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.

(1) T.P.R.

British Services C.V. and American Type Numbers.

Cathode Ray Tubes

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

** Data Sheet is not in the catalogue.*

British Services C.V. and American Type Numbers.

Cathode Ray Tubes

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

** Data Sheet is not in the Catalogue*

DIAMETER 2″ NOMINAL

2EB1

2EB1

Oscilloscope Tube

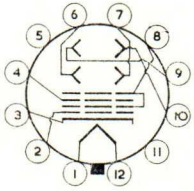
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	6.3	a.c. or d.c. volts.
Current	0.6	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		11.0μμf.
Each X Plate to all other electrodes		11.0μμf.
Each Y Plate to all other electrodes		10.0μμf.
Deflector Plates XI to X2		4μμf.
Deflector Plates Y1 to Y2		4μμf.
Screen :		
Fluorescence		Blue.
Persistence		Very Short.
	(10μ sec. max. for 1% initial brightness).	
Focusing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		194 ± 5 mm.
Greatest Diameter of Bulb		52.4 mm.
Minimum Useful Screen Diameter		44 mm.
Mounting Position		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.



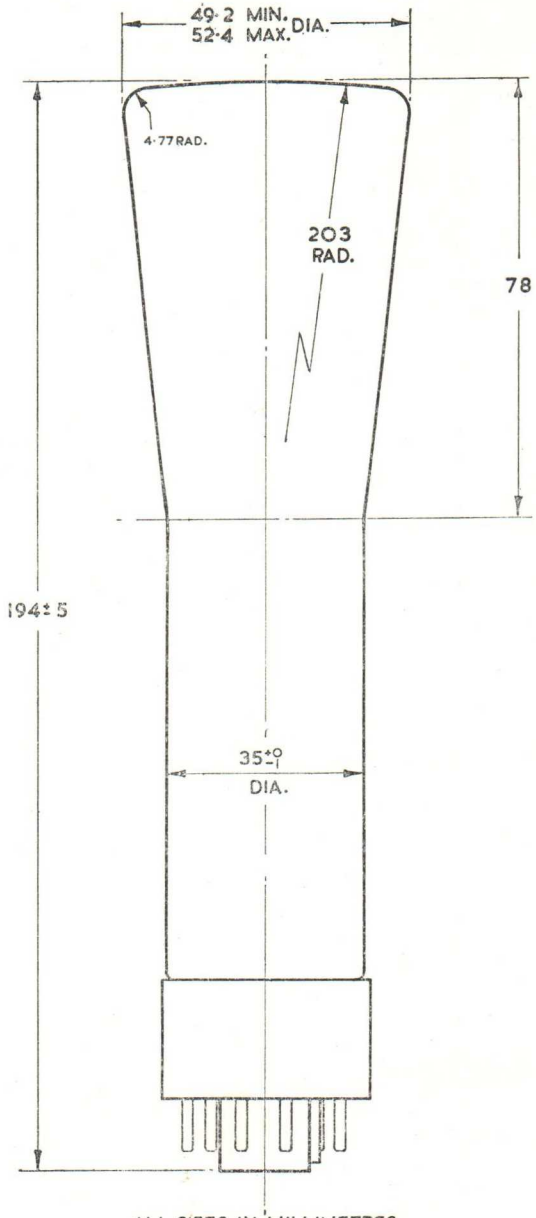
Pin 7—Y2.
Pin 8—Anode 1 and Anode 3.
Pin 9—X2.
Pin 10—X1.
Pin 11—Pin omitted.
Pin 12—Heater.

Typical Operating Conditions:

Anode 1 (2500v. max.)	1000 volts.	2000 volts.
Anode 2	150/280 volts.	300/560 volts.
Anode 3 (2500v. max.)	1000 volts.	2000 volts.
Modulator volts for cut-off	−65 volts. max.	−130 volts max.
Deflection Sensitivity:	mm/volt.	mm/volt.
X Plate	0.16 to 0.22	0.08 to 0.11
Y Plate	0.25 to 0.34	0.125 to 0.17

Note 2. The angle between the traces produced by X1 and X2 and the trace produced by Y1 and Y2 is 90° ± 3°.

Note 3. The undeflected focused spot will fall within a circle having a 5 mm. radius concentric with the centre of the tube face.



ALL SIZES IN MILLIMETRES.

Note 1. When viewing the screen with the tube positioned such that 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

2EG1

Oscilloscope Tube

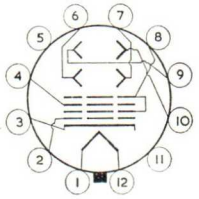
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	6.3	a.c. or d.c. volts.
Current	0.6	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		11.0μμf.
Each X Plate to all other electrodes		11.0μμf.
Each Y Plate to all other electrodes		10.0μμf.
Deflector Plates XI to X2		4μμf.
Deflector Plates Y1 to Y2		4μμf.
Screen :		
Fluorescence		Green.
Persistence		Short.
(10m sec. min./100m sec. max. for 1% initial brightness).		
Focusing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		194 ± 5 mm.
Greatest Diameter of Bulb		52.4 mm.
Minimum Useful Screen Diameter		44 mm.
Mounting Position		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.



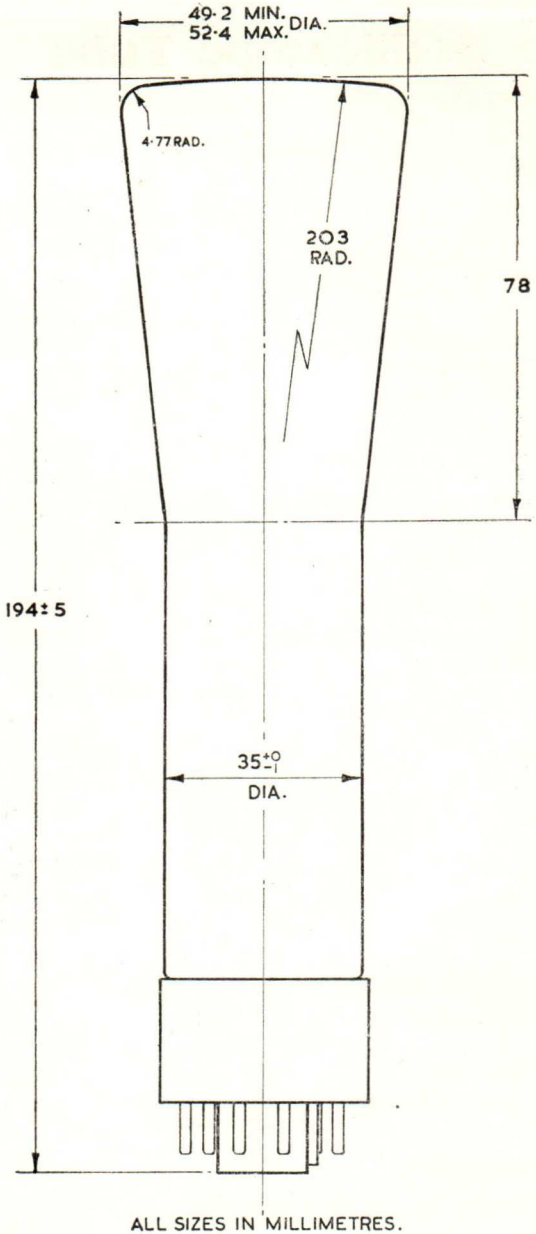
Pin 7—Y2.
Pin 8—Anode 1 and Anode 3.
Pin 9—X2.
Pin 10—X1.
Pin 11—Pin omitted.
Pin 12—Heater.

Typical Operating Conditions :

Anode 1 (2500v. max.)	1000 volts.	2000 volts.
Anode 2	150/280 volts.	300/560 volts.
Anode 3 (2500v. max.)	1000 volts.	2000 volts.
Modulator volts for cut-off	−65 volts max.	−130 volts max.
Deflection Sensitivity :	mm/volt.	mm/volt.
X Plate	0.16 to 0.22	0.08 to 0.11
Y Plate	0.25 to 0.34	0.125 to 0.17

Note 2. The angle between the traces produced by X1 and X2 and trace the produced by Y1 and Y2 is 90° ± 3°.

Note 3. The undeflected focused spot will fall within a circle having a 5 mm. radius concentric with the centre of the tube face.



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

DIAMETER 2¾" NOMINAL

3EB1

Oscilloscope Tube

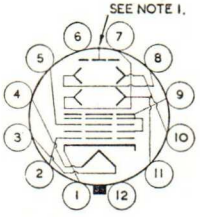
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		13μμf.
Each X Plate to all other electrodes		21μμf.
Each Y Plate to all other electrodes		21μμf.
One X to one Y Deflector Plate		4μμf.
Cathode to all other electrodes		12μμf.
Screen :		
Fluorescence		Blue.
Persistence		Very Short.
	(10μ sec. max. for 1% initial brightness).	
Focusing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		255 ± 5 mm.
Greatest Diameter of Bulb		70 mm.
Minimum Useful Screen Diameter		55 mm.
Mounting Position		Any.
Anode Cap		Recessed Small Ball.
Base		B.12.B.

Pin 1—Cathode.
Pin 2—Modulator.
Pin 3—Heater.
Pin 4—Heater.
Pin 5—Anode 2.
Pin 6—Pin omitted.
Pin 7—Y2.



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.

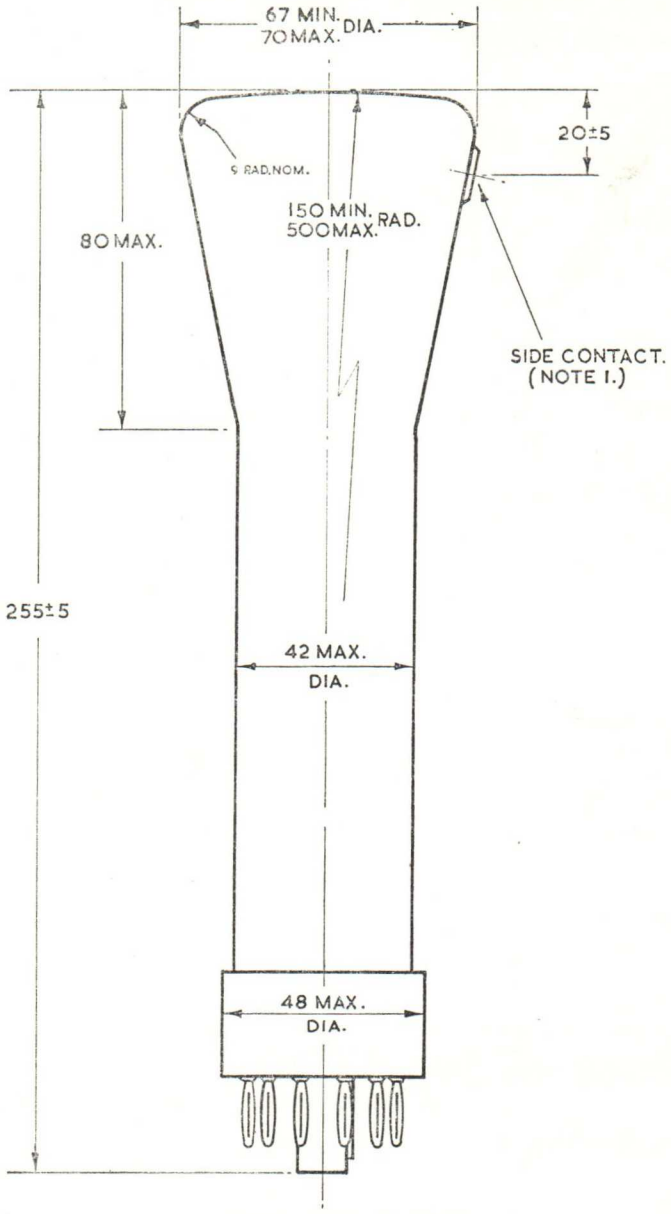
Typical Operating Conditions:

Anode 1 (2500v. max.)	2000 volts.	1300 volts.
Anode 2	130 volts.	100 volts.
Anode 3 (2500v. max.)	2000 volts.	1300 volts.
Anode 4 Post Deflector Accelerator (5KV max.)	4000 volts.	2500 volts.
Modulator volts for cut-off	−65 to −145 volts.	−45 to −100 volts.

Deflection Sensitivity:	mm/volt.	mm/volt.
X Plate	0.125	0.190
Y Plate	0.145	0.220

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is 90° ± 3°.

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



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

DIAMETER 3″ NOMINAL

3EB3P

Oscilloscope Tube

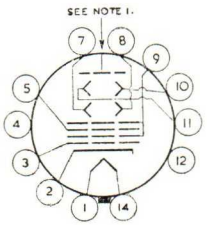
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

GENERAL:

Heater: Voltage	6.3 a.c. or d.c. volts.
Current	0.6 amp.
Direct Inter-electrode Capacitances:	
Modulator to all other electrodes	10.5μμf.
Each X Plate to all other electrodes	11.0μμf.
Each Y Plate to all other electrodes	9.0μμf.
Deflector Plates X1 to X2	4.0μμf.
Deflector Plates Y1 to Y2	3.5μμf.
Screen:	
Fluorescence	Blue.
Persistence	Very Short (10μsec. max. for 1% of initial brightness).
Focussing Method	Electrostatic.
Deflecting Method	Electrostatic.
Overall Length	254 ± 6 mm.
Greatest Diameter of Bulb	77.8 mm.
Minimum Useful Screen Diameter	69.0 mm.
Mounting Position	Any.
Anode Cap	Recessed Ball BSS448/CT7.
Base	B.14A.

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



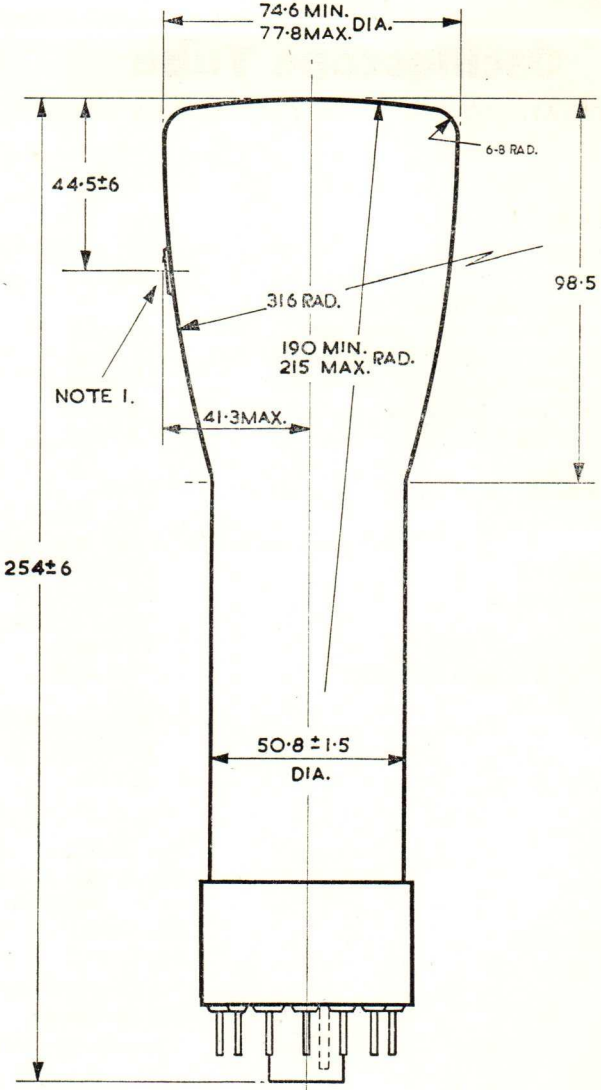
Pin 8—Y2.
Pin 9—Anode 1 and Anode 3.
Pin 10—X2.
Pin 11—X1.
Pin 12—No connection.
Pin 14—Heater.
Cap—Anode 4 P.D.A.

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.

Deflection Sensitivity:

	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 $90° \pm 3°$.

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 2¾" NOMINAL

3ED1

Oscilloscope Tube

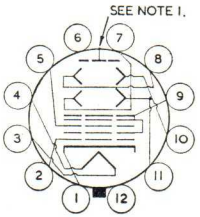
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		13μμf.
Each X Plate to all other electrodes		21μμf.
Each Y Plate to all other electrodes		21μμf.
One X to one Y Deflector Plate		4μμf.
Cathode to all other electrodes		12μμf.
Screen :		
Fluorescence		Blue.
Afterglow		Yellow.
Persistence of Afterglow		Long.
(10 sec. min./100 sec. max. for 1% initial brightness).		
Focusing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		255 ± 5 mm.
Greatest Diameter of Bulb		70 mm.
Minimum Useful Screen Diameter		55 mm.
Mounting Position		Any.
Anode Cap		Recessed Small Ball.
Base		B.12.B.

Pin 1—Cathode.
Pin 2—Modulator.
Pin 3—Heater.
Pin 4—Heater.
Pin 5—Anode 2.
Pin 6—Pin omitted.
Pin 7—Y2.



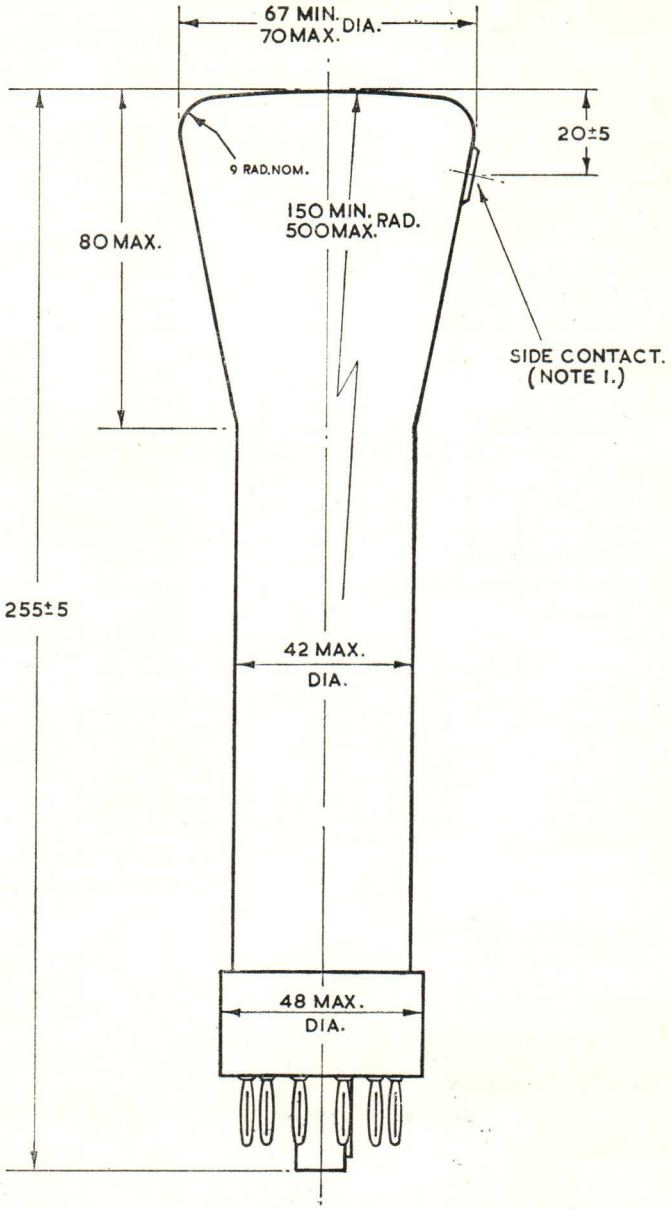
Pin 8—X2.
Pin 9—Anode 1, Anode 3 and Internal Conductive coating.
Pin 10—X1.
Pin 11—Y1.
Pin 12—Pin omitted.
Cap—Anode 4 P.D.A.

Typical Operating Conditions:

Anode 1 (2500v. max.)	2000 volts.	1300 volts.
Anode 2	130 volts.	100 volts.
Anode 3 (2500v. max.)	2000 volts.	1300 volts.
Anode 4 Post Deflector Accelerator (5KV max.)	4000 volts.	2500 volts.
Modulator volts for cut-off	−50 to −105 volts.	−35 to −70 volts.
Deflection Sensitivity:	mm/volt.	mm/volt.
X Plate	0.125	0.190
Y Plate	0.145	0.220

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is 90° ± 3°.

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



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

DIAMETER 3″ NOMINAL

3ED2

Oscilloscope Tube

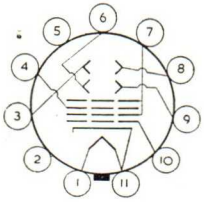
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

GENERAL:

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

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



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

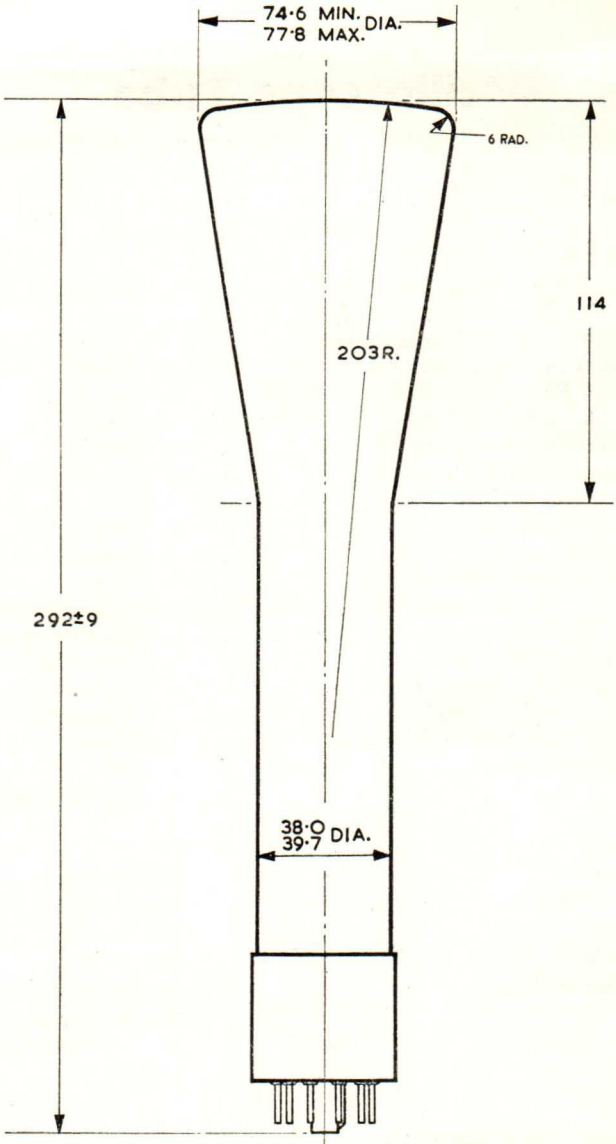
Typical Operating Conditions:

Anode 1 and 3 (2500 volts max.)

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

Deflection Sensitivity:

	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 $90° \pm 3°$.

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°.

DIAMETER 3″ NOMINAL

3ED3P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

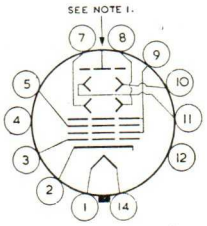
3ED3P

DATA

GENERAL:

Heater: Voltage	6.3 a.c. or d.c. volts.
Current	0.6 amp.
Direct Inter-electrode Capacitances:	
Modulator to all other electrodes	10.5μμf.
Each X Plate to all other electrodes	11.0μμf.
Each Y Plate to all other electrodes	9.0μμf.
Deflector Plates X1 to X2	4.0μμf.
Deflector Plates Y1 to Y2	3.5μμf.
Screen:	
Fluorescence	Blue.
Afterglow	Yellow.
Persistence of Afterglow	Long (10 sec. min./100 sec. max. for 1% initial brightness).
Focussing Method	Electrostatic.
Deflecting Method	Electrostatic.
Overall Length	254 ± 6 mm.
Greatest Diameter of Bulb	77.8 mm.
Minimum Useful Screen Diameter	69.0 mm.
Mounting Position	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.



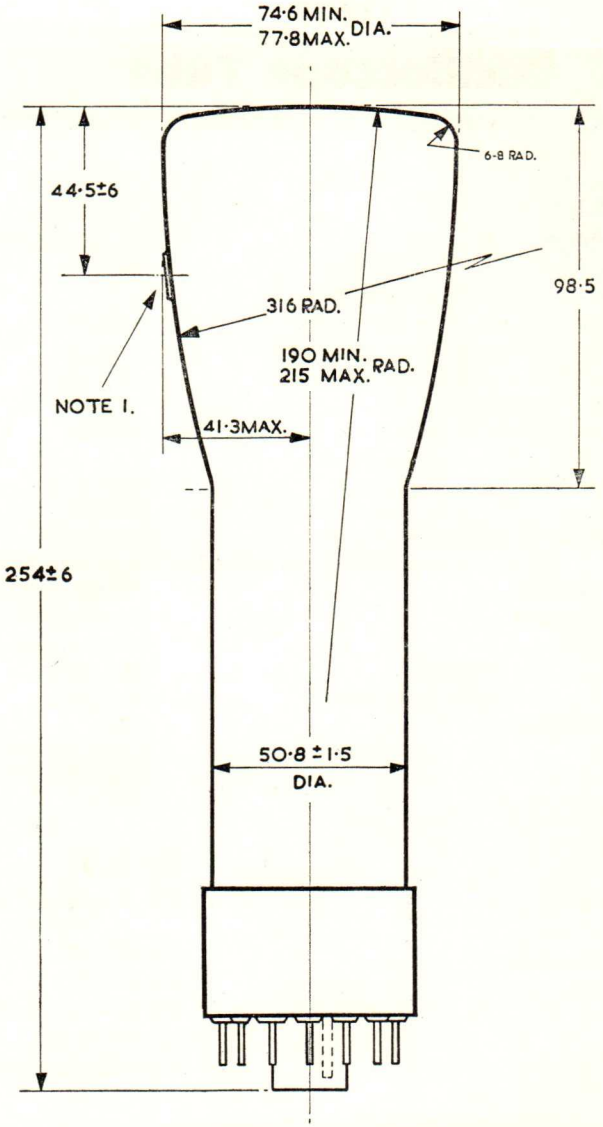
Pin 8—Y2.
Pin 9—Anode 1 and Anode 3.
Pin 10—X2.
Pin 11—X1.
Pin 12—No connection.
Pin 14—Heater.
Cap—Anode 4 P.D.A.

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.

Deflection Sensitivity:

	mm./volts.
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 $90° \pm 3°$.

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 2¾" NOMINAL

3EG1

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

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

Direct Inter-electrode Capacitances.

Modulator to all other electrodes	13μμf.
Each X Plate to all other electrodes	21μμf.
Each Y Plate to all other electrodes	21μμf.
One X to one Y Deflector Plate	4μμf.
Cathode to all other electrodes	12μμf.

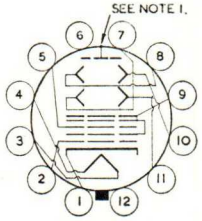
Screen :

Fluorescence	Green.
Persistence	Short.

(10m sec. min./100m sec. max. for 1% initial brightness).

Focusing Method	Electrostatic.
Deflecting Method	Electrostatic.
Overall Length	255 ± 5 mm.
Greatest Diameter of Bulb	70 mm.
Minimum Useful Screen Diameter	55 mm.
Mounting Position	Any.
Anode Cap	Recessed Small Ball.
Base	B.12.B.

Pin 1—Cathode.
Pin 2—Modulator.
Pin 3—Heater.
Pin 4—Heater.
Pin 5—Anode 2.
Pin 6—Pin omitted.
Pin 7—Y2.



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.

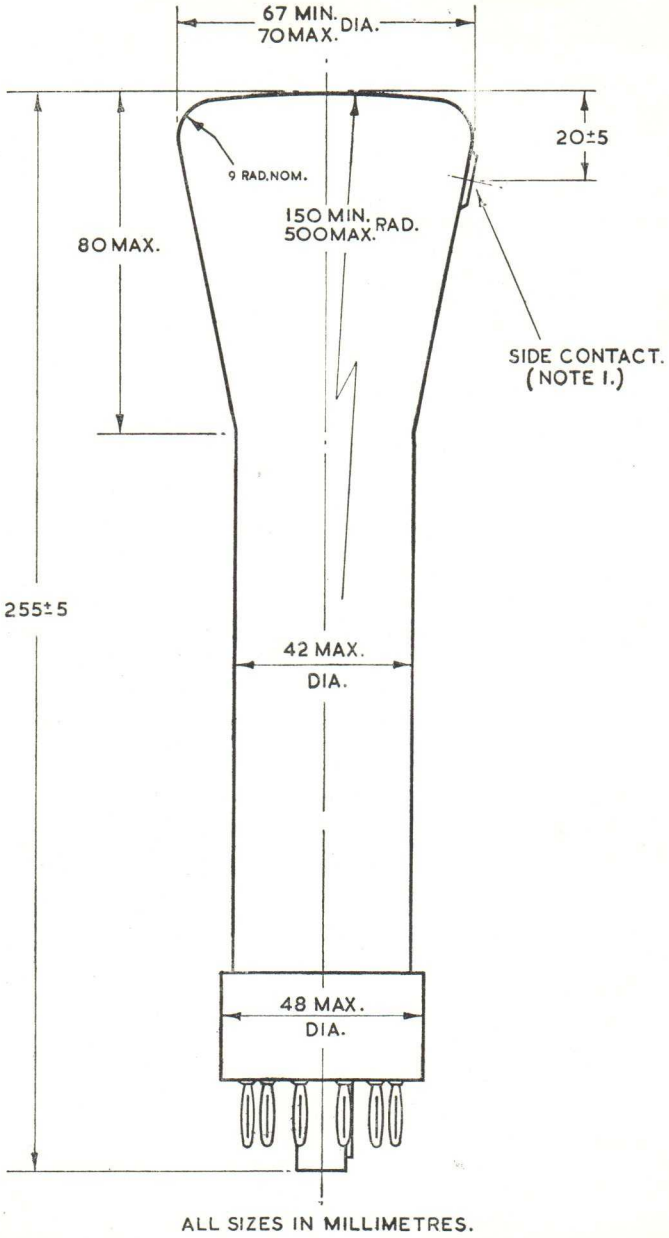
Typical Operating Conditions :

Anode 1 (2500v. max.)	2000 volts.	1300 volts.
Anode 2	130 volts.	100 volts.
Anode 3 (2500v. max.)	2000 volts.	1300 volts.
Anode 4 Post Deflector Accelerator (5KV max.)	4000 volts.	2500 volts.
Modulator volts for cut-off	−65 to −145 volts.	−45 to −100 volts.

Deflection Sensitivity :	mm /volt.	mm/volt.
X Plate	0.125	0.190
Y Plate	0.145	0.220

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is 90° ± 3°.

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



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

DIAMETER 3″ NOMINAL

3EG3P

Oscilloscope Tube

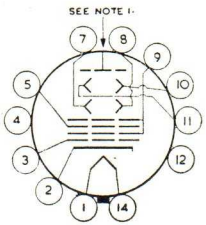
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

GENERAL:

Heater: Voltage	6.3 a.c. or d.c. volts.
Current	0.6 amp.
Direct Inter-electrode Capacitances:	
Modulator to all other electrodes	10.5μμf.
Each X Plate to all other electrodes	11.0μμf.
Each Y Plate to all other electrodes	9.0μμf.
Deflector Plates X1 to X2	4.0μμf.
Deflector Plates Y1 to Y2	3.5μμf.
Screen:	
Fluorescence	Green.
Persistence	Short
(10m. sec. min./100m. sec. max. for 1% initial brightness).	
Focussing Method	Electrostatic.
Deflecting Method	Electrostatic.
Overall Length	254 mm. ± 6 mm.
Greatest Diameter of Bulb	77.8mm.
Minimum Useful Screen Diameter	69.0 mm.
Mounting Position	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.



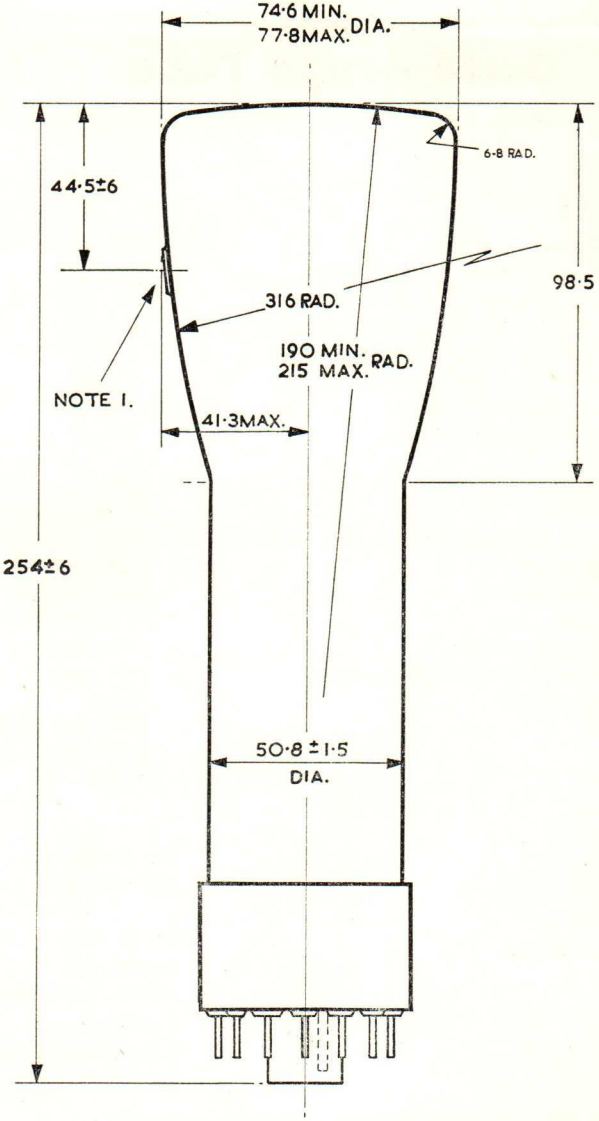
Pin 8—Y2.
Pin 9—Anode 1 and Anode 3.
Pin 10—X2.
Pin 11—X1.
Pin 12—No connection.
Pin 14—Heater.
Cap—Anode 4 P.D.A.

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.

Deflection Sensitivity:

	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 $90° \pm 3°$.

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 2¾" NOMINAL

3E01

Oscilloscope Tube

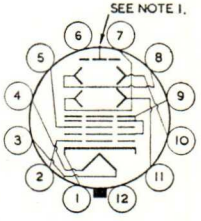
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		13μμf.
Each X Plate to all other electrodes		21μμf.
Each Y Plate to all other electrodes		21μμf.
One X to one Y Deflector Plate		4μμf.
Cathode to all other electrodes		12μμf.
Screen :		
Fluorescence		Orange.
Afterglow		Orange.
Persistence of Afterglow		Long.
(10 sec. min./100 sec. max. for 1% initial brightness).		
Focusing Method		Electrostatic.
Deflecting Method		Elcterostatic.
Overall Length		255 ± 5 mm.
Greatest Diameter of Bulb		70 mm.
Minimum Useful Screen Diameter		55 mm.
Mounting Position		Any.
Anode Cap		Recessed Small Ball.
Base		B.12.B.

Pin 1—Cathode.
Pin 2—Modulator.
Pin 3—Heater.
Pin 4—Heater.
Pin 5—Anode 2.
Pin 6—Pin omitted.
Pin 7—Y2.



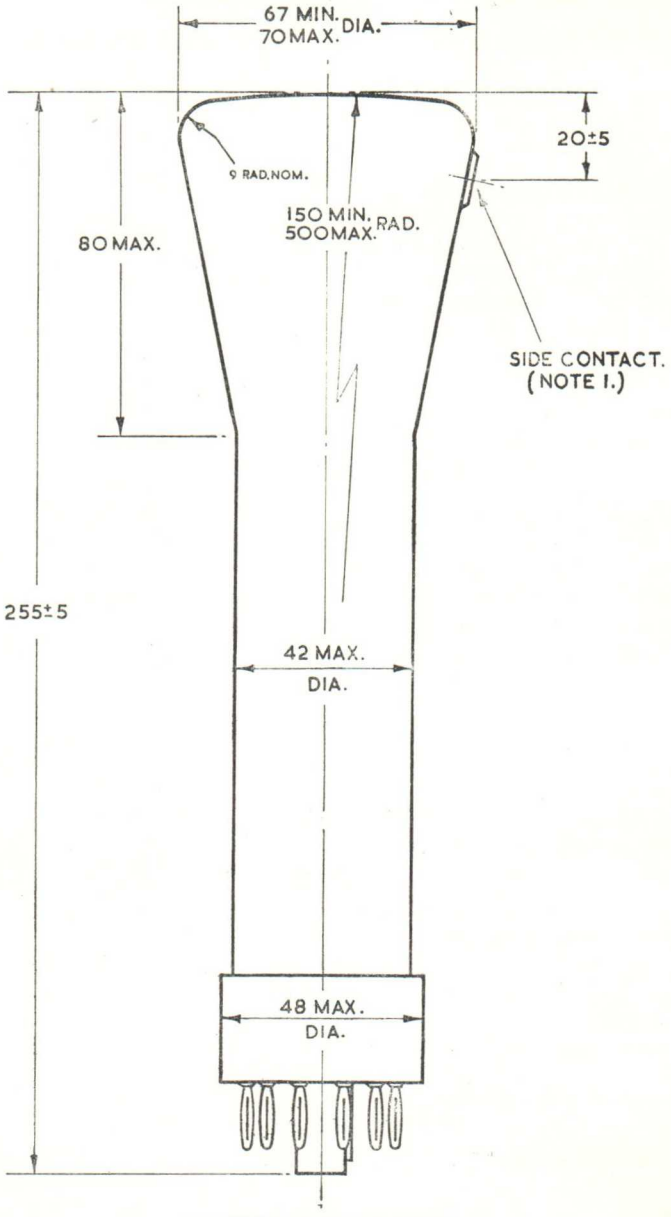
Pin 8—X2.
Pin 9—Anode 1, Anode 3 and Internal Conductive coating.
Pin 10—X1.
Pin 11—Y1.
Pin 12—Pin omitted.
Cap—Anode 4 P.D.A.

Typical Operating Conditions :

Anode 1 (2500v. max.)	2000 volts.	1300 volts.
Anode 2	130 volts.	100 volts.
Anode 3 (2500v. max.)	2000 volts.	1300 volts.
Anode 4 Post Deflector Accelerator (5KV. max.)	4000 volts.	4000 volts.
Modulator volts for cut-off	−65 to −145 volts.	−45 to −100 volts.
Deflection Sensitivity :	mm/volt.	mm/volt.
X Plate	0.125	0.190
Y Plate	0.145	0.220

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is 90° ± 3°.

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



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

DIAMETER 3″ NOMINAL

3EO3P

Oscilloscope Tube

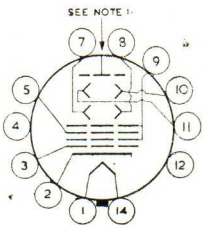
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

GENERAL:

Heater: Voltage	6.3	a.c. or d.c. volts.
Current	0.6	amp.
Direct Inter-electrode Capacitances:		
Modulator to all other electrodes		10.5μμf.
Each X Plate to all other electrodes		11.0μμf.
Each Y Plate to all other electrodes		9.0μμf.
Deflector Plates X1 to X2		4.0μμf.
Deflector Plates Y1 to Y2		3.5μμf.
Screen:		
Fluorescence		Orange.
Afterglow		Orange.
Persistence of Afterglow		Long
(10 sec. min/100 sec. max. for 1% initial brightness).		
Focussing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		254 ± 6 mm.
Greatest Diameter of Bulb		77.8 mm.
Minimum Useful Screen Diameter		69.0 mm.
Mounting Position		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.



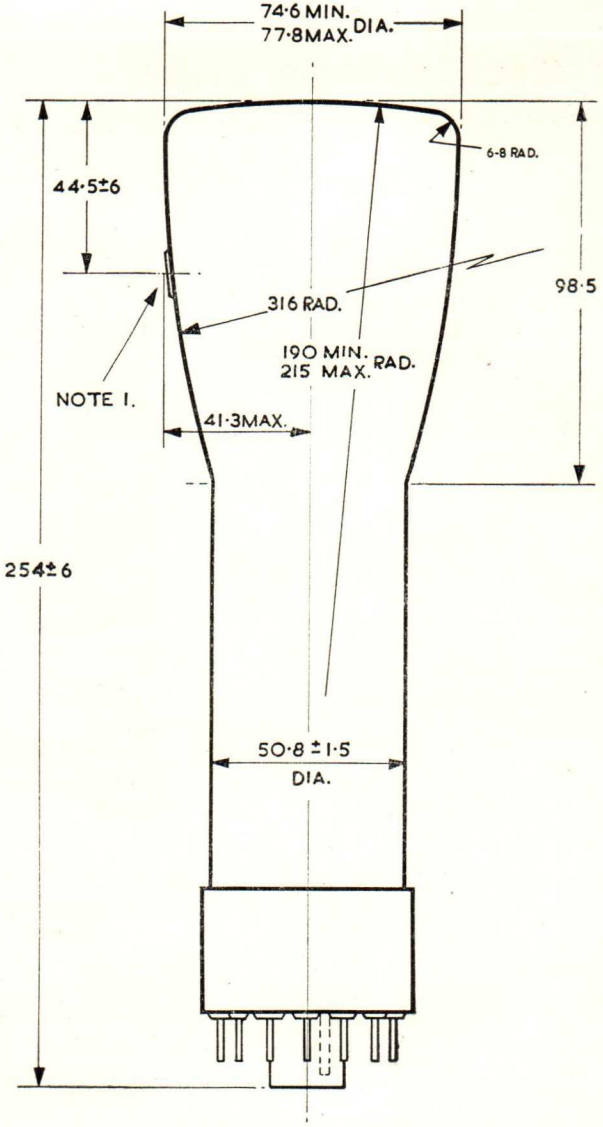
Pin 8—Y2.
Pin 9—Anode 1 and Anode 3.
Pin 10—X2.
Pin 11—X1.
Pin 12—No connection.
Pin 14—Heater.
Cap—Anode 4 P.D.A.

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.

Deflection Sensitivity:

	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 $90° \pm 3°$.

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 2¾″ NOMINAL

3EW1

Oscilloscope Tube

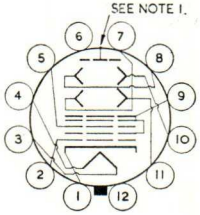
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		13μμf.
Each X Plate to all other electrodes		21μμf.
Each Y Plate to all other electrodes		21μμf.
One X to one Y Deflector Plate		4μμf.
Cathode to all other electrodes		12μμf.
Screen :		
Fluorescence		White.
Persistence		Short.
(5m sec. min./25m sec. max. for 1% initial brightness).		
Focusing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		255 ± 5 mm.
Greatest Diameter of Bulb		70 mm.
Minimum Useful Screen Diameter		55 mm.
Mounting Position		Any.
Anode Cap		Recessed Small Ball.
Base		B.12.B.

Pin 1—Cathode.
Pin 2—Modulator.
Pin 3—Heater.
Pin 4—Heater.
Pin 5—Anode 2.
Pin 6—Pin omitted.
Pin 7—Y2.



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.

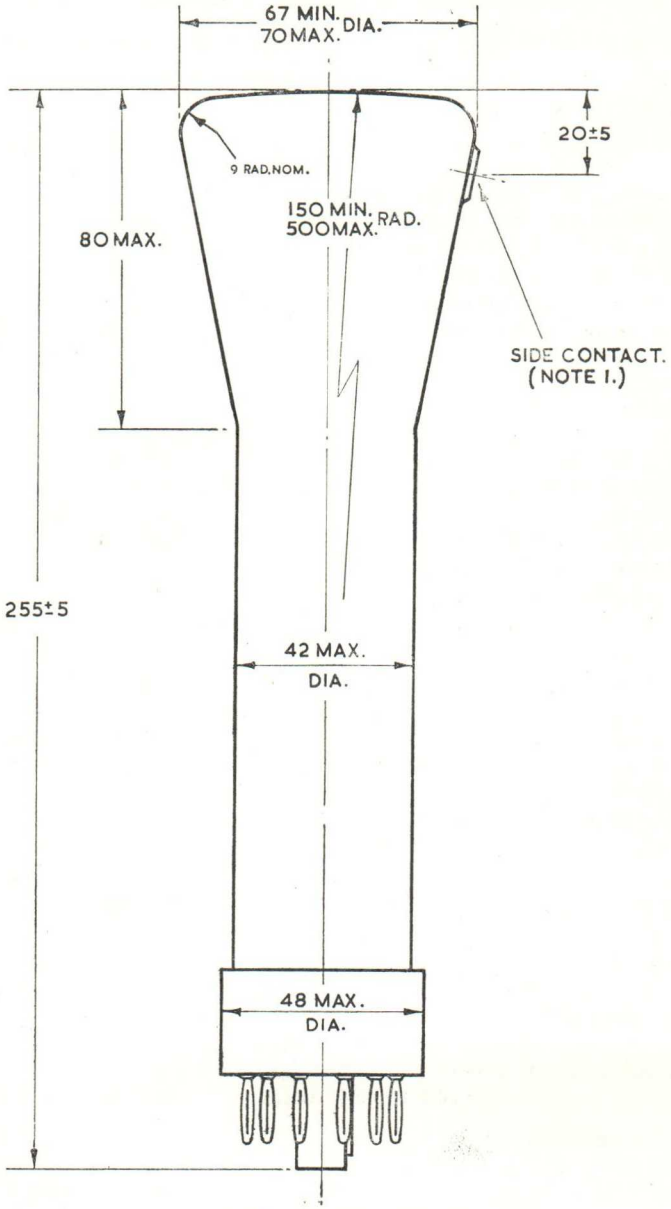
Typical Operating Conditions:

Anode 1 (2500v. max.)	2000 volts.	1300 volts.
Anode 2	130 volts.	100 volts.
Anode 3 (2500v. max.)	2000 volts.	1300 volts.
Anode 4 Post Deflector Accelerator (5KV max.)	4000 volts.	2500 volts.
Modulator volts for cut-off	−65 to −145 volts.	−45 to −100 volts.

Deflection Sensitivity:	mm/volt.	mm/volt.
X Plate	0.125	0.190
Y Plate	0.145	0.220

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is 90° ± 3°.

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



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

DIAMETER 2¾" NOMINAL

3EY1

3EY1

Oscilloscope Tube

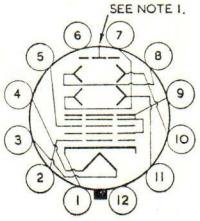
ELECTROSTATIC FOCUS ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		13μμf.
Each X Plate to all other electrodes		21μμf.
Each Y Plate to all other electrodes		21μμf.
One X to one Y Deflector Plate		4μμf.
Cathode to all other electrodes		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 ± 5 mm.
Greatest Diameter of Bulb		70 mm.
Minimum Useful Screen Diameter		55 mm.
Mounting Position		Any.
Anode Cap		Recessed Small Ball.
Base		B.12.B.

Pin 1—Cathode.
Pin 2—Modulator.
Pin 3—Heater.
Pin 4—Heater.
Pin 5—Anode 2.
Pin 6—Pin omitted.
Pin 7—Y2.



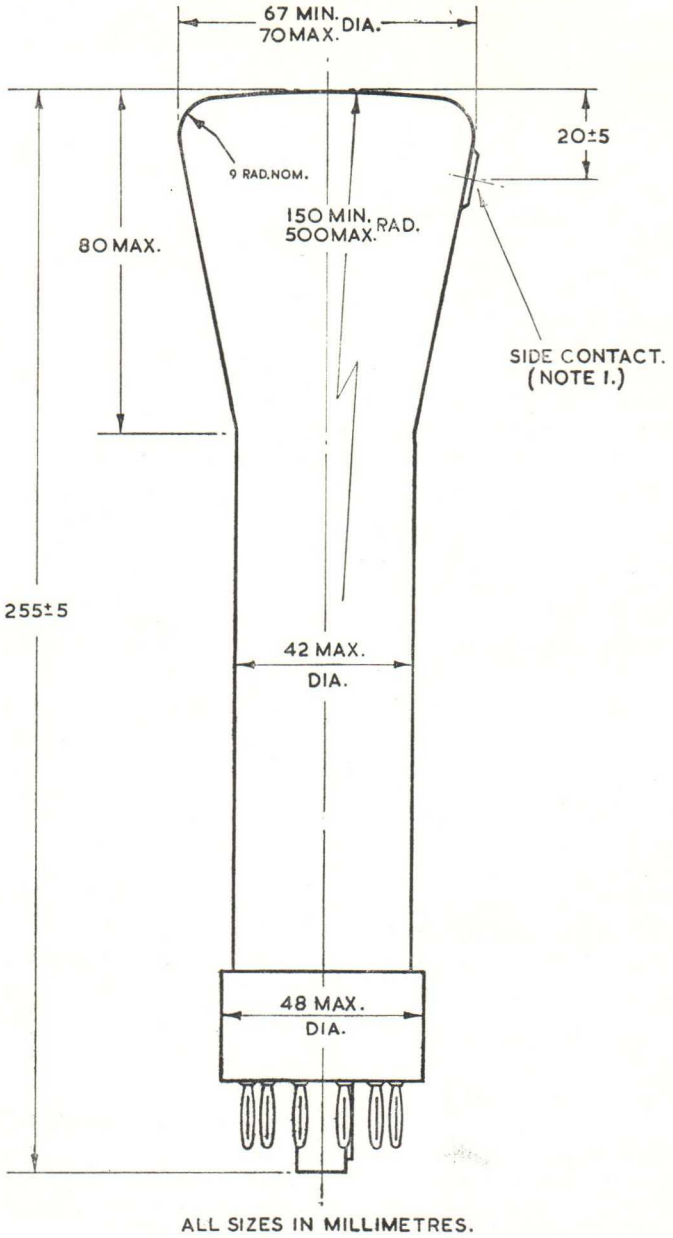
Pin 8—X2.
Pin 9—Anode 1, Anode 3 and Internal Conductive coating.
Pin 10—X1.
Pin 11—Y1.
Pin 12—Pin omitted.
Cap—Anode 4 P.D.A.

Typical Operating Conditions:

Anode 1 (2500v. max.)	2000 volts.	1300 volts.
Anode 2	130 volts.	100 volts.
Anode 3 (2500v. max.)	2000 volts.	1300 volts.
Anode 4 Post Deflector Accelerator (5KV max.)	4000 volts.	2500 volts.
Modulator volts for cut-off	−65 to −145 volts.	−45 to −100 volts.
Deflection Sensitivity:	mm/volt.	mm/volt.
X Plate	0.125	0.190
Y Plate	0.145	0.220

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is 90° ± 3°.

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



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

DIAMETER 3″ NOMINAL

3EY3P

Oscilloscope Tube

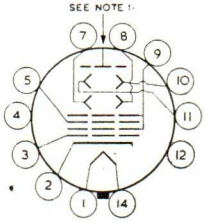
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

GENERAL:

Heater: Voltage	6.3 a.c. or d.c. volts.
Current	0.6 amp.
Direct Inter-electrode Capacitances:	
Modulator to all other electrodes	10.5μμf.
Each X Plate to all other electrodes	11.0μμf.
Each Y Plate to all other electrodes	9.0μμf.
Deflector Plates X1 to X2	4.0μμf.
Deflector Plates Y1 to Y2	3.5μμf.
Screen:	
Fluorescence	Yellow.
Afterglow	Yellow.
Persistence of Afterglow	Long (1 sec. min./10 sec. max. for 1% initial brightness).
Focussing Method	Electrostatic.
Deflecting Method	Electrostatic.
Overall Length	254 ± 6 mm.
Greatest Diameter of Bulb	77.8 mm.
Minimum Useful Screen Diameter	69.0 mm.
Mounting Position	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.



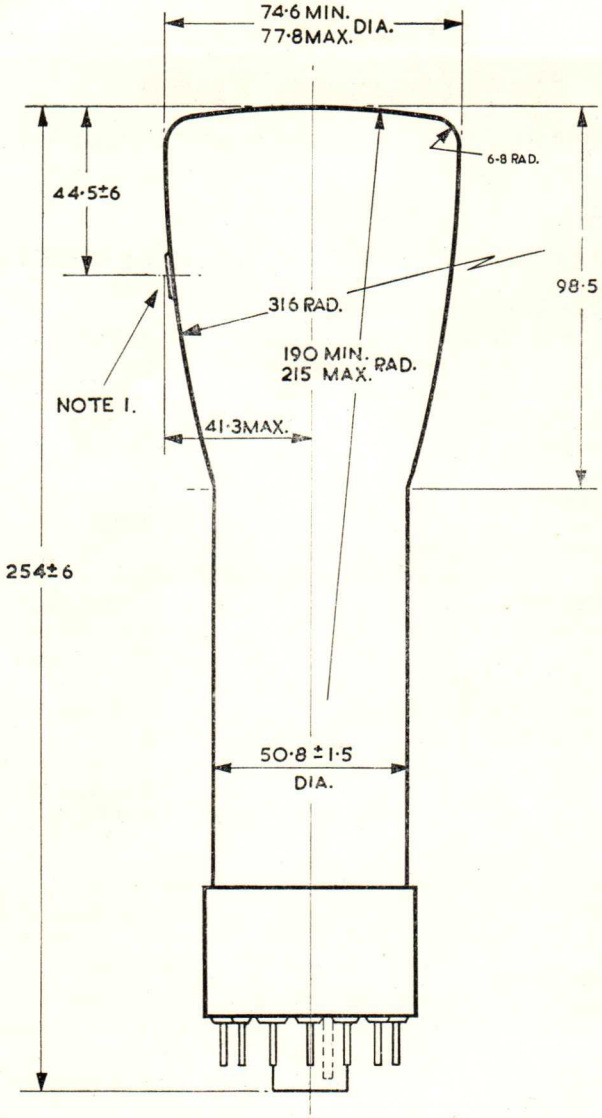
Pin 8—Y2.
Pin 9—Anode 1 and Anode 3.
Pin 10—X2.
Pin 11—X1.
Pin 12—No connection.
Pin 14—Heater.
Cap—Anode 4 P.D.A.

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.

Deflection Sensitivity:

	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 $90° \pm 3°$.

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 5″ NOMINAL

5EB2P

5EB2P

Oscilloscope Tube

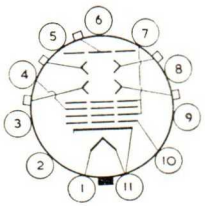
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

GENERAL:

Heater: Voltage	6.3	a.c. or d.c. volts.
Current	0.6	amp.
Direct Inter-electrode Capacitances:		
Modulator to all other electrodes		12.0μμf.
Each X Plate to all other electrodes		5.0μμf.
Each Y Plate to all other electrodes		5.0μμf.
Deflector Plates X1 to X2		2.3μμf.
Deflector Plates Y1 to Y2		2.3μμf.
Screen:		
Fluorescence		Blue.
Persistence		Very Short (10μsec. max. for 1% of initial brightness).
Focussing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		425 ± 9 mm.
Greatest Diameter of Bulb		136.5 mm.
Minimum Useful Screen Diameter		114 mm.
Mounting Position		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.



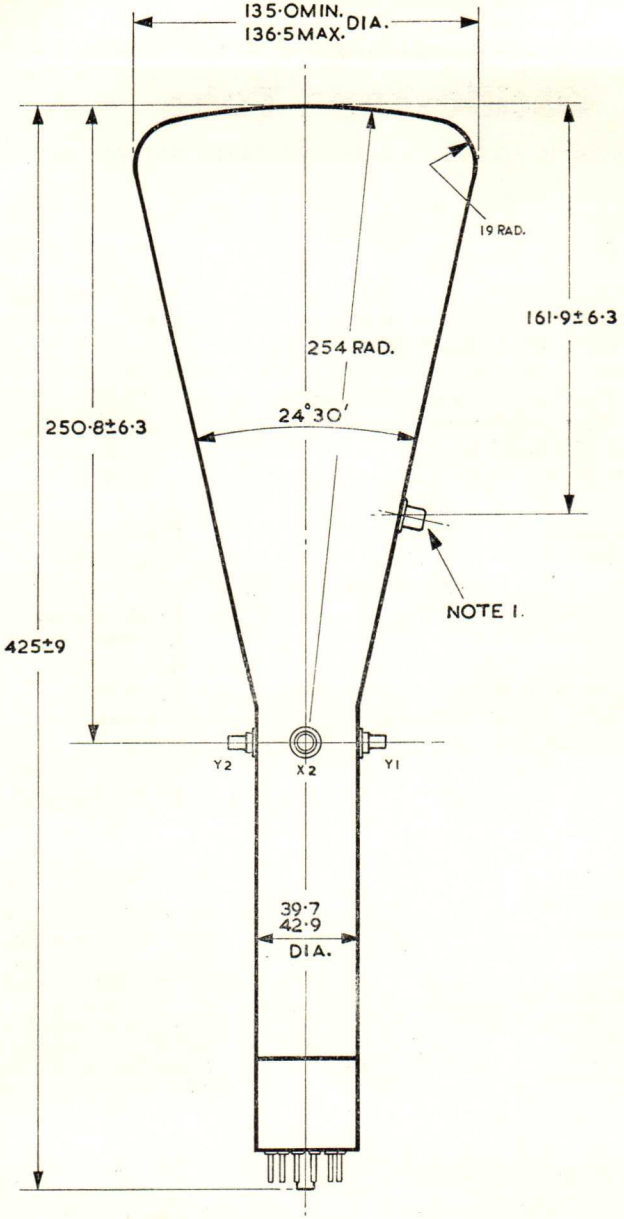
Pin 7—Anode 1 and Anode 3.
Pin 8—No connection.
Pin 9—No connection.
Pin 10—Modulator.
Pin 11—Heater and Cathode.
Cap—Anode 4 P.D.A.
BSS448/CT1 caps on neck connect to X1, X2, Y1 and Y2.

Typical Operating Conditions:

Anode 1 and 3 (2500 volts max.)	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



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 $90° \pm 3°$.

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

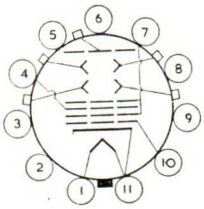
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

GENERAL:

Heater: Voltage	6.3	a.c. or d.c. volts.
Current	0.6	amp.
Direct Inter-electrode Capacitances:		
Modulator to all other electrodes		12.0μμf.
Each X Plate to all other electrodes		5.0μμf.
Each Y Plate to all other electrodes		5.0μμf.
Deflector Plates X1 to X2		2.3μμf.
Deflector Plates Y1 to Y2		2.3μμf.
Screen:		
Fluorescence		Blue.
Afterglow		Yellow.
Persistence of Afterglow		Long (10 sec. min./100 sec. max. for 1% initial brightness).
Focussing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		425 ± 9 mm.
Greatest Diameter of Bulb		136.5 mm.
Minimum Useful Screen Diameter		114 mm.
Mounting Position		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.



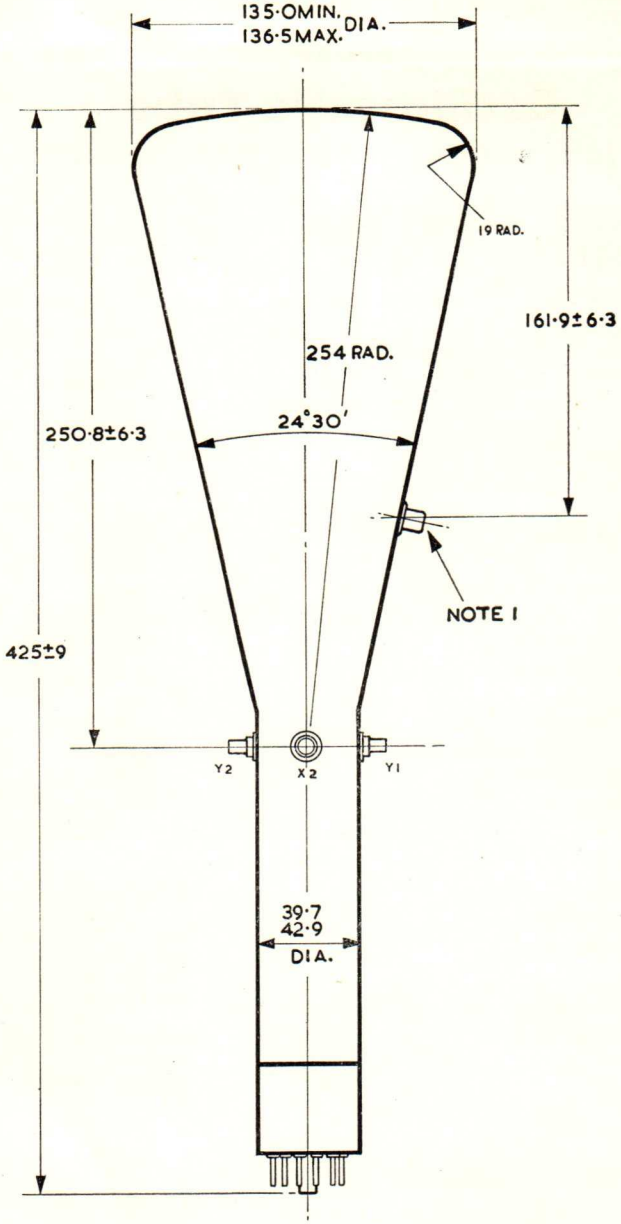
Pin 7—Anode 1 and Anode 3.
Pin 8—No connection.
Pin 9—No connection.
Pin 10—Modulator.
Pin 11—Heater and Cathode.
Cap—Anode 4 P.D.A.
BSS448/CT1 caps on neck connect to X1, X2, Y1 and Y2.

Typical Operating Conditions:

Anode 1 and 3 (2500 volts max.)	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.



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 $90° + 3°$.

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

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

DIAMETER 5″ NOMINAL

5EG2P

Oscilloscope Tube

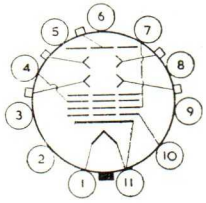
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

GENERAL:

Heater: Voltage	6.3	a.c. or d.c. volts.
Current	0.6	amp.
Direct Inter-electrode Capacitances:		
Modulator to all other electrodes		12.0μμf.
Each X Plate to all other electrodes		5.0μμf.
Each Y Plate to all other electrodes		5.0μμf.
Deflector Plates X1 to X2		2.3μμf.
Deflector Plates Y1 to Y2		2.3μμf.
Screen:		
Fluorescence		Green.
Persistence		Short
(10 m. sec. min./100m. sec. max. for 1% initial brightness).		
Focussing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		425 ± 9 mm.
Greatest Diameter of Bulb		136.5 mm.
Minimum Useful Screen Diameter		114 mm.
Mounting Position		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.



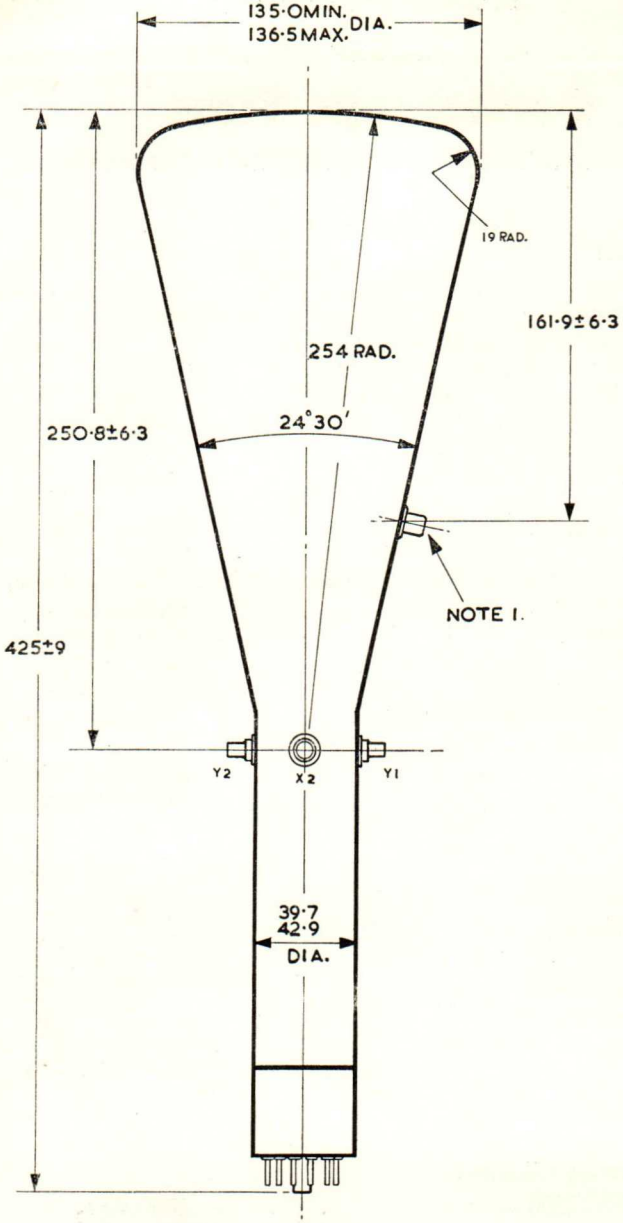
Pin 7—Anode 1 and Anode 3.
Pin 8—No connection.
Pin 9—No connection.
Pin 10—Modulator.
Pin 11—Heater and Cathode.
Cap—Anode 4 P.D.A.
BSS448/CT1 caps on neck connect to X1, X2, Y1 and Y2.

Typical Operating Conditions:

Anode 1 and 3 (2500 volts max.)	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.



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 $90° \pm 3°$.

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

5EO2P

5EO2P

Oscilloscope Tube

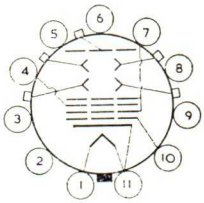
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

DATA

GENERAL:

Heater: Voltage	6.3	a.c. or d.c. volts.
Current	0.6	amp.
Direct Inter-electrode Capacitances:		
Modulator to all other electrodes		12.0μμf.
Each X Plate to all other electrodes		5.0μμf.
Each Y Plate to all other electrodes		5.0μμf.
Deflector Plates X1 to X2		2.3μμf.
Deflector Plates Y1 to Y2		2.3μμf.
Screen:		
Fluorescence		Orange.
Afterglow		Orange.
Persistence of Afterglow		Long
(10 sec. min./100 sec. max. for 1% initial brightness).		
Focussing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		425 ± 9 mm.
Greatest Diameter of Bulb		136.5 mm.
Minimum Useful Screen Diameter		114 mm.
Mounting Position		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.



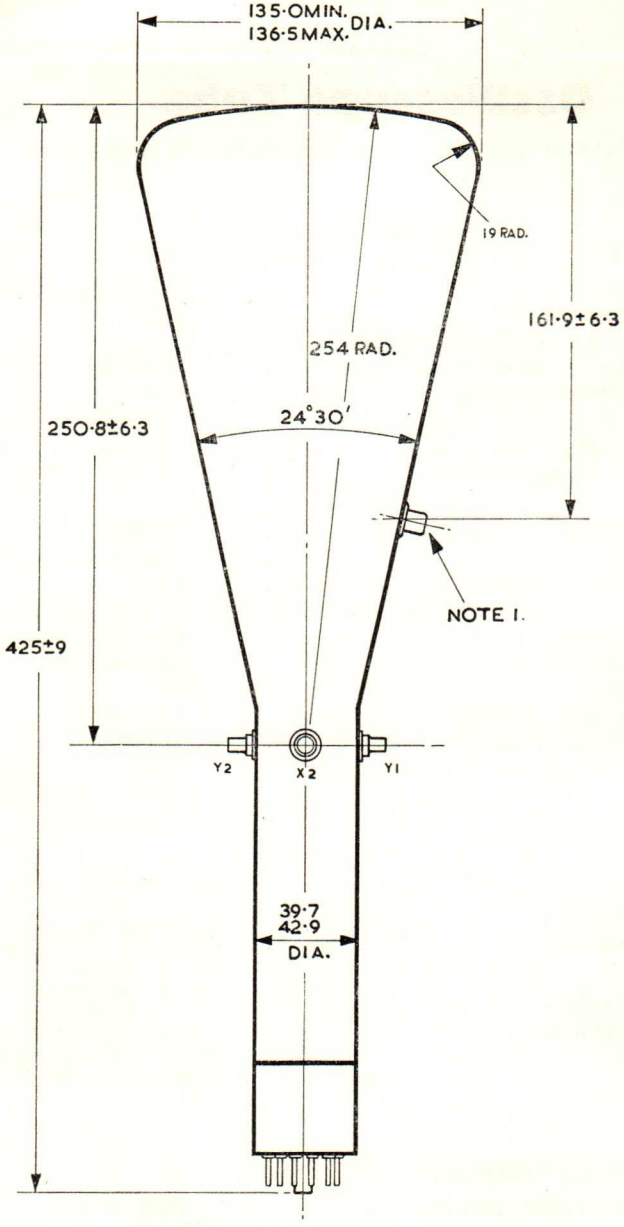
Pin 7—Anode 1 and Anode 3.
Pin 8—No connection.
Pin 9—No connection.
Pin 10—Modulator.
Pin 11—Heater and Cathode.
Cap—Anode 4 P.D.A.
BSS448/CT1 caps on neck connect to X1, X2, Y1 and Y2.

Typical Operating Conditions:

Anode 1 and 3 (2500 volts max.)	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.



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 $90° \pm 3°$.

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

5EY2P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION.

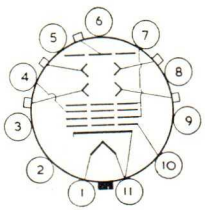
5EY2P

DATA

GENERAL:

Heater: Voltage	6.3	a.c. or d.c. volts.
Current	0.6	amp.
Direct Inter-electrode Capacitances:		
Modulator to all other electrodes		12.0μμf.
Each X Plate to all other electrodes		5.0μμf.
Each Y Plate to all other electrodes		5.0μμf.
Deflector Plates X1 to X2		2.3μμf.
Deflector Plates Y1 to Y2		2.3μμf.
Screen:		
Fluorescence		Yellow.
Afterglow		Yellow.
Persistence of Afterglow		Long (1 sec. min/10 sec. max. for 1% initial brightness).
Focussing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		425 ± 9 mm.
Greatest Diameter of Bulb		136.5 mm.
Minimum Useful Screen Diameter		114 mm.
Mounting Position		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.



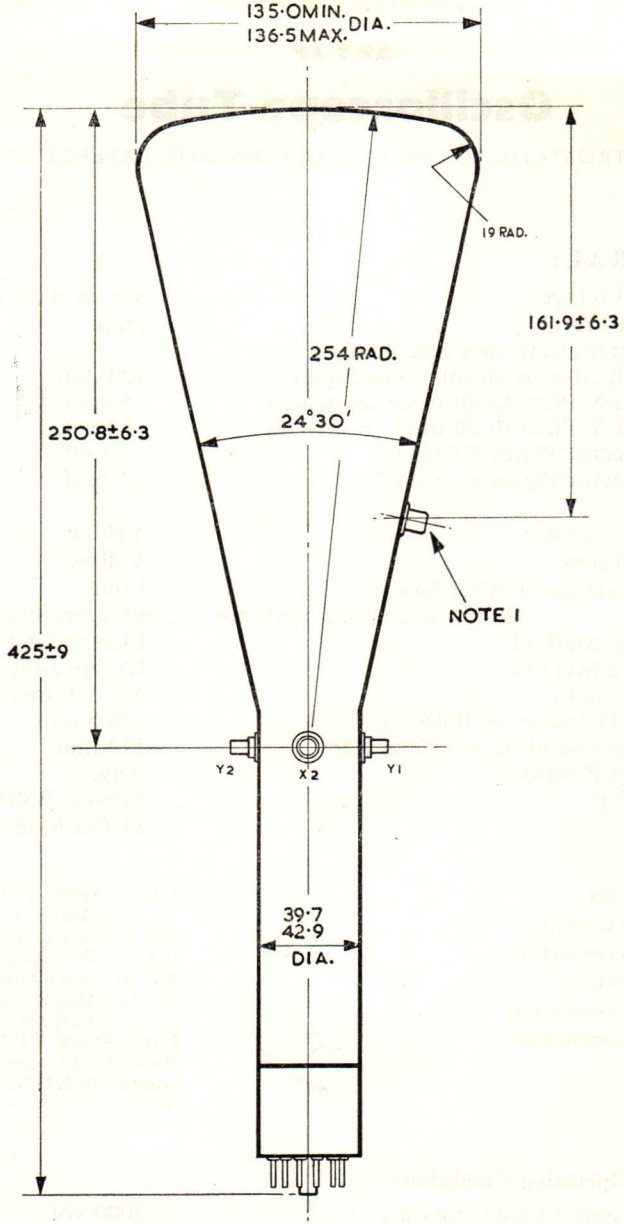
Pin 7—Anode 1 and Anode 3.
Pin 8—No connection.
Pin 9—No connection.
Pin 10—Modulator.
Pin 11—Heater and Cathode.
Cap—Anode 4 P.D.A.
BSS448/CT1 caps on neck connect to X1, X2, Y1 and Y2.

Typical Operating Conditions:

Anode 1 and 3 (2500 volts max.)	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.



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 $90° \pm 3°$.

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

5LOIA

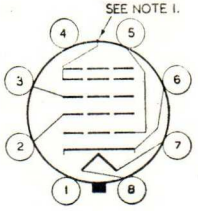
5LOIA
Radar Tube

ELECTROSTATIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

Heater : Voltage	4.0 ac or dc volts.
Current	1.0 amp.
Direct Inter-electrode Capacitances (Approx.)	
Modulator to All Other Electrodes	15 μμf.
Anode 1 to All Other Electrodes	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	315 mm. ± 6 mm.
Greatest Diameter of Bulb	127.5 mm.
Minimum Useful Screen Diameter	108 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.

Maximum Ratings

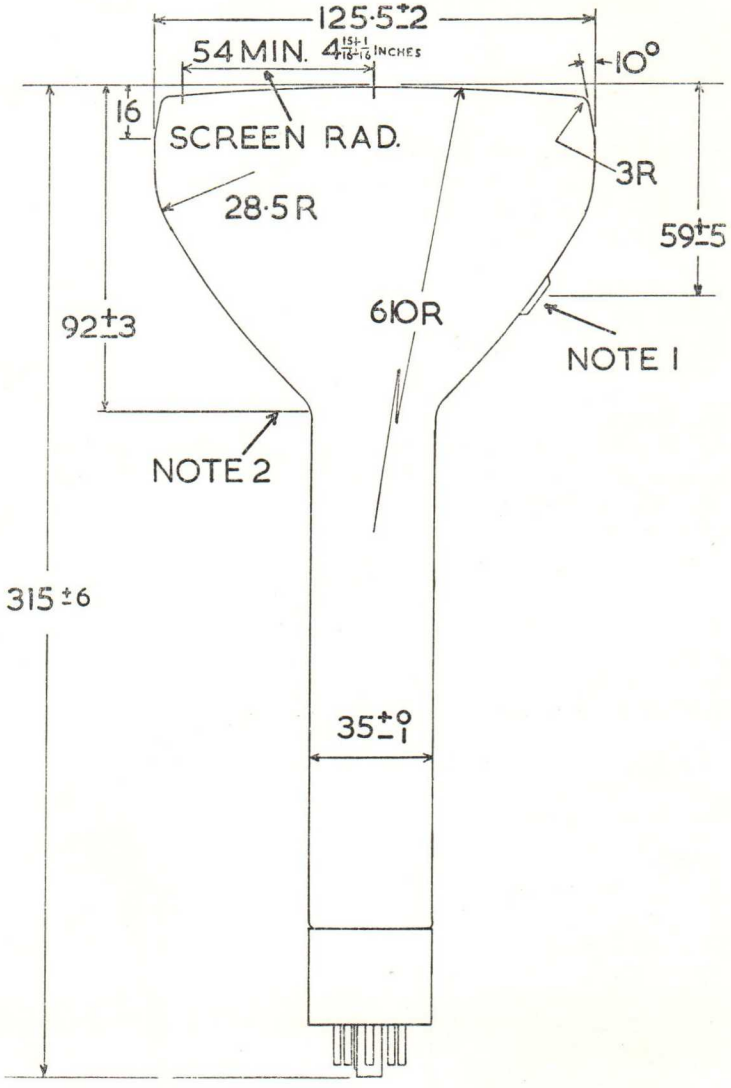
Final Anode Voltage	9000 volts.
Anode 1 Voltage-See Note 3	1450 volts.
Modulator Voltage :	
Negative bias value	100 volts.
Positive bias value	0 volts.
Peak Heater-Cathode Voltage :	
Heater negative with respect to cathode	125 volts.
Heater positive with respect to cathode	125 volts.

Typical Operation

Final Anode Voltage	7000 volts.
Anode 2 Voltage	1000 volts ± 100 volts.
Anode 1 Voltage	1250 volts.
Modulator Voltage for cut-of	–45 to –80 volts.
Spot Position–See Note 4	

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

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



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 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.

DIAMETER 5″ NOMINAL

5TD3

Radar Tube

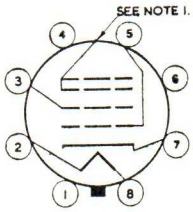
MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

Heater : Voltage	6.3 a.c. or d.c. volts
Current	0.6 amp.
Direct Inter-electrode Capacitances (Approx.)	
Modulator to All Other Electrodes	10.5 μμf.
Anode 1 to All Other Electrodes	6 μμf.
Cathode to All Other Electrodes	9 μμf.
Screen :	
Fluorescence	Blue.
Afterglow	Yellow.
Persistence of Afterglow	Long.
Focusing Method	Magnetic.
Deflection Method	Magnetic.
Deflection Angle (Approx.)	53°
Overall Length	280 ± 6 mm.
Greatest Diameter of Bulb	125.5 ± 2 mm.
Minimum Useful Screen Diameter	108 mm.
Mounting Position	Any.
Anode Cap	Recessed Small Ball.
Base	International Octal.

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



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

Maximum Ratings:

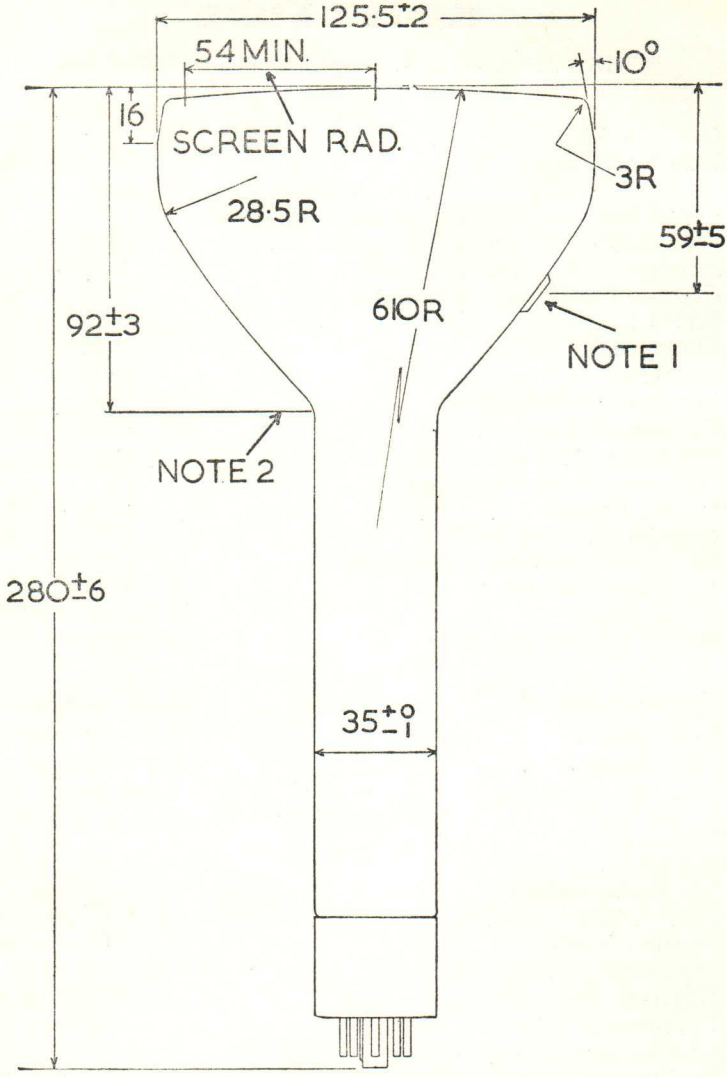
Final Anode Voltage	8000 max. volts.
Anode 1 Voltage	700 max. volts.
Modulator Voltage :	
Negative bias value	125 max. volts.
Positive bias value	0 max. volts.
Peak Heater-Cathode Voltage :	
Heater negative with respect to cathode	125 max. volts.
Heater positive with respect to cathode	125 max. volts.

Typical Operation:

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 current–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 4. The centre of the undeflected unfocused spot will fall within a circle having 9 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 bulb cone.

DIAMETER 5″ NOMINAL

5T03A

Radar Tube

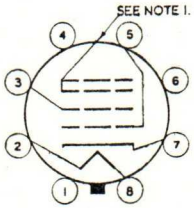
MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

Heater : Voltage	6.3 a.c. or d.c. volts
Current	0.6 amp.
Direct Inter-electrode Capacitances (Approx.)	
Modulator to All Other Electrodes	10.5 μμf.
Anode 1 to All Other Electrodes	6 μμf.
Cathode to All Other Electrodes	9 μμf.
Screen :	
Fluorescence	Orange.
Afterglow	Orange.
Persistence of Afterglow	Long.
Focusing Method	Magnetic.
Deflection Method	Magnetic.
Deflection Angle (Approx.)	53°
Overall Length	280 ± 6 mm.
Greatest Diameter of Bulb	125.5 ± 2 mm.
Minimum Useful Screen Diameter	108 mm.
Mounting Position	Any.
Anode Cap	Recessed Small Ball.
Base	International Octal.

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



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

Maximum Ratings:

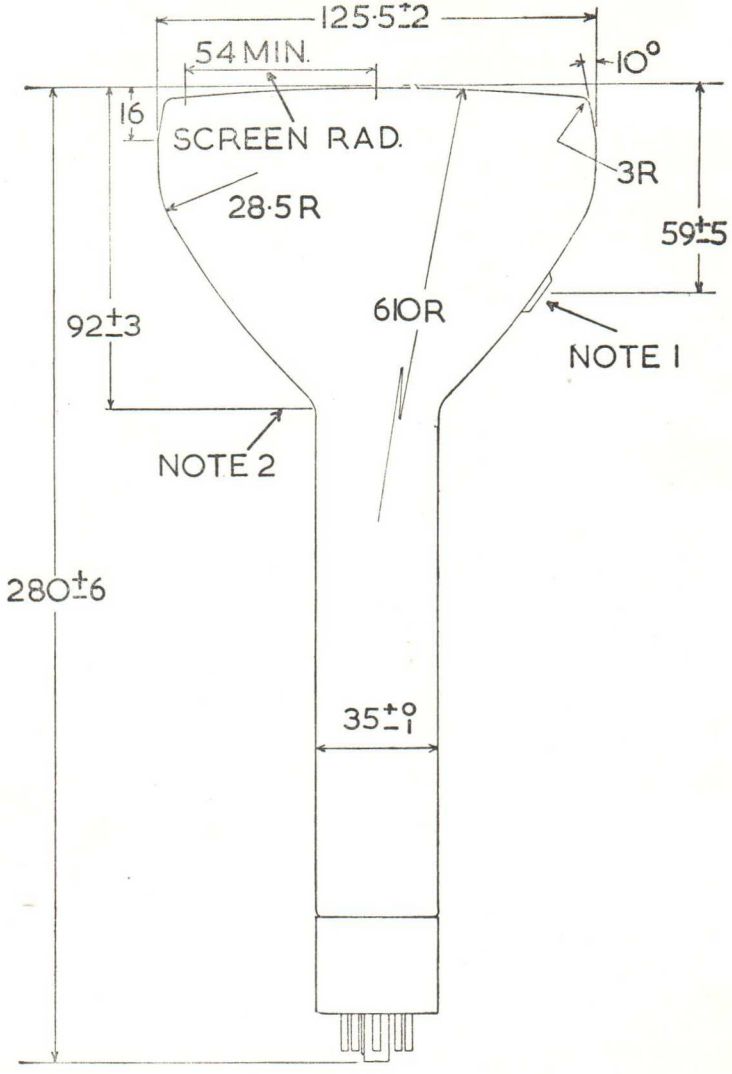
Final Anode Voltage	8000 max. volts.
Anode 1 Voltage	700 max. volts.
Modulator Voltage :	
Negative bias value	125 max. volts.
Positive bias value	0 max. volts.
Peak Heater-Cathode Voltage :	
Heater negative with respect to cathode	125 max. volts.
Heater positive with respect to cathode	125 max. volts.

Typical Operation:

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 current–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 4. The centre of the undeflected unfocused spot will fall within a circle having 9 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 bulb cone.

DIAMETER 5″ NOMINAL

5TW3A

5TW3A

Television Monitor Tube

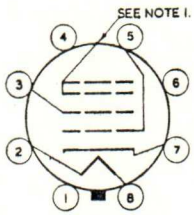
MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

Heater : Voltage . . . 6.3 . . .	a.c. or d.c. volts
Current . . . 0.6 . . .	amp.
Direct Inter-electrode Capacitances (Approx.)	
Modulator to All Other Electrodes . . .	10.5 μμf.
Anode 1 to All Other Electrodes . . .	6 μμf.
Cathode to All Other Electrodes . . .	9 μμf.
Screen :	
Fluorescence	White.
Persistence of Afterglow	Short.
Focusing Method	Magnetic.
Deflection Method	Magnetic.
Deflection Angle (Approx.)	53°
Overall Length	280 ± 6 mm.
Greatest Diameter of Bulb	125.5 ± 2 mm.
Minimum Useful Screen Diameter . . .	108 mm.
Mounting Position	Any.
Anode Cap	Recessed Small Ball.
Base	International Octal.

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



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

Maximum Ratings:

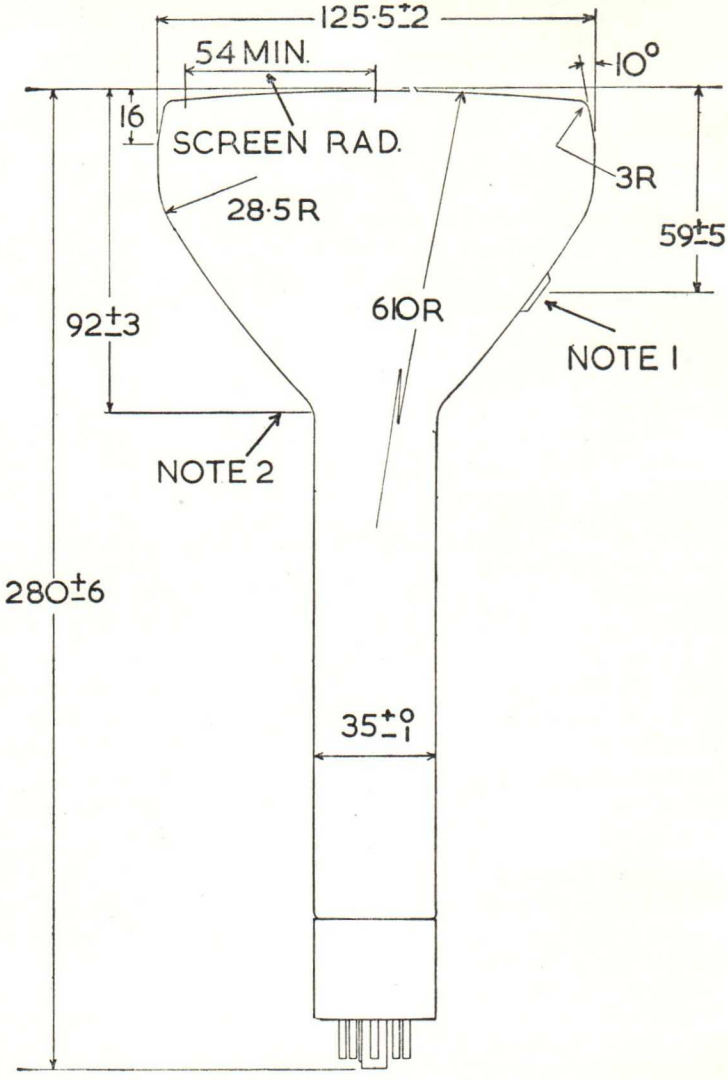
Final Anode Voltage	8000 max. volts.
Anode 1 Voltage	700 max. volts.
Modulator Voltage :	
Negative bias value	125 max. volts.
Positive bias value	0 max. volts.
Peak Heater-Cathode Voltage :	
Heater negative with respect to cathode . .	125 max. volts.
Heater positive with respect to cathode . .	125 max. volts.

Typical Operation:

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 current–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 4. The centre of the undeflected unfocused spot will fall within a circle having 9 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 bulb cone.

DIAMETER 6″ NOMINAL

6EB4

6EB4

Oscilloscope Tube

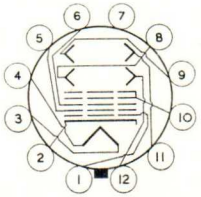
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		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		Blue.
Persistence		Very Short.
	(10μ 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 Screen Diameter		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—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

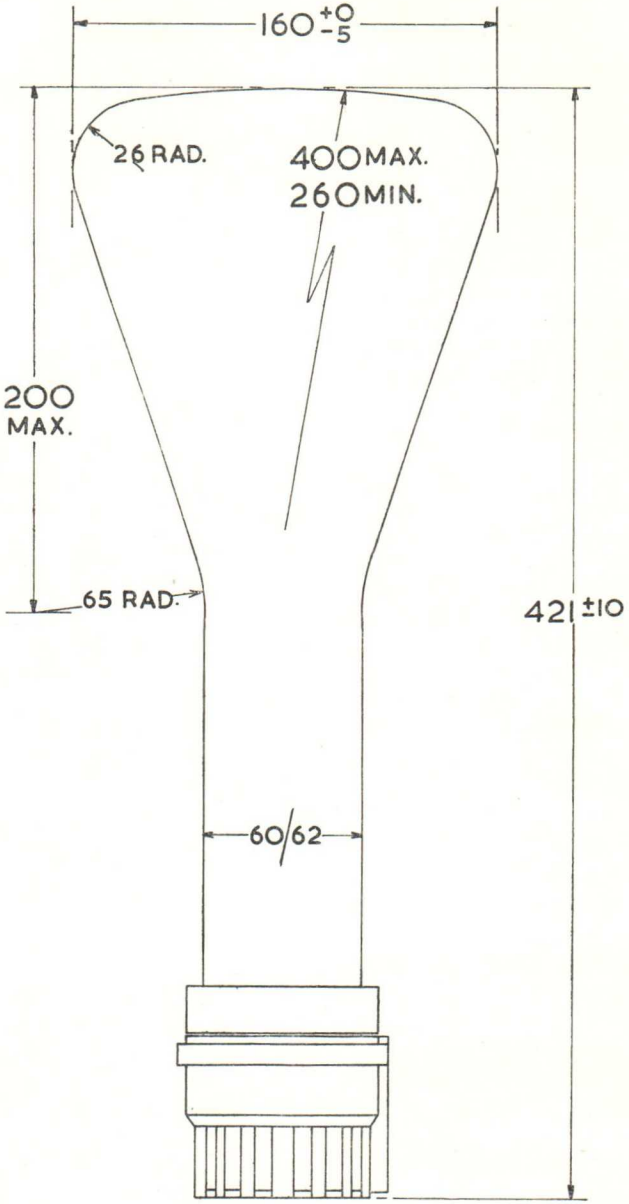
Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	400 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	−40 to −80 volts.	−40 to −80 volts.

Deflection Sensitivity:	mm/volt.	mm/volt.
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° ± 3°.

Note 3. 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. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

DIAMETER 6″ NOMINAL

6EB4F

6EB4F

Oscilloscope Tube

FLAT FACED BULB

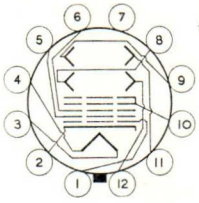
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		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		Blue.
Persistence		Very Short.
	(10μ sec. max. for 1% initial brightness).	
Focusing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		421 ± 10 mm.
Greatest Diameter of Bulb		159 mm.
Minimum Useful Screen Diameter		140 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—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

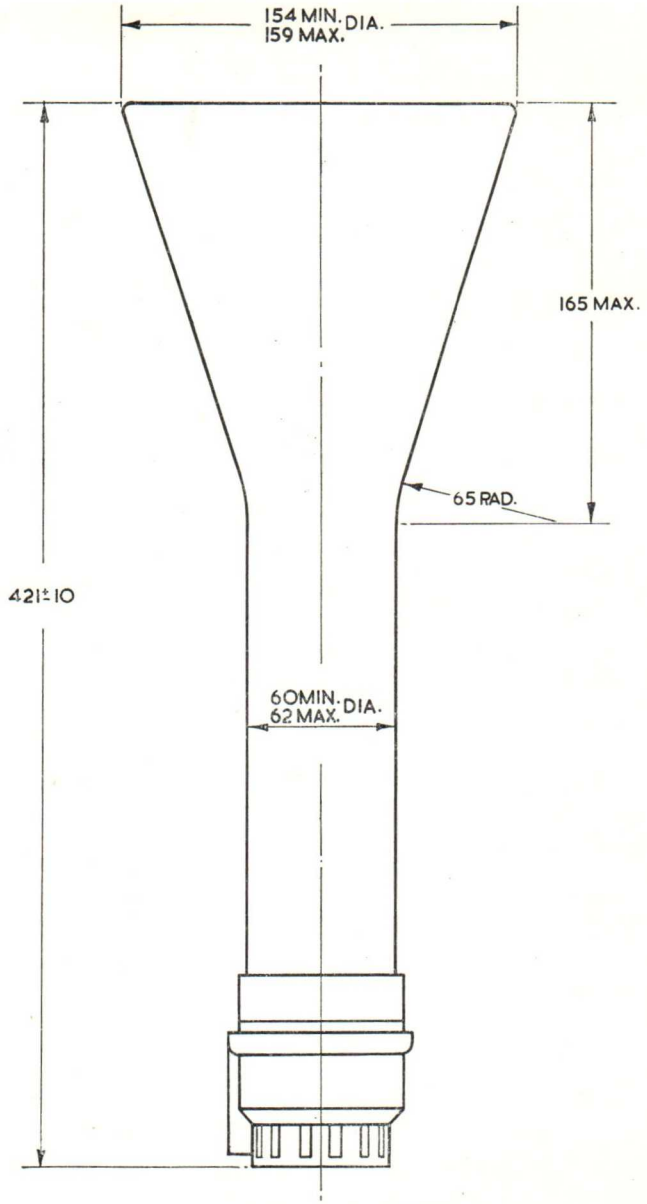
Typical Operating Conditions :

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	400 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	–40 to –80 volts.	–40 to –80 volts.

Deflection Sensitivity :	mm/volt.	mm/volt.
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° ± 3°.

Note 3. 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. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

DIAMETER 6″ NOMINAL

6EB5

Oscilloscope Tube

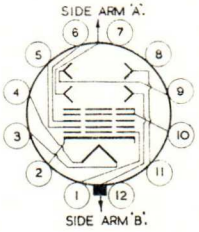
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		25μμf.
Each X Plate to all other electrodes		20μμf.
Each Y Plate to all other electrodes		13μμf.
One X to one Y Deflector Plate		2.5μμf.
Cathode to all other electrodes		25μμf.
Screen :		
Fluorescence		Blue.
Persistence		Very Short.
	(10μ 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 Screen Diameter		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.



Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—No connection
Side Arm 'A'—Y2.
Side Arm 'B'—Y1.

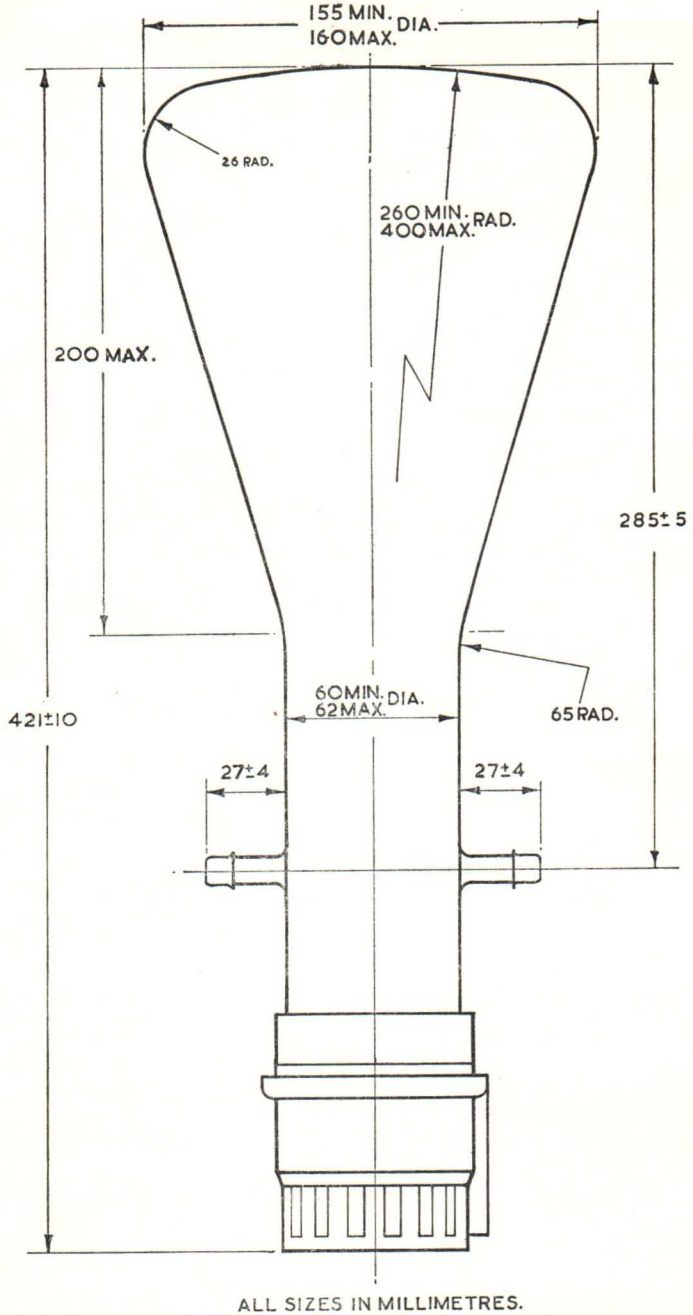
Typical Operating Conditions :

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	400 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	–40 to –80 volts.	–40 to –80 volts.

Deflection Sensitivity :	mm/volt.	mm/volt.
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° ± 3°.

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



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

DIAMETER 6″ NOMINAL

6EB7

Oscilloscope Tube

ELECTROSTATIC FOCUS ELECTROSTATIC DEFLECTION

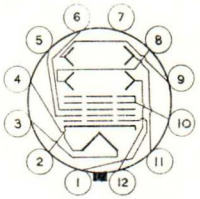
Suitable for Assymetrical Deflection

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other 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		2.5μμf.
Cathode to all other electrodes		15μμf.
Screen :		
Fluorescence		Blue.
Persistence		Very Short.
		(10μ sec. max. for 1% initial brightness).
Focusing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		421 ± 10 mm.
Greatest Diameter of Bulb		163 mm.
Minimum Useful Screen Diameter		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—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

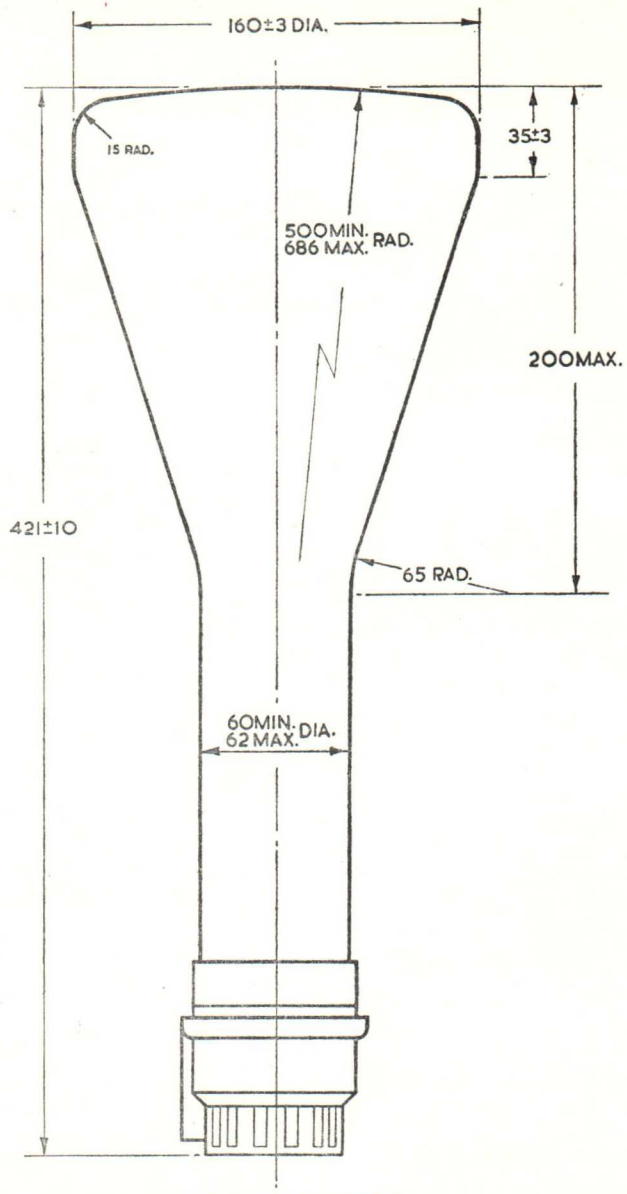
Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	800 volts.	530 volts.
Anode 3 (6000v. max.)	5000 volts.	3000 volts.
Modulator volts for cut-off	−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 $90^\circ \pm 3^\circ$.

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



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

DIAMETER 6″ NOMINAL

6ED4

6ED4

Oscilloscope Tube

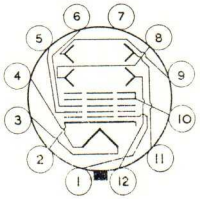
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		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		Blue.
Afterglow		Yellow.
Persistence of Afterglow		Long.
	(10 sec. min./100 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 Screen Diameter		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—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

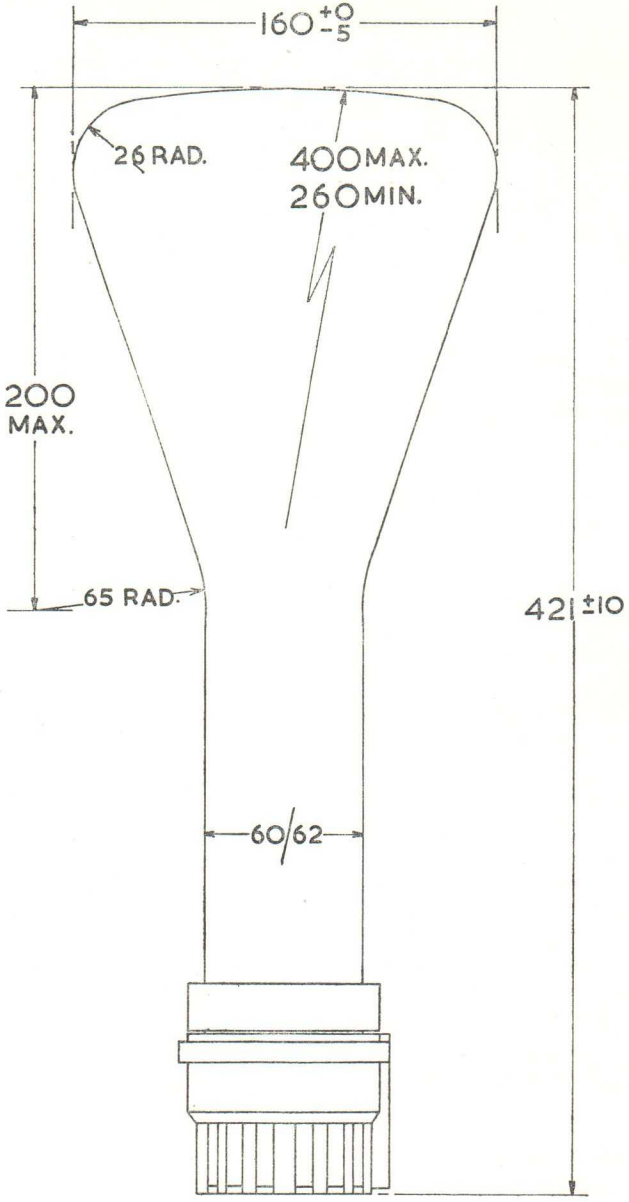
Typical Operating Conditions :

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	400 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	–40 to –80 volts.	–40 to –80 volts.

Deflection Sensitivity :	mm/volt.	mm/volt.
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° ± 3°.

Note 3. 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. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

DIAMETER 6" NOMINAL

6ED7

6ED7

Oscilloscope Tube

ELECTROSTATIC FOCUS ELECTROSTATIC DEFLECTION

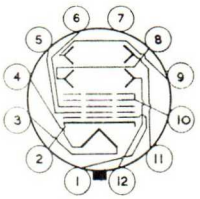
Suitable for Assymetrical Deflection

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other 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		2.5μμf.
Cathode to all other electrodes		15μμf.
Screen :		
Fluorescence		Blue.
Afterglow		Yellow.
Persistence of Afterglow		Long.
(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		163 mm.
Minimum Useful Screen Diameter		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—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

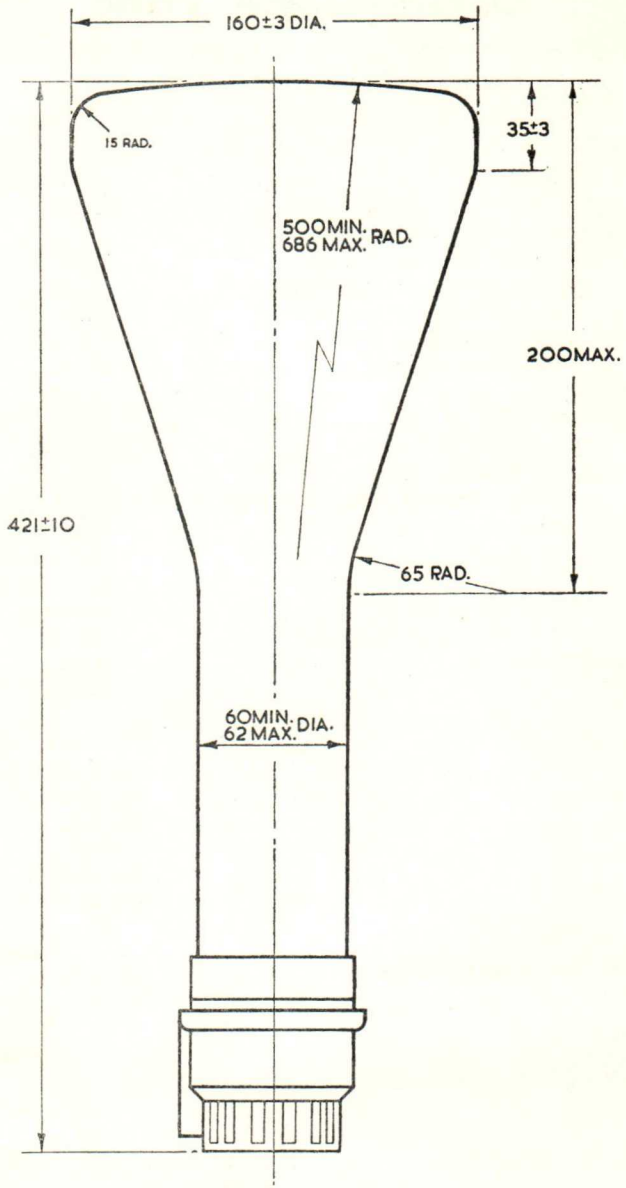
Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	800 volts.	530 volts.
Anode 3 (6000v. max.)	5000 volts.	3000 volts.
Modulator volts for cut-off	−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° ± 3°.

Note 3. 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. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

DIAMETER 6″ NOMINAL

6EG4

6EG4

Oscilloscope Tube

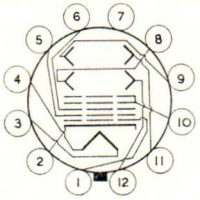
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		25μμf.
Each X Plate to all other electrodes		25μμf.
Each Y Plate to all other electrodes		25μμf.
One X to one Y Deflector Plate		6μμf.
Cathode to all other electrodes		15μμf.
Screen :		
Fluorescence		Green.
Persistence		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 Screen Diameter		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.



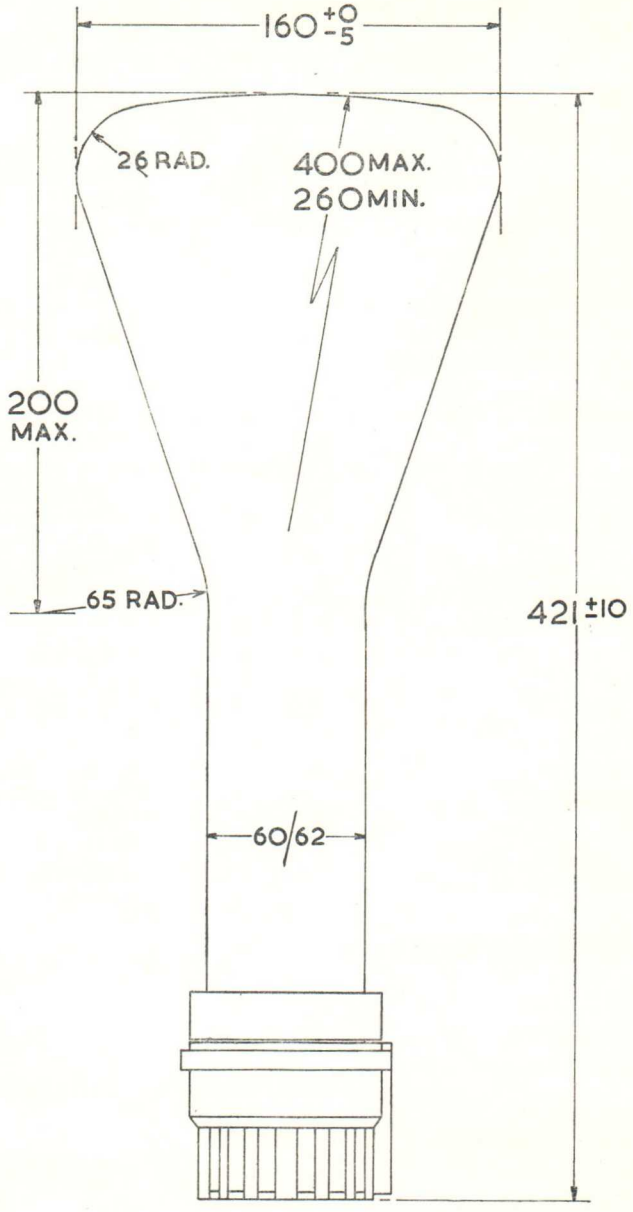
Pin 8—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	400 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	–40 to –80 volts.	–40 to –80 volts.
Deflection Sensitivity:	mm/volt.	mm/volt.
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° ± 3°.

Note 3. 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. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

DIAMETER 6″ NOMINAL

6EG4F

6EG4F

Oscilloscope Tube

FLAT FACED BULB

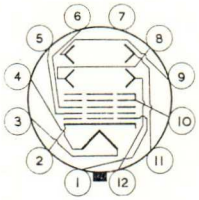
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0 a.c. or d.c. volts.
Current	1.0 amp.
Direct Inter-electrode Capacitances.	
Modulator to all other electrodes	25μμf.
Each X Plate to all other electrodes	25μμf.
Each Y Plate to all other electrodes	25μμf.
One X to one Y Deflector Plate	6μμf.
Cathode to all other electrodes	15μμf.
Screen :	
Fluorescence	Green.
Persistence	Short.
(10m sec. min./100m sec. max. for 1% initial brightness).	
Focusing Method	Electrostatic.
Deflecting Method	Electrostatic
Overall Length	421 ± 10 mm.
Greatset Diameter of Bulb	159 m.m.
Minimum Useful Screen Diameter	140 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—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

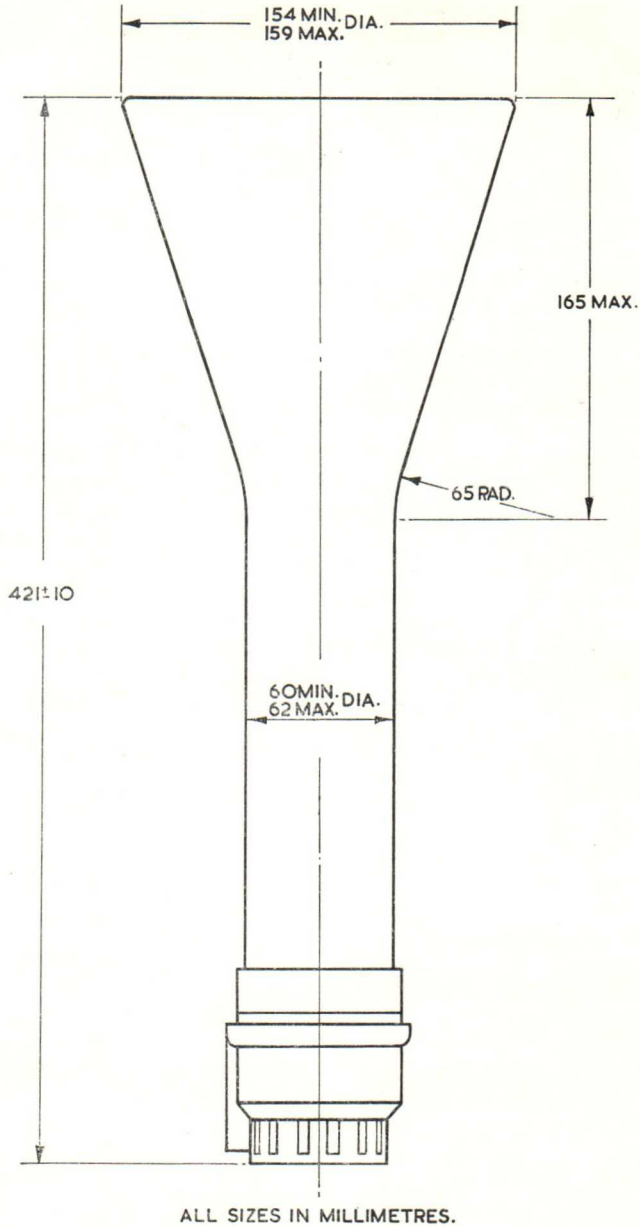
Typical Operating Conditions :

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	400 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	−40 to −80 volts.	−40 to −80 volts.

Deflection Sensitivity :	mm/volt.	mm/volt.
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° ± 3°.

Note 3. 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. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

DIAMETER 6" NOMINAL

6EG5

Oscilloscope Tube

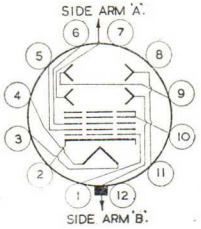
ELECTROSTATIC FOCUS ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage . . . 4.0 . . .	a.c. or d.c. volts.
Current . . . 1.0 . . .	amp.
Direct Inter-electrode Capacitances.	
Modulator to all other electrodes . . .	25μμf.
Each X Plate to all other electrodes . . .	20μμf.
Each Y Plate to all other electrodes . . .	13μμf.
One X to one Y Deflector Plate	2.5μμf.
Cathode to all other electrodes	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 Screen Diameter . . .	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.



Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—No connection
Side Arm 'A'—Y2.
Side Arm 'B'—Y1.

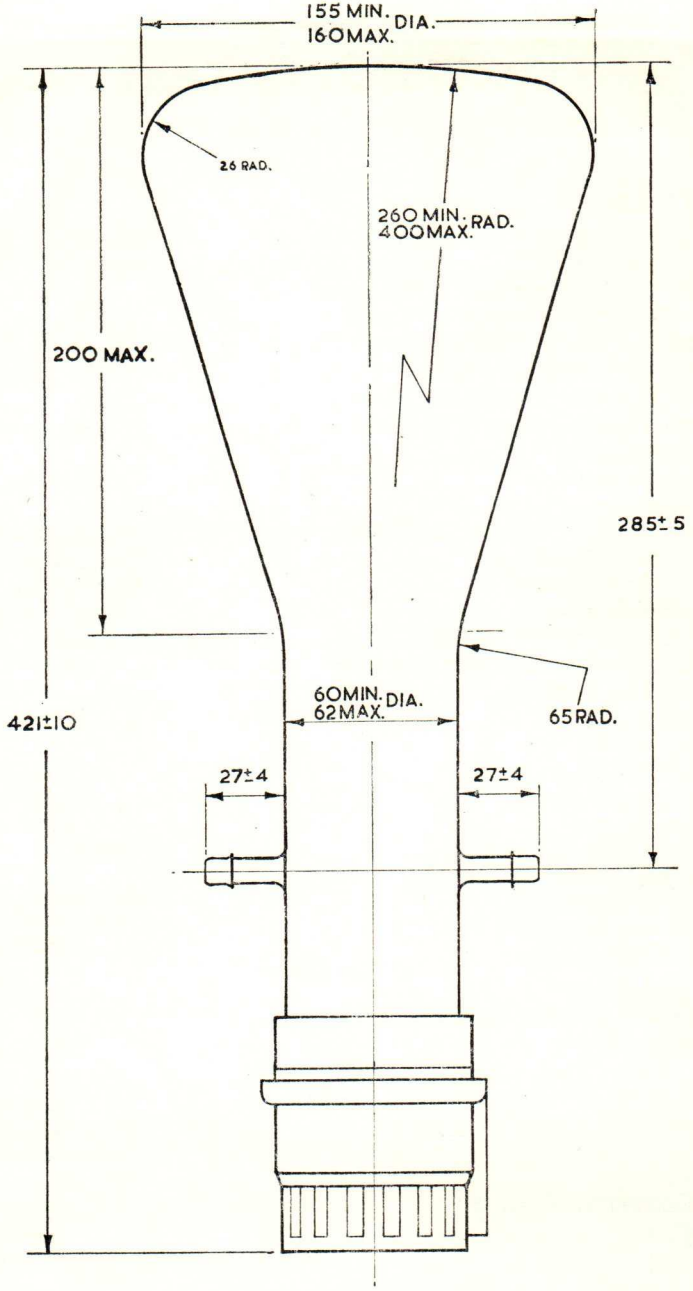
Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	400 volts.
Anode 3 (5000v. max.) . .	4000 volts.	2000 volts.
Modulator volts for cut-off	–40 to –80 volts.	–40 to –80 volts.

Deflection Sensitivity:	mm/volt.	mm/volt.
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° ± 3°.

Note 3. 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. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

DIAMETER 6" NOMINAL

6EG7

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

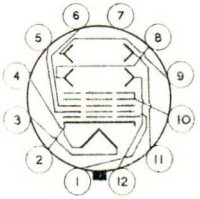
Suitable for Assymetrical Deflection

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other 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		2.5μμf.
Cathode to all other electrodes		15μμf.
Screen :		
Fluorescence		Green.
Persistence		Short.
(10m sec. min./100m sec. max. for 1% initial brightness).		
Focusing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		421 ± 10 mm.
Greatest Diameter of Bulb		163 mm.
Minimum Useful Screen Diameter		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—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

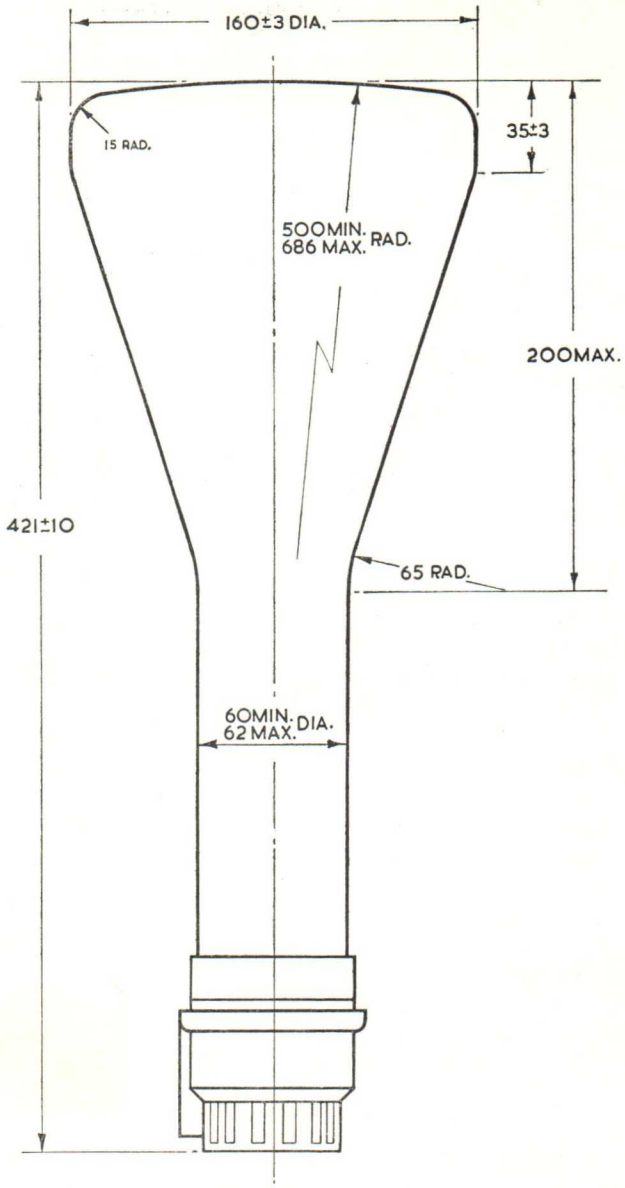
Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	800 volts.	530 volts.
Anode 3 (6000v. max.)	5000 volts.	3000 volts.
Modulator volts for cut-off	−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° ± 3°.

Note 3. 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. When viewing the screen with the tube positioned such that the base spigot is uppermost, a positive voltage applied to the terminal X1 will deflect the spot to the left and a positive voltage applied to the terminal Y1 will deflect the spot upwards.

DIAMETER 6″ NOMINAL

6E04

6E04

Oscilloscope Tube

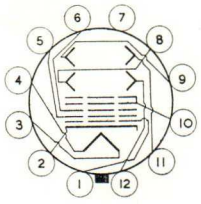
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		25μμf.
Each X Plate to all other electrodes		25μμf.
Each Y Plate to all other electrodes		25μμf.
One X to one Y Deflector Plate		6μμf.
Cathode to all other electrodes		15μμf.
Screen :		
Fluorescence		Orange.
Afterglow		Orange.
Persistence of Afterglow		Long.
(10 sec. min./100 sec. max. for 1% initial brightness).		
Focusing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		421 ± 10 mm.
Greatest Diameter of Bulb		160 mm.
Minimum Useful Screen Diameter		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—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

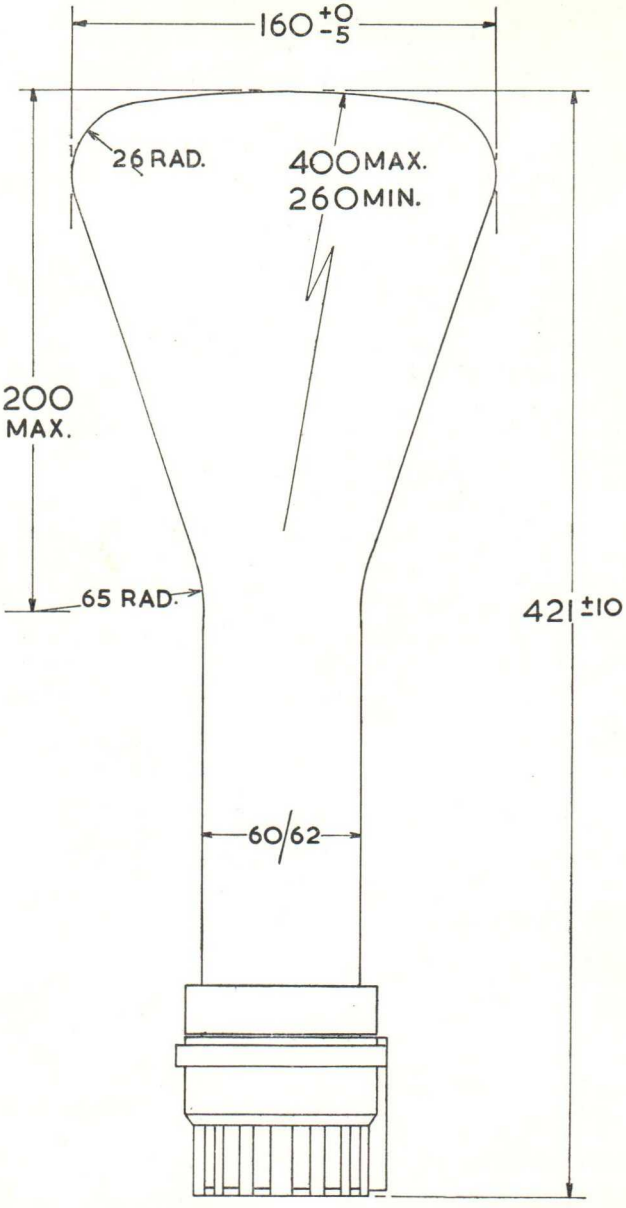
Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	400 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	–40 to –80 volts.	–40 to –80 volts.

Deflection Sensitivity:	mm/volt.	mm/volt.
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° ± 3°.

Note 3. 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. 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.

T9472
6C01A

DIAMETER 6" NOMINAL

6LY1A

Radar Tube

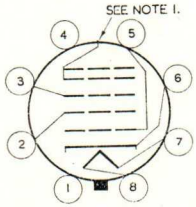
ELECTROSTATIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0 a.c. or d.c. volts.
Current	1.0 amp.
Direct Inter-electrode Capacitances.	
Modulator to all other electrodes	15μμf.
Anode 1 to all other electrodes	15μμf.
Cathode to all other electrodes	14μμf.
Screen :	Aluminium Backed.
Fluorescence	Yellow.
Afterglow	Yellow.
Persistence of Afterglow	Long.
Focusing Method	Electrostatic.
Deflecting Method	Magnetic.
Overall Length	390 ± 10 mm.
Greatest Diameter of Bulb	163 mm.
Minimum Useful Screen Diameter	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.

Maximum Ratings :

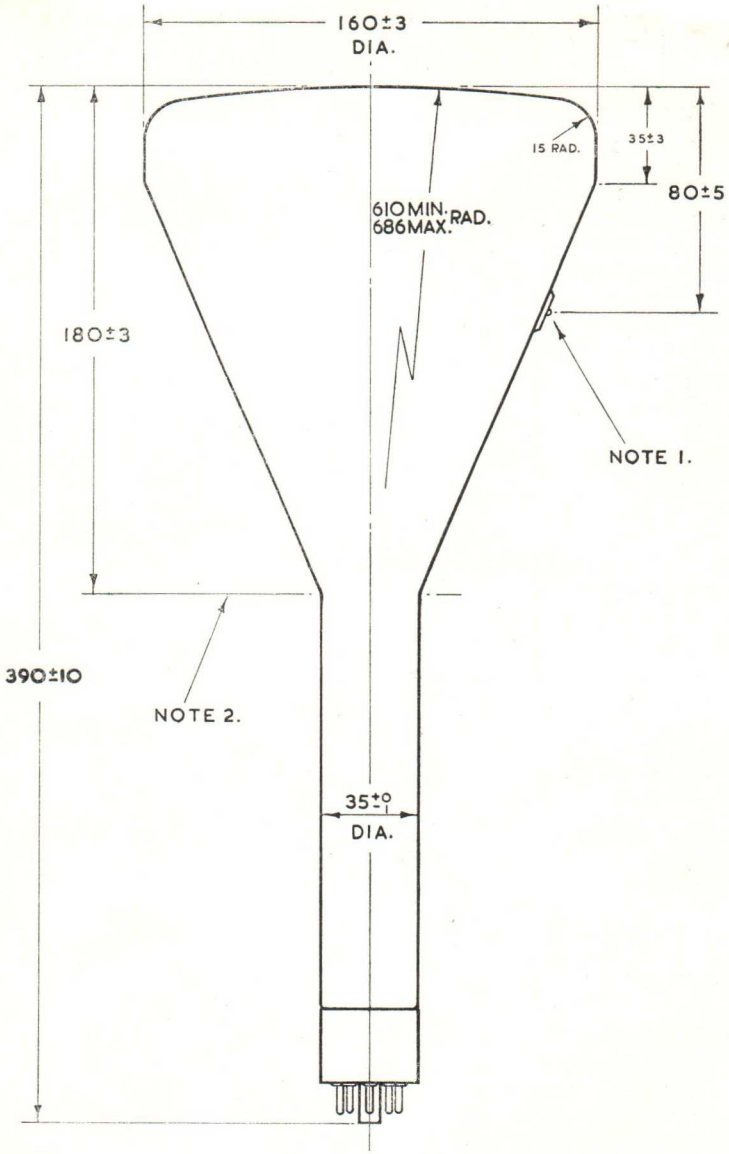
Final Anode Voltage	9000 volts.
Anode 1 Voltage	1650 volts.
Modulator Voltage :	
Negative bias value	130 volts.
Positive bias value	0 volts.
Peak Heater-Cathode Voltages :	
Heater negative with respect to cathode	125 volts.
Heater positive with respect to cathode	125 volts.

Typical Operating Conditions :

Final Anode Voltage	7000 volts.
Anode 2 Voltage	1075 volts. ± 100 volts.
Anode 1 Voltage–See Note 3	1250 volts.
Modulator Voltage for cut-off	–45 to –100 volts.
Spot Position	See Note 4

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.

DIAMETER 6″ NOMINAL

6T03A

6T03A

Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

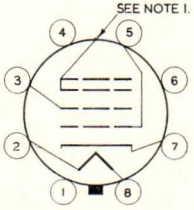
Heater: Voltage . . . 6.3 . . .	a.c. or d.c. volts.
Current . . . 0.6 . . .	amp.
Direct Inter-electrode Capacitances.	
Modulator to all other electrodes . . .	9.0μμf.
Anode 1 to all other electrodes . . .	6.0μμf.
Cathode to all other electrodes . . .	8.0μμf.
Screen :	Aluminium Backed.
Fluorescence	Orange.
Afterglow	Orange.
Persistence of Afterglow	Long.
Focusing Method	Magnetic.
Deflecting Method	Magnetic.
Overall Length	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.

Pin 1—No connection.

Pin 2—Heater.

Pin 3—Anode 1.

Pin 4—No connection.



Pin 5—Modulator.

Pin 6—No connection.

Pin 7—Cathode.

Pin 8—Heater.

Cap—Final Anode.

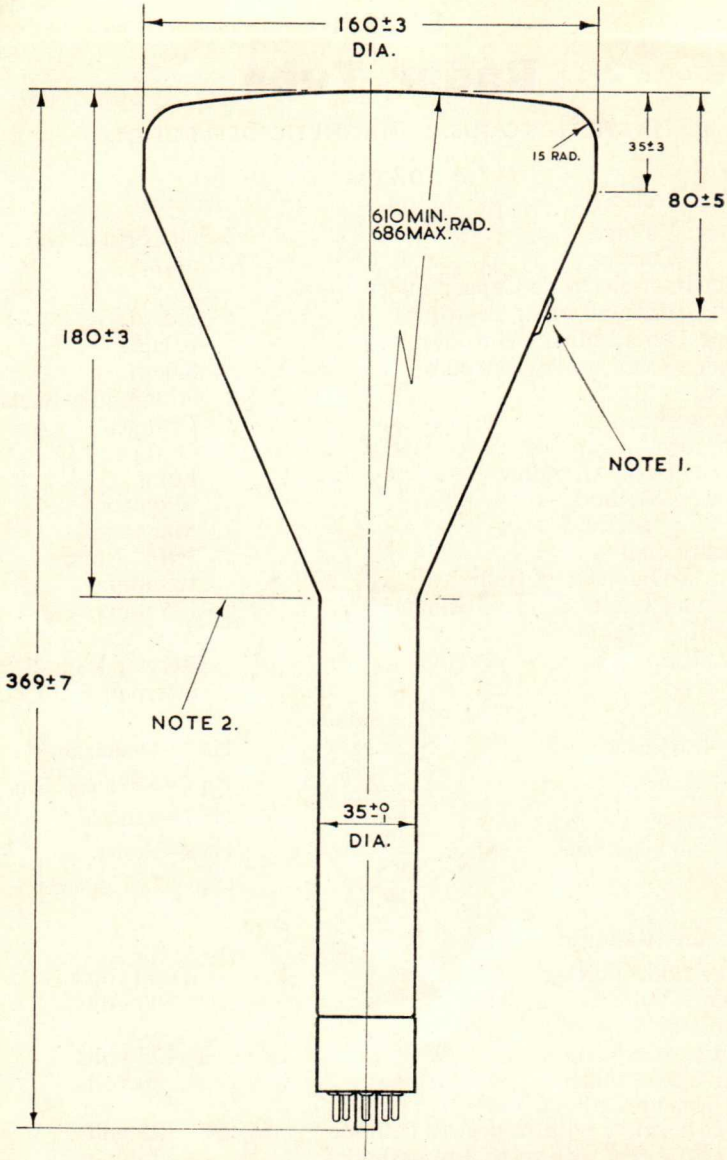
Maximum Ratings:

Final Anode Voltage	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).

DIAMETER 7″ NOMINAL

7TD3A

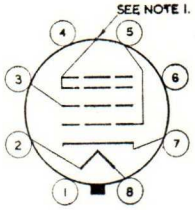
Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

GENERAL:

Heater: Voltage	6.3	a.c. or d.c. volts.
Current	0.6	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		9.0μμf.
Anode 1 to all other electrodes		6.0μμf.
Cathode to all other electrodes		8.0μμf.
Screen :		Aluminium Backed.
Fluorescence		Blue.
Afterglow		Yellow.
Persistence of Afterglow		Long.
Focusing Method		Magnetic.
Deflecting Method		Magnetic.
Overall Length		337 ± 10 mm.
Greatest Diameter of Bulb		181 mm.
Minimum Useful Screen Diameter		155 mm.
Mounting Position		Any.
Anode Cap		Recessed Small Ball.
Base		International Octal.

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



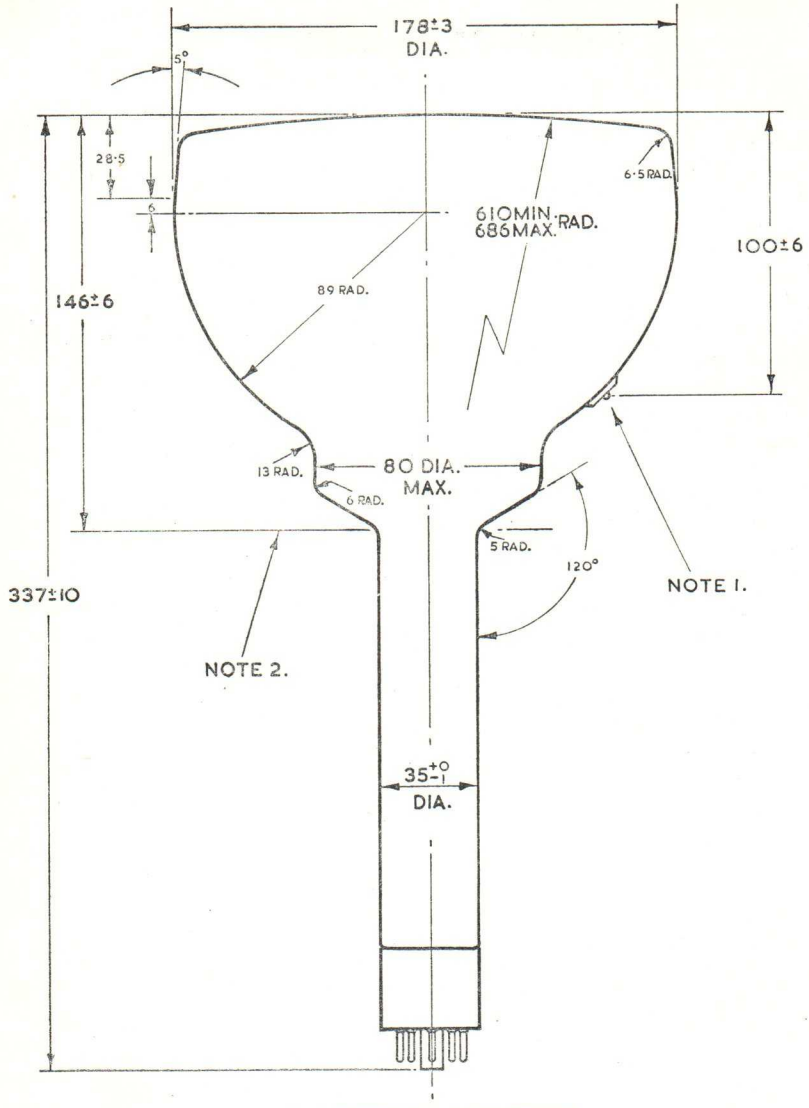
Pin 5—Modulator.
Pin 6—No connection.
Pin 7—Cathode.
Pin 8—Heater.
Cap—Final Anode.

Maximum Ratings:

Final Anode Voltage	8000 volts.
Anode 1 Voltage	700 volts.
Modulator Voltage :	
Negative bias value	195 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	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	



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.

DIAMETER 7″ NOMINAL

7T03A

7T03A

Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

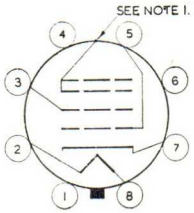
Heater: Voltage	6.3	a.c. or d.c. volts.
Current	0.6	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		9.0μμf.
Anode 1 to all other electrodes		6.0μμf.
Cathode to all other electrodes		8.0μμf.
Screen :		Aluminium Backed.
Fluorescence		Orange.
Afterglow		Orange.
Persistence of Afterglow		Long.
Focusing Method		Magnetic.
Deflecting Method		Magnetic.
Overall Length		337 ± 10 mm.
Greatest Diameter of Bulb		181 mm.
Minimum Useful Screen Diameter		155 mm.
Mounting Position		Any.
Anode Cap		Recessed Small Ball.
Base		International Octal.

Pin 1—No connection.

Pin 2—Heater.

Pin 3—Anode 1.

Pin 4—No connection.



Pin 5—Modulator.

Pin 6—No connection.

Pin 7—Cathode.

Pin 8—Heater.

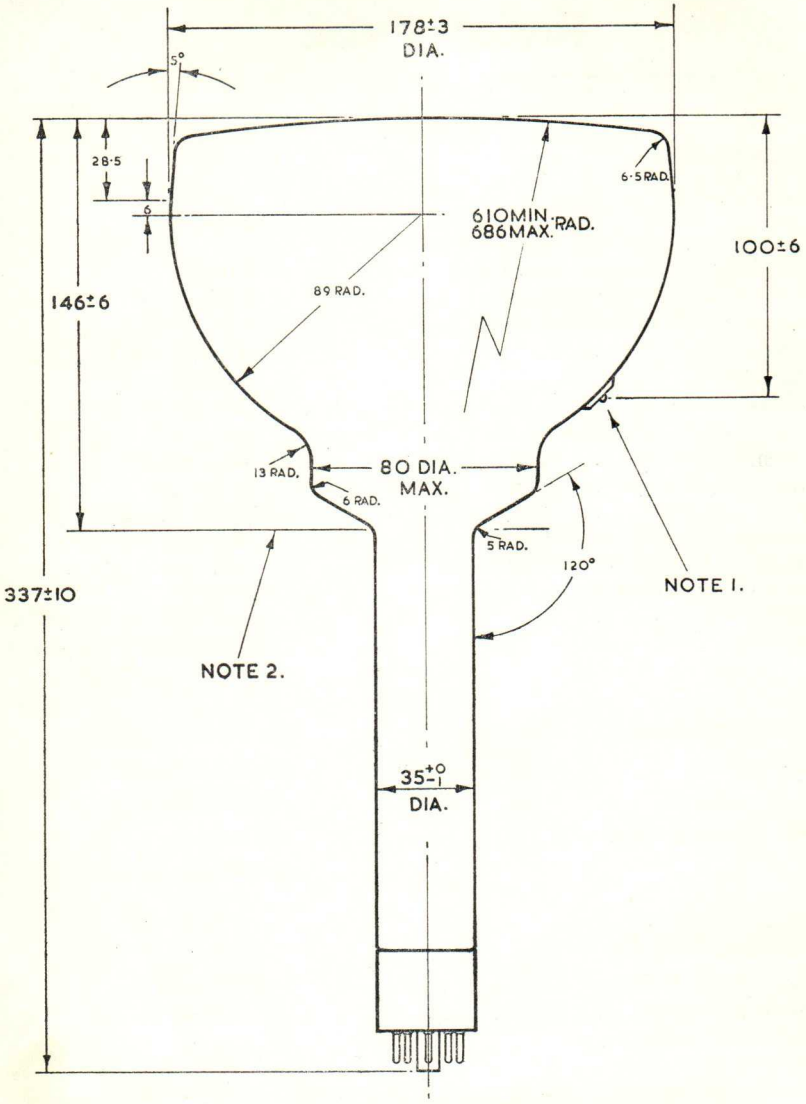
Cap—Final Anode.

Maximum Ratings:

Final Anode Voltage	8000 volts.
Anode 1 Voltage	700 volts.
Modulator Voltage :	
Negative bias value	195 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	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	



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.

DIAMETER 9" NOMINAL

9LO1A

Radar Tube

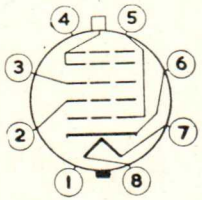
ELECTROSTATIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL

Heater : Voltage	4.0 ac or dc volts.
Current	1.0 amp.
Direct Inter-electrode Capacitances (Approx.)	
Modulator to All Other Electrodes	15 μμf.
Anode 1 to All Other Electrodes	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.

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



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

Maximum Ratings

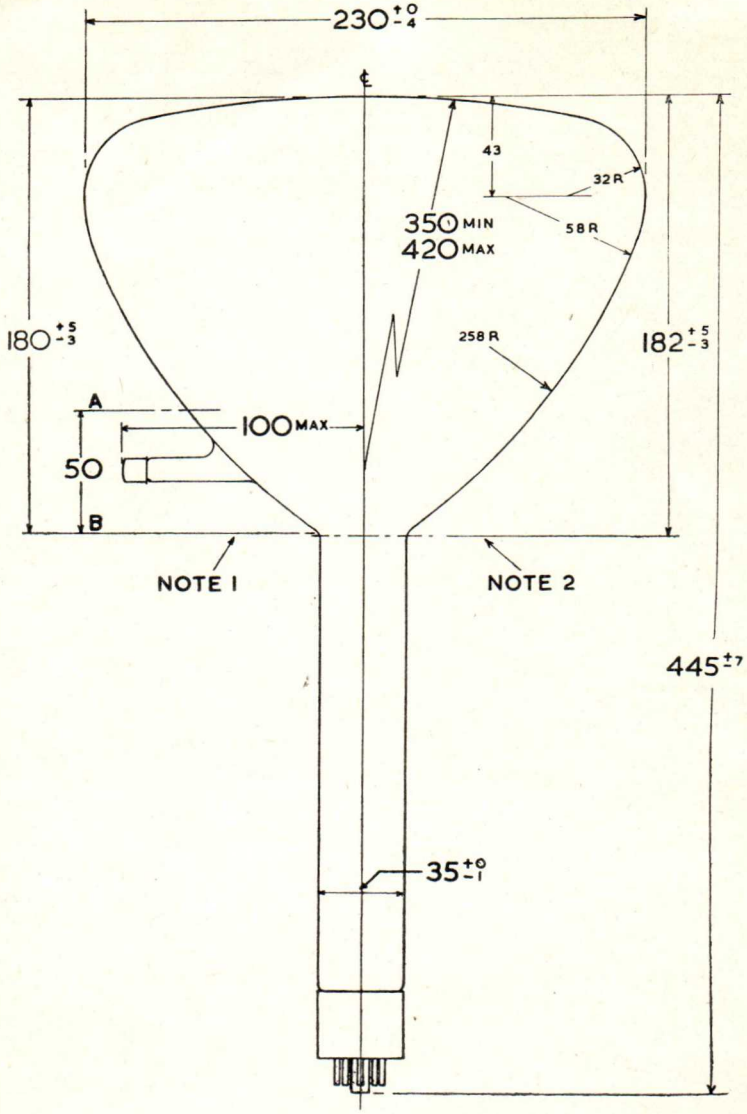
Final Anode Voltage	10000 volts.
Anode 1 Voltage	1450 volts.
Modulator Voltage :	
Negative bias value	100 volts.
Positive bias value	0 volts.
Peak Heater-Cathode Voltages :	
Heater negative with respect to cathode	125 volts.
Heater positive with respect to cathode	125 volts.

Typical Operation

Final Anode Voltage	8000 volts.
Anode 2 Voltage	1240 volts.
Anode 1 Voltage–See Note 3	1350 volts.
Modulator Voltage for cut-off	–75 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 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 the spigot key may vary from the plane through the tube axis and the anode cap by an angular tolerance (measured about the tube axis) of 10°. The position of the anode cap along the tube axis is between A and B and is on the same side of the tube as the spigot key.

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

DIAMETER 10" NOMINAL

10MW4A

Television Monitor Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

10MW4A

DATA

GENERAL:

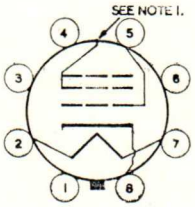
Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		9μμf.
Cathode to all other electrodes		9μμf.
Screen :		Aluminium Backed.
Fluorescence		White.
Persistence	Short (5m sec./25m sec. for 1% initial brightness)	
Focusing Method		Magnetic.
Deflecting Method		Magnetic.
Overall Length		483 ± 10 mm.
Greatest Diameter of Bulb		257 mm.
Minimum Useful Screen Diameter		230 mm.
Mounting Position		Any.
Anode Cap		Cavity Cap BSS448/CT8.
Base		International Octal.

Pin 1—No connection.

Pin 2—Heater.

Pin 3—Pin omitted.

Pin 4—Pin omitted.



Pin 5—Modulator.

Pin 6—Pin omitted.

Pin 7—Heater.

Pin 8—Cathode.

Cap—Anode.

Maximum Ratings:

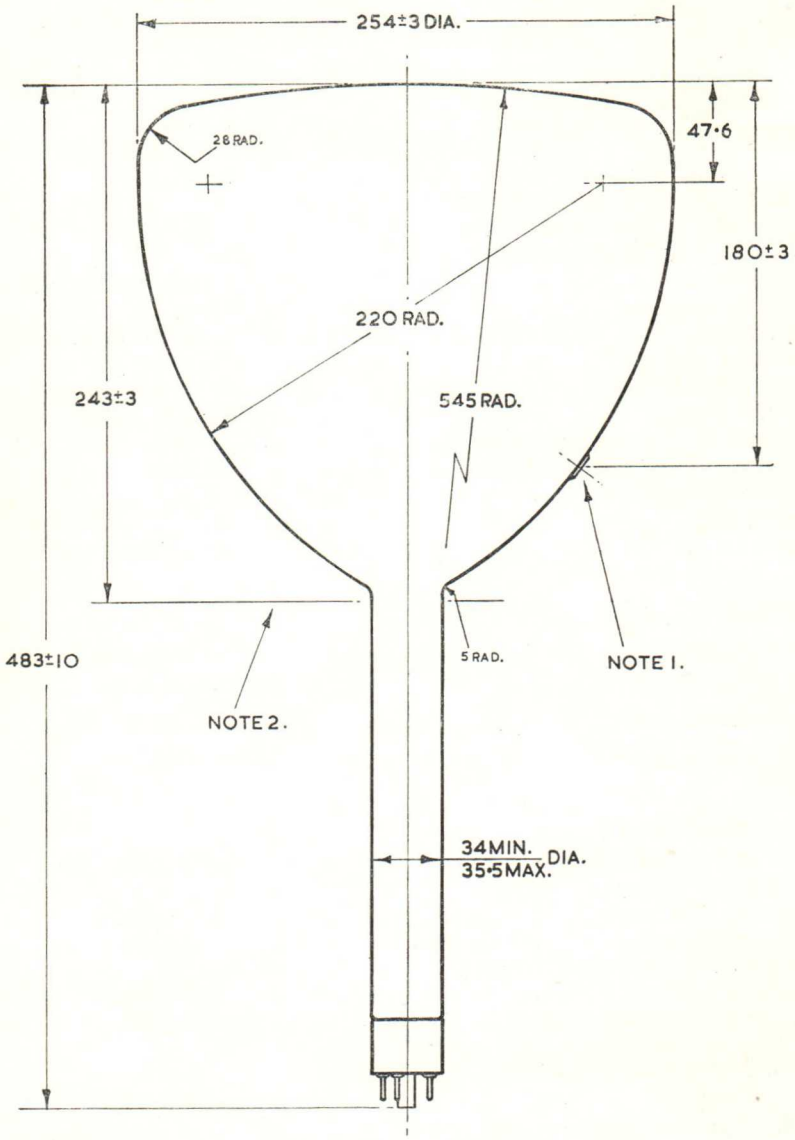
Final Anode Voltage	11000 volts.
Modulator Voltage :	
Negative bias value	130 volts.
Positive bias value	0 volts.
Peak Heater-Cathode Voltages :	
Heater negative with respect to cathode	150 volts.
Heater positive with respect to cathode	150 volts.

Typical Operating Conditions:

Anode Voltage	10000 volts.
Modulator Voltage for cut-off	−70 to −120 volts.
Focusing-Coil Current–See Note 3	550 A.T.
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.



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.

DIAMETER 12″ NOMINAL

12EG6

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0 a.c. or d.c. volts
Current	1.0 amp.
Direct Inter-electrode Capacitances:	
Modulator to all other electrodes	15μμf.
Each X Plate to all other electrodes	15μμf.
Each Y Plate to all other electrodes	15μμf.
One X to one Y Deflector Plate	4.0μμf.
Cathode to all other electrodes	15μμf.
Screen:	
Fluorescence	Green
Persistence of Afterglow	Short
(10 m. sec min./100m. sec. max.) for 1% initial brightness.	
Focussing Method	Electrostatic
Deflecting Method	Electrostatic.
Overall Length	635±5 mm.
Greatest Diameter of Bulb	312 mm.
Minimum Useful Screen Diameter	280 mm.
Mounting Position	Any
Base	B12D.

Pin 1—Modulator.

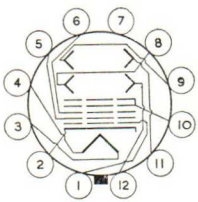
Pin 2—Cathode.

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.

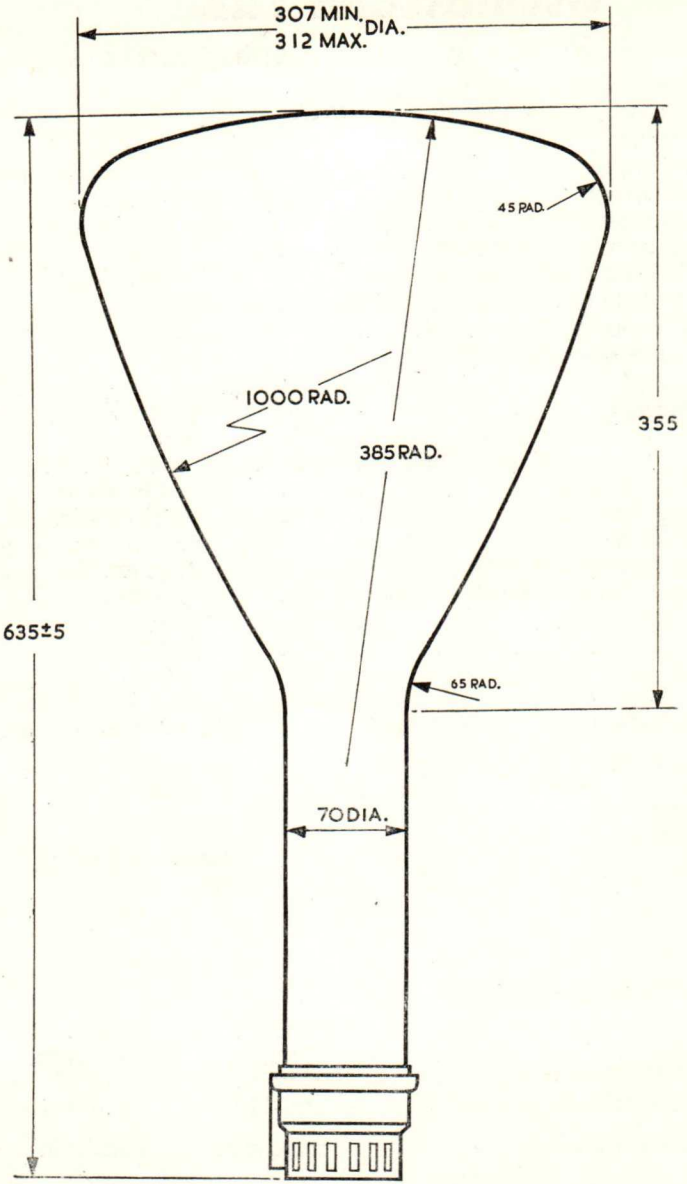
Pin 12—Y1.

Typical Operating Conditions:

Anode 1	1000 volts.	1000 volts
Anode 2	550 volts.	900 volts.
Anode 3 (5500 volts max.)	3000 volts.	5000 volts.
Modulator volts for cut-off	-60 to -110	-60 to -110
Deflection Sensitivity:	mm./volt.	mm./volt.
X Plate	0.4	0.24
Y Plate	0.4	0.24

Note 2. The angle between the trace produced by X1 and X2 and the trace produced by Y1 and Y2 is 90° ± 3°.

Note 3. The undeflected focused spot will fall within a circle having a 15 mm. radius concentric with the centre of the tube face.



ALL SIZES IN MILLIMETRES.

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

12 LOIA

has been mislaid.

JLL

ENGLISH ELECTRIC VALVE.CO.LTD.
Chelmsford, Essex, England.
PHYS[illegible] SOCIETY EXHIBITION, 1960

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 1.34 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
o high power radars.

Summary of Characteristics

Indirectly Heated, Oxide Coated

5	V Max.
110	A Max.

DIAMETER 12″ NOMINAL

12L03A

Radar Tube

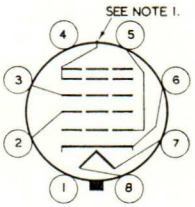
ELECTROSTATIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		15μμf.
Anode 1 to all other electrodes		15μμf.
Cathode to all other electrodes		12μμf.
Screen :		Aluminium Backed.
Fluorescence		Orange.
Afterglow		Orange.
Persistence of Afterglow		Long.
Focusing Method		Electrostatic.
Deflecting Method		Magnetic.
Overall Length		535 ± 10 mm.
Greatest Diameter of Bulb		306.5 mm.
Minimum Useful Screen Diameter		265 mm.
Mounting Position		Any.
Anode Cap		Cavity Cap BSS448/CT8
Base		International Octal.

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



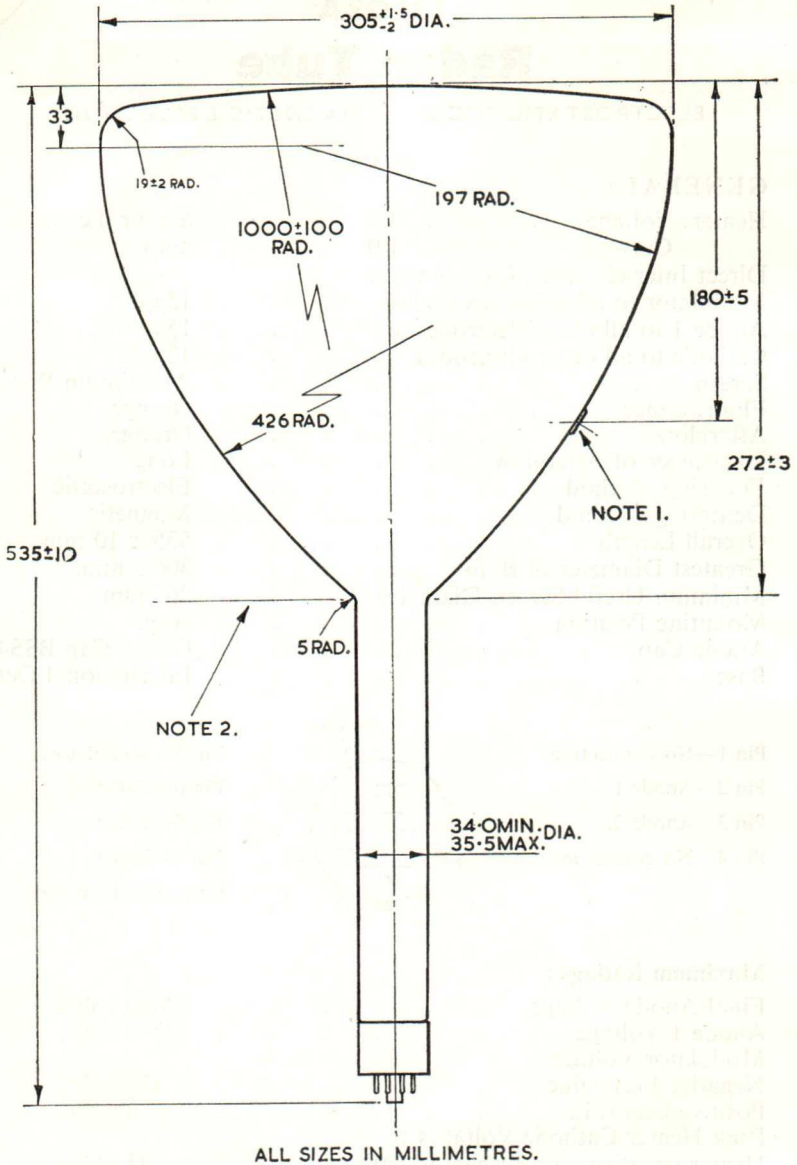
Pin 5—Modulator.
Pin 6—Cathode.
Pin 7—Heater.
Pin 8—Heater.
Cap—Final Anode.

Maximum Ratings:

Final Anode Voltage	13000 volts.
Anode 1 Voltage	2200 volts.
Modulator Voltage :	
Negative bias value	130 volts.
Positive bias value	0 volts.
Peak Heater-Cathode Voltages :	
Heater negative with respect to cathode	125 volts.
Heater positive with respect to cathode	125 volts.

Typical Operating Conditions:

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



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

Note 2. Reference line is determined by position where 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.

DIAMETER 12″ NOMINAL

12M06A

12M06A

Radar Tube

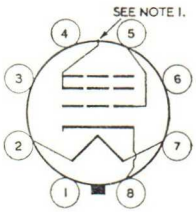
MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		12.0μμf.
Cathode to all other electrodes		10.0μμf.
Screen :		Aluminium Backed.
Fluorescence		Orange.
Afterglow		Orange.
Persistence of Afterglow		Long.
Focusing Method		Magnetic.
Deflecting Method		Magnetic.
Overall Length		510 ± 10 mm.
Greatest Diameter of Bulb		306.5 mm.
Minimum Useful Screen Diameter		265 mm.
Mounting Position		Any.
Anode Cap		Cavity Cap BSS448/CT8.
Base		International Octal.

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



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

Maximum Ratings:

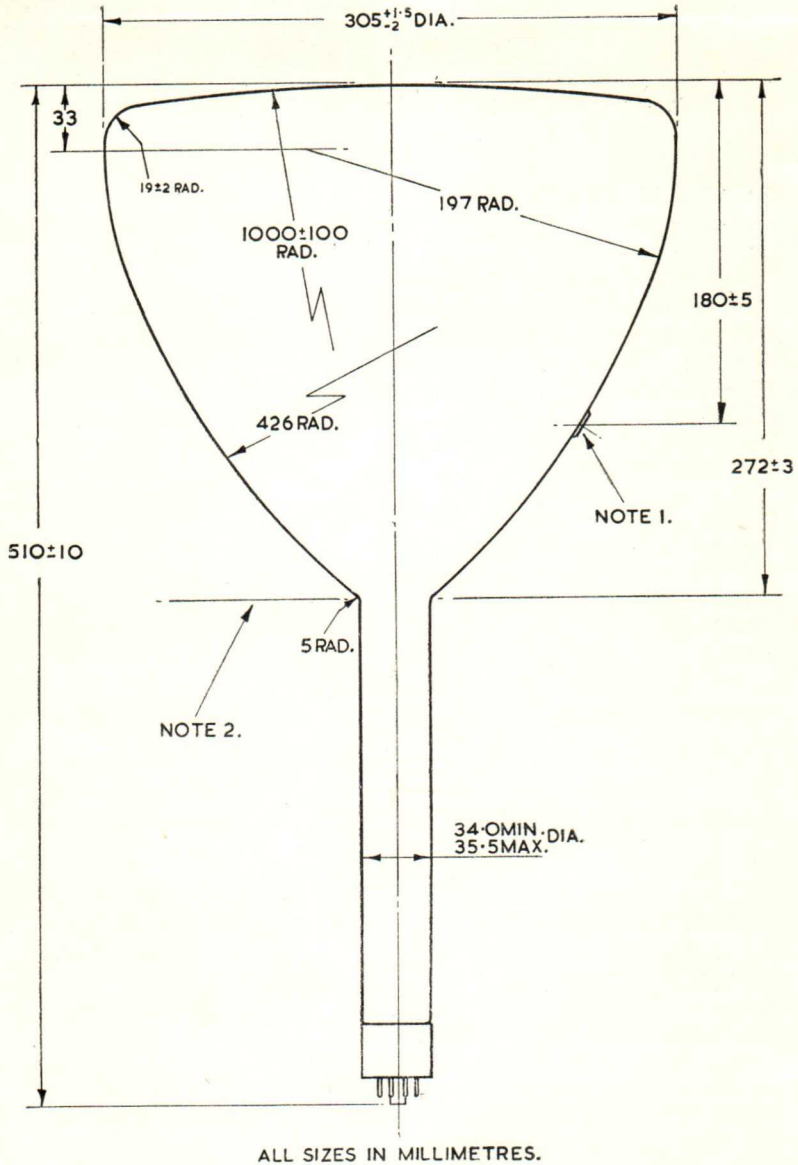
Anode Voltage	11000 volts.
Modulator Voltage :	
Negative bias value	130 volts.
Positive bias value	0 volts.
Peak Heater-Cathode Voltages :	
Heater negative with respect to cathode	125 volts.
Heater positive with respect to cathode	125 volts.

Typical Operating Conditions:

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



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.

DIAMETER 12" NOMINAL

12T03A

12T03A

Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

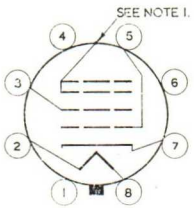
Heater: Voltage	6.3	a.c. or d.c. volts.
Current	0.6	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		9.0μμf.
Anode 1 to all other electrodes		6.0μμf.
Cathode to all other electrodes		8.0μμf.
Screen :		Aluminium Backed.
Fluorescence		Orange.
Afterglow		Orange.
Persistence of Afterglow		Long.
Focusing Method		Magnetic.
Deflecting Method		Magnetic.
Overall Length		488 ± 7 mm.
Greatest Diameter of Bulb		306.5 mm.
Minimum Useful Screen Diameter		265 mm.
Mounting Position		Any.
Anode Cap		Cavity Cap BSS448/CT8.
Base		International Octal.

Pin 1—No connection.

Pin 2—Heater.

Pin 3—Anode 1.

Pin 4—No connection.



Pin 5—Modulator.

Pin 6—No connection.

Pin 7—Cathode.

Pin 8—Heater.

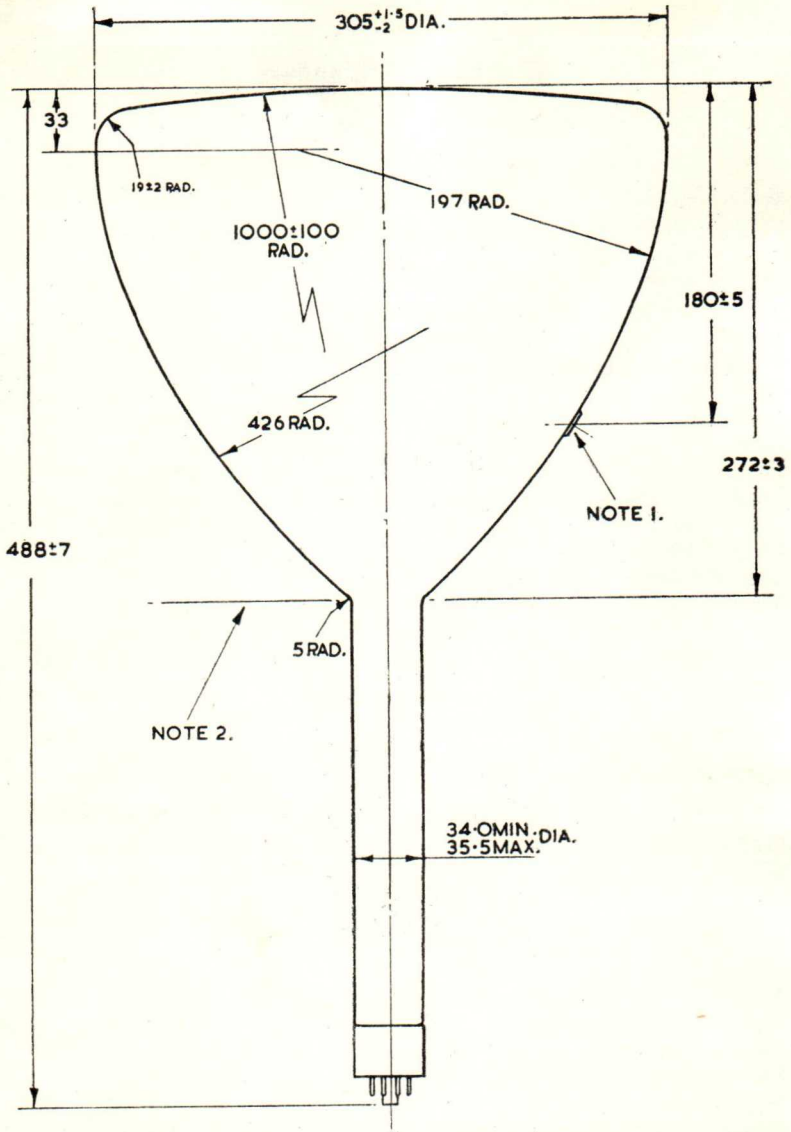
Cap—Final Anode.

Maximum Ratings:

Final Anode Voltage	15000 volts.
Anode 1 Voltage	850 volts.
Modulator Voltage :	
Negative bias value	140 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 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 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.

DIAMETER 15″ NOMINAL

15LO3A

15LO3A

Radar Tube

ELECTROSTATIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

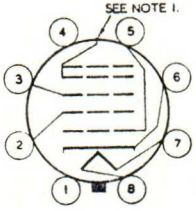
Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		15μμf.
Anode 1 to all other electrodes		15μμf.
Cathode to all other electrodes		12μμf.
Screen :		Aluminium Backed.
Fluorescence		Orange.
Afterglow		Orange.
Persistence of Afterglow		Long.
Focusing Method		Electrostatic.
Deflecting Method		Magnetic.
Overall Length		575 ± 10 mm.
Greatest Diameter of Bulb		385 mm.
Minimum Useful Screen Diameter		330 m.m
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.

Maximum Ratings :

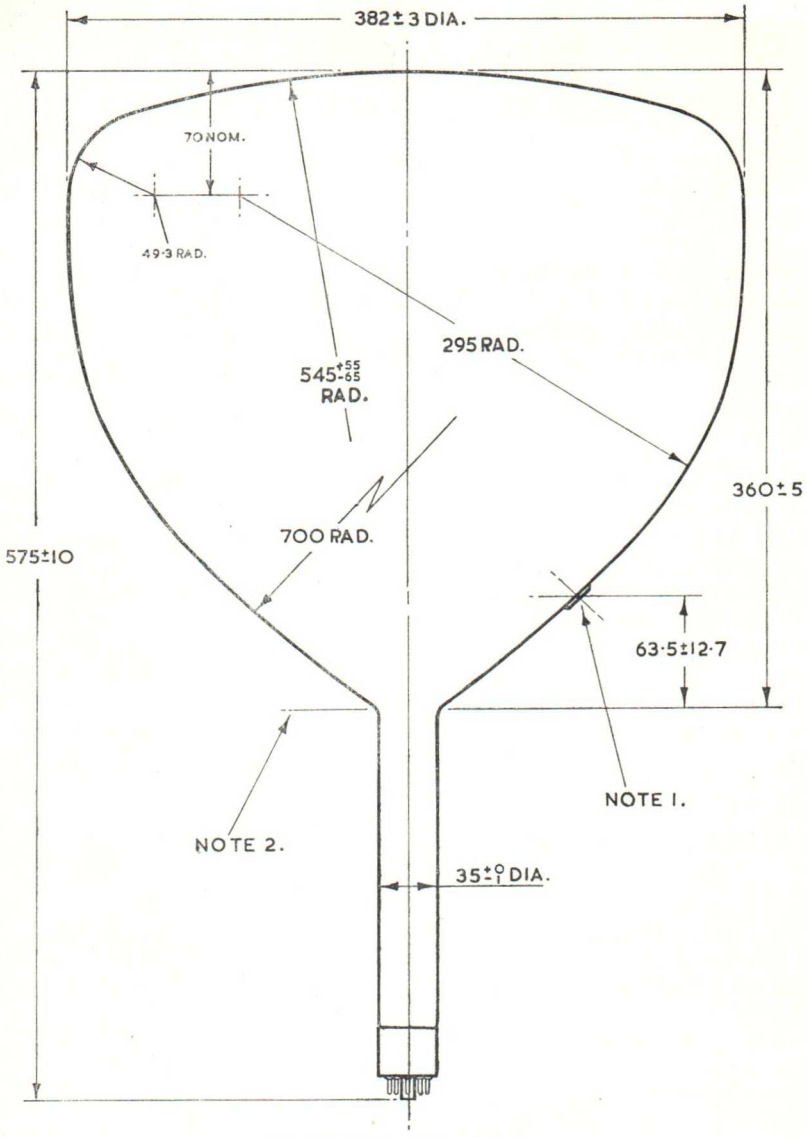
Final Anode Voltage	12000 volts.
Anode 1 Voltage	2200 volts.
Modulator Voltage :	
Negative bias value	145 volts.
Positive bias value	0 volts.
Peak Heater-Cathode Voltages :	
Heater negative with respect to cathode	125 volts.
Heater positive with respect to cathode	125 volts.

Typical Operating Conditions :

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	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 15 mm. radius concentric with the centre of the tube face.



ALL SIZES IN MILLIMETRES.

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

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

DIAMETER 15″ NOMINAL

15M06A

15M06A

Radar Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

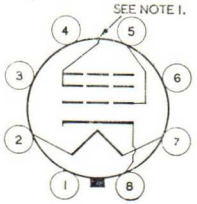
Heater: Voltage . . . 4.0 . . .	a.c. or d.c. volts.
Current . . . 1.0 . . .	amp.
Direct Inter-electrode Capacitances.	
Modulator to all other electrodes . . .	12.0μμf.
Cathode to all other electrodes . . .	10.0μμf.
Screen :	Aluminium Backed.
Fluorescence	Orange.
Afterglow	Orange.
Persistence of Afterglow	Long.
Focusing Method	Magnetic.
Deflecting Method	Magnetic.
Overall Length	582 ± 7 mm.
Greatest Diameter of Bulb	385 mm.
Minimum Useful Screen Diameter . . .	330 mm.
Mounting Position	Any.
Anode Cap	Cavity Cap BSS448/CT8.
Base	International Octal.

Pin 1—No connection.

Pin 2—Heater.

Pin 3—Pin omitted.

Pin 4—Pin omitted.



Pin 5—Modulator.

Pin 6—Pin omitted.

Pin 7—Heater.

Pin 8—Cathode.

Cap—Anode.

Maximum Ratings:

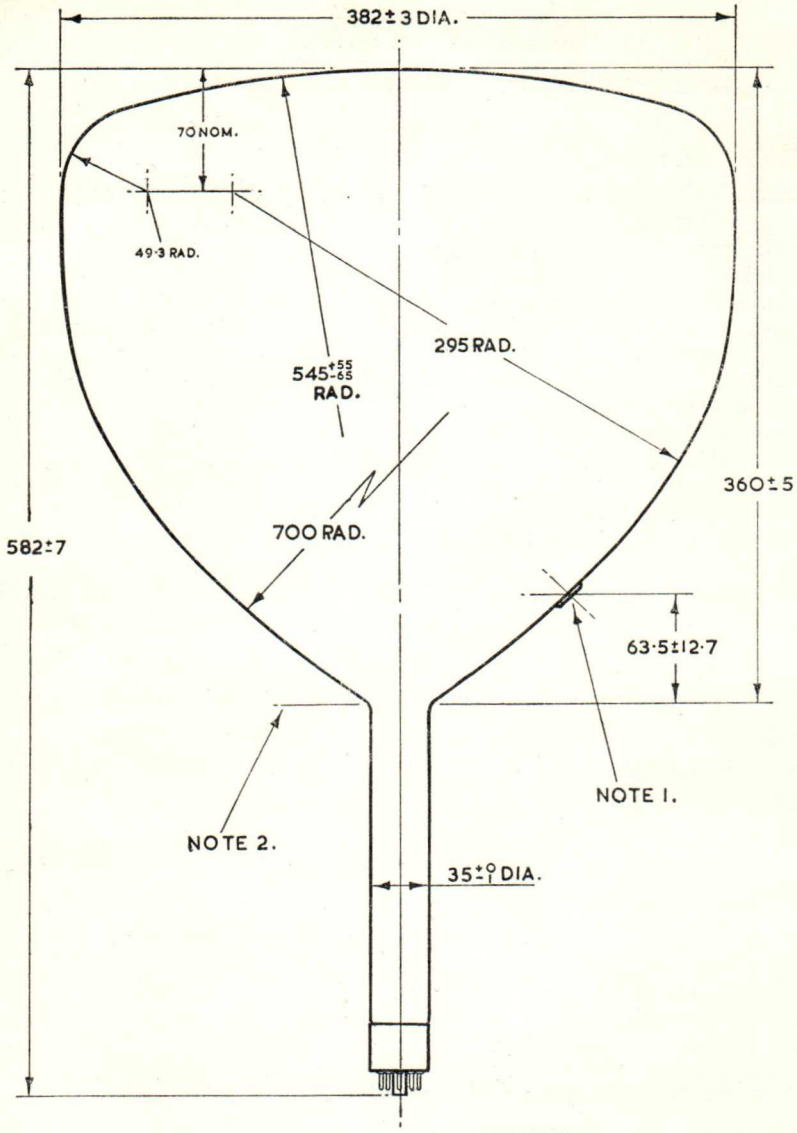
Anode Voltage	11000 volts.
Modulator Voltage :	
Negative bias value	130 volts.
Positive bias value	0 volts.
Peak Heater-Cathode Voltages :	
Heater negative with respect to cathode . .	125 volts.
Heater positive with respect to cathode . .	125 volts.

Typical Operating Conditions:

Anode Voltage	10000 volts.
Modulator Voltage for cut-off	−75 to −115 volts.
Focusing-Coil Current–See Note 3 . . .	600 A.T.
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 15 mm. radius concentric with the centre of the tube face.



ALL SIZES IN MILLIMETRES.

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

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

DIAMETER 15″ NOMINAL

15T04A

15T04A
Radar Tube

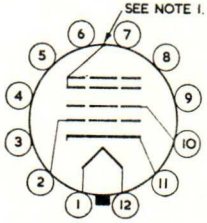
MAGNETIC FOCUS. MAGNETIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	6.3	a.c. or d.c. volts.
Current	0.6	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		12μμf.
Anode 1 to all other electrodes		10μμf.
Cathode to all other electrodes		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 Bulb		385 mm.
Minimum Useful Screen Diameter		330 mm.
Mounting Position		Any.
Anode Cap		Cavity Cap BSS448/CT8.
Base		B.12.A.

Pin 1—Heater.
Pin 2—Modulator.
Pin 3—Pin omitted.
Pin 4—Pin omitted.
Pin 5—Pin omitted.
Pin 6—No connection.



Pin 7—No connection.
Pin 8—Pin omitted.
Pin 9—Pin omitted.
Pin 10—Anode 1.
Pin 11—Cathode.
Pin 12—Heater.
Cap—Final Anode.

Maximum Ratings :

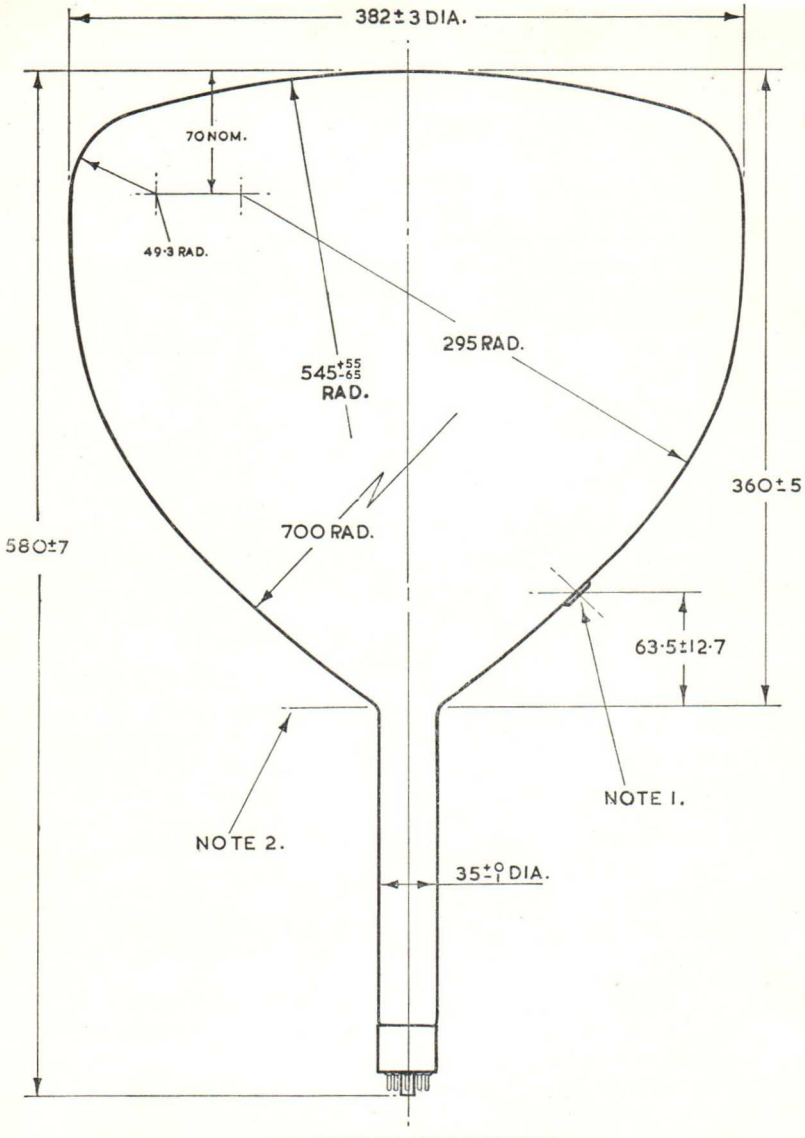
Final Anode Voltage	15500 volts.
Anode 1 Voltage	600 volts.
Modulator Voltage :	
Negative bias value	180 volts.
Positive bias value	0 volts.
Peak Heater-Cathode Voltages :	
Heater negative with respect to cathode	150 volts.
Heater positive with respect to cathode	150 volts.

Typical Operating Conditions :

Final Anode Voltage	15000 volts.
Anode 1 Voltage	300 volts.
Modulator Voltage for cut-off	–30 to –90 volts.
Focusing-Coil Current–See Note 3	730 A.T.
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 15 mm. radius concentric with the centre of the tube face.



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

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

DIAMETER 16" NOMINAL

16T04A

16T04A
Radar Tube

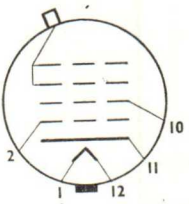
MAGNETIC FOCUS MAGNETIC DEFLECTION

DATA

GENERAL:

Heater : Voltage	6.3	a.c. or d.c. volts.
Current	0.6	amp.
Direct Inter-electrode Capacitances		
Modulator to all other electrodes		9.0 pf.
Anode 1 to all other electrodes		6.0 pf.
Cathode to all other electrodes		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.

Pin 1—Heater
Pin 2—Grid
Pin 6—No connection



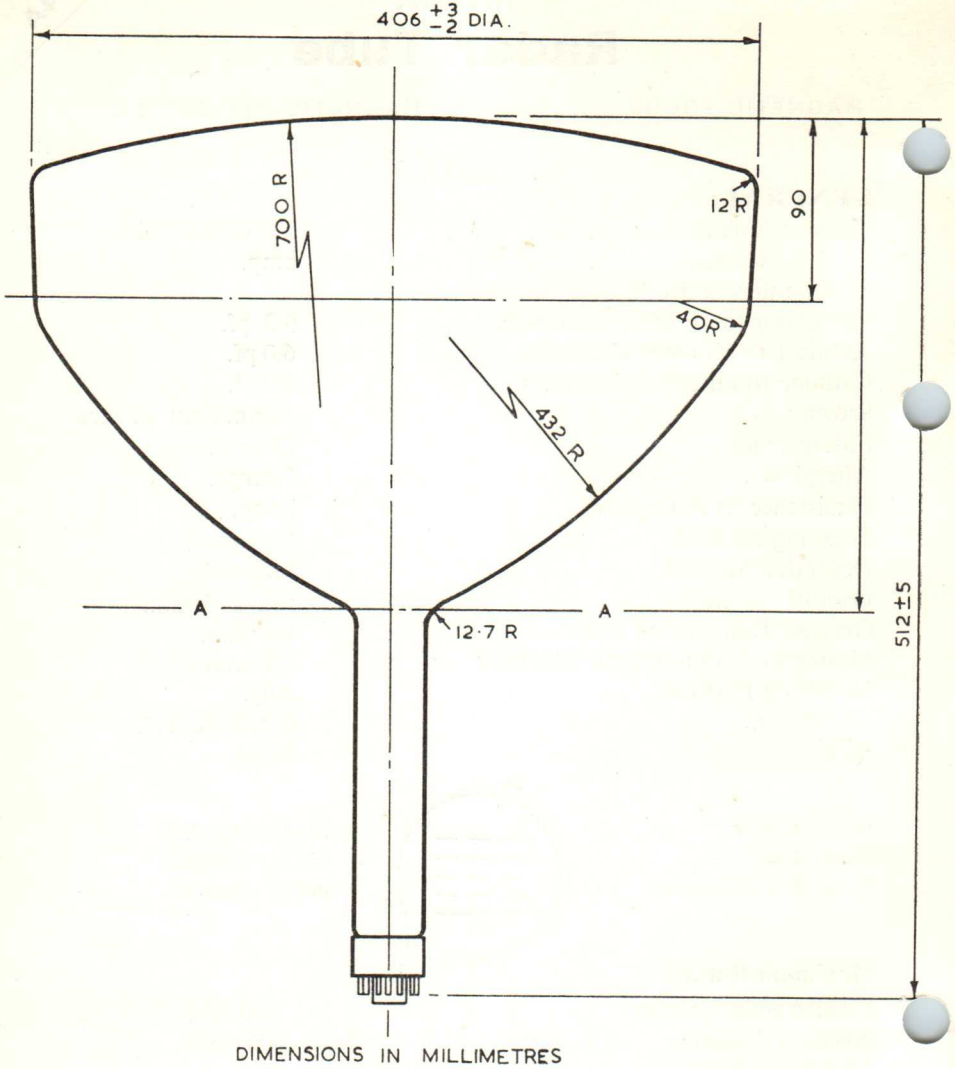
Pin 10—Anode 1
Pin 11—Cathode
Pin 12—Heater

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 Anode Voltage	15.0 kV.
Anode 1 Voltage	300 volts.
Modulator Voltage for cut-off	–30 to –90 volts.
Spot position	*See Note 4.*



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

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

Note 3. Focusing coil positioned with centre line of air gap approximately 118 mm. from the reference line (see outline drawing).

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

DIAMETER 3½" NOMINAL

90EB4

Oscilloscope Tube

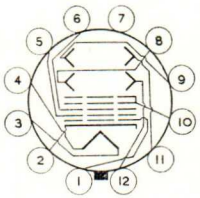
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		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		Blue.
Persistence		Very Short.
	(10μ sec. 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.



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

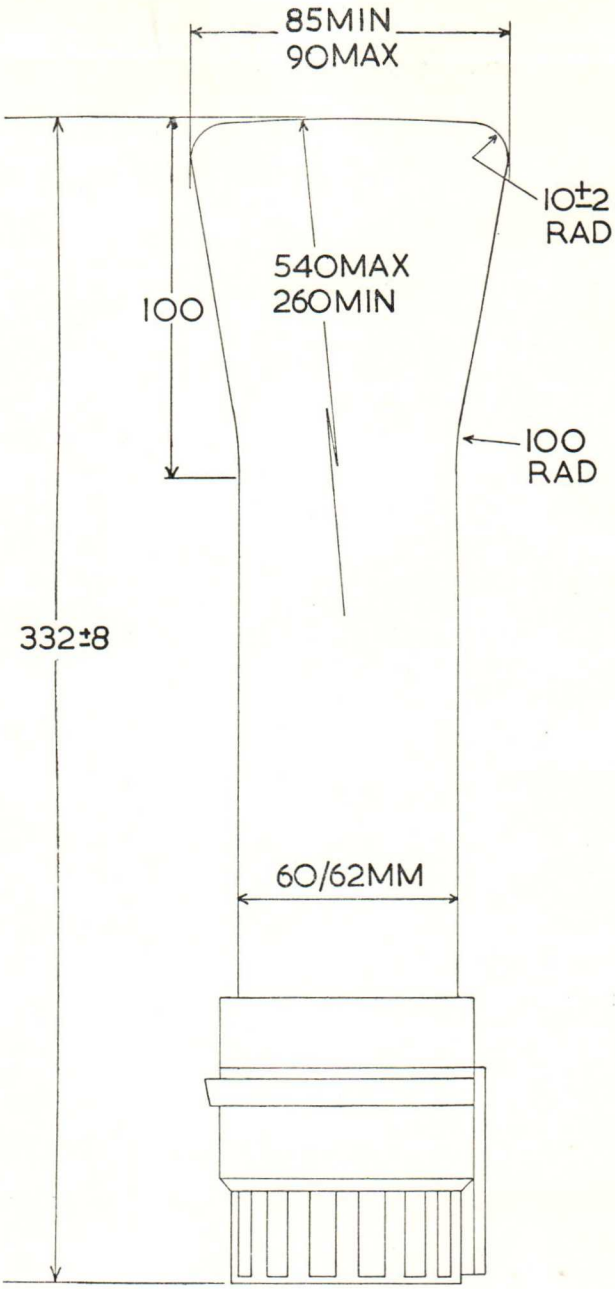
Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	350 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	−40 to −80 volts.	−40 to −80 volts.

Deflection Sensitivity:	mm/volt.	mm/volt.
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° ± 3°.

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



ALL SIZES IN MILLIMETRES

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

DIAMETER 3½ NOMINAL

90EB4F

Oscilloscope Tube

FLAT FACED BULB

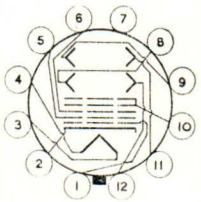
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		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		Blue.
Persistence		Very Short.
	(10μ sec. max. for 1% initial brightness).	
Focusing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		332 ± 8 mm.
Greatest Diameter of Bulb		88.5 mm.
Minimum Useful Screen Diameter		75 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.



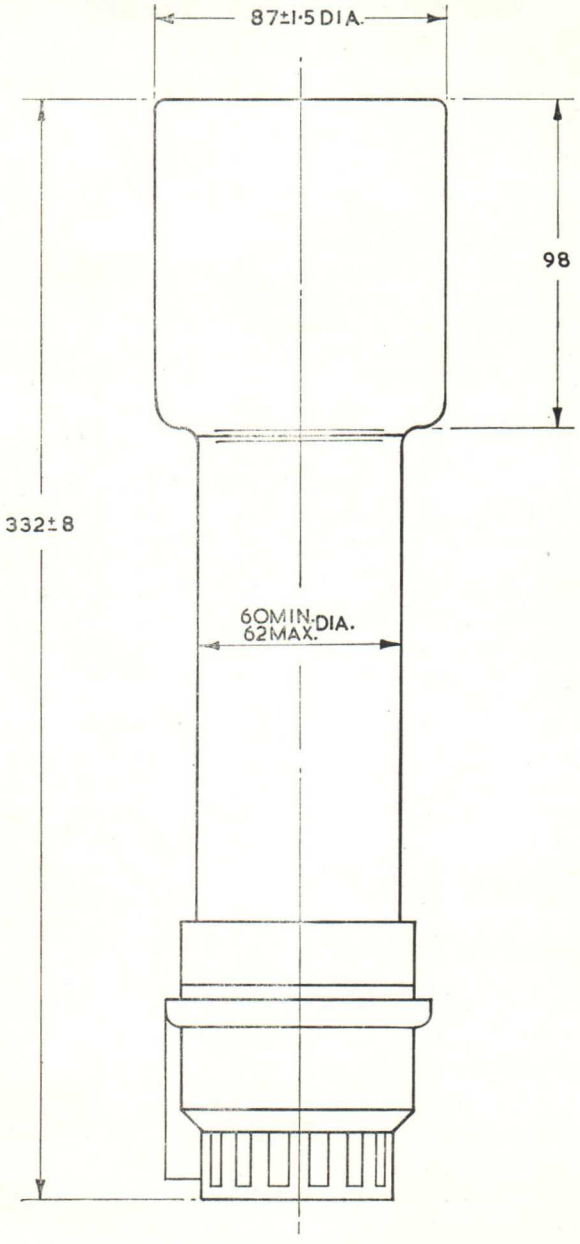
Pin 8—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	350 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	−40 to −80 volts.	−40 to −80 volts.
Deflection Sensitivity:	mm/volt.	mm/volt.
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° ± 3°.

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



ALL SIZES IN MILLIMETRES.

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

DIAMETER 3½" NOMINAL

90EB4P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

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

Direct Inter-electrode Capacitances.

Modulator to all other electrodes	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.

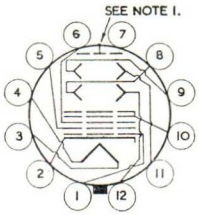
Screen :

Fluorescence	Blue.
Persistence	Very Short.

(10μ sec. max. for 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.
Pin 2—Cathode.
Pin 3—Heater.
Pin 4—Heater.
Pin 5—Anode 1.
Pin 6—Anode 2.
Pin 7—No connection.



Pin 8—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.
Cap—Anode 4 P.D.A.

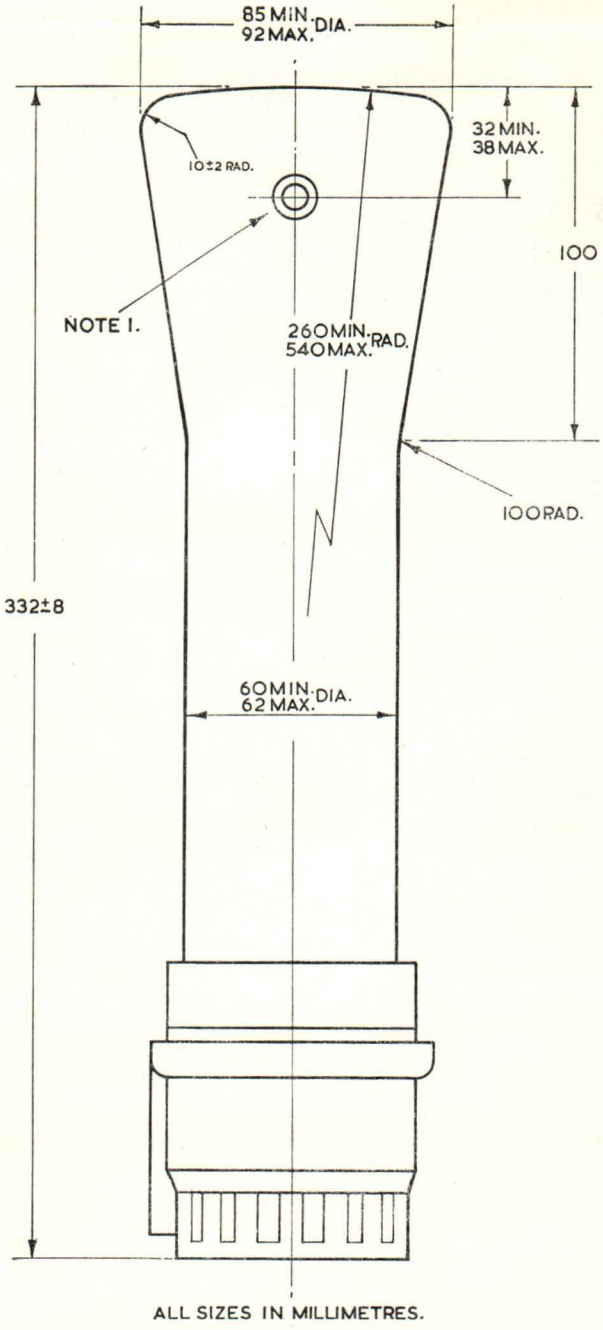
Typical Operating Conditions:

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° ± 3°.

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 3½" NOMINAL

90ED4

90E D4

Oscilloscope Tube

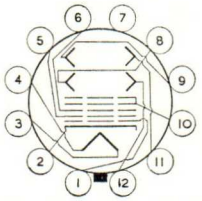
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		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		Blue.
Afterglow		Yellow
Persistence of Afterglow		Long.
(10 sec. min./100 sec. 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.



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

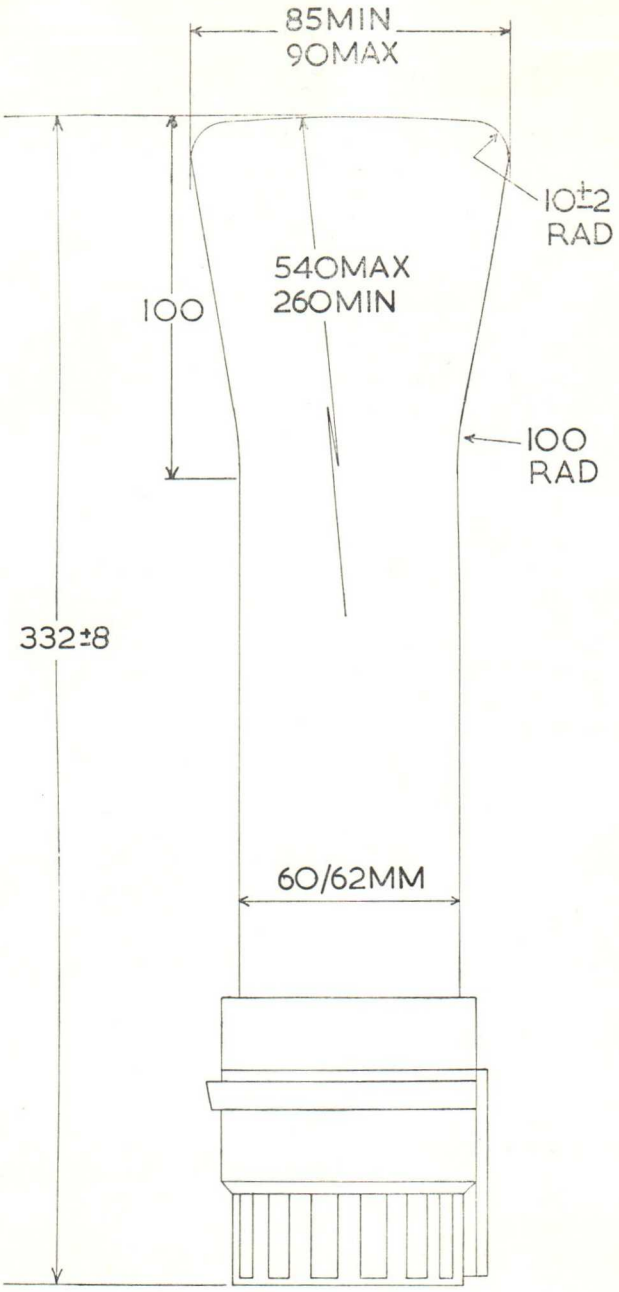
Typical Operating Conditions :

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	350 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	–40 to –80 volts.	–40 to –80 volts.

Deflection Sensitivity :	mm/volt.	mm/volt.
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° ± 3°.

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



ALL SIZES IN MILLIMETRES

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

DIAMETER 3½″ NOMINAL

90ED4P

Oscilloscope Tube

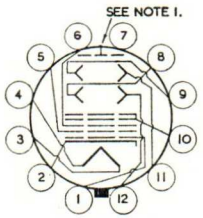
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		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		Blue.
Afterglow		Yellow.
Persistence of Afterglow		Long.
(10 sec. min./100 sec. max. for 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.
Pin 2—Cathode.
Pin 3—Heater.
Pin 4—Heater.
Pin 5—Anode 1.
Pin 6—Anode 2.
Pin 7—No connection.



Pin 8—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.
Cap—Anode 4 P.D.A.

Typical Operating Conditions:

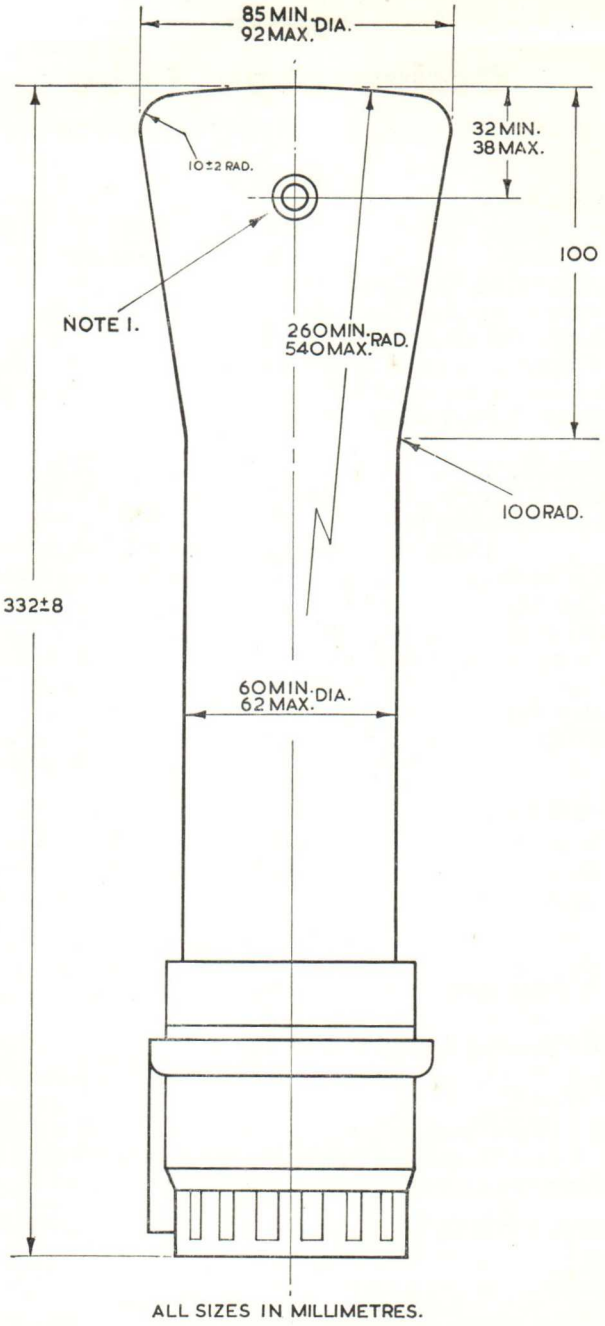
Anode 1	2000 volts.
Anode 2	380 volts.
Anode 3 (4000v. max.)	2000 volts.
Anode 4 Post Deflector Accelerator (6000v. max.)	4000 volts.
Modulator volts for cut-off	–40 to –80 volts.

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° ± 3°.

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 3½" NOMINAL

90EG4

Oscilloscope Tube

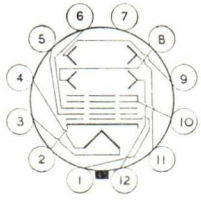
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		25μμf.
Each X Plate to all other electrodes		25μμf.
Each Y Plate to all other electrodes		25μμf.
One X to one Y Deflector Plate		6μμf.
Cathode to all other electrodes		15μμf.
Screen :		
Fluorescence		Green.
Persistence of Afterglow		Short.
(10m sec. min./100m sec. max. for 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.



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

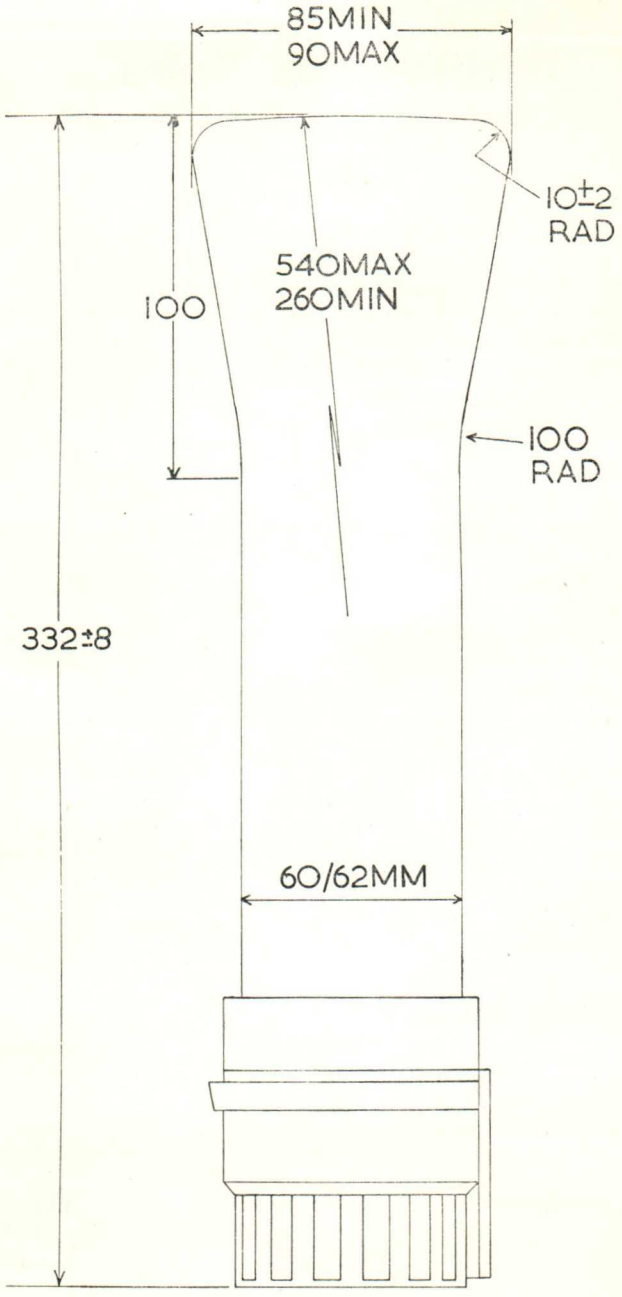
Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	350 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	–40 to –80 volts.	–40 to –80 volts.

Deflection Sensitivity:	mm/volt.	mm/volt.
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° ± 3°.

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



ALL SIZES IN MILLIMETRES

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

DIAMETER 3½" NOMINAL

90EG4F

Oscilloscope Tube

FLAT FACED BULB

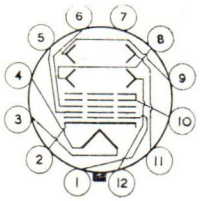
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		25μμf.
Each X Plate to all other electrodes		25μμf.
Each Y Plate to all other electrodes		25μμf.
One X to one Y Deflector Plate		6μμf.
Cathode to all other electrodes		15μμf.
Screen :		
Fluorescence		Green.
Persistence		Short.
(10m sec. min./100m sec. max. for 1% initial brightness).		
Focusing Method		Electrostatic.
Deflecting Method		Electrostatic.
Overall Length		332 ± 8 mm.
Greatest Diameter of Bulb		88.5 mm.
Minimum Useful Screen Diameter		75 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.



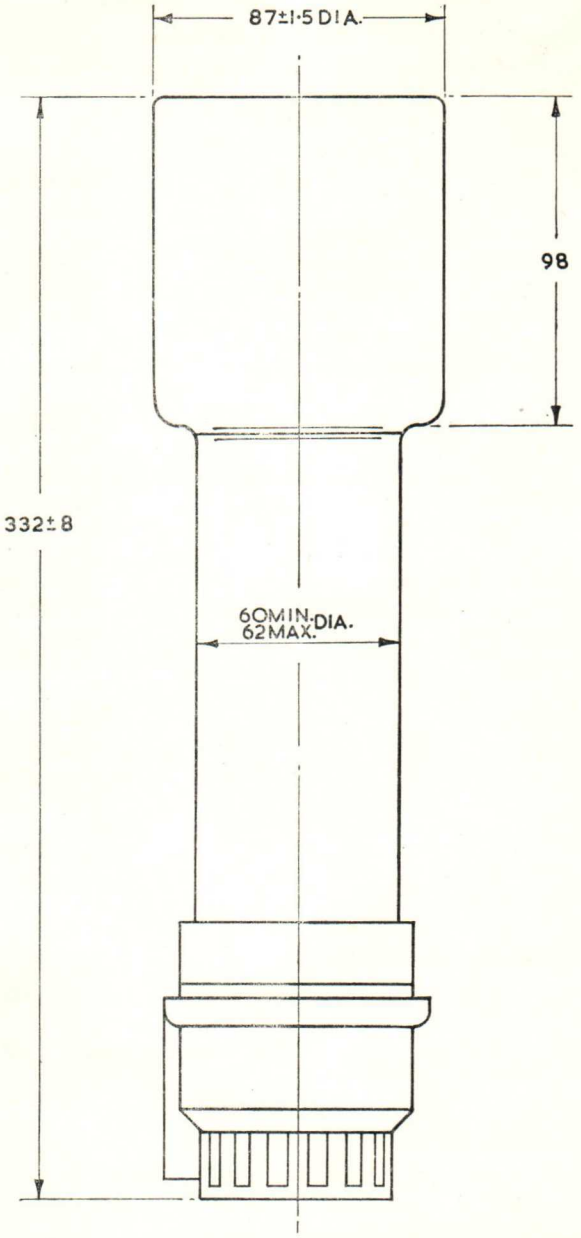
Pin 8—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	350 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	−40 to −80 volts.	−40 to −80 volts.
Deflection Sensitivity:	mm/volt.	mm/volt.
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° ± 3°.

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



ALL SIZES IN MILLIMETRES.

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

DIAMETER 3½" NOMINAL

90EG4P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

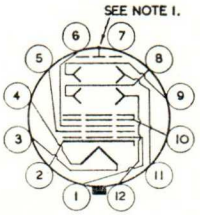
90EG4P

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		25μμf.
Each X Plate to all other electrodes		25μμf.
Each Y Plate to all other electrodes		25μμf.
One X to one Y Deflector Plate		6μμf.
Cathode to all other electrodes		15μμf.
Screen :		
Fluorescence		Green.
Persistence		Short.
(10m sec. min./100m sec. max. for 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.
Pin 2—Cathode.
Pin 3—Heater.
Pin 4—Heater.
Pin 5—Anode 1.
Pin 6—Anode 2.
Pin 7—No connection.



Pin 8—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.
Cap—Anode 4 P.D.A.

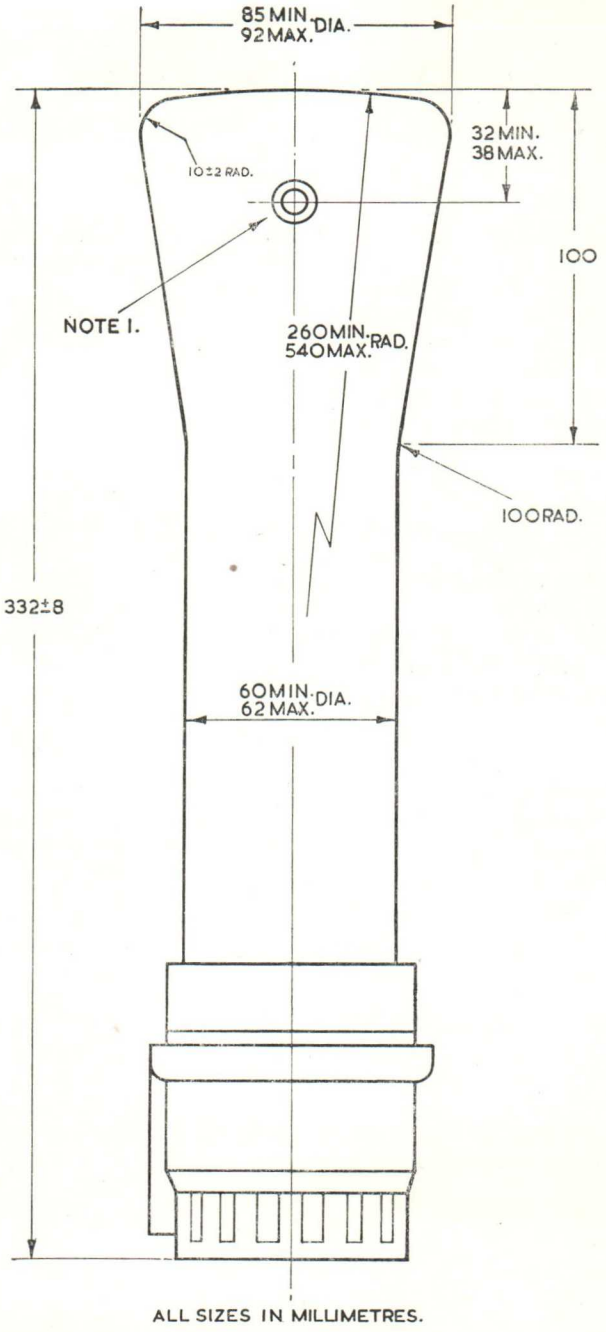
Typical Operating Conditions:

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° ± 3°.

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



ALL SIZES IN MILLIMETRES.

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

DIAMETER 3½" NOMINAL

90E04

90E04

Oscilloscope Tube

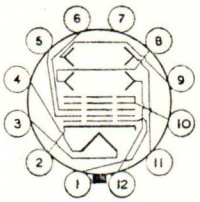
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		25μμf.
Each X Plate to all other electrodes		25μμf.
Each Y Plate to all other electrodes		25μμf.
One X to one Y Deflector Plate		6μμf.
Cathode to all other electrodes		15μμf.
Screen :		
Fluorescence		Orange.
Afterglow		Orange.
Persistence of Afterglow		Long.
(10 sec. min./100 sec. max. 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.



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

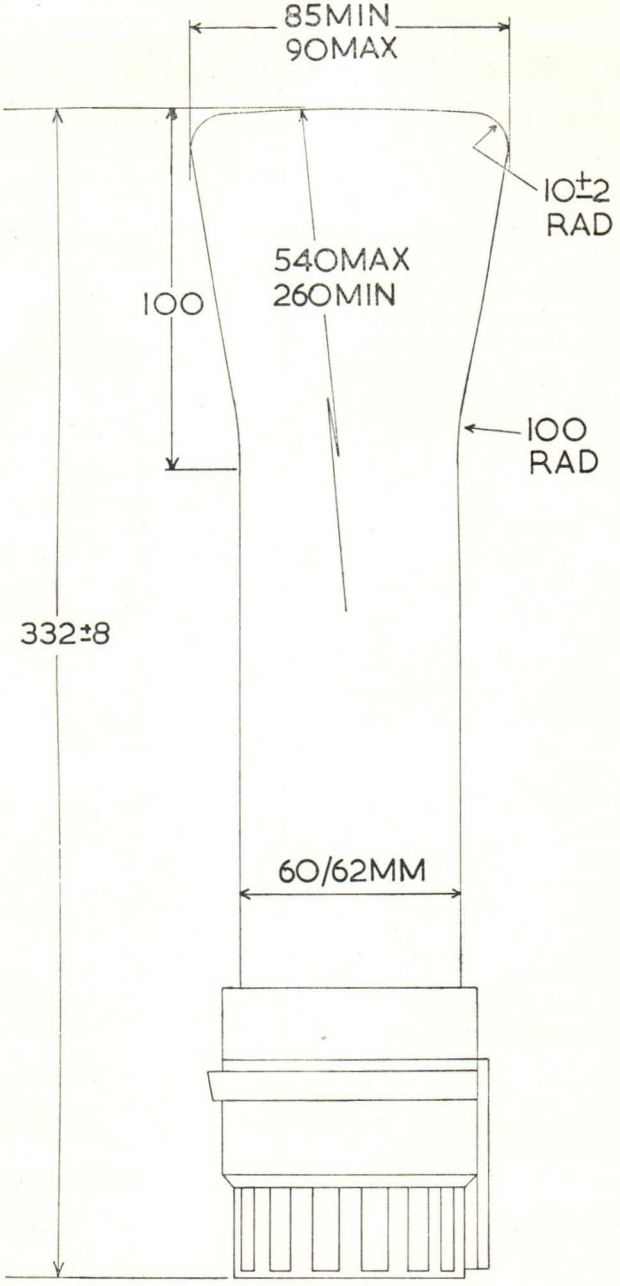
Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	350 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	−40 to −80 volts.	−40 to −80 volts.

Deflection Sensitivity:	mm/volt.	mm/volt.
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° ± 3°.

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



ALL SIZES IN MILLIMETRES

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

DIAMETER 3½″ NOMINAL

90EO4F

90EO4F

Oscilloscope Tube

FLAT FACED BULB

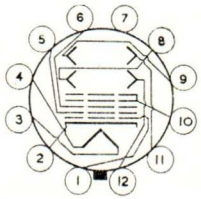
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0 a.c. or d.c. volts.
Current	1.0 amp.
Direct Inter-electrode Capacitances.	
Modulator to all other electrodes	25μμf.
Each X Plate to all other electrodes	25μμf.
Each Y Plate to all other electrodes	25μμf.
One X to one Y Deflector Plate	6μμf.
Cathode to all other electrodes	15μμf.
Screen :	
Fluorescence	Orange.
Afterglow	Orange.
Persistence of Afterglow	Long.
	(10 sec. min./100 sec. max. for 1% initial brightness).
Focusing Method	Electrostatic.
Deflecting Method	Electrostatic.
Overall Length	332 ± 8 mm.
Greatest Diameter of Bulb	88.5 mm.
Minimum Useful Screen Diameter	75 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.



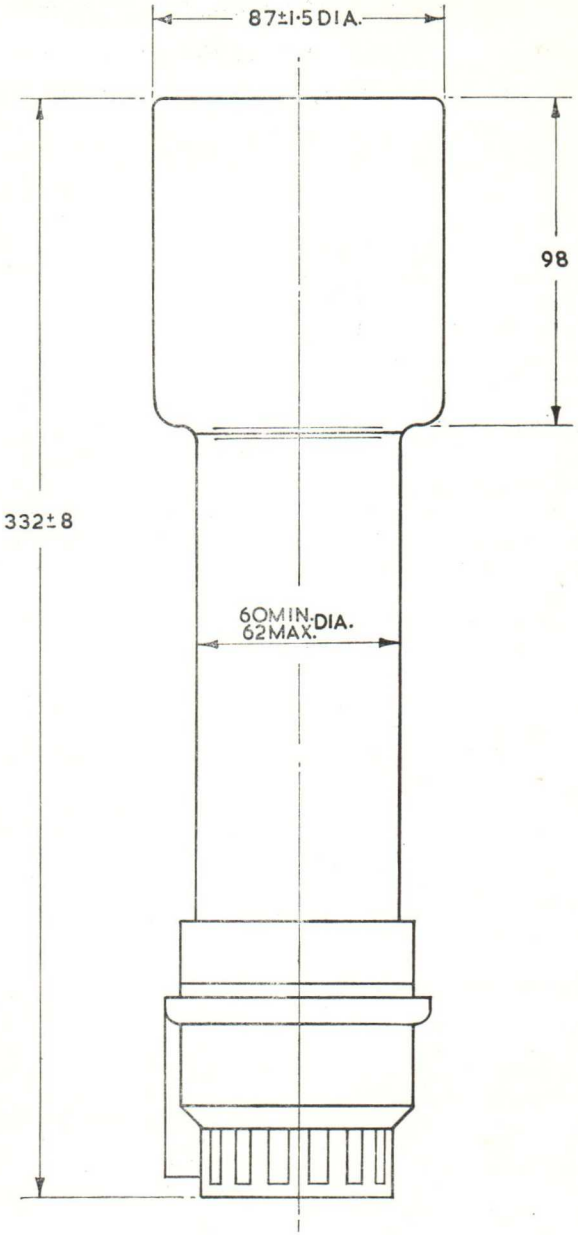
Pin 8—Y2.
Pin9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

Typical Operating Conditions :

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	350 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	−40 to −80 volts.	−40 to −80 volts.
Deflection Sensitivity :	mm/volt.	mm/volt.
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° ± 3°.

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



ALL SIZES IN MILLIMETRES.

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

DIAMETER 3½" NOMINAL

90E04P

Oscilloscope Tube

ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

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

Direct Inter-electrode Capacitances.

Modulator to all other electrodes	25μμf.
Each X Plate to all other electrodes	25μμf.
Each Y Plate to all other electrodes	25μμf.
One X to one Y Deflector Plate	6μμf.
Cathode to all other electrodes	15μμf.

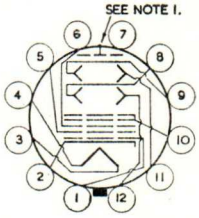
Screen :

Fluorescence	Orange.
Afterglow	Orange.
Persistence of Afterglow	Long.

(10 sec. min./100 sec. max. for 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.
Pin 2—Cathode.
Pin 3—Heater.
Pin 4—Heater.
Pin 5—Anode 1.
Pin 6—Anode 2.
Pin 7—No connection.



Pin 8—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.
Cap—Anode 4 P.D.A.

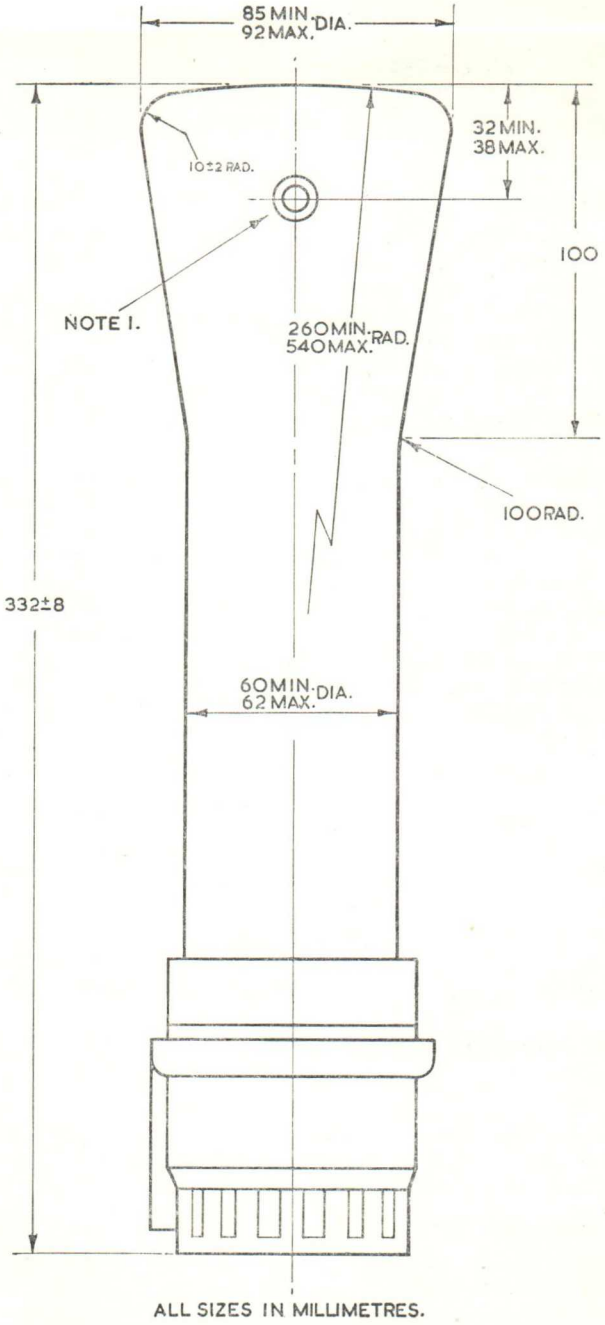
Typical Operating Conditions :

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° ± 3°.

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 3½″ NOMINAL

90EY4

Oscilloscope Tube

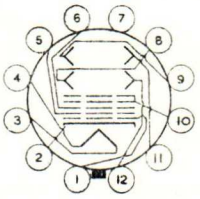
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		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. 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.



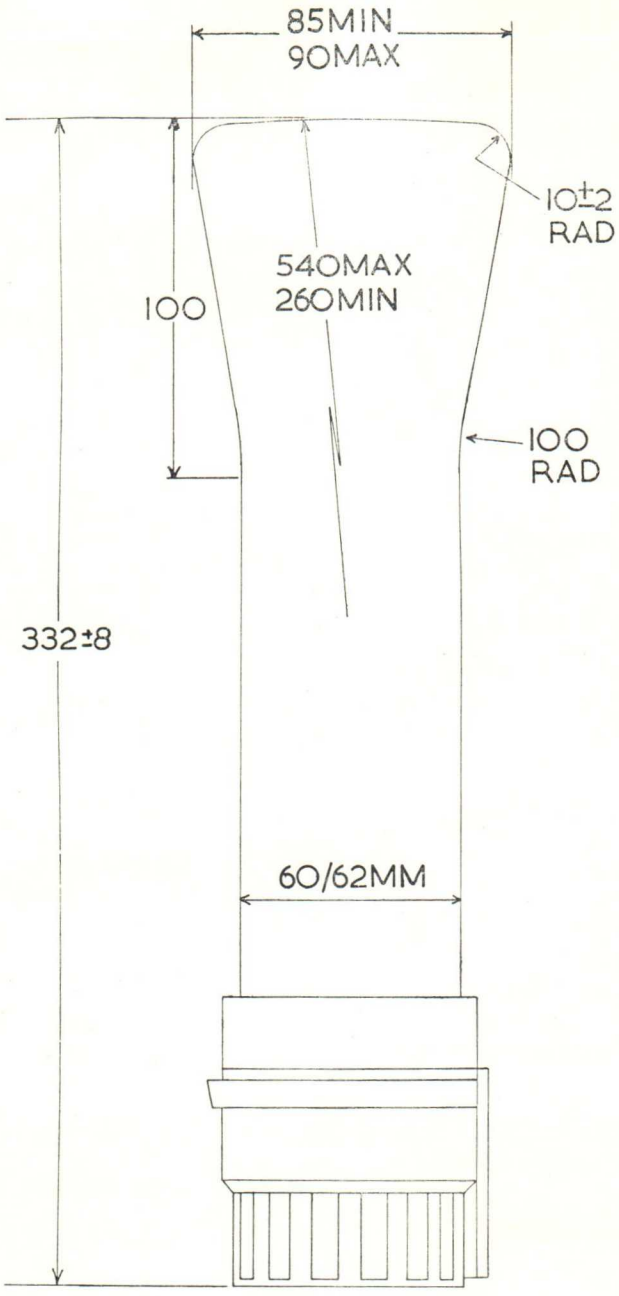
Pin 8—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	350 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	−40 to −80 volts.	−40 to −80 volts.
Deflection Sensitivity:	mm/volt.	mm/volt.
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° ± 3°.

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



ALL SIZES IN MILLIMETRES

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

DIAMETER 3½" NOMINAL

90EY4F

90EY4F

Oscilloscope Tube

FLAT FACED BULB

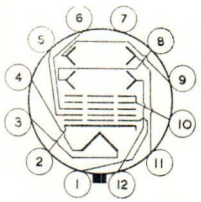
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0 a.c. or d.c. volts.
Current	1.0 amp.
Direct Inter-electrode Capacitances.	
Modulator to all other electrodes	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. for 1% initial brightness).	
Focusing Method	Electrostatic.
Deflecting Method	Electrostatic.
Overall Length	332 ± 8 mm.
Greatest Diameter of Bulb	88.5 mm.
Minimum Useful Screen Diameter	75 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.



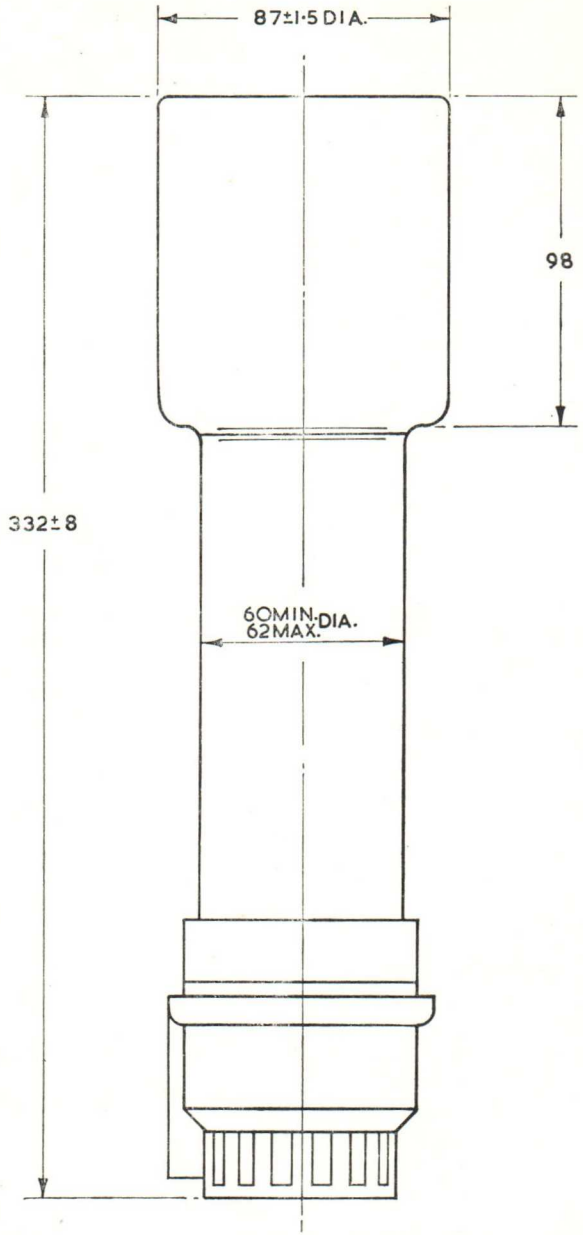
Pin 8—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.

Typical Operating Conditions:

Anode 1	2000 volts.	2000 volts.
Anode 2	700 volts.	350 volts.
Anode 3 (5000v. max.)	4000 volts.	2000 volts.
Modulator volts for cut-off	−40 to −80 volts.	−40 to −80 volts.
Deflection Sensitivity:	mm/volt.	mm/volt.
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° ± 3°.

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



ALL SIZES IN MILLIMETRES.

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

DIAMETER 3½" NOMINAL

90EY4P

Oscilloscope Tube

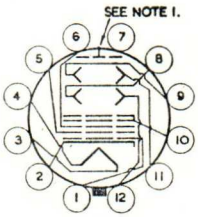
ELECTROSTATIC FOCUS. ELECTROSTATIC DEFLECTION

DATA

GENERAL:

Heater: Voltage	4.0	a.c. or d.c. volts.
Current	1.0	amp.
Direct Inter-electrode Capacitances.		
Modulator to all other electrodes		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. for 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.
Pin 2—Cathode.
Pin 3—Heater.
Pin 4—Heater.
Pin 5—Anode 1.
Pin 6—Anode 2.
Pin 7—No connection.



Pin 8—Y2.
Pin 9—X2.
Pin 10—Anode 3 and Internal Conductive coating.
Pin 11—X1.
Pin 12—Y1.
Cap—Anode 4 P.D.A.

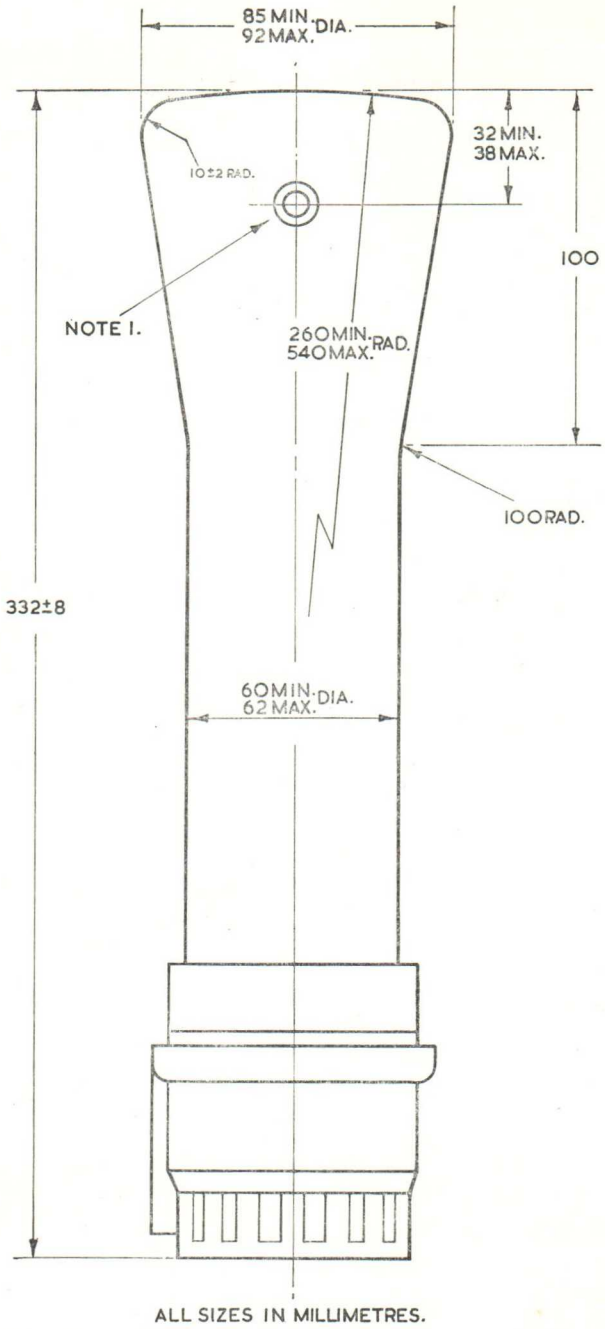
Typical Operating Conditions:

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° ± 3°.

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 10" NOMINAL

PMT57

HIGH DEFINITION

Television Monitor Tube

MAGNETIC FOCUS. MAGNETIC DEFLECTION

PMT57

DATA

GENERAL:

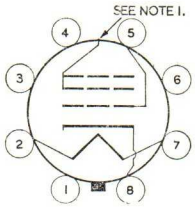
Heater: Voltage	4.0 a.c. or d.c. volts.
Current	1.0 amp.
Direct Inter-electrode Capacitances:	
Modulator to all other electrodes	9.0μμf.
Cathode to all other electrodes	9.0μμf.
Screen:	Aluminium Backed.
Fluorescence	White.
Persistence	(5m sec./25 m sec. for 1% initial brightness.)
Focussing Method	Magnetic
Deflecting Method	Magnetic
Overall Length	500mm ± 10 mm.
Greatest Diameter of Bulb	257 mm.
Minimum Useful Screen Diameter	230 mm.
Mounting Position	Any
Anode Cap	Cavity Cap BSS/448/CT8.
Base	International Octal.

Pin 1—No connection.

Pin 2—Heater.

Pin 3—Pin omitted.

Pin 4—Pin omitted.



Pin 5—Modulator

Pin 6—Pin omitted.

Pin 7—Heater.

Pin 8—Cathode.

Cap—Anode.

Maximum Ratings:

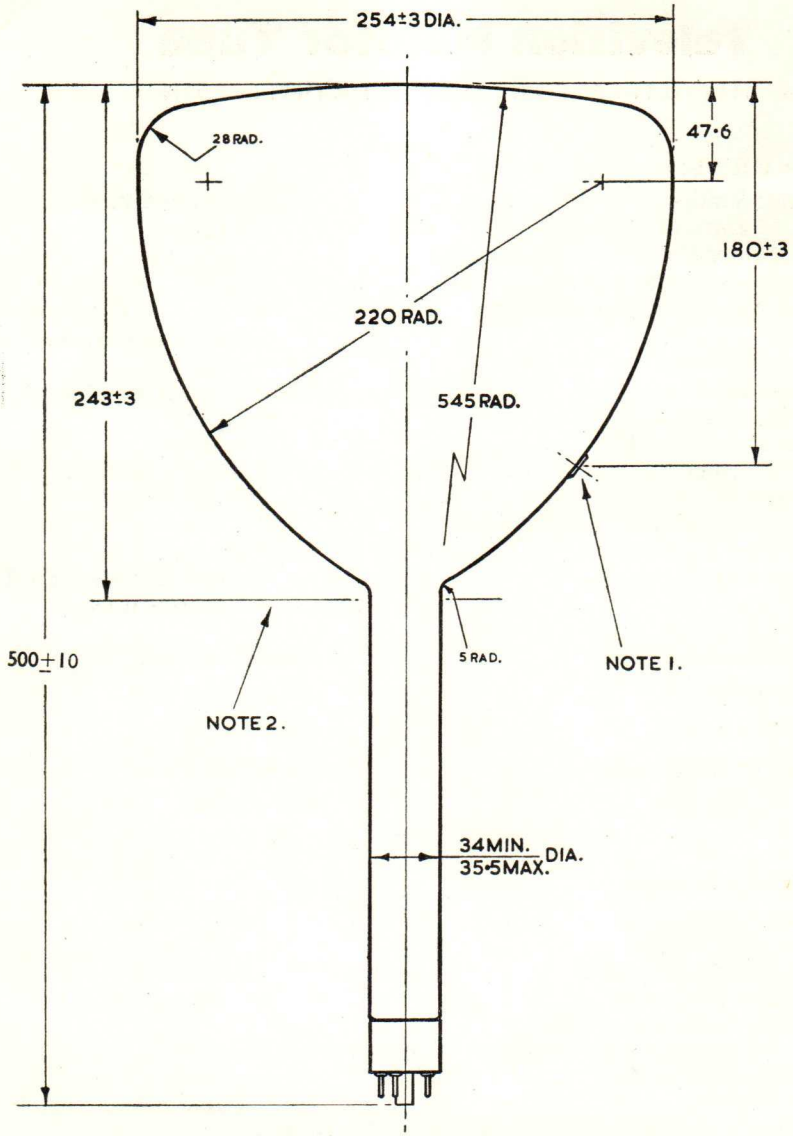
Anode Voltage	15000 volts.
Modulator Voltage:	
Negative bias value	128 volts.
Positive bias value	0 volts
Peak Heater-Cathode Voltages:	
Heater negative with respect to cathode	150 volts
Heater positive with respect to cathode	150 volts
Line Width	0.3 mm.

Interlaced 405 line T.V. raster. Beam Current 100μA.
Line length 200 mm.

Typical Operating Conditions:

Anode Voltage	10,000 volts
Modulator Voltage for cut-off	-50 to -85 volts.
Focussing-Coil Current—See Note 3	550 A.T.
Spot Position See Note 4	

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



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.)

Vacuum Photocell

Quartz Envelope

QVA.39

GENERAL

Spectral Response	Type QA.
Wavelength of Maximum Response	3700 ± 500 A.U.
Cathode :	
Shape	V - shaped cross section.
Projected Width	25 mm.
Length	40 mm.
Anode	Cylindrical wire mesh.
Inter-electrode Capacitance	8 μμf.
Maximum Overall Length	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.

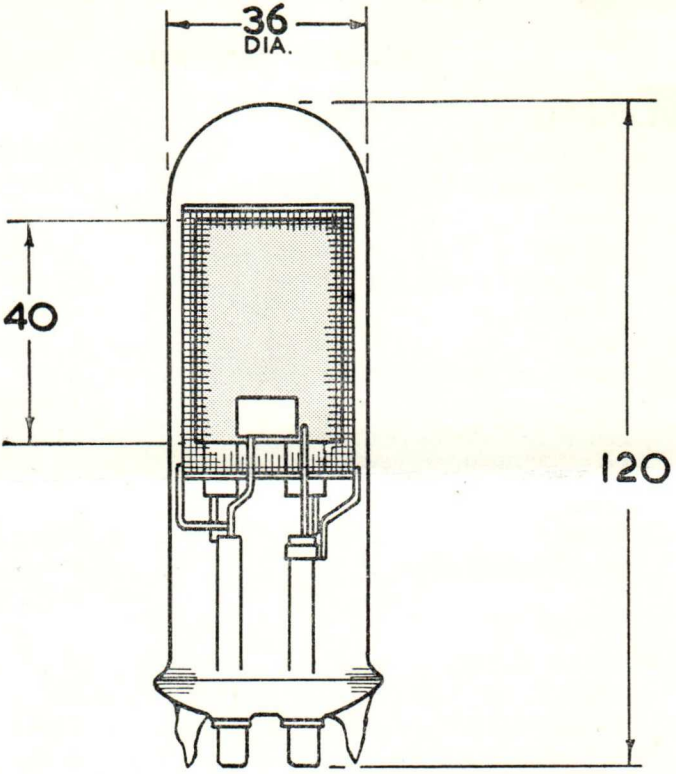
Maximum Ratings

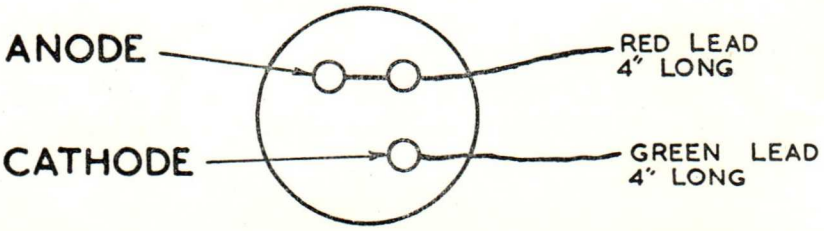
Anode Supply Voltage (DC or peak AC)	50.
Average cathode current	1 μA.
Peak cathode current	4 μA.
Ambient Temperature	50°C.

Characteristics

Operating voltage	30-50.
Maximum dark current at 30 volts	5×10^{-12} amps.
*Minimum sensitivity at operating voltage	20 μA/lumen.

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





ALL SIZES IN MILLIMETRES.

SPECTRAL SENSITIVITY CURVES

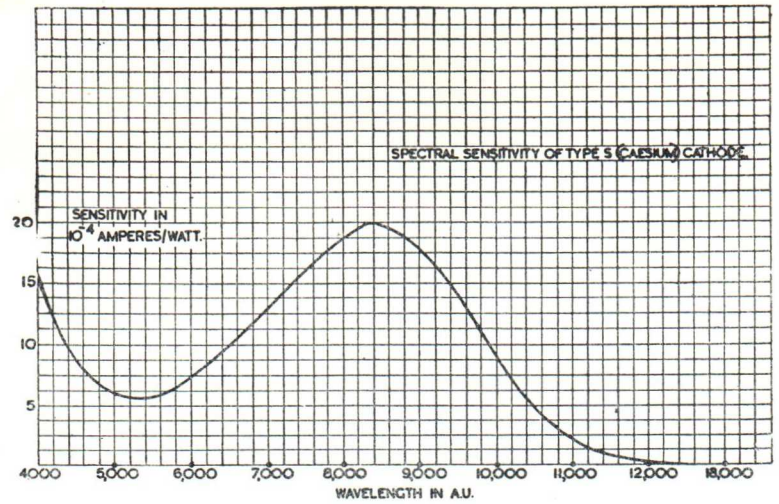


Fig. 1

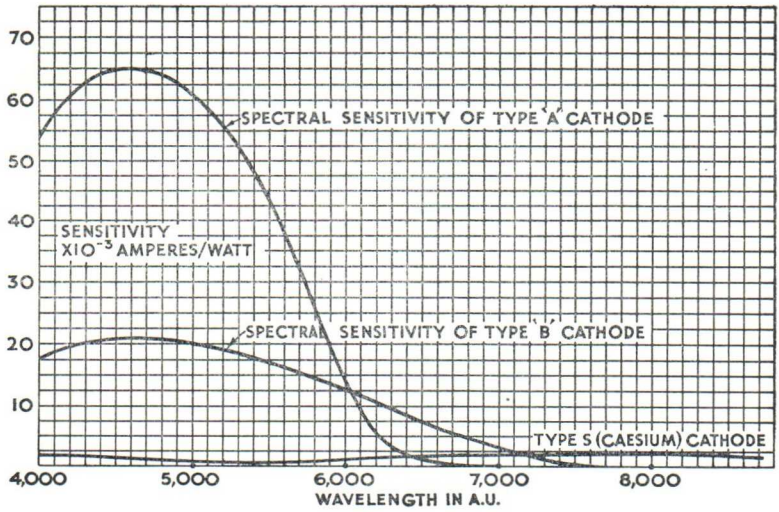


Fig. 2

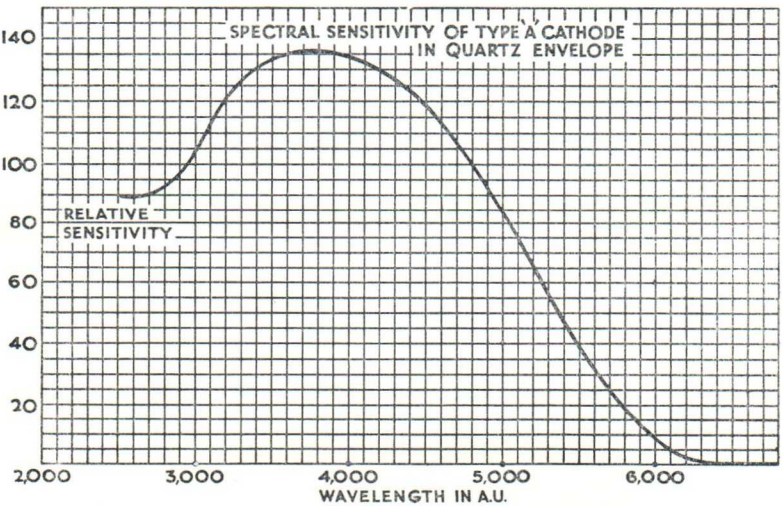


Fig. 3

GPD10

Germanium Photodiode

General:

Spectral response	Similar to S14
Peak response	1.5 – 1.6μ
Shape of diode	Cylindrical, end view
Overall length (excluding leads)	11mm maximum
Diameter	5mm maximum
Mounting position	Any
Base connections	Flying leads Short lead—cathode

Maximum ratings:

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

Sensitivity: 0.5μA/ft.candle minimum

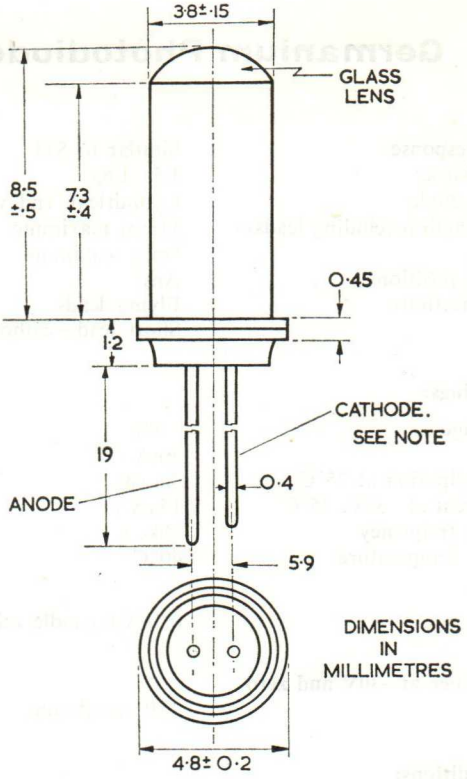
Internal resistance at –30V and zero illumination: 2MΩ minimum

Operating conditions:

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

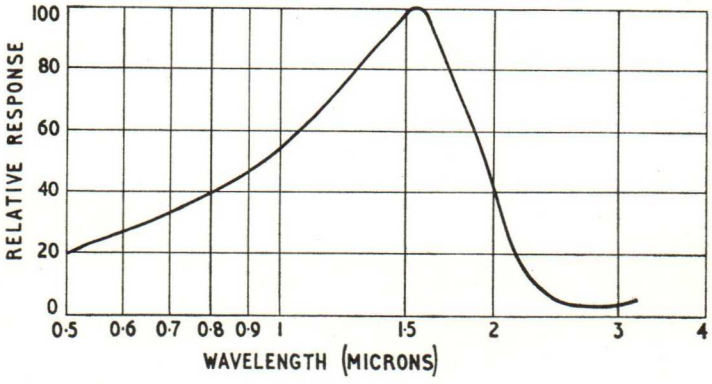
Note:

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



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

SPECTRAL RESPONSE



GPD20

Germanium Photodiode

General:

Spectral response	Similar to S14
Peak response	1.5 – 1.6μ
Shape of diode	Cylindrical, end view
Overall length (excluding leads)	11mm maximum
Diameter	5mm maximum
Mounting position	Any
Base connections	Flying leads Short lead—cathode

Maximum ratings:

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

Sensitivity: 0.25μA/ft.candle minimum

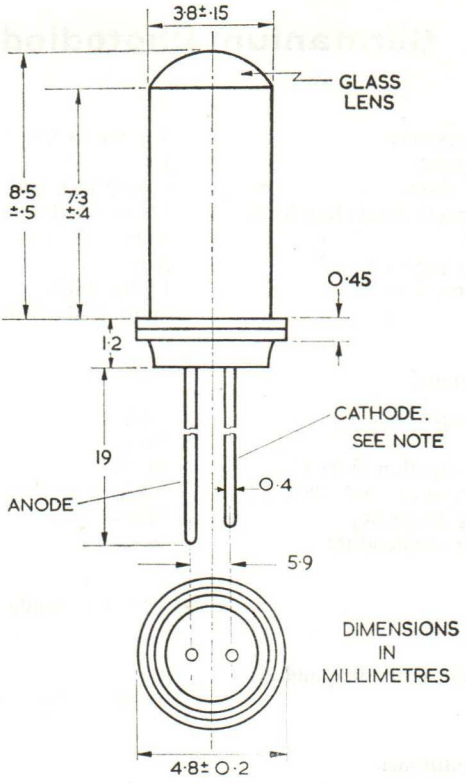
Internal resistance at –30V and zero illumination: 0.6MΩ minimum

Operating conditions:

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

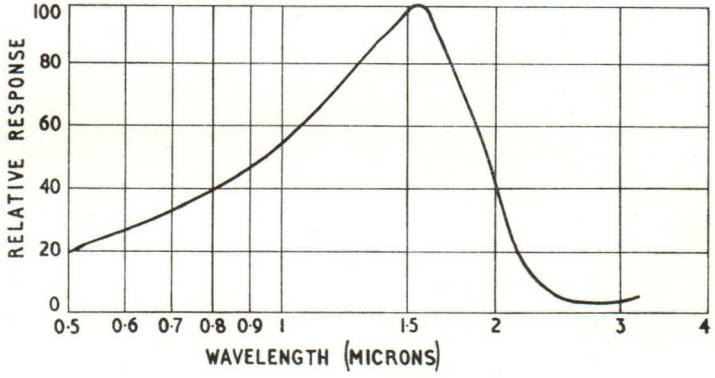
Note:

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



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

SPECTRAL RESPONSE



CDS1

Photo Conductive Cell

GENERAL:

Sensitive Element	Cadmium Sulphide.
Wavelength of maximum response	5500 to 7000 A.U.
Sensitive area (total area to be illuminated)	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	$42.0 \times 21.0 \times 8.3$ mm.

Maximum Ratings :

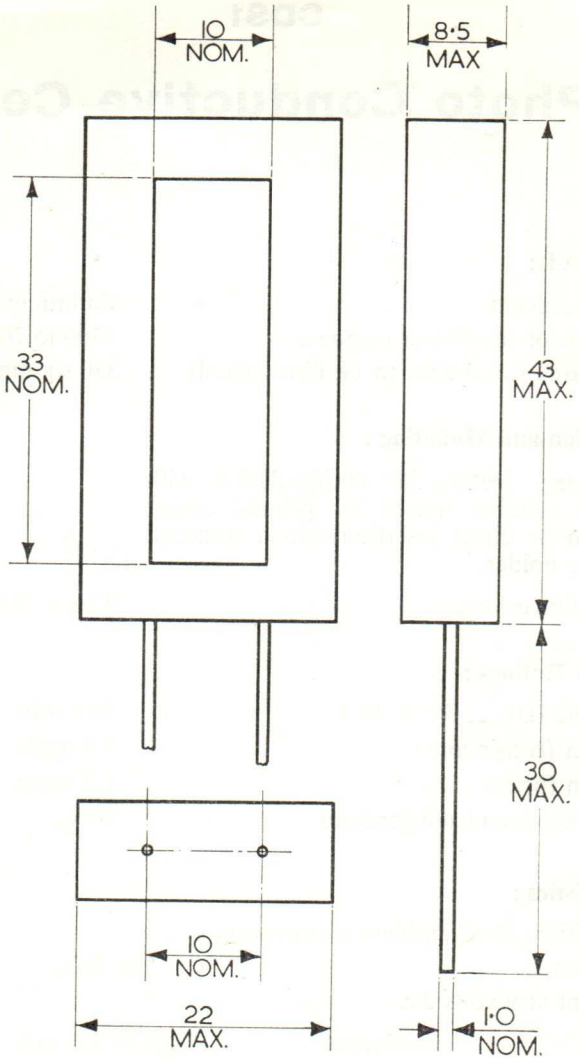
Cell voltage (DC or Peak AC)	300 volts.
Dissipation (continuous)	0.5 watts.
Dissipation (peak)	1.0 watts.
Absolute maximum temperature	70°C.

Characteristics :

(DC condition. 25°C ambient temperature.)

Illumination	5.fc.
Cell current at 9 volts d.c.	
minimum	3.0 mA.
average	6.0 mA.
maximum	12.0 mA.
Ultimate Dark Current (at 100 volts d.c.)	1.0μa.*

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



DIMENSIONS IN MILLIMETRES.