pm 9 \text{ mm}$ .
Greatest Diameter of Bulb	. 136.5 mm.
Minimum Useful Screen Diameter	. 136.5 mm. . 114 mm.
Deflecting Method	. Any.
Anode Cap	. English BSS448/CT2.
Base	. 11 Pin Magnal.
Pin 1—Heater.	Pin 7—Anode 1 and
Pin 2—No connection.	Anode 3.
Pin 3—No connection.	Pin 8—No connection.
Pin 4—Anode 2.	Pin 9—No connection. Pin 10—Modulator.
Pin 5—No connection.	Pin 11—Heater and
(3) = = 19	Cathode.
Pin 6—No connection.	Cap—Anode 4 P.D.A.
2 (10)	BSS448/CT1 caps on neck connect to X1, X2, Y1 and
. (1) (1)	Y2.
Typical Operating Conditions:	
Anode 1 and 3 (2500 volts max.)	. 2000 volts.
	450/570 volts.
Anode 2	. 4000 volts.
Modulator volts for cut-off	105 volts max.
<b>Deflection Sensitivity:</b>	
	mm./volt.
X Plate	. 0.22 to 0.33.
Y Plate	. 0.22 to 0.33.
	. 0.22 10 0.55.



ALL SIZES IN MILLIMETRES.

Note 1. The angle between the trace produced by Y1, Y2 and a plane through the tube axis, spigot key and the P.D.A. Cap, may vary by an angular tolerance of 10°. The spigot key is on the same side of the tubes as the P.D.A. Cap.

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .

Note 3. The undeflected focused spot will fall within a circle having a 7 m.m. radius concentric with the centre of the tube face.

Note 4. When viewing the screen with the tube positioned such that the spigot key is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

#### DIAMETER 5" NOMINAL

### 5EG2P

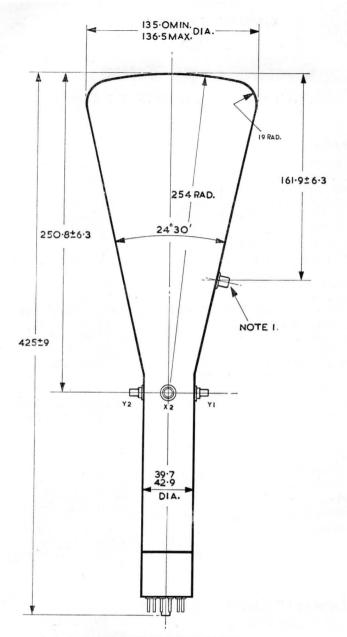
SEC 20

### **Oscilloscope Tube**

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA
GENERAL:
Heater: Voltage 6.3 a.c. or d.c. volts.
Current 0.6 amp.
Direct Inter-electrode Capacitances:
Modulator to all other electrodes . $12.0\mu\mu f$ .
Each X Plate to all other electrodes . 5.0μμf.
Each Y Plate to all other electrodes 5.0μμf.
Deflector Plates XI to X2 2.3μμf. Deflector Plates Y1 to Y2 2.3μμf.
Screen: Fluorescence Green.
(10 m sec min /100m sec may for 19/ initial brightness)
Flectrostatio
Deflecting Method Flectrostatic
Overall Length 425 + 9 mm
Greatest Diameter of Bulb
Minimum Useful Screen Diameter 114 mm.
Focussing Method
Anode Cap English BSS448/CT2.
Base
Pin 1—Heater.  Pin 2—No connection.  Pin 3—No connection.  Pin 4—Anode 2.  Pin 5—No connection.  Pin 6—No connection.  Pin 6—No connection.  Pin 6—No connection.
Typical Operating Conditions:
Deflection Sensitivity:

X Plate Y Plate mm./volt. 0.22 to 0.33. 0.22 to 0.33.



The angle between the trace produced by Y1, Y2 and a plane through Note 1. the tube axis, spigot key and the P.D.A. Cap, may vary by an angular tolerance of 10°. The spigot key is on the same side of the tubes as the P.D.A. Cap.

Note 2.

The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ . The undeflected focused spot will fall within a circle having a 7 m.m. Note 3. radius concentric with the centre of the tube face.

Note 4. When viewing the screen with the tube positioned such that the spigot key is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

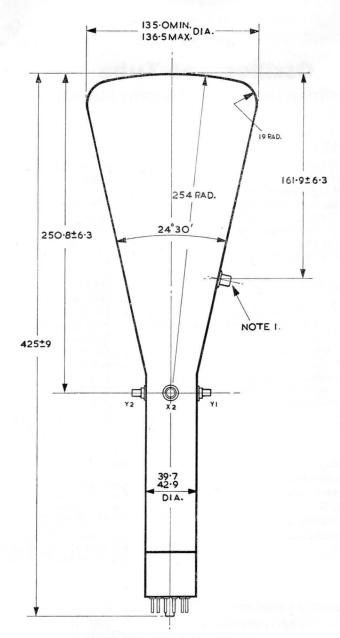
# FOZA

## **5EO2P**

## **Oscilloscope Tube**

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA
GENERAL:
Heater: Voltage 6.3 a.c. or d.c. volts.
Current 0.6 amp.
Direct Inter-electrode Capacitances:
Modulator to all other electrodes 12.0uuf
Each X Plate to all other electrodes 5.0μμf.
Each Y Plate to all other electrodes . 5.0uut.
Deflector Plates X1 to X2 2.3μμf.
Deflector Plates Y1 to Y2 2.3μμf.
Screen:
Fluorescence Orange.
Afterglow Orange. Persistence of Afterglow Long
Persistence of Afterglow Long
(10 sec. min./100 sec. max. for 1% initial brightness).
Focussing Method Electrostatic.
Deflecting Method Electrostatic.
Overall Length
Greatest Diameter of Bulb 136.5 mm.
Minimum Useful Screen Diameter 114 mm.
Mounting Position Any.
Anode Cap English BSS448/CT2.
Base
Pin 1—Heater. Pin 7—Anode 1 and
Pin 2—No connection.  Anode 3.
Pin 3—No connection.  Pin 3—No connection.  S  S  Pin 8—No connection.  Pin 9—No connection.
Pin 4—Anode 2.  Pin 10—Modulator.
Pin 5—No connection Pin 11—Heater and
(3) = = (9) Cathode.
Pin 6—No connection.  Cap—Anode 4 P.D.A. BSS448/CT1 caps on neck
connect to X1, X2, Y1 and
Y2.
Typical Operating Conditions:
••
Anode 1 and 3 (2500 volts max.) 2000 volts.
Anode 2
Anode 4 (5000 volts max.) 4000 volts.
Modulator volts for cut-off105 volts max.
Deflection Sensitivity:
mm./volt.
X Plate 0.22 to 0.33.
Y Plate
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1



The angle between the trace produced by Y1, Y2 and a plane through the tube axis, spigot key and the P.D.A. Cap, may vary by an angular tolerance of 10°. The spigot key is on the same side of the tubes as the P.D.A. Cap.

The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ . The undeflected focused spot will fall within a circle having a 7 m.m. Note 2.

Note 3. radius concentric with the centre of the tube face.

When viewing the screen with the tube positioned such that the spigot Note 4. key is uppermost, a positive voltage applied to the terminal XI will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

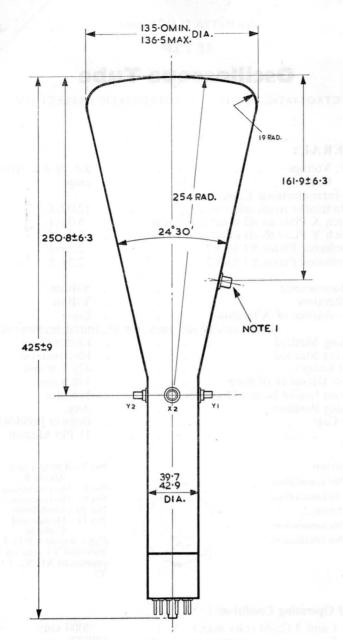
## SEL ZA

## SEY2P

## Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

	DATA	
GENERAL:	2	
	. 6.3	. a.c. or d.c. volts.
Current		. amp.
Direct Inter-electrode Capa		
Modulator to all other		. 12.0μμf.
Each X Plate to all oth		. 5.0μμf.
Each Y Plate to all oth	er electrodes .	. 5.0μμf.
Deflector Plates X1 to	X2	. 2.3μμf.
Deflector Plates Y1 to	Y2	. 2.3μμf.
Screen:		
Fluorescence		. Yellow.
Afterglow		. Yellow.
Persistence of Afterglov	w	. Long
(1 sec. mir	1/10 sec. max. for	1% initial brightness).
Focussing Method .	·	. Electrostatic.
Deflecting Method		. Electrostatic.
Overall Length		$425 \pm 9 \text{ mm}$ .
Focussing Method Deflecting Method Overall Length Greatest Diameter of Bulb		. 136.5 mm.
Minimum Useful Screen Di Mounting Position Anode Cap	ameter	. 114 mm.
Mounting Position		. Anv.
Anode Cap		. English BSS448/CT2.
Anode Cap Base		. 11 Pin Magnal.
		. II I III Magnai.
Pin 1—Heater.		Pin 7—Anode 1 and
		Anode 3.
Pin 2—No connection.	(5) (6) (7)	Pin 8—No connection.
Pin 3—No connection.		Pin 9—No connection.
Pin 4—Anode 2.	4) (8)	Pin 10—Modulator.
Pin 5—No connection.		Pin 11—Heater and Cathode.
Pin 6—No connection.		Cap—Anode 4 P.D.A.
	(2) (10)	BSS448/CT1 caps on neck
		connect to X1, X2, Y1 and
		Y2.
Typical Operating Condition		
Anode 1 and 3 (2500 volts i	nax.)	. 2000 volts.
Anode 2 Anode 4 (5000 volts max.)		450/570 volts.
Anode 4 (5000 volts max.)		. 4000 volts.
Modulator volts for cut-off		. $-105$ volts max.
<b>Deflection Sensitivity:</b>		
Deficetion Scholing.		mm./volt.
X Plate		. 0.22 to 0.33.
Y Plate		. 0.22 to 0.33.
1 1 late		. 0.22 10 0.33.



Note 1. The angle between the trace produced by Y1, Y2 and a plane through the tube axis, spigot key and the P.D.A. Cap, may vary by an angular tolerance of 10°. The spigot key is on the same side of the tubes as the P.D.A. Cap.

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .

Note 3. The undeflected focused spot will fall within a circle having a 7 m.m. radius concentric with the centre of the tube face.

Note 4. When viewing the screen with the tube positioned such that the spigot key is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

## **SLOIA**

## Radar Tube

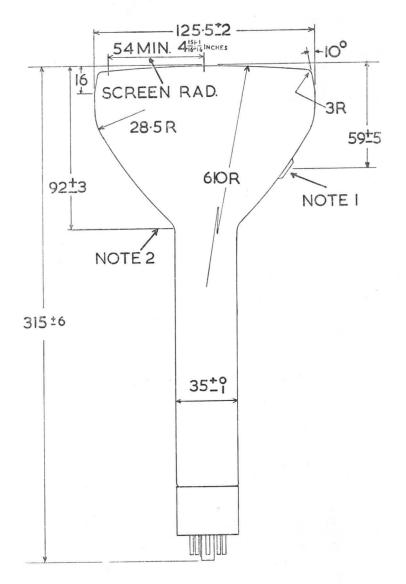
ELECTROSTATIC FOCUS. MAGNETIC DEFLECTION

CENERAL		
GENERAL:		
Heater: Voltage 4.0 .		
Current 1.0 .		. amp.
Direct Inter-electrode Capacitances (Appro	ox.)	
Modulator to All Other Electrodes .		. 15 μμf.
Modulator to All Other Electrodes Anode 1 to All Other Electrodes Cathoda to All Other Electrodes		. 15 μμf.
Callidde to All Other Electrodes		
Screen:		Aluminium Backed.
Screen: Fluorescence		. Orange
		. Orange.
Focusing Method Deflection Method Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diameter Mounting Position Anode Cap		. Electrostatic
Deflection Method		. Magnetic
Overall Length		. 315 mm + 6 mm
Greatest Diameter of Bulb		. 127.5 mm
Minimum Useful Screen Diameter .	i.	. 108 mm
Mounting Position		. Any
Mounting Position		Recessed Small Ball.
Base	Ċ	International Octal.
SEE NOTE I.		meriational Octal.
Pin 1—No connection.		Pin 5—Modulator.
Pin 2—Anode 1.		Pin 6—Cathode.
Pin 3—Anode 2.		Pin 7—Heater.
Pin 4—No connection.		Pin 8—Heater
		Cap—Final Anode.
		Cap—Final Anode.
Maximum Ratings		
Final Anode Voltage		. 9000 volts.
Anode 1 Voltage-See Note 3		. 1450 volts.
Modulator Voltage:		
Negative bias value		. 100 volts.
Positive bias value		. 0 volts.
Peak Heater-Cathode Voltage ·		
Heater negative with respect to cathode		. 125 volts.
Heater negative with respect to cathode Heater positive with respect to cathode		. 125 volts.
Typical Operation		. 123 voits.
Final Anode Voltage		7000 1
Anode 2 Voltage		. 7000 volts.
Anode 1 Voltage	,	1000 volts $\pm$ 100 volts.
Final Anode Voltage Anode 2 Voltage Anode 1 Voltage Modulator Voltage for cut-of Spot Position—See Note 4		. 1250 volts.
Spot Position-See Note 4	•	45 to -80 volts.

Note 3. Anode 1 must always be at least 50v positive to Anode 2.

Spot Position-See Note 4

Note 4. The centre of the undeflected focused spot will fall within a circle having 9 mm. radius concentric with the centre of the tube face.



- Note 1. The plane through the tube axis and the spigot key may vary from the plane through the tube axis and the anode terminal by an angular tolerance (measured about the tube axis) of 10°. Anode terminal is on the same side of tube as the spigot key.
- Note 2. Reference line is determined by position where gauge 36 mm. I.D. and 50 mm. long will rest on bulb cone.

## 5TD3

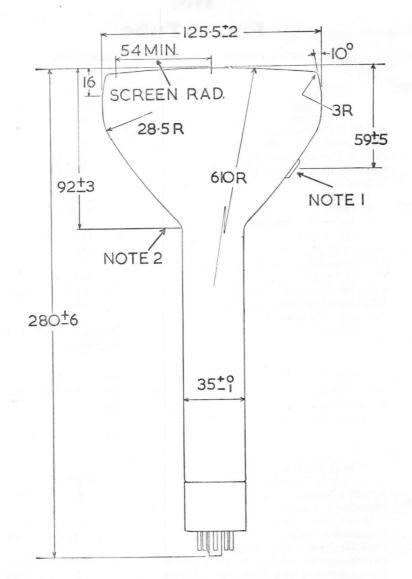
## Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

DA	TA

DATA	
GENERAL:	
Heater: Voltage 6.3	. a.c. or d.c. volts
Heater: Voltage 6.3 . Current 0.6 .	amp.
Direct Inter-electrode Canacitances (Apr	rox)
Modulator to All Other Electrodes .	10.5 μμf.
Anode 1 to All Other Electrodes .	
C-41 1 4 411 O.1 E1	9 μμf.
Screen:	9 μμι.
Fluorescence	. Blue.
Afterglow	X 7 11
Afterglow Persistence of Afterglow Focusing Method	
Focusing Method	
reading Method	. Magnetic.
Deflection Method	Magnetic.
Overall Length	53°
Overall Length	. 280 ± 6 mm.
Minimum Hanful Comer Discourt	. $125.5 \pm 2$ mm.
Minimum Useful Screen Diameter	108 mm.
Mounting Position	. Any.
Anode Cap	. Recessed Small Ball.
Base	. International Octal.
SEE NOTE	E I.
Pin 1—No connection.	Pin 5—Modulator.
Pin 2—Heater.	
rin 2—Heater.	Pin 6 No connection
(3) /   (	Pin 6—No connection.
Pin 3—Anode 1.	Pin 6—No connection. Pin 7—Cathode.
Pin 3—Anode 1. Pin 4—No connection.	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater.
Pin 3—Anode 1. Pin 4—No connection.	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater.
Pin 3—Anode 1. Pin 4—No connection.	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater.
Pin 3—Anode 1. Pin 4—No connection.	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater.
Pin 3—Anode 1. Pin 4—No connection.	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.  . 8000 max. volts.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage Modulator Voltage:	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.  . 8000 max. volts. 700 max. volts.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage Modulator Voltage: Negative bias value	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.  . 8000 max. volts 700 max. volts 125 max. volts.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage Modulator Voltage: Negative bias value Positive bias value	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.  . 8000 max. volts 700 max. volts 125 max. volts.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage Modulator Voltage: Negative bias value Positive bias value Peak Heater-Cathode Voltage:	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.  8(0) max. volts. 70) max. volts. 125 max. volts. 0 max. volts.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage Modulator Voltage: Negative bias value Positive bias value Peak Heater-Cathode Voltage: Heater negative with respect to cathode	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.   8(0) max. volts. 70) max. volts. 125 max. volts. 0 max. volts.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage Modulator Voltage: Negative bias value Positive bias value Peak Heater-Cathode Voltage: Heater negative with respect to cathode Heater positive with respect to cathode	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.   8(0) max. volts. 70) max. volts. 125 max. volts. 0 max. volts.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage Modulator Voltage: Negative bias value Positive bias value Peak Heater-Cathode Voltage: Heater negative with respect to cathode Heater positive with respect to cathode Typical Operation:	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.   8000 max. volts. 700 max. volts. 125 max. volts. 0 max. volts. 125 max. volts. 125 max. volts.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage Modulator Voltage: Negative bias value Positive bias value Peak Heater-Cathode Voltage: Heater negative with respect to cathode Heater positive with respect to cathode Typical Operation: Anode Voltage	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.   8(0) max. volts. 70) max. volts. 125 max. volts. 0 max. volts. 125 max. volts. 125 max. volts. 7000 volts.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage Modulator Voltage: Negative bias value Positive bias value Peak Heater-Cathode Voltage: Heater negative with respect to cathode Heater positive with respect to cathode Typical Operation: Anode Voltage	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.   8(0) max. volts. 70) max. volts. 125 max. volts. 0 max. volts. 125 max. volts. 125 max. volts. 7000 volts.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage Modulator Voltage: Negative bias value Positive bias value Peak Heater-Cathode Voltage: Heater negative with respect to cathode Heater positive with respect to cathode Typical Operation: Anode Voltage Anode 1 Voltage Modulator Voltage for cut-off Modulator Voltage for cut-off	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.   8000 max. volts. 700 max. volts. 125 max. volts.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage Modulator Voltage: Negative bias value Positive bias value Peak Heater-Cathode Voltage: Heater negative with respect to cathode Heater positive with respect to cathode Typical Operation: Anode Voltage Anode 1 Voltage Modulator Voltage for cut-off Focusing-Coil current—See Note 3	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.   8000 max. volts. 700 max. volts. 125 max. volts.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage Modulator Voltage: Negative bias value Positive bias value Peak Heater-Cathode Voltage: Heater negative with respect to cathode Heater positive with respect to cathode Typical Operation: Anode Voltage Anode 1 Voltage Modulator Voltage for cut-off Focusing-Coil current—See Note 3 Spot Position Sec Note 4	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.  8(0) max. volts. 700 max. volts. 0 max. volts. 125 max. volts. 125 max. volts. 125 max. volts. 250 ax. volts. 250 color 250 volts. 4000 color 250 color 250 volts. 250 color 250 volts. 420 color 250 A.T.
Pin 3—Anode 1. Pin 4—No connection.  Maximum Ratings: Final Anode Voltage Anode 1 Voltage Modulator Voltage: Negative bias value Positive bias value Peak Heater-Cathode Voltage: Heater negative with respect to cathode Heater positive with respect to cathode Typical Operation: Anode Voltage Anode 1 Voltage Modulator Voltage for cut-off Focusing-Coil current—See Note 3	Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.  8(0) max. volts. 700 max. volts. 0 max. volts. 125 max. volts. 125 max. volts. 125 max. volts. 250 ax. volts. 250 color 250 volts. 4000 color 250 color 250 volts. 250 color 250 volts. 420 color 250 A.T.

The centre of the undeflected unfocused spot will fall within a circle having 9 mm. radius concentric with the centre of the tube face.



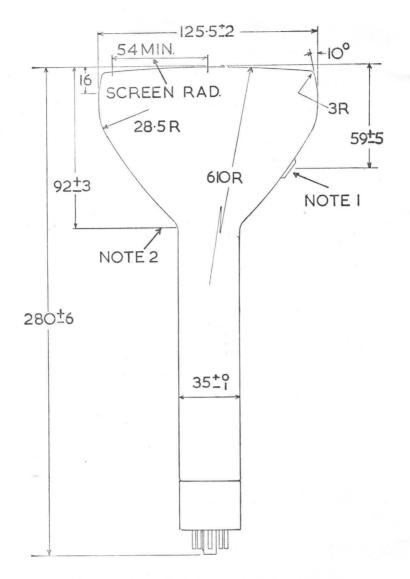
- Note 1. The plane through the tube axis and Pin No. 5 may vary from the plane through the tube axis and anode terminal by an angular tolerance (measured about the tube axis) of 10°. Anode terminal is on the same side of tube as Pin No. 5.
- Note 2. Reference line is determined by position where gauge 36 mm. I.D. and 50 mm. long will rest on bulb cone.

# STOSA

# 5TO3A Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

			,				
CENED	A.T.	D	ATA				
GENER	Voltage		62				
neater.	Voltage . Current .		6.3 0.6	•	•		a.c. or d.c. volts
	ter-electrode Ca						amp.
Modulate	or to All Other	Flectro	des (A		)X.)		10.5 μμf.
	to All Other E			٠	•	•	6 μμf.
	to All Other El						9 μμf.
Screen:	to im other E	ceti oue.	,				<i>μ</i> μι.
Fluoresce	ence						Orange.
Afterglov							Orange.
0	ce of Afterglow						Long.
Focusing	Method .						Magnetic.
	n Method .			•		•	Magnetic.
	n Angle (Appro	ox.) .				Ċ	53°
Overall I	ength .						280 ± 6 mm.
	Diameter of Bu	ılb .					125.5 ± 2 mm.
Minimun	n Useful Screen	Diame	ter				108 mm.
Mountin	g Position .						Any.
Anode C	ар					Rec	essed Small Ball.
Base						Inte	rnational Octal.
			SEE	NOTE I.			
Pin 1—No	connection.	•	5			Pin	5—Modulator.
Pin 2—He	ater.	0//		<b>6</b>		Pin	6-No connection.
Pin 3—An	ode 1.	3/ (	==	6		Pin	7—Cathode.
Pin 4—No	connection.	1 -		L		Pin	8—Heater.
		2	~	10		Car	Final Anode.
Mavimur	n Ratings:	·	/ – w				
	ode Voltage						8000 max. volts.
Anode 1			•		•		700 max. volts.
	or Voltage:		•		•	•	700 max. voits.
Negative	bias value						125 max. volts.
	bias value		·		•		0 max. volts.
	ater-Cathode V	oltage:					o max. rons.
Heater no	egative with res	pect to	cathod	le			125 max. volts.
Heater p	ositive with resp	pect to o	cathod	e			125 max. volts.
_	Operation :						
Anode V	oltage .			4	1000		7000 volts.
Anode 1	Voltage .				250		250 volts.
Modulate	or Voltage for o	cut-off	2	5 to	-70		−25 to −70 volts.
Focusing	-Coil current-S	ee Note	3		420		520 A.T.
	ition . S						
Note 3. I	Focusing Coil, po	sitioned v	with cer	ntre li	ine o	f air	gap approximately
7	0 mm. from refer	ence line	(see Ou	tline .	Drav	ving)	
Note 4.	The centre of the	undeflect	ed unfo	cused	spo	t will	fall within a circle the tube face.
I	iaving 9 mm. radi	us concer	itric wit	n the	cent	re of	the tube face.



- Note 1. The plane through the tube axis and Pin No. 5 may vary from the plane through the tube axis and anode terminal by an angular tolerance (measured about the tube axis) of 10°. Anode terminal is on the same side of tube as Pin No. 5.
- Note 2. Reference line is determined by position where gauge 36 mm. I.D. and 50 mm. long will rest on bulb cone.

#### DIAMETER 5" NOMINAL

## 5TW3A

## **Television Monitor Tube**

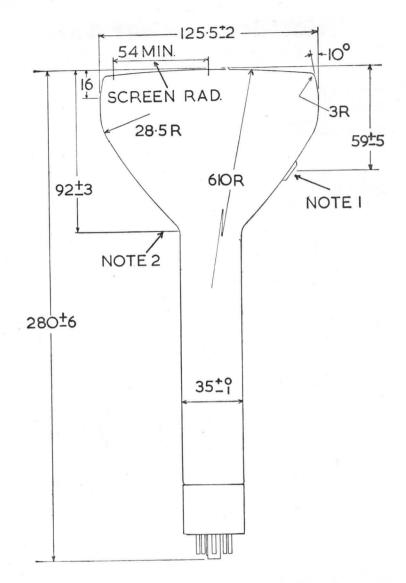
MAGNETIC FOCUS. MAGNETIC DEFLECTION

n		-	
D	A	Τ	A

GENERAL:		D	AIA				
Heater: Voltage			62				
Current			6.3	•			a.c. or d.c. volts
Current .	•		0.6	•	٠.		amp.
Direct Inter-electrode C	apac	itan	ces (A	pp	rox.)		
Modulator to All Other	Elec	ctro	des				10.5 $\mu\mu f$ .
Anode 1 to All Other E	lectr	odes	S				6 μμf.
Cathode to All Other E	lectr	odes					9 μμf.
Screen:							
Fluorescence							White.
Persistence of Afterglow							Short.
Focusing Method .							11
Dencetion Method .							Magnetic.
Deflection Angle (Appro	ox.)						53°
Overall Length .							$280 \pm 6 \text{ mm}.$
Greatest Diameter of Bu	ılb						125.5 ± 2 mm.
Minimum Useful Screen	Dia	met	er.				100
Mounting Position .					•		Any.
Anode Cap			·			Pec	essed Small Ball.
Base			Ċ			Into	rnational Octal.
		•	•	•	٠	Inte	mational Octal.
		_	SEE	NOTE	1.		
Pin 1—No connection.		(1)	(5)			Pin	5—Modulator.
Pin 2—Heater.		//	1	10		Pin	6—Cathode
Pin 3—Anode 1.	3	$\subseteq$	==	6	)		7—No connection.
Pin 4—No connection.		_					8—Heater.
The connection.	(2)	_		t,	)		
		//	$\wedge$			Cap	Final Anode.
			<b>B</b> (8)				
Maximum Ratings:		_	_				
Final Anode Voltage							
Anoda 1 Waltana	•	•					8000 max. volts.
Anode 1 Voltage .	•						700 max. volts.
Modulator Voltage:							
Negative bias value							125 max. volts.
Positive bias value							0 max. volts.
Peak Heater-Cathode Vo	oltag	e :					
Heater negative with resp	pect	to c	athod	e			125 max. volts.
Heater positive with resp	ect t	o ca	ithode	,			125 max. volts.
Typical Operation:							
Anode Voltage .					4000		7000 volts.
Anode 1 Voltage .		100			250		250 volts.
Modulator Voltage for c	ut-of	Ŧ	2	5 to	-70		-25 to -70 volts.
Focusing-Coil current-Se	e N	ote '	3		420		520 A.T.
Spot Position . Se	e N	ote 4	4		120		320 A.I.
Note 3. Focusing Coil, pos	itione	d wi	th cen	tre	line a	f oir	con opposite t
Note 3. Focusing Coil, pos 70 mm. from refere	nce li	ine (s	ee Out	line	Draw	ino)	gap approximately
Note 4. The centre of the i	ndefl	ector	unfoo		donot	-115).	6-11

The centre of the undeflected unfocused spot will fall within a circle having 9 mm. radius concentric with the centre of the tube face.

Note 4.



- Note 1. The plane through the tube axis and Pin No. 5 may vary from the plane through the tube axis and anode terminal by an angular tolerance (measured about the tube axis) of 10°. Anode terminal is on the same side of tube as Pin No. 5.
- Note 2. Reference line is determined by position where gauge 36 mm. I.D. and 50 mm. long will rest on bulb cone.

0.590

## 6EB4

## Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

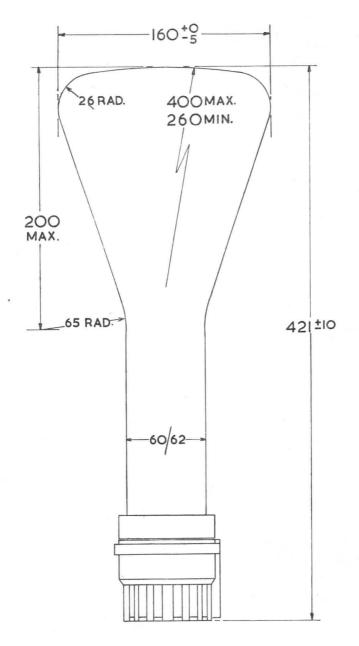
T			

		D	ATA				
GENERAL:							
Heater: Voltage . Current .		:	4.0 1.0	:			a.c. or d.c. volts.
Direct Inter-electrode C	Capa	citan	ces.				ump.
Modulator to all other	elec	trode	es				25μμf.
Each X Plate to all oth							25μμf.
Each Y Plate to all other	er e	lectro	des				25μμf.
One X to one Y Deflec	tor.	Plate					6μμf.
Cathode to all other ele Screen:	ectro	odes				•	15μμf.
Fluorescence						٠.	Blue.
Persistence							
		$(10\mu$	sec.	max.	for	1%	initial brightness).
Focusing Method .						- 70	Electrostatic.
Deflecting Method .							
Overall Length .							101 1 1-
Greatest Diameter of B	ulb						160 mm.
Minimum Useful Screen	n D	iamet	er			•	130 mm.
Mounting Position							
Base					•		
			•			•	D.12.D.
Pin 1-Modulator.		6	7			Pir	n 8—Y2.
Pin 2—Cathode.	(	5	-	(B)			1 9—X2.
Pin 3—Heater.	(4)	7/4		T			10—Anode 3 and
Pin 4—Heater.	4	1 =:		9			ternal Conductive
Pin 5—Anode 1.	(3)		==	10			ating.
Pin 6—Anode 2.		X	$\Delta$	X		Pir	11—X1.
	(	2	12				12—Y1.
Pin 7—No connection.			(12)			- 11	

## **Typical Operating Conditions:**

or - F	B	-	data O		
Anode 1 Anode 2 Anode 3 (5) Modulator	000v. n	nax.)		 2000 volts. 700 volts. 4000 volts.	2000 volts. 400 volts. 2000 volts.
				to -80 volts.	-40 to $-80$ volts.
Deflection S	Sensitivi	ity:		mm/volt.	mm/volt.
X Plate				0.160	0.320
Y Plate				0.295	0.590

- The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ . Note 2.
- The undeflected focused spot will fall within a circle having a 10 mm, radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

# OKBAR.

## 6EB4F

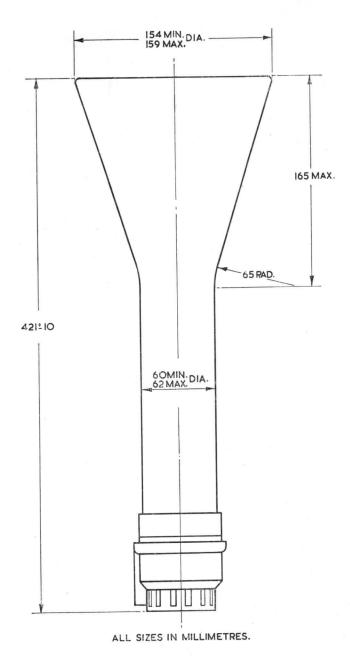
## Oscilloscope Tube

FLAT FACED BULB

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATE	
GENERAL: DATA	
Heater: Voltage 4.0	0.0.0
Current 1.0	<ul><li>a.c. or d.c. volts.</li><li>amp.</li></ul>
Direct Inter-electrode Capacitances	. amp.
Modulator to all other electrodes	. 25μμf.
Each X Plate to all other electrodes	. 25μμf.
Each Y Plate to all other electrodes	
	. 6μμf.
One X to one Y Deflector Plate Cathode to all other electrodes	. 15μμf.
Screen:	10/01/1
Fluorescence	. Blue.
Persistence	. Very Short.
(10u sec. max. for	1% initial brightness).
rocusing Method	Electrostatio
Deflecting Method	. Electrostatic.
Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diameter	$421 \pm 10 \text{ mm}$ .
Greatest Diameter of Bulb	. 159 mm.
Mounting Position	. 140 mm.
Mounting Position	. Any.
base	. B.12.D.
Pin 1—Modulator. (6) (7)	
Pin 2—Cathode.	Pin 8—Y2.
	Pin 9—X2.
Pin 3—Heater. Pin 4—Heater.	Pin 10-Anode 3 and
	Internal Conductive coating.
Pin 5—Anode 1.	Pin 11—X1.
Till 0—Allode 2.	Pin 12—Y1.
Pin 7—No connection.	1 m 12—11.
T-1-10 d C W	
Typical Operating Conditions:	
Anode 1 2000 volts. Anode 2 700 volts.	2000 volts.
Anode 2 700 volts.	400 volts.
Anode 5 (5000v. max.) 4000 volts	2000 volts.
Modulator volts for cut-off	
−40 to −80 volts.	-40 to $-80$ volts.
Deflection Sensitivity: mm/volt.	
17 D1	mm/volt.
0.143	0.290
Y Plate 0.280	0.560

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 10 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

#### DIAMETER 6" NOMINAL

#### 6EB5

## Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

GENERAL: DATA	
Heater: Voltage 4.0	. die of die rolls.
Modulator to all other electrodes  Each X Plate to all other electrodes  Each Y Plate to all other electrodes  One X to one Y Deflector Plate	
	. Very Short.
Focusing Method Deflecting Method Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diameter Mounting Position Base	. 421 ± 10 mm. . 160 mm. . 130 mm. . Any.
Pin 1—Modulator. Pin 2—Cathode. Pin 3—Heater. Pin 4—Heater. Pin 5—Anode 1. Pin 6—Anode 2. Pin 7—No connection Pin 8—No connection.	Pin 9—X2. Pin 10—Anode 3 and Internal Conductive coating. Pin 11—X1. Pin 12—No connection Side Arm 'A'—Y2. Side Arm 'B'—Y1.
Typical Operating Conditions:	
Anode 1	2000 volts. 400 volts. 2000 volts.
−40 to −80 volts.	-40 to -80 volts.

Y Plate 0.295 0.590

mm/volt.

0.160

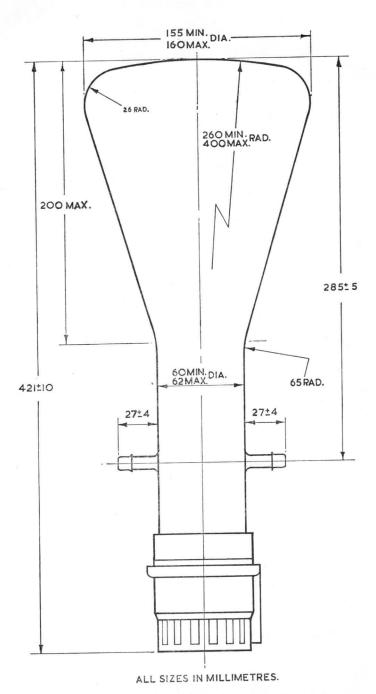
**Deflection Sensitivity:** 

X Plate

mm/volt.

0.320

- The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ}\pm3^{\circ}$ .
- The undeflected focused spot will fall within a circle having a 10 mm. radius concentric with the centre of the tube face. Note 3.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

#### DIAMETER 6" NOMINAL

### **6EB7**

## ELBY.

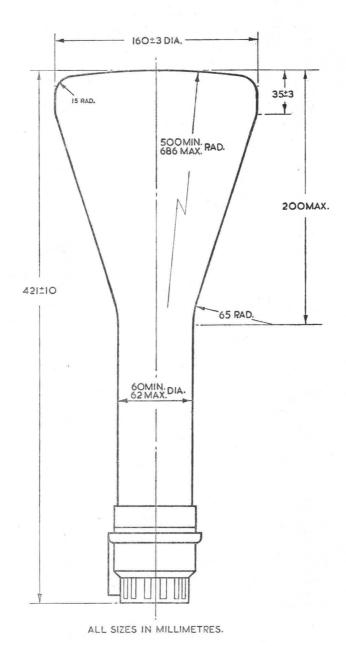
## Oscilloscope Tube

ELECTROSTATIC FOCUS ELECTROSTATIC DEFLECTION

Suitable for Assymetrical Deflection

ountable for Ass,		
GENERAL:	DATA	
	4.0	. a.c. or d.c. volts.
Heater: Voltage	1.0	and.
Direct Inter-electrode Capacit	ances	. amp.
Modulator to all other electro	des	. 25μμf.
Each X Plate to all other elec	trodes	. 25uut.
Each Y Plate to all other elec One X to one Y Deflector Pla	trodes	. 25µµf.
One X to one Y Deflector Pla	ite	. 2.5μμf.
Cathode to all other electrode	s	. 15μμf.
Screen:		
Fluorescence		Blue. Very Short.
Persistence	0	
Facusing Method	υμ sec. max. for	1% initial brightness).
Focusing Method Deflecting Method Overall Length Greatest Diameter of Bulb		Electrostatic.
Overall Length		421 ± 10 mm
Greatest Diameter of Rulb		163 mm
Minimum Useful Screen Dian	meter	. 130 mm
Mounting Position .		. Any.
Base		. B.12.D.
Pin 1—Modulator.	6 7	Pin 8—Y2.
Pin 2—Cathode. 5	8	Pin 9—X2.
Pin 3—Heater.	× ×	Pin 10-Anode 3 and
Pin 4—Heater.		Internal Conductive coating.
Pin 5—Anode 1.		Pin 11—X1.
Pin 6—Anode 2.	1) 11	Pin 12—Y1.
Pin 7—No connection.	(1) (12)	1 III 12—11.
Typical Operating Conditions		
Anode 1	. 2000 volts.	2000 volts.
Anode 1	. 800 volts.	530 volts.
Anode 3 (6000v. max.) .	. 5000 volts.	3000 volts.
Modulator volts for cut-off	5	45 . 00 1.
-4.	5 to -80 volts.	−45 to −80 volts.
Deflection Considerity	mm/volt	mm/vo1+
Deflection Sensitivity:	No. of Contract	mm/volt.
X Plate Y Plate	. 0.130	0.215
Y Plate	. 0.250	0.415

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ}\pm3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 10 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

# CED W

### 6ED4

## Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

D	ATA	
GENERAL:		
Heater: Voltage	4.0	. a.c. or d.c. volts.
Current	1.0	. amp.
Direct Inter-electrode Consciton	ces.	
Modulator to all other electrode Each X Plate to all other electro	s	. 25μμf.
Each X Plate to all other electro	des	. 25μμf.
Each Y Plate to all other electro	des	. 25μμf.
Each Y Plate to all other electro One X to one Y Deflector Plate		. 6uuf.
Cathode to all other electrodes		. 6μμf. . 15μμf.
Screen:		
Fluorescence		. Blue.
Afterglow		. Yellow
Persistence of Afterglow .		. Long.
(10 sec. min./100	sec may for	1% initial brightness)
Focusing Method Deflecting Method		. Electrostatic.
Deflecting Method		. Electrostatic
Overall Length		$421 \pm 10 \text{ mm}$ .
Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diameter		. 160 mm.
Minimum Useful Screen Diameter	er	. 130 mm.
Mounting Position		. Any.
Base		. B.12.D.
Pin 1—Modulator.	(7)	Pin 8—Y2.
Pin 2—Cathode. 5	8	Pin 9—X2.
Pin 3—Heater.	2	Pin 10—Anode 3 and
Pin 4—Heater.	= 1 1	Internal Conductive
Pin 5—Anode 1.	10	coating.
Pin 6—Anode 2.	>460	Pin 11—X1.
Pin 7—No connection.	(12)	Pin 12-Y1.
Fill /—No connection.		
Typical Operating Conditions:		
	1000 14	2000
	700 volts.	2000 volts.
Anode 2 Anode 3 (5000v. max.)	/UU VOITS.	400 volts.
Modulator volts for cut-off	OUU VOITS.	2000 volts.
	–80 volts.	-40 to -80 volts.
	oo voits.	TO 13 TO VOILS.
	mm/volt.	mm/volt.
X Plate	0.160	0.320
V Dlata	0.205	0.520

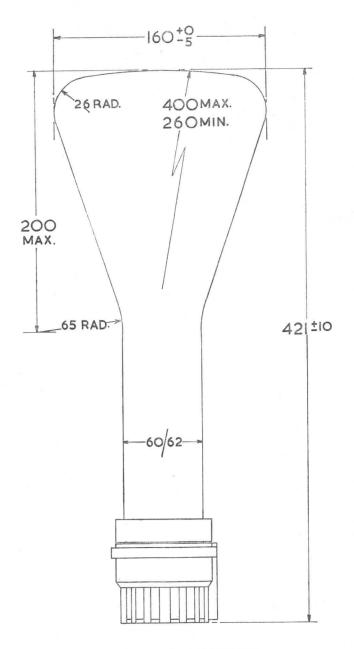
Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ}\pm3^{\circ}$ .

0.295

0.590

Y Plate

The undeflected focused spot will fall within a circle having a 10 mm. radius concentric with the centre of the tube face. Note 3.



ALL SIZES IN MILLIMETRES

Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

#### DIAMETER 6" NOMINAL

#### 6ED7

## Oscilloscope Tube

**ELECTROSTATIC FOCUS** ELECTROSTATIC DEFLECTION Suitable for Assymetrical Deflection

DATA
GENERAL:
Heater: Voltage 4.0 a.c. or d.c. volts.  Current 1.0 amp.  Direct Inter-electrode Capacitances.
Modulator to all other electrodes25μμf.Each X Plate to all other electrodes25μμf.Each Y Plate to all other electrodes25μμf.One X to one Y Deflector Plate2.5μμf.Cathode to all other electrodes15μμf.Screen:
Fluorescence
(10m sec. min./100m sec. max. for 1% initial brightness).  Focusing Method Electrostatic.  Deflecting Method Electrostatic.  Overall Length
Pin 1—Modulator. Pin 2—Cathode. Pin 3—Heater. Pin 4—Heater. Pin 5—Anode 1. Pin 6—Anode 2. Pin 7—No connection.  Pin 8—Y2. Pin 9—X2. Pin 10—Anode 3 and Internal Conductive coating. Pin 11—X1. Pin 12—Y1.
Typical Operating Conditions:           Anode 1         .         .         2000 volts.         2000 volts.           Anode 2         .         .         800 volts.         530 volts.           Anode 3 (6000v. max.)         .         5000 volts.         3000 volts.           Modulator volts for cut-off         .         .

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .

**Deflection Sensitivity:** 

X Plate

Y Plate

-45 to -80 volts.

mm/volt.

0.130

0.250

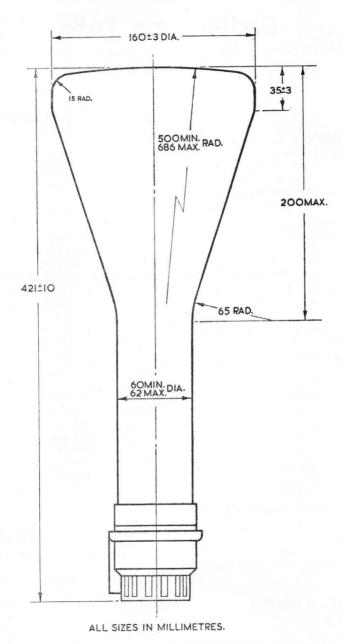
-45 to -80 volts.

mm/volt.

0.215

0.415

Note 3. The undeflected focused spot will fall within a circle having a 10 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

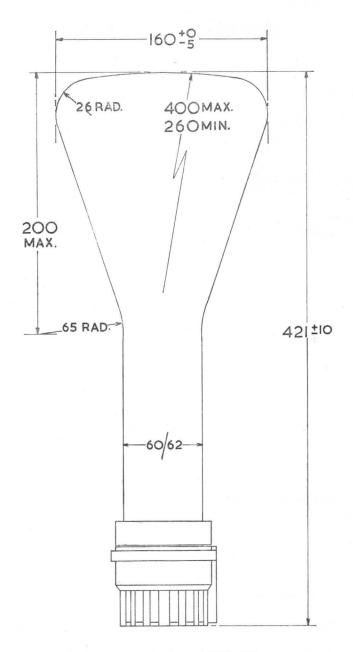
## **6EG4**

## Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

GENERAL:	
Heater: Voltage 4.0	. a.c. or d.c. volts.
Current 1.0	. amp.
Direct Inter-electrode Capacitances.	
Modulator to all other electrodes	. 25μμf.
Each X Plate to all other electrodes	. 25μμf.
Each I Plate to all other electrones	$.$ 25 $\mu\mu$ f.
One X to one Y Deflector Plate	. 6μμf.
Cathode to all other electrodes	. 15μμf.
Screen:	
Fluorescence	. Green.
Persistence	. Short.
(10m sec. min./100m sec. max. for 1	% initial brightness).
Focusing Method	. Electrostatic.
Deflecting Method	. Electrostatic.
Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diameter Mounting Position	$421 \pm 10 \text{ mm}$ .
Greatest Diameter of Bulb	. 160 mm.
Minimum Useful Screen Diameter	. 130 mm.
Mounting Position	. Any.
Base	. B.12.D.
Pin 1—Modulator. (6) (7)	Pin 8—Y2.
Pin 2—Cathode.	Pin 9—X2.
Pin 3—Heater.	Pin 10-Anode 3 and
Pin 4—Heater.	Internal Conductive
Pin 5—Anode 1.	coating.
Pin 6—Anode 2.	Pin 11—X1.
Pin 7—No connection.	Pin 12—Y1.
Thi /—No connection.	
T-1-10 4 6 44	
Typical Operating Conditions:	
Anode 1 2000 volts. Anode 2	2000 volts.
Anode 2	400 volts.
Anode 3 (5000v. max.) 4000 volts.	2000 volts.
Modulator volts for cut-off	
−40 to −80 volts.	-40 to $-80$ volts.
<b>Deflection Sensitivity:</b> mm/volt.	mm/volt.
X Plate 0.160	0.320
Y Plate 0.295	0.520
. 0.275	0.590

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 10 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

#### 6EG4F

## Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

D	A	Т	A
_			$\boldsymbol{\alpha}$

DATA
GENERAL:
Heater: Voltage 4.0 a.c. or d.c. volts.
Current 1.0 amp.
Direct Inter-electrode Capacitances.
Modulator to all other electrodes
Each X Plate to all other electrodes 25uuf.
Each Y Plate to all other electrodes 25uuf.
One X to one Y Deflector Plate 6μμf.
Cathode to all other electrodes 15µµf.
Screen:
Fluorescence Green.
Persistence Short.
(10m sec. min./100m sec. max. for 1% initial brightness).
Focusing Method Electrostatic.  Deflecting Method Electrostatic
Deflecting Method Electrostatic
Overall Length
Greatset Diameter of Bulb 159 m.m.
Minimum Useful Screen Diameter 140 mm.
Overall Length
Base B.12.D.
Pin 1—Modulator. 6 (6) (7) Pin 8—Y2.
Pin 2—Cathode.  5  8  Pin 9—X2.
Pin 3—Heater.  4 Pin 10—Anode 3 and
Pin 4—Heater. Internal Conductive
Pin 5—Anode 1. 3 coating.
Pin 11 V1
Pin 12 V1
Pin 7—No connection.
T-1-10 d C W
Typical Operating Conditions:
Anode 1 2000 volts. 2000 volts.
Anode 2 700 volts. 400 volts.
Anode 3 (5000v. max.) 4000 volts. 2000 volts.
Modulator volts for cut-off
−40 to −80 volts. −40 to −80 volts.
Deflection Sensitivity: mm/volt. mm/volt.
Deflection Sensitivity: mm/volt. mm/volt.

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .

0.145

0.280

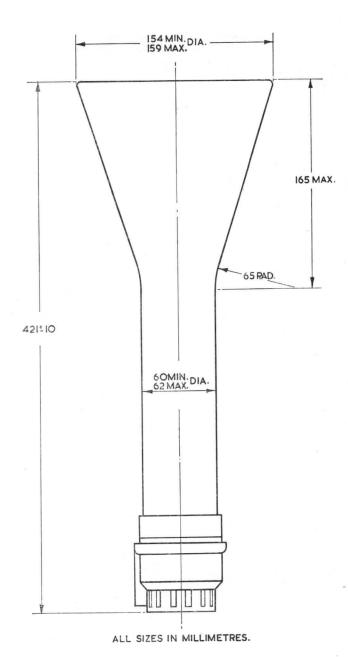
0.290

0.560

X Plate

Y Plate

Note 3. The undeflected focused spot will fall within a circle having a 10 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

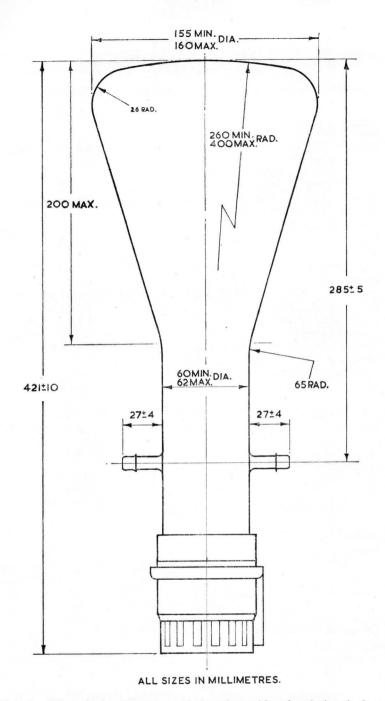
### 6EG5

## Oscilloscope Tube

ELECTROSTATIC FOCUS ELECTROSTATIC DEFLECTION

CENEDAL	DATA	
GENERAL:		
Heater: Voltage . Current .	4.0 .	. a.c. or d.c. volts.
		amp.
Direct Inter-electrode C		
Modulator to all other of	electrodes .	25μμf.
Fach X Plate to all other	er electrodes .	20μμf.
Each Y Plate to all other		
One X to one Y Deflect		
Cathode to all other elec-	ctrodes	25μμf.
Screen:		
Fluorescence		. Green.
Persistence		Short.
(10m sec. m	in./100m sec. max.	for 1% initial brightness).
Focusing Method .		. Electrostatic.
Focusing Method . Deflecting Method .		. Electrostatic.
Overall Length .		$421 \pm 10 \text{ mm}$ .
Overall Length . Greatest Diameter of Bu Minimum Useful Screen Mounting Position Base	ılb	160 mm.
Minimum Useful Screen	Diameter .	130 mm.
Mounting Position		Anv.
Base		. B.12.D.
Pin 1—Modulator.	SIDE ARM A.	Pin 9—X2.
Pin 2—Cathode.	6 7	Pin 10—Anode 3 and
Pin 3—Heater.		Internal Conductive
Pin 4—Heater.	4 4 > 9	coating.
Pin 5—Anode 1.		Pin 11—X1.
Pin 6—Anode 2.	3 70	Pin 12—No connection
Pin 7—No connection.	2	Side Arm 'A'—Y2.
Pin 8—No connection.	SIDE ARM B.	Side Arm 'B'—Y1.
The Connection.	SIDE ARM B.	
Typical Operating Condi	tions ·	
		2000 1
Anode 1	2000 volts.	2000 volts.
Anode 2 Anode 3 (5000v. max.)	/00 volts.	400 volts.
Anode 3 (5000v. max.)	4000 voits.	2000 volts.
Modulator volts for cut-		40
	-40 to $-80$ volts.	-40 to $-80$ volts.
Deflection Sensitivity:	mm/volt	mm/::alt
		mm/volt.
	0.160	0.320
Y Plate	0.295	0.590

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ}\pm3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 10 mm radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

## 6EG7

## Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

Suitable for Assymetrical Deflection

CENEDAL	DATA	
GENERAL:		
Heater: Voltage Current	4.0 .	. a.c. or d.c. volts.
Current .	1.0 .	amp.
Direct Inter-electrode Ca	pacitances	· ump.
Modulator to all other e		. 25μμf.
Each X Plate to all other	electrodes	25f
Each Y Plate to all other	r electrodes	. 25μμf.
One X to one Y Deflecto	or Plate	. 2.5μμι. . 2.5μμι.
Cathode to all other elec-	trodes	. 2.5μμΓ 15μμΓ.
Screen:		15/11/11
Fluorescence		. Green.
Persistence		Short
(10m sec. mir	1./100m sec. max. fe	. Short. or 1% initial brightness).
Focusing Method . Deflecting Method . Overall Length		Flectrostatic
Deflecting Method .		Flectrostatic
Overall Length Greatest Diameter of Bu Minimum Useful Screen Mounting Position Base		421 ± 10 mm
Greatest Diameter of Bu	lb	163 mm
Minimum Useful Screen	Diameter	130 mm
Mounting Position		Any
Base		R 12 D
		. D.12.D.
Pin 1—Modulator.	6 7	Pin 8—Y2.
Pin 2—Cathode.	(5) (8)	Pin 9—X2.
Pin 3—Heater.		
Pin 4—Heater.	(a) (a)	Pin 10—Anode 3 and Internal Conductive
Pin 5—Anode 1.	3 10	coating.
		Pin 11—X1.
Pin 6—Anode 2.	2 (1)	Pin 12—Y1.
Pin 7—No connection.	(1)-(12)	111112—11.
Typical Operating Condit	ions :	
Anode 1	. 2000 volts	2000 volts.
Anode 2	800 volts	530 volts.
Anode 2 Anode 3 (6000v. max.)	. 5000 volts	3000 volts.
Modulator volts for cut-	off	5000 voits.
	-45 to -80 volts.	-45 to -80 volts.
D. G		to to tolts.
Deflection Sensitivity:	mm/volt.	mm/volt.
Y Plata	0.120	

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .

0.130

0.250

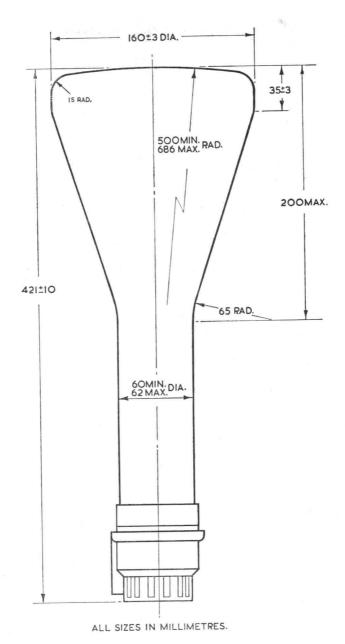
0.215

0.415

X Plate

Y Plate

Note 3. The undeflected focused spot will fall within a circle having a 10 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

## **6EO**4

## Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

#### DATA

DATA		
GENERAL:		
Heater: Voltage 4.0		a.c. or d.c. volts.
Current 1.0		amp.
Direct Inter-electrode Capacitances.		•
Modulator to all other electrodes		. 25μμf.
Each X Plate to all other electrodes		. 25μμf.
Each Y Plate to all other electrodes		. 25μμf.
One X to one Y Deflector Plate		. 6μμf.
Cathode to all other electrodes		. 15μμf.
Screen:		
Fluorescence		Orange.
Afterglow		Orange.
Persistence of Afterglow		Long.
(10 sec. min./100 sec. max. f		
Focusing Method		. Electrostatic.
Denecting Method		Electrostatic.
Overall Length		$421 \pm 10$ mm.
Greatest Diameter of Bulb		160 mm.
Minimum Useful Screen Diameter		
Mounting Position		Any.
Base		B.12.D.
Pia 1 Madalasa	,	D' 0 3/0
Pin 1—Modulator. Pin 2—Cathode		Pin 8—Y2.
1 in 2—Cathode.		Pin 9—X2.
Pin 3—Heater.		Pin 10—Anode 3 and Internal Conductive
Pin 4—Heater.		coating.
Pin 5—Anode 1.		Pin 11—X1.
Pin 6—Anode 2.		Pin 12—Y1.
Pin 7—No connection.		1 III 12 - 11.
<b>Typical Operating Conditions:</b>		
Anode 1 2000 volts.		2000 volts.
Anode 2 700 volts.		400 volts.
Anode 3 (5000v. max.) 4000 volts.		2000 volts.
Modulator volts for cut-off		
−40 to −80 volts.		-40 to $-80$ volts.

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .

**Deflection Sensitivity:** 

X Plate

Y Plate

mm/volt.

0.160

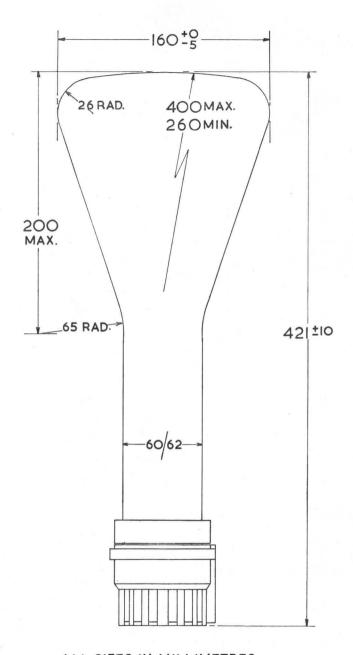
0.295

mm/volt.

0.320

0.590

Note 3. The undeflected focused spot will fall within a circle having a 10 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

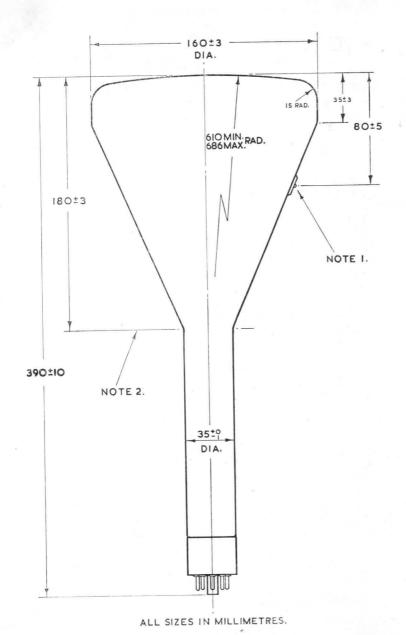
## 6LYIA Radar Tube

ELECTROSTATIC FOCUS. MAGNETIC DEFLECTION

DATA	
GENERAL:	
Hootes, W. I.	o o or do volto
	. a.c. or d.c. volts.
Current 1.0	. amp.
	15 6
Anode I to all other electrodes  Cathode to all other electrodes  Cathode to all other electrodes	. 15μμf.
Cathodo to all other electrodes	. 15μμf.
Screen	. 14μμf.
Screen:	<ul> <li>Aluminium Backed.</li> </ul>
A ftendam	Yellow.
Fluorescence Afterglow Persistence of Afterglow Focusing Method Deflecting Method Overall Length	. Yellow.
resistence of Afterglow	. Long.
Focusing Method	. Electrostatic.
Deflecting Method	. Magnetic.
Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diameter	$390 \pm 10 \text{ mm}$ .
Greatest Diameter of Bulb	. 163 mm.
Minimum Useful Screen Diameter	. 135 mm.
Mounting Position	. Any.
Mounting Position Anode Cap	. Recessed Small Ball.
Base	. International Octal.
SEE NOTE I.	
Pin 1—No connection.	Pin 5—Modulator.
Pin 2—Anode 1.	Pin 6—Cathode.
Pin 3—Anode 2.	Pin 7—Heater.
Pin 4—No connection.	Pin 8—Heater.
	Cap—Final Anode.
(1) (8)	
Maximum Ratings:	
Final Anada Walter	. 9000 volts.
Anode 1 Voltage	. 1650 volts.
Modulator Voltage:	. 1050 voits.
Negative bias value	. 130 volts.
Modulator Voltage: Negative bias value Positive bias value Positive bias value	. 0 volts.
Peak Heater-Cathode Voltages:	. 0 voits.
Heater negative with respect to cothede	125 14
Heater negative with respect to cathode Heater positive with respect to cathode	. 125 volts.
Heater positive with respect to cathode .	. 125 volts.
Typical Operating Conditions:	
Final Anode Voltage Anode 2 Voltage Anode 1 Voltage—See Note 3 Modulator Voltage for cut-off Spot Position	. 7000 volts.
Anode 2 Voltage	. 1075 volts + 100 volts
Anode 1 Voltage-See Note 3	. 1250 volts
Modulator Voltage for cut-off	-45 to -100 volts
Spot Position See Note 4	. 15 to 100 voits.
Spot I ostilon See Note 4	

Note 3. Anode 1 must always be at least 50 volts positive to Anode 2.

The centre of the undeflected focused spot will fall within a circle having a 10 mm. radius concentric with the centre of the tube face. Note 4.



Note 1. The plane through the tube axis and the spigot key may vary from the plane through the tube axis and the anode cap by an angular tolerance (measured about the tube axis) of 10°. The anode cap is on the same side of the tube as the spigot key.

Note 2. Reference line is determined by position where a gauge 36 mm. I.D. and 50 mm. long will rest on the bulb cone.

# STOJA

### 6TO3A

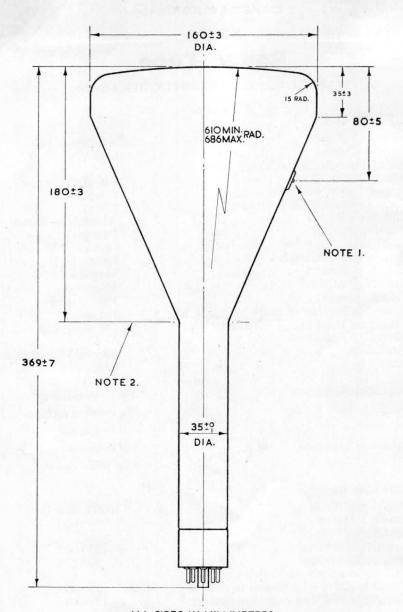
## Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

#### DATA

DATA	
GENERAL:	
Heater: Voltage 6.3	. a.c. or d.c. volts.
Current 0.6	
Direct Inter-electrode Capacitances.	
Modulator to all other electrodes	. 9.0μμf.
Anode 1 to all other electrodes	. 6.0μμf.
Cathode to all other electrodes	. 8.0μμf.
Screen:	. Aluminium Backed.
Fluorescence	. Orange.
Persistence of Afterglow	. Orange.
Fersistence of Afterglow	. Long.
Focusing Method	. Magnetic.
Overall Length	. Magnetic.
Overall Length Greatest Diameter of Bulb	$309 \pm 7 \text{ mm}$ .
Minimum Useful Screen Diameter	. 163 mm.
Minimum Useful Screen Diameter  Mounting Position	
Mounting Position Anode Cap	Any.
	. Recessed Small Ball
Base	. International Octal.
Pin 1—No connection.	Pin 5—Modulator.
Pin 2—Heater.	Pin 6—No connection.
Pin 3—Anode 1.	Pin 7—Cathode.
F: 4 N	
Pin 4—No connection.	Pin 8—Heater.
1 8	Cap—Final Anode.
Maximum Ratings:	
Final Anode Voltage	. 10000 volts.
Anode 1 Voltage	. 500 volts.
Modulator Voltage:	7010.
Negative bias value	. 125 volts.
Positive bias value	. 0 volts.
Peak Heater-Cathode Voltages:	
Heater negative with respect to cathode .	. 125 volts.
Heater positive with respect to cathode .	. 125 volts.
Typical Operating Conditions:	
Final Anode Voltage	. 7000 volts.
Anode 1 Voltage	450 volts.
Modulator Voltage for cut-off Focusing-Coil Current-See Note 3	45 to -110 volts.
Spot Position See Note 4	. 830 A.T.

Note 4. The centre of the undeflected unfocused spot will fall within a circle having 10 mm. radius concentric with the centre of the tube face.



ALL SIZES IN MILLIMETRES.

- Note 1. The plane through the tube axis and Pin No. 5 may vary from the plane through the tube axis and anode terminal by an angular tolerance (measured about the tube axis) of 10°. Anode terminal is on the same side of tube as Pin No. 5.
- Note 2. Reference line is determined by position where gauge 36 mm. I.D. and 50 mm. long will rest on the bulb cone.
- Note 3. Focusing Coil positioned with centre line of air gap approximately 80 mm. from reference line (see outline drawing).

# TOJA

## 7TD3A

## Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

#### GENERAL:

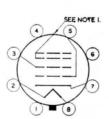
GENERAL.				
Heater: Voltage 6.3				a.c. or d.c. volts.
Current 0.6				amp.
Direct Inter-electrode Capacitances.				
Modulator to all other electrodes				9.0μμf.
Anode 1 to all other electrodes .				(0 0
Cathode to all other electrodes .				8.0μμf.
Screen ·		•	•	
Fluorescence	٠		٠	Aluminium Backed.
A Ct 1	•			Blue.
Altergiow				Yellow.
Persistence of Afterglow				Long.
Focusing Method				Magnetic.
Deflecting Method				Magnetic.
Overall Length				337 ± 10 mm.
C	÷	•	•	
Minimum Useful Screen Diameter			•	181 mm.
Mounting Position	•		•	155 mm.
Anada Carrottion				Any.
Anode Cap	•			Recessed Small Ball.
Base				International Octal.

Pin 1-No connection.

Pin 2—Heater.

Pin 3—Anode 1.

Pin 4-No connection.



Pin 5-Modulator.

Pin 6-No connection.

Pin 7—Cathode.

Pin 8-Heater.

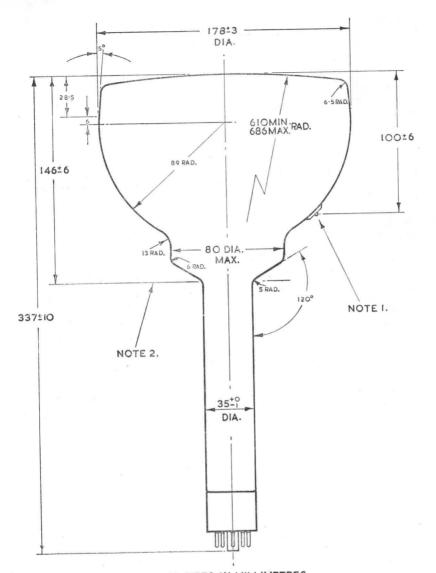
Cap-Final Anode.

### **Maximum Ratings:**

Final Anode Voltage						8000 volts.
Anode 1 Voltage .						700 volts.
Modulator Voltage:						roo roits.
Negative bias value						195 volts.
Positive bias value					-	
Peak Heater Cathada	17-14-	•	•		•	0 volts.
Peak Heater-Cathode	voita	iges :				
Heater negative with	ode		125 volts.			
Heater positive with r	espect	t to c	atho	de		125 volts

### **Typical Operating Conditions:**

Final Anode Voltage Anode 1 Voltage . Modulator Voltage for Focusing Coil Current		
Focusing-Coil Current Spot Position	-See Note 3 500 A	



ALL SIZES IN MILLIMETRES.

- Note 1. The plane through the tube axis and Pin No. 5 may vary from the plane through the tube axis and anode terminal by an angular tolerance (measured about the tube axis) of 10°. Anode terminal is on the same side of tube as Pin No. 5.
- Note 2. Reference line is determined by position where gauge 36 mm. I.D. and 50 mm. long will rest on the bulb cone.
- Note 3. Focusing Coil positioned with centre line of air gap approximately 80 mm. from reference line (see outline drawing).
- Note 4. The centre of the undeflected unfocused spot will fall within a circle having a 10 mm. radius concentric with the centre of the tube face.

# TOUR

## 7TO3A Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

#### DATA

## GENERAL:

Heater: Voltage . 6.3 a.c. or d.c. volts. Current 0.6 amp. Direct Inter-electrode Capacitances. Modulator to all other electrodes 9.0µµf. Anode 1 to all other electrodes 6.0uuf. Cathode to all other electrodes 8.0µµf. Screen: . Aluminium Backed. Fluorescence . . Orange. Afterglow Orange. Persistence of Afterglow . . Long. Focusing Method . . . . . Magnetic. Deflecting Method . . Magnetic. Overall Length  $337 \pm 10 \text{ mm}$ . Greatest Diameter of Bulb . . . 181 mm.

Mounting Position . . . . . . . . . . . . Any.

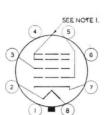
Anode Cap . . . . . . . . . . . . . . . . Recess

Pin 1-No connection.

Pin 2—Heater.

Pin 3—Anode 1.

Pin 4—No connection.



Pin 5—Modulator.

Pin 6-No connection.

Pin 7—Cathode.

Pin 8—Heater.

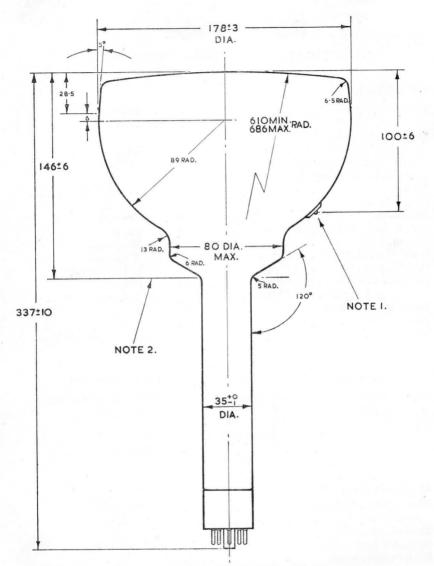
Cap-Final Anode.

### **Maximum Ratings:**

#### **Typical Operating Conditions:**

Final Anode Voltage . . . 4000 volts.
Anode 1 Voltage . . . 250 volts.

Modulator Voltage for cut-off -25 to -70 volts.
Focusing-Coil Current-See Note 3 500 A.T.
Spot Position . . See Note 4



ALL SIZES IN MILLIMETRES.

- Note 1. The plane through the tube axis and Pin No. 5 may vary from the plane through the tube axis and anode terminal by an angular tolerance (measured about the tube axis) of 10°. Anode terminal is on the same side of tube as Pin No. 5.
- Note 2. Reference line is determined by position where gauge 36 mm. I.D. and 50 mm. long will rest on the bulb cone.
- Note 3. Focusing Coil positioned with centre line of air gap approximately 80 mm. from reference line (see outline drawing).
- Note 4. The centre of the undeflected unfocused spot will fall within a circle having a 10 mm. radius concentric with the centre of the tube face.

# Sto14

## 9LOIA Radar Tube

ELECTROSTATIC FOCUS. MAGNETIC DEFLECTION

#### DATA

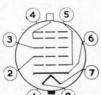
GENERAL					
Heater: Voltage		4.0			. ac or de volts
Current		1.0			. amp.
Direct Inter-electrode Capa	acit	ances	(At	oprox	(.)
Modulator to All Other	Ele	ectrode	es		. 15 μμf.
Anode 1 to All Other El	ect	rodes			. 15 μμf.
Cathode to All Other Ele					. 14 μμf.
Screen:					Aluminium Backed.
Fluorescence					. Orange.
Afterglow					. Orange
Persistence of Afterglow					Long
Focusing Method .					. Electrostatic.
Deflection Method .					Magnetic
Overall Length			V.	•	. 445 mm. ± 7 mm.
Greatest Diameter of Bulb					. 230 mm.
Minimum Useful Screen D	ian	neter			. 190 mm.
Mounting Position .					Any.
Anode Can		•			Amorican
Anode Cap Base					International Ostal
Base					International Octal.

Pin 1—No connection.

Pin 2—Anode 1.

Pin 3—Anode 2.

Pin 4—No connection.



Pin 5-Modulator.

Pin 6—Cathode.

Pin 7—Heater.

Pin 8-Heater.

Side arm connection— Anode Cap.

-75 volts.

#### Maximum Ratings

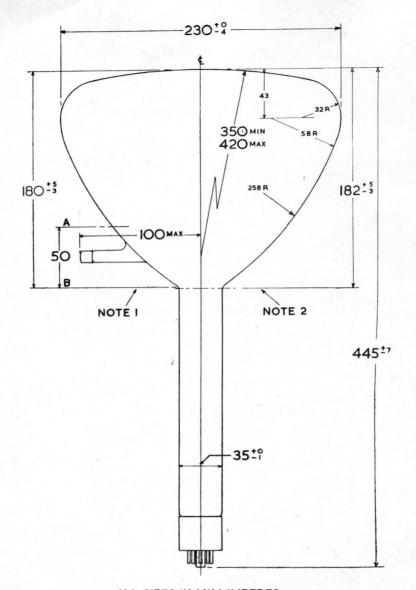
Modulator Voltage for cut-off

Spot Position-See Note 4

viaximum Ratings						
Final Anode Voltage						10000 volts.
Anode 1 Voltage .						1450 volts.
Modulator Voltage:						7
Negative bias value						100 volts.
Positive bias value						0 volts.
Peak Heater-Cathode	Volta	iges	:			
Heater negative with	n resp	pect	to ca	thod	le	125 volts.
Heater positive with	resp	ect t	o car	thod	e	125 volts.
Typical Operation						
Final Anode Voltage						8000 volts.
Anode 2 Voltage .						1240 volts.
Anode 1 Voltage-See	Note	3				1350 volts.

Note 3. Anode 1 must always be at least 50 volts positive to Anode 2.

Note 4. The centre of the undeflected infocused spot will fall within a circle having 10 mm. radius concentric with the centre of the tube face.



ALL SIZES IN MILLIMETRES

- Note 1. The plane through the tube axis and the spigot key may vary from the plane through the tube axis and the anode cap by an angular tolerance (measured about the tube axis) of 10°. The position of the anode cap along the tube axis is between A and B and is on the same side of the tube as the spigot key.
- Note 2. Reference line is determined by position where gauge 36 mm. I.D. and 50 mm. long will rest on bulb cone.

#### DIAMETER 10" NOMINAL

#### IOMW4A

ONWA

## **Television Monitor Tube**

MAGNETIC FOCUS. MAGNETIC DEFLECTION

#### DATA

DATA							
GENERAL:							
Heater: Voltage 4.0 .			a.c. or d.c. volts.				
Current 1.0 .			THE RESERVE THE PROPERTY OF THE PARTY OF THE				
Direct Inter-electrode Capacitances.							
Modulator to all other electrodes .			9μμf.				
Cathode to all other electrodes			9µµf.				
Screen:			Aluminium Backed.				
Fluorescence			White.				
Persistence Short (5m sec./25m	sec.	for	1% initial brightness)				
Focusing Method			Magnetic.				
Deflecting Method			Magnetic.				
Overall Length			$483 \pm 10 \text{ mm}.$				
Greatest Diameter of Bulb			257 mm.				
Minimum Useful Screen Diameter .			230 mm.				
Mounting Position			Any.				
Anode Cap			Cavity Cap BSS448/CT8.				
Base			International Octal.				
SEE NOTE I.							
Pin 1—No connection.		Pir	5—Modulator.				
Pin 2—Heater.		Pir	6—Pin omitted.				
Pin 3—Pin omitted.		Pir	7—Heater.				
Pin 4—Pin omitted.		Pir	8—Cathode.				
		Ca	p—Anode.				
0-0							
Maximum Ratings:							
Final Anode Voltage			11000 volts.				
Modulator Voltage:	•	•	11000 voits.				
Negative bias value			130 volts.				
Positive bias value			0 volts.				
Peak Heater-Cathode Voltages:			o rolls.				
Heater negative with respect to cathode			150 volts.				
Heater positive with respect to cathode			150 volts.				
Typical Operating Conditions:							

Focusing Coil positioned with centre line of air gap approximately 80 mm. from reference line (see outline drawing). Note 3.

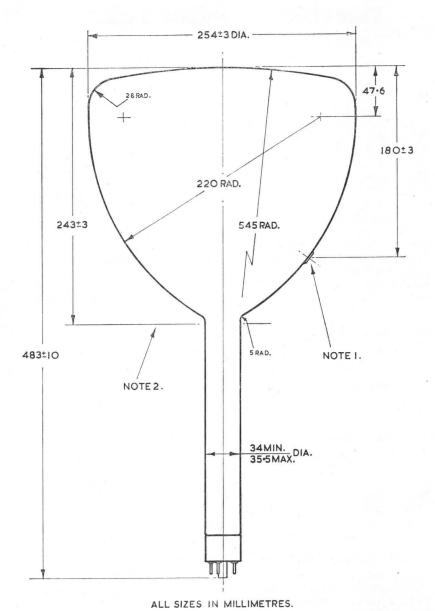
10000 volts. -70 to -120 volts.

550 A.T.

Focusing-Coil Current-See Note 3

Spot Position . . See Note 4

The centre of the undeflected unfocused spot will fall within a circle Note 4. having 10 mm. radius concentric with the centre of the tube face.



Note 1. The plane through the tube axis and the spigot key may vary from the plane through the tube axis and the anode cap. by an angular tolerance (measured about the tube axis) of 10°. The anode cap is on the same side of the tube as the spigot key.

Note 2. Reference line is determined by position where a gauge 36 mm. I.D. and 50 mm. long will rest on bulb cone.

#### DIAMETER 12" NOMINAL

#### 2EG6

# Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

#### DATA

#### GENERAL: Heater: Voltage 4.0 a.c. or d.c. volts Current 1.0 amp. Direct Inter-electrode Capacitances: Modulator to all other electrodes 15µµf. Each X Plate to all other electrodes $15\mu\mu f.$ Each Y Plate to all other electrodes 15µµf. One X to one Y Deflector Plate 4.0 µµf. Cathode to all other electrodes 15μμf. Screen: Fluorescence Green Persistence of Afterglow Short (10 m. sec min./100m. sec. max.) for 1% initial brightness. Focussing Method Electrostatic Deflecting Method Electrostatic. Overall Length $635 \pm 5 \text{ mm}$ .

Pin 1—Modulator.	6 7	Pin
Pin 2—Cathode.	5 8	
Pin 3—Heater.	4) 4	Pin 8
Pin 4—Heater.		Pin 9
Pin 5—Anode 1	(3)	Pin
	2	Pin
Pin 6—Anode 2	1 12	Pin

Pin 7— Internal Conductive Coating.

Pin 8—Y2. Pin 9—X2.

312 mm.

280 mm.

Any

B12D.

Pin 10—Anode 3.

Pin 11—X1. Pin 12—Y1.

### **Typical Operating Conditions:**

Greatest Diameter of Bulb

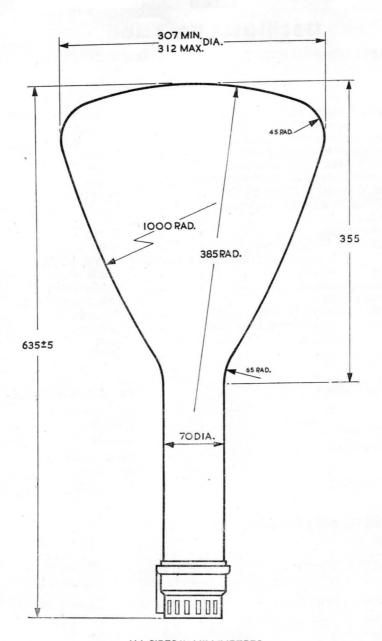
Mounting Position

Base

Minimum Useful Screen Diameter

Anode 1				1000 volts.	1000 volts
Anode 2				550 volts.	900 volts.
Anode 3 (5 Modulator	5500 volvolts fo	ts max.	) . off	3000 volts. -60 to -110	5000 volts.
Deflection				mm./volt.	mm./volt.
X Plate				. 0.4	0.24
Y Plate				. 0.4 .	0.24

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 15 mm. radius concentric with the centre of the tube face.



ALL SIZES IN MILLIMETRES.

Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

# 121034

#### 12L03A

## Radar Tube

ELECTROSTATIC FOCUS.

MAGNETIC DEFLECTION

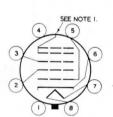
#### DATA

DAIN			
GENERAL:			
Heater: Voltage 4.0		a.c. or d.c. volts.	
Current 1.0		amp.	
Direct Inter-electrode Capacitances.		•	
Modulator to all other electrodes		15µµf.	
Anode 1 to all other electrodes .		15μμf.	
Cathode to all other electrodes .		12μμf.	
Screen:		Aluminium Backed.	
Fluorescence		Orange.	
Afterglow		Orange.	
Persistence of Afterglow		Long.	
Focusing Method		Electrostatic.	
Deflecting Method		Magnetic.	
Overall Length		$535 \pm 10 \text{ mm}$ .	
Greatest Diameter of Bulb		306.5 mm.	
Minimum Useful Screen Diameter		265 mm.	
Mounting Position			

Pin 1—No connection.
Pin 2—Anode 1.
Pin 3—Anode 2.
Pin 4 No connection

Anode Cap

Base



Pin 5—Modulator.
Pin 6—Cathode.

Cavity Cap BSS448/CT8

International Octal.

Pin 7—Heater.

Pin 8—Heater.

Cap—Final Anode.

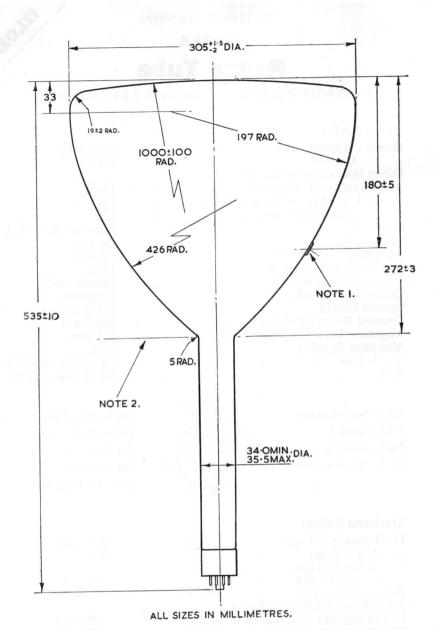
13000 volts.

# Maximum Ratings: Final Anode Voltage

Anode I Voltage .					2200 volts.
Modulator Voltage:					
Negative bias value					130 volts.
Positive bias value					0 volts.
Peak Heater-Cathode					
Heater negative with r	ode		125 volts.		
Heater positive with re-		125 volts.			

## **Typical Operating Conditions:**

Final Anode Voltage			12000 volts.
Anode 2 Voltage			1900 volts. ± 100 volts.
			2000 volts.
Modulator Voltage for cut-off			−70 to −120 volts.
Spot Position See Note	e 4		



Note 1. The plane through the tube axis and the spigot key may vary from the plane through the tube axis and the anode cap by an angular tolerance (measured about the tube axis) of 10°. The anode cap is on the same

- Note 2. Reference line is determined by position where a gauge 36 mm. I.D. and 50 mm. long will rest on the bulb cone.
- Note 3. Anode 1 must always be at least 50 volts positive to Anode 2.

side of the tube as the spigot key.

Note 4. The centre of the undeflected focused spot will fall within a circle having a 10 mm. radius concentric with the centre of the tube face.

#### DIAMETER 12" NOMINAL

#### 12MO6A

## Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

#### DATA

. 4.0

### GENERAL: Heater: Voltage

a.c. or d.c. volts. . 1.0 amp. Direct Inter-electrode Capacitances. Modulator to all other electrodes 12.0uuf. Cathode to all other electrodes . 10.0uuf. Screen: . . . . . Aluminium Backed Fluorescence Orange. Afterglow Orange. Persistence of Afterglow Long. Focusing Method . . . Magnetic.

Deflecting Method . . . Magnetic. Overall Length  $510 \pm 10 \text{ mm}$ . Greatest Diameter of Bulb 306.5 mm.

Minimum Useful Screen Diameter 265 mm. Mounting Position . . . Any.

Anode Cap . Cavity Cap BSS448/CT8. Base

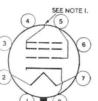
International Octal

Pin 1—No connection.

Pin 2—Heater

Pin 3—Pin omitted

Pin 4—Pin omitted.



Pin 5-Modulator.

12MOSA

Pin 6—Pin omitted.

Pin 7—Heater.

Pin 8—Cathode.

Cap—Anode.

### **Maximum Ratings:**

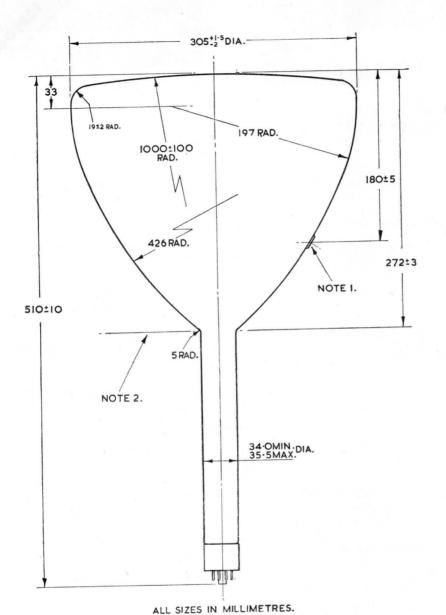
Anode Voltage 11000 volts. Modulator Voltage: Negative bias value 130 volts. Positive bias value 0 volts. Peak Heater-Cathode Voltages: Heater negative with respect to cathode 125 volts. Heater positive with respect to cathode 125 volts

### **Typical Operating Conditions:**

Anode Voltage 10000 volts. Modulator Voltage for cut-off
Focusing-Coil Current-See Note 3
Spot Position See Note 4 -75 to -115 volts. 560 A.T.

Focusing Coil positioned with centre line of air gap approximately Note 3. 80 mm. from reference line (see outline drawing).

The centre of the undeflected unfocused spot will fall within a circle Note 4. having 10 mm. radius concentric with the centre of the tube face.



Note 1. The plane through the tube axis and the spigot key may vary from the plane through the tube axis and the anode cap by an angular tolerance (measured about the tube axis) of 10°. The anode cap is on the same side of the tube as the spigot key.

Note 2. Reference line is determined by position where a gauge 36 mm. I.D. and 50 mm. long will rest on the bulb cone.

### 12TO3A

## Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

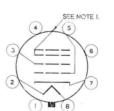
#### DATA

GENERAL:				
Heater: Voltage 6	.3			a.c. or d.c. volts.
Current 0	.6			amp.
Direct Inter-electrode Capacitance	es.		-	p.
Modulator to all other electrodes				9.0μμf.
Anode 1 to all other electrodes				6.0µµf.
Cathode to all other electrodes				0.0
Screen:			÷	Aluminium Backed.
Fluorescence				^
Afterglow				Orange.
Persistence of Afterglow .				Long.
Focusing Method				Magnetic.
Deflecting Method				Magnetic.
Overall Length				488 ± 7 mm.
Greatest Diameter of Bulb .				306.5 mm.
Minimum Useful Screen Diameter				265 mm.
Mounting Position				Any.
Anode Cap		•	8	
			•	Cavity Cap BSS448/CT8.
Base			•	International Octal.

Pin 1—No connection.
Pin 2—Heater.

Pin 3—Anode 1.

Pin 4—No connection.



Pin 5—Modulator.

Pin 6-No connection.

12 FOSA

Pin 7—Cathode.

Pin 8—Heater.

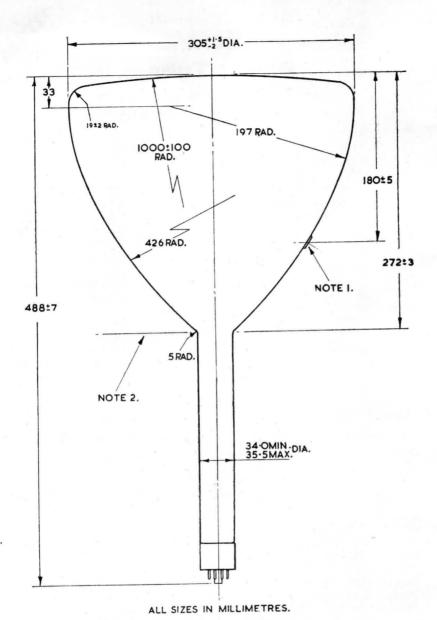
Cap-Final Anode.

### Maximum Ratings:

Final Anode Voltage	140						15000 volts.
Anode 1 Voltage .							850 volts.
Modulator Voltage:							obo voits.
Negative bias value							140 volts.
D '.' 1 ' 1							0 volts.
Peak Heater-Cathode	Volta	ges :				•	o voits.
Heater negative with re				ode			150 volts.
Heater positive with re	spect	to c	atho	de			150 volts.
*	1				•		150 VOILS.

### **Typical Operating Conditions:**

Final Anode Voltage			10000 volts.
Anode 1 Voltage			700 volts.
Modulator Voltage for cut-off			-50 to -115 volts.
Focusing-Coil Current-See Note	3		700 A.T.
Cnot Docition C - NI	4		21 2 2 2 2 2 2 2



- Note 1. The plane through the tube axis and Pin No. 5 may vary from the plane through the tube axis and anode terminal by an angular tolerance (measured about the tube axis) of 10°. Anode terminal is on the same side of the tube as Pin No. 5.
- Note 2. Reference line is determined by position where gauge 36 mm. I.D. and 50 mm. long will rest on the bulb cone.
- Note 3. Focusing Coil positioned with centre line of air gap approximately 100 mm. form the reference line (see outline drawing).
- Note 4. The centre of the undeflected focused spot will fall within a circle having 12 mm. radius concentric with the centre of the tube face.

# 151034

# Radar Tube

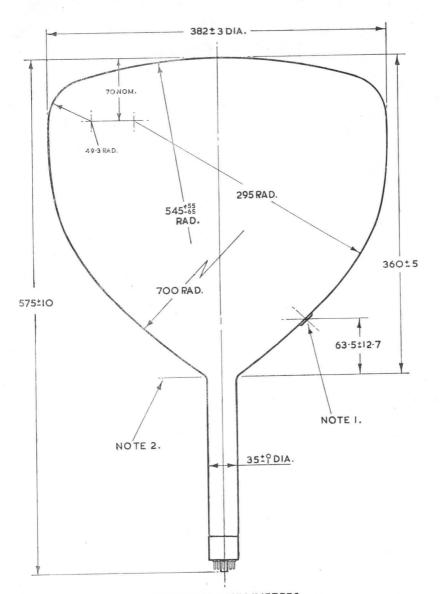
ELECTROSTATIC FOCUS. MAGNETIC DEFLECTION

n		-	
$\mathbf{D}$	A	1	A

DATA	
GENERAL:	
Heater: Voltage 4.0	. a.c. or d.c. volts.
Current 1.0	. amp.
Direct Inter-electrode Capacitances	•
Modulator to all other electrodes Anode 1 to all other electrodes	. 15μμf.
Anode 1 to all other electrodes	. 15μμf.
Cathode to all other electrodes	. 12μμf.
Screen:	. Aluminium Backed.
Fluorescence	. Orange.
Afterglow Persistence of Afterglow Focusing Method Deflecting Method	. Orange.
Persistence of Afterglow	. Long.
Focusing Method	. Electrostatic.
Deflecting Method	. Magnetic.
Overall Length	. 575 ± 10 mm.
Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diameter	. 385 mm.
Minimum Useful Screen Diameter	. 330 m.m
Mounting Position Anode Cap Base	. Any.
Poss	Cavity Cap BSS448/CT8.
	. International Octal.
Pin 1—No connection (4) (5)	
Pin 1—No connection.	Pin 5—Modulator.
Pin 2—Anode 1. 3 == 6	Pin 6—Cathode.
Pin 3—Anode 2.	Pin 7—Heater.
Pin 4—No connection.	Pin 8—Heater.
(1) W (8)	Cap—Final Anode.
Maximum Ratings:	
	120001
A J - 1 X7 - 14	. 12000 volts. . 2200 volts.
Modulator Voltage:	. 2200 volts.
Negative bias value	. 145 volts.
Positive bias value	
Peak Heater-Cathode Voltages:	. 0 voits.
Heater negative with respect to cathode .	. 125 volts.
	. 125 volts.
Typical Operating Conditions:	. 125 voits.
Final Anode Voltage	10000 **** 14**
Anode 2 Voltage	. $16000 \text{ Volts.}$ . $1600 \pm 100 \text{ volts.}$
Anode 1 Voltage-See Note 3	2000 ± 100 Volts.
Modulator Voltage for cut-off	-80 to -130 volts
Final Anode Voltage Anode 2 Voltage Anode 1 Voltage–See Note 3 Modulator Voltage for cut-off Spot Position See Note 4	00 to -150 voits.
Note 2 And 1	

Note 3. Anode 1 must always be at least 50 volts positive to Anode 2.

Note 4. The centre of the undeflected focused spot will fall within a circle having 15 mm. radius concentric with the centre of the tube face.



ALL SIZES IN MILLIMETRES.

- Note 1. The plane through the tube axis and the spigot key may vary from the plane through the tube axis and the anode cap by an angular tolerance (measured about the tube axis) of 10°. The anode cap is on the same side of the tube as the spigot key.
- Note 2. Reference line is determined by position where gauge 36 mm. I.D. and 50 mm. long will rest on the bulb cone.

# ISMOGA

## 15**MO**6A

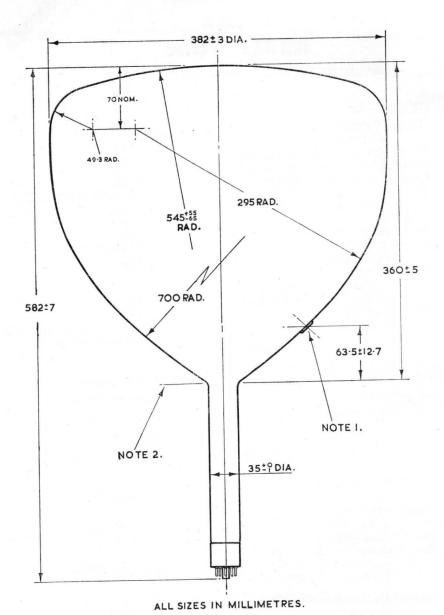
## Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

D	A	T	A

CENTERAL	DAIA		
GENERAL:			
Heater: Voltage Current	. 4.0 .		a.c. or d.c. volts.
Current	. 1.0 .		
Direct Inter-electrode Capac	itances.		1
Modulator to all other electronic	rodes .	. ,	12.0μμf.
Cathode to all other electrod	des		100 0
Screen:			
Fluorescence			
Afterglow Persistence of Afterglow Focusing Method Deflecting Method Overall Length Greatest Diameter of Bulb Minimum Useful Screen Dia Mounting Position Anode Cap Base			
Persistence of Afterglow			
Focusing Method .			Magnetic.
Deflecting Method			Magnetic.
Overall Length			582 ± 7 mm.
Greatest Diameter of Bulb			385 mm.
Minimum Useful Screen Dia	meter .		330 mm.
Mounting Position .			Any.
Anode Cap			Cavity Cap BSS448/CT8.
Base			International Octal.
25 172	SEE NOTE	l.	
Pin 1—No connection.	4) 5	Pi	in 5—Modulator.
Pin 2—Heater.	F	Pi	n 6—Pin omitted.
Pin 3—Pin omitted.			
Pin 4—Pin omitted.			n 7—Heater.
rin 4—rin omitted.	1	) Pi	n 8—Cathode.
		C	ap—Anode.
Maximum Ratings:			
Anode Voltage			11000 volts.
Modulator voltage:			
Negative bias value . Positive bias value .			130 volts.
Peak Heater-Cathode Voltage			0 volts.
Heater negative with respect	to cothed-		107
Heater negative with respect Heater positive with respect t	to cathode		125 volts.
reater positive with respect t	to cathode		125 volts.
<b>Typical Operating Conditions</b>	:		
			10000 volta
Modulator Voltage for cut-of	÷ · ·		-75 to -115 volts.
Anode Voltage  Modulator Voltage for cut-of Focusing-Coil Current-See N	Tote 3		600 A T
Spot Position See N	Tote 4		000 A.1.

- Note 3. Focusing Coil positioned with centre line of air gap approximately 80 mm. from reference line (see outline drawing).
- Note 4. The centre of the undeflected unfocused spot will fall within a circle having 15 mm. radius concentric with the centre of the tube face.



Note 1. The plane through the tube axis and the spigot key may vary from the plane through the tube axis and the anode cap by an angular tolerance (measured about the tube axis) of 10°. The anode cap is on the same side of the tube as the spigot key.

Note 2. Reference line is determined by position where gauge 36 mm. I.D. and 50 mm. long will rest on the bulb cone.

#### DIAMETER 15" NOMINAL

#### ISTO4A

15TORA

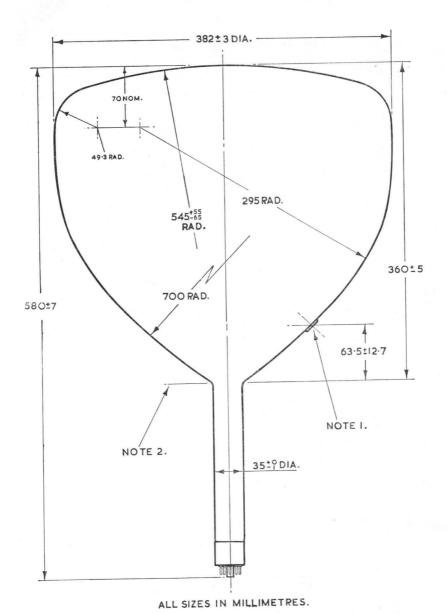
## Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

#### DATA

L	AIA				
GENERAL:					
Heater: Voltage	6.3				a.c. or d.c. volts.
Current	0.6				amp.
Direct Inter-electrode Capacitan	ices.				ump.
Modulator to all other electrode	es				12μμf.
Anode 1 to all other electrodes					10μμf.
Cathode to all other electrodes					12μμf.
Screen:					Aluminium Backed.
Screen:					_
Afterglow Persistence of Afterglow Focusing Method Deflecting Method					
Persistence of Afterglow .					Long.
Focusing Method					Magnetic.
Deflecting Method					Magnetic.
Overall Length					580 ± 7 mm.
Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diameter					385 mm.
Minimum Useful Screen Diamer	ter				330 mm.
Mounting Position Anode Cap					Any.
Anode Cap					Cavity Cap BSS448/CT8.
Base		•	•		B.12.A.
		NOTE I		•	B.12.A.
Pin 1—Heater.	6	NOTE I.		Pir	7—No connection.
Pin 2—Modulator. (5)	1	8			8—Pin omitted.
D: 2 D: 11 -7 -	`	7		Pin	9—Pin omitted.
		(9)			10—Anode 1.
Pin 4—Pin omitted.	`	1			11—Cathode.
I'm 5—I'm offitted.	\	(10)			12—Heater.
Pin 6—No connection.		II)			—Final Anode.
	12				
Maximum Ratings:					
Final Anode Voltage					15500 volts.
Anode 1 Voltage					600 volts.
Modulator Voltage:					
Negative bias value					180 volts.
rositive bias value					0 volts.
Peak Heater-Cathode Voltages:					0 1016.
Heater negative with respect to o	cathod	le			150 volts.
Heater positive with respect to c	athod	e			
<b>Typical Operating Conditions:</b>					100 TORIS.
Final Anode Voltage					15000 1
Final Anode Voltage Anode 1 Voltage		•			15000 volts. 300 volts.
Modulator Voltage for cut-off			•		-30 to -90 volts.
Focusing-Coil Current-See Note	3				730 A.T.
Anode 1 Voltage	0.1				730 A.1.
Spot I osition See Not	C 4				

- Note 3. Focusing Coil positioned with centre line of air gap approximately 80 mm, from reference line (see outline drawing).
- Note 4. The centre of the undeflected unfocused spot will fall within a circle having 15 mm. radius concentric with the centre of the tube face.



Note 1. The plane through the tube axis and the spigot key may vary from the plane through the tube axis and the anode cap by an angular tolerance (measured about the tube axis) of 10°. The anode cap is on the same side of the tube as the spigot key.

Note 2. Reference line is determined by position where gauge 36 mm. I.D. and 50 mm. long will rest on the bulb cone.

# 16TORA

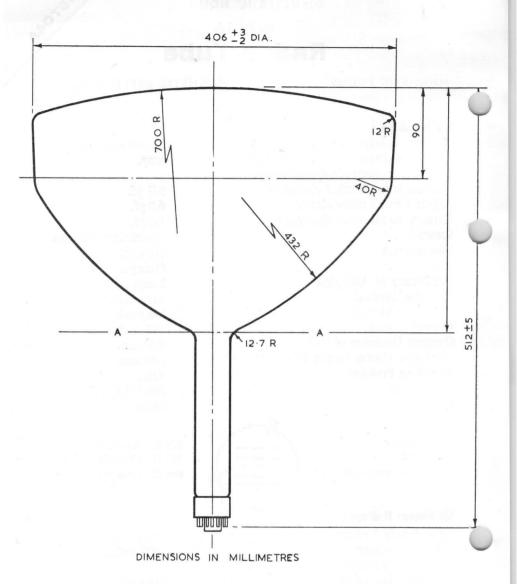
### 16TO4A

## Radar Tube

MAGNETIC FOCUS

MAGNETIC DEFLECTION

DATA		
GENERAL:		
Heater: Voltage 6.3 .		a.c. or d.c. volts.
Current 0.6		amp.
Direct Inter-electrode Capacitances		
Modulator to all other electrodes		9.0 pf.
Anode 1 to all other electrodes.		6.0 pf.
Cathode to all other electrodes		000
Screen:		Aluminium Backed.
Fluorescence		Orange.
Afterglow		Orange.
Persistence of Afterglow		
Focusing Method		Long.
D-9-4: M 41 1		Magnetic.
Overell Length		Magnetic.
Overall Length .		$512 \pm 5$ mm.
Greatest Diameter of Bulb		409 mm.
Minimum Useful Screen Diameter		
Mounting Position		Any.
Anode Cap		BSS448/C.T.7.
Base		B12A.
D.		
Pin 1—Heater	p;	n 10—Anode 1
Pin 2—Grid		n 11—Cathode
Pin 6—No connection		n 12—Heater
110	11	ii 12—Heater
2		
Maximum Ratings:		
Final Anode Voltage		16.0 kV.
Anode 1 Voltage		600 volts.
Modulator Voltage:		
Negative bias value		-180 volts.
Positive bias value		0 volts
Peak Heater-Cathode Voltages:		o voits.
Heater negative with respect to cathode .		150 volta
Heater positive with respect to cathode		150 volts.
		130 voits.
Typical Operating Conditions:		
Final Anode Voltage		15.0 kV.
Anode 1 Voltage		300 volts.
Modulator Voltage for cut-off .		−30 to −90 volts.
Spot position		See Note 4.



- Note 1. The plane through the tube axis and the spigot key may vary from the plane through the tube axis and the anode cap by an angular tolerance (measured about the tube axis) of 10°. The anode cap is on the same side of the tube as the spigot key.
- Note 2. Reference line is determined by position where gauge 36 mm. I.D. and 50 mm. long will rest on the bulb cone.
- Note 3. Focusing coil positioned with centre line of air gap approximately 118 mm, from the reference line (see outline drawing).
- Note 4. The centre of the undeflected focused spot will fall within a circle having 15 mm, radius concentric with the centre of the tube face.

# SOFFE

#### **90EB4**

# Oscilloscope Tube

ELECTROSTATIC DEFLECTION ELECTROSTATIC FOCUS.

CENERAL	DATA		
GENERAL:			
Heater: Voltage	4.0 .		a.c. or d.c. volts.
Current	1.0 .		
Direct Inter-electrode Capacita	ances.		
Modulator to all other electro-			25μμf.
Each X Plate to all other elect	rodes .		25μμf.
Each Y Plate to all other elect	rodes . rodes .		
One X to one Y Deflector Plat	te		6μμf.
Cathode to all other electrodes	·		' -
Screen:			
Fluorescence			Blue.
Persistence			Very Short.
(10	μ sec. max.	for 1%	initial brightness).
Focusing Method			Electrostatic
Deflecting Method			Electrostatic.
Overall Length			$332 \pm 8 \text{ mm}.$
Deflecting Method Overall Length Greatest Diameter of Bulb . Minimum Useful Screen Diam Mounting Position			90 mm.
Minimum Useful Screen Diam	eter .		70 mm.
Mounting Position			Any.
Base			B.12.D.
Pin 1—Modulator.	2 2	D:	. 9. V2
Pin 2—Cathode. (5)	8		1 8—Y2.
D: 2 T			19—X2. 110—Anode 3 and
Pin 3—Heater. Pin 4—Heater.	9	Int	ernal Conductive
		coa	ting.
rin 3—Anode I.		Pin	11—X1.
Pin 6—Anode 2.		Pin	12—Y1.
Pin 7—No connection.	1) (12)		
Typical Operating Conditions:			
Anode 1			2000 volts.
Anode 2	700 volts.		350 volts.
Anode 3 (5000v. max.) Modulator volts for cut-off	4000 volts.		2000 volts.
	to -80 volts.		−40 to −80 volts.
Deflection Sensitivity:	mm/volt.		
	mm/ voit.		mm/volt.

The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ}\pm3^{\circ}$ . Note 2.

X Plate

Y Plate

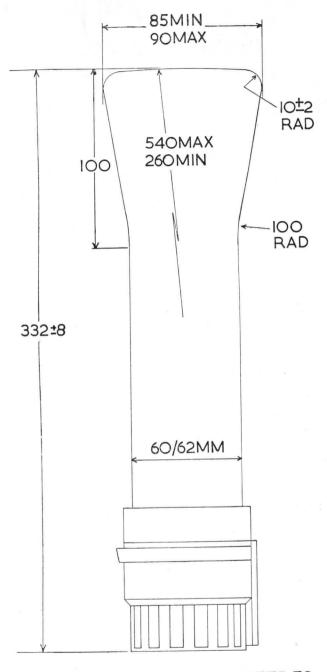
0.085

0.190

0.170

0.380

Note 3. The undeflected focused spot will fall within a circle having a 6 mm. radius concentric with the centre of the tube face.



ALL SIZES IN MILLIMETRES

Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

# SOKBAA

#### **90EB4F**

## Oscilloscope Tube

### FLAT FACED BULB

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

#### DATA

GEN	ER	AL	:
-----	----	----	---

Heater: Voltage		4.0		٠.	a.c. or d.c. volts.
Current		1.0			amp.

Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		25uuf.

Each X Plate to all other electrodes			25 µµf.
Each Y Plate to all other electrodes			25µµf.
O V to V D C D	15	1,5	- chalar.

One X to one Y Deflector Plate			6µuf.
Cathode to all other electrodes			15µµf.
Camaran .			

Screen:	
Fluorescence	T) I

Tracrescence	•	•	•		•				Diue.
Persistence									Very Short.
				$(10\mu$	sec.	max.	for	1%	initial brightness).

	(	 ******	101	1 /0	minute official
Focusing Method .					Electrostatic.
Deflecting Method					Electrostatic.
Overall Length					$332 \pm 8 \text{ mm}.$
Greatest Diameter of Bull					88.5 mm.
Minimum TI-C1C	· ·				

Minimum Useful Scre	en Di	iame	ter		75 mm.
Mounting Position					Any.
Race					D 12 D

Base						÷	÷	B.12.D.
Pin 1—Mo			5	7	(B)			in 8—Y2.

	- / / / / / / /	
Pin 3—Heater.	(X X )	Pin 10-Anode 3 and
Pin 4—Heater.		Internal Conductive
Pin 5—Anode 1.		coating.
Pin 6—Anode 2.	(2)	Pin 11—X1.
Pin 7—No connection.	(1)—(12)	Pin 12—Y1.

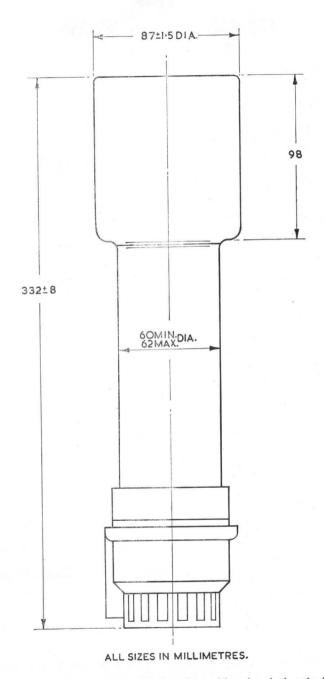
### **Typical Operating Conditions:**

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	350 volts.
Anode 3 (5000v. max.) .	4000 volts.	2000 volts.

-40 to $-80$ volts.	-40 to -80 volts.

<b>Deflection Sensitivity:</b>			mm/volt.	mm/volt.	
X Plate				0.085	0.170
Y Plate				0.190	0.380

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 6 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

# SO KBAR

#### **90EB4P**

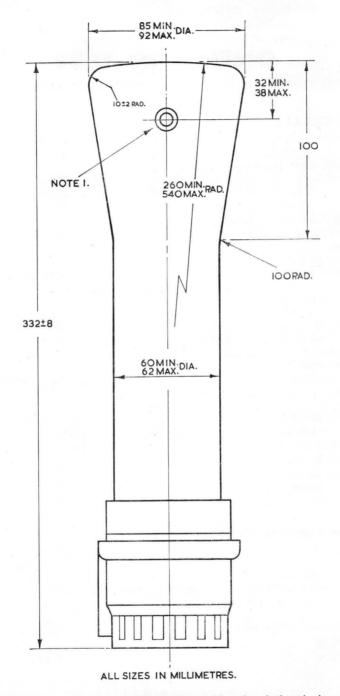
## Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

n	A	т	A
$\boldsymbol{\nu}$	$\mathbf{n}$		7

	DATA	
GENERAL:		
Heater: Voltage	. 4.0	. a.c. or d.c. volts.
Current	. 1.0	. amp.
Direct Inter-electrode Capacita	ances.	r
Modulator to all other electro	des	. 25μμf.
Each X Plate to all other elect	trodes	25uuf
Each Y Plate to all other elect	trodes	. 25μμf.
Each Y Plate to all other elect One X to one Y Deflector Pla Cathode to all other electrodes	te	. 6μμf.
Cathode to all other electrodes	s	. 15µµf.
Screen:		
Fluorescence		. Blue.
Persistence		. Very Short.
(10μ sec. r	max. for 1% initi	al brightness).
Focusing Method		Electrostatic
Deflecting Method		. Electrostatic.
Overall Length		$332 \pm 8 \text{ mm}$ .
Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diam		. 92 mm.
Minimum Useful Screen Diam	neter	. 70 mm.
Mounting Position		. Any.
Anode Cap		. Recessed Small Ball.
Mounting Position Anode Cap	71	. B.12.D.
Pin 1—Modulator.	SEE NOTE I.	
	6 / 7	Pin 8—Y2.
Pin 2—Cathode.	B B	Pin 9—X2.
Pin 3—Heater.	7	Pin 10-Anode 3 and
Pin 4—Heater.		Internal Conductive coating.
Pin 5—Anode 1.	10	
Pin 6—Anode 2.		Pin 11—X1.
Pin 7—No connection.	1) 12	Pin 12—Y1.
		Cap—Anode 4 P.D.A.
<b>Typical Operating Conditions:</b>		
		2000 14-
Anode 1		. 2000 volts.
Anode 3 (4000v. max.)		. 380 VOITS.
Anode 4 Post Deflector Accele		. 2000 Volts.
Modulator volta for out off	rator (6000v. ma	1X.) 4000 VOITS.
Modulator volts for cut-off .		40 to -80 voits.
Deflection Sensitivity:		mm/volt.
X Plate		
Y Plate		
		. 0.320

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ}\pm3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 6 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal XI will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

# SOFOR

#### 90E D4

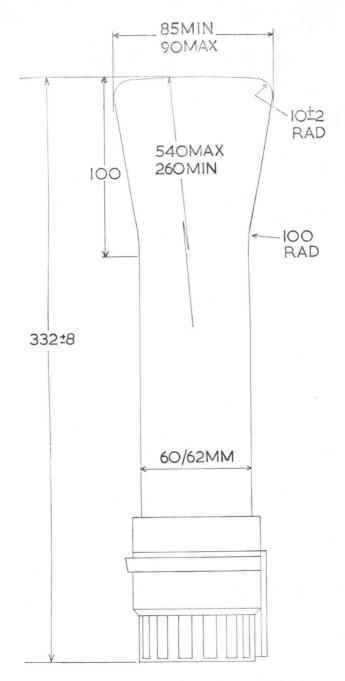
## Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA
GENERAL:
Heater: Voltage 4.0 a.c. or d.c. volts.
Current 1.0 amp.
Direct Inter-electrode Capacitances.
Modulator to all other electrodes
Each X Plate to all other electrodes
Fach Y Plate to all other electrodes 25
One X to one Y Deflector Plate
Cathode to all other electrodes 15uuf.
Screen:
Fluorescence Blue.
Afterglow Yellow
Persistence of Afterglow Long.
Afterglow Yellow Persistence of Afterglow Long.  (10 sec. min./100 sec. max. for 1% initial brightness).
rocusing without
Deflecting Method Electrostatic.
Overall Length
Greatest Diameter of Bulb 90 mm.
Minimum Useful Screen Diameter 70 mm.
Mounting Tosition Any.
Base B.12.D.
Di di seria
Pin 1—Modulator. Pin 8—Y2.
Pin 2—Cathode. S Pin 9—X2.
Pin 3—Heater. Pin 4—Heater  Pin 4—Heater  Pin 10—Anode 3 and Internal Conductive
The fleater.
Pin 5—Anode 1. 3 coating.
Pin 6—Anode 2.
Pin 7—No connection.  Pin 12—Y1.
Typical Operating Conditions:
Anode 1 2000 volts. 2000 volts.
2000 10165.
Anode 3 (5000y, max.) 4000 volts 2000 volts
Modulator volts for cut-off
-40 to -80 volts40 to -80 volts.
Deflection Sensitivity: mm/volt. mm/volt.
V DI-t-
0.170
Y Plate 0.190 0.380

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ}\pm3^{\circ}$ .

The undeflected focused spot will fall within a circle having a 6 mm. radius concentric with the centre of the tube face. Note 3.



### ALL SIZES IN MILLIMETRES

Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

# OFD RA

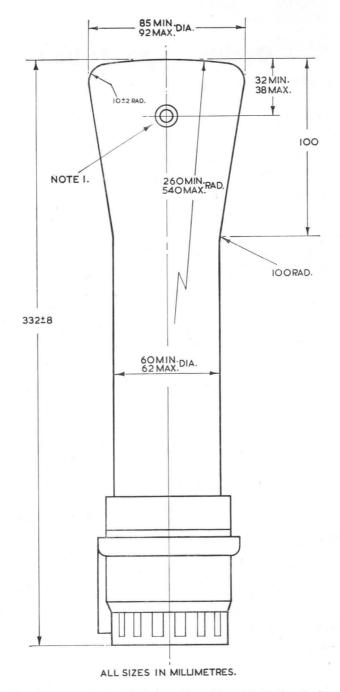
#### **90ED4P**

# Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

	DATA					
GENERAL:	DAIA					
Heater: Voltage	4.0			a.c. or d.c. volts.		
Current	. 1.0					
Direct Inter-electrode Capac				amp.		
Modulator to all other elect	rodes			256		
Each X Plate to all other el	ectrodes			25μμf.		
Each Y Plate to all other el	ectrodes			25μμf.		
One Y to one V Deflector I	Plata			25μμf.		
One X to one Y Deflector I Cathode to all other electro	das .	•		6μμf.		
Screen:	des .			15μμf.		
				7.1		
Fluorescence Afterglow				Blue.		
Altergiow		•		Yellow.		
Persistence of Afterglow				Long.		
(10 sec. min	./100 sec.	max.	for 1	% initial brightness)		
Focusing Method				Electrostatic.		
Deflecting Method				Electrostatic.		
Overall Length				$332 \pm 8 \text{ mm}.$		
Overall Length Greatest Diameter of Bulb				92 mm.		
Minimum Useful Screen Di Mounting Position	ameter			70 mm.		
Mounting Position . Anode Cap				Any.		
Anode Cap				Recessed Small Ball.		
Base				B.12.D.		
Pin 1—Modulator.		IOTE I.		0: 0 X/2		
Pin 2—Cathode.	6 (7)	1000		Pin 8—Y2.		
	5	(B)		Pin 9—X2.		
Pin 3—Heater.	712-2	(e)		Pin 10-Anode 3 and		
rin 4—Heater.				Internal Conductive		
Pin 5—Anode 1.		10		coating.		
Pin 6—Anode 2.	2			Pin 11—X1.		
Pin 7—No connection.	2			Pin 12—Y1.		
			(	Cap—Anode 4 P.D.A.		
Typical Operating Conditions:						
Anode 1				2000 volts		
Anode 1				380 volts.		
Anode 3 (4000y may)				2000 volts.		
Anode 4 Post Deflector Acc	alaratar (6			2000 VOILS.		
Modulator volta for out off	elerator (c	ουυυν.	max	.) 4000 voits.		
Modulator volts for cut-off				-40 to $-80$ volts.		
<b>Deflection Sensitivity:</b>				mm/volt.		
X Plate				0.140		
Y Plate						
Note 2. The angle between the	trace prod	uced b	y X1	and X2 and the trace		

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 6 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

## OKC.

#### 90EG4

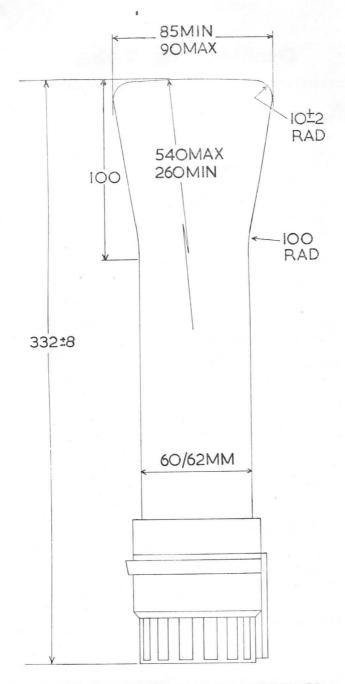
## Oscilloscope Tube

D	A	T	4

DATA	
GENERAL:	
Heater: Voltage 4.0	. a.c. or d.c. volts.
Current 1.0	. amp.
Direct Inter-electrode Capacitances.	
Modulator to all other electrodes	. 25μμf.
Each X Plate to all other electrodes	. 25µµf.
Each Y Plate to all other electrodes	. 25μμf.
One X to one Y Deflector Plate	. 6μμf.
Cathode to all other electrodes	. 15µµf.
Screen:	
Fluorescence	. Green.
Persistence of Afterglow	. Short.
(10m sec. min/100m sec. max. for	10/ initial brightness)
Focusing Method	. Electrostatic
Deflecting Method	. Electrostatic.
Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diameter Mounting Position	. 332 ± 8 mm.
Greatest Diameter of Bulb	. 90 mm.
Minimum Useful Screen Diameter	. 70 mm.
Mounting Position	. Any.
Base	. B.12.D.
	. B.12.D.
Pin 1—Modulator.	Pin 8—Y2.
Pin 2—Cathode	Pin 9—X2.
Pin 3—Heater.	
Pin 4—Heater.	Pin 10—Anode 3 and Internal Conductive
D. 5	coating.
Pin 5—Anode 1.	Pin 11—X1.
Pin 6—Anode 2.	Pin 12—Y1.
Pin 7—No connection.	FIII 12—11.
<b>Typical Operating Conditions:</b>	
Anode 1 2000 volts.	2000 volts.
Anode 2	350 volts.
Anode 3 (5000v. max.) 4000 volts.	2000 volts.
- (, 1000 voits.	ZOOU VOILS.

Anode 2 Anode 3 (5	5000v. m	iax.)		700 volts. 4000 volts.	350 volts. 2000 volts.
Modulator	volts fo	or cu	t-off	to –80 volts.	-40 to -80 volts.
Deflection	Sensitivi	ity:		mm/volt.	mm/volt.
X Plate				0.085	0.170
Y Plate				0.190	0.380

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 6 mm, radius concentric with the centre of the tube face.



ALL SIZES IN MILLIMETRES

Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

#### DIAMETER 31 NOMINAL

#### 90EG4F

OFCRA

## Oscilloscope Tube

#### FLAT FACED BULB

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

#### DATA

DATA	
GENERAL:	
Heater: Voltage 4.0	. a.c. or d.c. volts.
Current 1.0	. amp.
Direct Inter-electrode Capacitances.	1
Modulator to all other electrodes	. 25μμf.
Each X Plate to all other electrodes	$25\mu\mu f$ .
Each Y Plate to all other electrodes	
One X to one Y Deflector Plate	
Cathode to all other electrodes	$15\mu\mu f$ .
Screen:	
Fluorescence	. Green.
Persistence	. Short.
(10m sec. min./100m sec. max. for	1% initial brightness)
Focusing Method Deflecting Method	. Electrostatic
Deflecting Method	. Electrostatic
Overall Length	. 332 ± 8 mm
Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diameter	. 88.5 mm.
Minimum Useful Screen Diameter	. 75 mm.
Mounting Position	. Anv.
Mounting Position	. B.12.D.
Pin 1—Modulator. (6) (7)	Pin 8—Y2.
Pin 2—Cathode.	Pin 9—X2.
Pin 3—Heater. Pin 4—Heater.	Pin 10—Anode 3 and Internal Conductive
3 \ \===\h\710	coating.
Pin 5—Anode 1.	Pin 11—X1.
Till 6—Allode 2.	Pin 12—Y1.
Pin 7—No connection.	111.
Typical Operating Conditions:	
Anode 1 2000 volts.	2000 volts.
Anode 2 700 volts.	350 volts.
Anode 3 (5000v. max.) 4000 volts.	2000 volts.
Modulator volts for cut-off	
-40 to $-80$ volts.	-40 to $-80$ volts.
Deflection Sensitivity: mm/volt.	mm/volt.
Y DI	1

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .

0.085

0.190

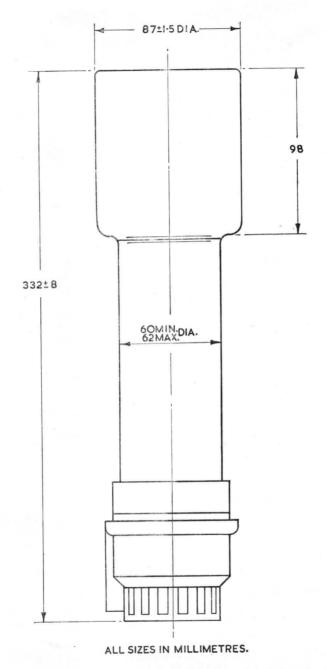
0.170

0.380

X Plate

Y Plate

Note 3. The undeflected focused spot will fall within a circle having a 6 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

# SORCAR

#### **90EG4P**

## Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

	DATA
GENERAL .	

GENERAL:
Heater: Voltage 4.0 a.c. or d.c. volts.
Current 1.0 amp.
Direct Inter-electrode Capacitances.
Modulator to all other electrodes 25mf
Each X Plate to all other electrodes 25μμf.
Each Y Plate to all other electrodes
One X to one Y Deflector Plate
Each Y Plate to all other electrodes . 25μμf. One X to one Y Deflector Plate . 6μμf. Cathode to all other electrodes . 15μμf.
Screen:
Fluorescence Green. Persistence Short.
(10m sec min /100m sec may for 10/ initial brightness)
Focusing Method  Flectrostatic
Deflecting Method  Flectrostatic
Overall Length 332 + 8 mm
Greatest Diameter of Rulb
Focusing Method Electrostatic.  Deflecting Method
Mounting Position
Anode Can  Research Carell Dell
Rase P 12 D
Base B.12.D.
Pin 1—Modulator. SEE NOTE I. Pin 8—Y2.
Pin 2 Cathoda (6) /(7)
Pin 3—Heater.  Pin 10—Anode 3 and
Pin 4—Heater.  Pin 4—Heater.  Internal Conductive
coating
Din 11 V1
Pin 6—Anode 2.  Pin 12—Y1.
Pin 7—No connection.  Cap—Anode 4 P.D.A.
Cap—Allode 4 F.D.A.
Typical Operating Conditions:
Anode 1
Anode 2 380 volts
Anode 1
Anode 4 Post Deflector Accelerator (6000v. max.) 4000 volts.
Modulator volts for cut-off

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .

mm/volt.

0.140

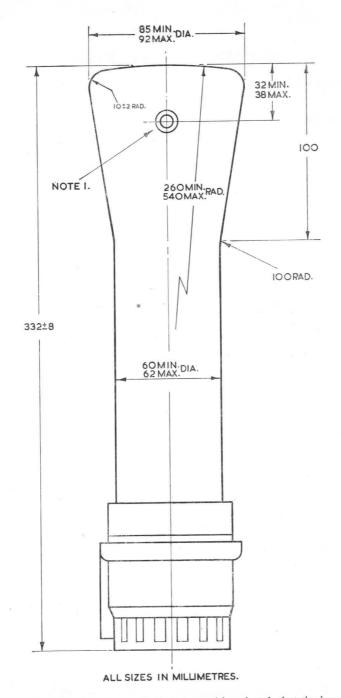
0.320

**Deflection Sensitivity:** 

X Plate

Y Plate

Note 3. The undeflected focused spot will fall within a circle having a 6 mm-radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

## SOFOR

#### 90EO4

## Oscilloscope Tube

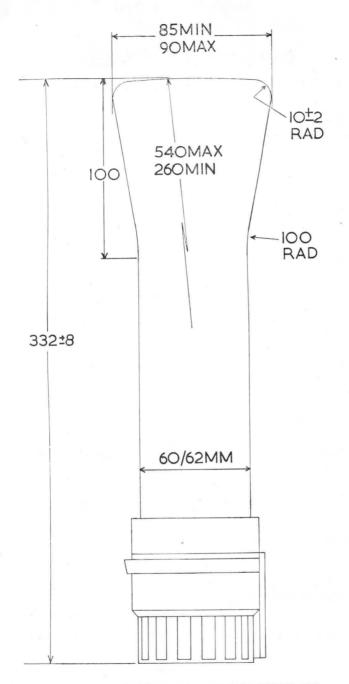
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

#### DATA

GENERAL:	
Heaters Valtage	
Current	i.c. volts.
Direct Inter-electrode Capacitances.	
Each X Plate to all other electrodes	
Each Y Plate to all other electrodes One X to one Y Deflector Plate	
Cathode to all other electrodes 15μμf.	
Fluorescence	
A fteraless Orange.	
Porsistence of A.C Orange.	
Fluorescence Orange.  Afterglow Orange.  Persistence of Afterglow Long.  (10 sec. min /100 sec. max for 10/ initial bai	
To see. min./100 sec. max. for 1% initial bri	gntness).
Focusing Method Electrosi	tatic.
Deflecting Method Electrosi	tatic.
Overall Length $332 \pm 8$	mm.
Deflecting Method	
Minimum Useful Screen Diameter 70 mm.	
Minimum Useful Screen Diameter	
Base Base Base	
Pin 1—Modulator. Pin 8—Y2.	
Pin 2—Cathode. 6 7 8 Pin 9—X2.	
Pi a Till 3—AZ.	
Pin 3—Heater. Pin 4—Heater.  Pin 10—Ano Internal C	de 3 and
Di a coating	onductive
Pin 6 Anada 2 Pin 11—X1.	
Till 0—Allode 2.	
Pin 7—No connection.	
Typical Operating Conditions	

1 ypicai Op	erating	Con	ditio	ns:	,	
Anode 1 Anode 2 Anode 3 (5) Modulator	000v. n volts fo	nax.) or cu	· · t-off		2000 volts. 700 volts. 4000 volts.	2000 volts. 350 volts. 2000 volts.
					to -80 volts.	−40 to −80 volts.
Deflection S	Sensitivi	ity:			mm/volt.	mm/volt.
X Plate					0.085	0.170
Y Plate					0.190	0.380

- The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ}\pm3^{\circ}$ .
- The undeflected focused spot will fall within a circle having a 6 mm. radius concentric with the centre of the tube face.



ALL SIZES IN MILLIMETRES

Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

# SOFORA

#### 90EO4F

## Oscilloscope Tube

FLAT FACED BULB

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA	
GENERAL:	
Heater: Voltage 4.0	. a.c. or d.c. volts.
Current 1.0	
Direct Inter-electrode Canacitanoss	ump.
Modulator to all other electrodes	. 25μμf.
Each X Plate to all other electrodes	. 25µµf.
Each Y Plate to all other electrodes Each Y Plate to all other electrodes	. 25μμf.
One X to one Y Deflector Plate	6uuf
Cathode to all other electrodes	. 15μμf.
Screen:	
Fluorescence Afterglow Persistence of Afterglow	. Orange.
Persistance of Africal	. Orange.
10 and with 100	. Long.
(10 sec. min./100 sec. max. for	1% initial brightness).
Pocusing Method Deflecting Method	. Electrostatic.
Overall Length	Electrostatic.
Greatest Diameter of Bulb	. 332 ± 8 mm. . 88.5 mm.
Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diameter Mounting Position	. 75 mm.
Mounting Position	. Any.
Base	. B.12.D.
Pin 1—Modulator.	Pin 8—Y2.
Pin 2—Cathode.	Pin9—X2.
Pin 3—Heater.	Pin 10-Anode 3 and
Pin 4—Heater.	Internal Conductive
Pin 5—Anode 1.	coating.
Pin 6—Anode 2.	Pin 11—X1.
Pin 7—No connection.	Pin 12—Y1.
Typical Operating Conditions:	
Anode 1 2000 volts.	2000 volts.
Anode 2 700 volts.	350 volts.
Anode 3 (5000v. max.) 4000 volts.	2000 volts.
Modulator volts for cut-off	
−40 to −80 volts.	-40 to $-80$ volts.
Deflection Sensitivity: mm/volt.	mm/volt.

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .

0.085

0.190

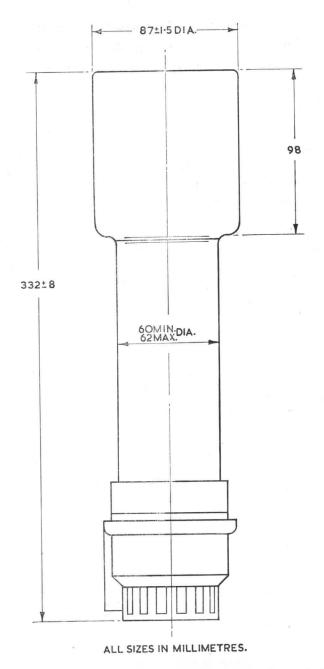
0.170

0.380

X Plate

Y Plate

Note 3. The undeflected focused spot will fall within a circle having a 6 mm, radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

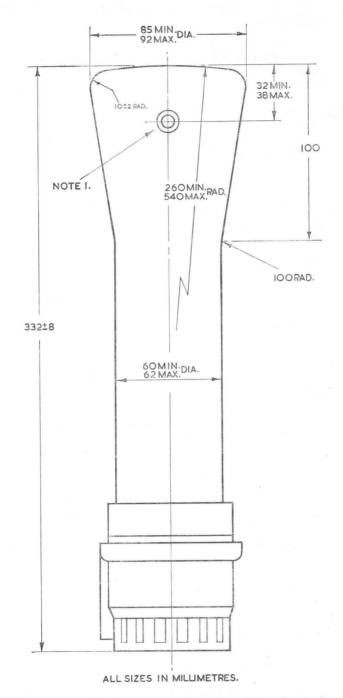
# SOFORA

#### 90EO4P

## Oscilloscope Tube

DATA		
GENERAL:		
Heater: Voltage 4.0		. a.c. or d.c. volts.
Current 1.0		. amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		. 25μμf.
Each X Plate to all other electrodes		. 25μμf.
Each Y Plate to all other electrodes		. 25μμ1.
One X to one Y Deflector Plate .		. 6μμf.
Cathode to all other electrodes .		. 15μμf.
Screen:		
Fluorescence		. Orange.
Afterglow Persistence of Afterglow (10 sec. min./100 sec.		. Orange.
Persistence of Afterglow		. Long.
(10 sec. min./100 sec.	max. for	% initial brightness).
Focusing Method		. Electrostatic.
Deflecting Method		. Electrostatic.
Focusing Method Deflecting Method Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diameter Mounting Position Anode Cap Base		$332 \pm 8 \text{ mm}$ .
Greatest Diameter of Bulb		. 92 mm.
Minimum Useful Screen Diameter		. 70 mm.
Mounting Position		. Any.
Anode Cap		. Recessed Small Ball.
Base		. B.12.D.
	IOTE I.	Pin 8—Y2.
Din 2 Cathol		Pin 9—X2.
Pin 2—Cathode.	(8)	Pin 10—Anode 3 and
(4) (1)	(0)	Internal Conductive
Pin 4—Heater.	15	coating.
Pin 5—Arode 1.	10	Pin 11—X1.
Pin 6—Anode 2.	(11)	Pin 12—Y1.
Pin 7—No connection.		Cap—Anode 4 P.D.A.
Typical Operating Conditions:		
- 2		
Anode 1		. 2000 volts.
Anode 2 Anode 3 (4000v. max.)		. 380 volts. . 2000 volts.
Anode 3 (4000v. max.)		. 2000 volts.
Anode 4 Post Denector Accelerator (8	5000v. ma	x.) 4000 volts.
Modulator volts for cut-off		. –40 to –80 volts.
Deflection Sensitivity:		mm/volt.
X Plate		. 0.140
Y Plate		. 0.320

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 6 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

## SOKY W

#### 90EY4

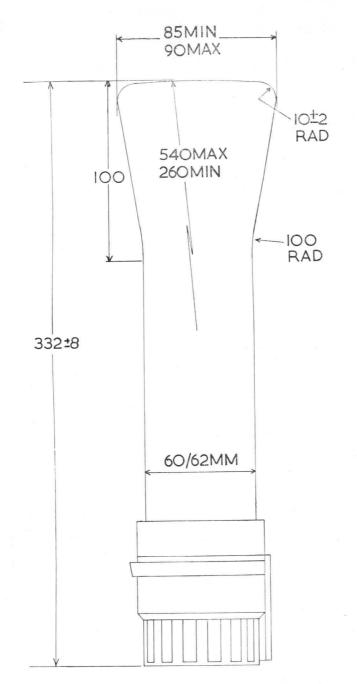
## Oscilloscope Tube

GENERAL: DATA	
Heater: Voltage 4.0	. a.c. or d.c. volts.
Current 1.0	. amp.
Direct Inter-electrode Capacitances.	
Modulator to all other electrodes	$25\mu\mu f$ .
Each X Plate to all other electrodes	. 25μμf.
Each Y Plate to all other electrodes	. 25μμf.
One X to one Y Deflector Plate	$6\mu\mu f$ .
Cathode to all other electrodes	. 15μμf.
Screen:	10,011
Fluorescence	. Yellow.
Afterglow	. Yellow.
Persistence of Afterglow	. Long.
(1 sec. min./10 sec. max. for 1%	initial brightness)
Focusing Method	. Electrostatic.
	Electrostatic.
Overall Length Greatest Diameter of Bulb Minimum Useful Screen Diameter Mounting Position	. 332 ± 8 mm.
Greatest Diameter of Bulb	. 90 mm.
Minimum Useful Screen Diameter	. 70 mm.
Mounting Position	
Base	. Any.
Buse	. B.12.D.
D' 1 M 1	
Pin 1—Modulator.	Pin 8—Y2.
Pin 2—Cathode.	Pin 9—X2.
Pin 3—Heater.	Pin 10-Anode 3 and
Pin 4—Heater.	Internal Conductive
Pin 5—Anode 1.	coating.
Pin 6—Anode 2.	Pin 11—X1.
Dia 7 N	Pin 12—Y1.
Pin /—No connection.	
T 1 10 1 5	
Typical Operating Conditions:	
Anode 1 2000 volts.	2000 volts.
Anode 2 700 volts.	350 volts.
Anode 3 (5000v. max.) 4000 volts.	2000 volts.
. Tood voits.	2000 volts.

Anode I					2000 volts.	2000 volts.
Anode 2					700 volts.	350 volts.
Anode 3 (50 Modulator v	00v. m	ax.)	. ~	٠	4000 volts.	2000 volts.
Wiodulator V	ons io	cut				
			-	40 t	to -80 volts.	-40 to $-80$ volts.

Deflection S	Sensitiv	ity:		mm/volt.	mm/volt.	
X Plate				0.085	0.170	
Y Plate				0.190	0.380	

- The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ}\pm3^{\circ}$ . Note 2.
- The undeflected focused spot will fall within a circle having a 6 mm. radius concentric with the centre of the tube face. Note 3.



ALL SIZES IN MILLIMETRES

Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

#### 90EY4F

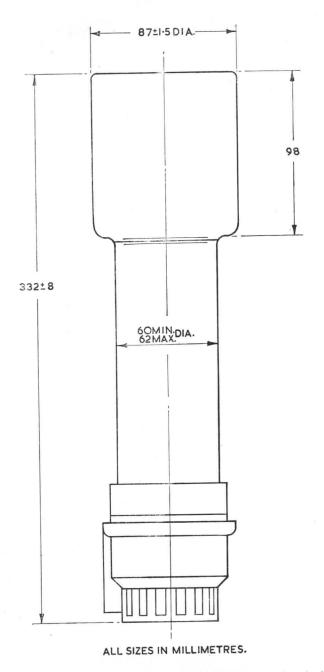
SOFT BY

## Oscilloscope Tube

FLAT FACED BULB

	D	ATA		
GENERAL:	D	ATA		
		4.0		
Heater: Voltage . Current .		1.0		. a.c. or d.c. volts.
Direct Inter-electrode (	· · ·	1.0 .		. amp.
Modulator to all other	olootrod	ices.		
Each X Plate to all oth	or alastra			. 25μμf.
Each Y Plate to all oth	er electro			. 25μμf.
Cathode to all other ele	tor Plate		•	. 6μμf.
Screen:				. 15μμf.
Fluorescence				. Yellow.
Alterglow				. Yellow.
Afterglow Persistence of Afterglow (1 sec	ν.			. Long.
(1 sec	c. min./10	sec. max.	for	1% initial brightness).
Focusing Method Deflecting Method Overall Length Greatest Diameter of B Minimum Useful Screen Mounting Position Base				. Electrostatic.
Deflecting Method .				. Electrostatic.
Overall Length .				$332 \pm 8 \text{ mm}.$
Greatest Diameter of B	ulb .			. 88.5 mm.
Minimum Useful Screen	n Diamet	er .		. 75 mm.
Mounting Position				. Anv.
Base				. B.12.D.
				-112.2.
Pin 1—Modulator.	6	2		Pin 8—Y2.
Pin 2—Cathode.	5/4	100		Pin 9—X2
Pin 3—Heater.	4	e / K		Pin 10—Anode 3 and
Pin 4—Heater.				Internal Conductive
Pin 5—Anode 1.	3			coating.
Pin 6—Anode 2.	2			Pin 11—X1.
		12		Pin 12—Y1.
Pin 7—No connection.				1 in 12—11.
Typical Operating Condi	itions :			
Anode 1		2000 volts.		2000 volts.
Anode 2		700 volts.		
Anode 3 (5000v. max.)		4000 volts.		350 volts.
Modulator volts for cut-	off.	rood voits.		2000 volts.
		-80 volts.		-40 to -80 volts.
Deflection Sensitivity:		mm/volt.		mm/volt.
X Plate		0.085		0.170
Y Plate		0.190		0.380
				. 0.500

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 6 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

# SOFTER

#### **90EY4P**

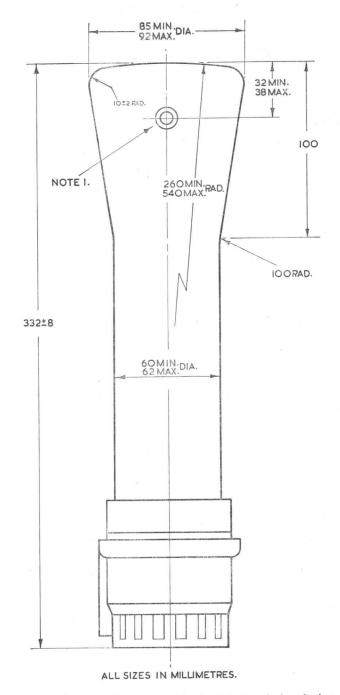
## Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

#### DATA

	DATA				
GENERAL:					
Heater: Voltage Current	. 4.0		. a.c. or d.c. volts.		
Current	. 1.0				
Direct Inter-electrode Capa	citances.				
Modulator to all other elec-	trodes		. 25μμf.		
Each X Plate to all other el	ectrodes		. 25µµf.		
Each Y Plate to all other el	ectrodes		$25\mu\mu f$ .		
One X to one Y Deflector I	Plate .		. 6μμf.		
Cathode to all other electro	des .				
Screen:					
Fluorescence			. Yellow.		
Afterglow			. Yellow		
Persistence of Afterglow			. Long.		
(1 sec. mir	n./10 sec.	max. for	Long. 1% initial brightness).		
Focusing Method .			. Electrostatic.		
Deflecting Method			. Electrostatic.		
Overall Length			$332 \pm 8 \text{ mm}$ .		
Focusing Method Deflecting Method Overall Length Greatest Diameter of Bulb Minimum Heaful Server Di			. 92 mm.		
William Osciul Scieen Di	ameter		. 70 mm.		
Mounting Position			. Any.		
Anode Cap			. Recessed Small Ball.		
Base			. B.12.D.		
Din 1 Madalas	SEE I	NOTE I.			
Pin 1—Modulator.	6 /7	WILL.	Pin 8—Y2.		
	5	(B)	Pin 9—X2.		
Pin 3—Heater.		No.	Pin 10—Anode 3 and		
I III + Ticatci.	1 ===		Internal Conductive coating.		
Pin 5—Anode 1.		(10)	Pin 11—X1.		
Pin 6—Anode 2.	2		Pin 11—X1. Pin 12—Y1.		
Pin 7—No connection.	1) 12				
	00		Cap—Anode 4 P.D.A.		
Typical Operating Conditions:					
			2000 yolts		
Anode 1			380 volts		
Anode 3 (4000y, max.)			2000 volts.		
Anode 4 Post Deflector Acc	elerator (	5000v m	2000 volts.		
Modulator volts for cut-off	ciciatoi (	5000V. III	-40 to -80 volts		
Deflection Sensitivity:					
Y Plate			. 0.320		

- Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is  $90^{\circ} \pm 3^{\circ}$ .
- Note 3. The undeflected focused spot will fall within a circle having a 6 mm. radius concentric with the centre of the tube face.



Note 1. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

#### PMT57

HIGH DEFINITION

### **Television Monitor Tube**

MAGNETIC FOCUS. MAGNETIC DEFLECTION

#### DATA

#### GENERAL:

Heater: Voltage . . . . 4.0 a.c. or d.c. volts. Current . . . . . 1.0 amp.

Direct Inter-electrode Capacitances:

Modulator to all other electrodes . 9.0μμf. Cathode to all other electrodes . 9.0μμf.

Screen: . . . . . . Aluminium Backed. Fluorescence . . . . . . . . White.

Persistence . (5m sec./25 m sec. for 1% initial brightness.)

Focussing Method . . . . Magnetic Deflecting Method . . . . Magnetic

Mounting Position . . . Any

Anode Cap . . . Cavity Cap BSS/448/CT8.

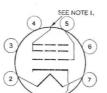
Base . . . International Octal.

Pin 1-No connection.

Pin 2—Heater.

Pin 3—Pin omitted.

Pin 4—Pin omitted.



Pin 5-Modulator

Pin 6—Pin omitted.

Pin 7—Heater.

Pin 8—Cathode.

Cap—Anode.

#### **Maximum Ratings:**

Modulator Voltage:

Peak Heater-Cathode Voltages:

Heater negative with respect to cathode . 150 volts Heater positive with respect to cathode . 150 volts Line Width . . . . . . . . . 0.3 mm.

Interlaced 405 line T.V. raster. Beam Current 100µA.

Line length 200 mm.

#### Typical Operating Conditions:

Anode Voltage . . . . . 10,000 volts

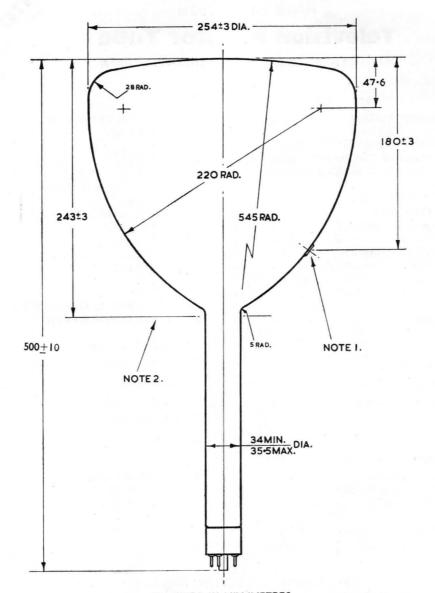
Modulator Voltage for cut-off . . . -50 to -85 volts.

Focussing-Coil Current—See Note 3 . 550 A.T.

Spot Position See Note 4

Note 4. The centre of the undeflected unfocused spot will fall within a circle having 10 mm. radius concentric with the centre of the tube face.

PARTY



ALL SIZES IN MILLIMETRES.

- **Note 1.** The "plane" through the tube axis and the spigot key may vary from the plane through the tube axis and the anode cap, by an angular tolerance (measured about the tube axis) of 10°. The anode cap is on the same side of the tube as the spigot key.
- Note 2. Reference line is determined by position where a gauge 36 mm. I.D. and 50 mm. long will rest on bulb cone.
- Note 3. Focusing Coil positioned with centre line of air gap approximately 80 mm. from reference line (see outline drawing.)

#### **QVA.39**

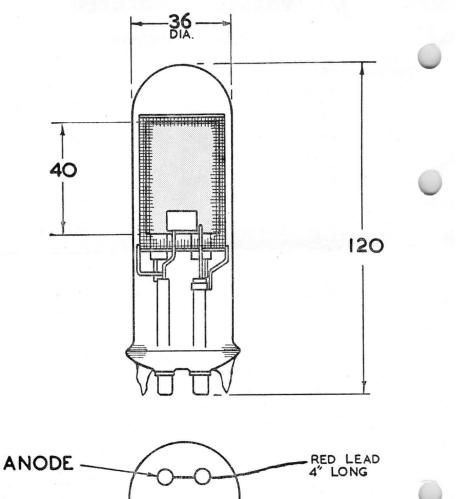
### **Vacuum Photocell**

#### **Quartz Envelope**

GENERAL						
Spectral Response .						Type OA.
Wavelength of Maximum	Resp	onse	е			$3700 \pm 500 \text{ A.U.}$
Cathode:						
Shape						V - shaped cross section.
Projected Width .						
Length						40 mm.
Anode				4		Cylindrical wire mesh.
Inter-electrode Capacitano	e					8 μμf.
Maximum Overall Length						
Length to Cathode centre						75 mm. approx.
Maximum bulb diameter						36 mm.
Mounting position .						
Basing						
Base Connections .						Green - Cathode.
						Red - Anode.
Maximum Ratings						
Anode Supply Voltage (D	C or	peal	( A(	$\mathbb{C}$ )		50.
Average cathode current						1 μΑ.
Peak cathode current						
Ambient Temperature						
Characteristics						
Operating voltage .						30-50.
Maximum dark current at	30 v	olts			, .	5 x 10 <sup>-12</sup> amps.

0 LA.30

<sup>\*</sup>Measured with an incandescent tungsten filament at a colour temperature of  $2700^{\circ}K$ .

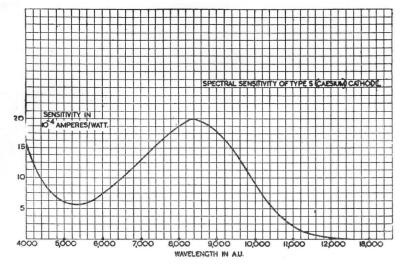


GREEN LEAD 4" LONG

ALL SIZES IN MILLIMETRES.

CATHODE







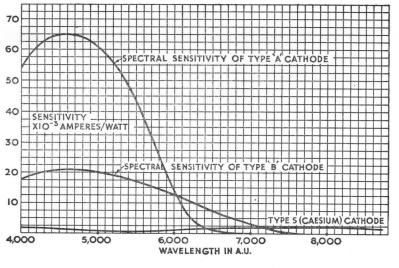


Fig. 2

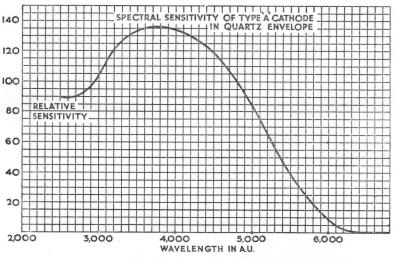
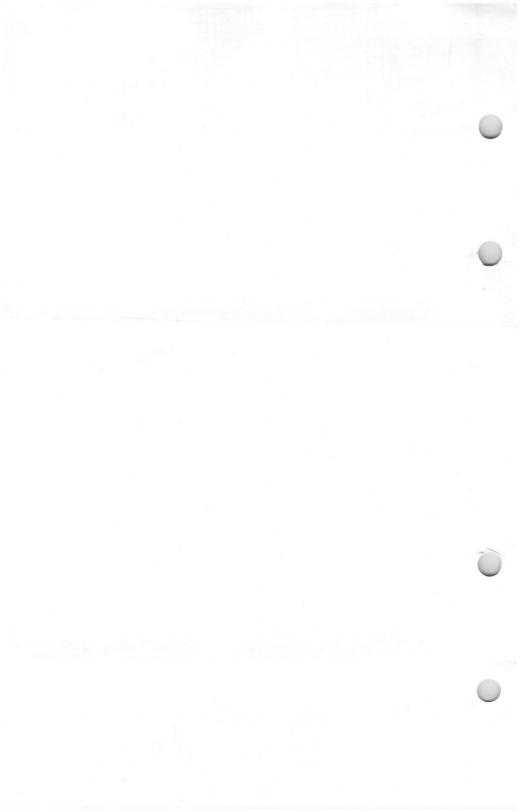


Fig. 3



#### GPD10

#### Germanium Photodiode

#### General:

Spectral response
Peak response
Shape of diode

Overall length (excluding leads)

Diameter

Mounting position

Similar to S14

 $1.5 - 1.6\mu$  Cylindrical, end view

11mm maximum 5mm maximum

Any

Flying leads

Short lead—cathode

#### Maximum ratings:

Bias voltage -50VCurrent 3mAPower dissipation at 25°C 30mWDark current at -30V, 25°C  $15\mu A$ Operating frequency 50kc/sOperating temperature 40°C

Sensitivity:

0.5µA/ft.candle minimum

Internal resistance at -30V and zero illumination:

2MΩ minimum

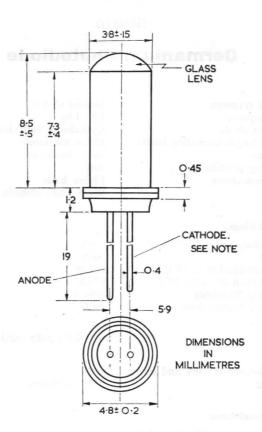
#### Operating conditions:

This photodiode operates as a light sensitive device in the reversed biased condition, and for all practical purposes the amount of current flowing is a linear function of the illumination. The reverse bias voltage has only a small effect on the sensitivity, and is therefore usually determined by circuit parameters.

#### Note:

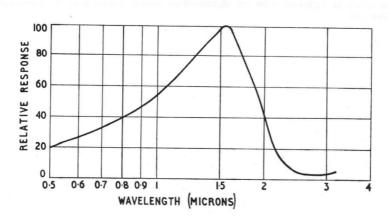
The diode is supplied with an identification sleeve, which may be removed if desired.

GPD10



Note:
The leads are of unequal length, the cathode lead being the shorter.

#### SPECTRAL RESPONSE



#### GPD20

#### Germanium Photodiode

#### General:

Spectral response Peak response Shape of diode

Overall length (excluding leads)

Diameter

Mounting position Base connections Similar to S14

 $1.5 - 1.6\mu$ 

Cylindrical, end view 11mm maximum 5mm maximum GROZO

Any

Flying leads

Short lead-cathode

#### Maximum ratings:

Bias voltage Current Power dissipation at 25°C Dark current at -30V, 25°C Operating frequency Operating temperature -30V

3mA 30mW

50μA 50kc/s 40°C

#### Sensitivity:

 $0.25\mu A/ft.candle$  minimum

Internal resistance at -30V and zero illumination:

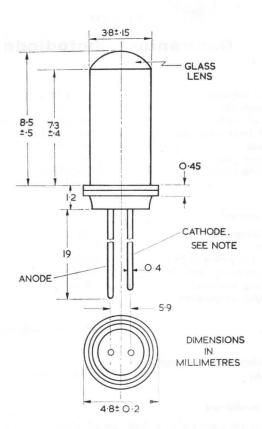
0.6MΩ minimum

#### Operating conditions:

This photodiode operates as a light sensitive device in the reversed biased condition, and for all practical purposes the amount of current flowing is a linear function of the illumination. The reverse bias voltage has only a small effect on the sensitivity, and is therefore usually determined by circuit parameters.

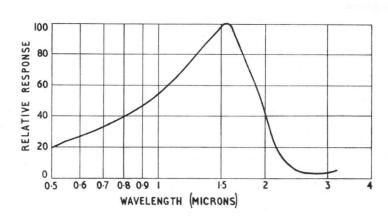
#### Note:

The diode is supplied with an identification sleeve, which may be removed if desired.



Note:
The leads are of unequal length, the cathode lead being the shorter.

#### SPECTRAL RESPONSE



#### CDS<sub>1</sub>

### **Photo Conductive Cell**

#### **GENERAL:**

#### Construction and Mounting:

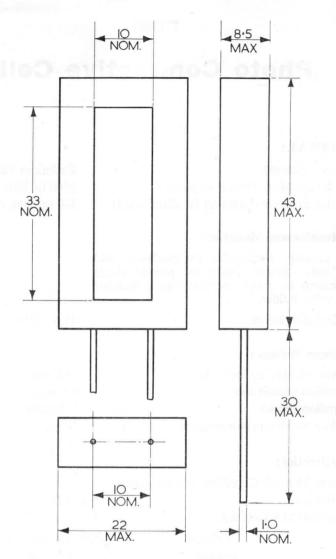
Side viewing, rectangular encapsulation with two leads suitably spaced for printed circuit application or direct insertion into a standard B7G valve holder.

#### Maximum Ratings:

#### **Characteristics:**

minimum . . . 3.0 mA.
average . . . 6.0 mA.
maximum . . . 12.0 mA.
Ultimate Dark Current (at 100 volts d.c.) . . . 1.0µa.\*

<sup>(\*</sup> The photoconductive current decays exponentially after the light is removed, and the above value is reached after approximately 1 minute.)



DIMENSIONS IN MILLIMETRES.