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.



C.V. TYPE	AMERICAN	CINTEL
NUMBER	TYPE NUMBER	TYPE NUMBER
$252 \checkmark$ $254 \checkmark$ $262 \lor$ $282 \checkmark$ $407 \checkmark$ $429 \checkmark$ $464 \checkmark$ $516 \checkmark$ $718 \checkmark$ $884 \checkmark$ $960 \checkmark$ $966 \checkmark$ $1140 \checkmark$ $1385 \checkmark$ $1397 \checkmark$ $1521 \checkmark$ $1524 \checkmark$ $1524 \checkmark$ $1526 \checkmark$ $1529 \checkmark$ $1526 \checkmark$ $1546 \checkmark$ $1547 \checkmark$	3 GPI 5 FP7 7BP7A	

British Services C.V. and American Type Numbers.

Cathode Ray Tubes

* Data Sheet is not in the catalogue.

C.V. TYPE NUMBER	AMERICAN TYPE NUMBER	CINTEL TYPE NUMBER
1587		90 EG4 /
1744 🗸		/ 15 LO3A /
1868		5 TO3A 🗸
1869 🗸		12 TO1A * 🗸
2108		√ 9 MO7A * ✓
2137 ✓		7 6 ED6 * 1
2162 🗸		V 12 LO3A
2184 🗸	La Carriera de	√ 3 EY1 ✓
2192 🗸	1.45	✓ C 102B * ✓
2228 /	1 357.57	✓ 90 EO4 ✓
2280 🗸		3 ED1 /
2286 ✓		90 EY6P *
2301 /		90 EY4 🗸
2314 /		/ 12 TD4A * /
2328 1		12 TO3A 🗸
2419 1		√ 3 ED3 * √
2810		✓ 6 ED6B * ✓
2897 /		√ C 211—Q1 * ✓
2904 1		√ C 214—L1 * ✓
3678 1	2BP1	2 EG1 🗸
5004 1	3JP2	3 EY3P 1
5035 ✓	5ADP1	✓ 5 EG1P ✓

British Services C.V. and American Type Numbers.

Cathode Ray Tubes

* Data Sheet is not in the Catalogue

DIAMETER 2" NOMINAL

2EBI

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

OLITHICHT	•								
Heater: Volta	age				6.3				a.c. or d.c. volts.
Curr	ent				0.6				amp.
Direct Inter-	electro	de C	apa	citan	ces.				
Modulator to	all ot	her	elec	trode	s				11.0µµf.
Each X Plate	to all	othe	er el	lectro	odes				$11.0\mu\mu f.$
Each Y Plate	to all	othe	er el	lectro	odes				$10.0\mu\mu f.$
Deflector Pla	tes XI	to >	(2				. /		4μμf.
Deflector Pla	tes Y1	to	12						4µµf.
Screen :								•	
Fluorescence									Blue.
Persistence									Very Short.
				(10µ	sec.	max.	for	1%	initial brightness).
Focusing Me	thod								Electrostatic.
Deflecting M	ethod								Electrostatic.
Overall Leng	th								194 ± 5 mm.
Greatest Dia	meter	of B	ulb						52.4 mm.
Minimum Us	seful S	стеет	D	iamet	ter				44 mm.
Mounting Po	sition								Any.
Base .									B.12.A.

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

CENEDAL .



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

2EB1

Typical Operating Conditions :

Anode 1 (2	500v. ma	IX.)		. 1000 volts.	2000 volts.
Anode 2				150/280 volts.	300/560 volts.
Anode 3 (2	500v. ma	IX.)		. 1000 volts.	2000 volts.
Modulator	volts for	cut	t-off		
				-65 volts. max.	-130 volts max
Deflection S	Sensitivit	y :		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 $90^{\circ} \pm 3^{\circ}$.



ALL SIZES IN MILLIMETRES.

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

2EG

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

Heater: Voltage					6.3				a.c. or d.c. volts.
Current					0.6				amp.
Direct Inter-elec	trod	e Ca	paci	itan	ces.				
Modulator to all	l oth	ner e	lectr	ode	S				11.0µµf.
Each X Plate to	all	other	ele	ctro	des				11.0µµf.
Each Y Plate to	all	other	ele	ctro	des				10.0µµf.
Deflector Plates	XI	to X	2						4µµf.
Deflector Plates	Y1	to Y	2						4μµf.
Screen :									
Fluorescence .									Green.
Persistence .									Short.
(10m	sec	. mii	1./10	00m	sec.	max.	for	1%	initial brightness).
Focusing Metho	d								Electrostatic.
Deflecting Meth-	od								Electrostatic.
Overall Length									194 ± 5 mm.
Greatest Diamet	er c	of Bu	lb						52.4 mm.
Minimum Usefu	1 Sc	reen	Dia	met	er				44 mm.
Mounting Positi	on								Any.
Base									B.12.A.

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

GENERAL:



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

PEGI

Typical Operating Conditions:

Anode 1 (2:	500v. ma	ax.)		. 1000 volts.	2000 volts.
Anode 2				150/280 volts.	300/560 volts.
Anode 3 (2:	500v. ma	ax.)		. 1000 volts.	2000 volts.
Modulator	volts for	· cut	-off		
				-65 volts max.	-130 volts max.
Deflection S	ensitivit	¥:		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 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 2ª" NOMINAL

3EBI

3EB1

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

CENEDAT .

GENERAL.				
Heater: Voltage .	4	.0 .		a.c. or d.c. volts.
Current .	1	.0 .		amp.
Direct Inter-electrode Ca	apacitanc	es.		
Modulator to all other e	electrodes		• •	13µµf.
Each X Plate to all othe	r electroc	les .		21µµf.
Each Y Plate to all othe	r electroc	les .		21µµf.
One X to one Y Deflect	or Plate			4μμf.
Cathode to all other elec	ctrodes			$12\mu\mu f.$
Screen :				
Fluorescence				Blue.
Persistence				Very Short.
	(104	sec. max.	for 1	% initial brightness).
Focusing Method	(10)	Seet main		Electrostatic.
Deflecting Method				Electrostatic.
Overall Length	• •			$255 \pm 5 \text{ mm}$
Greatest Diameter of Bi	ilb			70 mm
Minimum Useful Screen	Diamete			55 mm
Mounting Position	Diamen			Any
Anode Can	• •	• •		Recessed Small Ball
Anode Cap	• •		• •	D 12 D
Base	• •	· ·	• •	D.12.D.
Pin 1—Cathode. Pin 2—Modulator. Pin 3—Heater. Pin 4—Heater. Pin 5—Anode 2. Pin 6—Pin omitted. Pin 7—Y2.		SEE NOTE I. 7 8 9 10 11 11 12		Pin 8—X2. Pin 9—Anode 1, Anode 3 and Internal Conductive coating. Pin 10—X1. Pin 11—Y1. Pin 12—Pin omitted. Cap—Anode 4 P.D.A.
Typical Operating Condi	tions :			1000
Anode 1 (2500v. max.)	• • 2	2000 volts.		1300 volts.
Anode 2		130 volts.		100 volts.
Anode 3 (2500v. max.)	2	2000 volts.		1300 volts.
Anode 4 Post Deflector	Accelerat	tor (5KV :	max.)	
	4	000 volts.		2500 volts.
Modulator volts for cut-	off			
	-65 to -	-145 volts.		-45 to -100 volts.
Defloction Sonsitivity		mm/walt		mm/wolt
V Plata		0.125	•	0.100
V Plata	•	0.125		0.190
I Flate	•	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 $90^{\circ} \pm 3^{\circ}$.



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.

3EB3P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

Heater: Vo	oltage				6.3				a.c. or d.c. volts.
Ci	irrent				0.6				amp.
Direct Inte	er-electro	de C	apa	citan	ces:				-
Modu	lator to a	all ot	her	elect	rode	S			10.5uuf.
Fach	X Plate t	o all	oth	er el	ectro	des			11.0uuf.
Each	V Plate t	o all	oth	er el	ectro	des			9 Quuf
Deflec	tor Plate	v X1	to	X2	coure	0.03	•	Ċ	4 Quuf
Deflec	tor Plate	v VI	to	V2	•			•	4.0µµ1.
Screen :	tor Trace	5 1 1	10	14	•	•	•	•	5.5µµ1.
Fluor	acconco.								Blue
Danaia	escence	•	•	•	•	•	•	·	Vary Short
Persis	tence	•		•	•				very Short
			111	1		** * ~ **	10/	Ot 1	matter lama a htm accol
			(10	pusec	. ma	X. 101	1 %	01	initial originaess).
Focussing	Method			jusec	. та	x. 101	1 % •		Electrostatic.
Focussing Deflecting	Method Method		(n	μsec	. та	x. 101	1% •	•	Electrostatic. Electrostatic.
Focussing Deflecting Overall Le	Method Method ngth	÷		insec	. ma	x. 101	1%	•	Electrostatic. $254 \pm 6 \text{ mm.}$
Focussing Deflecting Overall Le Greatest D	Method Method ngth Diameter	· · of Bı	(10	jusec	. ma	x. 101	1%	•	Electrostatic. $254 \pm 6 \text{ mm.}$ 77.8 mm.
Focussing Deflecting Overall Le Greatest D Minimum	Method Method ngth Diameter Useful S	of Bu		iamet	. ma.	x. ior	1%	· · · · · · · · · · · · · · · · · · ·	Electrostatic. $254 \pm 6 \text{ mm.}$ 77.8 mm. 69.0 mm.
Focussing Deflecting Overall Le Greatest D Minimum Mounting	Method Method ngth Diameter Useful S Position	of Bu		iamet	. ma	x. ior	1%	01)	Electrostatic. $254 \pm 6 \text{ mm.}$ 77.8 mm. 69.0 mm. Any
Focussing Deflecting Overall Le Greatest D Minimum Mounting	Method Method ngth Diameter Useful S Position	of Bu creen	(IC	iamet	. ma ter	x. 10r	1%		Electrostatic. Electrostatic. 254 ± 6 mm. 77.8 mm. 69.0 mm. Any. Recessed Ball
Focussing Deflecting Overall Le Greatest D Minimum Mounting Anode Cap	Method Method ngth Diameter Useful S Position	of Bu creen	(IC Di	iamet	. ma ter	x. 10r	1%	· · · · · · · · · · · · · · · · · · ·	Electrostatic. Electrostatic. 254 ± 6 mm. 77.8 mm. 69.0 mm. Any. Recessed Ball BSS448/CT7
Focussing Deflecting Overall Le Greatest D Minimum Mounting Anode Caj	Method Method ngth Diameter Useful S Position	of Bu creen	(IC · · · · · · · ·	amet	. ma ter	x. 10r	1%	· · ·	Electrostatic. Electrostatic. 254 ± 6 mm. 77.8 mm. 69.0 mm. Any. Recessed Ball BSS448/CT7. B 144
Focussing Deflecting Overall Le Greatest D Minimum Mounting Anode Caj Base	Method Method ngth Diameter Useful S Position	of Bu creen	(IC · · · · · · · · ·	amet	. ma ter	x. for	1 %	· · · · · · · · · · · · · · · · · · ·	Electrostatic. Electrostatic. 254 ± 6 mm. 77.8 mm. 69.0 mm. Any. Recessed Ball BSS448/CT7. B.14A.

Pin 1—Heater. Pin 2—Cathode. Pin 3—Modulator. Pin 4—No connection. Pin 5—Anode 2. Pin 7—Y1.

GENERAL:



Pin 8—Y2.
Pin 9—Anode 1 and Anode 3.
Pin 10—X2.
Pin 11—X1.
Pin 12—No connection.
Pin 14—Heater.
Cap—Anode 4 P.D.A.

mm./volt

3 EB3D

Typical Operating Conditions :

Anode 1 and Anode 3 (2500 volt	s max.)	. 1500 volts.
Anode 2		350/500 volts.
Anode 4 P.D.A. (5000 volts max.	.) .	. 3000 volts.
Modulator volts for cut-off .		-65 volts max.

X Plate					0.15 to 0.2
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.

DIAMETER 2% NOMINAL

3FOI

3ED I

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

CENEDAT .

GENERAL.								
Heater: Voltage			. 4	4.0	•			a.c. or d.c. volts.
Current			. 1	1.0				amp.
Direct Inter-electr	ode Ca	apacit	anc	es.				
Modulator to all	other e	electro	des	5				13µµf.
Each X Plate to a	ll othe	r elec	troc	les				21µµf.
Each Y Plate to a	ll othe	r elec	troc	les				21µµf.
One X to one Y I	Deflect	or Pla	ite					4µµf.
Cathode to all oth	ner elec	ctrode	S					12uuf.
Screen :								
Fluorescence .								Blue.
Afterglow	-				-			Yellow
Persistence of Aft	erglow			•	•	·	•	Long
(1)	Sec 1	min / 1	00	Sec.	max	for	10/	initial brightness)
Focusing Method	5 300. 1		00	sec.	max.	101	1 /0	Electrostatic
Deflecting Metho	1	•		·	•	·	•	Electrostatic
Overall Length	1.	•		•	•	·	·	255 ± 5 mm
Greatest Diameter	r of Bi	ilh		•	•	•	•	70 mm
Minimum Useful	Screen	Diar	nete		•	•	•	55 mm
Mounting Positio	bereen	Dial	nen	-1	•	•	·	Apy
Anoda Can	1	•	•	•	•	•	•	Ally. Decessed Small Dall
Anode Cap .	•	•	•	•	·	•	•	Recessed Small Ball.
Base	•	•		•	•	·	•	B.12.B.
Pin 1-Cathode.				SEE	NOTE I.		Pir	1 8-X2.
Pin 2-Modulator.		0	6	(7)	0		Pir	9-Anode 1.
Pin 3—Heater.		5	-	1-5	(8)		An	ode 3 and Internal
Pin 4—Heater.		4	2	-5	el E		Co	nductive coating.
Pin 5—Anode 2		A			T		Pir	n 10—X1.
Pin 6—Pin omitted		3			10		Pir	n 11—Y1.
Pin 7—Y2		G	14		6		Pir	12—Pin omitted.
1 111 / 12.		0	2	12			Ca	p—Anode 4 P.D.A.
			0	0				
Typical Operating	Condi	tions						
Anode 1 (2500v. r	nax.)		. 2	2000	volts			1300 volts.
Anode 2 .				130	volts.			100 volts.
Anode 3 (2500v. r	nax.)		. 2	2000	volts			1300 volts.
Anode 4 Post Def	lector	Accel	erat	or (5KV	max)	1000 1010.
rinode i rost Dei		1 10001	4	000	volts	1110075	•)	2500 volts
Modulator volts f	or cut-	off		000	10100			2500 10115.
	or out	-50	to -	-105	volts			-35 to -70 volts
Deflection Servitiv	itar .			mm	/volt			
V Dioto	ny:			mm	125			mm/volt.
V Plate .	•	•		0	145			0.190
i riate .	•	•		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 $90^{\circ} \pm 3^{\circ}$.



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.

3ED2

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

Heater: Vo	ltage				6.3				a.c. or d.c. volts.
Cu	rrent				0.6				amp.
Direct Inte	r-electro	de C	apa	citar	ices:				1
Modul	ator to	all ot	her	elec	trod	es			$12\mu\mu f.$
Each >	K Plate t	o all	oth	ner e	lectr	odes			16µµf.
Each Y	Plate t	o all	oth	ner e	lectr	odes			11µµf.
Deflect	or Plate	s X1	to	X2					2.5µµf.
Deflect	or Plate	s Y1	to	Y2					2.5µµf.
Screen:									
Fluore	scence								Blue.
Afterg	low								Yellow.
Persist	ence of	After	glo	w.					Long
	(10 s	ec. m	in.	/100	sec.	max.	for	1%	initial brightness).
Focussing	Method							- /0	Electrostatic.
Deflecting	Method								Electrostatic.
Overall Let	oth.								292 + 9 mm
Greatest D	iameter	of Bi	ilb		÷				77.8 mm.
Minimum	Useful S	creen	Di	iame	ter				69.0 mm.
Mounting	Position								Any.
Base									11 Pin Magnal.
Greatest D Minimum Mounting Base	iameter Useful S Position	of Bu creen	ılb Di	iame	ter			· · ·	77.8 mm. 69.0 mm. Any. 11 Pin Magnal.

Pin 1—Heater. Pin 2—No connection. Pin 3—X1. Pin 4—Anode 2. Pin 5—No connection.

GENERAL:



Pin 6—Y2. Pin 7—Anode 1 and 3. Pin 8—X2. Pin 9—Y1. Pin 10—Modulator. Pin 11—Heater and Cathode.

SFOT

Typical Operating Conditions:

Anode 1 and 3 (2500 volts max.) 1000 volts Anode 2 . . . 200/280 volts Modulator volts for cut-off -50 volts max. 1000 volts -50 volts max.

			mm/volt	mm./volt.
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.
- 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. 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° .

3ED3p

3ED3P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

o hit hard t						
Heater: Voltage .		6.3				a.c. or d.c. volts.
Current .	• .•	0.6		•	•	amp.
Direct Inter-electrode C	apacita	ances:				
Modulator to all o	ther ele	ectrode	es	•		10.5µµf.
Each X Plate to all	other	electro	odes	•	•	11.0µµf.
Each Y Plate to all	other	electro	odes		•	9.0µµf.
Deflector Plates X	to X2	2 .				4.0μμf.
Deflector Plates Y	l to Y2	2 .				3.5µµf.
Screen:						
Fluorescence .						Blue.
Afterglow .						Yellow.
Persistence of Afte	rglow					Long
(10 sec. r	nin./10	0 sec. :	max.	for	1% ir	nitial brightness).
Focussing Method						Electrostatic.
Deflecting Method						Electrostatic.
Overall Length .						$254 \pm 6 \text{ mm}.$
Greatest Diameter of B	ulb .					77.8 mm.
Minimum Useful Screen	n Diam	neter				69.0 mm.
Mounting Position						Any.
Anode Cap						Recessed Ball
						BSS448/CT7.
Base						B14A.
D' 1 Harton					Die	9 V2
Pin 1—Heater.		SEE NOT	TE 1.		Pin	0-12.
Pin 2—Cathode.		(7).(20		Pin	9-Anode 1 and
Pin 3—Modulator.	(5)	1-1	-IX	10	Din	10 X2
Pin 4—No connection.	Y	14	74	6	F III	10—A2.
Pin 5—Anode 2.	(4)		\equiv	M	Pin	11—X1.
Pin 7—Y1.	3	TA	= /	12)	Pin	12—No connection.
	0	X		\bigcirc	Pin	14—Heater.
	C		14		Car	-Anode 4 P.D.A.
		\bigcirc	\bigcirc			
Typical Operating Cond	itions :					
Anode 1 and Anode 3 (2500 v	olts m	ax.)			1500 volts.
Anode 2					350	0/500 volts.
Anode 4 P.D.A. (5000	volts m	ax.)				3000 volts.
Madulator valta for aut	off	,				65 volte max

Deflection Sensitivity :

GENERAL:

X Plate					0.15	to 0.2	
Y Plate					0.2	to 0.27	1

m/volte



- 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 2ª" NOMINAL

SECI

3EGI

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 Ca	pacitan	ces.			
Modulator to all other e	lectrode	S.			13µµf.
Each X Plate to all other	r electro	des .			21µµf.
Each Y Plate to all other	r electro	des .			21µµf.
One X to one Y Deflecto	or Plate				4µµf.
Cathode to all other elec	trodes				12µµf.
Screen :					
Fluorescence					Green.
Persistence				·	Short.
(10m sec. min	n./100m	sec. m	ax. for	1%	initial brightness).
Focusing Method					Electrostatic.
Deflecting Method .					Electrostatic.
Overall Length .					255 ± 5 mm.
Greatest Diameter of Bu	lb .				70 mm.
Minimum Useful Screen	Diame	ter			55 mm.
Mounting Position	Diamo				Any
Anode Cap	•				Recessed Small Ball
Base	• •	•			B 12 B
					2
Pin 1—Cathode.	C	SEE NO	IEI.	Pi	n 8—X2.
Pin 2—Modulator.	5	242	8)	Pin	19 - Anode 1,
Pin 3—Heater.	Yr	· X		AI	inductive coating
Pin 4—Heater.	4	$\langle \rangle$	(9)	Die	10 V1
Pin 5—Anode 2.		E	b	FII D:	110—XI.
Pin 6—Pin omitted.	3 AF	~	10	Pli	11-11.
Pin 7—Y2.	2	$ \ge $	1)	Pli	n 12—Pin omitted.
		12		Ca	Ip-Anode 4 P.D.A.
Tunical Operating Condi	tions :				
Anode 1 (2500y max)	tions .	2000 1	olte		1300 volte
Anode 2	•	130 1	olts.		100 volts.
Anode 3 (2500v max)	• •	2000 1	olts.		1300 volts.
Anode 4 Post Deflector	Accolor	2000 V	VV m	1 1	1500 volts.
Anode 4 Post Denector	Accelet	4000		(X.)	2500 volta
Madulatan walta fan aut	off	4000 1	ons.		2300 vons.
Modulator volts for cut-	-011	145 -	alta i		15 to 100 molto
	-05 to	-145 \	olts.		-45 to -100 volts.
Deflection Sensitivity :		m	m /volt		mm/volt.
X Plate		(0.125		0.190
Y Plate		(0.145		0.220
					1 770 1 1

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



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 3" NOMINAL

3EG3P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

Heater: Voltage				6.3				a.c. or d.c. volts.
Current				0.6				amp.
Direct Inter-elect	rode C	apa	icita	nces:				
Modulator t	o all o	the	ele	ctrod	es			10.5µµf.
Each X Plate	e to all	ot	her e	electr	odes			$11.0\mu\mu f.$
Each Y Plate	e to all	ot	her e	electr	odes			9.0µµf.
Deflector Pla	ites X1	to	X2					4.0µµf.
Deflector Pla	ates Y1	to	Y2					3.5uuf.
Screen :								
Fluorescence								Green.
Persistence	· ·	·	•					Short
(10m se	e min	110)0m	Sec	max	for	1%	initial brightness).
Focussing Metho	d	., .	, , , , , , , , , , , , , , , , , , ,		max.	101	1 /0	Electrostatic.
Deflecting Metho	d	•	•	•	•	•	·	Electrostatic
Overall Length	·u ·	·	•	•	•	·	·	254 mm + 6 mm
Greatest Diamete	er of B	ulb	•	·	•	•	÷.	77 8mm
Minimum Hooful	Soroo	n D	iom.	ator	•	•		60.0 mm
Manufin Desiti	SCIEC		lain	elei	·	•	•	A mu
Mounting Positio	on	•	•	•	•	•		Any.
Anode Cap			•			•	•	Recessed Ball
								BSS448/C17.
Base	•						•	B14A.

Pin 1—Heater. Pin 2—Cathode. Pin 3—Modulator. Pin 4—No connection. Pin 5—Anode 2. Pin 7—Y1.

GENERAL:



Pin 8—Y2.
Pin 9—Anode 1 and Anode 3.
Pin 10—X2.
Pin 11—X1.
Pin 12—No connection.
Pin 14—Heater.
Cap—Anode 4 P.D.A.

mm /volt

3FC3P

Typical Operating Conditions:

Anode 1 and Anod	le 3 (2500	volts	max	x.)		•	1500	volts.
Anode 2 .	• •					35	0/500	volts.
Anode 4 P.D.A. (5	000 volts	max.)				3000	volts.
Modulator volts fo	or cut-off	•			•	•	-65	volts max.

X Plate					0.15	to 0.2
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.

SFOI

3EOI

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

CENEDAL .

GENERAL.						
Heater: Voltage .		4.0			•	a.c. or d.c. volts.
Current .		1.0				amp.
Direct Inter-electrode C	apacita	ances.				
Modulator to all other of	electro	des				13μµf.
Each X Plate to all other	er elect	rodes				21µµf.
Each Y Plate to all othe	er elect	rodes				21µµf.
One X to one Y Deflect	or Pla	te.				4µµf.
Cathode to all other ele	ctrodes	s.				12µµf.
Screen :						
Fluorescence						Orange.
Afterglow						Orange.
Persistence of Afterglow			÷.			Long
(10 sec	min / 1	00 sec	max	for	1%	initial brightness)
Focusing Method		00 300.	man.	101	1 /0	Electrostatic
Deflecting Method	• •	•	·	•	•	Electrostatic.
Overall Length	• •	•	•	•	•	255 ± 5 mm
Greatest Diamater of D		•	·	•	•	255 ± 5 mm.
Greatest Diameter of B	Diam		•	•	•	70 mm.
Minimum Useful Screen	Diam	ieter	•	•	•	55 mm.
Mounting Position	• •	•	·	•	•	Any. Decessed Small Dall
Anode Cap	• •	•	•	•	•	Recessed Small Ball.
Base	• •	•	•	•	•	B.12.B.
Pin 1—Cathode.		SEE N	KOTE I.		Pir	n 8—X2.
Pin 2—Modulator.	6	517			Pir	1 9—Anode 1,
Pin 3—Heater.	Y	XX	P		An	ode 3 and Internal
Pin 4—Heater.	4	XX	J(9)		Die	10 VI
Pin 5—Anode 2.	11	===	Th		PII	110—XI.
Pin 6—Pin omitted.	3 X		10		PI	11—YI.
Pin 7-Y2.	(2)	\$	(1)		Pir	12—Pin omitted.
)	1 12	<u> </u>		Ca	p—Anode 4 P.D.A.
Typical Operating Condi	itions :					
Anode 1 (2500v. max.)		. 2000	volts	5.		1300 volts.
Anode 2		130	volts.			100 volts.
Anode 3 (2500y, max.)		2000	volts.			1300 volts.
Anode 4 Post Deflector	Accele	rator (SKV.	max	()	
Anode Trost Deneetor		4000	volts		,	4000 volts
Modulator volts for cut	off	1000	· OICS.			1000 (010)
Widdulator voits for cut	-65 t	o -145	volts.			-45 to -100 volts.
Deflection Sensitivity .		mm	/volt			mm/volt
X Plate		0	125			0.190
V Plate	·	0.	145			0.220
i i lato	·	0.				0.220

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



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 3" NOMINAL

3EO3P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

Heater: Voltage				6.3				a.c. or d.c. volts.
Current				0.6				amp.
Direct Inter-elec	trode	Cap	acita	nces :				
Modulator	to all	othe	r elec	ctrod	es			10.5µµf.
Each X Plat	te to	all ot	her e	electr	odes			11.0µµf.
Each Y Plat	te to	all ot	her e	electr	odes			9.0µµf.
Deflector Pl	ates	X1 to	X2					4.0µµf.
Deflector Pl	lates	Y1 to	Y2			•		3.5µµf.
Screen:								
Fluorescenc	e.							Orange.
Afterglow			•					Orange.
Persistence	of Af	terglo	OW					Long
(10 se	c. mir	1/100	sec.	max.	for	1%	initial brightness).
Focussing Meth	od							Electrostatic.
Deflecting Meth	od							Electrostatic.
Overall Length								254 ± 6 mm.
Greatest Diamet	ter of	Bulb	, .					77.8 mm.
Minimum Usefu	l Scr	een D	Diamo	eter				69.0 mm.
Mounting Positi	on							Any.
Anode Cap .								Recessed Ball
								BSS448/CT7.
Base							•	B14A.

Pin 1—Heater. Pin 2—Cathode. Pin 3—Modulator. Pin 4—No connection. Pin 5—Anode 2. Pin 7—Y1.

GENERAL:



Pin 8—Y2.
Pin 9—Anode 1 and Anode 3.
Pin 10—X2.
Pin 11—X1.
Pin 12—No connection.

SEOSE

Pin 14—Heater. Cap—Anode 4 P.D.A.

mm /volt

Typical Operating Conditions:

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 cut-off	·	-65 volts max.

					1111	11./ + 010.
X Plate					0.15	to 0.2
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.

DIAMETER 2% NOMINAL

3EW1

3EWI

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 Ca	apacitances.			
Modulator to all other e	lectrodes			13µµf.
Each X Plate to all othe	r electrodes			21µµf.
Each Y Plate to all othe	r electrodes			21uuf.
One X to one Y Deflect	or Plate			4uuf.
Cathode to all other elec	ctrodes			12uuf
Screen :		· ·		120001.
Eluorescence				White
Princiescence	• • •	• •	•	Willie.
Persistence	· .	• •		Short.
(5m sec. m	n./25m sec.	max. for	r 1% 1	initial brightness).
Focusing Method				Electrostatic.
Deflecting Method .				Electrostatic.
Overall Length .				255 ± 5 mm.
Greatest Diameter of Bu	ilb			70 mm.
Minimum Useful Screen	Diameter			55 mm.
Mounting Position				Any.
Anode Can				Recessed Small Ball
Pase	• • •			P 12 P
Dase	• • •	• •	·	D.12.D.
Pin 1—Cathode.	SEE	NOTE I.	Pir	8—X2.
Pin 2-Modulator	6 7	-	Pir	9-Anode 1
Pin 3 Hester	5	(8)	An	ode 3 and Internal
Pin 4 Heater	a the	AF	Co	nductive coating
Pin 4		2HP	Dia	10 VI
Pin 5—Anode 2.		1/10	PIL	110
Pin 6—Pin omitted.	AIN	'A	Pin	111—Y1.
$\operatorname{Pin} 7 - Y2.$	2		Pir	12—Pin omitted.
)	Ca	p—Anode 4 P.D.A.
Typical Operating Condi	tions :			
Anode 1 (2500y max)	2000	volts		1300 volts
Anode 7 (2500V. max.)	2000	volto.		100 volts.
Anole 2	150	voits.		1200
Anode 3 (2500v. max.)	2000	volts.		1300 volts.
Anode 4 Post Deflector	Accelerator (SKV ma	ax.)	
	4000	volts.		2500 volts.
Modulator volts for cut-	-off			
	-65 to -145	volts.		-45 to -100 volts.
D. G. Mar Constitution		a /malt		mm /malt
Denection Sensitivity:	mr	II/VOIL.		mm/voit.
V III. I.	(125		0 100
X Plate	. (.125		0.190
Y Plate	. ().125).145		0.190 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 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 2ª" NOMINAL

BEYI Oscilloscope Tube

SET.

ELECTROSTATIC FOCUS ELECTROSTATIC DEFLECTION

DATA

GENERAL:				
Heater: Voltage .	4.0			a.c. or d.c. volts.
Current .	1.0		•	amp.
Direct Inter-electrode C	apacitances.			
Modulator to all other e	electrodes			13µµf.
Each X Plate to all othe	r electrodes	· ·		21µµf.
Each Y Plate to all othe	r electrodes	. .		21µµf.
One X to one Y Deflect	or Plate .			4µµf.
Cathode to all other ele	ctrodes .			12µµf.
Screen :				
Fluorescence				Yellow.
Afterglow				Yellow.
Persistence of Afterglow				Long.
(1 sec. min./	10 sec. max	. for 1%	initial	brightness
Focusing Method				Electrostatic.
Deflecting Method .				Electrostatic.
Overall Length				$255 \pm 5 \text{ mm}$.
Greatest Diameter of Bi	ilb .			70 mm.
Minimum Useful Screen	Diameter			55 mm
Mounting Position	Diameter			Anv
Anode Can			• •	Recessed Small Ball
Base				B 12 B
		CE NOTE I		5.12.15.
Pin 1—Cathode.	G.C.	Z NOTE I.	PI	n 8—X2.
Pin 2—Modulator.	5	KB	PI	n 9—Anode I,
Pin 3—Heater.	XK	25X	AI	node 3 and Internal
Pin 4—Heater.	4/14	2 Ag	Co	onductive coating.
Pin 5—Anode 2.		END	Pi	n 10—X1.
Pin 6—Pin omitted.	3 AFT	= 10	Pi	n 11—Y1.
Pin 7—Y2.	2		Pi	n 12—Pin omitted.
		12)	Ca	ap-Anode 4 P.D.A.
Typical Operating Condi	tions .			
Anode 1 (2500y max)	200	0 volts		1300 volts
Anode 2	200	SO volts		100 volts.
Anode 3 (2500y max)		0 volts		1300 volts
Anode 4 Post Deflector	Accelerator	$\cdot (5 \text{KV})$	nax)	1500 volts.
Alloue 4 I ost Delicetor	400	0 volte	пал.)	2500 volts
Modulator volts for out	off	o vons.		2500 vons.
Wouldield volts for cut	65 to 1/	15 volte		15 to 100 volta
	-05 10 -14	+J voits.		-45 to -100 volts.
Deflection Sensitivity :		mm/vo	lt.	mm/volt.
		0.1.5-		0 100
X Plate		0.125		0.190
X Plate Y Plate	:	0.125 0.145		0.190 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 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.

der ac

3EY3P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

CENEDAL .

GENERAL.							
Heater: Voltage		• •	6.3				a.c. or d.c. volts.
Current		• .•	0.6	•	•	•	amp.
Direct Inter-electroo	de Ca	apacit	ances:				
Modulator to a	all ot	her el	ectrod	es			10.5µµf.
Each X Plate to	o all	other	electr	odes			11.0µµf.
Each Y Plate to	o all	other	electr	odes			9.0µµf.
Deflector Plate	s X1	to X2	2 .				4. Quuf
Deflector Plate	s V1	to Y'	2				3 Suuf
Screen:	5 1 1	10 14	- .	•	•	•	J. Jula .
Fluorescence							Yellow.
Afterglow							Vellow
Persistence of	After	dow.		•	·	·	Long
		$\frac{g10w}{min}$ /1	0	·	for	10/ ;	nitial brightness)
Econoring Mathed	sec. I	11111./1	U Sec.	max.	101	1 % 1	Flootnontatio
Focussing Method		•	• •	•	•	•	Electrostatic.
Deflecting Method		• •	•	•	•	•	Electrostatic.
Overall Length	•	•	• •	•		•	254 ± 6 mm.
Greatest Diameter	of Bi	ılb .					77.8 mm.
Minimum Useful So	creen	Dian	neter				69.0 mm.
Mounting Position							Anv.
Anode Can							Recessed Ball
mode cap .	•	•		·	•	·	RCCC33CC Dall
Deer							DS5440/C17.
Base	•	• •	• •	•	• •		BI4A
Din 1 Heater			SEE NO	TE 1		Dir	8 V2
Fin 1—Heater.			G	0		FII D'	1 0-12.
Pin 2—Cathode.			9	20)	Pit	n 9—Anode I and
Pin 3—Modulator.		E			10		Anode 5.
Pin 4-No connection.		S	A G	47	P	Pin	n 10—X2.
Pin 5-Anode 2		(4)	\	==	(11)	Pin	n 11—X1.
Die 7 Mil		2		=	6	Pi	12-No connection.
$\operatorname{Pin}/-YI.$		3	NC		12	Di	n 14 Heater
		• (2	X		r u	in 14—meater.
			0	14		Ca	p—Anode 4 P.D.A.
Typical Operating (Condi	itions	:				
Anode 1 and Anod	e 3 (2500 1	olts n	ax)			1500 volts.
Anode 2	0 5 (.	2000	ones in	ian.)	•	35	0/500 volts
Anode 4 P D A (50	000 v	olts n	nav)	•	•	55	3000 volts
Modulator volts for		off	11a.)	•	·	•	-65 volts max
wiodulator volts for	cut	-011	• •	•	•	•	-05 voits max.
Deflection Sensitivit	y :						1 1
							mm./volt.
X Plate		•					0.15 to 0.2
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.

SEB2P

Oscilloscope Tube

ELECTROSTATIC DEFLECTION. ELECTROSTATIC FOCUS.

DATA

Heater: Voltage				6.3				a.c. or d.c. volts.
Current				0.6			•	amp.
Direct Inter-electro	ode (Capa	citar	ices:				
Modulator to	all c	ther	elec	trode	S			12.0µµf.
Each X Plate	to al	l oth	er el	lectro	des			5.0µµf.
Each Y Plate	to al	l oth	er el	lectro	des			5.0µµf.
Deflector Plat	es X	1 to	X2					2.3µµf.
Deflector Plat	es Y	1 to	Y2					2.3µµf.
Screen:								
Fluorescence								Blue.
Persistence								Very Short
		(10	used	. ma	x. for	1%	of	initial brightness).
Focussing Method			• .					Electrostatic.
Deflecting Method	۱.							Electrostatic.
Overall Length .								425 ± 9 mm.
Greatest Diameter	of E	Bulb						136.5 mm.
Minimum Useful	Scree	n Di	ame	ter				114 mm.
Mounting Position	1.							Any.
Anode Cap .								English BSS448/CT2.
Base								11 Pin Magnal.
								U

Pin 1-Heater. Pin 2-No connection. Pin 3-No connection. Pin 4—Anode 2. Pin 5-No connection. Pin 6-No connection.

GENERAL:



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.

mm./volt.

SEBID

Typical Operating Conditions:

Anode 1 and 3 (2500 volts n	nax.)		. 2000 volts.
Anode 2			450/570 volts.
Anode 4 (5000 volts max.)			. 4000 volts.
Modulator volts for cut-off	•		-105 volts max.

X Plate					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.

DIAMETER 5" NOMINAL

5ED2P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

Heater: V	oltage				6.3				a.c. or d.c. volts.
C	urrent				0.6				amp.
Direct Int	er-electro	de C	apa	cita	nces	:			
Modu	alator to	all ot	her	elec	ctrod	es			12.0µµf.
Each	X Plate t	to all	oth	er e	electr	odes			5.0µµf.
Each	Y Plate t	to all	oth	er e	electr	odes			5.0µµf.
Defle	ctor Plate	es X1	to	X2					2.3µµf.
Defle	ctor Plate	es Y1	to	Y2					2.3µµf.
Screen:									
Fluor	escence								Blue.
After	glow								Yellow.
Persis	stence of	After	glo	W			•		Long
_	(10 s	ec. m	in./	100	sec.	max.	for	1%	initial brightness).
Focussing	Method						•		Electrostatic.
Deflecting	Method								Electrostatic.
Overall Le	ength .	•							425 ± 9 mm.
Greatest I	Diameter	of Bi	ılb						136.5 mm.
Minimum	Useful S	creen	Di	ame	eter				114 mm.
Mounting	Position								Any.
Anode Ca	р.		•		•	•	·	•	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.

GENERAL:



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.

SEDIA

Typical Operating Conditions:

Anode 1 and 3 (2500 volts r	nax.)		. 2000 volts.
Anode 2			450/570 volts.
Anode 4 (5000 volts max.)			. 4000 volts.
Modulator volts for cut-off	•		-105 volts max.

					mm./volt.
X Plate					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.
- 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. 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.
5EG2P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

Heater: Voltage				6.3				a.c. or d.c. volts.
Current				0.6				amp.
Direct Inter-elect	rode	Cap	acita	ances	:			
Modulator t	o all	othe	er ele	ectrod	les			12.0µµf.
Each X Plat	e to	all o	ther	electr	odes			5.0µµf.
Each Y Plat	e to	all o	ther	electr	odes			5.0µµf.
Deflector Pl	ates 2	XI to	> X2				•	2.3µµf.
Deflector Pl	ates]	Y1 to	o Y2	2 .				2.3µµf.
Screen:								
Fluorescenc	е.							Green.
Persistence								Short
(10 m. s	ec. m	nin./	100m	1. sec.	max.	for	1%	initial brightness).
Focussing Metho	d.						- /0	Electrostatic.
Deflecting Metho	bd .							Electrostatic.
Overall Length								425 ± 9 mm.
Greatest Diamet	er of	Bul	b.					136.5 mm.
Minimum Usefu	I Scr	een l	Dian	neter				114 mm.
Mounting Positi	on	com i	Jun	notor			÷	Any
Anode Can		•		•	•		·	English BSS448/CT2
Ribuc Cap .	•	•	•	• •	•	•	•	11 Pin Magnal
Dase	•	•	•	•	•	•	•	II I III Wagilai.

 Pin 1—Heater.

 Pin 2—No connection.

 Pin 3—No connection.

 Pin 4—Anode 2.

 Pin 5—No connection.

 Pin 6—No connection.

GENERAL:



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.

mm /volt

SECTR

Typical Operating Conditions :

Anode 1 and 3 (2500 volts n	nax.)			. 2000 volts.
Anode 2				450/570 volts.
Anode 4 (5000 volts max.)				. 4000 volts.
Modulator volts for cut-off		•	•	 –105 volts max.

Deflection Sensitivity :

T DI					0.22 to 0.22
X Plate			•		0.22 to 0.33 .
Y Plate					0.22 to 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. 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. 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.

5EO2P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

Heater: Vo	oltage				6.3				a.c. or d.c. volts.
Cı	irrent				0.6				amp.
Direct Inte	er-electro	ode C	apa	cita	nces :				
Modu	lator to	all ot	her	ele	ctrod	es			12.0µµf.
Each	X Plate	to all	oth	ner e	electr	odes			5.0µµf.
Each	Y Plate	to all	oth	ner e	electr	odes			5.0µµf.
Deflec	tor Plat	es X1	to	X2					2.3µµf.
Deflec	tor Plat	es Y1	to	Y2					2.3µµf.
Screen:									
Fluore	escence								Orange.
Afterg	low								Orange.
Persist	tence of	After	glo	W					Long
	(10 :	sec. m	in.	/100	sec.	max.	for	1%	initial brightness).
Focussing	Method								Electrostatic.
Deflecting	Method								Electrostatic.
Overall Le	ngth.								425 ± 9 mm.
Greatest D	iameter	of Bu	ılb						136.5 mm.
Minimum	Useful S	Screen	Di	iame	eter				114 mm.
Mounting	Position								Any.
Anode Caj									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.

GENERAL:



Pin 7—Anode 1 and Anode 3.
Pin 8—No connection.
Pin 10—Modulator.
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.

SEOIR

Typical Operating Conditions:

Anode 1 and 3 (2500 volts n	nax.)				. 2000 volts.
Anode 2					450/570 volts.
Anode 4 (5000 volts max.)	•		•	•	. 4000 volts.
Modulator volts for cut-off		•			-105 volts max.

Deflection Sensitivity :

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

SEY2P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

Heater: Voltage				6.3				a.c. or d.c. volts.
Current				0.6				amp.
Direct Inter-elect	rode (Capa	icita	nces				
Modulator t	o all c	ther	elec	ctrod	es			$12.0\mu\mu f.$
Each X Plate	e to al	l otl	her e	electr	odes			5.0µµf.
Each Y Plate	e to al	l oth	ner e	electr	odes			5.0µµf.
Deflector Pla	ates X	1 to	X2					2.3µµf.
Deflector Pla	ates Y	1 to	Y2					2.3µµf.
Screen:								
Fluorescence	• •					•		Yellow.
Afterglow								Yellow.
Persistence c	of Afte	rglo	W			•		Long
	(1 sec)	. mi	n/10	sec.	max.	for	1%	initial brightness).
Focussing Metho	d							Electrostatic.
Deflecting Metho	d.							Electrostatic.
Overall Length .								425 ± 9 mm.
Greatest Diamete	er of E	Bulb						136.5 mm.
Minimum Useful	Scree	n D	iame	eter				114 mm.
Mounting Positio	on.							Any.
Anode Cap .								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.

GENERAL:



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.

SETTR

Typical Operating Conditions :

Anode 1 and 3 (2500 volts n	nax.)	•	•	. 2000 volts.
Anode 2				450/570 volts.
Anode 4 (5000 volts max.)				. 4000 volts.
Modulator volts for cut-off				-105 volts max.

Deflection Sensitivity :

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



- 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. redius concentric with the centre of the tube focu Note 1.
- Note 2.
- 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.

sloia Radar Tube

ELECTROSTATIC FOCUS. MAGNETIC DEFLECTION

DATA

Heater :	Voltag	e				4.0			. ac or dc volts.
	Curren	nt				1.0			. amp.
Direct In	ter-ele	ctrod	e Ca	pacit	tand	ces (A	Appro	x.)	1
Modulato	or to A	Il Ot	her	Elect	rod	les			. 15 μμf.
Anode 1	to All	Othe	r Ele	ectro	des				. 15 μµf.
Cathode	to All	Othe	r Ele	ectro	des				. 14 µµf.
Screen :									Aluminium Backed.
Fluoresce	ence								. Orange.
Afterglow	V								. Orange.
Persistend	ce of A	fterg	low						. Long.
Focusing	Meth	od							. Electrostatic.
Deflection	n Met	hod							. Magnetic.
Overall I	ength								. 315 mm. ± 6 mm.
Greatest	Diame	eter o	f Bu	lb					. 127.5 mm.
Minimun	1 Usef	ul Sc	reen	Diar	net	er			. 108 mm.
Mounting	g Posit	tion							. Any.
Anode C	ap								Recessed Small Ball.
Base									International Octal.
						SEE N	OTE L		
					4	15)		
Pin 1—No	connec	ction.			7	-			Pin 5-Modulator.
				- 1	in the second se	STREET, STREET			

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

GENERAL:



Pin 5—Modulator. Pin 6—Cathode. Pin 7—Heater. Pin 8—Heater. Cap—Final Anode.

SLOIA

Maximum Ratings

Final Anode Voltage					. 9000 volts.	
Anode 1 Voltage-See	Note 3	3			. 1450 volts.	
Modulator Voltage :						
Negative bias value					. 100 volts.	
Positive bias value					. 0 volts.	
Peak Heater-Cathode	Volta	ge:				
Heater negative with	respect	t to c	atho	de	. 125 volts.	
Heater positive with	respect	to c	atho	de	. 125 volts.	
Typical Operation						
Final Anode Voltage					. 7000 volts.	
Anode 2 Voltage					1000 volts \pm 100 volts	
Anode 1 Voltage					. 1250 volts.	
Modulator Voltage for	or cut-	of			45 to -80 volts.	
Spot Position-See No	ote 4					

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



- 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.

STD3

5TD3

Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

CENEDAT .

DATA

GENERAL.							
Heater : Voltage .			6.3	•		•	a.c. or d.c. volts
Current .			0.6				amp.
Direct Inter-electrode C	apaci	tan	ces (I	Appro	x.)		
Modulator to All Other	Élec	troc	les			•	10.5 μµf.
Anode 1 to All Other E	lectro	odes					6 µµf.
Cathode to All Other E	lectro	des					9 µµf.
Screen :							
Fluorescence							Blue.
Afterglow							Yellow.
Persistence of Afterglow	7						Long.
Focusing Method .							Magnetic.
Deflection Method .							Magnetic.
Deflection Angle (Appro	ox.)						53°
Overall Length							280 ± 6 mm.
Greatest Diameter of B	ulb						125.5 ± 2 mm.
Minimum Useful Screet	Dia	met	er				108 mm.
Mounting Position							Anv.
Anode Cap	÷		÷		÷	Rec	essed Small Ball.
Base			÷			Inte	rnational Octal.
				NOTE			
D' I M			5	NOTE I.		D'	5 Madulaton
Pin I—No connection.		Y	1			Pin	5-Modulator.
Pin 2—Heater.	3/	' E		10		Pin	6-No connection.
Pin 3—Anode 1.	7	-		T		Pin	7—Cathode.
Pin 4-No connection.	2			-h		Pin	8—Heater.
	2	1	\wedge	10		Car	-Final Anode.
		2		5			
		0	- (
Maximum Ratings :							0.000
Final Anode Voltage	·	•	•	•	·	•	8000 max. volts.
Anode I Voltage .	·	·	•	•			/0) max. volts.
Modulator Voltage :							105
Negative bias value	•	•	•	•		•	125 max. volts.
Positive bias value		•		•	٠	·	0 max. volts.
Peak Heater-Cathode V	oltag	e :					105
Heater negative with res	spect	to	cathc	de		•	125 max. volts.
Heater positive with res	pect	to c	atho	de	·	·	125 max. volts.
Typical Operation:							
Anode Voltage .					4000)	7000 volts.
Anode 1 Voltage .					250)	250 volts.
Modulator Voltage for	cut-o	ff		-25 to	-70)	-25 to -70 volts.
Focusing-Coil current-S	See N	lote	3		420)	520 A.T.
Spot Position .	See N	lote	4				
Note 2 Francisco Call an		ad .	with a		ima .	f ai	

Note 3. Focusing Coil, positioned with centre line of air gap approximately 70 mm. from reference line (see Outline Drawing).



- 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.

5TO3A Radar Tube

ST03A

MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:							
Heater : Voltage .			6.3			. a.c. or d.c. volts	Ś
Current .			0.6			. amp.	
Direct Inter-electrode Ca	pacit	and	ces (A	ppro	x.)		
Modulator to All Other	Elect	rod	les			. 10.5 μμf.	
Anode 1 to All Other El	ectro	des				. 6 μμf.	
Cathode to All Other Ele	ectro	des				. 9 μμf.	
Screen :							
Fluorescence						. Orange.	
Afterglow						. Orange.	
Persistence of Afterglow						. Long.	
Focusing Method .						. Magnetic.	
Deflection Method .						. Magnetic.	
Deflection Angle (Appro	x.)					. 53°	
Overall Length						280 ± 6 mm.	
Greatest Diameter of Bu	lb					$. 125.5 \pm 2$ mm.	
Minimum Useful Screen	Diar	net	er			. 108 mm.	
Mounting Position .						. Any.	
Anode Cap			•			Recessed Small Ball.	
Base						International Octal.	
			SEE	NOTE			
Pin 1 No connection		0	5	NOTE I.		Pin 5 Modulator	
Pin 1—No connection.		Y	TY			Pin 6 No constitution.	
Pin 2—Heater.	3	4	`	6		Pin 6—No connection.	•
Pin 3—Anode 1.	7	-		Γ		Pin 7—Cathode.	
Pin 4-No connection.	2			h		Pin 8—Heater.	
	3	1	~	10		Cap-Final Anode.	
		2	A				
Mai Dat		0	0				
Maximum Ratings:						8000	
Final Anode Voltage	.•	•	•	•	•	. 8000 max. volts	•
Anode I Voltage .	•	•			•	. 700 max. volts	•
Modulator Voltage :							
Negative bias value	•	•	•		•	. 125 max. volts	•
Positive bias value		•	•			. 0 max. volts	•
Peak Heater-Cathode Vo	oltage	e :				•	
Heater negative with res	pect	to	catho	de		. 125 max. volts	•
Heater positive with rest	pect t	0 0	athoc	le		. 125 max, volts	

I	y	pi	cal	(O	pe	ra	ti	on	l
---	---	----	-----	---	---	----	----	----	----	---

:

Anode Voltage				4000	7000 volts.
Anode 1 Voltage				250	250 volts.
Modulator Voltage	for	cut-off		-25 to -70	-25 to -70 volts.
Focusing-Coil curre	ent-	See Note	3	420	520 A.T.
Spot Position .		See Note	4		

Note 3. Focusing Coil, positioned with centre line of air gap approximately 70 mm. from reference line (see Outline Drawing).



- 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.

STW3A

STW3A Television Monitor Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

CENEDAT

DATA

GENERAL.							
Heater : Voltage .	•		6.3		•		a.c. or d.c. volts
Current .			0.6	•	•		amp.
Direct Inter-electrode Ca	apaci	tan	ces (Appro	ox.)		
Modulator to All Other	Elect	troc	les				10.5 μµf.
Anode 1 to All Other El	ectro	des	5				6 µµf.
Cathode to All Other El	ectro	des					9 µµf.
Screen :							
Fluorescence							White.
Persistence of Afterglow							Short.
Focusing Method .							Magnetic.
Deflection Method .							Magnetic.
Deflection Angle (Appro	x.)						53°
Overall Length .							280 ± 6 mm.
Greatest Diameter of Bu	ılb						125.5 ± 2 mm.
Minimum Useful Screen	Dia	met	ter				108 mm.
Mounting Position .							Any.
Anode Cap						Rec	essed Small Ball.
Base						Inte	rnational Octal.
		\bigcirc	SE	E NOTE I			
Pin 1—No connection.		9	1	2		Pir	1 5—Modulator.
Pin 2—Heater.	a	4		16		Pir	6—Cathode.
Pin 3—Anode 1.	4	-				Pir	7-No connection.
Pin 4-No connection.				L		Pir	8-Heater.
	2	~	~	10	1	Ca	p-Final Anode.
		>	5	<			
		0		2			
Maximum Ratings:							
Final Anode Voltage							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 res	pect	to	catho	ode			125 max, volts.
Heater positive with rest	pect 1	to c	atho	de			125 max. volts.
Typical Operation :							
Anode Voltage					4000)	7000 volts
Anode 1 Voltage			·		250	ì	250 volts
Modulator Voltage for o	cut-o	ff		-25 to	-70)	-25 to -70 volts.
Focusing-Coil current-S	ee N	ote	3	20 00	420)	520 A.T.

Focusing-Coil current-See Note 3 Spot Position . See Note 4

Note 3. Focusing Coil, positioned with centre line of air gap approximately 70 mm. from reference line (see Outline Drawing).



- **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.

6EB4

Oscilloscope Tube

ELECTROSTATIC FOCUS.

GENERAL:

ELECTROSTATIC DEFLECTION

SEB4

DATA

Heater: Voltage .		4.0				a.c. or d.c. volts.
Current .	• •	1.0	•			amp.
Direct Inter-electrode Ca	apacitar	ices.				
Modulator to all other e	electrode	es				25µµf.
Each X Plate to all othe	r electro	odes				25µµf.
Each Y Plate to all othe	r electro	odes				25µµf.
One X to one Y Deflect	or Plate					6µµf.
Cathode to all other elec	ctrodes					15µµf.
Screen:						
Fluorescence						Blue.
Persistence						Very Short.
	(10)	sec.	max.	for	1%	initial brightness).
Focusing Method .						Electrostatic.
Deflecting Method .						Electrostatic.
Overall Length .						421 ± 10 mm.
Greatest Diameter of Bu	ulb .					160 mm.
Minimum Useful Screen	Diame	eter				130 mm.
Mounting Position						Any.
Base						B.12.D.
Pin 1—Modulator.	G	\mathbf{O}			Pi	n 8—Y2.
Pin 2—Cathode	5	200	(8)		Pi	n 9X2
Pin 3 Heater	AK	X	No.		Pi	n 10 Anode 3 and
Pip 4 Heater	ALK		1 19		In	ternal Conductive
Pin 4—Heater.	3		1/10)	co	ating.
Pin 5—Anode I.	X	~//	X		Pi	n 11—X1.
Pin 6—Anode 2.	2	K	0		Pi	n 12—Y1.
Pin 7-No connection.	C	0-12				
Typical Operating Cond	itions :					
Anode 1		2000	volt	s.		2000 volts.
Anode 2		700	volt	S.		400 volts.
Anode 3 (5000y, max.)		4000	volt	S.		2000 volts.
Modulator volts for cut	-off					
	-40 t	io -80	volt	s.		-40 to -80 volts.
Deflection Sensitivity :		mm	volt	t.		mm/volt
V Plate		~	160			0.220
X Plate	• •	0.	205			0.520
r Plate		0.	293			0.590

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



ALL SIZES IN MILLIMETRES

SEBAR

6EB4F

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

CENEDAL.

GENERAL.							
Heater: Voltage			4.0				a.c. or d.c. volts.
Current			1.0				amp.
Direct Inter-electr	ode Ca	apacitan	ices.				
Modulator to all	other e	electrode	es				25µµf.
Each X Plate to a	ll othe	r electro	odes		. '		25µµf.
Each Y Plate to a	ill othe	r electro	odes				25uuf.
One X to one Y I	Deflect	or Plate					6uuf.
Cathode to all of	her elec	etrodes					15uuf
Screen .		ett o des		·	·		rophpi.
Fluorescence							Blue
Persistence			•	·	·	·	Very Short
reisistence .	•	. (10.		·	for	•	initial brightness)
Equation Mathad		(Top	sec.	max.	101	1 70	Electrostatio
Focusing Method		• •	•	·	•	•	Electrostatic.
Deflecting Metho	d .	• •	•	•	•	•	Electrostatic.
Overall Length				•	•		421 ± 10 mm.
Greatest Diamete	r of Bi	ilb .	•		·	•	159 mm.
Minimum Useful	Screen	Diame	ter				140 mm.
Mounting Positio	n				•		Any.
Base							B.12.D.
Pin 1—Modulator. Pin 2—Cathode. Pin 3—Heater. Pin 4—Heater. Pin 5—Anode 1. Pin 6—Anode 2. Pin 7—No connecti	on.			8 9 10		Pi Pi In co Pi Pi	n 8—Y2. n 9—X2. n 10—Anode 3 and ternal Conductive nating. n 11—X1. n 12—Y1.
Typical Operating	g Condi	itions :	2000				2000
Anode 1 .	•		2000	volts	s.		2000 volts.
Anode 2 .	•	• •	/00	volts	s.		400 volts.
Anode 3 (5000v.	max.)	· ·	4000	volts	S.		2000 volts.
Wodulator volts	ioi cut	-40 t	o -80	volt	s.		-40 to -80 volts.
Deflection Sensiti	vity :		mm	/volt.			mm/volt.
X Plate			0.	145			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 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.

6EB5

Oscilloscope Tube

ELECTROSTATIC FOCUS.

GENERAL:

ELECTROSTATIC DEFLECTION

SEB5

DATA

Heater: Voltage . Current	:	•	4.0	·	·	·	a.c. or d.c. volts.
Direct Inter-electrode Ca	apaci	tand	ces.	•	•	•	ump
Modulator to all other e	lectro	ode	S				25uuf.
Each X Plate to all othe	r elec	tro	des				20uuf
Each Y Plate to all othe	r elec	etro	des				13uuf
One X to one Y Deflect	or Pl	ate	400		•	•	2 Sunf
Cathode to all other elec	otrod	ec	•	•	•	·	2500f
Screen :	liou	C3	•		•	•	20/4/21.
Eluorescence							Blue
Persistence	·	•	·	•		·	Very Short
reisistence	•				for	10/	initial brightness)
Foruging Mathod	(.	ιυμ	sec.	max.	101	1 %	Electrostatio
Deflecting Method	•	•	•	•	•	·	Electrostatic.
Denecting Method .	•		•		•	•	Electrostatic.
Overall Length .		•	•	•	•	·	421 ± 10 mm.
Greatest Diameter of Bi	IID	•	•		•	•	160 mm.
Minimum Useful Screen	Dia	met	er	•	•	·	130 mm.
Mounting Position				•		•	Any.
Base							B.12.D.
Pin 1-Modulator.		SID	EARM	4.		Pi	n 9—X2.
Pin 2—Cathode.	5	X	40	(8)		Pin	n 10-Anode 3 and
Pin 3—Heater.	7	K	\rightarrow	X		In	ternal Conductive
Pin 4-Heater.	4	4	>	10		co	ating.
Pin 5—Anode 1.	1	LE		the		Pi	n 11—X1.
Pin 6—Anode 2.	30	X	\wedge	10		Pi	n 12—No connection
Pin 7—No connection	2	X	2	(11)		Sie	de Arm 'A'-Y2.
Pin 8—No connection.		(1	(12)			Sie	de Arm 'B'-Y1.
		SID	E ARM	в.			
Typical Operating Condi	itions	:					
Anode 1			2000	volts			2000 volts.
Anode 2			700	volts			400 volts.
Anode 3 (5000y, max.)			4000	volts			2000 volts.
Modulator volts for cut	-off						2000 .0101
inouulutor volts for out	-4	0 to	0 -80	volts	i.		-40 to -80 volts.
Deflection Sensitivity :			mm	volt.			mm/volt.
X Plate			0	160			0.320
V Plate		•	0	295			0.590
i i iuto · · ·	•	•	0				0.570

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



ALL SIZES IN MILLIMETRES.

6EB7

SEBI

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 Ca	pacitan	ces.				•								
Modulator to all other electrodes 25µµf.														
Each X Plate to all other electrodes \dots $25\mu\mu f.$														
Each Y Plate to all other	Each Y Plate to all other electrodes $.$ $.$ $.$ $25\mu\mu f.$													
One X to one Y Deflected	or Plate				. :	2.5µµf.								
Cathode to all other elec	trodes					15µµf.								
Screen :														
Fluorescence					.]	Blue.								
Persistence .						Very Short.								
	(100	sec.	max.	for	1% i	nitial brightness).								
Focusing Method .	(. /0 .	Electrostatic.								
Deflecting Method .						Electrostatic								
Overall Length						421 + 10 mm								
Greatest Diameter of Bu	lb				•	163 mm								
Minimum Useful Screen	Diame	ter				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	A		No.		Pin	10_Anode 3 and								
Din 4 Heater	AL	=	12		Inte	ernal Conductive								
Fill 4—Heater.	3		10		coa	ting.								
Pin 5—Anode 1.	X		X		Pin	11—X1.								
Pin 6—Anode 2.	2	12	U		Pin	12-Y1.								
Pin 7—No connection.	C													
Typical Operating Condi	tions:													
Anode 1		2000	volts	5.		2000 volts.								
Anode 2		800	volts	5.		530 volts.								
Anode 3 (6000v. max.)		5000	volts	5.		3000 volts.								
Modulator volts for cut	-off													
	-45 t	0 - 80	volts	5.		-45 to -80 volts.								
Deflection Sensitivity :		mm	volt			mm/volt.								
X 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 $90^{\circ} \pm 3^{\circ}$.



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.

SEDR

6ED4

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

O DI I DI I DI I							
Heater: Voltage .		. 4	.0				a.c. or d.c. volts.
Current .	•	. 1	.0				amp.
Direct Inter-electrode C	apacit	tanc	es.				
Modulator to all other e	electro	odes				•	25µµf.
Each X Plate to all othe	r elec	troc	les				25µµf.
Each Y Plate to all othe	r elec	troc	les				25µµf.
One X to one Y Deflect	or Pla	ate					6µµf.
Cathode to all other ele	ctrode	es					15µµf.
Screen :							
Fluorescence							Blue.
Afterglow	•						Yellow.
Persistence of Afterglow	/	•			•		Long.
(10 sec. 1	min./1	00 9	sec. n	nax.	for 1	%	initial brightness).
Focusing Method .		•					Electrostatic.
Deflecting Method .						•	Electrostatic.
Overall Length .		•			•		421 ± 10 mm.
Greatest Diameter of Bi	ulb						160 mm.
Minimum Useful Screen	Dia1	mete	T				130 mm.
Mounting Position							Any.
Base		•	•	•	•	•	B.12.D.
Pin 1-Modulator.		6	(7)			Pir	8-Y2.
Pin 2—Cathode.	5	T-		8		Pir	9—X2.
Pin 3—Heater.	all	-	-X	10		Pir	10-Anode 3 and
Pin 4—Heater.	A			L		Int	ernal Conductive
Pin 5—Anode 1.	3	X	~7)	10		C02	unig.
Pin 6—Anode 2.	(2)	L) H	11)		Pir	111—XI.
Pin 7—No connection.	\bigcirc		12	<u> </u>		Pir	12—Y1.
Typical Operating Condi	tions						
Typical Operating Colu	nions	•	000	1.			2000 1
Anode I	•	• 4	2000	volts	•		2000 volts.
Anode 2	•	•	1000	volts	•		400 volts.
Anode 3 (5000v. max.)	·œ	. 4	000	voits			2000 volts.
woullator volts for cut	-4() to	-80	volts			-40 to -80 volts.
Deflection Sensitivity :			mm	volt.			mm/volt.

 X Plate
 .
 .
 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 $90^{\circ} \pm 3^{\circ}$.



6ED7

SEDI

Oscilloscope Tube

ELECTROSTATIC FOCUS ELECTROSTATIC DEFLECTION Suitable for Assymetrical Deflection

DATA

CENEDAT .

GENERAL.								
Heater: Voltage				4.0				a.c. or d.c. volts.
Current				1.0				amp.
Direct Inter-electr	rode Ca	apacit	tand	ces.				1
Modulator to all	other e	electro	ode	S				25µµf.
Each X Plate to a	all othe	r elec	tro	des				25µµf.
Each Y Plate to a	all othe	r elec	tro	des				25µµf.
One X to one Y	Deflect	or Pla	ate					2.5µµf.
Cathode to all ot	her elec	ctrode	es					15µµf.
Screen :								
Fluorescence .								Blue.
Afterglow .								Yellow.
Persistence of Afr	terglow	7						Long.
(10m	sec. mi	n./100	Om	sec.	max.	for	1%	initial brightness).
Focusing Method	1.							Electrostatic.
Deflecting Metho	d.							Electrostatic.
Overall Length								421 ± 10 mm.
Greatest Diamete	er of B	ulb						163 mm.
Minimum Useful	Screet	Dia	met	er		·	Ċ	130 mm
Mounting Positic	n		inco		•	•	•	Any
Rase	/11	•	•	•	•	•	•	B 12 D
Dase	·	•	•	•		•	•	D.12.D.
Pin 1-Modulator			Ce	0 6)		Pi	n 8—Y2
Pin 2 Cathode		(5	V		(8)		Pi	n 9 ¥2
Pin 2 Heater		N	14		X	1	Di	n 10 Anodo 3 and
Pin 5—Heater.		A	IX		215)	In	ternal Conductive
Pin 4—Heater.		(3)	1=		EN TIC		co	ating.
Pin 5—Anode 1.		-	X	~	IN		Pi	n 11-X1
Pin 6—Anode 2.		(2	5	1			D	n 12 V1
Pin 7-No connecti	on.		C	0-02)		11	11 12-11.
Typical Operating	g Cond	itions	:					
Anode 1				2000) volt	s.		2000 volts.
Anode 2				800) volt	s.		530 volts.
Anode 3 (6000v.	max.)			5000) volt	s.		3000 volts.
Modulator volts	for cut	-off						

		-	45 to	~ -80 volts.	-45 to -80 volts.	
Deflection Sensitivity :					mm/volt.	mm/volt.
X 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 $90^{\circ} \pm 3^{\circ}$.



6EG4

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

Heater: Voltag	ge				4.0				a.c. or d.c. volts.
Curre	nt		•		1.0				amp.
Direct Inter-el	ectro	de Ca	apac	citan	ices.				
Modulator to	all ot	her e	elect	rode	es				25µµf.
Each X Plate	to all	othe	r ele	ectro	odes				25µµf.
Each Y Plate	to all	othe	r ele	ectro	odes				25µµf.
One X to one	Y De	eflect	or F	Plate					6μμf.
Cathode to all	othe	r elec	ctro	des					15µµf.
Screen :									
Fluorescence									Green.
Persistence									Short.
(10	m see	c. mi	n./1	00m	sec.	max.	for	1%	initial brightness).
Focusing Met	hod								Electrostatic.
Deflecting Me	thod								Electrostatic.
Overall Lengt	1								421 ± 10 mm.
Greatest Dian	neter	of B	ulb						160 mm.
Minimum Use	eful S	creer	ı Di	ame	ter				130 mm.
Mounting Pos	ition			•					Any.
Base .									B.12.D.

Pin 1—Modulator. Pin 2—Cathode. Pin 3—Heater. Pin 4—Heater. Pin 5—Anode 1. Pin 6—Anode 2. Pin 7—No connection.

GENERAL:



Pin 8—Y2. Pin 9—X2. Pin 10—Anode 3 and Internal Conductive coating. Pin 11—X1. Pin 12—Y1.

OFGR

Typical Operating Conditions:

Anode 1					2000 volts.	2000 volts.
Anode 2					700 volts.	400 volts.
Anode 3 (5)	000v. n	nax.)			4000 volts.	2000 volts.
Modulator	volts fo	or cu	t-off			
			-	40 1	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

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



6EG4F

OFCAR

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL .

O DI TRIALI I				
Heater: Voltage .	4	.0.		. a.c. or d.c. volts.
Current .	1.	.0 .		. amp.
Direct Inter-electrode C	apacitance	es.		
Modulator to all other	electrodes			. 25μμf.
Each X Plate to all othe	er electrod	es .		. 25µµf.
Each Y Plate to all other	er electrod	es .		. 25µµf.
One X to one Y Deflect	or Plate			. 6µµf.
Cathode to all other ele	ctrodes			. 15µµf.
Screen :				
Fluorescence				. Green.
Persistence				. Short.
(10m sec. m)	n./100m s	ec. max.	for 1	% initial brightness).
Focusing Method .				. Electrostatic.
Deflecting Method .				. Electrostatic
Overall Length				421 ± 10 mm.
Greatset Diameter of B	ulb .			. 159 m.m.
Minimum Useful Screen	Diamete	r		140 mm
Mounting Position	I Diamete	•		Any
Rase	· ·	· ·		B 12 D
Dase	· ·	· ·	•	. D.12.D.
Pin 1—Modulator.	6	(7)		Pin 8—Y2.
Pin 2—Cathode	5	8		Pin 9-X2.
Pin 3 Heater	A	-210		Pin 10_Anode 3 and
Pin 5—Heater.	NE=			Internal Conductive
Pin 4—Heater.	3/	10		coating.
Pin 5—Anode 1.		SIL		Pin 11-X1.
Pin 6—Anode 2.	2	To U		Pin 12-V1
Pin 7-No connection.	0	12		rm 12—11.
Typical Operating Cond	itions :			
Anode 1	2	000 volts		2000 volts.
Anode 2		700 volts		400 volts.
Anode 3 (5000y, max.)	4	000 volts		2000 volts.
Modulator volts for cut	-off	000 .010		
	-40 to	-80 volts		–40 to –80 volts.
Deflection Sensitivity :		mm/volt		mm/volt.
X Plate		0.145		0.290
Y Plate		0.280		0.560
		0.200		0.000

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





6EG5

Oscilloscope Tube

ELECTROSTATIC FOCUS ELECTROSTATIC DEFLECTION

DATA

Heater: Voltage .	•		4.0				a.c. or d.c. volts.
Current .			1.0				amp.
Direct Inter-electrode	Capa	citan	ces.				
Modulator to all othe	r elec	trode	S				25µµf.
Each X Plate to all ot	her el	ectro	des				20µµf.
Each Y Plate to all of	her el	lectro	des				13µµf.
One X to one Y Defle	ector]	Plate					2.5µµf.
Cathode to all other e	electro	des					25µµf.
Screen :							
Fluorescence							Green.
Persistence							Short.
(10m sec.	min./	100m	sec.	max.	for	1%	initial brightness).
Focusing Method .							Electrostatic.
Deflecting Method .							Electrostatic.
Overall Length .							421 ± 10 mm.
Greatest Diameter of	Bulb						160 mm.
Minimum Useful Scre	en D	iamet	er				130 mm.
Mounting Position							Any.
Base							B.12.D.

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.

GENERAL:



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.

BEGS

Typical Operating Conditions:

Anode 1					2000 volts.	2000 volts.
Anode 2					700 volts.	400 volts.
Anode 3 (5	000v. n	nax.)			4000 volts.	2000 volts.
Modulator	volts fe	or cut	-off			
			-	40 t	to -80 volts.	-40 to -80 volts.
Deflection S	Sensitiv	ity :			mm/volt.	mm/volt.
X Plate					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 $90^{\circ} \pm 3^{\circ}$.



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

SECI

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	Capacitan	nces.				
Modulator to all other	electrod	es				25µµf.
Each X Plate to all oth	ner electr	odes				25µµf.
Each Y Plate to all oth	ner electr	odes				25µµf.
One X to one Y Deflect	ctor Plate	э.				2.5µµf.
Cathode to all other el	ectrodes					15µµf.
Screen :						
Fluorescence	· ·					Green.
Persistence			•			Short.
(10m sec. n	nin./100n	n sec.	max.	for	1%	initial brightness).
Focusing Method .			. '			Electrostatic.
Deflecting Method .						Electrostatic.
Overall Length .						421 ± 10 mm.
Greatest Diameter of I	Bulb .					163 mm.
Minimum Useful Scree	en Diame	eter				130 mm.
Mounting Position						Any.
Base						B.12.D.
Pin 1-Modulator.		6 7			Pi	n 8
Pin 2—Cathode.	5		B		Pi	n 9—X2.
Pin 3—Heater.	AVE	2	2No)	Pi	n 10-Anode 3 and
Pin 4—Heater.	3	Ì	K		In	ternal Conductive ating.
Pin 5—Anode 1.	X	5	M	2	Pi	n 11-X1
Pin 6—Anode 2.	(2)	Z	(1)		Di	n 12 V1
Pin 7-No connection.		(1) - (12))		FI	11 12-11.
Typical Operating Con	ditions :					
Anoda 1	untions .	2000	volt	6		2000 volts
Anode 2	• •	2000	volt	ð.		530 volts.
Anode 3 (6000y max	· · ·	5000	volt	5.		3000 volts.
Modulator volts for a)	5000	von	5.		5000 vons.
Wiodulator volts for c	<u>-45</u>	to -80) volt	s.		-45 to -80 volts.
Deflection Sensitivity .		m		t		mm/volt
V Dista		iiii	120			0.215
V Plate	• •		250			0.215
I FIALC		(1.400			0.715

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 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.

SEO.

6E04

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 C	apacitar	nces.				
Modulator to all other	electrod	es				25µµf.
Each X Plate to all other	er electro	odes				25µµf.
Each Y Plate to all othe	er electr	odes				25µµf.
One X to one Y Deflect	tor Plate					6µµf.
Cathode to all other ele	ctrodes					15µµf.
Screen :						
Fluorescence						Orange.
Afterglow						Orange
Persistence of Afterglow		•	•	·		Long
(10 sec	min /10	0 580	max	for	10/	initial brightness)
Ecousing Mathad	mm./10	U Sec.	шах.	101	1 /0	Electrostatio
Pocusing Method .	• •	•	•	•	•	Electrostatic.
Denecting Method .		•	•	•	•	Electrostatic.
Overall Length .		·		•	·	421 ± 10 mm.
Greatest Diameter of B	ulb .	•	•			160 mm.
Minimum Useful Screen	n Diame	eter	•		•	130 mm.
Mounting Position	• •			•	•	Any.
Base	· ·		•	•	•	B.12.D.
Pin 1—Modulator.	(e	\mathbf{O}			Pir	n 8—Y2.
Pin 2_Cathode	5	200	(8)		Pir	9_X2
Pin 2 Heater	AR	×	No.		Di	1)—Az.
Pin 3—Heater.	AXIK	\succ	19		Int	arnal Conductive
Pin 4—Heater.	AVE		the		CO	ating.
Pin 5—Anode 1.	3 CXF	~/	NO		Di	11V1
Pin 6—Anode 2.	2	Z	(1)		Dia	111—AI.
Pin 7—No connection.	- (12			PII	112-11.
Typical Operating Cond	itions :					
Anode 1		2000	volts			2000 volts.
Anode 2		700	volts			400 volts.
Anode 3 (5000y, max)		4000	volts			2000 volts
Modulator volts for cut	-off	1000	vorto	•		2000 10.00
Wiedulator volts for cut	-40 t	0 - 80	volts			-40 to -80 volts.
Deflection Sensitivity :		m	m/vol	t.		mm/volt.
X Plate			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 $90^{\circ} \pm 3^{\circ}$.


6LYIA Radar Tube

ELECTROSTATIC FOCUS.

6601A

GENERAL:

MAGNETIC DEFLECTION

SIXIA

DATA

Heater: Voltage				4.0		a.c. or d.c. volts.
Current				1.0		amp.
Direct Inter-electro	de Ca	apaci	itar	ices.		
Modulator to all ot	her e	lectr	ode	es		15µµf.
Anode 1 to all othe	r elec	ctrod	les			15µµf.
Cathode to all othe	r elec	ctrod	les	۰.		14µµf.
Screen :						Aluminium Backed.
Fluorescence .						Yellow.
Afterglow .						Yellow.
Persistence of After	glow					Long.
Focusing Method	0					Electrostatic.
Deflecting Method						 Magnetic.
Overall Length						390 ± 10 mm.
Greatest Diameter	of Bi	ılb				163 mm.
Minimum Useful S	creen	Dia	me	ter		135 mm.
Mounting Position						Any.
Anode Cap .						Recessed Small Ball.
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. Cap—Final Anode.

		C		9		
Maximum Ratings :						
Final Anode Voltage						9000 volts.
Anode 1 Voltage .						1650 volts.
Modulator Voltage :						
Negative bias value						130 volts.
Positive bias value						0 volts.
Peak Heater-Cathode	Volta	ges :				
Heater negative with re	espec	t to	cathe	ode		125 volts.
Heater positive with re	spect	t to c	athc	de		125 volts.
Typical Operating Con	dition	16 .				
Final Anode Voltage						7000 volts.
Anode 2 Voltage						1075 volts. \pm 100 volts.
Anode 1 Voltage-See	Note	3				1250 volts.
Modulator Voltage for	cut-	off				-45 to -100 volts.

Spot Position . . . See Note 4

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 a 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 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.

STO3A

6TO3A Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

Heater: Voltage 6.3	. a.c. or d.c. volts.
Direct Inter-electrode Canacitances	. amp.
Modulator to all other electrodes	9 Quuf
Anode 1 to all other electrodes	. 6.0µµf.
Cathode to all other electrodes	. 8.0uuf.
Screen :	Aluminium Backed.
Fluorescence	. Orange.
Afterglow	. Orange.
Persistence of Afterglow	. Long.
Focusing Method	. Magnetic.
Deflecting Method	. Magnetic.
Overall Length	. 369 ± 7 mm.
Greatest Diameter of Bulb	. 163 mm.
Minimum Useful Screen Diameter	. 135 mm.
Mounting Position	. Any.
Anode Cap	. Recessed Small Ball
Base	. International Octal.
SEE NOTE I.	
Pin 1—No connection.	Pin 5—Modulator.
Pin 2—Heater.	Pin 6-No connection.
Pin 3—Anode 1.	Pin 7—Cathode.
Pin 4—No connection.	Pin 8—Heater.
	Cap—Final Anode.
Maximum Ratings :	
Final Anode Voltage	. 10000 volts.
Anode 1 Voltage	. 500 volts.
Modulator Voltage :	
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	-45 to -110 volts
Focusing-Coil Current-See Note 3	. 830 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.



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).

7TD3A Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

GENERAL:							
Heater: Voltage				6.3			a.c. or d.c. volts.
Current				0.6		۰.	amp.
Direct Inter-electr	ode (Capa	cita	nces.			-

cked.
Ball.
ctal.

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.

TTD3A

Maximum Ratings :

Final Anode Voltage							8000 volts.
Anode 1 Voltage .					. •		700 volts.
Modulator Voltage :							
Negative bias value							195 volts.
Positive bias value							0 volts.
Peak Heater-Cathode	e Vol	tages	:				
Heater negative with	ode			125 volts.			
Heater positive with	respe	ct to	catho	de			125 volts.
Heater negative with Heater positive with	respe	ect to	cathe	ode	:	:	125 volts. 125 volts.

Typical Operating Conditions:

Final Anode Voltage		4000 volts.	7000 volts.
Anode 1 Voltage .		250 volts.	250 volts.
Modulator Voltage for	cut-	off -25 to -70 volts.	-25 to -70 volts.
Focusing-Coil Current-	See	Note 3 500 A.T.	625 A.T.
Spot Position	See	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 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.

7TO3A Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

Heater: Vo	ltage				6.3		a.c. or d.c. volts.
Cu	rrent				0.6		amp.
Direct Inte	r-elect	rode	Capa	citar	ices.		
Modulator	to all	othe	r elect	rod	es		9.0µµf.
Anode 1 to	all ot	her e	lectro	des			6.0µµf.
Cathode to	all ot	her e	lectro	des			8.0µµf.
Screen :							Aluminium Backed.
Fluorescen	ce .						Orange.
Afterglow							Orange.
Persistence	of Af	terglo	W				Long.
Focusing N	Aetho	1.					Magnetic.
Deflecting	Metho	d.					Magnetic.
Overall Lei	ngth						337 ± 10 mm.
Greatest D	iamete	er of	Bulb				181 mm.
Minimum	Useful	Scre	en Di	ame	eter		155 mm.
Mounting	Positio	n					Any.
Anode Car							Recessed Small Ball.
Base							International Octal.

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

GENERAL:



Pin 5—Modulator. Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.

Troja

Maximum Ratings :

Final Anode Voltage	e							8000 volts.	
Anode 1 Voltage								700 volts.	
Modulator Voltage	:								
Negative bias value								195 volts.	
Positive bias value								0 volts.	
Peak Heater-Cathode Voltages :									
Heater negative with	le			125 volts.					
Heater positive with	resp	ect t	o ca	thod	e			125 volts.	

Typical Operating Conditions :

Final Anode V	oltage			4000	volts.	7000 vol	ts.
Anode 1 Volta	ge .			250	volts.	250 vol	ts.
Modulator Vol	tage for	cut-o	ff -:	25 to	-70 volts.	-25 to -	70 volts.
Focusing-Coil	Current	t-See	Not	e 3	500 A.T.	1	625 A.T.
Spot Position		See	Not	e 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.

9LOIA Radar Tube

ELECTROSTATIC FOCUS. MAGNETIC DEFLECTION

DATA

Heater : Voltage 4.0			. ac or dc volts.
Current 1.0		· .	. amp.
Direct Inter-electrode Capacitances	(A)	oprox	(.)
Modulator to All Other Electrod	es		. 15 μμf.
Anode 1 to All Other Electrodes	1		. 15 µµf.
Cathode to All Other Electrodes	·.		. 14 µµf.
Screen :			Aluminium Backed.
Fluorescence			. Orange.
Afterglow			. Orange.
Persistence of Afterglow			. Long.
Focusing Method			. Electrostatic.
Deflection Method			. Magnetic.
Overall Length			. 445 mm. ± 7 mm.
Greatest Diameter of Bulb			. 230 mm.
Minimum Useful Screen Diameter			. 190 mm.
Mounting Position			. Any.
Anode Cap			. American.
Base			International Octal.



GENERAL



Pin 5—Modulator. Pin 6—Cathode. Pin 7—Heater. Pin 8—Heater. Side arm connection— Anode Cap. 9101A

Maximum Ratings							
Final Anode Voltage			. '				10000 volts.
Anode 1 Voltage .							1450 volts.
Modulator Voltage :							
Negative bias value		1.	•				100 volts.
Positive bias value							0 volts.
Peak Heater-Cathode	Volt	tages	:				
Heater negative with	1 res	spect	to	catho	de		125 volts.
Heater positive with	res	pect	to c	atho	de	•	125 volts.
Typical Operation							
Final Anode Voltage							8000 volts.
Anode 2 Voltage .							1240 volts.
Anode 1 Voltage-See	Not	e 3					1350 volts.
Modulator Voltage for	r cu	t-off					-75 volts.
Spot Position-See Not	te 4						

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

Note 4. The centre of the undeflected **Co**focused spot will fall within a circle 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 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.

IOMW4A

Television Monitor Tube

MAGNETIC FOCUS.

GENERAL:

MAGNETIC DEFLECTION

10MW RA

DATA

Heater: Voltage			. 4	4.0				a.c. or d.c. volts.
Current				1.0				amp.
Direct Inter-electr	ode	Capac	itand	ces.				
Modulator to all	other	elect	rode	S				9µµf.
Cathode to all ot	her el	lectroo	les					9µµf.
Screen :								Aluminium Backed.
Fluorescence .								White.
Persistence .		Short	(5m	sec.	25m	sec.	for	1% initial brightness)
Focusing Method								Magnetic.
Deflecting Metho	d.							Magnetic.
Overall Length								483 ± 10 mm.
Greatest Diamete	r of l	Bulb						257 mm.
Minimum Useful	Scree	en Dia	amet	er				230 mm.
Mounting Positio	n							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.



Fin 5—Modulator.
Pin 6—Pin omitted.
Pin 7—Heater.
Pin 8—Cathode.
Cap—Anode.

Maximum Ratings:

Final Anode Voltage						11000 volts.
Modulator Voltage :						
Negative bias value						130 volts.
Positive bias value						0 volts.
Peak Heater-Cathode V	oltag	ges :				
Heater negative with re	spect	to	catho	ode		150 volts.
Heater positive with res	spect	to c	atho	de	•	150 volts.
Typical Operating Cond	itions					
Anode Voltage .						10000 volts.
Modulator Voltage for	cut-o	ff				-70 to -120 volts

Modulator Voltage for cut-off -70 to -120 vc Focusing-Coil Current-See Note 3 550 A.T.	niloue ronuge			• •	•	•	10000 10103.	
Focusing-Coil Current-See Note 3 550 A.T.	Modulator Vol	ge for	cut-o	ff.			-70 to -120 volts	
	Focusing-Coil	urrent-	-See N	Note 3			550 A.T.	
Spot Position See Note 4	Spot Position		See	Note 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 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.

12EG6

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

Heater: Voltage					4.0 a.c. or d.c. volts
Current					1.0 amp.
Direct Inter-electro	de Ca	pacitanc	es:		
Modulator to all	other of	electrode	S		$15\mu\mu f.$
Each X Plate to a	all othe	er electro	odes		15µµf.
Each Y Plate to a	all othe	er electro	odes		15µµf.
One X to one Y	Deflect	tor Plate			4.0µµf.
Cathode to all ot	her ele	ctrodes			15µµf.
Screen:					
Fluorescence					Green
Persistence of Af	terglov	v .			Short
(10 m. se	ec min.	/100m.	sec. m	ax.) for	1% initial brightness.
Focussing Method					Electrostatic
Deflecting Method					Electrostatic.
Overall Length					635+5 mm.
Greatest Diameter	of Bul	lb .			312 mm.
Minimum Useful S	Screen	Diamete	er		280 mm.
Mounting Position					Any
Base					B12D.

Pin 1-Modulator.

GENERAL:

- Pin 2-Cathode.
- Pin 3-Heater.
- Pin 4-Heater.
- Pin 5-Anode 1
- Pin 6—Anode 2



Pin 7— Internal Conductive Coating.
Pin 8—Y2.
Pin 9—X2.
Pin 10—Anode 3.
Pin 11—X1.
Pin 12—Y1.

INEGO

Typical Operating Conditions:

	1000 volts.	1000 volts
	550 volts.	900 volts.
) .	3000 volts.	5000 volts.
off	-60 to -110	-60 to -110
	mm./volt.	mm./volt.
	. 0.4	0.24
	. 0.4 .	0.24
) . off	. 1000 volts. . 550 volts.) . 3000 volts. off -60 to -110 mm./volt. . 0.4 . 0.4

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.



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.

12 LOIA

has been mislaid.

FL

ENCLISH ELECTRIC VALVE. CO.LTD.

A NEW 6 MW KLYSTRON AMPLIFIER

ctric Valve Company Limited announce the introduction ty klystron amplifier, type K352, for high power the range 2993 to 3003 Mc/s. This tube is capable power output of 6 MW, at a mean level of 9 kW, with an efficiency in excess of 35%. The cavities form the valve envelope.

put connections are employed and the output flange ling to Waveguide No.10 (2.84 inches x l.34 inches

>s magnetic focusing and a water cooled focus mount,) volt, 40 ampere, supply (max) employed for this cooling of the output window, which is of low loss is required and water cooling is necessary for the

table for use with linear particle accelerators and

Summary of Characteristics

Indirectly Heated, Oxide Coated5V Max.110A Max.

I2LO3A Radar Tube

ELECTROSTATIC FOCUS. MAGNETIC DEFLECTION

GENERAL:

DATA

Heater: Voltage .			4.0		a.c. or d.c. volts.
Current .			1.0		amp.
Direct Inter-electrode Ca	paci	tan	ces.		
Modulator to all other el	lectre	ode	es		15μµf.
Anode 1 to all other elec	trod	es			15µµf.
Cathode to all other elect	trod	es			12µµf.
Screen :					Aluminium Backed.
Fluorescence					Orange.
Afterglow .					Orange.
Persistence of Afterglow					Long.
Focusing Method .					Electrostatic.
Deflecting Method .					Magnetic.
Overall Length .					535 ± 10 mm.
Greatest Diameter of Bul	lb				306.5 mm.
Minimum Useful Screen	Dia	me	ter		265 mm.
Mounting Position					Any.
Anode Cap					Cavity Cap BSS448/CT8
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. Cap—Final Anode.

12103A

Maximum Ratings:

Final Anode Voltage						13000 volts.	
Anode 1 Voltage .						2200 volts.	
Modulator Voltage :							
Negative bias value						130 volts.	
Positive bias value				۰.		0 volts.	
Peak Heater-Cathode	Volta	iges :					
Heater negative with re	espec	t to	cath	ode		125 volts.	
Heater positive with re		125 volts.					

Typical Operating Conditions:

Final Anode Voltage			12000 volts.
Anode 2 Voltage			1900 volts. \pm 100 volts.
Anode 1 Voltage-See Note 3			2000 volts.
Modulator Voltage for cut-off			-70 to -120 volts.
Spot Position See Note	e 4		



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 the bulb cone.
- 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 a 10 mm. radius concentric with the centre of the tube face.

12M06A **Radar Tube**

MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

OLITERAL.									
Heater: Voltag	e				4.0				a.c. or d.c. volts.
Curren	nt			•	1.0				amp.
Direct Inter-ele	ctroc	le Ca	pac	itan	ices.				•
Modulator to a	all oth	ner el	lecti	ode	es				12.0µµf.
Cathode to all	other	·elec	troc	les					10.0µµf.
Screen : .									Aluminium Backed.
Fluorescence									Orange.
Afterglow									Orange.
Persistence of A	After	glow							Long.
Focusing Meth	od								Magnetic.
Deflecting Met	hod								Magnetic.
Overall Length									510 ± 10 mm.
Greatest Diam	eter o	of Bu	lb						306.5 mm.
Minimum Uset	ful Sc	reen	Dia	ime	ter		۰.		265 mm.
Mounting Posi	tion								Any.
Anode Cap									Cavity Cap BSS448/CT8.
Base .	•								International Octal.
					SEE NO	TE I.			
Pin 1-No conne	ction.		(4	5			Pin	5-Modulator.
Pin 2—Heater.		C	3	4-	>	6		Pin	6—Pin omitted.
Pin 3—Pin omitte	d.		1			M		Pin	7—Heater.

Pin 4-Pin omitted.

CENERAL .



Pin 7—Heater. Pin 8-Cathode.

12MOSA

Cap-Anode.

Maximum Ratings:

Anode Voltage							11000	volts.	
Modulator Voltage	e :								
Negative bias valu	e						130	volts.	
Positive bias value							0	volts.	
Peak Heater-Catho	de V	Volta	ges :						
Heater negative wi	th re	espec	t to	catho	ode		125	volts.	
Heater positive with	th re	spect	to	atho	de		125	volts.	
Typical Operating	Cond	litior	IS:						
Anode Voltage							10000	volte	

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

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

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



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 the bulb cone.

12TO3A Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

Heater:	Voltag	ge	•			6.3		a.c. or d.c. volts.
(Curre	nt				0.6		amp.
Direct In	ter-el	ectro	de C	Capa	citar	nces.		-
Modulat	or to	all ot	ther	elect	trod	es		9.0µµf.
Anode 1	to all	othe	er ele	ectro	odes			6.0µµf.
Cathode	to all	othe	r ele	ectro	des			8.0µµf.
Screen :								Aluminium Backed.
Fluoresc	ence							Orange.
Afterglov	W							Orange.
Persisten	ce of	After	glov	N				Long.
Focusing	Meti	nod						Magnetic.
Deflectin	g Me	thod						Magnetic.
Overall I	Length	1						488 ± 7 mm.
Greatest	Diam	neter	of B	ulb				306.5 mm.
Minimur	n Use	ful S	cree	n Di	iame	eter		265 mm.
Mountin	g Pos	ition						Any.
Anode C	ap							Cavity Cap BSS448/CT8.
Base								International Octal.

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

GENERAL:



Pin 5—Modulator. Pin 6—No connection. Pin 7—Cathode. Pin 8—Heater. Cap—Final Anode.

12FO3A

Maximum Ratings :

Final Anode Voltage						15000 volts.
Anode 1 Voltage .						850 volts.
Modulator Voltage :						
Negative bias value						140 volts.
Positive bias value						0 volts.
Peak Heater-Cathode	Volta	iges :				
Heater negative with re	espec	t to	cathe	ode		150 volts.
Heater positive with re	spec	t to c	athc	de		150 volts.
Typical Operating Cond	dition	15:				

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.
Spot Position	See	Note	e 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 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.

I SLO3A

Radar Tube

ELECTROSTATIC FOCUS.

GENERAL:

MAGNETIC DEFLECTION

15103A

DATA

Heater: Voltage				4.0		a.c. or d.c. volts.
Current				1.0		amp.
Direct Inter-elect	rode (Capa	cita	nces.		
Modulator to all	other	elec	trod	es		15μµf.
Anode 1 to all ot	her el	ectro	odes			15μµf.
Cathode to all ot	her ele	ectro	odes			12µµf.
Screen :						Aluminium Backed.
Fluorescence .						Orange.
Afterglow .					۰.	Orange.
Persistence of Afr	terglov	W				Long.
Focusing Method	1.					Electrostatic.
Deflecting Metho	d.					Magnetic.
Overall Length						575 ± 10 mm.
Greatest Diamete	r of E	Bulb				385 mm.
Minimum Useful	Scree	n D	iame	eter		330 m.m
Mounting Positic	n	•				Any.
Anode Cap .				· .		Cavity Cap BSS448/CT8
Base						International Octal.

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

Marinen Datings



Pin 5—Modulator. Pin 6—Cathode. Pin 7—Heater. Pin 8—Heater. Cap—Final Anode.

Maximum Kaungs:						
Final Anode Voltage						12000 volts.
Anode 1 Voltage .						2200 volts.
Modulator Voltage :						
Negative bias value						145 volts.
Positive bias value						0 volts.
Peak Heater-Cathode	Volta	iges :				
Heater negative with re	espec	et to	cathe	ode		125 volts.
Heater positive with re	spec	t to c	athc	de		125 volts.
Typical Operating Con	ditio	ns :				
Final Anode Voltage						10000 volts.
Anode 2 Voltage .						1600 ± 100 volts.
Anode 1 Voltage-See	Note	3				2000 volts.
Modulator Voltage for	cut-	off				-80 to -130 volts.
Spot Position	Se	e No	te 4			

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.





- 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 Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

Heater: Vo	Itage	e				4.0				a.c. or d.c. volts.
Cu	rren	t				1.0				amp.
Direct Inter	r-ele	ctro	de Ca	apaci	itar	nces.				
Modulator	to a	ll ot	her e	lectr	od	es			,	12.0µµf.
Cathode to	all	othe	r elec	ctrod	les					10.0µµf.
Screen :										Aluminium Backed.
Fluorescene	e									Orange.
Afterglow										Orange.
Persistence	of A	fter	olow					÷		Long
Focusing N	feth	od	510 11		Ċ	•	·	·		Magnetic
Deflecting	Met	hod		·	·	•	·	·		Magnetic
Overall Let	oth	iou	•	•	•	•	•	•	·	$582 \pm 7 \text{ mm}$
Greatest D	iame	eter (of Bi	ilb	•	•		·		385 mm
Minimum I	Icef	int S	Teen	Dia	·me	ter	•	•	•	330 mm
Mounting	Docit	ion	i ccn	Dia	in		·	·	•	Any
Anoda Can	USI	101		•	•	•	•	·	•	Cavity Can DSSA49/CT9
Anoue Cap		•	•	•	•	•	•	•	·	Cavity Cap B55446/C16.
Base										International Octal.

Pin 1—No connection. Pin 2—Heater. Pin 3—Pin omitted. Pin 4—Pin omitted.

GENERAL:



Pin 5—Modulator. Pin 6—Pin omitted. Pin 7—Heater. Pin 8—Cathode. Cap—Anode.

ISMO6A

Maximum Ratings:

Anode Voltage	•					11000 volts.
Modulator Voltage	:					
Negative bias value						130 volts.
Positive bias value						0 volts.
Peak Heater-Cathoo	de Vol	tages	:			
Heater negative wit	h respe	ect to	cathe	ode		125 volts.
Heater positive with	1 respe	ct to	catho	ode		125 volts.
Typical Operating (Conditio	ons:				
Anode Voltage						10000 volts.
Modulator Voltage	for cu	t-off				-75 to -115 volts.
Focusing-Coil Curr	ent-Se	e Not	e 3			600 A.T.
Spot Position .	. Se	e Not	e 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.

ISTO4A Radar Tube

ISTORA

MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL .

O MI THAT AND T						
Heater: Voltage		6.3				a.c. or d.c. volts.
Current .		0.6				amp.
Direct Inter-electrode C	apacitar	nces.				
Modulator to all other	electrod	es				12μμf.
Anode 1 to all other ele	ctrodes					10µµf.
Cathode to all other ele	ctrodes		•			12µµf.
Screen :						Aluminium Backed.
Fluorescence						Orange.
Afterglow						Orange.
Persistence of Afterglow	· ·					Long.
Focusing Method .						Magnetic.
Deflecting Method .						Magnetic.
Overall Length .						580 ± 7 mm.
Greatest Diameter of B	ulb .					385 mm.
Minimum Useful Screen	n Diame	eter				330 mm.
Mounting Position						Any.
Anode Cap						Cavity Cap BSS448/CT8
Base						B.12.A.
		, SEE	NOTE	L	-	
Pin 1—Heater.	C	6) (7)			Pin	n 7—No connection.
Pin 2-Modulator.	5	A	(8)		Pin	n 8—Pin omitted.
Pin 3—Pin omitted	NE		5		Pir	n 9—Pin omitted.
Pin 4 Pin omitted	9 -		P		Pir	n 10—Anode 1.
Pin 4—Pin oninted.	31-		10		Pir	n 11—Cathode.
Pin 5—Pin omitted.	Y	\wedge	L		Pir	n 12—Heater.
Pin 6—No connection.	2				Ca	p—Final Anode.
	C					
Maximum Ratings :						
Final Anode Voltage						15500 volts.
Anode 1 Voltage .						600 volts.
Modulator Voltage :						
Negative bias value						180 volts.
Positive bias value						0 volts.
Peak Heater-Cathode V	oltages	:				
Heater negative with re	spect to	catho	de			150 volts.
Heater positive with res	pect to	catho	de			150 volts.
Typical Operating Cond	itions .					
Final Anode Voltage	1110115 ;					15000 volts
Anode 1 Voltage	• •	•		•		300 volts
Modulator Voltage for	cut-off		•	•	·	-30 to -90 volts
Focusing-Coil Current-	See Not	te 3	•			730 A T
Spot Position	See No	te 4				100 1111

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.

16TO4A Radar Tube

MAGNETIC FOCUS

GENERAL:

MAGNETIC DEFLECTION

16TORA

DATA

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 .		8.0 pf.
Screen:		Aluminium Backed.
Fluorescence .		Orange.
Afterglow .		Orange.
Persistence of Afterglow .		Long.
Focusing Method		Magnetic.
Deflecting Method		Magnetic.
Overall Length		512 ± 5 mm.
Greatest Diameter of Bulb		409 mm.
Minimum Useful Screen Diameter		370 mm.
Mounting Position		Any.
Anode Cap		BSS448/C.T.7.
Base .		B12A.
P		
Pin 1—Heater	F	Pin 10—Anode 1
Pin 2—Grid $(\Box = \Box$) F	Pin 11—Cathode
Pin 6—No connection	F	Pin 12—Heater
	/10	
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 :		
Heater negative with respect to cathode		150 volts.
Heater positive with respect to cathode		150 volts.
Typical Operating Conditions		
Final Anada Valtage		15.0.1-17
Anodo 1 Voltage	• •	13.0 KV.
Modulator Voltage for cut-off		-30 to -90 volts.
wiodulator voltage for cut-off.		-30 to -30 voits.
Spot position		See Note 4



DIMENSIONS 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.
- 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.

90EB4

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

Heater: Volta	ge				4.0				a.c. or d.c. volts.
Curre	ent				1.0				amp.
Direct Inter-el	lectro	de Ca	apa	citan	ces.				
Modulator to	all of	her e	lec	trode	es				25µµf.
Each X Plate	to all	othe	r el	lectro	odes				25µµf.
Each Y Plate	to all	othe	r el	lectro	odes				25µµf.
One X to one	Y De	eflect	or	Plate					6µµf.
Cathode to all	l othe	r elec	etro	odes					15µµf.
Screen :									
Fluorescence									Blue.
Persistence									Very Short.
				(10µ	sec.	max.	for	1%	initial brightness).
Focusing Met	hod			` . '					Electrostatic.
Deflecting Me	thod								Electrostatic.
Overall Lengt	h								332 ± 8 mm.
Greatest Dian	neter	of Bu	ılb			:			90 mm.
Minimum Use	eful S	creen	D	iame	ter				70 mm.
Mounting Pos	sition								Any.
Base .									B.12.D.

Pin 1—Modulator. Pin 2—Cathode. Pin 3—Heater. Pin 4—Heater. Pin 5—Anode 1. Pin 6—Anode 2. Pin 7—No connection.

GENERAL:



Pin 8—Y2. Pin 9—X2. Pin 10—Anode 3 and Internal Conductive coating. Pin 11—X1. Pin 12—Y1.

POEBA

Typical Operating Conditions:

Anode 1					2000 volts.	2000 volts.
Anode 2					700 volts.	350 volts.
Anode 3 (5	000v. n	nax.)			4000 volts.	2000 volts.
Modulator	volts fo	or cu	t-off	-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

- 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.

DIAMETER 3 NOMINAL **90EB4F**

POFBRA

Oscilloscope Tube FLAT FACED BULB

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

O LI I DITTE I									
Heater: Voltag	ge				4.0			۰.	a.c. or d.c. volts.
Curre	nt				1.0				amp.
Direct Inter-el	ectro	de C	apa	citan	ices.				
Modulator to	all of	her	elec	trode	es				25µµf.
Each X Plate	to all	othe	er el	lectro	odes				25µµf.
Each Y Plate	to all	othe	er el	lectro	odes				25µµf.
One X to one	Y De	eflect	tor]	Plate					6µµf.
Cathode to all	othe	r ele	ctro	des					15µµf.
Screen :									
Fluorescence		•							Blue.
Persistence									Very Short.
				(10p	sec.	max.	for	1%	initial brightness).
Focusing Meth	nod								Electrostatic.
Deflecting Me	thod								Electrostatic.
Overall Length	1								332 ± 8 mm.
Greatest Diam	neter	of B	ulb						88.5 mm.
Minimum Use	ful S	creet	n D	iame	ter				75 mm.
Mounting Pos	ition								Any.
Base .		•							B.12.D.
Die 1 Madulate				(6)			Die	. º V2
Pin 1—Modulate	or.			5	20	B		PI	1 0-12.
Pin 2—Cathode.			0	TR	>	X		PII	n 9—X2.
Pin 3—Heater.			4	AIK	>	1 19		Pir	n 10—Anode 3 and
Pin 4—Heater.			3			the		Int	ernal Conductive
Pin 5-Anode 1.			G	X	1	12º		coa	ating.
Pin 6—Anode 2.			(2	A A	(11)		Pir	11-X1.
Pin 7—No conne	ection			C)-(12)			Pir	n 12—Y1.
Typical Opera	ting (Cond	itio	15:					

GENERAL .

Anode 1					2000 volts.	2000 volts.
Anode 2					700 volts.	350 volts.
Anode 3 (S	5000v. r	nax.)			4000 volts.	2000 volts.
Modulator	volts f	or cut	-off			
			-	40 1	to -80 volts.	-40 to -80 volts.
Deflection	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 $90^{\circ} \pm 3^{\circ}$. Note 2.

The undeflected focused spot will fall within a circle having a 6 mm. Note 3. 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.

90EB4P

Oscilloscope Tube

ELECTROSTATIC FOCUS.

GENERAL:

ELECTROSTATIC DEFLECTION

POFBRA

DATA

Heater: Vo	oltag	;e			•	4.0				a.c. or d.c. volts.
Cı	irrer	ıt		•	. •	1.0	•		•	amp.
Direct Inte	er-ele	ectro	de C	apac	itan	ces.				
Modulator	to a	all ot	her o	electi	rode	es	•		·	25µµf.
Each X Pla	ate t	o all	othe	er ele	ctro	odes				25µµf.
Each Y Pla	ate t	o all	othe	er ele	ctro	odes	•			25µµf.
One X to one Y Deflector Plate									·	6µµt.
Cathode to	o all	othe	r ele	ctroc	les					15μµf.
Screen :										
Fluorescen	ce									Blue.
Persistence	•							•	•	Very Short.
			(10)	l sec	. ma	ax. for	r 1%	initia	al t	orightness).
Focusing N	Meth	od								Electrostatic.
Deflecting	Met	hod							•	Electrostatic.
Overall Le	ngth	l								332 ± 8 mm.
Greatest D	Diam	eter	of B	ulb						92 mm.
Minimum	Use	ful S	creer	1 Dia	ame	ter				70 mm.
Mounting	Posi	tion								Any.
Anode Ca	р							•	•	Recessed Small Ball.
Base										B.12.D.
Din 1 Mod	ulata					SEE I	NOTE I.		Di	n 8 V2
Pin 2 Coth	ulato	1.			- (6 (7)			Di	n = 12
Pin 2—Cath	ode.			(5	ETT	8		FI.	10 Angle 2 and
Pin 3—Heat	er.			(4)		\overline{z}	5/9)	In	ternal Conductive
Pin 4—Heat	er.						AL		co	ating.
Pin 5-Anoo	de 1.			3	N	~	1/10)	Pi	n 11—X1.
Pin 6—Anoo	de 2.			(2	->	1		Pi	n 12—Y1
Pin 7-No c	conne	ction			0	1) 12			C	n Anode A P.D.A
									Ca	ap—Anode 4 F.D.A.
Typical Op	perat	ing (Cond	ition	5:					
Anode 1										2000 volts.
Anode 2		÷								380 volts.
Anode 3 (4	4000	v. m	ax.)							2000 volts.
Anode 4 P	ost	Defle	ctor	Acc	elera	ator (6000	v. ma	x.)	4000 volts.
Modulator	r vol	ts for	r cut	-off					•	-40 to -80 volts.
Deflection	Sens	sitivit	v:							mm/volt.
V Dlata										0.140
A Plate	•	•	•	•	•		•		·	0.140
r 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.
90ED4 Oscilloscope Tube

SOFDR

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage . Current .	· ·	4.0 1.0		•	a.c. or d.c. volts. amp.
Direct Inter-electrode Ca	apacitan	ces.			
Modulator to all other e	lectrode	s .			25µµf.
Each X Plate to all othe	r electro	des .			25µµf.
Each Y Plate to all other	r electro	des .			25µµf.
One X to one Y Deflected	or Plate				6μμf.
Cathode to all other elec	trodes				15µµf.
Screen :					
Fluorescence					Blue.
Afterglow					Yellow
Persistence of Afterglow					Long.
(10 sec. min	n./100 se	ec. max	. for 1°	% ini	itial brightness).
Focusing Method					Electrostatic.
Deflecting Method .					Electrostatic.
Overall Length .					332 ± 8 mm.
Greatest Diameter of Bu	ılb .				90 mm.
Minimum Useful Screen	Diame	ter			70 mm.
Mounting Position					Any.
Base	· ·			•	B.12.D.
Pin 1—Modulator.	(6)		Pin	a 8—Y2.
Pin 2—Cathode.	5	E	0	Pin	9-X2.
Pin 3—Heater.	AK	X	10	Pin	10-Anode 3 and
Pin 4—Heater.	AF		19	Int	ernal Conductive
Pin 5—Anode 1.	3 VE	~7/	10	Pir	11-X1.
Pin 6—Anode 2.	2	2A		Pir	12-Y1
Pin 7—No connection.	(12			
Typical Operating Condi	tions :				
Anode 1		2000 v	olts.		2000 volts.
Anode 2		700 v	olts.		350 volts.
Anode 3 (5000 v max)		4000 v	olts.		2000 volts.
Modulator volts for cut.	off	1000 1	0100.		2000 10101
inodulator volts for cut	-40 to	o -80 v	olts.		-40 to -80 volts.
Deflection Sensitivity :		mm/	volt.		mm/volt.
X Plate		0.0	85		0 170
Y Plate		0.1	90		0.380
		0.1			0.000

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



ALL SIZES IN MILLIMETRES

90ED4P

90EDAP

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

ENEDA

DATA

GENERAL:									
Heater: Voltag	ge				4.0				a.c. or d.c. volts.
Currer	nt				1.0				amp.
Direct Inter-ele	ectro	de Ca	apac	itan	ces.				
Modulator to a	all ot	her e	electr	rode	S				25µµf.
Each X Plate t	o all	othe	r ele	ctro	des				25µµf.
Each Y Plate t	o all	othe	r ele	ctro	des				25µµf.
One X to one	Y De	eflect	or P	late					6μµf.
Cathode to all	othe	r ele	ctroc	les					15µµf.
Screen :									
Fluorescence				•	•		•		Blue.
Afterglow									Yellow.
Persistence of	After	glow	7					•	Long.
	(10	sec.	min.	/100	sec.	max.	for	1%	initial brightness)
Focusing Meth	lod								Electrostatic.
Deflecting Met	thod					•			Electrostatic.
Overall Length	1								332 ± 8 mm.
Greatest Diam	eter	of Bi	ılb						92 mm.
Minimum Use	ful S	creer	Dia	amet	ter				70 mm.
Mounting Posi	ition								Any.
Anode Cap									Recessed Small Ball.
Base .		•	•	•	•	•		•	B.12.D.
Pin 1-Modulato	or.			-	SEE	NOTE I.		Pin	n 8—Y2.
Pin 2—Cathode.			(2/17	0		Pin	n 9—X2.
Pin 3-Heater				14	>	X°		Pi	10—Anode 3 and
Pin 4—Heater			4		$\langle \rangle$	1)0		Int	ternal Conductive
Din 5 Anoda 1			a	VE		the		co	ating.
Fin 5—Anode 1.			3	X	\wedge			Pin	n 11—X1.
Pin 6—Anode 2.			(2	2	11		Pin	n 12—Y1.
Pin 7—No conne	ection	•		(12)		Ca	p—Anode 4 P.D.A.
Typical Operat	ting (Cond	ition	s:					
Anode 1									2000 volts.
							-	-	

Anoue I								•		2000 vons.
Anode 2										380 volts.
Anode 3	(4000	v. 1	max.)							2000 volts.
Anode 4	Post	Def	flector	Acc	elera	ator	(6000	v. n	nax.)	4000 volts.
Modulate	or vol	ts f	for cut	-off			•	4	•	-40 to -80 volts.
Deflection	n Sens	sitiv	vity :							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 $90^{\circ} \pm 3^{\circ}$.



90EG4

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

Heater: Voltage 4.0) .			a.c. or d.c. volts.
Current 1.0) .			amp.
Direct Inter-electrode Capacitances	S.			1
Modulator to all other electrodes				25µµf.
Each X Plate to all other electrode	s.			25µµf.
Each Y Plate to all other electrode	s.			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 se	c. max.	for	1%	initial brightness).
Focusing Method				Electrostatic.
Deflecting Method				Electrostatic.
Overall Length				332 ± 8 mm.
Greatest Diameter of Bulb				90 mm.
Minimum Useful Screen Diameter				70 mm.
Mounting Position				Any.
Base				B.12.D.

Pin 1—Modulator. Pin 2—Cathode. Pin 3—Heater. Pin 4—Heater. Pin 5—Anode 1. Pin 6—Anode 2. Pin 7—No connection.

GENERAL:



Pin 8—Y2. Pin 9—X2. Pin 10—Anode 3 and Internal Conductive coating. Pin 11—X1. Pin 12—Y1.

90FGR

Typical Operating Conditions:

Anode 1					2000 volts.	2000 volts.
Anode 2					700 volts.	350 volts.
Anode 3 (50	000v. n	nax.)			4000 volts.	2000 volts.
Modulator v	volts fo	or cu	t-off			
			-	40 1	to -80 volts.	-40 to -80 volts.
Deflection S	ensitiv	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 $90^{\circ} \pm 3^{\circ}$.



90EG4F

90FCRF

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL :

Heater: Voltag	e				4.0				a.c. or d.c. volts.
Curren	nt				1.0				amp.
Direct Inter-ele	ectro	de Ca	apaci	itan	ces.				
Modulator to a	all ot	her e	lectr	ode	es				25µµf.
Each X Plate t	o all	other	r ele	ctro	odes				25µµf.
Each Y Plate t	o all	other	r ele	ctro	odes				25µµf.
One X to one	Y De	eflecto	or Pl	ate					6µµf.
Cathode to all	othe	r elec	trod	es					15µµf.
Screen :									
Fluorescence									Green.
Persistence									Short.
(10)	m sec	c. mir	1./10	0m	sec.	max.	for	1%	initial brightness).
Focusing Meth	od								Electrostatic.
Deflecting Met	hod								Electrostatic.
Overall Length			•				•		332 ± 8 mm.
Greatest Diam	eter (of Bu	lb						88.5 mm.
Minimum User	ful So	creen	Dia	me	ter				75 mm.
Mounting Posi	tion								Any.
Base .	•	•		•					B.12.D.
				1	10				
Pin 1—Modulato	r.		(5	5	20	0		Pin	n 8—Y2.
Pin 2—Cathode.			-	14	>	X		Pin	n 9—X2.
Pin 3—Heater.			4	K	>	710		Pin	n 10—Anode 3 and
Pin 4—Heater.			a	LE		1		Int	ternal Conductive
Pin 5—Anode 1.			5	X	\wedge	1/10		CO	ating.
Pin 6—Anode 2			(2	N	Z	(1)		Pi	$n \Pi - XI$.
Pin 7 No conne	ction			(1) [12]			Pin	n 12—Y1.
	cuon.								
Typical Operat	ing (Condi	tions	:					

Anode 1 . Anode 2 . 2000 volts. 2000 volts. 700 volts. 350 volts. . 4000 volts. Anode 3 (5000v. max.) . 2000 volts. Modulator volts for cut-off -40 to -80 volts. -40 to -80 volts. **Deflection Sensitivity :** 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 $90^{\circ} \pm 3^{\circ}$.



ALL SIZES IN MILLIMETRES.

SOFCAR

90EG4P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltag	ge .		4.0				a.c. or d.c. volts.
Curren	nt.		1.0				amp.
Direct Inter-ele	ectrode Ca	apacita	ances.				
Modulator to a	all other e	electro	des				25µµf.
Each X Plate t	o all othe	r elect	trodes				25µµf.
Each Y Plate t	o all othe	r elect	trodes				25µµf.
One X to one	Y Deflect	or Pla	te .				6µµf.
Cathode to all	other elec	ctrode	s.				15µµf.
Screen :							
Fluorescence							Green.
Persistence							Short
(10	m sec mi	n /100	m sec	max	for	1%	initial brightness)
Focusing Meth	in sec. in	11./100	in sec.	max.	101	1 /0	Electrostatic
Deflecting Met	thod	• •	• •	•	•	•	Electrostatic
Overall Longth	nou .	•	• •		•	·	332 ± 8 mm
Greatest Diam	i .	,ih	· ·	•	·	•	02 mm
Greatest Diam	ful Concor	Dian			•	•	70 mm
Minimum Use	ful Screen	Dian	neter	•	·	•	/0 mm.
Mounting Post	ltion	•	• •	•	•	•	Any.
Anode Cap	• •	• •	• •	•	•	•	Recessed Small Ball.
Base .	· ·	• •	· ·	•	•		B.12.D.
Pin 1-Modulato	ог.		SEE	NOTE I.		Pi	n 8—Y2.
Pin 2 Cathode		0	(6) /(7			Pi	n 0X2
Dia 2 Hart		5		X8		D.	10 And 2 and
Pin 3—Heater.		A	125	210)	In	ternal Conductive
Pin 4—Heater.		A			/	co	ating.
Pin 5—Anode 1.		3		-1 10)	Pi	n 11-X1
Pin 6—Anode 2.		2	M	-		Di	n 12V1
Pin 7-No conne	ection.	G	(1) (12	5.0		C	
			\bigcirc \bigcirc			Ca	ip—Anode 4 P.D.A.
Typical Opera	ting Condi	itions :					
Anode 1							2000 volts.
Anode 2							380 volts
Anode 3 (4000	v max)						2000 volts
Anode 4 Post	Deflector	Accel	erator	(6000	v m	av	4000 volts
Modulator vol	Its for cut	-off	iciator	(0000	v. 11	an.	-40 to -80 volts
Wiodulator vol	its for cut	-011	• •	·	•	•	40 10 00 00113.
Deflection Sen	sitivity :						mm/volt.
X Plate .							0.140
Y Plate .							0.320
	450 (5)	-					

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



90EO4

Oscilloscope Tube

ELECTROSTATIC FOCUS.

GENERAL:

ELECTROSTATIC DEFLECTION

POROR

DATA

o at the state of					
Heater: Voltage	. 4.0				a.c. or d.c. volts.
Current	. 1.0				amp.
Direct Inter-electrode Capaci	itances.				
Modulator to all other electr	odes				25µµf.
Each X Plate to all other ele	ctrodes				25µµf.
Each Y Plate to all other ele	ctrodes				25µµf.
One X to one Y Deflector P	late .				6uuf.
Cathode to all other electroc	les .				15uuf.
Screen :					
Fluorescence					Orange.
Afterglow					Orange.
Persistence of Afterglow	• •				Long.
(10 sec min /	100 sec	max	for 1	0/ 1	nitial brightness).
Focusing Method	100 sec.	max.	101 1	/0 1	Electrostatic
Deflecting Method	• •	•	•	•	Electrostatic
Overall Length	• •	·		•	$232 \pm 8 \text{ mm}$
Overall Length	• •	•	•	•	552 <u>-</u> 6 IIIII.
Greatest Diameter of Buib	• • •	·	·	•	90 mm.
Minimum Useful Screen Dia	imeter	•	•	•	70 mm.
Mounting Position .	• •	•	•	•	Any.
Base	• •	·	·	•	B.12.D.
Pin 1-Modulator	0.0			Pi	n 8-Y2
Pin 2 Cathada	6 7	\sim		Di	0 V2
Pin 2—Cathode.	XII	P		PI.	19-A2.
Pin 3—Heater.	K	210)	Pi	ternal Conductive
Pin 4—Heater.	L	HLL		CO	ating
Pin 5—Anode 1. (3)		5) 710)	Di	n 11 V1
Pin 6—Anode 2.	KU	5		PI.	11 11
Pin 7—No connection.	(1) 12	500		PI	n 12 - Y 1.
		·			
Typical Operating Conditions	s: •				
Anode 1	. 200	0 volt	s.		2000 volts.
Anode 2	. 70	0 volt	S.		350 volts.
Anode 3 (5000y max)	400	0 volt	S		2000 volts
Modulator volts for cut-off					2000 1010.
	40 to -8	0 volt	s.		-40 to -80 volts.
Defloction Sonsitivity	m	m/vol	+		mm/volt
Denection Sensitivity:	m				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 $90^{\circ} \pm 3^{\circ}$.



ALL SIZES IN MILLIMETRES

90FORF

90EO4F Oscilloscope Tube

FLAT FACED BULB

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

Heater: Volta	ge				4.0				a.c. or d.c. volts.
Curre	nt				1.0				amp.
Direct Inter-el	ectro	de C	apa	citan	ces.				
Modulator to	all of	ther e	elect	rode	S				25µµf.
Each X Plate	to all	othe	er el	ectro	des				25µµf.
Each Y Plate	to all	othe	er el	ectro	des				25uuf.
One X to one	Y De	eflect	or I	Plate					6uuf.
Cathode to all	othe	r ele	ctro	des					15uuf.
Screen :									
Fluorescence									Orange.
Afterglow									Orange.
Persistence of	After	glow	,						Long.
	(10	sec.	min	./100	sec.	max.	for	1%	initial brightness).
Focusing Met	hod			.,				- /0	Electrostatic.
Deflecting Me	thod								Electrostatic.
Overall Length	h								332 ± 8 mm.
Greatest Diam	ieter	of B	lb				-		88.5 mm.
Minimum Use	ful S	creen	Di	amet	er				75 mm.
Mounting Pos	ition								Any.
Base	mon		•						B 12 D
	·	÷ .	•	•	·	•		•	D.12.D.
Pin 1-Modulate)r			6) (7)			Pir	8-Y2
Pin 2 Cathode			(5/	~	(8)		Dir	9 ¥2
Pin 2 Heater				14	~?	No.		Die	10 Anode 3 and
Pin 5-Heater.			9	11=	=			Int	ernal Conductive
Pin 4—Heater.			3	N=		10		coa	ating.
Pin 5—Anode 1.			(Ke	ΔI	K		Pir	11-X1.
Pin 6—Anode 2.			C	5	12	\bigcirc		Pir	12-Y1
Pin 7-No conne	ection			C				. 11	

Typical Operating Conditions:

GENERAL:

Anode 1	•				2000 volts.	2000 volts.
Anode 2					700 volts.	350 volts.
Anode 3 (5)	000v. n	nax.)			4000 volts.	2000 volts.
Modulator	volts fo	or cu	t-off			
			-	-40 1	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
X Plate Y Plate	:	:	:		0.085 0.190	0.170 0.380

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



ALL SIZES IN MILLIMETRES.

POFORA

90E04P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltag	ge .		4.0				a.c. or d.c. volts.
Curre	nt .		1.0				amp.
Direct Inter-el	ectrode Ca	apacitand	ces.				
Modulator to	all other e	electrode	S				25µµf.
Each X Plate	to all othe	r electro	des				25µµf.
Each Y Plate	to all othe	r electro	des				25µµf.
One X to one	Y Deflect	or Plate					6μµf.
Cathode to all	other elec	ctrodes					15µµf.
Screen :							
Fluorescence							Orange.
Afterglow		•					Orange.
Persistence of	Afterglow	· ·					Long.
	(10 sec. :	min./100	sec.	max.	for	1%	initial brightness).
Focusing Met	hod						Electrostatic.
Deflecting Me	thod .						Electrostatic.
Overall Lengt	h.						332 ± 8 mm.
Greatest Dian	neter of Bi	ulb .					92 mm.
Minimum Use	eful Screen	Diamet	er				70 mm.
Mounting Pos	sition						Any.
Anode Cap							Recessed Small Ball.
Base .							B.12.D.
			SEE	NOTE I.		D'	0. 1/2
Pin 1-Modulat	or.	6	16)		Pu	n 8—Y2.
Pin 2-Cathode		5	41	(8)		Pi	n 9—X2.
Pin 3-Heater.		NE	X	× Co		PII	n 10—Anode 3 and
Pin 4-Heater.		Y I				co	ating.
Pin 5-Apode 1		3	_	110		Pi	n 11—X1.
Pin 6_Anode 2		X		K		Pi	n 12—Y1.
Pin 7 No conr	Anotion	22	12			Ca	p-Anode 4 P.D.A.
Fill /—No com	lection.	C)		00	
Typical Opera	ting Cond	itions :					
Anode 1							2000 volts.
Anode 2							380 volts.
Anode 3 (400	Ov. max.)						2000 volts.
Anode 4 Post	Deflector	Accelera	ator	(6000)	/. m	ax.)	4000 volts.
Modulator vo	lts for cut	-off					-40 to -80 volts.

Deflection	n Ser	ISITIV	ity:				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 $90^{\circ} \pm 3^{\circ}$.



90EY4

Oscilloscope Tube

ELECTROSTATIC FOCUS.

GENERAL .

ELECTROSTATIC DEFLECTION

90FT #

DATA

Heater: Voltage .		. 4	.0				a.c. or d.c. volts.
Current .		. 1	.0				amp.
Direct Inter-electrode (Capaci	tanc	es.				
Modulator to all other	electr	odes					25µµf.
Each X Plate to all oth	er ele	ctroc	les				25µµf.
Each Y Plate to all oth	er ele	ctroc	les				25µµf.
One X to one Y Deflec	tor Pl	ate					6µµf.
Cathode to all other ele	ectrod	es					15µµf.
Screen :							
Fluorescence .							Yellow.
Afterglow							Yellow.
Persistence of Aftergloy	w.						Long.
(1 sec. m	in / 10	sec	max	for	1%	init	ial brightness).
Focusing Method		See.	11100711	101	1 /0		Electrostatic.
Deflecting Method	•		•	•	·	·	Electrostatic
Overall Length		·					332 + 8 mm
Greatest Diameter of F	Rulh		·		•		90 mm.
Minimum Useful Scree	n Dia	mete	T		•	•	70 mm
Mounting Position		mett		·	•	·	Any
Rase	·	·	•	•	•	•	B 12 D
Dase	•	•	·	•	•	•	D.12.D.
Pin 1—Modulator.		6	(7)			Pi	n 8—Y2.
Pin 2—Cathode.	5	X		8)		Pi	n 9—X2.
Pin 3—Heater.	N	1F	$-\chi$	To		Pin	n 10-Anode 3 and
Pin 4—Heater.	A	1==		12		In	ternal Conductive
	-	11.		- 1			

Pin 5—Anode 1. Pin 6—Anode 2. Pin 7-No connection.



Pin 11-X1. Pin 12-Y1.

Typical Operating Conditions:

Anode 1					2000 volts.	2000 volts.
Anode 2					700 volts.	350 volts.
Anode 3 (5)	000v. n	nax.)			4000 volts.	2000 volts.
Modulator	volts fo	or cu	t-off			
			-	40	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 $90^{\circ} \pm 3^{\circ}$. Note 2.



ALL SIZES IN MILLIMETRES

90EY4F

SOF ARE BOC

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 C	apa	citand	ces.				
Modulator to all other	elect	trode	S				25µµf.
Each X Plate to all other	er el	ectro	des				25uuf.
Each Y Plate to all other	er el	ectro	des				25µµf.
One X to one Y Deflec	tor I	Plate					6µµf.
Cathode to all other ele	ectro	des					15µµf.
Screen :							
Fluorescence							Yellow.
Afterglow							Yellow.
Persistence of Afterglow	N						Long.
(1 sec	. mi	n./10	sec.	max.	for	1%	initial brightness).
Focusing Method							Electrostatic.
Deflecting Method .							Electrostatic.
Overall Length .							332 ± 8 mm.
Greatest Diameter of B	ulb						88.5 mm.
Minimum Useful Scree	n Di	iamet	er				75 mm.
Mounting Position							Any.
Base		•					B.12.D.
Pin 1—Modulater.		6) (7)			Pi	n 8-Y2.
Pin 2—Cathode		5/1	-	8		Pi	n 9-X2
Pin 3 Hester	4	VIE		No.		Pi	n 10_Anode 3 and
Pin 4 Heaten	0	∩∥È	$= \doteq$			In	ternal Conductive
Pin 4—Heater.	3	K/=	-	1/10		co	ating.
Pin 5—Anode I.		XL		5		Pi	n 11—X1.
Pin 6—Anode 2.		-	12			PI	n 12-Y1.
Pin 7-No connection.		C	0				
Typical Operating Cond	litio	ns :					

Anode 1					2000 volts.	2000 volts.
Anode 2					700 volts.	350 volts.
Anode 3 (5	000v. n	nax.)			4000 volts.	2000 volts.
Modulator	volts fo	or cut	-off	40 1	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

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



90EY4P

DOFT TH

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

CENEDAL .

O'DI (DI NIL)		
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		Yellow.
Afterglow		Yellow.
Persistence of Afterglow		Long.
(1 sec. min./10 sec. max. fo	or 1%	initial brightness).
Focusing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		332 ± 8 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.
Pin 1—Modulator.	Pi	n 8—Y2.
Pin 2—Cathode.	Pi	n 9—X2.
Pin 3—Heater	Pi	n 10—Anode 3 and
Pin 4—Heater	In	ternal Conductive
Pin 5 Anode 1	cc	bating.
Pin 6 Anode 2	Pi	n 11—X1.
Pin 6—Anode 2.	Pi	n 12—Y1.
Pin /—No connection.	C	ap—Anode 4 P.D.A.
Typical Operating Conditions :		
Anode 1		2000 volts.
Anode 2	÷	380 volts.
Anode 3 (4000v max)		2000 volts.
Anode 4 Post Deflector Accelerator (6000v	max) 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 $90^{\circ} \pm 3^{\circ}$.



PMT57

HIGH DEFINITION

Television Monitor Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

PMISI

DATA

Heater: Voltage					4.0 a.c. or d.c. volts.
Current					1.0 amp.
Direct Inter-electrode	Capac	itances	:		
Modulator to all oth	her elec	ctrodes			9.0µµf.
Cathode to all other	electro	odes			9.0µµf.
Screen:					Aluminium Backed.
Fluorescence.					White.
Persistence .		(5m s	ec./25 n	n sec. fo	r 1% initial brightness.)
Focussing Method					Magnetic
Deflecting Method	,				Magnetic
Overall Length					500mm + 10 mm.
Greatest Diameter of	Bulb				257 mm.
Minimum Useful Scr	een Dia	ameter			230 mm.
Mounting Position					Any
Anode Cap					Cavity Cap BSS/448/CT8.
Base					International Octal.

Pin 1-No connection.

Pin 2—Heater.

GENERAL:

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:

Anode Voltage					15000 volts.
Modulator Voltage:					
Negative bias value	•				128 volts.
Positive bias value					0 volts
Peak Heater-Cathode	e Vol	tages:			
Heater negative wit	h res	pect to	cathode	e .	150 volts
Heater positive with	h resp	pect to	cathode		150 volts
Line Width .					0.3 mm.
Interlaced 405 line T.	V. ras	ster. Bea	am Curr	ent 10	0μA.
Line length 200 mm.					

Typical Operating Conditions:

Anode Voltage			•	10,000 volts
Modulator Voltage f	or cut-off			-50 to -85 volts.
Focussing-Coil Curre	ent-See N	lote 3		550 A.T.
Spot Position	See N	Jote 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. Note 4.



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

QLA.39

Vacuum Photocell

Quartz Envelope

GENERAL					
Spectral Response .					Type QA.
Wavelength of Maximum	Resp	oonse			3700 ± 500 A.U.
Cathode :					
Shape					V - shaped cross section.
Projected Width .					25 mm.
Length	•				40 mm.
Anode				۶.	Cylindrical wire mesh.
Inter-electrode Capacitano	ce				8 µµf.
Maximum Overall Length	L				120 mm.
Length to Cathode centre		•			75 mm. approx.
Maximum bulb diameter					36 mm.
Mounting position .					Any.
Basing					Flying Leads.
Base Connections					Green - Cathode.
					Red - Anode.
Maximum Ratings					
Anode Supply Voltage (D	C or	peak	AC	.)	50.
Average cathode current					1 μA.
Peak cathode current					4 µA.
Ambient Temperature					50°C.
Characteristics					
Operating voltage .					30-50.
Maximum dark current at	30 v	olts			5 x 10 ⁻¹² amps.

*Measured with an incandescent tungsten filament at a colour temperature of 2700° K.

*Minimum sensitivity at operating voltage . 20 μ A/lumen.



ALL SIZES IN MILLIMETRES.



SENSITIVITY CURVE



GPD10

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 Any Flying leads Short lead—cathode GROID

Maximum ratings:

Bias voltage Current Power dissipation at 25°C Dark current at -30V, 25°C Operating frequency Operating temperature -50V 3mA 30mW 15μA 50kc/s 40°C

Sensitivity:

0.5µA/ft.candle minimum

Internal resistance at -30V and zero illumination:

 $2M\Omega$ 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.





GPDIO

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 Any Flying leads Short lead—cathode GRO20

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:

0.25µA/ft.candle minimum

Internal resistance at -30V and zero illumination:

 $0.6M\Omega$ 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:

GPD20

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



CDS1

Photo Conductive Cell

GENERAL:

Sensitive	Element						Cadmium Sulphide.
Waveleng	gth of maxi	imum	resp	onse			5500 to 7000 A.U.
Sensitive	area (total	area	to b	e illu	mina	ted)	330 sq. mm. nominal.

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.

Nominal dimensions

Maximum Ratings:

Cell voltage (DC or Peak	AC)			300 volts.
Dissipation (continuous)				0.5 watts.
Dissipation (peak) .				1.0 watts.
Absolute maximum tempe	ratur	e		70°C.

Characteristics :

(DC condition.	25°	C am	bient	temp	eratu	re.)	
Illumination							5.fc.
Cell current at	9 vc	olts d.	c.				

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

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

 $42.0 \times 21.0 \times 8.3$ mm.



DIMENSIONS IN MILLIMETRES.