Black-and-White Picture Tubes

Greatest Deflection Angle (Approx.) Degrees	Heater Volts/mA	Focusing Method §	Design-Maximum Anode Volts	RCA Type
ELECTROSTATIC DEFLECTION TYPE				
Round Glass Envelope				
	6.3/600	E	6500	7JP4
MAGNETIC DEFLECTION TYPES				
Round Glass Envelope				
50	6.3/600	E	29,500	5TP4
52	6.3/600	M	15,500	16LP4A
55	6.3/600	M	13,000	10BP4A
55	6.3/600	M	13,000	10FP4A
55	6.3/600	M	13,000	12KP4A
60	6.3/600	M	16,500	16DP4A
70	6.3/600	M	17,500	16WP4A
Rectangular Metal Envelope				
70	6.3/600	M	17,500	17CP4[d]
70	6.3/600	E	17,500	17TP4[d]
Rectangular Glass Envelope				
Conventional Rectangular Glass Types				
70	6.3/600	M	17,500	16RP4B
70	6.3/600	M	15,500	16TP4
70	6.3/600	M	17,500	17BP4D
70	6.3/600	E	17,500	17HP4C
70	6.3/600	E	17,500	17LP4B[a]
70	6.3/600	M	20,000	17QP4B
70	6.3/600	M	20,000	20DP4D
70	6.3/600	E	17,500	20HP4E
70	6.3/600	M	20,000	21EP4C[a]
70	6.3/600	E	20,000	21FP4D[a]
70	6.3/600	M	20,000	21WP4B

Black-and-White Picture Tubes

Greatest Deflection Angle (Approx.) Degrees	Heater Volts/mA	Focusing Method §	Design-Maximum Anode Volts	RCA Type
Rectangular Glass Envelope Cont'd				
Conventional Rectangular Glass Types				
70	6.3/600	E	20,000	21XP4B
70	6.3/600	E	20,000	21YP4B
70	6.3/600	M	20,000	21ZP4C
72	6.3/600	E	22,000	21AVP4C
72	6.3/600	M	20,000	21AWP4A
90	6.3/600	E	9000	8DP4
90	8.4/450	E	15,500	14ATP4
90	6.3/600	E	15,500	14WP4
90	6.3/600	E	17,500	17BJP4
90	6.3/600	E	17,500	17CFP4
90	6.3/600	E	17,500	17CYP4
90	6.3/600	M	20,000	21AMP4B
90	6.3/600	E	22,000	21CBP4A
90	6.3/600	E	22,000	21DLP4
90	6.3/600	E	22,000	21DSP4[b]
90	6.3/600	E	22,000	24AEP4
90	6.3/600	E	22,000	24ATP4[b]
90	6.3/600	E	22,000	24AUP4
90	6.3/600	M	22,000	24CP4B
90	6.3/600	M	22,000	27RP4A
92	6.3/600	E	20,000	19BDP4[b]
92	6.3/600	E	22,000	23AHP4
92	6.3/600	E	22,000	23ASP4
92	6.3/600	E	25,000	23BJP4[b]
92	6.3/450	E	22,000	23CGP4
94	6.3/600	E	23,000	23DAP4[b]
110	6.3/450	E	15,000	11CP4

Black-and-White Picture Tubes

Greatest Deflection Angle (Approx.) Degrees	Heater Volts/mA	Focus-ing Method §	Design-Maximum Anode Volts	RCA Type
Rectangular Glass Envelope Cont'd				
Conventional Rectangular Glass Types				
110	8.4/450	E	17,500	17CDP4
110	6.3/600	E	17,500	17CSP4
110	2.68/450	E	17,500	17DAP4
110	6.3/600	E	23,000	17DKP4
110	6.3/450	E	17,500	17DQP4[b]
110	2.68/450	E	17,500	17DRP4[c]
110	6.3/600	E	20,000	17DSP4
110	6.3/450	E	17,500	17DXP4
110	6.3/450	E	20,000	17EFP4
110	6.3/600	E	20,000	21CQP4
110	6.3/600	E	22,000	21DEP4A
110	6.3/600	E	20,000	21DFP4
110	6.3/450	E	20,000	21DHP4
110	6.3/600	E	20,000	21EQP4
110	6.3/600	E	22,000	21FAP4
110	6.3/600	E	20,000	21FDP4
110	6.3/600	E	22,000	23ARP4
110	6.3/600	E	22,000	23DBP4[b]
110	6.3/600	E	22,000	24AHP4
110	6.3/600	E	22,000	24BAP4[b]
110	6.3/600	E	20,000	24BEP4
114	6.3/450	E	20,000	16AYP4
114	2.68/450	E	20,000	19ABP4
114	6.3/450	E	17,500	19AHP4
114	6.3/450	E	20,000	19AJP4[b]
114	6.3/600	E	23,000	19AVP4
114	6.3/450	E	23,000	19AYP4

Black-and-White Picture Tubes

Greatest Deflection Angle (Approx.) Degrees	Heater Volts/mA	Focusing Method §	Design-Maximum Anode Volts	RCA Type
Rectangular Glass Envelope Cont'd				
Conventional Rectangular Glass Types				
114	6.3/600	E	23,000	19BTP4
114	6.3/600	E	20,000	19CHP4[b]
114	6.3/450	E	20,000	19CMP4[b]
114	6.3/600	E	20,000	19CXP4[b]
114	6.3/600	E	20,000	19XP4
114	6.3/600	E	20,000	19YP4
114	6.3/450	E	22,000	20RP4
114	6.3/450	E	23,500	23CQP4
114	6.3/600	E	23,500	23FP4A
114	6.3/600	E	22,000	23MP4
114	6.3/600	E	22,000	23NP4[b]
Bi-Panel Rectangular Glass Types				
92	6.3/600	E	22,000	23BDP4[d]
92	6.3/600	E	25,000	23BKP4
92	6.3/600	E	25,000	23BLP4[e]
92	6.3/600	E	25,000	23BTP4
92	6.3/600	E	22,000	23YP4
110	6.3/600	E	22,000	23BGP4[b]
110	6.3/450	E	23,000	23BQP4
110	6.3/450	E	23,000	23CBP4[d]
110	6.3/600	E	22,000	23CP4
110	6.3/600	E	23,500	23CP4A
110	6.3/600	E	22,000	23EP4[b]
110	6.3/600	E	22,000	23GP4
110	6.3/450	E	22,000	23JP4[b]
114	6.3/600	E	20,000	19AFP4
114	6.3/600	E	20,000	19AUP4[d]

Black-and-White Picture Tubes

Greatest Deflection Angle (Approx.) Degrees	Heater Volts/mA	Focusing Method §	Design-Maximum Anode Volts	RCA Type
Rectangular Glass Envelope Cont'd				
Filled Rim Rectangular Glass Types				
92	6.3/600	E	25,000	23EYP4[b]
110	6.3/450	E	15,000	11GP4
110	6.3/450	E	23,000	23FRP4[b]
110	6.3/600	E	23,000	23FSP4
114	6.3/600	E	23,000	19EBP4
114	6.3/450	E	21,000	19EGP4[b]
Banded Rectangular Glass Types				
90	12.0/75	E	12,000	9WP4
92	6.3/450	E	25,000	23EKP4
92	6.3/600	E	25,000	23ENP4
92	6.3/600	E	25,000	23FBP4[e]
94	6.3/450	E	23,500	23EZP4[b,g]
110	6.3/450	E	15,000	11HP4A
110	6.3/450	E	16,000	12BNP4A
110	4.2/450	E	14,000	12CNP4
110	6.3/600	E	23,000	23ETP4
110	6.3/450	E	23,000	23FDP4[b]
110	6.3/450	E	23,000	23FMP4[b]
110	6.3/450	E	23,000	23GJP4A[b]
110	6.3/600	E	23,000	23GSP4[g]
110	6.3/450	E	22,000	23GWP4[b]
110	6.3/450	E	23,000	23HFP4A
110	6.3/450	E	23,000	23HGP4[g]
110	6.3/450	E	23,500	23HUP4A[b]
110	6.3/450	E	22,000	23HWP4A[b,g]
110	6.3/450	E	23,000	23HXP4
110	6.3/450	E	23,000	23JEP4
110	6.3/450	E	23,500	23JGP4[b]
114	6.3/450	E	20,000	16BGP4
114	6.3/450	E	20,000	16CHP4A[b]
114	6.3/450	E	18,000	16CMP4A
114	6.3/450	E	22,000	17EMP4[b]

Black-and-White Picture Tubes

Greatest Deflection Angle (Approx.) Degrees	Heater Volts/mA	Focusing Method §	Design-Maximum Anode Volts	RCA Type
Rectangular Glass Envelope Cont'd				
Banded Rectangular Glass Tubes				
114	6.3/450	E	23,000	19DQP4
114	6.3/600	E	23,000	19DRP4
114	6.3/600	E	20,000	19DSP4[b]
114	6.3/450	E	20,000	19EAP4[b]
114	6.3/450	E	22,000	19DUP4[b]
114	6.3/600	E	18,000	19EHP4A
114	6.3/450	E	21,000	19ENP4A[b]
114	6.3/450	E	23,500	19FEP4B[b]
114	6.3/450	E	18,000	19FJP4A
114	6.3/450	E	23,000	19FLP4
114	6.3/600	E	23,000	19FNP4[g]
114	6.3/450	E	20,000	19FQP4[b,g]
114	6.3/450	E	23,000	19GEP4A[g]
114	6.3/450	E	23,000	19GJP4A
114	6.3/450	E	23,000	20SP4[b]
114	6.3/450	E	23,000	20TP4
114	6.3/450	E	23,000	21FVP4
114	6.3/450	E	22,000	21FYP4[b,g]
114	6.3/450	E	23,500	21GAP4A[b]
114	6.3/450	E	23,000	23EQP4
114	6.3/600	E	23,000	23ERP4

Color Picture Tubes

Greatest Deflection Angle (Approx.) Degrees	Heater Volts/mA	Focusing Method §	Design-Maximum Anode Volts	RCA Type
ROUND GLASS ENVELOPE				
Conventional Types				
45	6.3/1800	E	22,000	15GP22
70	6.3/1600	E	27,500	21CYP22A
70	6.3/1800	E	27,500	21FBP22
70	6.3/1800	E	27,500	21FBP22A[f]
70	6.3/1800	E	27,500	21GUP22[f]
Integral Protective Window Types				
70	6.3/1800	E	27,500	21FJP22[d]
70	6.3/1800	E	27,500	21FJP22A[d,f]
70	6.3/1800	E	27,500	21GVP22[d,f]
ROUND METAL ENVELOPE				
70	6.3/1800	E	27,500	21AXP22A
RECTANGULAR GLASS ENVELOPE				
Conventional Types				
90	6.3/900	E	22,500	15KP22[f]
90	6.3/900	E	27,500	19EXP22[f]
90	6.3/900	E	27,500	19GVP22[f]
90	6.3/900	E	27,500	22KP22[f]
90	6.3/900	E	27,500	25BP22A[f]
90	6.3/900	E	27,500	25YP22[f]
Integral Protective Window Types				
90	6.3/900	E	22,500	15LP22[d,f]
90	6.3/900	E	27,500	19EYP22[d,f]
90	6.3/900	E	27,500	19GWP22[d,f]
90	6.3/900	E	27,500	22JP22[d,f]
90	6.3/900	E	27,500	25AP22A[d,f]
90	6.3/900	E	27,500	25XP22[d,f]
92	6.3/1350	E	27,500	23EGP22A[d]

Color Picture Tubes

Greatest Deflection Angle (Approx.) Degrees	Heater Volts/mA	Focusing Method §	Design-Maximum Anode Volts	RCA Type
Banded Types				
90	6.3/900	E	22,500	15NP22[f]
90	6.3/900	E	27,500	19HCP22[f]

Test Picture Tubes

ROUND GLASS ENVELOPE				
53	6.3/600	E	20,000	5AXP4
RECTANGULAR GLASS ENVELOPE				
70	6.3/1800	E	27,500	1828P22
90	6.3/600	E	22,000	8XP4
90	6.3/900	E	27,500	1830P22
110	6.3/600	E	22,000	8YP4

§ E = Electrostatic; M = Magnetic

[a] Cylindrical Faceplate

[b] Low G_2 Type

[c] Internal Magnetic Shield

[d] Faceplate Treated

[e] Low G_2 Type, Faceplate Treated

[f] Hi-Life type, features rare-earth red-emitting phosphor

[g] Integral Mounting Lugs

SPECIAL-PURPOSE KINESCOPES

Approx. Bulb Dia. Inches	Focusing Method	Deflection Method	Minimum Screen Size Inches	Maximum Anode Volts[a]	Tube Type
Monitor Types					
7	M	M	6-1/2	8,000	7CP4
7	E	M	6	12,000	7TP4
8[b]	E	M	7-13/16[b]	14,000[c]	8HP4
8[b]	E	M	7-3/4[b]	22,000[c]	8NP4
10	E	M	9-1/8	20,000	10SP4
17[b]	E	M	15-9/16[b]	22,000[c]	17DWP4
21[b]	E	M	20-1/4[b]	22,000[c]	21EYP4
Display Cathode-Ray Tube					
12[b]	E	M	Has integral protective window	16,000	4557
Projection Types					
5	E	M	4-1/2[d]	40,000[c]	5AZP4
7	E	M	5 x 3-3/4[e]	80,000[c]	7NP4
7	E	M	5 x 3-3/4[e]	80,000[c]	7WP4
7	E	M	5 x 3-3/4[e]	80,000[c]	4486
View-Finder Type					
5	M	M	4-1/4	8,000	5FP4A
Transcriber Type					
5	E	M	4-1/4	27,000	5WP11

E = Electrostatic.

M = Magnetic.

a Design-Center values unless otherwise noted.

b Diagonal.

c Absolute value.

d Quality circle diameter.

e Quality rectangle.

CATHODE-RAY TUBE, STORAGE TUBE, & MONOSCOPE CLASSIFICATION CHART

FLYING-SPOT CATHODE-RAY TUBES

Approx. Bulb Dia. Inches	Focusing Method	Deflection Method	Phosphor[a]	Maximum Anode Volts	Tube Type
Black-and-White Television Types					
5	E	M	P15	27,000[b]	5WP15
5	E	M	P16	27,000[b]	5ZP16
Color-Television Type					
5	E	M	P24	27,000[b]	5AUP24

MONOSCOPES

Approx. Bulb Dia. Inches	Focusing Method	Deflection Method	Features	Maximum Anode Volts[c]	Tube Type
2	E	E	Customized metal stencil electrode pattern	2,500[d]	4560
5	E	M	Indian Head Pattern	1,500[b]	2F21
5	E	M	Pattern individually styled to customer requirements	1,500[b]	1699

E = Electrostatic.

M = Magnetic.

a See sheet *Features of Fluorescent Screens.*

b Design-center value.

c Pattern-electrode voltage.

d Absolute-maximum value.

OSCILLOGRAPH TUBES

Phosphor	Approx. Bulb Dia. Inches	Max. Anode Volts[a]	Tube Type
Electrostatic-Deflection & Focus Types			
P1	1	1,500	1EP1
P1	2	1,100	2AP1A
P1	2	2,500	2BP1
P1	2	600	902A
P1	3	1,500	3AP1A
P1	3	2,750	3AQP1
P1	3	2,000	3BP1A
P1	3	2,500	3KP1
P1	3	2,500	3RP1
P1	3	2,500	3RP1A
P1	3	2,500	3WP1
P1	5	2,000	5BP1A
P1	5	2,500	5UP1
P1	7	4,000	7UP1
P1	5	2,800[b]	4499
P2	1	1,500	1EP2
P7	3	2,500	3KP7
P7	3	2,500	3RP7A
P7	5	2,500	5UP7
P11	1	1,500	1EP11
P11	2	2,500	2BP11
P11	3	2,500	3KP11
P11	3	2,500	3WP11
P11	5	2,500	5UP11
P31	5	2,500	5UP31
P31	7	4,000	7UP31

a Design-center value.

b Absolute-maximum value.

OSCILLOGRAPH TUBES (Cont'd)

Phosphor	Approx. Bulb Dia. Inches	Max. Post Accel-erator Volts	Tube Type
Electrostatic-Deflection & Focus Types With Post-Deflection Accelerator			
P1	3	4,000	3JP1
P1	5	6,000	5ABP1
P1	5	6,000	5ADP1
P1	5	4,000	5CP1A
P7	3	4,000	3JP7
P7	5	6,000[b]	4510
P11	5	6,000	5ABP11
P11	5	4,000	5CP11A
P31	5	6,000	5ABP31
P31	5	6,000	5ADP31
P31	5	8,000[b]	4489
P31	7	8,000[b]	4490
P31	8	8,000[b]	4491

Phosphor	Approx. Bulb Dia. Inches	Max. Anode Volts	Tube Type
Magnetic-Deflection & Focus Types			
P7	5	8,000	5FP7A
P7	7	8,000	7BP7A
P7	7	8,000	7MP7

b Absolute-maximum value.

STORAGE TUBES

Name	Description	Tube Type
Display	Ruggedized, 5"-diameter type having electrostatic-focus and deflection writing gun	2053
Display	Ruggedized, 10"-diameter type having electrostatic-focus and deflection writing gun	4412
Display	5"-diameter type having electrostatic-focus and magnetic-deflection writing gun	4454
Display	5"-diameter type having electrostatic-focus and deflection writing gun	6866
Display	5"-diameter type having electrostatic-focus and magnetic-deflection writing gun	7183A
Display	Ruggedized, 5"-diameter type having two electrostatic-focus and deflection writing guns	7268B
Display	5"-diameter type having electrostatic-focus and deflection writing gun	7315
Radechon	Single-beam barrier-grid type for digital data storage	6499
Radechon	Variant of 6499 for binary memory systems in computers	1858
Graphechon	Single-converter type with reading gun and writing gun	7539

RCA PICTURE TUBE INTERCHANGEABILITY GUIDE

Replacement Classification Keys

▲ Replacement information is based primarily on electrical and mechanical similarity of the picture-tube types covered. The technician should make certain that replacement is in accord with all safety precautions required by the TV receiver for picture-tube insulation or mechanical mounting.

A. RCA type does not require an external ion-trap magnet.

B. The ball-type anode contact must be replaced with cavity-type contact.

C. Neck length and/or overall length of RCA type is slightly greater.

D. Direct replacement.

E. The RCA replacement type is electrically interchangeable—Mechanical modifications to the receiver may be required.

F. The RCA replacement type has a 6.3-volt/600-milliampere heater. The receiver picture tube heater circuit must be modified to use this replacement type.

G. A conversion Kit (RCA Part No. 12B202) is available for RCA receivers.

H. The RCA replacement type is mechanically interchangeable—Electrical modifications to the receiver may be required.

J. The RCA replacement is directly interchangeable in most cases; however, in some cases the red cathode lead may have to be interchanged with the blue or green cathode leads to obtain satisfactory black-and-white tracking. Replacement information is packed with the tube.

K. Pin No. 6 (focusing electrode) of the RCA replacement must be connected to Pin No. 11 at the socket. The original tube did not require an external voltage for focus.

L. The RCA replacement type is electrically interchangeable — Mounting hardware may have to be modified to accept the replacement type. In some small-cabinet receivers, the replacement may not be feasible.

M. The RCA replacement type is electrically interchangeable — The receiver socket should be replaced by RCA Part No. 112579, Eby Sales Co. Part No. 49-13DD, or equivalent.

N. A conversion Kit (RCA Part No. 12B101) is available for RCA receivers.

P. External conductive coating must be gounded.

* Band around periphery of tube panel must be gounded and isolated from the ac line voltage.

RCA PICTURE TUBE INTERCHANGEABILITY GUIDE

Color Picture Tubes

Type To Be Replaced ★	Replaced By RCA Type ▲	
11SP22 11WP22	C-11WP22	D
15AEP22 15AFP22 15AGP22	H-15AEP22 C-15AEP22	•D D
15LP22	H-15LP22 C-15LP22	D D
15NP22	H-15NP22 C-15NP22	•D •D
15SP22	H-15AEP22 C-15AEP22	•D •D
15TP22	H-15NP22 C-15NP22	•D •D
15WP22	H-15LP22 C-15LP22	D D
15XP22	H-15NP22 C-15NP22	•D •D
17EZP22 17FAP22	H-17EZP22 C-17EZP22	•D •D
19EXP22	H-19GVP22 C-19GVP22/ 19EXP22	D D
19EYP22 19FMP22 19FXP22 19GSP22	H-19GWP22 C-19GWP22/ 19EYP22	D D
19GVP22 19GVP22/ 19EXP22	H-19GVP22 C-19GVP22/ 19EXP22	D D
19GWP22 19GWP22/ 19EYP22	H-19GWP22 C-19GWP22/ 19EYP22	D D
19GXP22 19GYP22	H-19GVP22 C-19GVP22/ 19EZP22	C C
19GZP22	H-19GWP22 C-19GWP22/ 19EYP22	D D
19HBP22	H-19GWP22 C-19GWP22/ 19EYP22	D D
19HCP22 19HCP22/ 19HKP22	H-19HCP22/ 19HKP22 C-19HCP22/ 19HKP22	•D •D
19HFP22	H-19GWP22 C-19GWP22/ 19EYP22	D D
19HJP22 19HKP22	H-19HCP22/ 19HKP22 C-19HCP22/ 19HKP22	•D •D
19HNP22	H-19HNP22 C-19HNP22	•D •D
19HQP22	H-19GVP22 C-19GVP22/ 19EXP22	D D
19HRP22	H-19GWP22 C-19GWP22/ 19EYP22	D D
19HXP22	H-19HCP22/ 19HKP22 C-19HCP22/ 19HKP22	•D •D
19JBP22 19JDP22	H-19GVP22 C-19GVP22/ 19EXP22	D D
19JGP22	H-19JWP22 C-19JWP22	D D
19JHP22	H-19GWP22 C-19GWP22/ 19EYP22	D D
19JKP22	H-19GWP22 C-19GWP22/ 19EYP22	D D
19JWP22	H-19JWP22 C-19JWP22	D D
21AXP22 21AXP22A 21AXP22A/ 21AXP22	C-21AXP22A C-21CYP22A C-21FBP22 H-21GUP22 C-21GUP22/ 21FBP22A	D CN CJN CJN CJN
21CYP22 21CYP22A	C-21CYP22A C-21FBP22 H-21GUP22 C-21GUP22/ 21FBP22A	D J J J
21FBP22 21FBP22A	C-21FBP22 H-21GUP22 C-21GUP22/ 21FBP22A	D J J

★ *See note on back of sheet 2 of this guide.*

▲ See *Replacement information* in front of this guide.

Type To Be Replaced ★	Replaced By RCA Type	▲
21FJP22 21FJP22A 21FKP22	C-21FJP22 H-21GVP22 C-21GVP22/ 21FJP22A	D J J
21GFP22 21GLP22 21GRP22	H-22JP22 C-22JP22	L L
21GUP22 21GUP22/ 21FBP22A	H-21GUP22 C-21FBP22 C-21GUP22/ 21FBP22A	D D D
21GVP22 21GVP22/ 21FJP22A	H-21GVP22 C-21FJP22 C-21GVP22/ 21FJP22A	D D D
21GWP22	H-22JP22 C-22JP22	L L
21GXP22 21GYP22	H-21GVP22 C-21FJP22 C-21GVP22/ 21FJP22A	D D D
22ADP22 22AGP22 22AHP22	H-22UP22 C-22UP22	•D •D
22JP22	H-22JP22 C-22JP22	D D
22KP22	H-22KP22 C-22JP22	D D
22LP22 22QP22	H-22JP22 C-22JP22	D D
22RP22	H-22KP22 C-22KP22	D D
22SP22	H-22JP22 C-22JP22	D D
22UP22 22XP22	H-22UP22 C-22UP22	•D •D
22YP22	H-22JP22 C-22JP22	D D
23EGP22 23EGP22A	C-23EGP22 C-23EGP22A	D
25ABP22	H-25XP22 C-25XP22/ 25AP22A	D D
25ADP22	H-25AJP22 C-25AJP22	•D •D
25AEP22	H-25YP22 C-25YP22/ 25BP22A	D D
25AFP22	H-25XP22 C-25XP22/ 25AP22A	D D
25AGP22 25AJP22	H-25AJP22 C-25AJP22	•D •D
25ANP22 25AP22 25AP22A 25AQP22	H-25XP22 C-25XP22/ 25AP22A	D D
25ASP22 25AWP22 25AXP22 25AZP22	H-25AJP22 C-25AJP22	•D •D
25BMP22	H-25XP22 C-25XP22/ 25AP22A	D D
25BP22 25BP22A	H-25YP22 C-25YP22/ 25BP22A	D D
25CP22 25CP22A	H-25XP22 C-25XP22/ 25AP22A	D D
25FP22 25FP22A	H-25YP22 C-25YP22/ 25BP22A	D D
25GP22 25GP22A	H-25XP22 C-25XP22/ 25AP22A	D D
25RP22	H-25YP22 C-25YP22/ 25BP22A	D D
25SP22	H-25XP22 C-25XP22/ 25AP22A	D D
25VP22	H-25XP22 C-25XP22/ 25BP22A	D D
25WP22 25XP22 25XP22/ 25AP22A	H-25XP22 C-25XP22/ 25AP22A	D D
25YP22 25YP22/ 25BP22A	H-25YP22 C-25YP22/ 25BP22A	D D

★ *See note on back of sheet 2 of this guide.*
▲ See *Replacement information* in front of this guide.

RCA PICTURE TUBE INTERCHANGEABILITY GUIDE

Type To Be Replaced ★	Replaced By RCA Type	▲
25ZP22	H-25XP22	D
	C-25XP22/ 25AP22A	D
370AB22	H-15NP22	• D
370CB22	C-15NP22	• D
490AB22	H-19GVP22	J
490ACB22	C-19GVP22/	
490ADB22	19EXP22	J
490AEB22	H-19GWP22	J
490AFB22	C-19GWP22/	
490AGB22	19EYP22	J
490AHB22	H-19GVP22	J
	C-19GVP22/ 19EXP22	J
490AHB22A	H-19GVP22	D
	C-19GVP22/ 19EXP22	D
490AJB22	H-19GWP22	D
490AJB22A	C-19GWP22/ 19EYP22	D
490AKB22	H-19GVP22	J
490ALB22	C-19GVP22/	
490AMB22	19EXP22	J
490ANB22		
490ARB22	H-19GWP22	J
	C-19GWP22/ 19EYP22	J
490ASB22	H-19GWP22	D
	C-19GWP22/ 19EYP22	D
490BAB22	H-19GVP22	D
	C-19GVP22/ 19EXP22	D
490BCB22	H-19GWP22	D
	C-19GWP22/ 19EYP22	D
490BDB22	H-19GWP22	J
	C-19GWP22/ 19EYP22	J
490BGB22	H-19GVP22	D
	C-19GVP22/ 19EXP22	D
490BHB22	H-19GWP22	D
	C-19GWP22/ 19EYP22	D
490BNB22	H-19JWP22	D
	C-19JWP22	D
490BRB22	H-19GWP22	D
	C-19GWP22/ 19EYP22	D
490BVB22	H-19JWP22	D
490BXB22	C-19JWP22	D
490CB22	H-19GVP22	J
490DB22	C-19GVP22/	
490EB22	19EXP22	J
490EB22A		
490FB22		
490GB22		
490HB22	H-19GVP22	D
490JB22	C-19GVP22/	
490JB22A	19EXP22	D
490KB22	H-19GVP22	J
490KB22A	C-19GVP22/	
490LB22	19EXP22	J
490MB22		
490NB22	H-19GWP22	J
490RB22	C-19GWP22/	
490SB22	19EYP22	J
490TB22		
490UB22	H-19GVP22	J
	C-19GVP22/ 19EXP22	J
490VB22	H-19GWP22	J
	C-19GWP22/ 19EYP22	J
490WB22	H-19GVP22	J
	C-19GVP22/ 19EXP22	J
490XB22	H-19GWP22	J
490YB22	C-19GWP22/	
490ZB22	19EYP22	J

The type to be replaced may have a manufacturer's coding prefix such as AN, C, CR, H, HR, OC, RE, REA, etc. Since these prefixes do not affect the electrical characteristics or interchangeability of the type, the prefixes have been omitted from type numbers in this column.

▲ See *Replacement information* in front of this guide.

Black & White Picture Tubes

Type To Be Replaced ★	Replaced By RCA Type	▲
7JP4	7JP4	D
8DP4	8DP4	D
9AEP4	9AEP4	• D
9WP4	9WP4	• D
10ATP4	10ATP4	D
11AP4 11BP4	11HP4A	• D
11CP4	11CP4	D
11GP4	11GP4	• D
11HP4 11HP4A	11HP4A	• D
12BNP4 12BNP4A	12BNP4A	• D
12CFP4	12CNP4	• D
12CGP4	12BNP4A	• D
12CNP4	12CNP4	• D
12DEP4	12DEP4	• D
12DFP4	12DFP4	• D
12DSP4	12DSP4	D
14NP4 14NP4A 14RP4 14RP4A 14SP4	14WP4	A
14WP4 14WP4/ 14ZP4 14ZP4 14ZP4/ 14WP4	14WP4	D
16ASP4 16AXP4	16CMP4A	• E
16AYP4	16BGP4	• E
16BFP4	16CMP4A	• C
16BGP4	16BGP4	• D
16BKP4	16CHP4A	• C
16BMP4	16BGP4	• CE
16BQP4	16CMP4	• C
16CHP4	16ATP4	• E
16BVP4	16CMP4A	• E
16BWP4 16CAP4	16BGP4	• D
16CEP4	16CMP4A	• D
16CHP4 16CHP4A	16CHP4A	• D
16CJP4 16CMP4 16CMP4A	16CMP4A	• D
16CTP4	16BGP4	• C
16CUP4	16CMP4A	• C
16CVP4	16CHP4A	• CE
16KP4 16KP4A	16RP4B	A
16QP4	16RP4B	AP
16RP4 16RP4/ 16KP4 16RP4A 16RP4A/ 16KP4A	16RP4B	A
16RP4B	16RP4B	D
16TP4	16TP4	D
16UP4	16RP4B	ACP
16XP4	16RP4B	AP
17AP4	17BP4D	ACP
17ATP4 17ATP4/ 17AVP4 17ATP4A 17ATP4A/ 17AVP4A 17AVP4 17AVP4/ 17ATP4 17AVP4A 17AVP4A/ 17ATP4A	17BJP4	A

▲ See *Replacement information* in front of this guide.

RCA PICTURE TUBE INTERCHANGEABILITY GUIDE

Type To Be Replaced	★ Replaced By RCA Type	▲
17BJP4	17BJP4	D
17BP4	17BP4D	AP
17BP4A 17BP4B 17BP4C	17BP4D	A
17BP4D	17BP4D	D
17BRP4	17DSP4	A
17BUP4	17BJP4	A
17BZP4 17BZP4/ 17CAP4/ 17CKP4 17BZP4/ 17CAP4/ 17CKP4/ 17BRP4 17CAP4	17DSP4	D
17CBP4	17BJP4	A
17CFP4	17CFP4	D
17CKP4	17DSP4	D
17CLP4	17BJP4	AP
17CTP4	17EFP4	D
17CWP4	17DSP4	D
17CYP4	17CFP4	D
17DAP4	17DAP4	D
17DHP4	17EFP4	P
17DKP4	17DSP4	C
17DLP4	17DSP4	D
17DQP4	17DQP4	D
17DRP4	17DRP4	D
17DSP4	17DSP4	D
17DTP4	17DSP4	C
17DXP4 17DZP4	17DXP4	D
17EAP4	17HP4C	AK
17EBP4	17EFP4	D
17EFP4	17EFP4	D
17EMP4	17EMP4	• D
17EWP4	17EWP4	• D
17FCP4	17FCP4	• D
17FP4 17FP4A 17HP4 17HP4/ 17RP4 17HP4A 17HP4B 17HP4B/ 17RP4C	17HP4C	A
17HP4C	17HP4C	D
17JP4	17BP4D	A
17KP4 17KP4A	17HP4C	AK
17LP4 17LP4/ 17VP4 17LP4A 17LP4A/ 17VP4B	17LP4B	A
17LP4B	17LP4B	D
17QP4 17QP4A	17QP4B	A
17QP4B	17QP4B	D
17RP4 17RP4C	17HP4C	A
17SP4	17LP4B	AK
17UP4	17QP4B	A
17VP4 17VP4/ 17LP4 17VP4B	17LP4B	A
17YP4	17QP4B	A
19ABP4	19ABP4	D
19ACP4	19CHP4	D
19ADP4	19AVP4	D
19AFP4	19AFP4	D
19AGP4	19AVP4	C
19AHP4	19AYP4	D
19AJP4	19AJP4	D
19AKP4	19AVP4	D
19ANP4	19AYP4	C
19ARP4	19AFP4	D

▲ See *Replacement information* in front of this guide.

Type To Be Replaced ★	Replaced By RCA Type	▲
19ATP4	19AFP4	C
19AUP4	19AFP4	D
19AVP4	19AVP4	D
19AWP4	19AYP4	C
19AXP4 19AYP4	19AYP4	D
19AZP4	19AVP4	D
19BDP4	19BDP4	D
19BHP4	19AVP4	D
19BLP4	19AVP4	C
19BMP4	19AFP4	C
19BRP4	19DRP4	•E
19BSP4 19BTP4	19AVP4	C
19BVP4	19AVP4	D
19BWP4	19AYP4	D
19BXP4	19AYP4	E
19CAP4	19AVP4	C
19CDP4	19CXP4	D
19CFP4	19CHP4	CE
19CHP4	19CHP4	D
19CJP4	19AVP4	D
19CKP4	19CHP4	E
19CLP4	19BDP4	D
19CMP4 19CMP4A	19CMP4	D
19CQP4	19CXP4	D
19CRP4	19BDP4	D
19CSP4	19CHP4	D
19CUP4	19CMP4	D
19CXP4	19CXP4	D
19CYP4	19AVP4	C
19CZP4 19DAP4	19DQP4	•E
19DCP4	19DRP4	•D
19DEP4	19AVP4	E
19DFP4	19CHP4	D
19DHP4	19DSP4	•D
19DKP4	19DRP4	•E
19DLP4	19CHP4	D
19DNP4	19DRP4	•E
19DQP4	19DQP4	•D
19DRP4	19DRP4	•D
19DSP4	19DSP4	•D
19DTP4	19DQP4	•C
19DUP4	19DUP4	•D
19DWP4	19DQP4	•D
19EAP4	19FEP4B	•D
19EBP4	19EBP4	•D
19EDP4	19DRP4	•D
19EFP4	19DSP4	•D
19EGP4	19EGP4	•D
19EHP4 19EHP4A	19DRP4	•D
19EJP4	19FEP4B	•D
19ELP4	19AVP4	D
19EMP4	19EBP4	•C
19ENP4 19ENP4A	19FEP4B	•D
19ERP4	19DRP4	•D
19ESP4	19DSP4	•D
19EUP4	19DRP4	•D
19EVP4 19EWP4	19DQP4	•D
19EZP4	19EZP4	•D
19FBP4	19EGP4	•D
19FCP4 19FCP4A 19FDP4	19DQP4	•D
19FEP4 19FEP4A	19FEP4B	•D
19FEP4B	19FEP4B	•D
19FJP4 19FJP4A	19DQP4	•D
19FLP4	19FLP4	•D
19FSP4	19FEP4B	•D
19FTP4	19FLP4	•D

▲ See *Replacement information* in front of this guide.

RCA PICTURE TUBE INTERCHANGEABILITY GUIDE

Type To Be Replaced ★	Replaced By RCA Type	▲
19FWP4	19AYP4	D
19GAP4	19GAP4	*D
19GBP4	19DQP4	*E
19GEP4 19GEP4A 19GFP4	19GEP4A	*D
19GHP4	19DUP4	*C
19GJP4 19GJP4A	19DQP4	*D
19GNP4	19DRP4	*D
19GRP4	19DQP4	*D
19GTP4	19FEP4B	*C
19XP4	19AVP4	D
19YP4	19AVP4	C
19ZP4	19AVP4	D
20CP4	20DP4D	ACP
20CP4A	20DP4D	AC
20CP4B 20CP4C	20DP4D	ACP
20CP4D 20DP4A	20DP4D	AP
20DP4A/ 20CP4A	20DP4D	A
20DP4B 20DP4C	20DP4D	AP
20DP4C/ 20CP4D	20DP4D	A
20DP4D	20DP4D	D
20RP4	20RP4	*D
20SP4	20SP4	*D
20TP4 20XP4	20TP4	*D
20YP4	20SP4	*D
20ZP4	20SP4	*D
21ACP4	21AMP4B	A
21ACP4/ 21AMP4		
21ACP4A		
21ACP4A/ 21AMP4A		
21ACP4A/		
21ACP4A/ 21BSP4/ 21AMP4A		

Type To Be Replaced ★	Replaced By RCA Type	▲
21AFP4	21YP4B	AP
21ALP4 21ALP4A 21ALP4B 21ALP4B/ 21ALP4A	21CBP4A	AP
21AMP4 21AMP4A	21AMP4B	A
21AMP4B	21AMP4B	D
21ANP4 21ANP4A	21CBP4A	AP
21AP4	21ZP4C	G
21AQP4 21AQP4A	21AMP4B	AP
21ASP4	21XP4B	AP
21ATP4 21ATP4A 21ATP4A/ 21ATP4 21ATP4B	21CBP4A	AP
21AUP4 21AUP4A 21AUP4B 21AUP4B/ 21AUP4A	21AVP4C	A
21AUP4C	21AVP4C	D
21AVP4 21AVP4/ 21AUP4 21AVP4A 21AVP4B 21AVP4B/ 21AVP4A 21AVP4B/ 21AUP4B 21AVP4A 21AUP4A	21AVP4C	A
21AVP4C	21AVP4C	D
21AWP4	21AWP4A	A
21AWP4A	21AWP4A	D
21AYP4	21XP4B	A
21BAP4	21CBP4A	D
21BCP4	21YP4B	C
21BDP4	21AVP4C	D
21BNP4	21CBP4A	D

▲ See *Replacement information* in front of this guide.

Type To Be Replaced ★	Replaced By RCA Type	▲
21BSP4	21AMP4B	A
21BTP4	21CBP4A	A
21CBP4 21CBP4A 21CBP4A/ 21CBP4/ 21CMP4 21CBP4B	21CBP4A	D
21CEP4 21CEP4A	21EMP4/ 21EQPA	D
21CMP4	21CBP4A	A
21CQP4	21CQP4	D
21CUP4	21AMP4B	A
21CVP4	21CBP4A	D
21CWP4	21CBP4A	A
21CXP4	21DSP4	D
21CZP4	21EMP4/ 21EQP4	A
21DAP4 21DEP4 21DEP4A 21DEP4A/ 21DEP4/ 21CZP4	21DEP4A	D
21DFP4	21EMP4/ 21EQP4	D
21DHP4	21DHP4	D
21DLP4	21DLP4	D
21DMP4	21EMP4/ 21EQP4	D
21DNP4	21CBP4A	AP
21DQP4	21DLP4	D
21DRP4	21CBP4A	D
21DSP4	21DSP4	D
21EAP4	21FDP4	F
21EDP4 21EMP4 21EMP4/ 21EQP4	21EMP4/ 21EQP4	D
21EP4	21EP4C	AP
21EP4A 21EP4B	21EP4C	A
21EP4C	21EP4C	D
21EQP4 21ESP4 21ETP4	21EMP4/ 21EQP4	D
21EVP4	21FDP4	CF
21FAP4	21EMP4/ 21EQP4	D
21FDP4	21FDP4	D
21FLP4	21CBP4A	D
21FP4	21FP4D	AP
21FP4A 21FP4C	21FP4D	A
21FP4D	21FP4D	D
21FVP4 21FWP4 21FZP4	21FVP4	•D
21GAP4 21GAP4A	21GAP4A	•D
21KP4 21KP4A	21FP4D	AK
21MP4	21YP4B	E
21WP4 21WP4A	21WP4B	A
21WP4B	21WP4B	D
21XP4 21XP4A	21XP4B	A
21XP4B	21XP4B	D
21YP4 21YP4A	21YP4B	A
21YP4B	21YP4B	D
21ZP4	21ZP4C	AP
21ZP4A 21AP4B	21ZP4C	A
21ZP4C	21ZP4C	D
23ACP4 23AFP4	23YP4	D
23AGP4	23CP4	C
23AHP4	23AHP4/	D
23AKP4	23FP4A	C

▲ See *Replacement information* in front of this guide.

RCA PICTURE TUBE INTERCHANGEABILITY GUIDE

Type To Be Replaced ★	Replaced By RCA Type	▲
23ALP4	23CQP4	D
23ANP4	23BKP4	D
23ARP4	23ARP4	D
23ASP4	23ASP4	D
23ATP4	23BKP4	D
23AUP4	23AHP4/	D
23AVP4	23CP4	C
23AWP4	23BJP4	C
23BAP4	23CP4	C
23BDP4	23YP4	D
23BFP4	23FP4A	C
23BGP4 23BHP4	23BGP4	D
23BJP4	23BJP4	D
23BKP4 23BLP4	23BKP4	D
23BMP4	23YP4	D
23BNP4	23CP4	D
23BP4	23CP4	C
23BQP4	23BQP4	D
23BTP4 23BVP4 23BWP4	23YP4	D
23BXP4	23EKP4	•E
23BZP4	23CGP4	D
23CBP4	23BQP4	D
23CEP4	23ARP4	D
23CGP4	23CGP4	D
23CP4 23CP4A	23CP4	D
23CQP4	23CQP4	D
23CUP4	23CP4	C
23CZP4	23AHP4	D
23DAP4	23DAP4	D
23DBP4	23DBP4	D
23DKP4	23EKP4	•D
23DLP4 23DLP4A	23ENP4	•C
23DNP4	23BKP4	D
23DP4	23CP4	C
23DQP4	23BKP4	M
23DSP4 23DSP4A	23ENP4	•M
23DTP4	23EKP4	•D
23DXP4	23CP4	D
23DYP4	23ETP4	•P
23DZP4	23EQP4	•D
23ECP4	23ENP4	•E
23EDP4	23EKP4	•E
23EHP4 23EKP4 23ELP4 23EMP4	23EKP4	•D
23ENP4	23ENP4	•D
23EP4	23EP4	D
23EQP4	23EQP4	•D
23ESP4	23HFP4A	•D
23ETP4	23ETP4	•D
23EWP4 23EWP4A	23EQP4	•D
23EYP4	23EYP4	D
23EZP4	23EZP4	•D
23FBP4	23ENP4	•D
23FCP4 23FDP4	23GJP4A	•D
23FEP4	23ENP4	•D
23FHP4	23GJP4A	•D
23FJP4	23ETP4	•D
23FLP4	23EKP4	•D
23FMP4	23HFP4A	•D
23FP4 23FP4A	23FP4A	D
23FRP4	23FRP4	•D
23FSP4	23FSP4	•D
23FVP4 23FVP4A	23HFP4A	•D

▲ See *Replacement information* in front of this guide.

Type To Be Replaced ★	Replaced By RCA Type	▲
23FZP4	23GSP4	*D
23GBP4	23HFP4A	*D
23GEP4	23ENP4	*D
23GFP4	23HGP4	*D
23GJP4 23GJP4A	23GJP4A	*D
23GP4	23CP4	D
23GSP4	23GSP4	*D
23GTP4	23ETP4	*D
23GUP4	23FRP4	*D
23GVP4	23HUP4A	*D
23GWP4	23GWP4	*D
23GXP4	23GSP4	*D
23GZP4	23EKP4	*E
23HFP4 23HFP4A	23HFP4A	*D
23HGP4	23HGP4	*D
23HLP4	23GSP4	*D
23HP4	23CP4	D
23HQP4	23HGP4	*D
23HRP4 23HSP4	23HWP4A	*C
23HUP4 23HUP4A	23HUP4A	*D
23HWP4	23HWP4A	*D
23HWP4A	23HWP4A	*D
23HXP4	23HFP4A	*D
23HYP4	23JEP4	*D
23JAP4	23GJP4A	*D
23JBP4	23FSP4	*C
23JEP4	23JEP4	*D
23JGP4	23FRP4	*D
23JHP4	23HFP4A	*D
23JLP4	23HUP4A	*D
23JP4	23JP4	D
23KP4 23KP4A	23FP4A	C
23LP4	23ETP4	*D
23MP4 23MP4/ 23MP4A/ 23WP4 23MP4A	23FP4A	D
23NP4	23NP4	D
23QP4	23CP4	D
23TP4	23YP4	D
23UP4	23BQP4	D
23WP4	23FP4A	D

Type To Be Replaced ★	Replaced By RCA Type	▲
23XP4 23YP4	23YP4	D
24ADP4 24ADP4/ 24VP4A/ 24CP4A/ 24TP4	24CP4B	A
24AEP4	24AEP4	D
24AHP4	24AHP4	D
24ALP4	24AHP4	D
24ANP4	24AEP4	A
24AUP4	24AUP4	D
24AVP4	24BEP4	F
24BEP4	24BEP4	D
24CP4	24CP4B	D
24CP4A	24CP4B	A
24CP4B	24CP4B	D
24DP4 24DP4A 24DP4A/ 24YP4	24AEP4	A
24QP4	24CP4B	AP
24TP4 24VP4 24VP4A	24CP4B	A
24XP4	24CP4B	AP
24YP4	24AEP4	A
24ZP4	24EAP4	D
230RB4	9WP4	*D
310AVB4	12CNP4	*D
470ACB4	19AYP4	D
500KB4	20TP4	*D
SG10FP4A	10FP4A	D
SG14WP4	14WP4	D
SG16KP4A	16RP4B	D
SG17BJP4	17BJP4	D
SG17BP4B	17BP4D	D
SG17CKP4	17DSP4	D
SG17HP4B	17HP4C	D
SG17LP4A	17LP4B	D
SG17QP4A	17QP4B	D
SG20CP4	D 20DP4	D C
SG21ACP4A	21AMP4B	D
SG21AUP4B	21AVP4C	D
SG21AWP4	21AWP4A	D
SG21DEP4A	21EMP4/ 21EQP4	D
SG21EP4B	21EP4C	D
SG21FLP4	21CBP4A	D
SG21FP4C	21FP4D	D
SG21WP4A	21WP4B	D

▲ See *Replacement information* in front of this guide.

RCA PICTURE TUBE INTERCHANGEABILITY GUIDE

Type To Be Replaced ★	Replaced By RCA Type	▲
SG21XP4A	21XP4B	D
SG21YP4A	21YP4B	D
SG21ZP4B	21ZP4C	D
SG24AEP4	24AEP4	D
SG24CP4A	24CP4B	D

▲ See *Replacement information* in front of this guide.

Safety Precautions For Color Picture Tubes

WARNING

X-Radiation:

Operation of the referenced color picture tube at abnormal conditions which exceed the 0.5 mR/h isodose-rate curve shown for this tube may produce soft X-rays which may constitute a health hazard on prolonged exposure at close range unless adequate external shielding is provided. Therefore, precautions must be exercised during servicing of TV receivers employing this tube to assure that the anode voltage and other tube voltages are adjusted to the recommended values so that the Design-Maximum Ratings will not be exceeded.

This color picture tube incorporates integral X-radiation shielding and must be replaced with a tube of the same type number or an RCA recommended replacement to assure continued safety.

Implosion Protection:
This picture tube employs integral implosion protection and must be replaced with a tube of the same type number or an RCA recommended replacement to assure continued safety.

Shock Hazard:
The high voltage at which the tube is operated may be very dangerous. Design of the TV receiver should include safeguards to prevent the user from coming in contact with the high voltage. Extreme care should be taken in the servicing or adjustment of any high-voltage circuit.

Caution must be exercised during the replacement or servicing of the picture tube since a residual electrical charge may be contained on the high-voltage capacitor formed by the external and internal conductive coatings of the picture tube funnel. To remove any undesirable residual high-voltage charges from the picture tube, "bleed off" the charge by shorting the anode contact button, located in the funnel of

the picture tube, to the external conductive coating before handling the tube. Discharging the high voltage to isolated metal parts such as cabinets and control brackets may produce a shock hazard.

Tube Handling:
Picture tubes should be kept in the shipping box or similar protective container until just prior to installation. Wear heavy protective clothing, including gloves and safety goggles with side shields, in areas containing unpacked and unprotected tubes to prevent possible injury from flying glass in the event a tube breaks. Handle the picture tube with extreme care. Do not strike, scratch or subject the tube to more than moderate pressure. Particular care should be taken to prevent damage to the seal area.

The equipment manufacturer should provide a warning label in an appropriate position on the equipment to advise the serviceman of all safety precautions.

FEATURES OF FLUORESCENT SCREENS

The fluorescent screens of the cathode-ray tubes covered in this Section are identified according to phosphor number, e.g., P1, P2, P4, P5, P7, etc.

Phosphor P1 produces a brilliant spot having yellowish-green fluorescence and medium persistence. Types having this phosphor are particularly useful for general oscillographic applications in which recurrent-wave phenomena are to be observed visually.

Phosphor P2 is a medium-persistence screen which exhibits yellowish-green fluorescence and phosphorescence. The phosphorescence may persist for over a minute under conditions of adequate excitation and low-ambient light. Types utilizing this phosphor are particularly useful for observing either low- or medium-speed non-recurring phenomena.

Phosphor P4 is a highly efficient screen having white fluorescence and medium-short persistence. Types having this phosphor are of particular interest for television picture tubes.

Phosphor P5 produces a highly actinic spot having blue fluorescence and medium-short persistence. Types having this phosphor are especially useful in photographic applications involving film moving at very high speeds.

Phosphor P7 is a very long-persistence, cascade (two-layer) screen. During excitation by the electron beam, this phosphor produces a purplish-blue fluorescence. After excitation, the screen exhibits a yellowish-green phosphorescence which persists for several minutes. Types having this phosphor are particularly useful where either extremely low-speed recurrent phenomena or medium-speed non-recurrent phenomena are to be observed.

Phosphor P11 produces a brilliant actinic spot of blue fluorescence and medium-short persistence to permit its use in all photographic applications except those in which film moves at high speed. P11 screens, because of their unusually high brightness characteristic, may also be used for visual observation of phenomena.

Phosphor P12 is a long-persistence phosphor which exhibits both yellowish-orange fluorescence and phosphorescence. Types utilizing this phosphor are particularly useful for observing low- and medium-speed recurring phenomena.

Phosphor P14 is a long-persistence cascade (two-layer) screen. During excitation by the electron beam, this phosphor exhibits purplish-blue fluorescence. After excitation, it exhibits a yellowish-orange phosphorescence which persists for a little over a minute. Types utilizing this phosphor are particularly useful for observing either low- and medium-speed non-recurring phenomena or high-speed recurring phenomena.

FEATURES OF FLUORESCENT SCREENS

Phosphor P15 has radiation in the visible green region and in the invisible near-ultraviolet region. The ultraviolet radiation has short persistence which is appreciably shorter than that of the visible radiation. This phosphor finds application in flying-spot cathode-ray tubes.

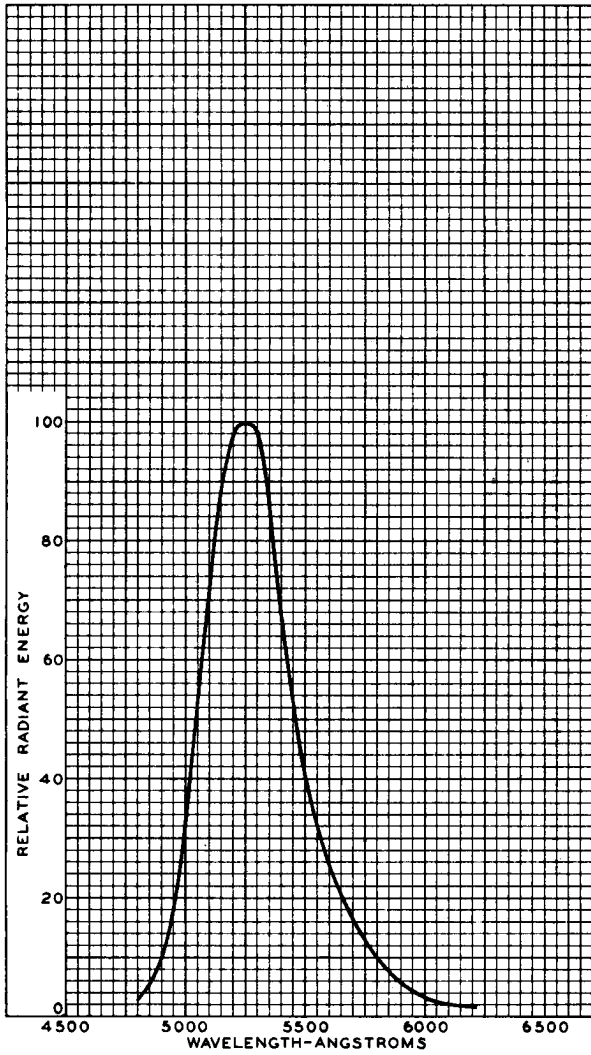
Phosphor P16 has violet as well as near-ultroviolet fluorescence and phosphorescence with very short persistence. This phosphor has a stable, exponential decay characteristic and is particularly useful for the high-speed scanning requirements of a flying-spot video-signal generator.

Phosphor P20 has high luminous efficiency, yellow-green fluorescence and medium-short persistence. The screen may be used in applications requiring relatively short persistence and good visual efficiency.

Phosphor P22 is the designation for three separate phosphors used in combination in a color picture tube. The separate phosphors are blue, green, and red, respectively. The persistence of the group phosphorescence is classified as medium.

Phosphor P24 is a short-persistence phosphor with green fluorescence and phosphorescence. Its spectral-energy emission characteristic has sufficient range to provide useable energy over the visible spectrum required for generating color signals from color transparencies.

SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF PHOSPHOR P1

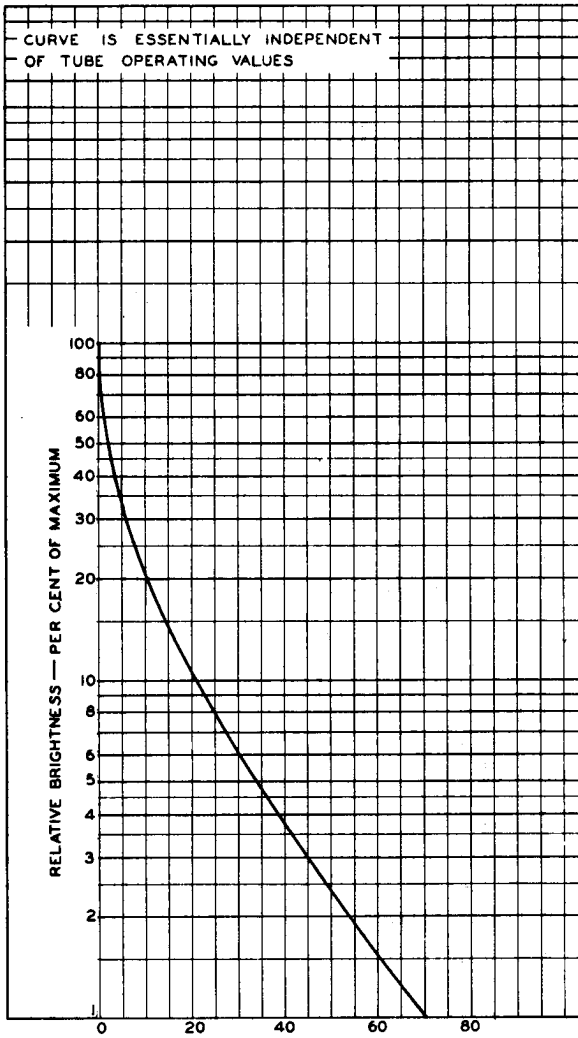


DEC.14,1948

TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-5372R1

PERSISTENCE CHARACTERISTIC OF PHOSPHOR P1

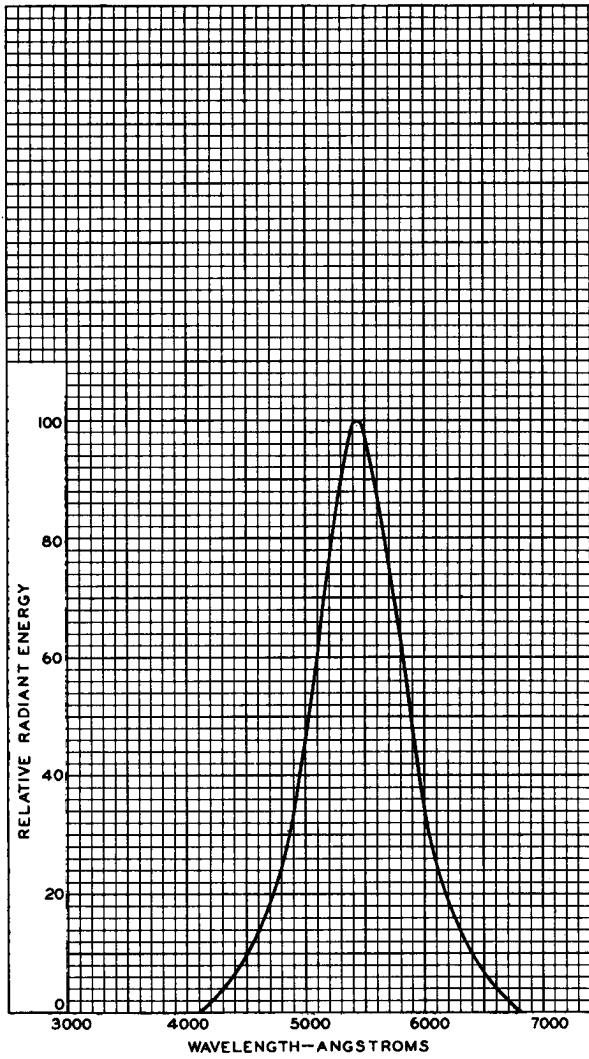


FEB. 1, 1951

TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-5380R2

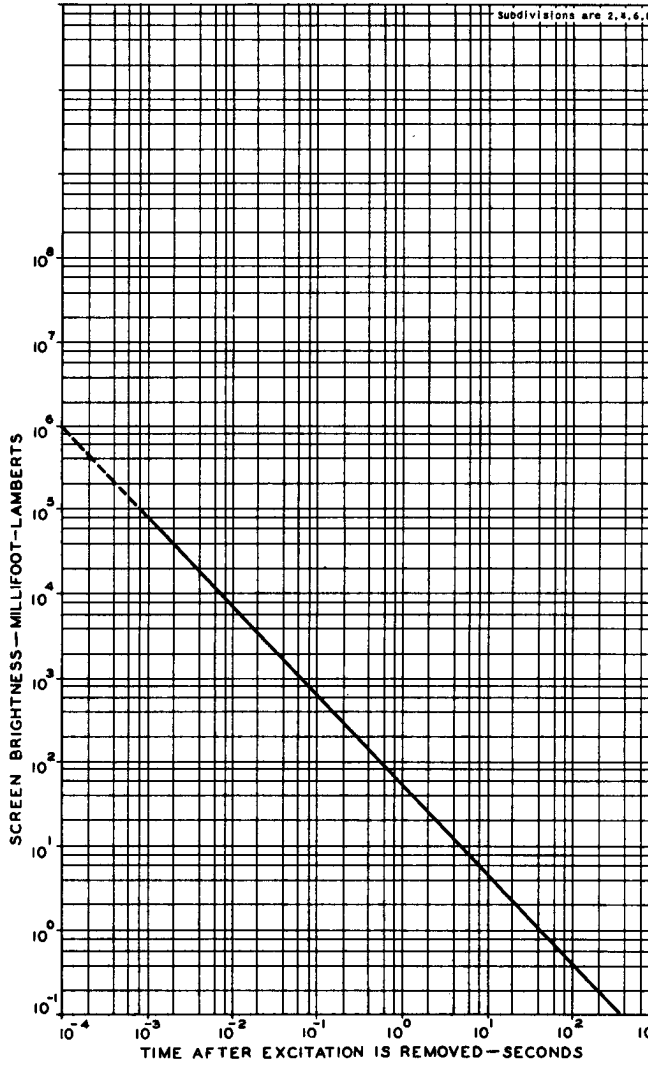
SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF PHOSPHOR P2



TUBE DIVISION

92CM-7312

PERSISTENCE CHARACTERISTIC OF PHOSPHOR P2

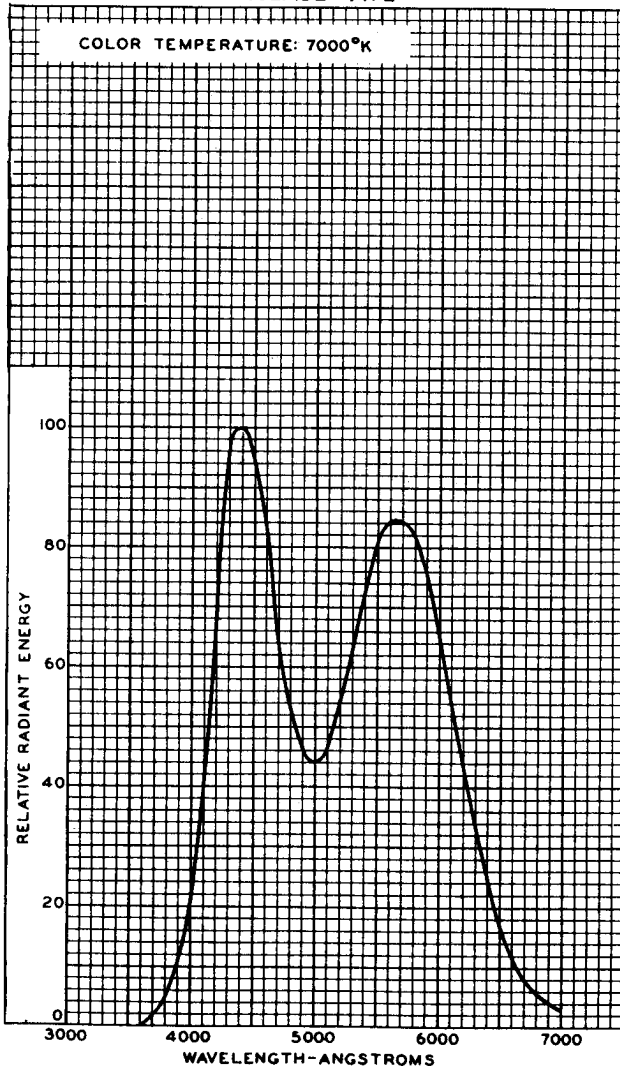


TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7321

SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF PHOSPHOR P4

SULFIDE TYPE



TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7316

PERSISTENCE CHARACTERISTIC OF PHOSPHOR P4
SULFIDE TYPE

FOR KINESCOPES

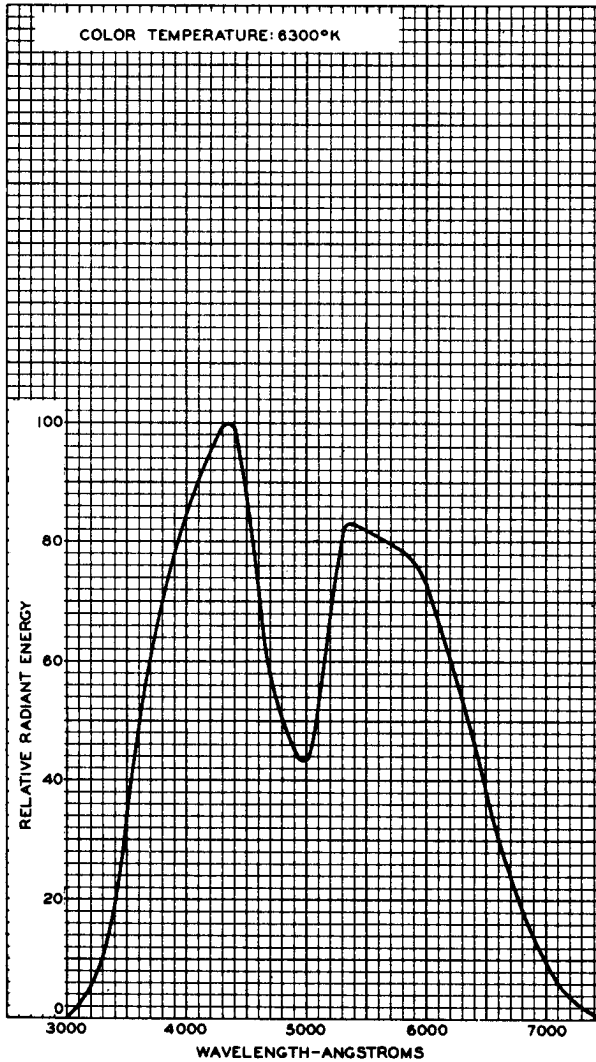
The persistence of the phosphorescence is such that its brightness does not exceed 7 per cent of the peak value in 33 milliseconds after excitation is removed.

FOR OSCILLOGRAPH TUBES

The persistence characteristics of the phosphorescence are the same as those shown for the P11 phosphor.

SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF PHOSPHOR No. 4

SILICATE-SULFIDE TYPE



MARCH 6, 1950

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7458

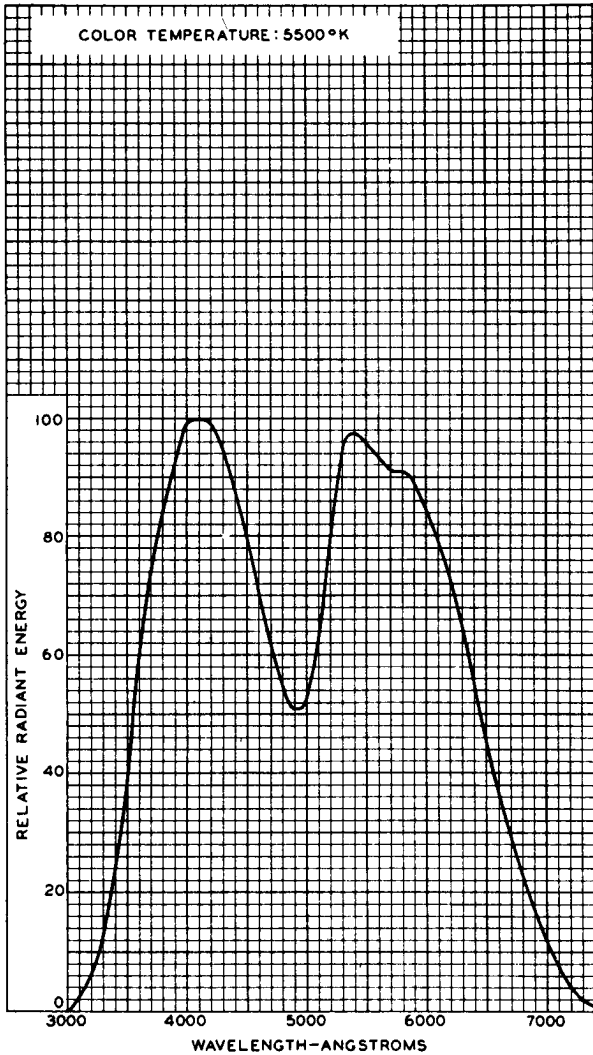
PERSISTENCE CHARACTERISTIC OF PHOSPOR Nº 4

SILICATE-SULFIDE TYPE

The persistence of the phosphorescence is such that its brightness does not exceed 7 per cent of the peak value in 33 milliseconds after excitation is removed.

SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF PHOSPHOR P4

SILICATE TYPE



AUG. 2, 1949

TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

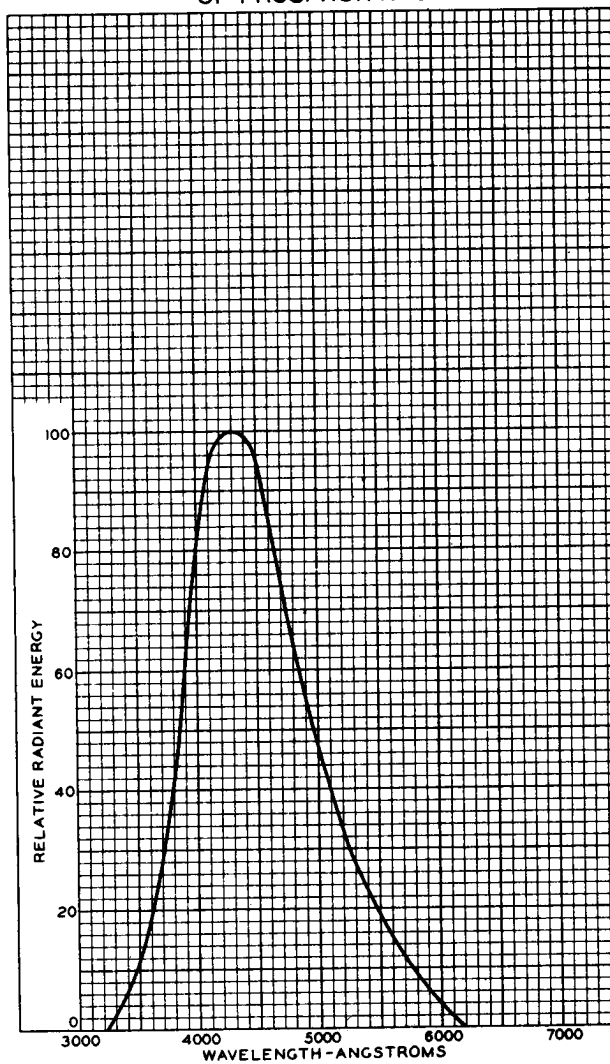
92CM-7335

PERSISTENCE CHARACTERISTIC OF PHOSPOR P4

SILICATE TYPE

The persistence of the phosphorescence is such that its brightness does not exceed 7 per cent of the peak value in 33 milliseconds after excitation is removed.

SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF PHOSPHOR Nº 5

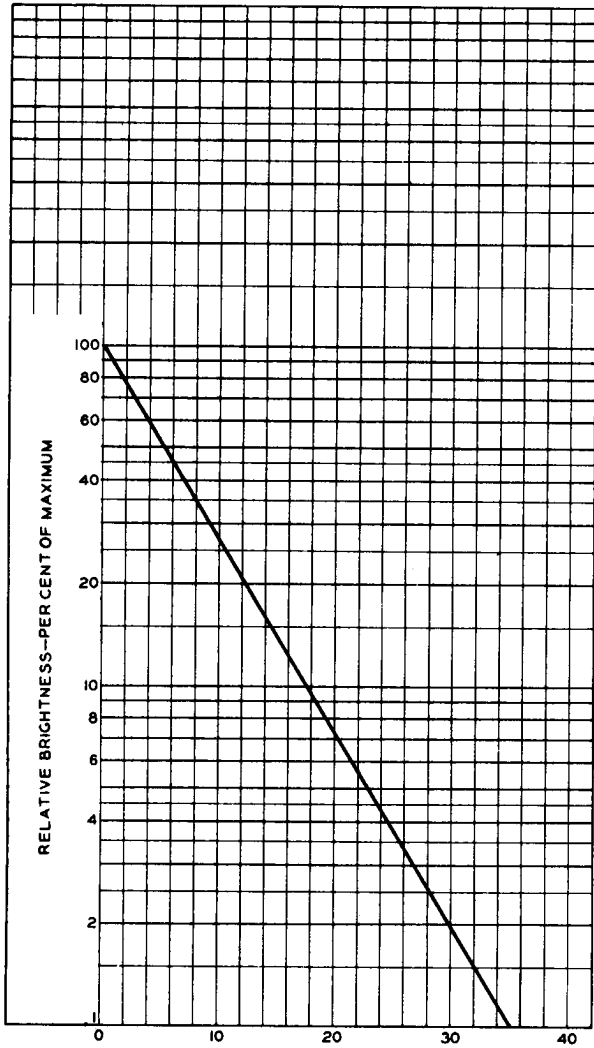


MAY 2,1949

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-5559R2

PERSISTENCE CHARACTERISTIC OF PHOSPHOR Nº 5

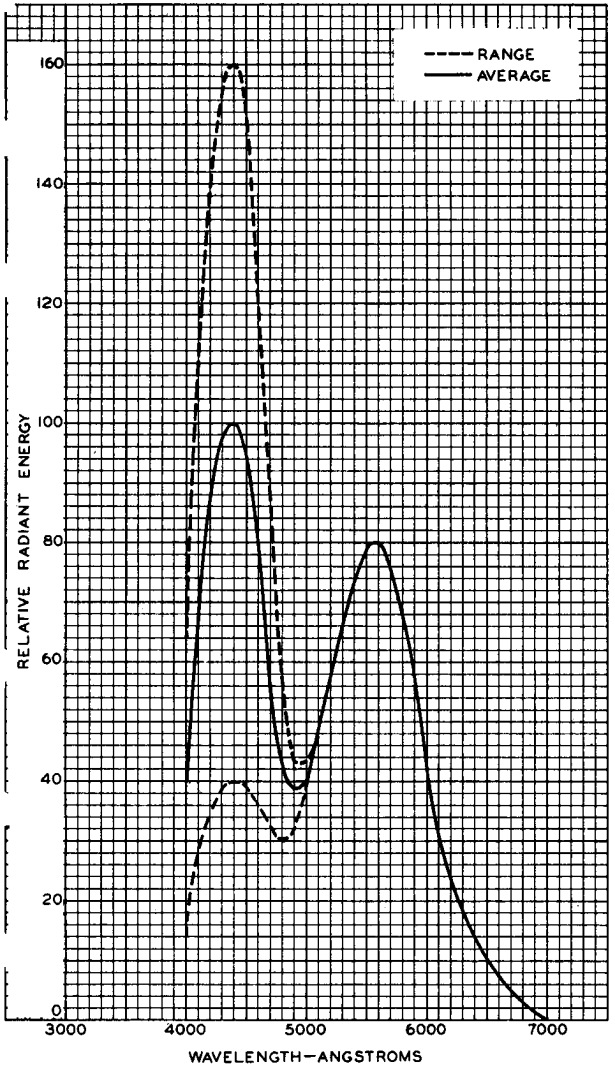


MAY 3, 1949

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7266

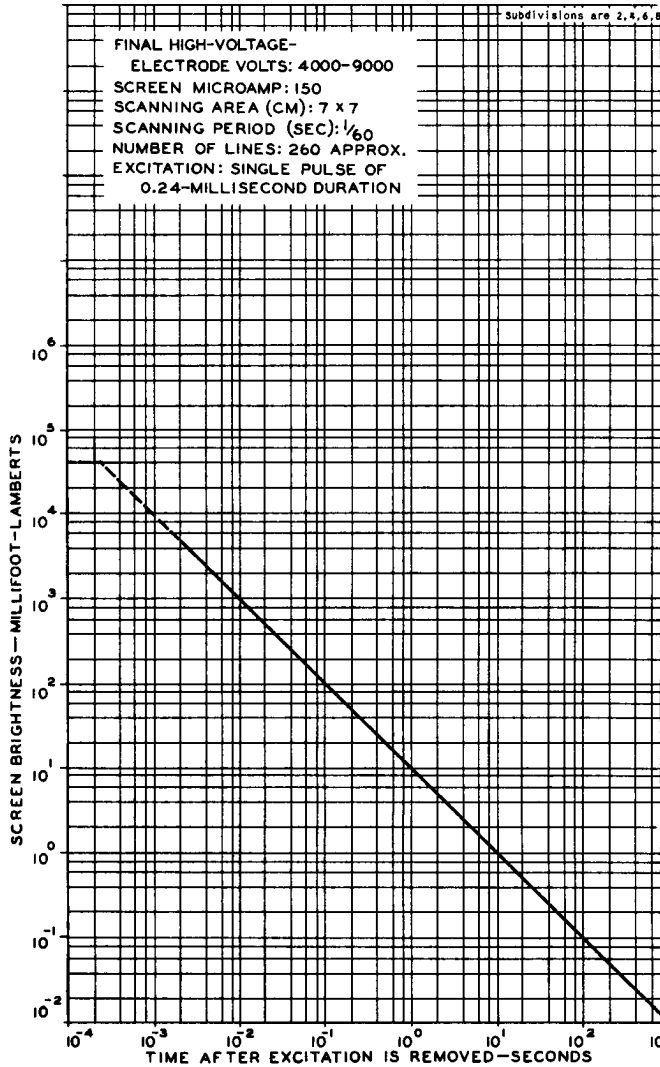
SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF PHOSPHOR P7



TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7336

PERSISTENCE CHARACTERISTIC OF PHOSPHOR P7



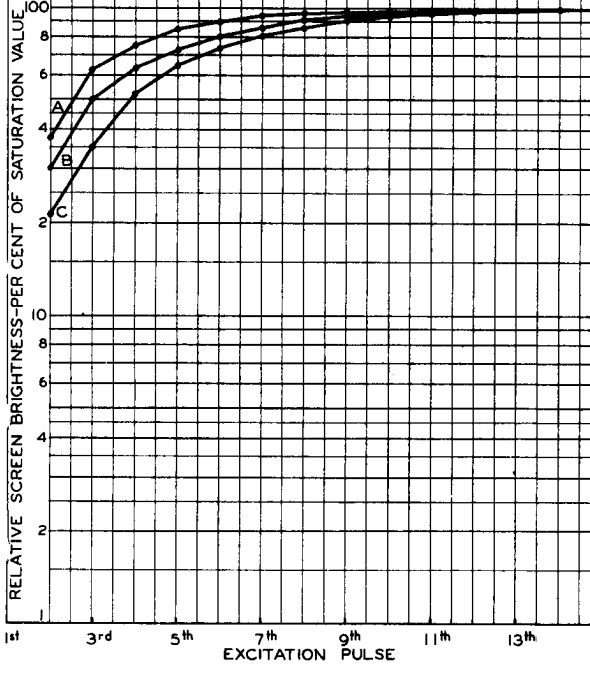
TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7015R4

BUILDUP CHARACTERISTICS OF PHOSPHOR P7

FINAL HIGH-VOLTAGE-ELECTRODE VOLTS: 4000–9000
SCANNING AREA (CM): 7x7
NUMBER OF LINES: 260 APPROX.
EXCITATION: PULSE OF 1/60-SECOND DURATION SUPPLIED TO GRID №1 OF CATHODE-RAY TUBE AT 1-SECOND INTERVALS FOR EACH OF THE LOCI UNDER THE INDICATED CONDITIONS.
BRIGHTNESS: MEASURED JUST BEFORE EACH EXCITATION PULSE.

LOCUS	SCREEN MICROAMP
A	150
B	75
C	37



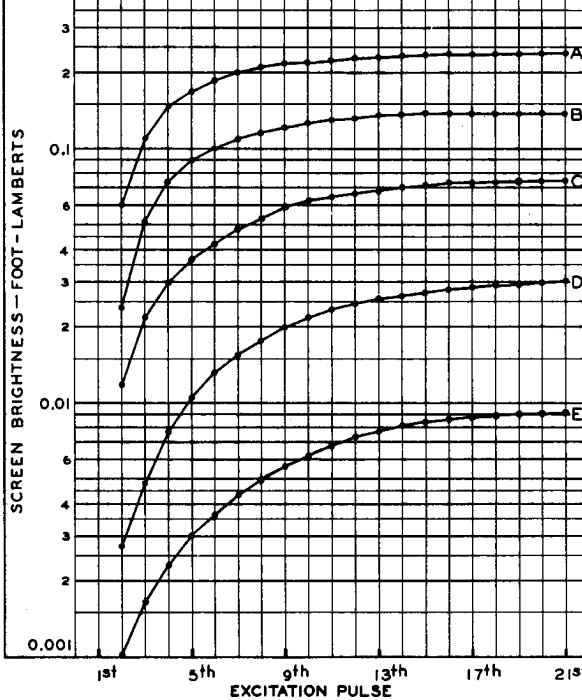
TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM - 7019R3

BUILDUP CHARACTERISTICS OF PHOSPHOR P7

SCANNING AREA (CM): 7×7
NUMBER OF LINES: 260 APPROX.
EXCITATION: PULSE OF $^1/_{60}$-SECOND DURATION SUPPLIED TO GRID No.1 OF CATHODE-RAY TUBE AT 1-SECOND INTERVALS FOR EACH OF THE LOCI UNDER THE INDICATED CONDITIONS.
BRIGHTNESS: MEASURED JUST BEFORE EACH EXCITATION PULSE.

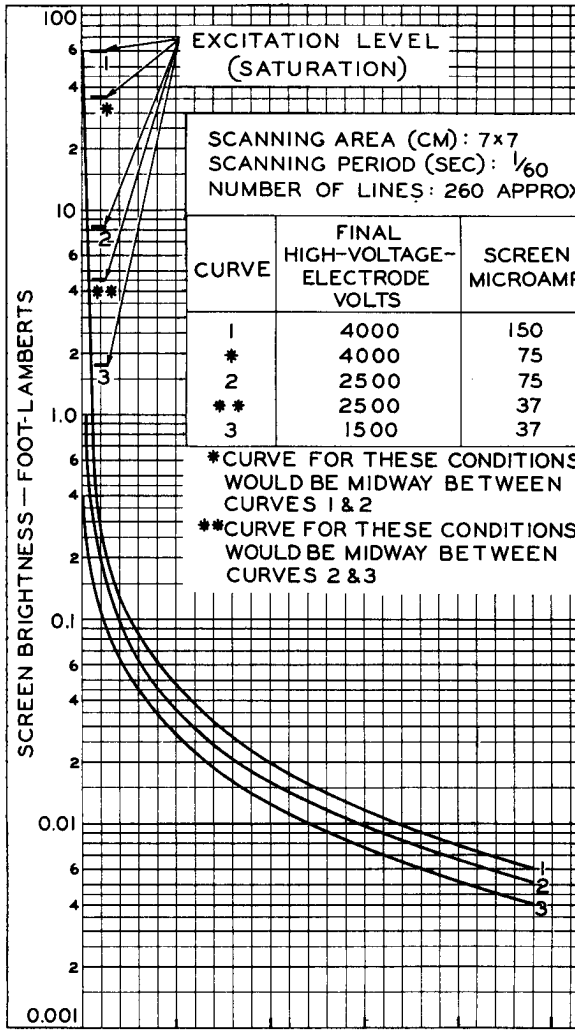
LOCUS	FINAL HIGH-VOLTAGE-ELECTRODE VOLTS	SCREEN MICROAMP
A	4000	150
B	4000	75
C	2500	75
D	2500	37
E	1500	37



TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-6805R5

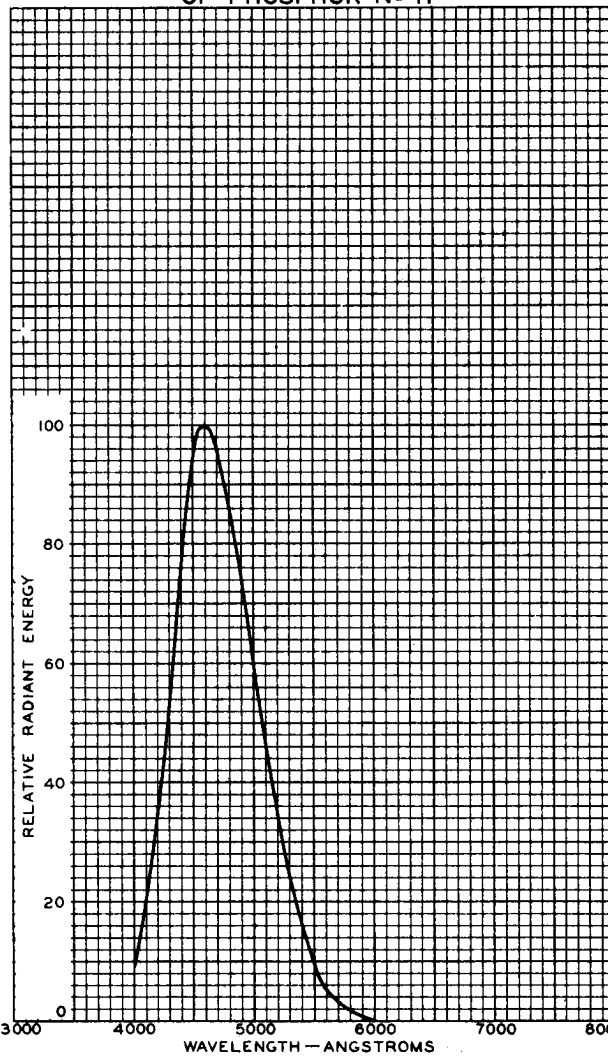
PERSISTENCE CHARACTERISTICS OF PHOSPHOR P7



TUBE DIVISION 92CL-6804R5

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF PHOSPHOR Nº 11

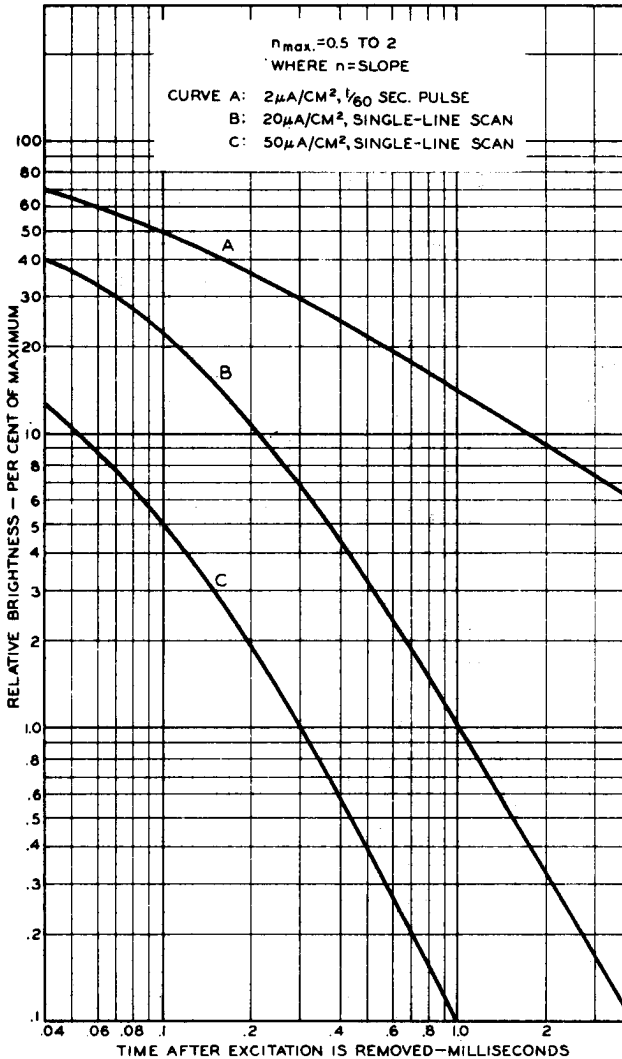


APRIL 9, 1946

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-6749

PERSISTENCE CHARACTERISTICS OF PHOSPHOR N°11

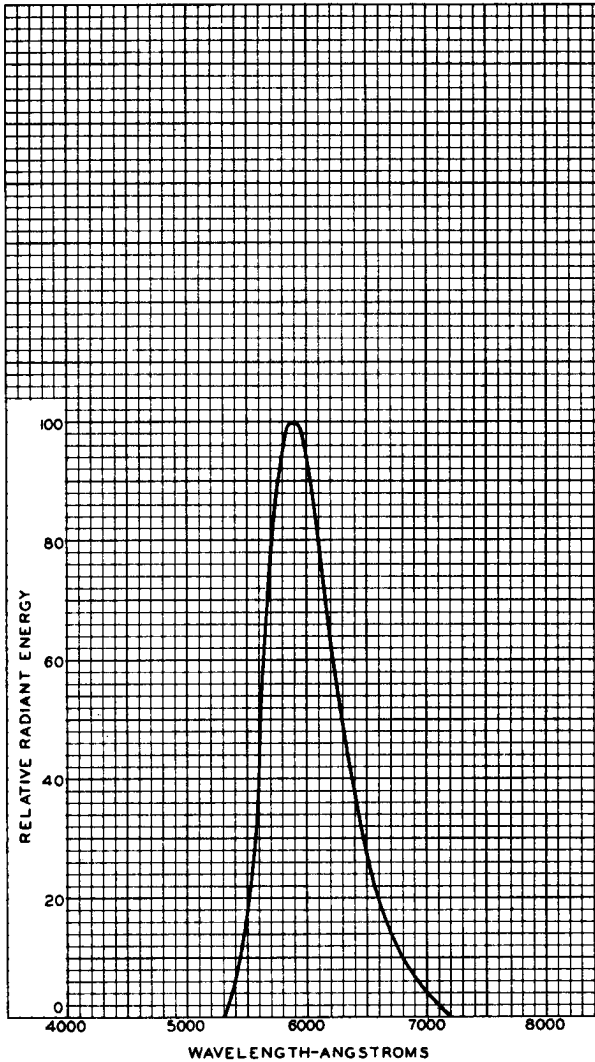


JULY 7, 1950

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-6806R2

SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF PHOSPHOR P12

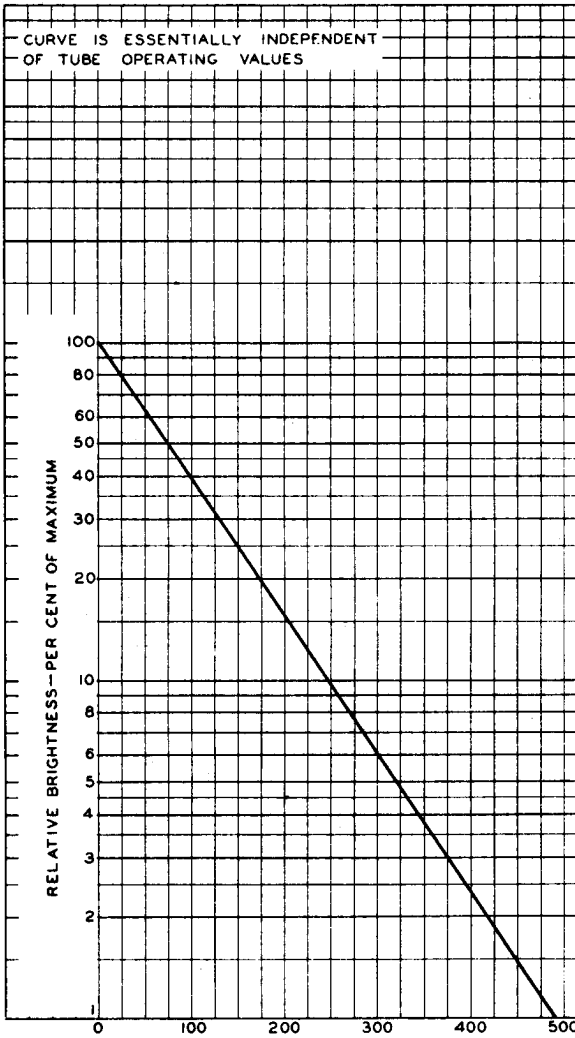


JULY 18, 1949

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7317

PERSISTENCE CHARACTERISTIC OF PHOSPHOR P12

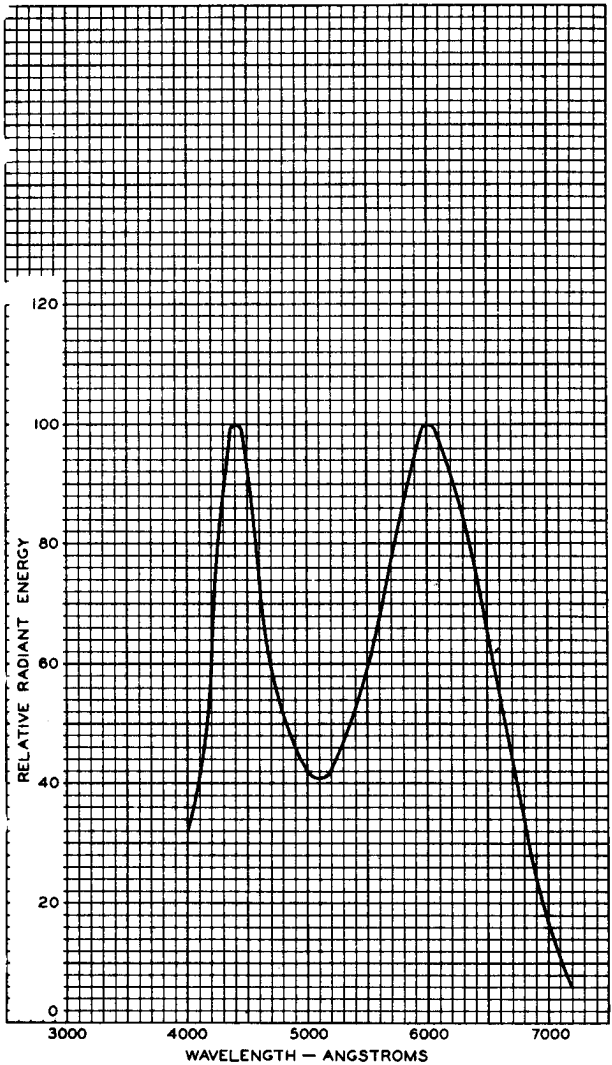


FEB. 1, 1951

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7318RI

SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF PHOSPHOR P14

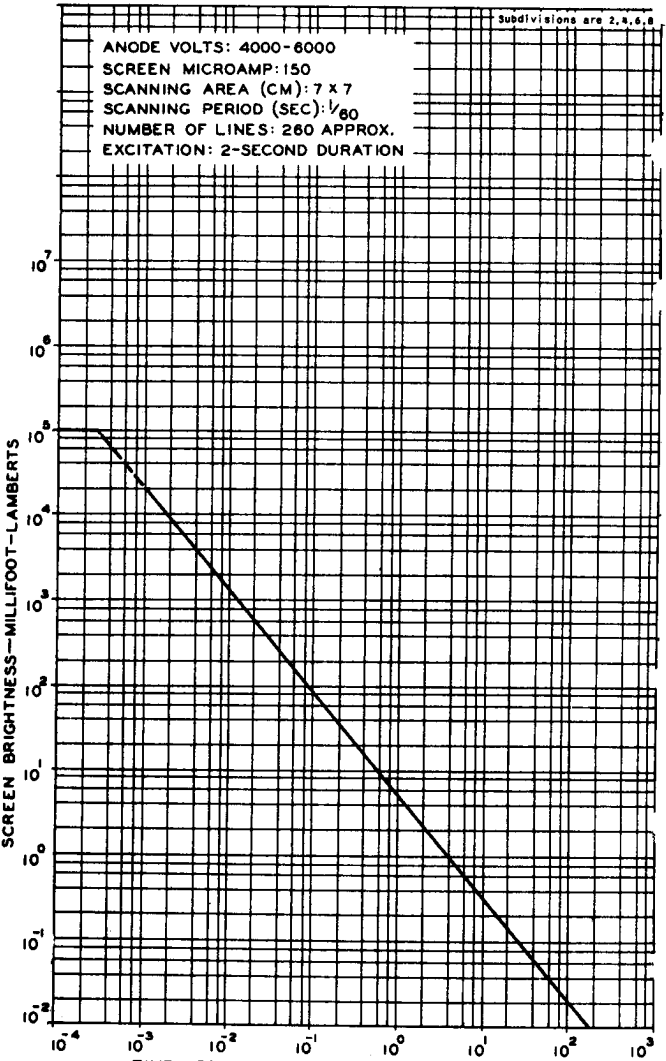


AUG. 1, 1951

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7675

PERSISTENCE CHARACTERISTIC OF PHOSPHOR P14



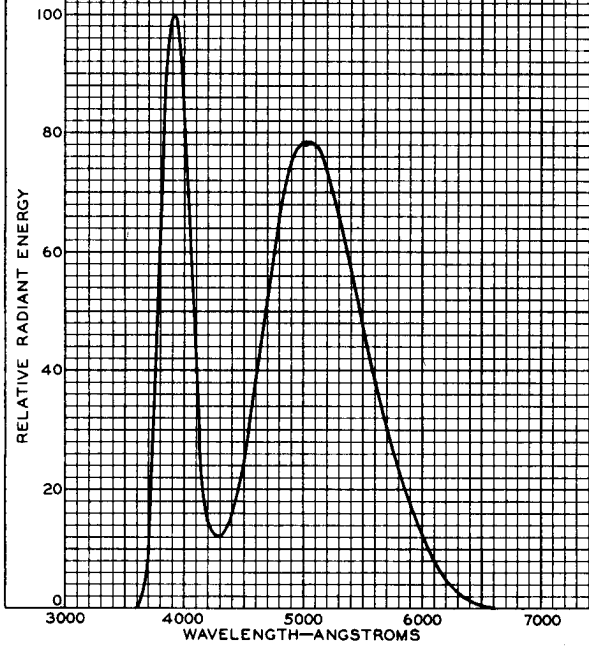
JAN. 26, 1951

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7326RI

SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF PHOSPHOR P15

COMPONENT	COLOR	I.C.I. COORDINATES	
		X	Y
VISIBLE	GREEN	0.246	0.439
ULTRAVIOLET	——	——	——



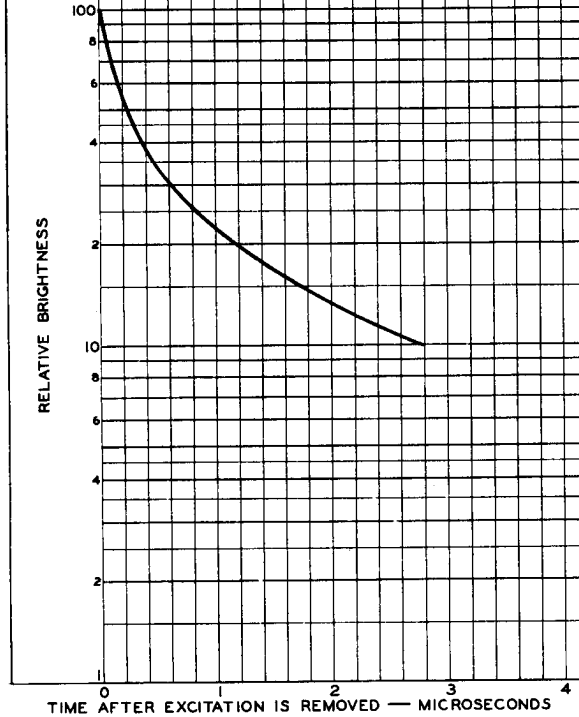
ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-6915RI

PERSISTENCE CHARACTERISTIC OF PHOSPHOR P15

COMPONENTS	EACH ESSENTIALLY INDEPENDENT OF TUBE OPERATING VALUES.
VISIBLE ULTRAVIOLET	SHOWN BY CURVE. DECAYS TO APPROXIMATELY 10 % OF MAXIMUM IN NOT MORE THAN 0.05 MICROSECOND.

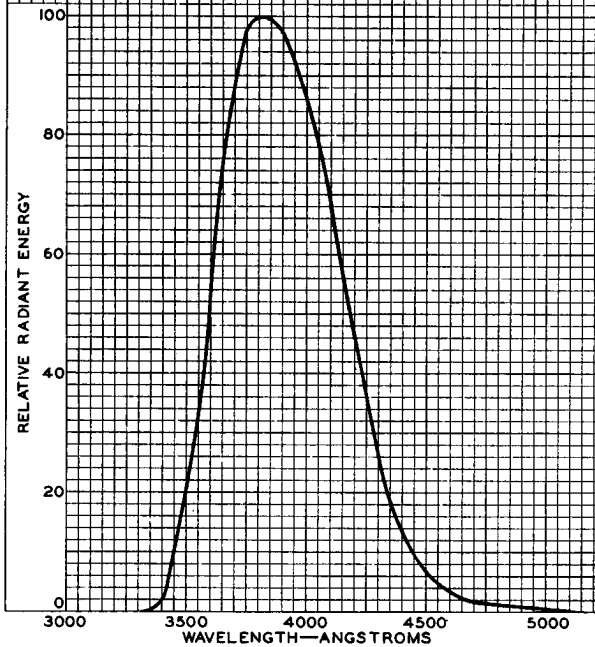
SPOT: SHARPLY FOCUSED.



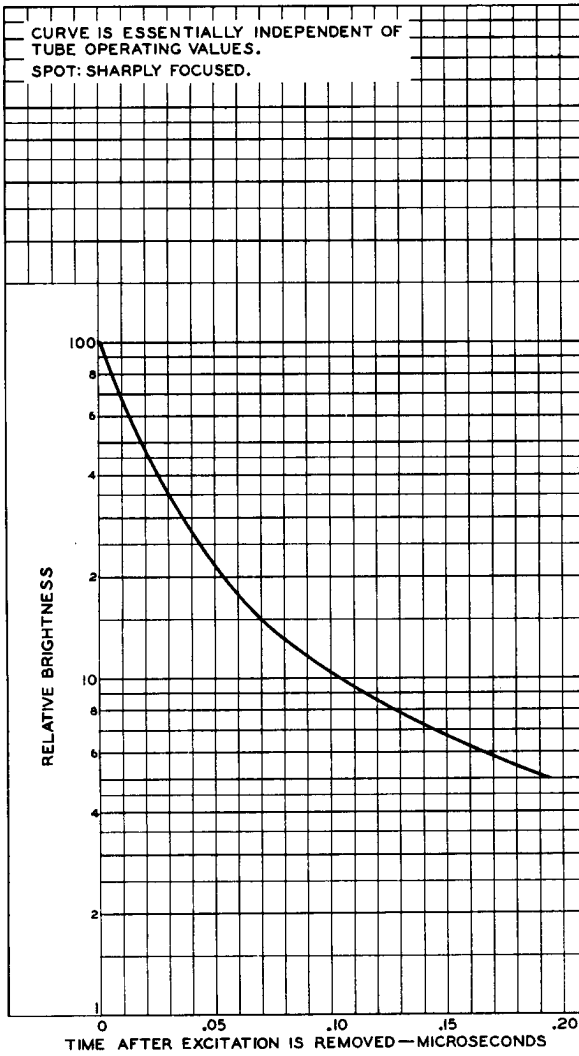
ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY
92CM-8540RI

SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF PHOSPHOR P16

COMPONENT	COLOR	I.C.I. COORDINATES	
		X	Y
VISIBLE	VIOLET	0.175	0.003
NEAR ULTRAVIOLET	——	——	——



PERSISTENCE CHARACTERISTIC OF PHOSPHOR P16

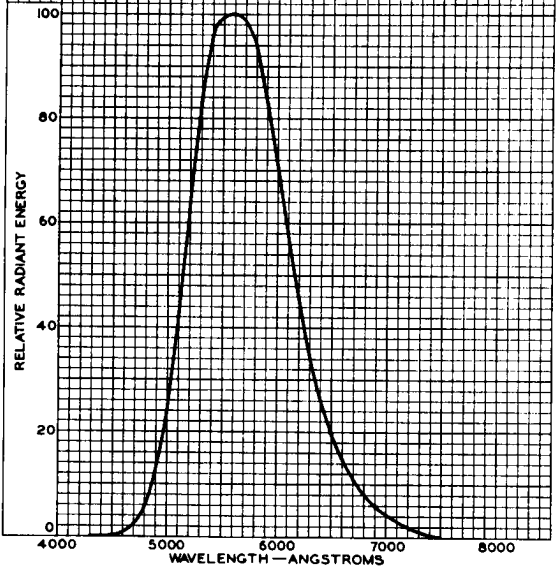


ELECTRON TUBE DIVISION 92CM—7564RI

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

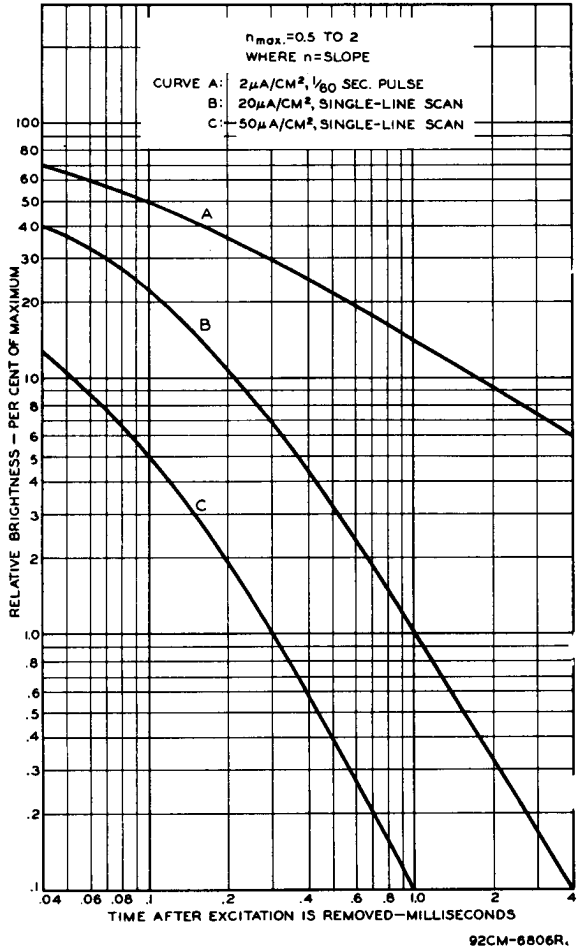
Spectral-Energy Emission Characteristic

COLOR	C.I.E. COORDINATES	
	X	Y
YELLOW-GREEN	0.426	0.546



92CM-7647R2

Persistence Characteristic



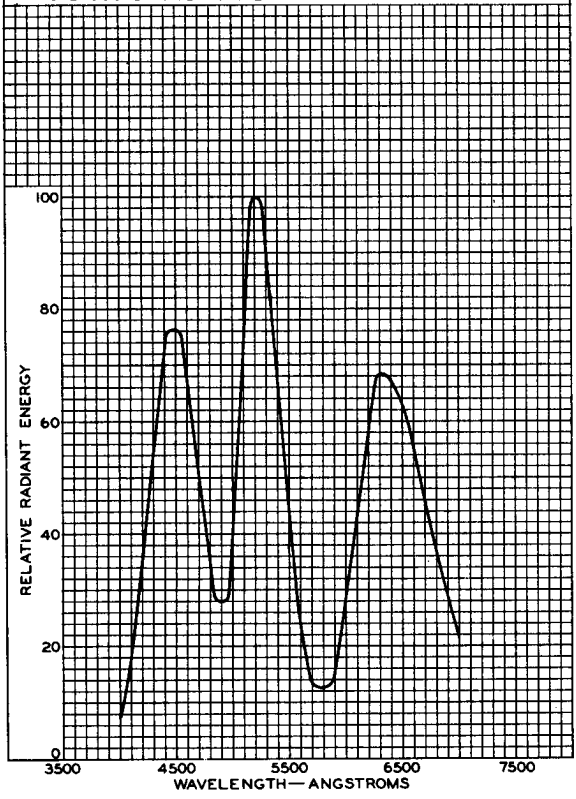
RADIO CORPORATION OF AMERICA
Electronic Components and Devices Harrison, N. J.

SPECTRAL-ENERGY EMISSION CHARACTERISTIC

SIMULTANEOUS EXCITATION OF BLUE PHOSPHOR, GREEN PHOSPHOR, AND RED PHOSPHOR TO PRODUCE 8500° K +27 M.P.C.D. WHITE (X=0.287, Y=0.316).

COMPONENT COLOR		CIE COORDINATES	
GENERAL DESCRIPTION	JEDEC DESIGNATION*	X	Y
BLUE	PURPLISH-BLUE	0.146	0.052
GREEN	YELLOWISH-GREEN	0.218	0.712
RED	REDDISH-ORANGE	0.674	0.326

*JEDEC COLOR CLASSIFICATION CORRESPONDING TO CIE COORDINATE VALUES.



92CM-7969R4

Group Phosphor P22

PERSISTENCE CHARACTERISTIC

The persistence of the group phosphorescence is such that its brightness does not exceed 7 per cent of the peak value in 33 milliseconds after excitation is removed.

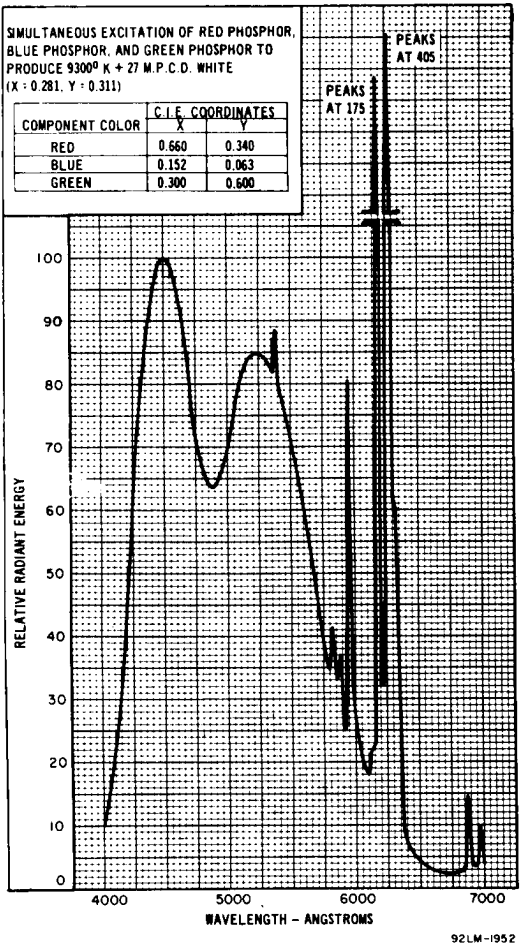
RADIO CORPORATION OF AMERICA
Electron Tube Division Harrison, N. J.

Group Phosphor P22

New Rare-Earth (Red), Sulfide (Blue & Green) Type[a]

Spectral-Energy Emission Characteristic

[a] The relative intensities of the narrow-emission bands of the red phosphor are dependent on the resolution of the measuring device.



Group Phosphor P22

New Rare-Earth (Red), Sulfide (Blue & Green) Type

PERSISTENCE CHARACTERISTIC

The persistence of the group phosphorescence is *medium short*. Persistence of the component phosphors is such that after excitation is removed, brightness decays to a level not exceeding 10 per cent of the initial value in:

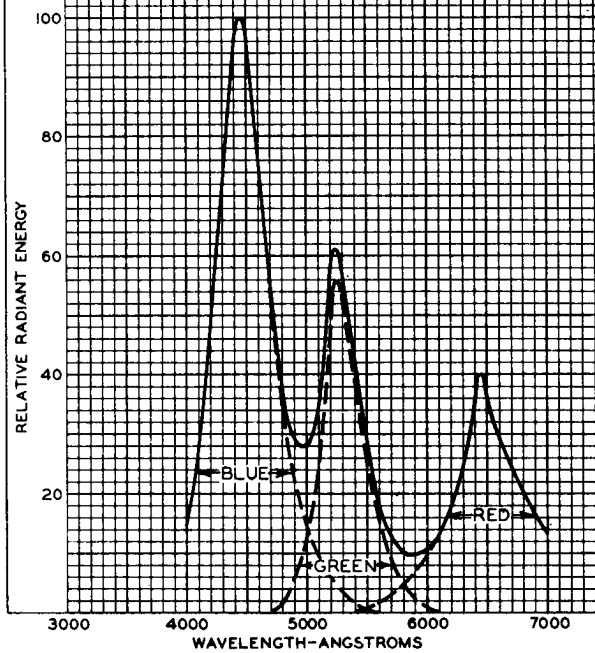
22 microseconds (Approx.). . . . . .Blue phosphor
60 microseconds (Approx.). . . . . Green phosphor
1 millisecond (Approx.). . . . . Red phosphor

RADIO CORPORATION OF AMERICA
Electronic Components and Devices Harrison, N. J.

SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF GROUP PHOSPHOR P22

EQUAL EXCITATION OF EACH PHOSPHOR

PHOSPHOR	RANGE OF MAX. VALUE ANGSTROMS
BLUE EMITTING	4420 TO 4520
GREEN EMITTING	5230 TO 5270
RED EMITTING	6360 TO 6580



JAN. 14, 1954

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7969R2

PERSISTENCE CHARACTERISTIC OF GROUP PHOSPHOR P22

The persistence of the group phosphorescence is such that its brightness does not exceed 7 per cent of the peak value in 33 milliseconds after excitation is removed.

Group Phosphor P22

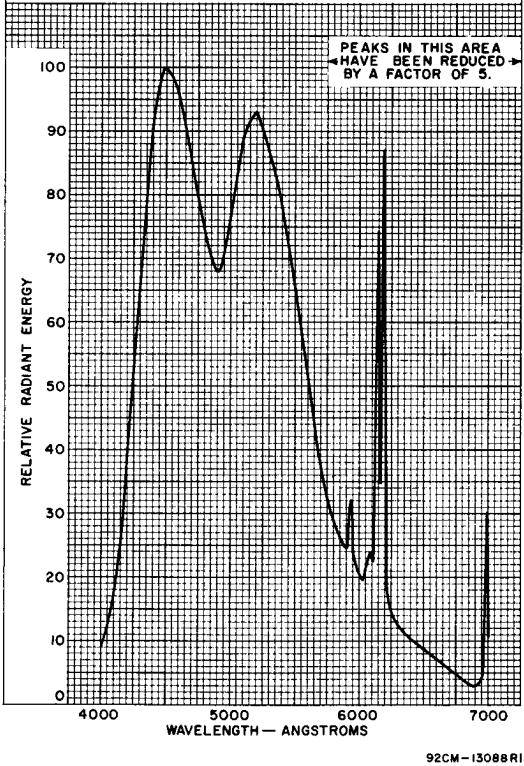
Rare-Earth (Red), Sulfide (Blue & Green) Type[a]

Spectral-Energy Emission Characteristic

[a] The relative intensities of the narrow-emission bands of the red phosphor are dependent on the resolution of the measuring device.

SIMULTANEOUS EXCITATION OF RED PHOSPHOR, BLUE PHOSPHOR, AND GREEN PHOSPHOR TO PRODUCE 9300° K + 27 M.P.C.D. WHITE (X = 0.281, Y = 0.311).

COMPONENT COLOR	C.I.E. COORDINATES	
	X	Y
RED	0.676	0.324
BLUE	0.155	0.061
GREEN	0.290	0.590



92CM-13088RI

Group Phosphor P22

Rare-Earth (Red), Sulfide (Blue & Green) Type

PERSISTENCE CHARACTERISTIC

The persistence of the group phosphorescence is *medium short*. Persistence of the component phosphors is such that after excitation is removed, brightness decays to a level not exceeding 10 per cent of the initial value in:

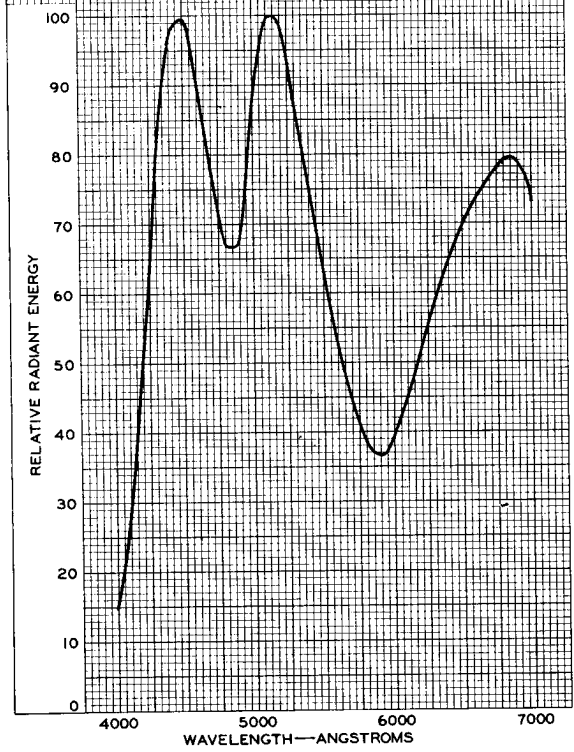
22 microseconds (Approx.) . . . . . Blue phosphor
60 microseconds (Approx.) . . . . . .Green phosphor
1 millisecond (Approx.) . . . . . .Red phosphor

RADIO CORPORATION OF AMERICA
Electronic Components and Devices
Harrison, N. J.

SPECTRAL-ENERGY EMISSION CHARACTERISTIC

SIMULTANEOUS EXCITATION OF BLUE PHOSPHOR, GREEN PHOSPHOR, AND RED PHOSPHOR TO PRODUCE 9300° K +27M.P.C.D. WHITE(X=0.281, Y=0.311).

COMPONENT COLOR	C.I.E. COORDINATES	
	X	Y
BLUE	0.155	0.061
GREEN	0.265	0.585
RED	0.639	0.342



92CM-10857

Group Phosphor P22

All-Sulfide Type

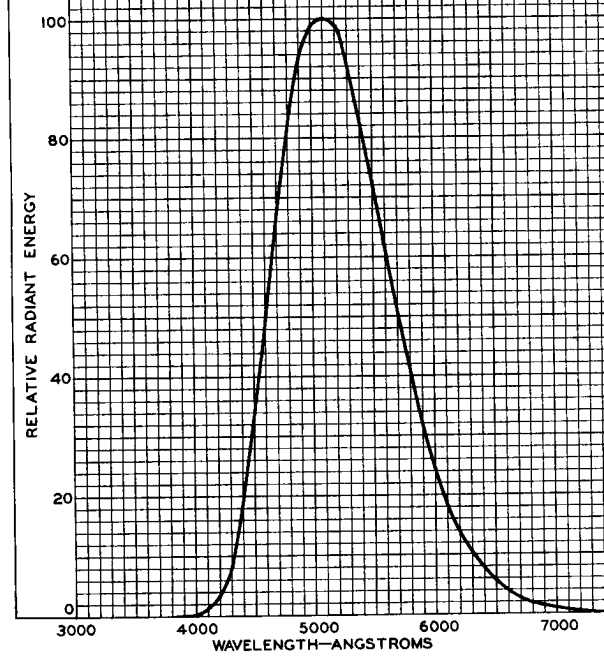
PERSISTENCE CHARACTERISTIC

The persistence of the group phosphorescence is ***medium short***. Persistence of the component phosphors is such that after excitation is removed, brightness decays to a level not exceeding 10 per cent of the initial value in:

22 microseconds (Approx.). . . . . .Blue phosphor
60 microseconds (Approx.). . . . . Green phosphor
60 microseconds (Approx.). . . . . Red phosphor

SPECTRAL-ENERGY EMISSION CHARACTERISTIC OF PHOSPHOR P24

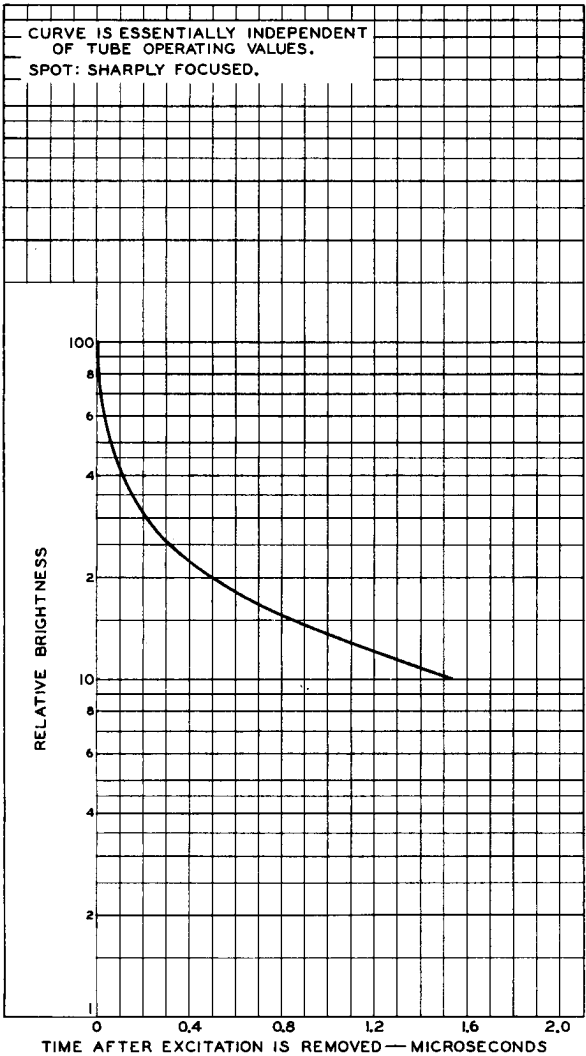
COLOR	I.C.I. COORDINATES	
	X	Y
GREEN	0.245	0.441



ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-8204

PERSISTENCE CHARACTERISTIC OF PHOSPHOR P24

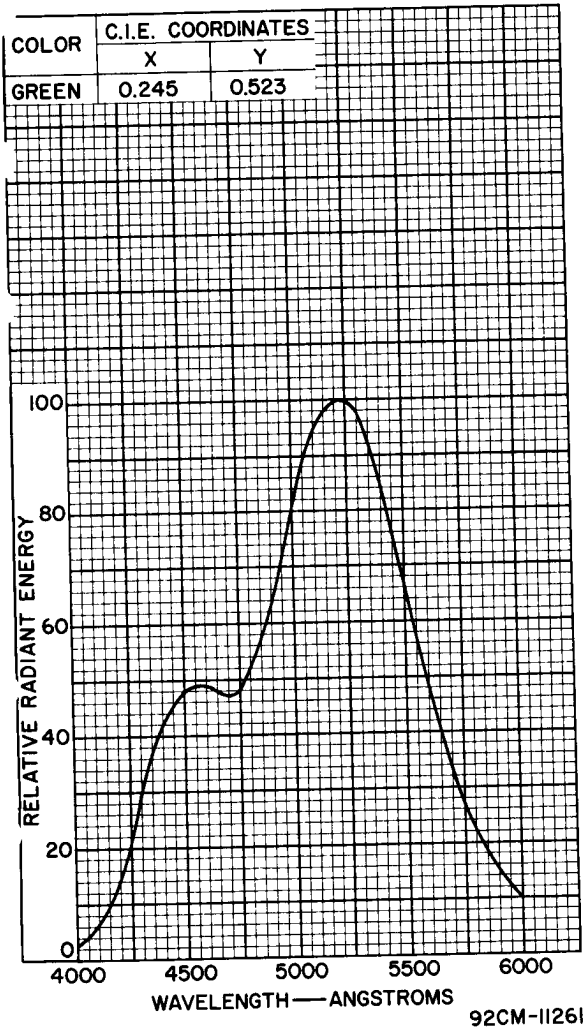


ELECTRON TUBE DIVISION 92CM-8205R2
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

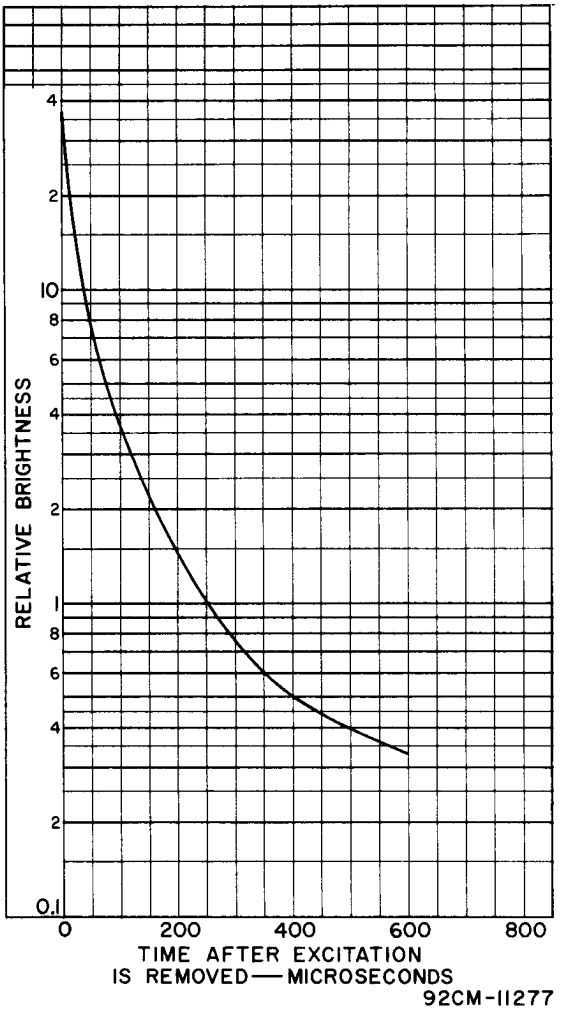
JEDEC PHOSPHOR P31

Spectral-Energy Emission Characteristic

COLOR	C.I.E. COORDINATES	
	X	Y
GREEN	0.245	0.523



Persistence Characteristic



Picture-Tube Dimensional Outlines

The *Dimensional Outlines* on the following pages provide the basic dimensions of RCA Picture Tubes. These Dimensional Outlines are classified by Bulb Designations in accordance with the designation system established by the American Standards Association. Tube neck length, tube overall length, base designation, and the configuration of the external conductive coating (when used) are not shown on these Dimensional Outlines. These items are covered on the data sheets for specific picture-tube types.

The terms used in the picture-tube data sheets to describe the *Type of External Conductive Coating* and the *Contact Area for Grounding* are defined below:

Type of External Conductive Coating

Regular Band. A band of external conductive coating of uniform height covering part of the bulb funnel. The band may entirely encompass the funnel except for an insulated area in the region of the anode (ultor) contact.

Modified Band. A coating configuration similar to a Regular Band except for special contouring of the upper and/or lower edges.

Special. A coating configuration not defined in the industry specification for the tube type.

Contact Area for Grounding

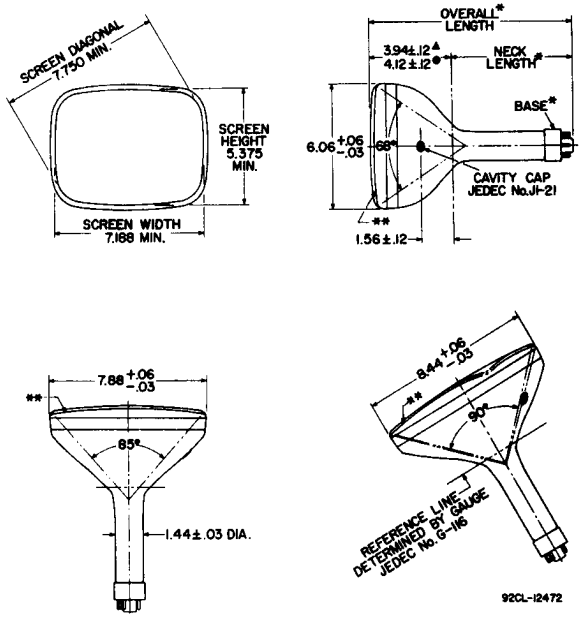
Near Reference Line. Refers to the position of the contact area usually employed for grounding a Regular or Modified Band of external conductive coating. A spring-finger contact mounted on the deflecting yoke or on the tube mounting assembly is normally employed for grounding the external conductive coating.

Special. Indicates that one or more contact areas for grounding the external conductive coating other than the area near the reference line are provided in the industry specification for the tube type.

Dimensional Outline Bulb J67-1/2 A

FOR PICTURE TUBES UTILIZING BULB J67-1/2 A

(For bulbs with and without integral protective window)



DIMENSIONS IN INCHES

* See data for specific tube type.

** Integral protective window is indicated.

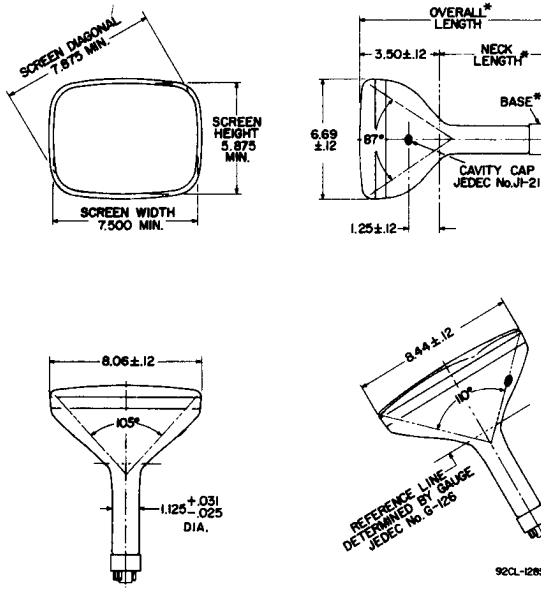
▲ For bulb without protective window.

● For bulb with protective window.

RADIO CORPORATION OF AMERICA
Electronic Components and Devices
Harrison, N. J.

Dimensional Outline Bulb J67-1/2 B

FOR PICTURE TUBES UTILIZING BULB J67-1/2 B

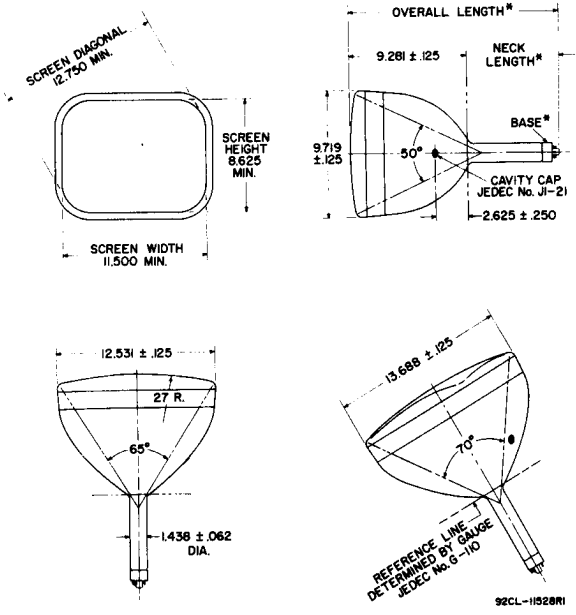


DIMENSIONS IN INCHES

* See data for specific tube type.

Dimensional Outline Bulb J109-1/2 A/C

FOR PICTURE TUBES UTILIZING BULB J109-1/2 A/C



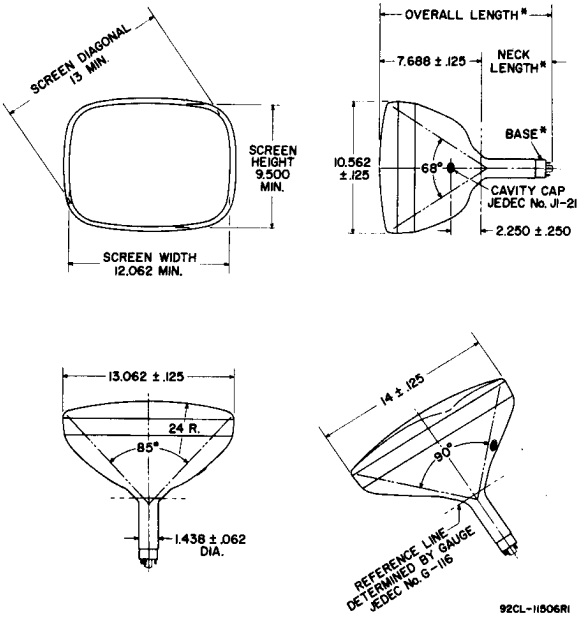
DIMENSIONS IN INCHES

* See data for specific tube type.

RADIO CORPORATION OF AMERICA
Electronic Components and Devices
Harrison, N. J.

Dimensional Outline Bulb J112 A/B

FOR PICTURE TUBES UTILIZING BULB J112 A/B

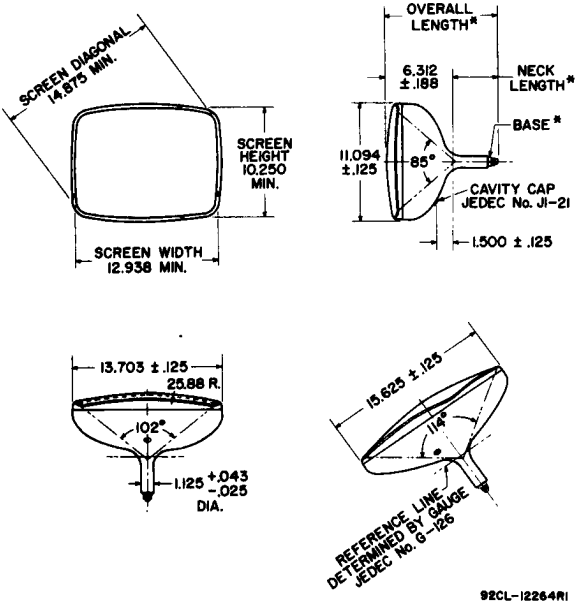


DIMENSIONS IN INCHES

* See data for specific tube type.

Dimensional Outline Bulb J125 A

FOR PICTURE TUBES UTILIZING BULB J125 A
AND PROTECTIVE WINDOW (FP125 A)



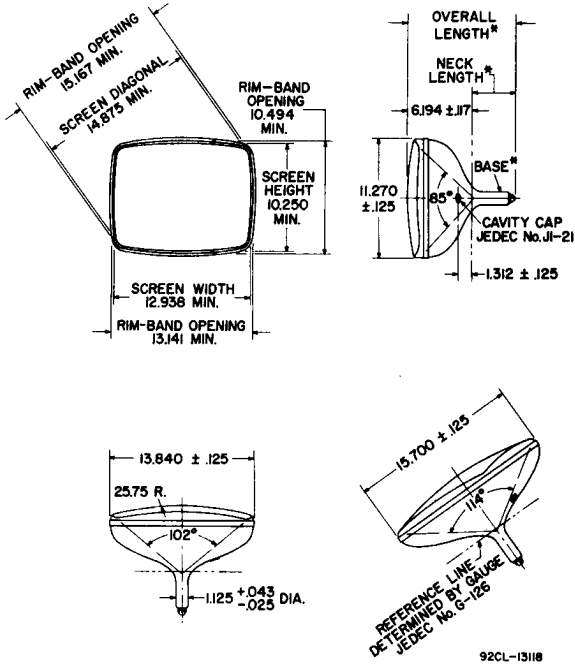
DIMENSIONS IN INCHES

* See data for specific tube type.

RADIO CORPORATION OF AMERICA
Electronic Components and Devices Harrison, N. J.

Dimensional Outline — Bulb J125 B

FOR PICTURE TUBE UTILIZING BULB J125 B

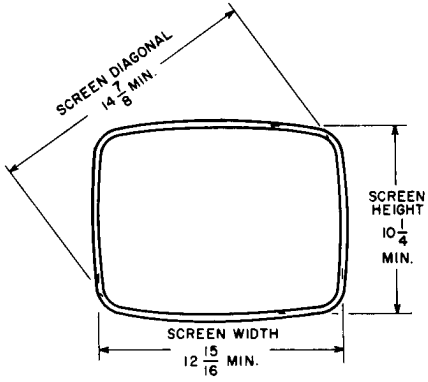


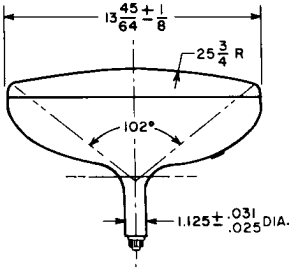
DIMENSIONS IN INCHES

* See data for specific tube type.

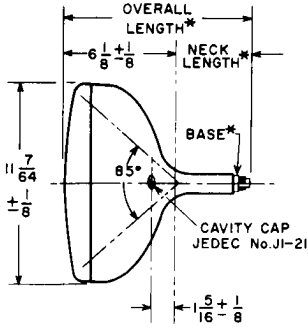
Dimensional Outline

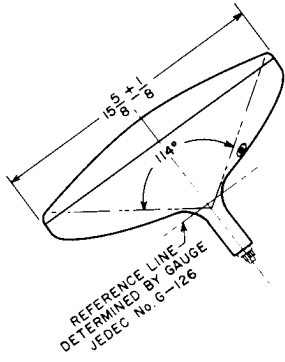
FOR PICTURE TUBES UTILIZING BULB J125 C2





BULB J125 C2





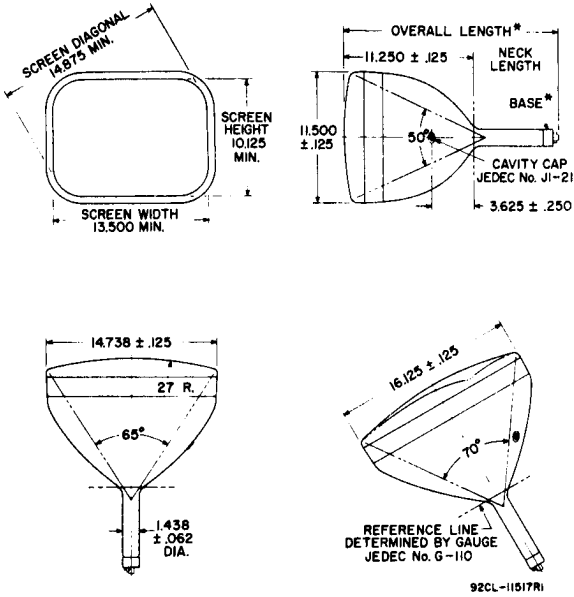
92CL-12037

DIMENSIONS IN INCHES

* See data for specific tube type.

Dimensional Outline Bulb J129 A/B

FOR PICTURE TUBES UTILIZING BULB J129 A/B



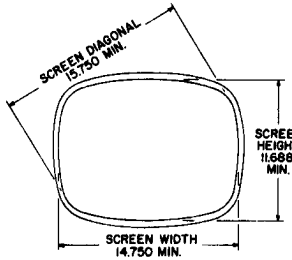
DIMENSIONS IN INCHES

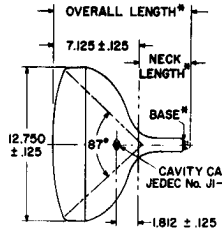
* See data for specific tube type.

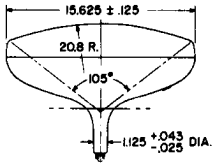
RADIO CORPORATION OF AMERICA
Electronic Components and Devices Harrison, N. J.

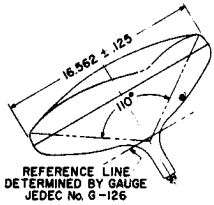
Dimensional Outline Bulb J132-1/2 A/B

FOR PICTURE TUBES UTILIZING BULB J132-1/2 A/B









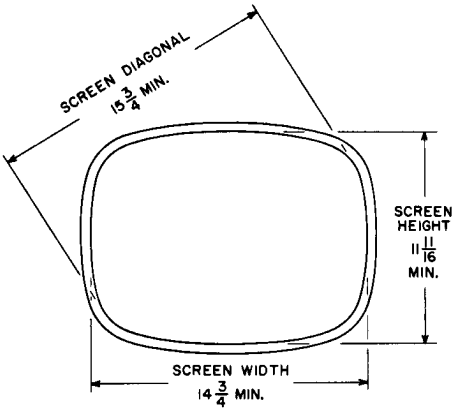
92CL-11589RI

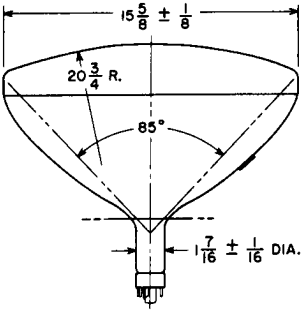
DIMENSIONS IN INCHES

* See data for specific tube type.

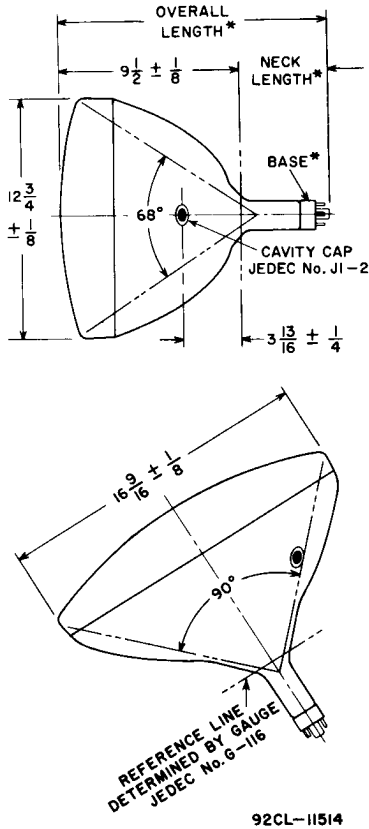
Dimensional Outline

FOR PICTURE TUBES UTILIZING BULB J132-1/2 C/D





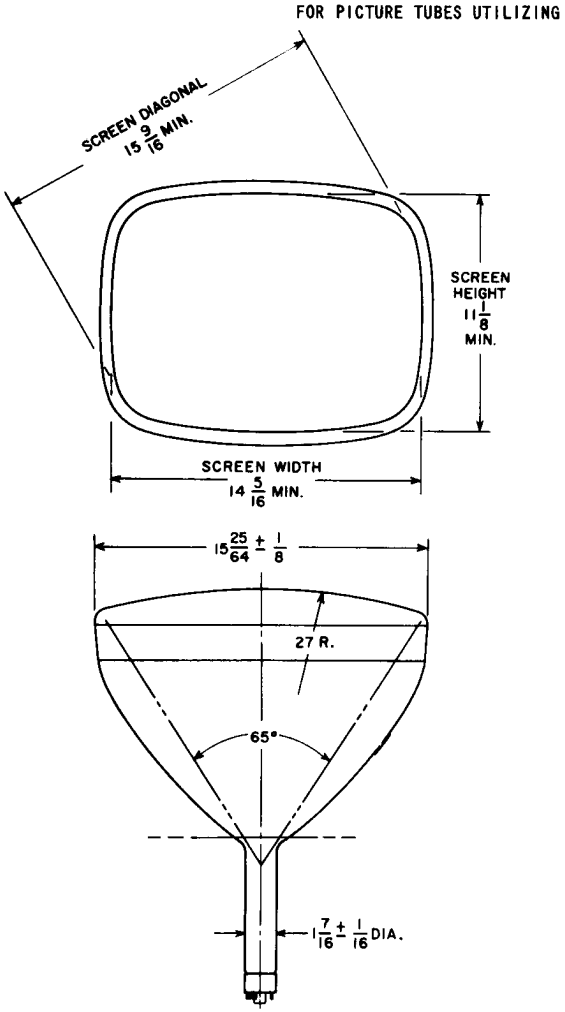
BULB J132-1/2 C/D



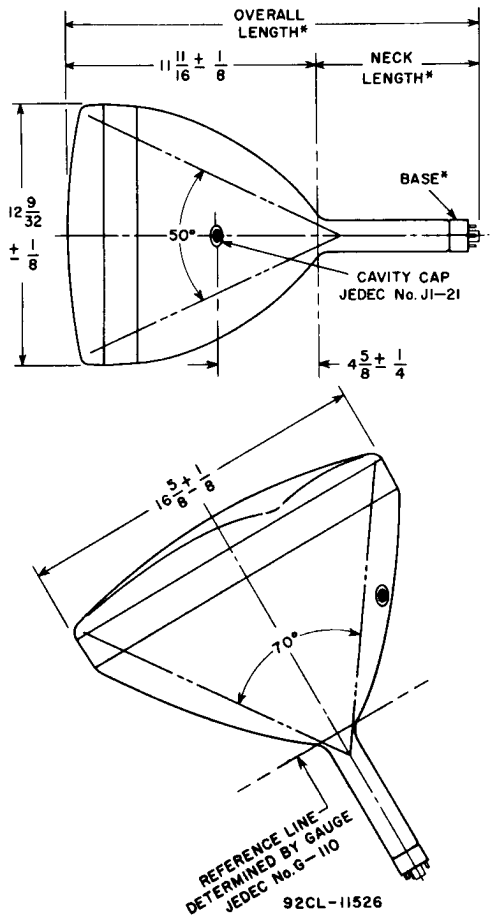
ALL DIMENSIONS IN INCHES

* See data for specific tube type.

Dimensional Outline



BULB J133 B/D

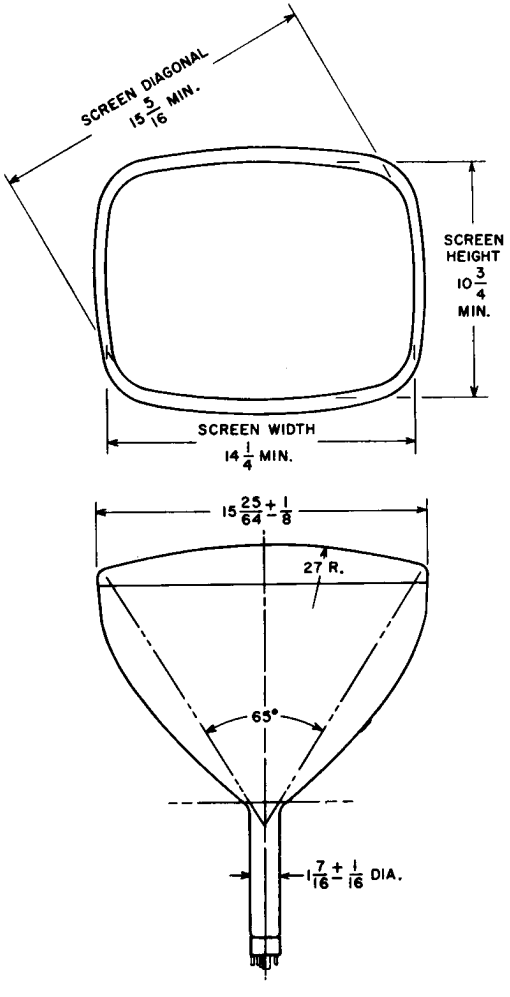


ALL DIMENSIONS IN INCHES

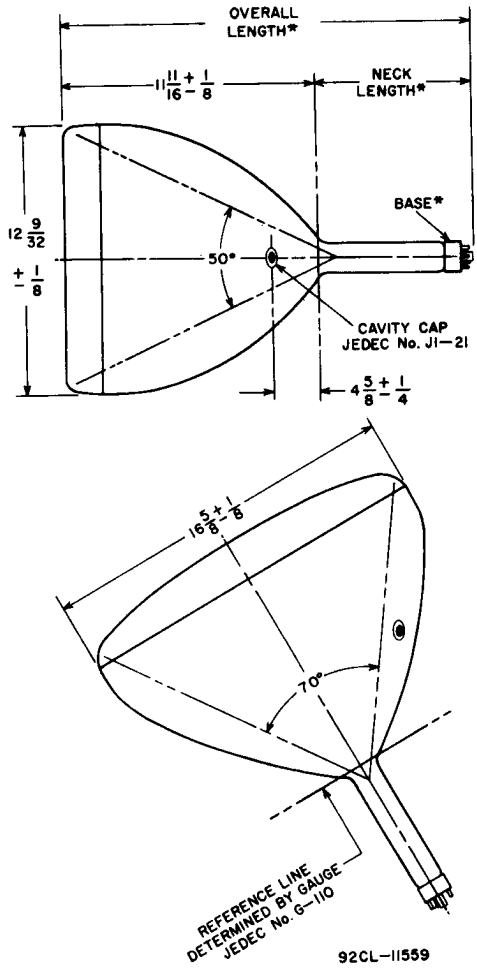
* See data for specific tube type.

Dimensional Outline

FOR PICTURE TUBES UTILIZING



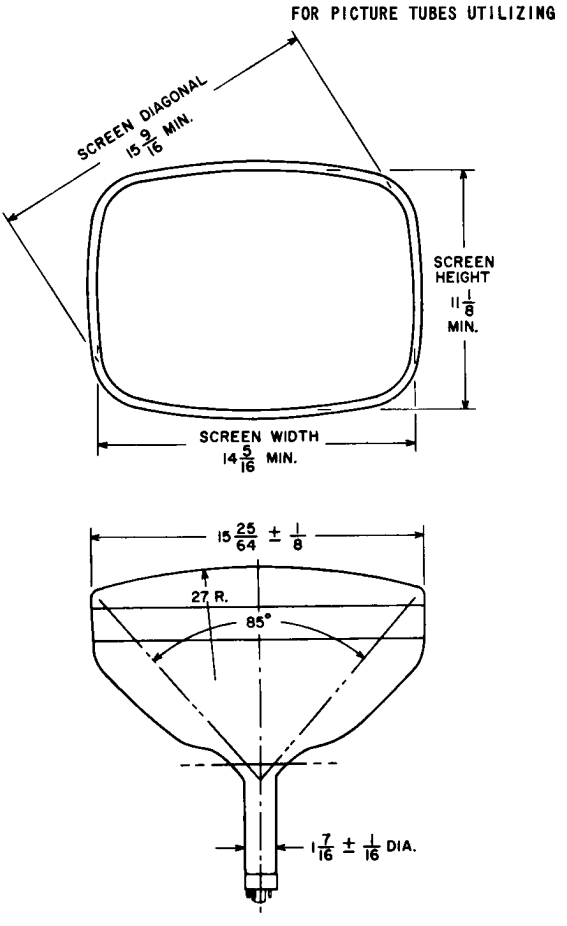
BULB J133 C/E



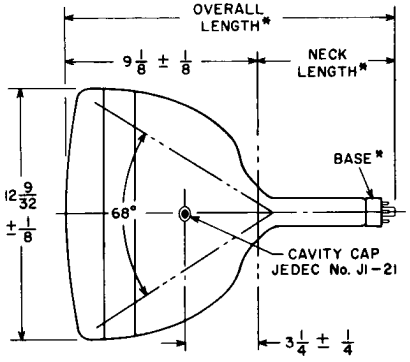
ALL DIMENSIONS IN INCHES

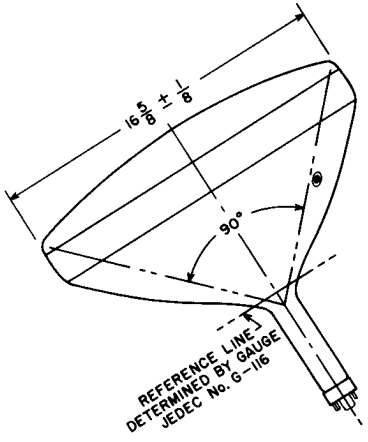
* See data for specific tube type.

Dimensional Outline



BULB J133 F/G





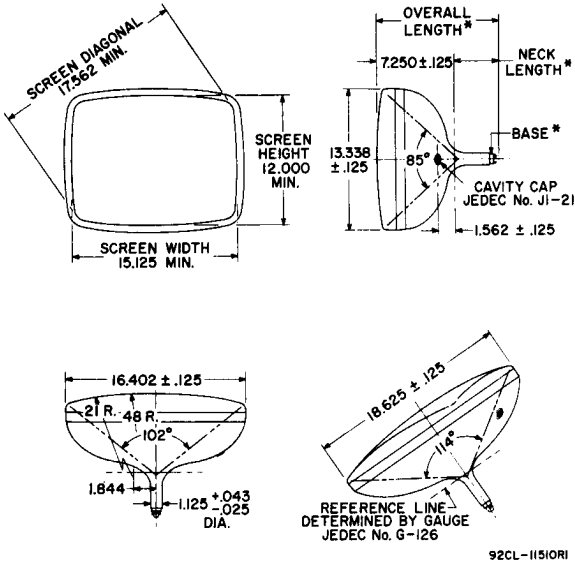
92CL-11557

DIMENSIONS IN INCHES

* See data for specific tube type.

Dimensional Outline — Bulb J149 A

FOR PICTURE TUBES UTILIZING BULB J149 A



92CL-11510RI

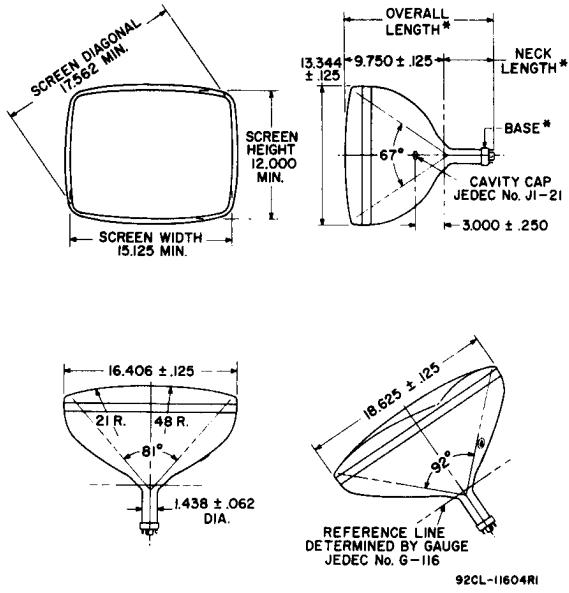
DIMENSIONS IN INCHES

* See data for specific tube type.

RADIO CORPORATION OF AMERICA
Electronic Components and Devices
Harrison, N. J.

Dimensional Outline — Bulb J149 B

FOR PICTURE TUBES UTILIZING BULB J149 B

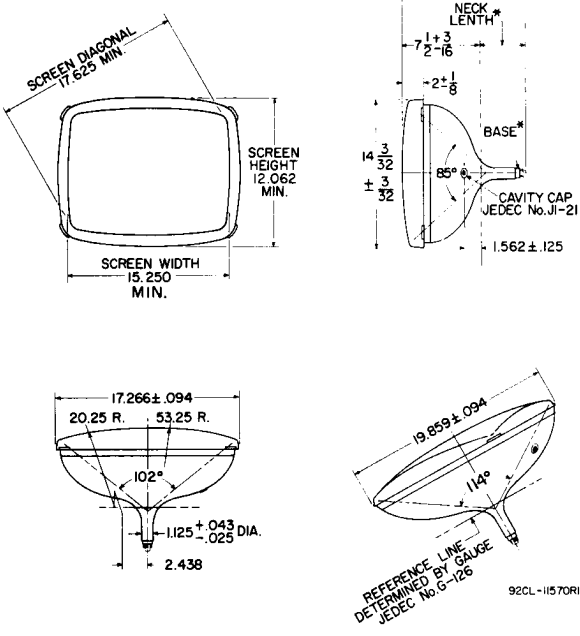


DIMENSIONS IN INCHES

* See data for specific tube type.

Dimensional Outline Bulb J149 C

FOR PICTURE TUBES UTILIZING BULB J149 C AND PROTECTIVE PANEL



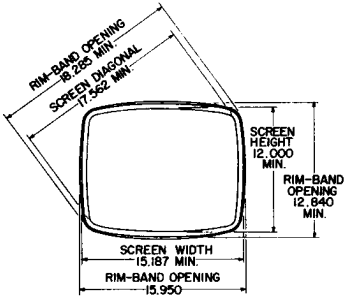
DIMENSIONS IN INCHES

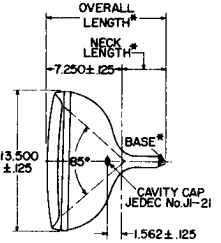
* See data for specific tube type.

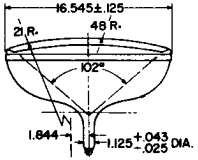
RADIO CORPORATION OF AMERICA
Electronic Components and Devices Harrison, N. J.

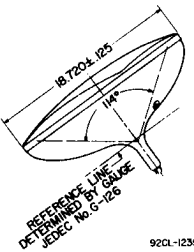
Dimensional Outline — Bulb J149 F

FOR PICTURE TUBES UTILIZING BULB J149 F







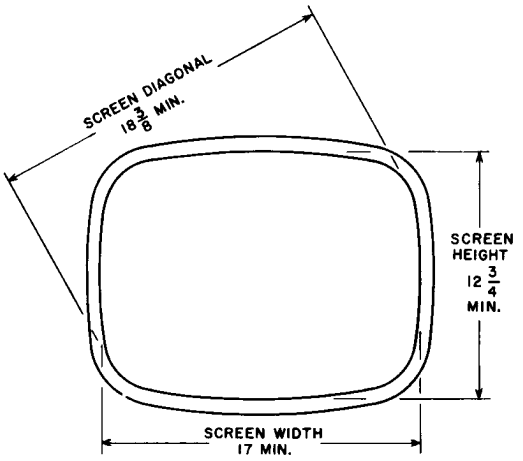


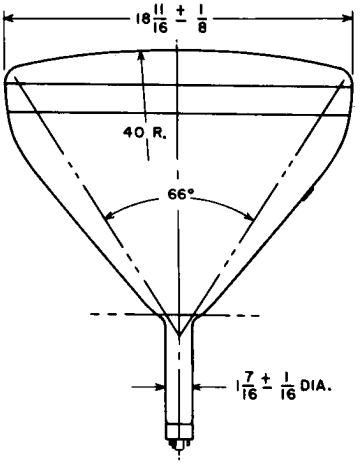
DIMENSIONS IN INCHES

*See data for specific tube type.

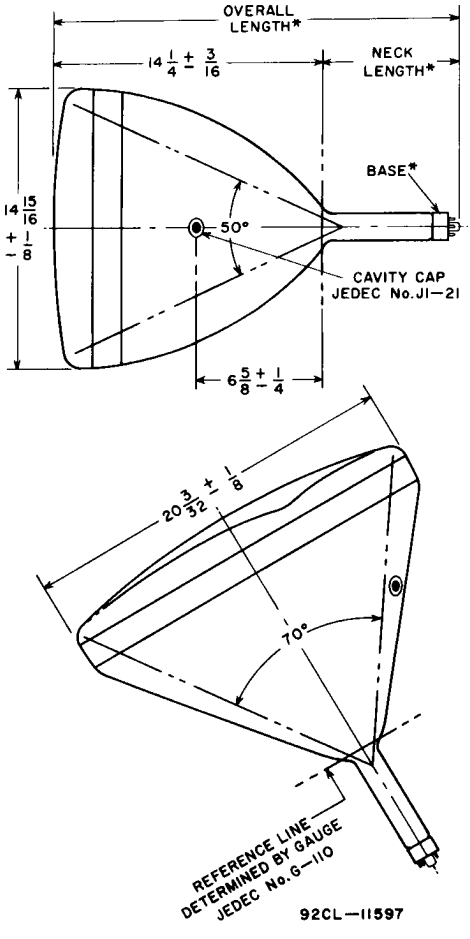
Dimensional Outline

FOR PICTURE TUBES UTILIZING BULB J161 C/D





BULB J161 C/D

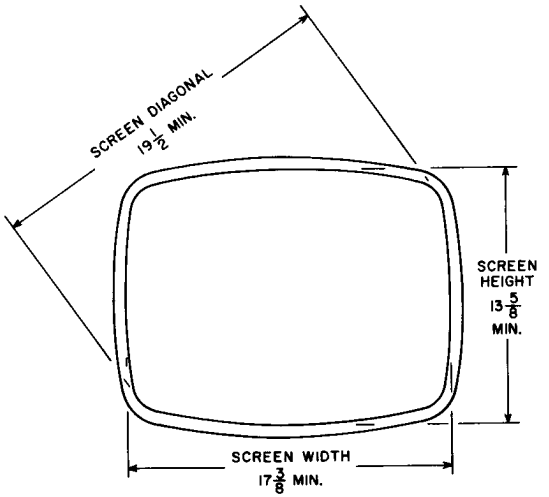


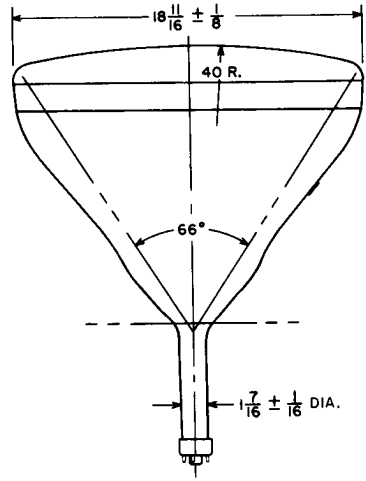
ALL DIMENSIONS IN INCHES

* See data for specific tube type.

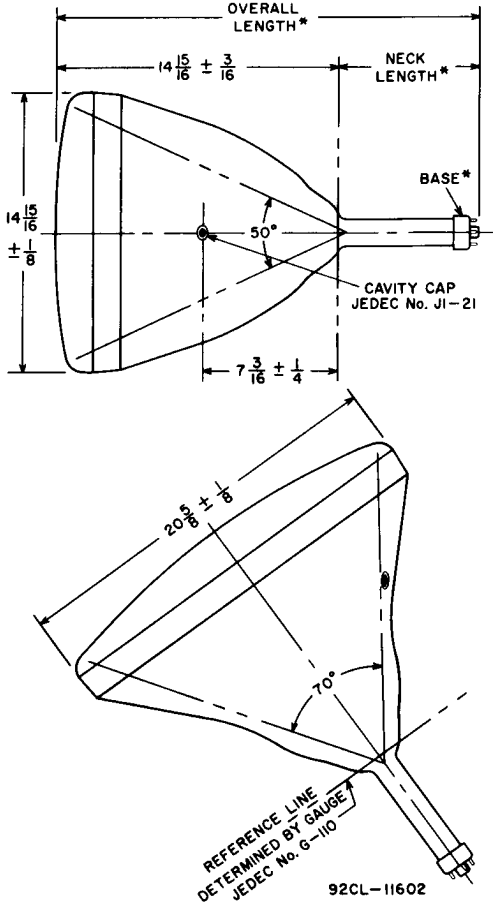
Dimensional Outline

FOR PICTURE TUBES UTILIZING





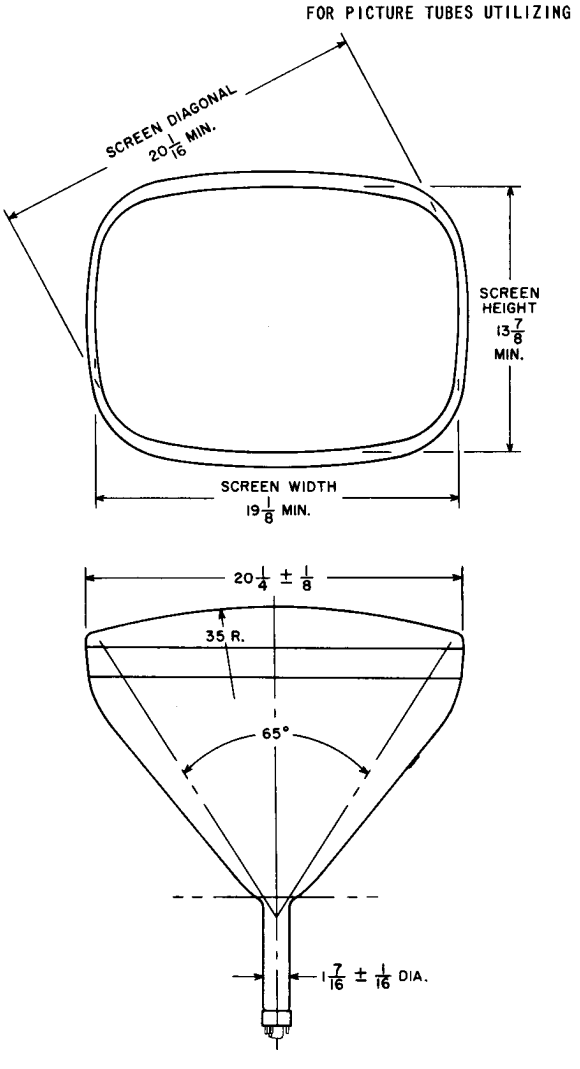
BULB J165 Z



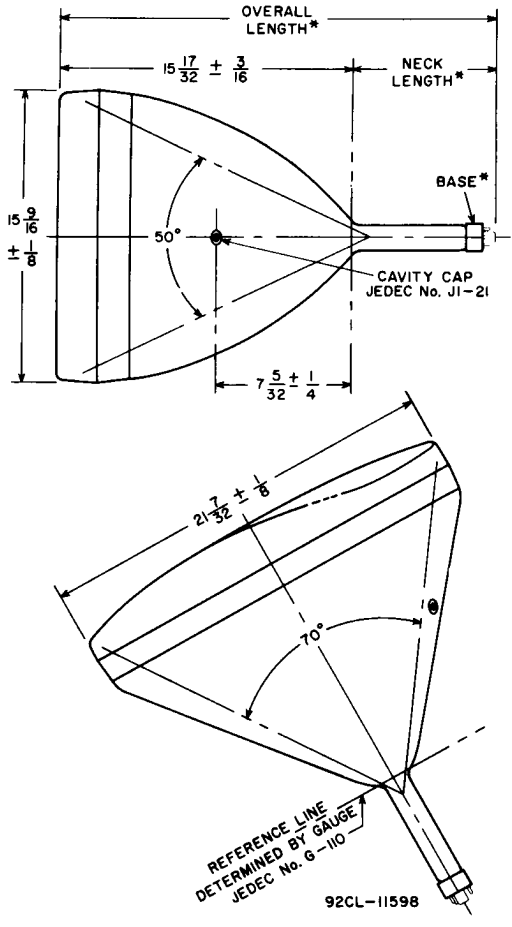
ALL DIMENSIONS IN INCHES

*See data for specific tube type.

Dimensional Outline



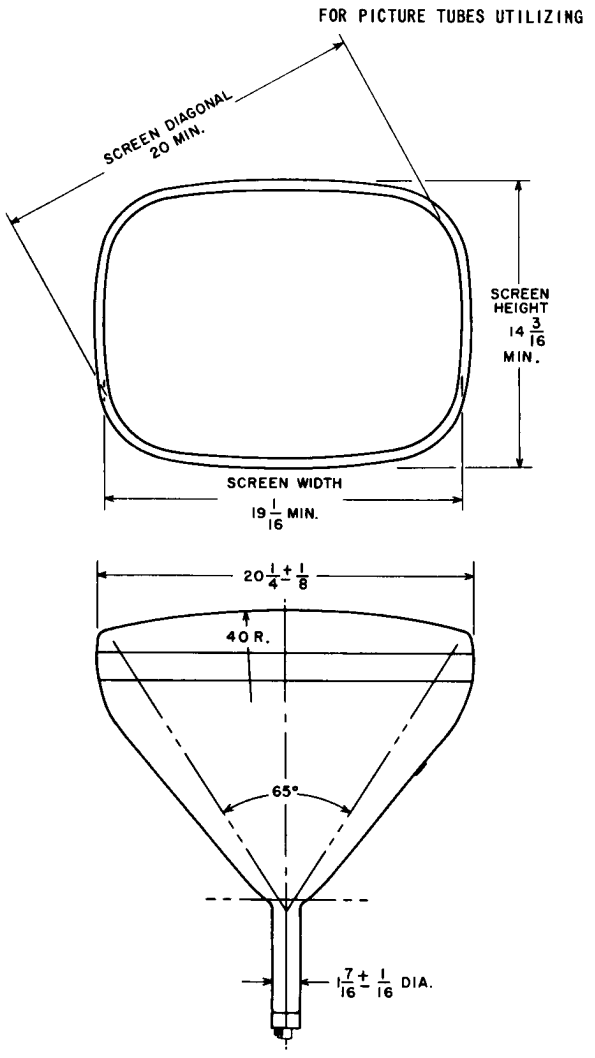
BULB J170 A/C



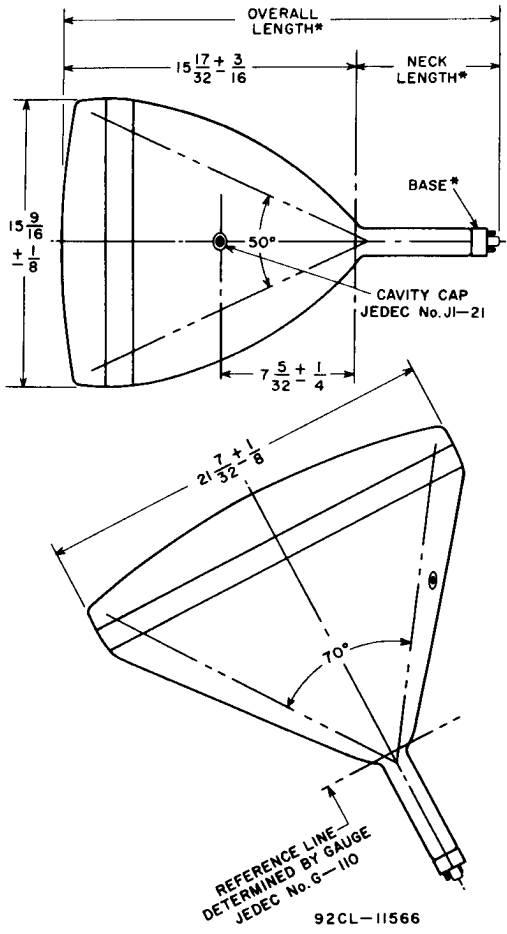
ALL DIMENSIONS IN INCHES

* See data for specific tube type.

Dimensional Outline



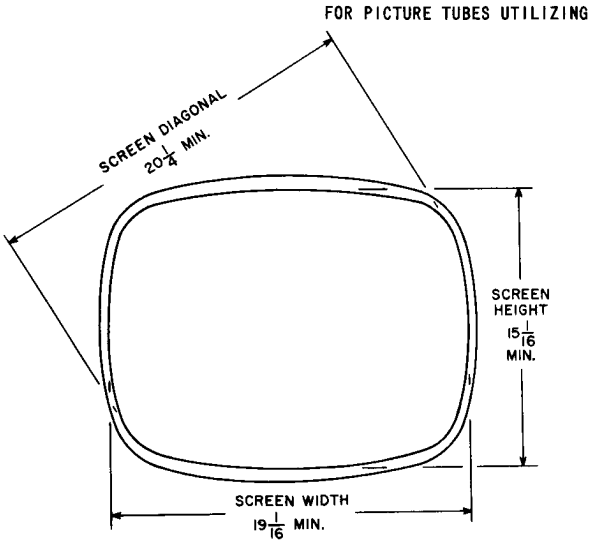
BULB J170 B/D

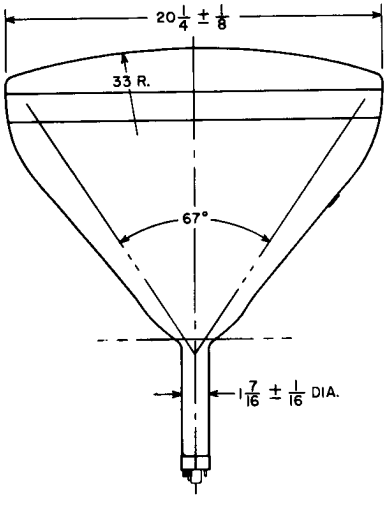


ALL DIMENSIONS IN INCHES

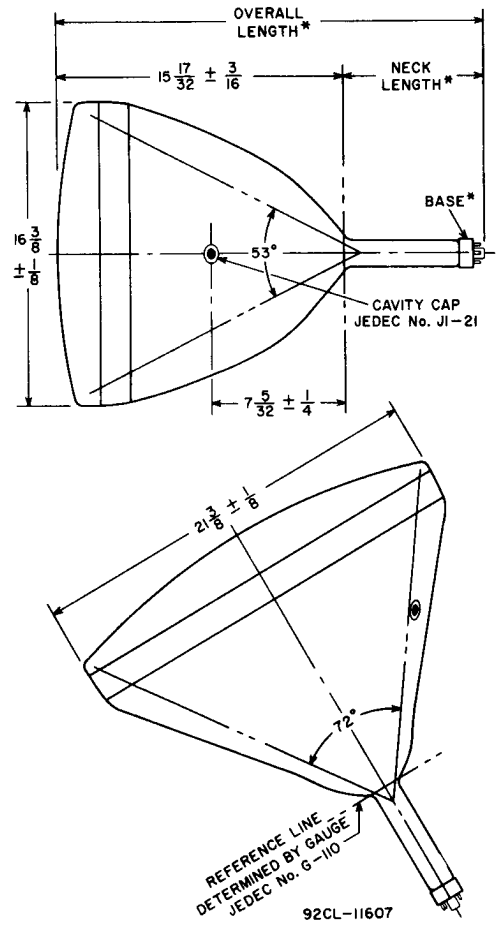
* See data for specific tube type.

Dimensional Outline





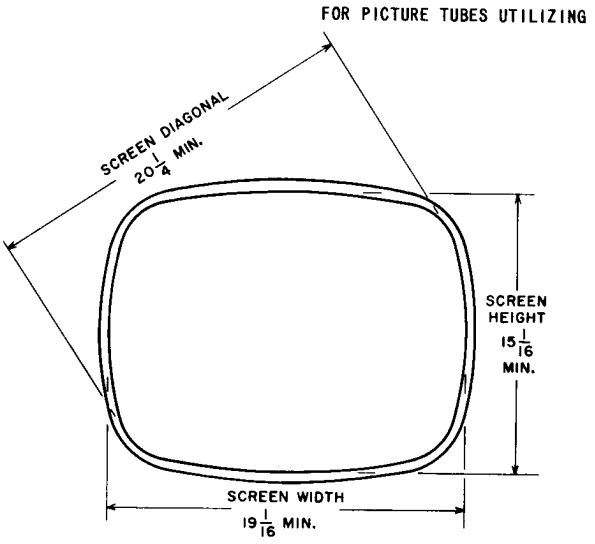
BULB J171 B/F

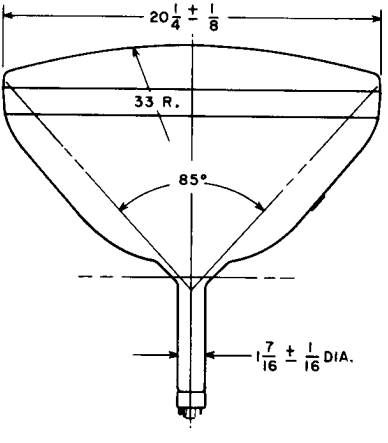


ALL DIMENSIONS IN INCHES

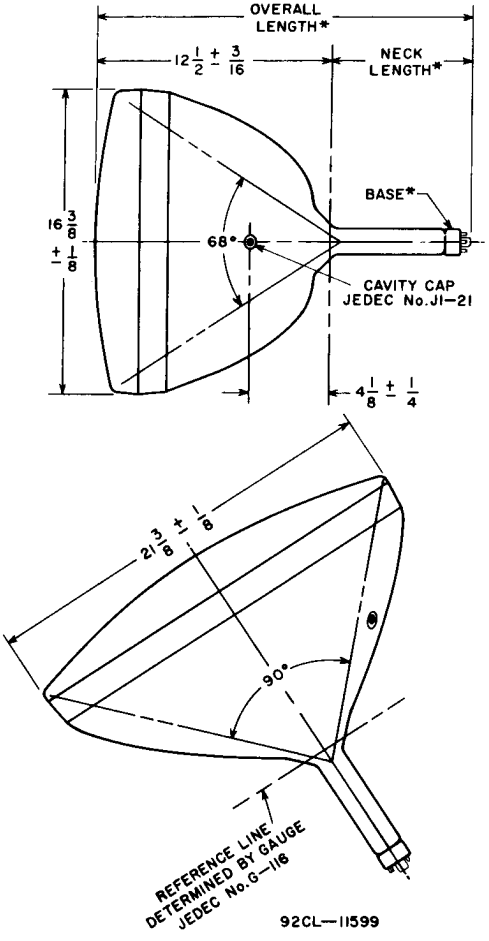
*See data for specific tube type.

Dimensional Outline





BULB J171 D/E

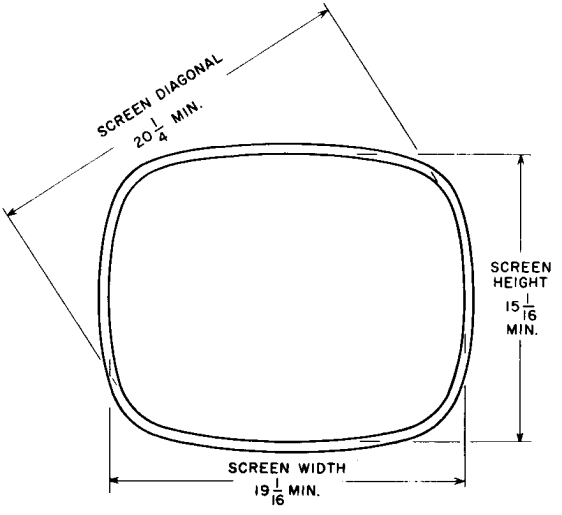


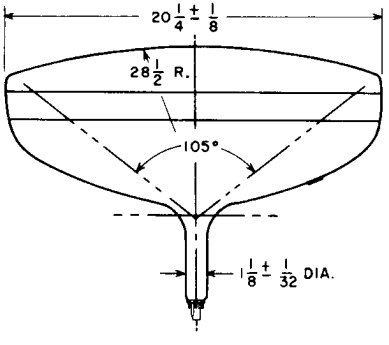
ALL DIMENSIONS IN INCHES

* See data for specific tube type.

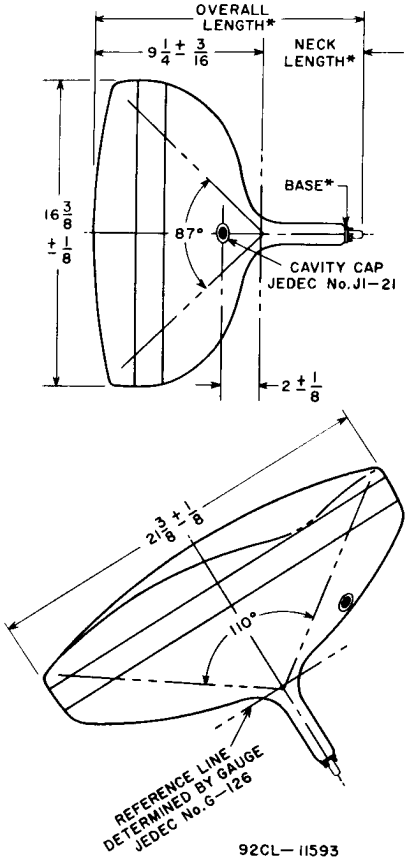
Dimensional Outline

FOR PICTURE TUBES UTILIZING





BULB J171 G/K

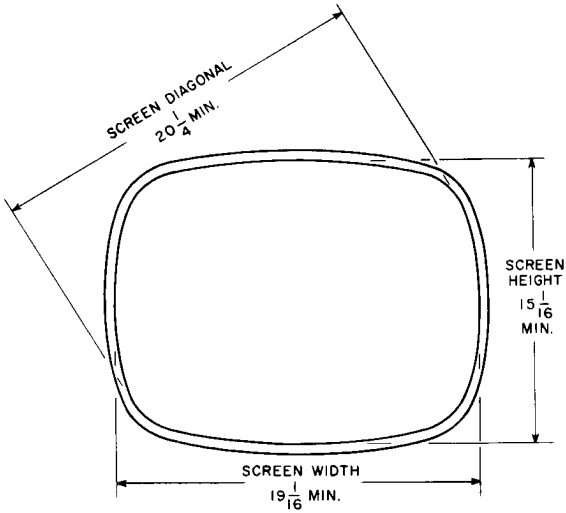


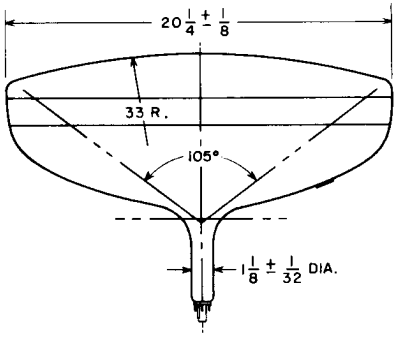
ALL DIMENSIONS IN INCHES

* See data for specific tube type.

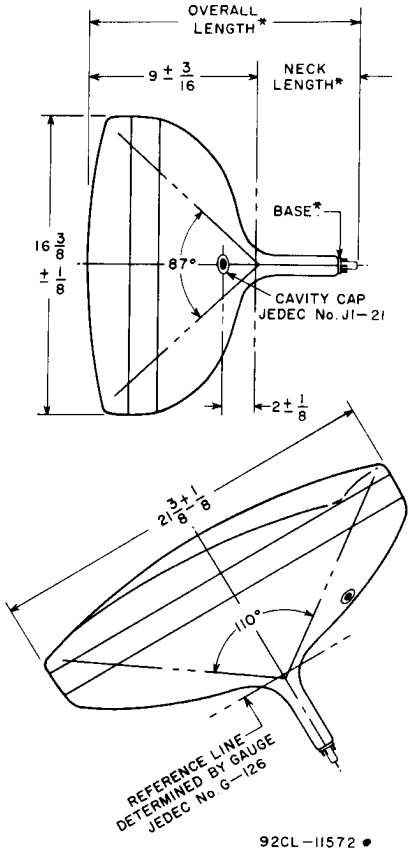
Dimensional Outline

FOR PICTURE TUBES UTILIZING





BULB J171 H/J

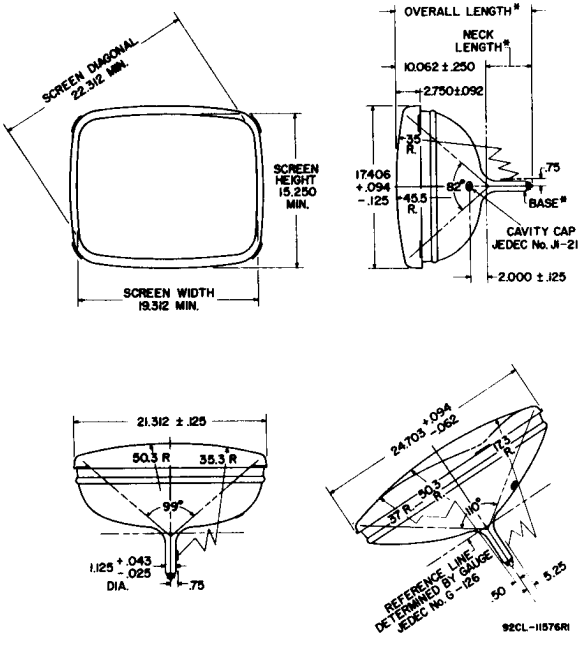


DIMENSIONS IN INCHES

*See data for specific tube type.

Dimensional Outline Bulb J187 A

FOR PICTURE TUBES UTILIZING BULB J187A
AND PROTECTIVE PANEL FP198



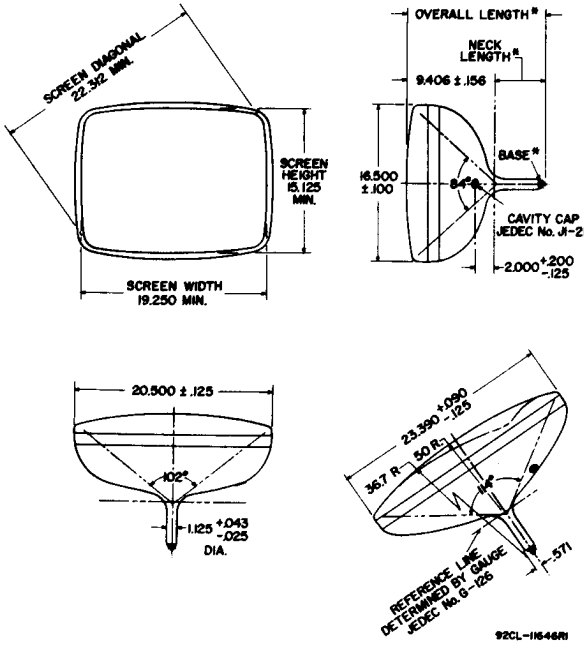
DIMENSIONS IN INCHES

* See data for specific tube type.

RADIO CORPORATION OF AMERICA
Electronic Components and Devices
Harrison, N. J.

Dimensional Outline — Bulb J187 B

FOR PICTURE TUBES UTILIZING BULB J187 B

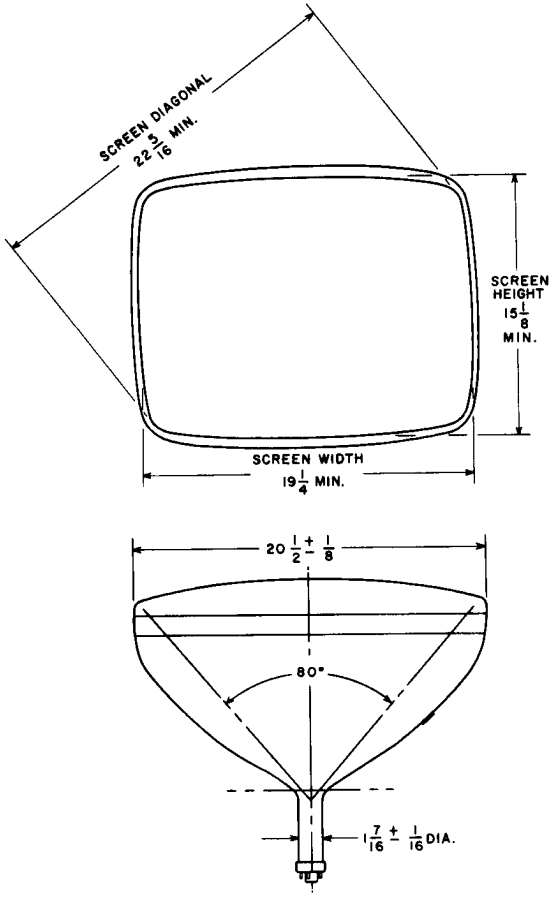


DIMENSIONS IN INCHES

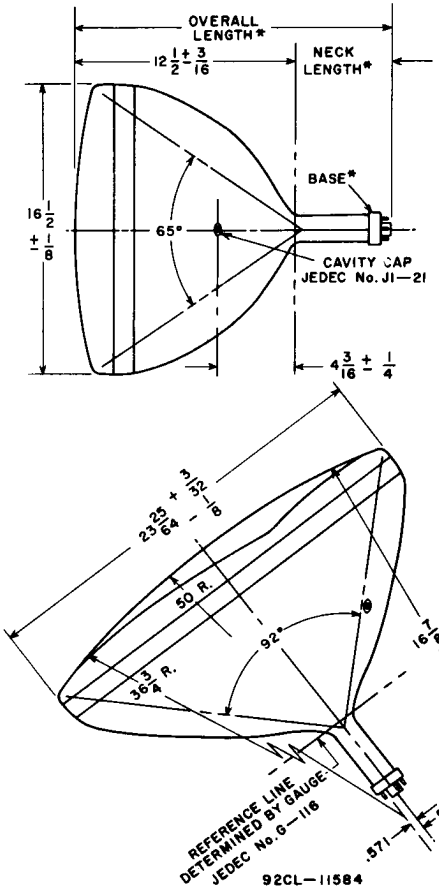
* See data for specific tube type.

Dimensional Outline

FOR PICTURE TUBES UTILIZING BULB J187 C/F



BULB J187 C/F

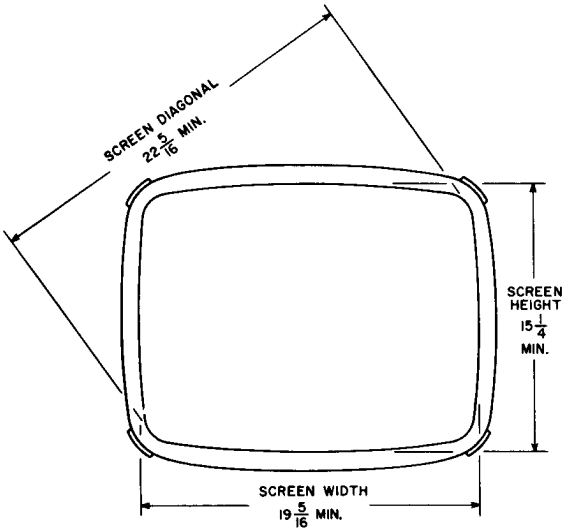


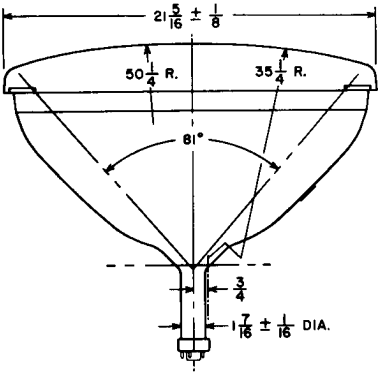
ALL DIMENSIONS IN INCHES

* See data for specific tube type.

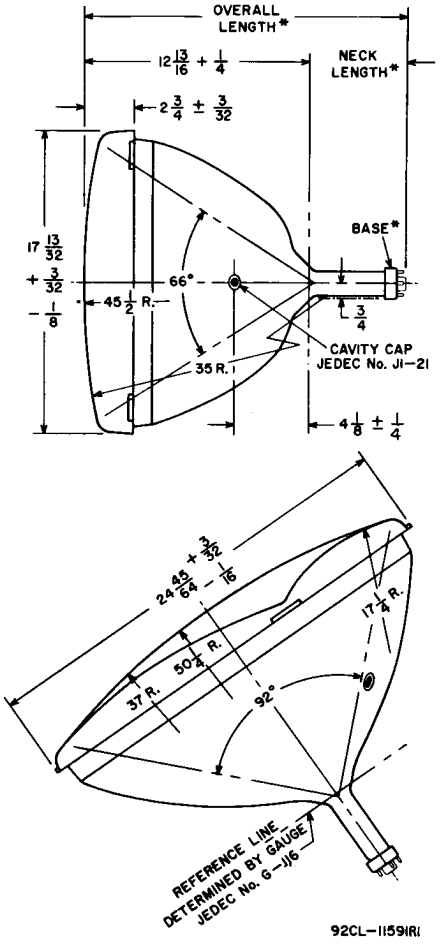
Dimensional Outline

FOR PICTURE TUBES UTILIZING





BULB J187 D/G AND PROTECTIVE PANEL

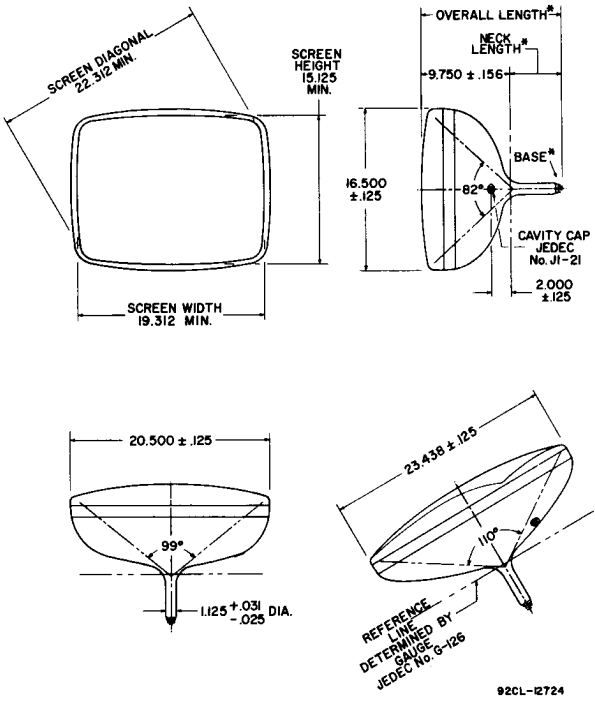


DIMENSIONS IN INCHES

*See data for specific tube type.

Dimensional Outline Bulb J187 E

FOR PICTURE TUBES UTILIZING BULB J187 E

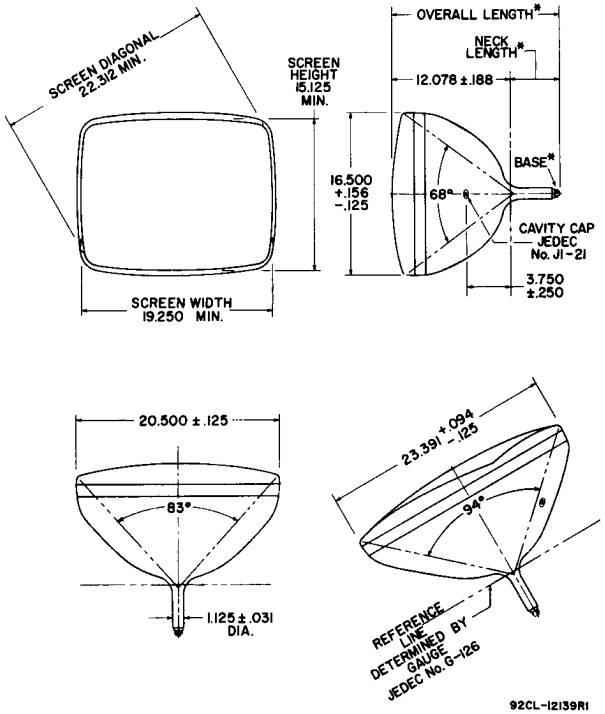


DIMENSIONS IN INCHES

*See data for specific tube type.

Dimensional Outline Bulb J187 H1

FOR PICTURE TUBES UTILIZING BULB J187 H1

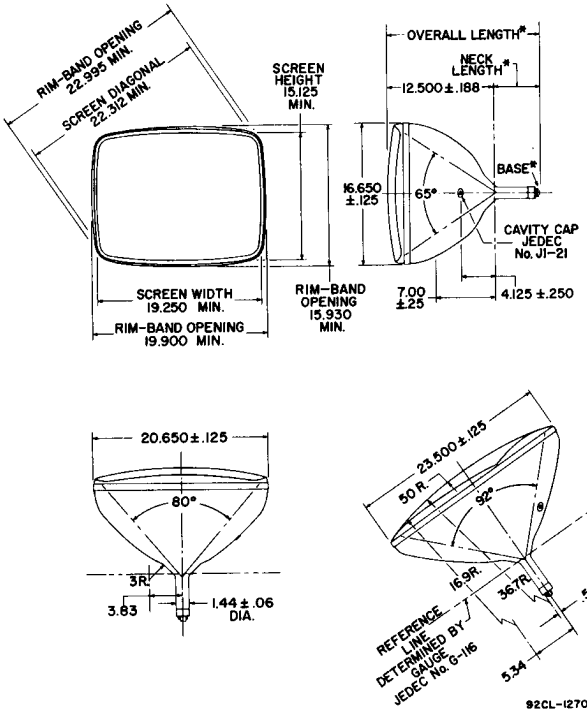


DIMENSIONS IN INCHES

*See data for specific tube type.

Dimensional Outline — Bulb J187 J

FOR PICTURE TUBES UTILIZING BULB J187 J

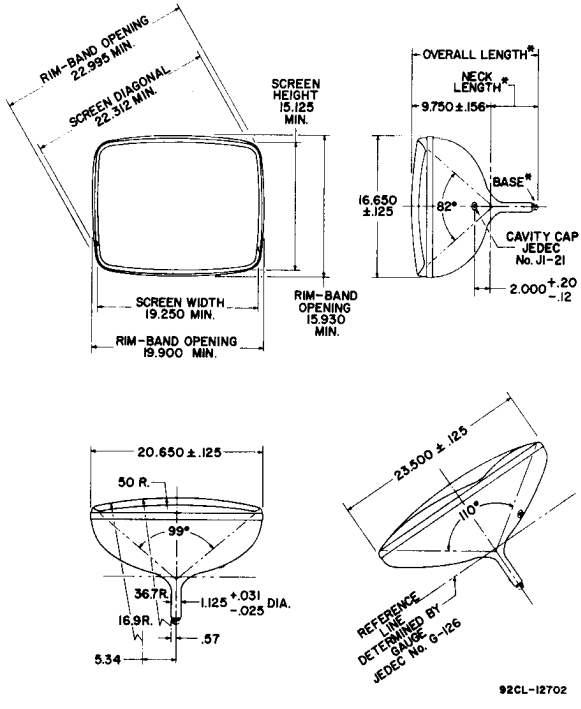


DIMENSIONS IN INCHES

*See data for specific tube type.

Dimensional Outline — Bulb J187 K

FOR PICTURE TUBES UTILIZING BULB J187 K

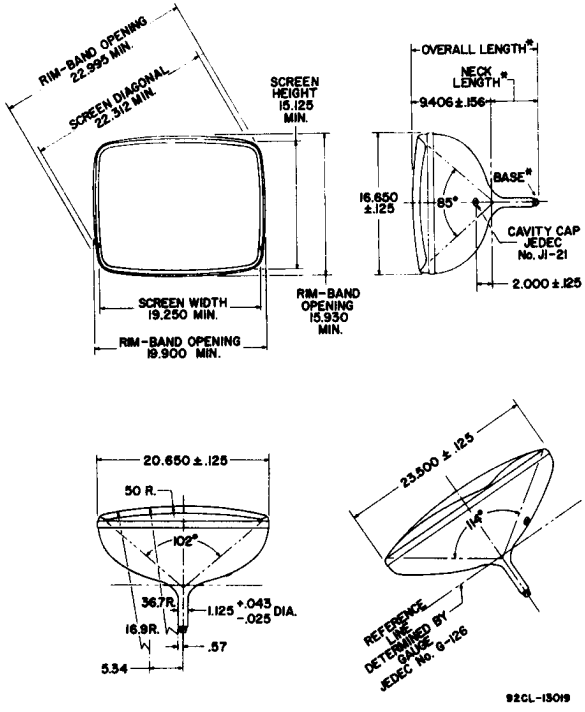


DIMENSIONS IN INCHES

*See data for specific tube type.

Dimensional Outline — Bulb J187 L

FOR PICTURE TUBES UTILIZING BULB J187 L



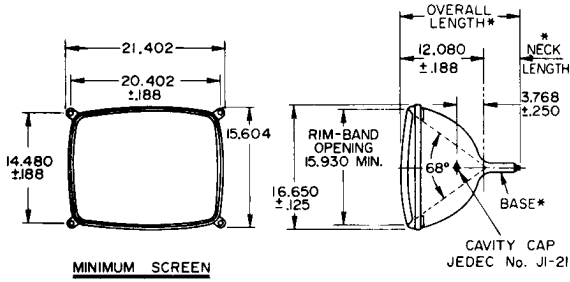
DIMENSIONS IN INCHES

*See data for specific tube type.

RADIO CORPORATION OF AMERICA
Electronic Components and Devices
Harrison, N. J.

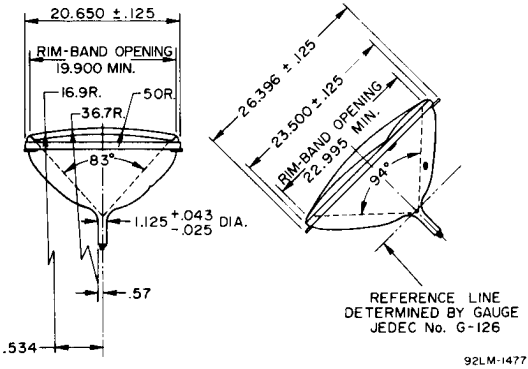
Dimensional Outline — Bulb J187M

FOR PICTURE TUBES UTILIZING BULB J187 M



MINIMUM SCREEN

DIAGONAL	22.312
GREATEST WIDTH	19.250
GREATEST HEIGHT	15.125



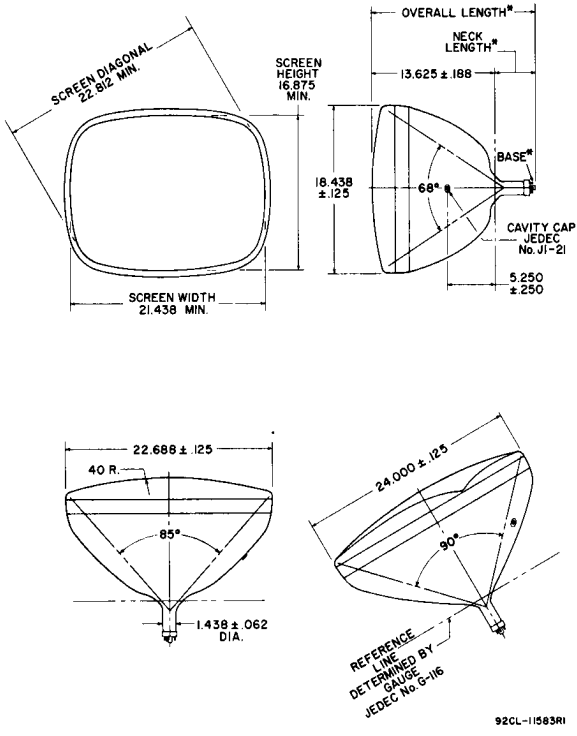
92LM-1477

DIMENSIONS IN INCHES

* See data for specific tube type.

Dimensional Outline Bulb J192 A/B

FOR PICTURE TUBES UTILIZING BULB J192 A/B



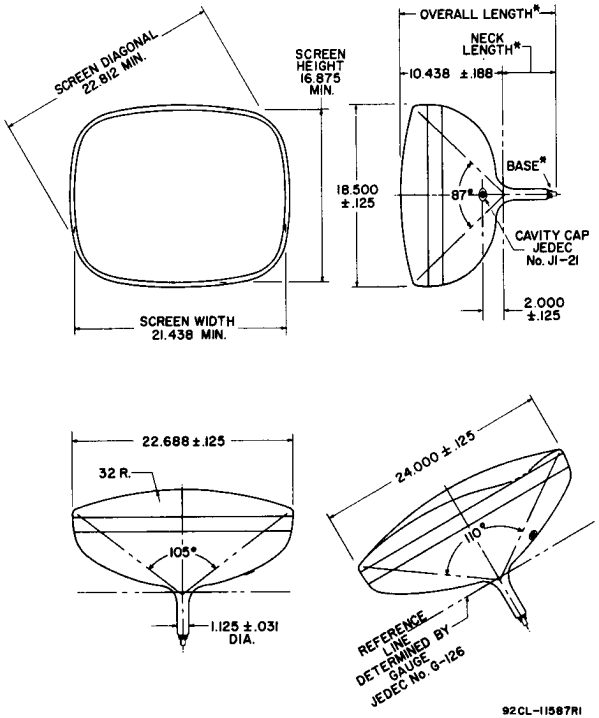
DIMENSIONS IN INCHES

* See data for specific tube type.

RADIO CORPORATION OF AMERICA
Electronic Components and Devices
Harrison, N. J.

Dimensional Outline Bulb J192 C/D

FOR PICTURE TUBES UTILIZING BULB J192 C/D

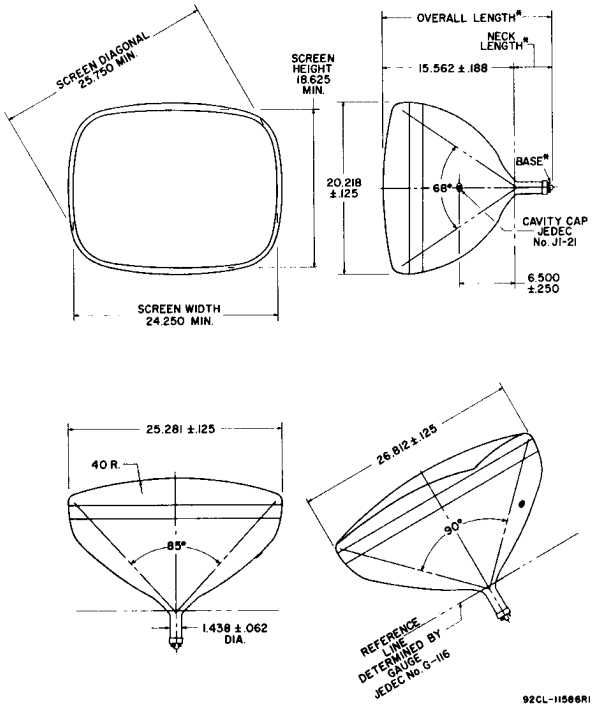


DIMENSIONS IN INCHES

*See data for specific tube type.

Dimensional Outline Bulb J214-1/2 A

FOR PICTURE TUBES UTILIZING BULB J214-1/2 A

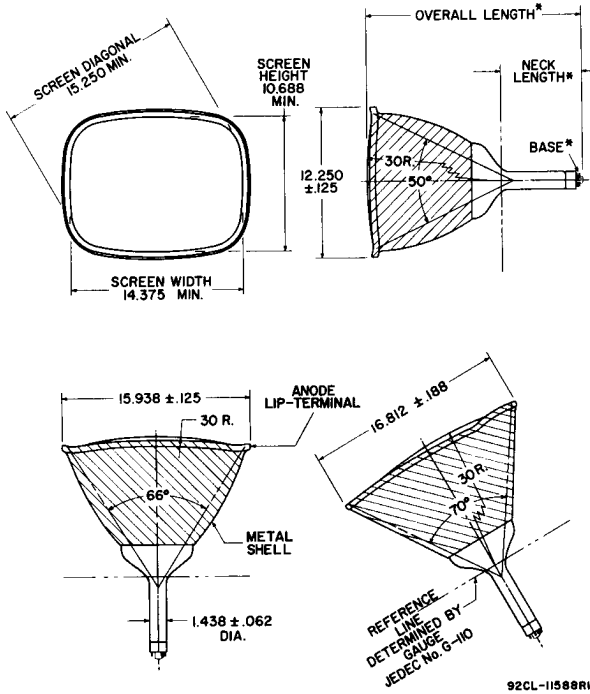


DIMENSIONS IN INCHES

*See data for specific tube type.

Dimensional Outline Bulb MJ135 A

FOR PICTURE TUBES UTILIZING BULB MJ135 A

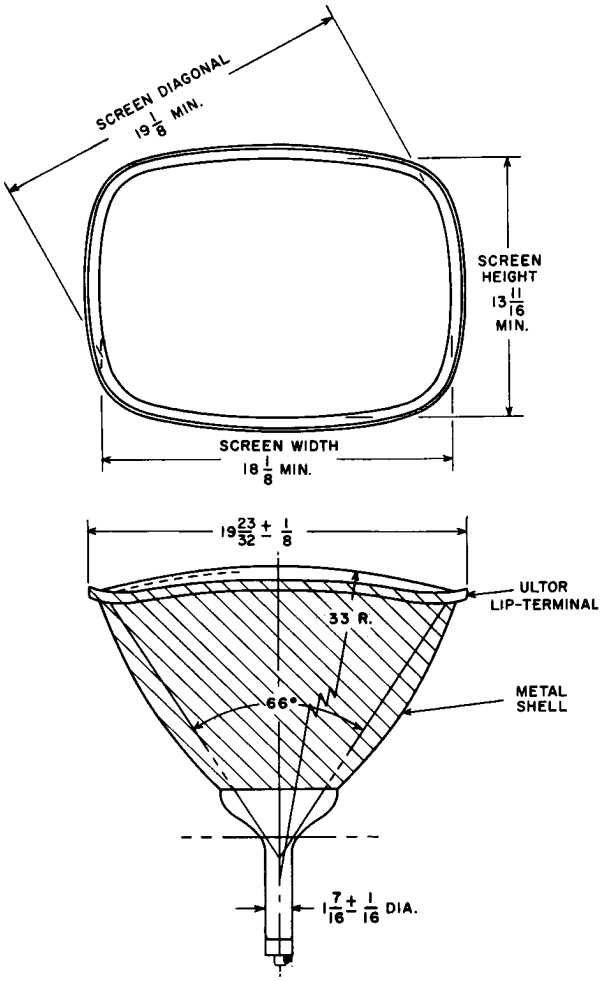


DIMENSIONS IN INCHES

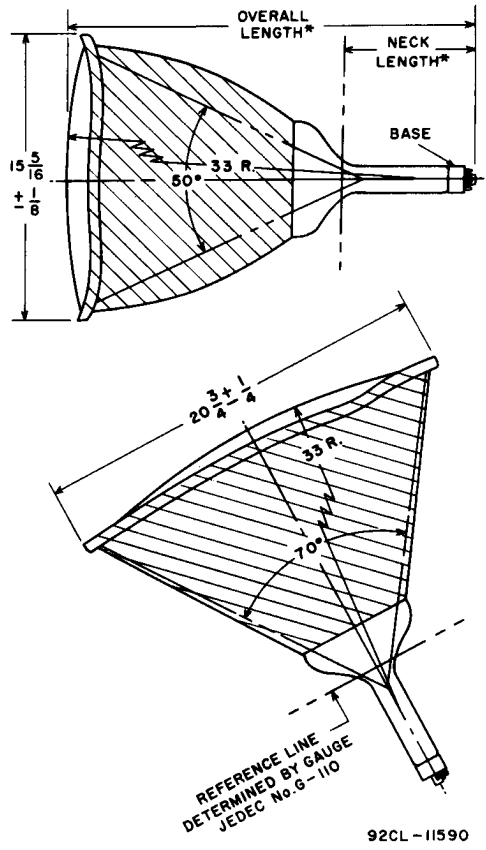
*See data for specific tube type.

Dimensional Outline

FOR PICTURE TUBES UTILIZING BULB MJ166 A



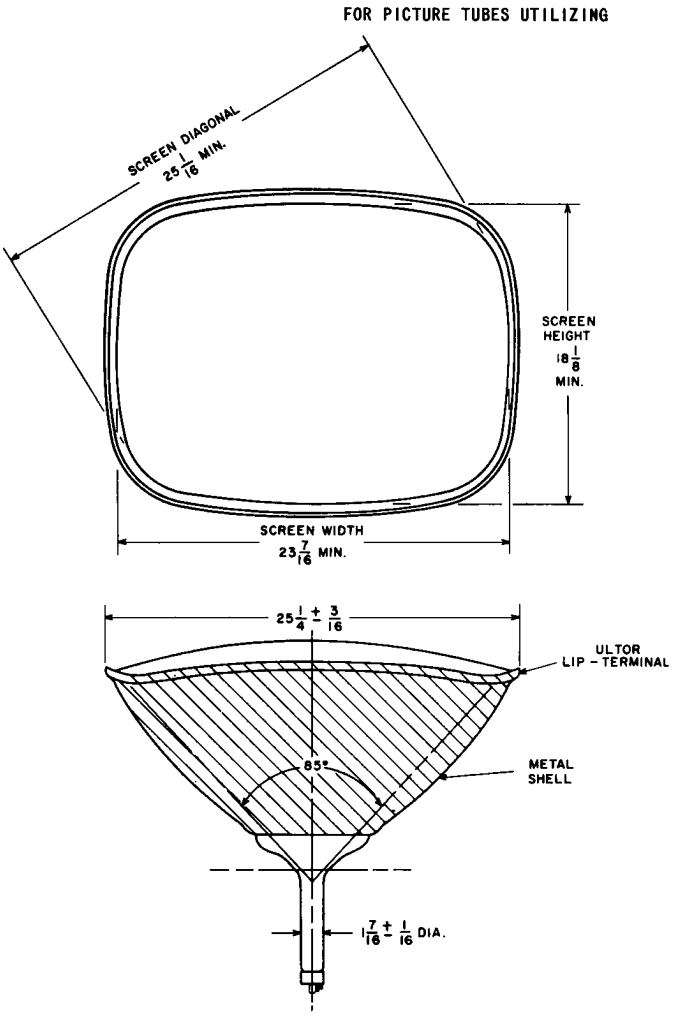
BULB MJ166 A



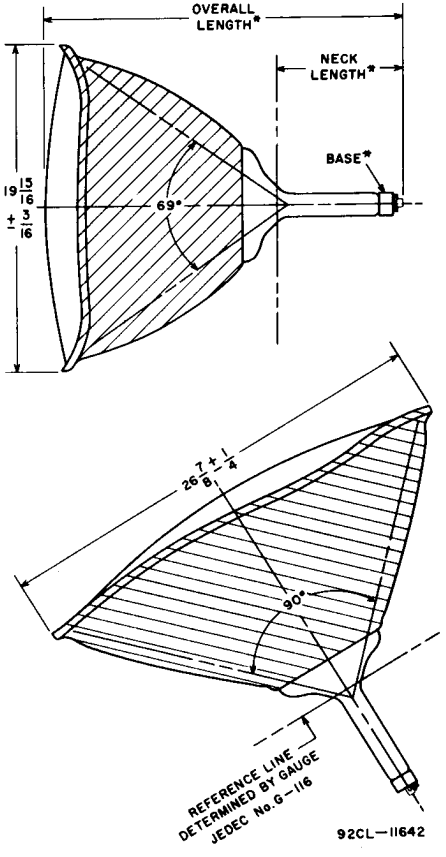
ALL DIMENSIONS IN INCHES

* See data for specific tube type.

Dimensional Outline



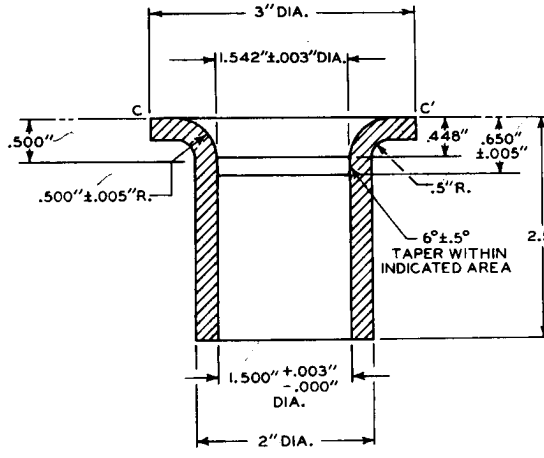
BULB MJ214 A



ALL DIMENSIONS IN INCHES

* See data for specific tube type.

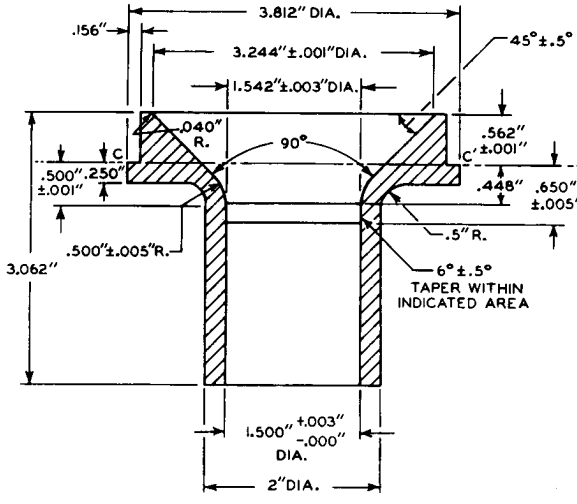
REFERENCE-LINE GAUGE
JETEC Nº G-110



WHEN TUBE NECK IS INSERTED THROUGH GAUGE, REFERENCE LINE WILL BE DETERMINED BY PLANE C-C'WHEN GAUGE IS RESTING ON FUNNEL.

92CS-7391RI

REFERENCE-LINE GAUGE
JETEC No. G-116

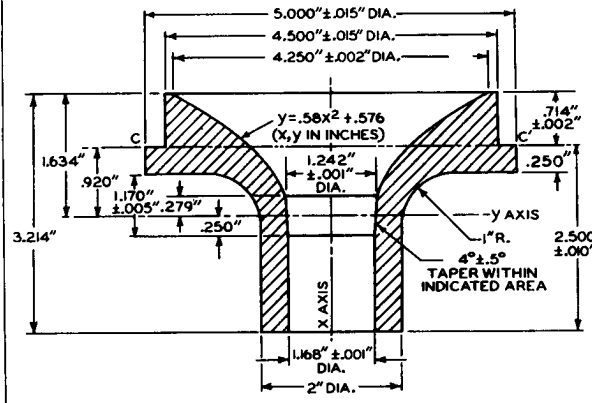


WHEN TUBE NECK IS INSERTED THROUGH GAUGE, REFERENCE LINE WILL BE DETERMINED BY PLANE C-C' WHEN GAUGE IS RESTING ON FUNNEL.

92CS-7896R1

ELECTRON TUBE DIVISION
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

REFERENCE-LINE GAUGE
JETEC Nº G-126



WHEN TUBE NECK IS INSERTED THROUGH GAUGE, REFERENCE LINE WILL BE DETERMINED BY PLANE C-C' WHEN GAUGE IS RESTING ON FUNNEL.

"y" VALUES MUST BE HELD TO ±.002".

92CS-9145RI

X-Radiation Precautions

For Cathode-Ray Tubes

WARNING

All types of cathode-ray tubes may be operated at voltages (where ratings permit) up to 16 kilovolts without personal injury on prolonged exposure at close range.

Above 16 kilovolts, special shielding precautions for X radiation may be necessary.

Definitions

Of Cathode-Ray-Tube Terms

Ultor. The "ultor" in a cathode-ray tube is the element to which is applied the highest dc voltage for accelerating the electrons in the beam prior to its deflection.

Post-Ultor. The "post-ultor" in a cathode-ray tube is the element to which is applied a dc voltage higher than the ultor voltage for accelerating the electrons in the beam after its deflection.

RADIO CORPORATION OF AMERICA
Electron Tube Division Harrison, N. J.