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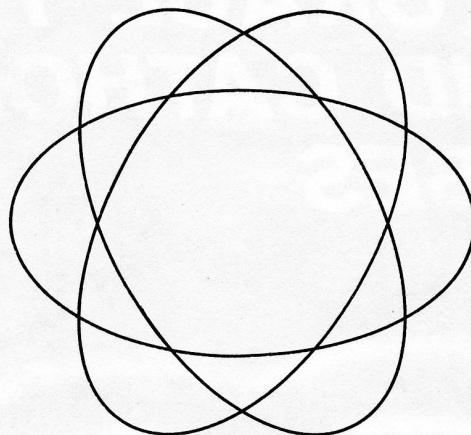
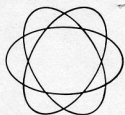
RCA STORAGE TUBES AND CATHODE-RAY TUBES



RADIO CORPORATION OF AMERICA
ELECTRONIC COMPONENTS AND DEVICES, HARRISON, N. J.

* SUGGESTED PRICE

BOOKLET STC-900B



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Classification Charts

SPECIAL-PURPOSE KINESCOPES

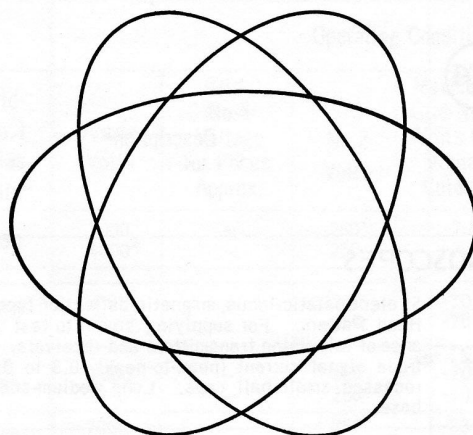
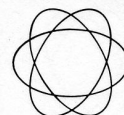
Monoscopes	Monitor Kinescopes
2F21	7CP4
1699	7TP4
	8HP4
Transcriber Kinescopes	8NP4
5WP11	10SP4
	14BAP4
	17DWP4
View-Finder Kinescopes	21EYP4
5FP4A	
	Flying-Spot
Projection Kinescopes	Cathode-Ray Tubes
5AZP4	5AUP24
7NP4	5WP15
7WP4	5ZP16
4486	4407

OSCILLOGRAPH-TYPE CATHODE-RAY TUBES

1EP1	3RP1A	5UP1
1EP2	3RP7A	5UP7
1EP11	3WP1	5UP11
2AP1A	3WP11	5UP31
2BP1	5ABP1	7BP7A
2BP11	5ABP11	7MP7
3AP1A	5ABP31	7VP1
3AQP1	5ADP1	7VP31
3BP1A	5ADP31	902A
3JP1	5BP1A	4489
3JP7	5CP1A	4490
3KP1	5CP11A	4491
3KP7	5CP12	4499
3KP11	5FP7A	4510
3RP1	5FP15A	

STORAGE TUBES

Display-Storage Types
4412
2028
2053
4454
6866
7183
7183A
7268B
7315
Radechons
1858
6499
Graphechons
(Scan-Conversion Tubes)
7539



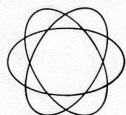
Index to Types

Type	Page	Type	Page	Type	Page
1EP1	6,7	5CP11A	10,11	902A	8,9
1EP2	6,7	5CP12	10,11	1699	4,5
1EP11	6,7	5FP4A	4,5	1858	13
2AP1A	8,9	5FP7A	12,13	2028	12
2BP1	8,9	5FP15A	12,13	2053	12
2BP11	8,9	5UP1	8,9	4407	6,7
2F21	4,5	5UP7	8,9	4412	12
3AP1A	8,9	5UP11	8,9	4454	12
3AQP1	8,9	5UP31	8,9	4486	6,7
3BP1A	8,9	5WP11	4,5	4489	10,11
3JP1	10,11	5WP15	6,7	4490	10,11
3JP7	10,11	5ZP16	6,7	4491	10,11
3KP1	8,9	7BP7A	12,13	4499	8,9
3KP7	8,9	7CP4	4,5	4510	10,11
3KP11	8,9	7MP7	12,13	6499	13
3RP1	8,9	7NP4	6,7	6866	12
3RP1A	8,9	7TP4	4,5	7183	12
3RP7A	8,9	7VP1	8,9	7183A	12
3WP1	8,9	7VP31	8,9	7268B	12
3WP11	8,9	7WP4	6,7	7315	12
5ABP1	10,11	8HP4	4,5	7539	13
5ABP11	10,11	8NP4	4,5		
5ABP31	10,11	10SP4	4,5		
5ADP1	10,11	14BAP4	4,5		
5ADP31	10,11	17DWP4	4,5		
5AUP24	6,7	21EYP4	4,5		
5AZP4	6,7				
5BP1A	8,9				
5CP1A	10,11				

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Type	Description ^a	Maximum Dimensions		Min. Useful Screen Diam. Inches
		Overall Length Inches	Envelope Diam. Inches	

MONOSCOPES

2F21	5" electrostatic-focus, magnetic-deflection type with Indian Head Pattern. For supplying signal to test video performance of television transmitters and receivers. Pattern-electrode signal current (peak-to-peak), 0.3 to 0.7 μ amp. Two recessed small ball caps. Long medium-shell small 6-pin base.	12-11/16	5-1/16	—
1699	Custom-built type like the 2F21 except that its pattern is individually styled to customer requirements.			

TRANSCRIBER KINESCOPIES^k

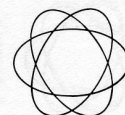
5WP11	5" electrostatic-focus and magnetic-deflection type having a flat aluminized screen and external conductive coating. For use in kinescope film recording. Recessed small-cavity cap. Small-shell duodecal 7-pin base.	11-13/16	5-1/8	4-1/4
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VIEW-FINDER KINESCOPIES^k

5FP4A	5" magnetic-focus-and-deflection type. For use as an electronic viewfinder in television cameras. Recessed small ball cap. Long medium-shell octal 8-pin base.	11-1/2	5-1/32	4-1/4
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MONITOR KINESCOPIES^k

7CP4	For renewal use. For new equipment design, use the 7TP4.	13-13/16	7-1/8	6-1/2
7TP4	7" directly viewed, electrostatic-focus, magnetic-deflection type. Has high resolution and an aluminized screen. Recessed small cavity cap. Small-shell duodecal 6-pin base.	13-1/2	7-5/16	6
8HP4	Small, compact, 8-inch, directly-viewed rectangular kinescope. Electrostatic focus, magnetic deflection. Recessed small cavity cap. Small-shell duodecal 6-pin base.	10-1/4	8-1/2 ^q	7-13/16 ^q
8NP4	Small, compact 8-inch, directly-viewed rectangular kinescope. Electrostatic focus, magnetic deflection. Recessed small cavity cap. Small-shell duodecal 6-pin base.	9-15/16	8-1/2 ^q	7-3/4 ^q
10SP4	10" directly-viewed, electrostatic-focus, magnetic-deflection type. Has high resolution, a Filterglass faceplate and an aluminized screen. Recessed small cavity cap. Small-shell duodecal 6-pin base.	17	10-9/16	9-1/8
14BAP4	14" directly-viewed, electrostatic-focus, magnetic-deflection type. Has a Filterglass faceplate and an aluminized screen. Recessed small cavity cap. Small-shell duodecal 6-pin base.	17-5/32	13-13/16 ^q	12-3/4 ^q
17DWP4	17" directly-viewed, electrostatic-focus, magnetic-deflection type. Has a Filterglass faceplate and an aluminized screen. Recessed small cavity cap. Small-shell duodecal 6-pin base.	19-9/16	16-3/4 ^q	15-9/16 ^q
21EYP4	21" directly-viewed, electrostatic-focus, magnetic-deflection type. Has a Filterglass faceplate and an aluminized screen. Recessed small cavity cap. Small-shell duodecal 6-pin base.	23-13/32	21-1/2 ^q	20-1/4 ^q



Maximum Ratings ^b				Operating Conditions					Type
Anode Volts	Grid-No.3 Volts	Grid-No.2 Volts	Grid-No.1 Bias Volts ^c	Anode Volts	Grid-No.3 Voltage for Focus Approx.	Grid-No.2 Volts	Maximum Grid-No.1 Volts for Visual Cutoff ^d	Deflection Angle	

MONOSCOPES

1500 ^f	600	1600	-125 ^g	1000 ^h	240 to 360	1000	-10 to -70 ^j	—	—	2F21
For additional data, refer to type 2F21.										1699

TRANSCRIBER KINESCOPES^k

27000	6000	350	-150	27000	4200 to 5400 ^m	200	-98	50° approx.		5WP11
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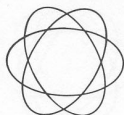
VIEW-FINDER KINESCOPES^k

8000	—	410	-125	6000	—	250	-70	53° approx.		5FP4A
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MONITOR KINESCOPES^k

8000	2400	300	-125	6000	912 to 1368	250	-67.5	57° approx.		7CP4
12000	2000	410	-125	10000	1170 to 1590 ⁿ	200	-48 ^p	50° approx.		7TP4
14000 ^r	+1100 ^{rs} -550 ^{rs}	550 ^r	-155 ^r	11000	0 to 400 ^{ns}	300	-72 ^p	90° approx. ^q		8HP4
22000 ^r	+1100 ^{rs} -550 ^{rs}	550 ^r	-155 ^r	16000	200 ^s	300	-72 ^p	90° approx. ^q		8NP4
20000	3000	410	-125	14000 12000	1640 to 2225 1400 to 1900	200 200	-48 -48	50° approx.		10SP4
22000 ^r	800 ^{rs}	700 ^r	-180 ^r	18000	0 to 400 ^s	300	-72 ^p	70° approx. ^q		14BAP4
22000 ^r	800 ^{rs}	700 ^r	-180 ^r	18000	0 to 400 ^s	300	-72 ^p	70° approx. ^q		17DWP4
22000 ^r	800 ^{rs}	700 ^r	-180 ^r	18000	0 to 400 ^s	300	-72 ^p	72° approx. ^q		21EYP4

For Footnotes, See Page 13.



Special-Purpose

Type	Description ^a	Maximum Dimensions		Min. Useful Screen Diam. Inches
		Overall Length Inches	Envelope Diam. Inches	

FLYING-SPOT CATHODE-RAY TUBES

5AUP24	5" electrostatic-focus, magnetic-deflection type. Intended primarily for use as a scanner in a color video-signal generator. Features usable radiant energy output over the visible spectrum, extremely short persistence, high resolution, aluminized screen, and external conductive coating. Recessed small cavity cap. Small-shell duodecal 7-pin base.	12-7/8	5-1/8	4-1/4
5WP15	5" electrostatic-focus, magnetic-deflection type. Intended primarily for use as a scanner in a video-signal generator. Features aluminized screen, extremely short persistence, and external conductive coating. Recessed small cavity cap. Small-shell duodecal 7-pin base.	11-13/16	5-1/8	4-1/4
5ZP16	5" electrostatic-focus, magnetic-deflection type. Intended primarily for use as a scanner in a video-signal generator. Features extremely short persistence, high resolution, aluminized screen, and external conductive coating. Recessed small cavity cap. Small-shell duodecal 7-pin base.	14-3/4	5-1/8	4-1/4
4407	5" magnetic focus and deflection type. Intended primarily for use as a scanner in a video-signal generator. Features extremely short persistence P-16 phosphor and low operating voltage. Recessed small-ball cap. Medium-shell octal 8-pin base.	11-1/2	5-1/32	4-1/4

PROJECTION KINESCOPIES^k

5AZP4	5" electrostatic-focus, magnetic-deflection type. Provides an 8' by 6' picture. Integral flexible anode lead. Small-shell duodecal 7-pin base.	12-9/16	5-1/8	4-1/2
7NP4 4486	Similar to 7WP4 except provides a 20' by 15' picture at a projection-throw distance of about 60'. 7NP4 is supplied with medium-cap anode terminal. 4486 is supplied with fitted high-voltage anode cable. ^l	20-1/8	7-3/16 ^u	5x3-3/4 ^v
7WP4	7" electrostatic-focus, magnetic-deflection type. Intended for theater-television use. Provides a 20' by 15' picture at a projection-throw distance of about 80'. Medium cap. Small-shell diheptal 14-pin base. ^t	20-1/16	7-3/16 ^u	5x3-3/4 ^v



Oscillograph-Type

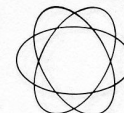
ELECTROSTATIC FOCUS AND DEFLECTION TYPES

Flat-Faceplate Types

Type	Description ^a	Maximum Dimensions		Min. Useful Screen Diam. Inches
		Overall Length Inches	Envelope Diam. Inches	
1EP1	1" type especially suited for general oscillographic applications and continuous monitoring. The 1EP1 features a medium-persistence screen and compact overall design. Small unidekar 11-pin base.	4-1/16	1-5/16	1-1/16
1EP2 1EP11	1" types same as 1EP1 except: 1EP2 is for medium-persistence images; the 1EP11 is for photographic use.	4-1/16	1-5/16	1-1/16



Kinescopes



Maximum Ratings ^b				Operating Conditions					Type
Anode Volts	Grid-No.3 Volts	Grid-No.2 Volts	Grid-No.1 Bias Volts ^c	Anode Volts	Grid-No.3 Voltage for Focus Approx.	Grid-No.2 Volts	Maximum Grid-No.1 Volts for Visual Cutoff ^d	Deflection Angle	

FLYING-SPOT CATHODE-RAY TUBES

27000	6000	350	-150	27000	4600 to 5800	200	-100	40° approx.	5AUP24
27000	6000	350	-150	27000 20000	4000 to 5200 3000 to 3800	200 200	-100 -100	50° approx.	5WP15
27000	7000	350	-150	27000 20000	5500 to 7000 4100 to 5300	200 200	-100 -100	40° approx.	5ZP16
8000	—	700	-180	5000 4000 ^z	— —	250 250	-70 -70	53° approx.	4407

PROJECTION KINESCOPES^k


40000 ^f	9000 ^f	400 ^f	-150 ^f	36000	6650 to 8100	200	-93 ^p	50° approx.	5AZP4
80000 ^f	20000 ^f	1050 ^f	-250 ^f	75000	15000 to 17000	400 to 600 ^p	-155 ^w	35° approx.	7NP4 4486
80000 ^f	20000 ^f	1050 ^f	-250 ^f	75000	15000 to 17000	400 to 600 ^p	-155 ^w	35° approx.	7WP4

Cathode-Ray Tubes

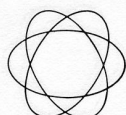


ELECTROSTATIC FOCUS AND DEFLECTION TYPES

Flat-Faceplate Types

Maximum Ratings ^b				Operating Conditions							
Anode Volts	Grid- No.3 Volts	Grid- No.2 Volts	Grid- No.1 Bias Volts ^c	Anode Volts	Grid- No.3 Voltage for Focus Approx.	Grid- No.2 Volts	Maximum Grid-No.1 Volts for Visual Cutoff ^d	Deflection Factors Volts dc/in.			Type
								DJ1 & DJ2 ^e	DJ3 & DJ4		
1500	1200	1500	-200	1000 500	100 to 300 50 to 150	1000 500	-42 -21	210 to 310 105 to 155	240 to 350 120 to 175	1EP1	
1500	1200	1500	-200	1000 750	100 to 300 75 to 225	1000 750	-42 -31.5	210 to 310 157 to 232	240 to 350 180 to 262	1EP2 1EP11	

For Footnotes, See Page 13.



Oscillograph-Type

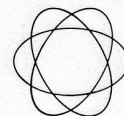
ELECTROSTATIC FOCUS AND DEFLECTION TYPES (CONT'D) Flat-Faceplate Types (Cont'd)

Type	Description ^a	Maximum Dimensions		Min. Useful Screen Diam. Inches
		Overall Length Inches	Envelope Diam. Inches	
3RP1A 3RP7A	3" types with good brightness at relatively low voltage. The 3RP1A is intended for general oscillographic use; the 3RP7A is intended for use in observing extremely-low-speed or medium speed recurrent or non-recurrent phenomena. Small-shell duodecal 10-pin base.	9-3/8	3-1/16	2-3/4
3WP1 3WP11	3" types with extremely high deflection sensitivity. The 3WP1 is for general oscillographic applications; the 3WP11 is for photographic use. Small-shell duodecal 10-pin base.	11-5/8	3-1/16	2-3/4
4499	5" type having medium-persistence P1 phosphor screen. Intended for use in general oscillographic applications. Special, small-shell duodecal 10-pin base.	12.13	5.31	4.56

Curved-Faceplate Types


Type	Description ^a	Maximum Dimensions		Min. Useful Screen Diam. Inches
		Overall Length Inches	Envelope Diam. Inches	
2AP1A	For renewal use. For new equipment design, use the 2BP1.	7-5/8	2-1/16	1-3/4
2BP1 2BP11	2" types a little less than 8" long. The 2BP1 is for general oscillographic use; the 2BP11 is for photographic use. Small-shell duodecal 10-pin base.	7-13/16	2-1/16	1-3/4
3AP1A	For renewal use ^y . For new equipment design, use the 3KP1 or 3R-type.	11-7/8	3-1/16	2-3/4
3AQP1	3" type about 9-1/8" long. High deflection sensitivity. Small-shell duodecal 12-pin base.	9-3/8	3-1/16	2-3/4
3BP1A	3" type about 10" long. Medium-shell diheptal 12-pin base.	10-1/4	3-1/16	2-3/4
3KP1	3" type having high deflection sensitivity. For general oscillographic applications. Medium-shell magnal 11-pin base.	11-3/4	3-1/16	2-3/4
3KP7 3KP11	3" types same as 3KP1 except: 3KP7 is for long-persistence images and for pulse-modulated applications; the 3KP11 is for photographic use.	11-3/4	3-1/16	2-3/4
3RP1	3" type with good brightness at relatively low voltage. For general oscillographic use. Small-shell duodecal 10-pin base.	9-3/8	3-1/16	2-3/4
5BP1A	For renewal use.. For new equipment design, use the 5UP1.	17-1/8	5-5/16	4-1/2
5UP1	5" type having high deflection sensitivity and resolution. For general oscillographic applications. Small-shell duodecal 10-pin base.	15-1/8	5-11/32	4-1/2
5UP7 5UP11 5UP31	5" types same as 5UP1 except: the 5UP7 is for long persistence images; and the 5UP11 and 5UP31 are for medium-short persistence images.	15-1/8	5-11/32	4-1/2
7VP1 7VP31	7" types having short overall length and good deflection sensitivity. For general oscillographic applications. The 7VP1 has medium persistence and the 7VP31 has medium-short persistence. Medium-shell diheptal 12-pin base.	14-7/8	7-1/8	6
902A	For renewal use. For new equipment design, use the 2BP1.	7-5/8	2-1/16	1-3/4

Cathode-Ray Tubes




ELECTROSTATIC FOCUS AND DEFLECTION TYPES (CONT'D)

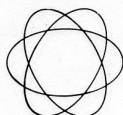
Flat-Faceplate Types (Cont'd)

Maximum Ratings ^b				Operating Conditions							
Anode Volts	Grid- No.3 Volts	Grid- No.2 Volts	Grid- No.1 Bias Volts ^c	Anode Volts	Grid- No.3 Voltage for Focus Approx.	Grid- No.2 Volts	Maximum Grid-No.1 Volts for Visual Cutoff ^d	Deflection Factors Volts dc/in.			Type
								DJ1 & DJ2 ^e	DJ3 & DJ4		
2500	1000	2500	-200	2000 1000	330 to 620 165 to 310	2000 1000	-135 -68.5	146 to 198 73 to 99	104 to 140 52 to 70	3RP1A 3RP7A	
2500	1000	2500	-200 ^x	2000 1500 1000	330 to 620 247 to 465 165 to 310	2000 1500 1000	-100 -75 -50	83 to 101 62.3 to 75.8 41.5 to 50.5	57 to 70 42.8 to 52.5 28.5 to 35	3WP1 3WP11	
2800 ^f	1100 ^f	2800 ^f	-200 ^f	2200	750 to 1000	2200	-140	84 to 106	67 to 83	4499	

Curved-Faceplate Types

Maximum Ratings ^b				Operating Conditions							
Anode Volts	Grid- No.3 Volts	Grid- No.2 Volts	Grid- No.1 Bias Volts ^c	Anode Volts	Grid- No.3 Voltage for Focus Approx.	Grid- No.2 Volts	Maximum Grid-No.1 Volts for Visual Cutoff ^d	Deflection Factors Volts dc/in.			Type
								DJ1 & DJ2 ^e	DJ3 & DJ4		
1000	500	1000	-125	1000	140 to 300	1000	-90	195 to 265	167 to 225	2AP1A	
2500	1000	2500	-200	2000 1000	300 to 560 150 to 280	2000 1000	-135 -67.5	230 to 310 115 to 155	148 to 200 74 to 100	2BP1 2BP11	
1500	1000	1500	-125	1500	300 to 515	1500	-75	91 to 137	87 to 131	3AP1A	
2750	1100	2750	-200	1000	165 to 310	1000	-67.5	73 to 99	26 to 35	3AQP1	
2000	1000	2000	-200	2000 1500	400 to 690 300 to 515	2000 1500	-90 -67.5	170 to 230 127 to 173	125 to 170 94 to 128	3BP1A	
2500	1000	2500	-200	2000 1000	320 to 600 160 to 300	2000 1000	-90 -45	100 to 136 50 to 68	76 to 104 38 to 52	3KP1	
2500	1000	2500	-200	2000	320 to 600	2000	-90	100 to 136	76 to 104	3KP7 3KP11	
2500	1000	2500	-200	2000 1000	330 to 620 165 to 310	2000 1000	-135 -67.5	146 to 198 73 to 99	104 to 140 52 to 70	3RP1	
2000	1000	2000	-125	2000 1500	340 to 560 255 to 420	2000 1500	-60 -45	70 to 96 53 to 72	64 to 88 48 to 66	5BP1A	
2500	1000	2500	-200	2000 1000	340 to 640 170 to 320	2000 1000	-90 -45	56 to 77 28 to 39	46 to 62 23 to 31	5UP1	
2500	1000	2500	-200	2000 1500 ^z	340 to 640 255 to 480	2000 1500	-90 -67.5	56 to 77 42 to 58	46 to 62 35 to 47	5UP7 5UP11 5UP31	
4000	2000	4000	-200	3000 1500	800 to 1200 400 to 600	3000 1500	-84 -42	93 to 123 47 to 62	75 to 102 38 to 51	7VP1 7VP31	
600	300	600	-125	600 400	85 to 180 57 to 120	600 400	-90 -60	110 to 166 73 to 111	96 to 141 64 to 94	902A	

For Footnotes, See Page 13.



Oscillograph-Type

ELECTROSTATIC FOCUS AND DEFLECTION TYPES HAVING A POST-DEFLECTION ACCELERATOR

Flat-Faceplate Types

Type	Description ^a	Maximum Dimensions		Min. Useful Screen Diam. Inches
		Overall Length Inches	Envelope Diam. Inches	
5ABP1 5ABP11 5ABP31	5" types with very high deflection sensitivity. Especially suitable for wide-band amplifiers. The 5ABP1 is for general oscillographic use; the 5ABP11 is for photographic use; the 5ABP31 is for use in observing low-or medium-speed recurring phenomena. Recessed small-ball cap. Medium-shell diheptal 12-pin base.	17-1/8	5-11/32	4-9/16
5ADP1 5ADP31	5" types with very high deflection sensitivity. Particularly suitable for wide-band amplifiers. The 5ADP1 is for general oscillographic use; the 5ADP31 is for use in observing low- and medium-speed recurrent phenomena. Medium-shell diheptal 12-pin base.	16-15/16	5-11/32	4-1/2
4510	5" type having long-persistence P7 phosphor screen. The 4510 is intended for use in observing extremely-low-speed or medium-speed recurrent or nonrecurrent phenomena. Recessed small-ball cap. Special small-shell duodecal 10-pin base.	12.13	5.31	4.56

Curved-Faceplate Types


Type	Description ^a	Maximum Dimensions		Min. Useful Screen Diam. Inches
		Overall Length Inches	Envelope Diam. Inches	
3JP1 3JP7	3" types about 10" long providing high brightness. The 3JP1 is for general oscillographic use; the 3JP7 is for long-persistence images and for pulse-modulated applications, such as radar indicator service. Recessed small-ball cap. Medium-shell diheptal 12-pin base.	10-1/4	3-1/16	2-3/4
5CP1A 5CP11A 5CP12	5" types providing high brightness. The 5CP1A is for general oscillographic use; the 5CP11A is for photographic use; the 5CP12 is for observing low-and medium-speed recurring phenomena. Recessed small-ball cap. Medium-shell diheptal 12-pin base.	17-1/8	5-11/32	4-1/2
4489	5" type having P31 phosphor screen of high luminous efficiency. Intended for use in observing low-and medium-speed recurrent phenomena. Recessed small-ball cap. Medium-shell diheptal 12-pin base.	15-1/8	5-11/32	4-1/2
4490	7" type having P31 phosphor screen of high luminous efficiency. Intended for use in observing low-and medium-speed recurrent phenomena. Recessed small-ball cap. Medium-shell diheptal 12-pin base.	14.87	7.12	6
4491	8" type having P31 phosphor screen of high luminous efficiency. Intended for use in observing low-and medium-speed recurrent phenomena. Recessed small-ball cap. Medium-shell diheptal 12-pin base.	16.88	8.50	7

Cathode-Ray Tubes




ELECTROSTATIC FOCUS AND DEFLECTION TYPES HAVING A POST-DEFLECTION ACCELERATOR

Flat-Faceplate Types

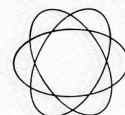
Maximum Ratings ^b				Operating Conditions							
Post Accelerator Volts	Grid-No.3 Volts	Grid-No.2 Volts	Grid-No.1 Bias Volts ^c	Post Accelerator Volts	Grid-No.3 Voltage for Focus Approx.	Grid-No.2 Volts	Maximum Grid-No.1 Volts for Visual Cutoff ^d	Deflection Factors Volts dc/in.			Type
								DJ1 & DJ2 ^e	DJ3 & DJ4		
6000	1000	2600 ^{aa}	-200	4000	400 to 690	2000 ^{aa}	-87	53 to 72	36 to 48	5ABP1	
				3000	300 to 515	1500 ^{aa}	-65	40 to 54	27 to 36	5ABP1	
				2000 ^{bb}	400 to 690	2000 ^{aa}	-87	43 to 58	29 to 39	5ABP3	
6000	1000	2600 ^{aa}	-200	4000	400 to 690	2000 ^{aa}	-75	53.4 to 66.6	40.6 to 50	5ADP1	
				3000	300 to 515	1500 ^{aa}	-56	40 to 50	30.5 to 37.5	5ADP3	
				2000 ^{bb}	400 to 690	2000 ^{aa}	-75	43 to 53	32 to 40		
6000 ^f	1200 ^f	3000 ^{f,aa}	-200 ^f	3000	475 to 725	1500 ^{aa}	-94	69 to 91	57 to 73	4510	

Curved-Faceplate Types

Maximum Ratings ^b				Operating Conditions							
Post Accelerator Volts	Grid-No.3 Volts	Grid-No.2 Volts	Grid-No.1 Bias Volts ^c	Post Accelerator Volts	Grid-No.3 Voltage for Focus Approx.	Grid-No.2 Volts	Maximum Grid-No.1 Volts for Visual Cutoff ^d	Deflection Factors Volts dc/in.			Type
								DJ1 & DJ2 ^e	DJ3 & DJ ⁴		
4000	1000	2000 ^{aa}	-200	4000	400 to 690	2000 ^{aa}	-90	170 to 230	125 to 170	3JP1 3JP7	
				3000	300 to 515	1500 ^{aa}	-67.5	127 to 173	94 to 128		
				2000 ^{bb}	400 to 690	2000 ^{aa}	-90	136 to 184	100 to 136		
4000	1000	2000 ^{aa}	-200	4000	375 to 690	2000 ^{aa}	-90	78 to 106	66 to 90	5CP1A 5CP11A 5CP12	
				3000	280 to 515	1500 ^{aa}	-67.5	59 to 80	50 to 68		
				2000 ^{bb}	375 to 690	2000 ^{aa}	-90	62 to 84	54 to 74		
8000 ^f	1250 ^f	4000 ^{f,aa}	-200 ^f	6000	700 to 900	3000 ^{aa}	-135	130	102	4489	
8000 ^f	2000 ^f	4000 ^{f,aa}	-200 ^f	6000	750 to 1200	3000 ^{aa}	-93	133 to 153	99 to 115	4490	
8000 ^f	2000 ^f	4000 ^{f,aa}	-200 ^f	6000	750 to 1200	3000 ^{aa}	-93	107 to 129	85 to 101	4491	


For Footnotes, See Page 13.

Cathode-Ray Tubes



MAGNETIC FOCUS AND DEFLECTION TYPES



Curved-Faceplate Types

Maximum Ratings ^b				Operating Conditions					 Type
Anode Volts	Grid-No.3 Volts	Grid-No.2 Volts	Grid-No.1 Bias Volts ^c	Anode Volts	Grid-No.3 Voltage for Focus Approx.	Grid-No.2 Volts	Maximum Grid-No.1 Volts for Visual Cutoff ^d	Deflection Angle	
8000	—	700	-180	7000 4000 ^z	—	250 250	-70 -70	53° approx.	5FP7A
8000	—	700	-180	5000 4000 ^z	—	250 250	-70 -70	53° approx.	5FP15A
8000	—	700	-180	7000 4000 ^z	—	250 250	-70 -70	53° approx.	7BP7A
8000	—	+700 -180	-180	7000 4000 ^z	—	250 250	-63 -63	50° approx.	7MP7



Tubes



RADECHONS

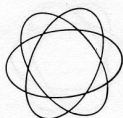
 Type	Maximum Diameter Inches	Maximum Overall Length Inches	 Remarks
1858	3.35	12-7/32	A variant of type 6499 but designed especially for binary memory systems in computers.
6499	3.35	12-7/32	Barrier-grid single-beam type designed for use in digital-data storage, signal-delay, fixed signal cancellation, and in time-base conversion applications. Can store information from microseconds to minutes.

GRAPHECHONS (SCAN-CONVERSION TUBES)

 Type	Maximum Diameter Inches	Maximum Overall Length Inches	 Remarks
7539	3.40	26	A charge storage tube designed for use in data processing applications where information is to be continuously transformed from one time base or scanning presentation to another. Has one electrostatic-focus, magnetic-deflection type writing gun and one magnetic-deflection, magnetic-focus reading gun.

FOOTNOTES

- | | |
|---|--|
| <p>^a Unless otherwise specified all of these types have electrostatic focus and deflection and a heater rating of 6.3 volts and 0.6 amp.</p> <p>^b Design-center values, except as noted.</p> <p>^c Positive bias value = 0 volts, positive peak value = 2 volts, except as noted.</p> <p>^d For visual cutoff of undeflected focused spot, except as noted.</p> <p>^e DJ1 and DJ2 are deflecting electrodes nearer screen.</p> <p>^f Pattern-electrode and grid-No.4 (collector) voltage.</p> <p>^g Positive-bias value = 0 volts.</p> <p>^h Pattern electrode voltage.</p> <p>^j For monitor raster cutoff.</p> <p>^k For information on picture tubes used in television broadcast receivers, see RCA booklet ERT-1275M (RCA Receiving Tubes and Picture Tubes).</p> <p>^m For anode current of 20 μamp.</p> <p>ⁿ For anode current of 100 μamp.</p> | <p>^p For raster-cutoff.</p> <p>^q Diagonal.</p> <p>^r Absolute value.</p> <p>^s Grid-No.4 volts.</p> <p>^t Heater rating: 6.6 volts, 0.62 amp.</p> <p>^u Excluding side cap.</p> <p>^v Quality rectangle. Max. faceplate temperature = 100° C. Tube requires 40 cfm air flow to faceplate.</p> <p>^w Recommended operating value.</p> <p>^x Positive-bias and positive-peak value = 0 volts.</p> <p>^y Heater rating: 2.5 volts, 2.1 amp.</p> <p>^z Recommended minimum voltage.</p> <p>^{aa} And anode volts.</p> <p>^{bb} It is recommended that the anode voltage be not less than 3000 volts for high-speed scanning.</p> |
|---|--|



Oscillograph-Type

Curved-Faceplate Types

MAGNETIC FOCUS AND DEFLECTION TYPES

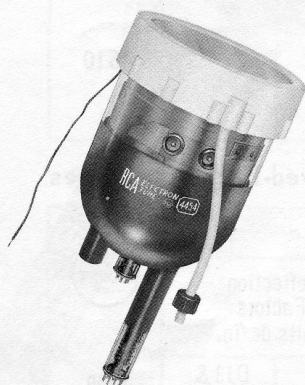


Type	Description ^a	Maximum Dimensions		Min. Useful Screen Diam. Inches
		Overall Length Inches	Envelope Diam. Inches	
5FP7A	5" type for low-frequency pulse-modulated applications. Recessed small-ball cap. Long medium-shell octal 8-pin base.	11-1/2	5-1/32	4-1/4
5FP15A	5" type capable of producing spot having diameter less than 0.009". The 5FP15A is for photographic use. Recessed small-ball cap. Long medium-shell octal 8-pin base.	11-1/2	5-1/32	4-1/4
7BP7A	For renewal use. For new equipment design, use the 7MP7.	13-5/8	7-1/8	6
7MP7	7" type for low-frequency pulse-modulated service. Recessed small-cavity cap. Small-shell duodecal 5-pin base.	13-1/8	7-5/16	6

Storage

DISPLAY-STORAGE TUBES

5"-Diameter Types



Type	Integral Magnetic Shield	Deflection Method	No. of Writing Guns	Maximum Dimensions		Remarks
				Overall Length Inches	Diameter Inches	
2028	No	Elec.	1	15-1/2	5-1/16	Similar to type 6866, except has higher maximum voltage ratings. For renewal use. For new equipment design, use type 7268B.
4454	No	Mag.	1	11.62	5.640	Similar to, but not interchangeable with, type 7183. Has improved contrast and display uniformity.
6866	No	Elec.	1	15-1/2	5-1/16	One of the first display-storage tubes built in mass production. For renewal use. For new equipment design, use type 7268B.
7183	No	Mag.	1	11-5/8	5.19	First display-storage tube used extensively in weather radar systems.
7183A	No	Mag.	1	11-5/8	5.19	Similar to type 7183. Has improved erasing uniformity and a new collimation design which simplifies set-up procedure.
7315	No	Elec.	1	13.64	5.31	Designed especially for slow-speed scanning applications.

DISPLAY-STORAGE TUBES FOR USE IN SEVERE ENVIRONMENTS

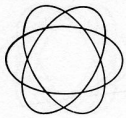
10"-Diameter Types

Type	Integral Magnetic Shield	Deflection Method	No. of Writing Guns	Maximum Dimensions		Remarks
				Overall Length Inches	Diameter Inches	
4412	Yes	Elec.	1	20.75	10.88	Ruggedized type with rectangular useful display area. Has integral magnetic shield.

5"-Diameter Types

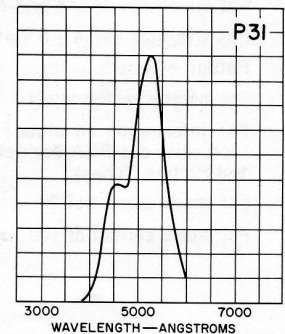
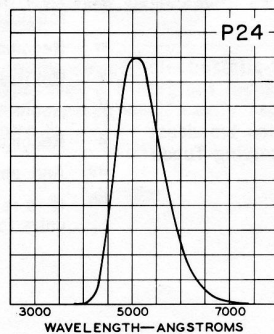
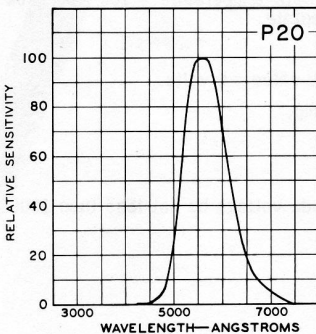
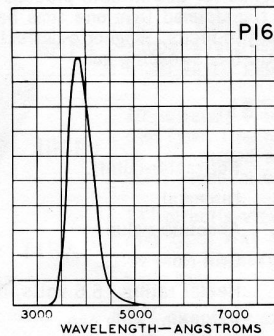
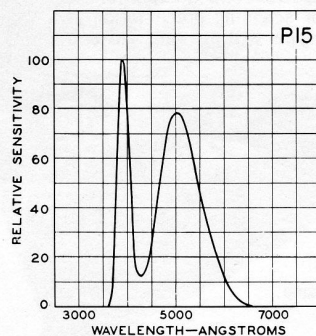
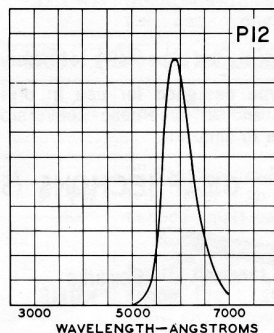
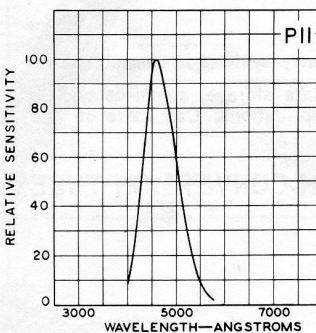
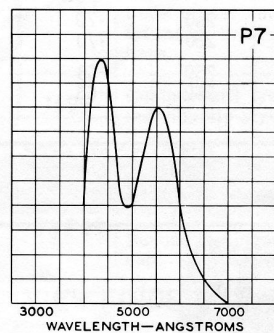
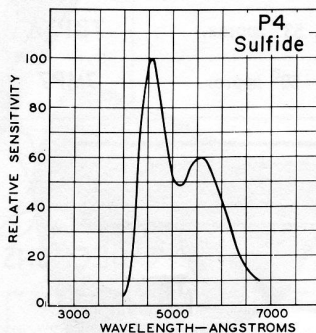
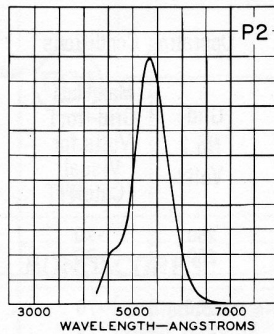
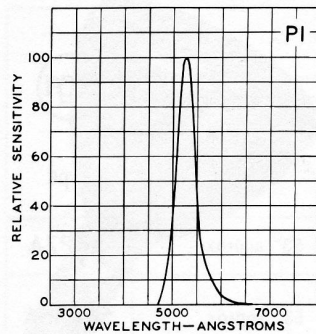
2053	Yes	Elec.	1	13.64	5.562	A ruggedized type having an integral magnetic shield.
7268B	Yes	Elec.	2	16	5.28	A ruggedized type having an integral magnetic shield, a factory collimated viewing beam, and excellent resolution.



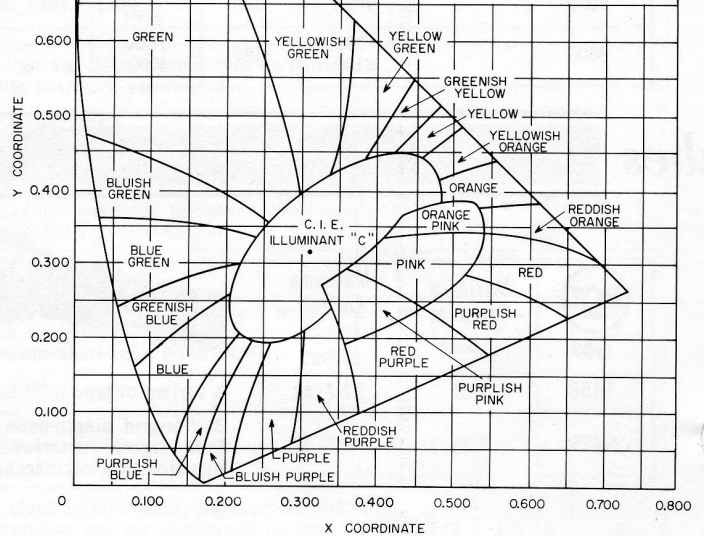


Spectral Energy Emission Curves

According to JEDEC Publication No. 16 "Optical Characteristics of Cathode-Ray Tube Screens".



PHOSPHOR DESIGNATION	TYPICAL C. I. E. COORDINATES	
	X	Y
P1	0.218	0.712
P2	0.279	0.534
P4 (SULFIDE) ^a	0.270	0.300
P4 (SILICATE) ^b	0.333	0.347
P4 (SILICATE-SULFIDE) ^c	0.317	0.331
P7	0.357	0.537
P11	0.139	0.148
P12	0.605	0.394
P15	0.246	0.439
P16	0.175	0.003
P20	0.426	0.546
P24	0.245	0.441
P31	0.245	0.523



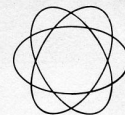
Description of Persistence

Very Long
Long
Medium
Medium Short
Short
Very Short

Time to decay to 10% of initial brightness

1 second and over
100 millisecc to 1 sec
1 millisecc to 100 millisecc
10 microsecc to 1 millisecc
1 microsecc to 10 microsecc
Less than 1 microsecc

and Phosphor Characteristics



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

Phosphor P4 - Sulfide Type 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 P4 - Silicate Type exhibits white fluorescence and has medium to medium-short persistence. Types having this phosphor are of particular interest for projection-type kinescopes.

Phosphor P4 - Silicate - Sulfide Type exhibits white fluorescence and has medium to medium-short persistence. Types having this phosphor are of particular interest for projection-type kinescopes.

Phosphor P7 is a long-persistence, cascade (two-layer) screen. During excitation by the electron beam, this phosphor produces a white 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 emits high intensity actinic blue fluorescence and has 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 orange fluorescence and phosphorescence. Types utilizing this phosphor are particularly useful for observing low- and medium-speed recurring phenomena.

Phosphor P15 emits radiation in the visible green region and in the invisible near-ultraviolet region. The ultraviolet radiation has very-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 bluish-purple as well as near ultraviolet 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 to medium-short persistence. The screen may be used in applications requiring relatively short persistence and good visual efficiency.

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

Phosphor P31 is a medium-short persistence screen which exhibits green fluorescence and phosphorescence. Types utilizing this phosphor are particularly useful for observing either low- or medium-speed non-recurring phenomena.

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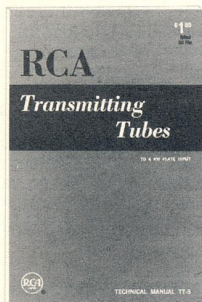
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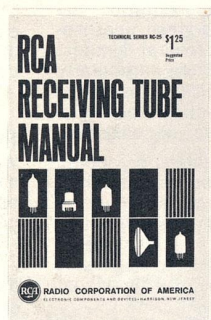
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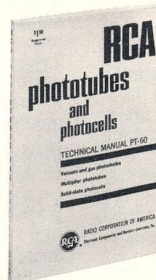
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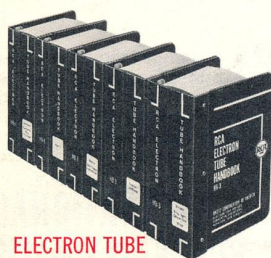
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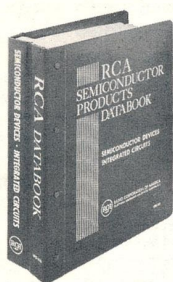
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