

Head On Type Photomultiplier Tubes

Type No.	Remarks	Spectral Response			Photo-cathode Material	Window Material	Out-line No.	Dynode Structure No. of Stages	Socket Socket Assembly	Maximum Ratings		Cathode Sensitivity	
		Curve Code	Range (nm)	Peak Wave-length (nm)						Anode to Cathode Voltage (Vdc)	Average Anode Current (mA)	Luminous	
												Min. (μ A/lm)	Typ. (μ A/lm)

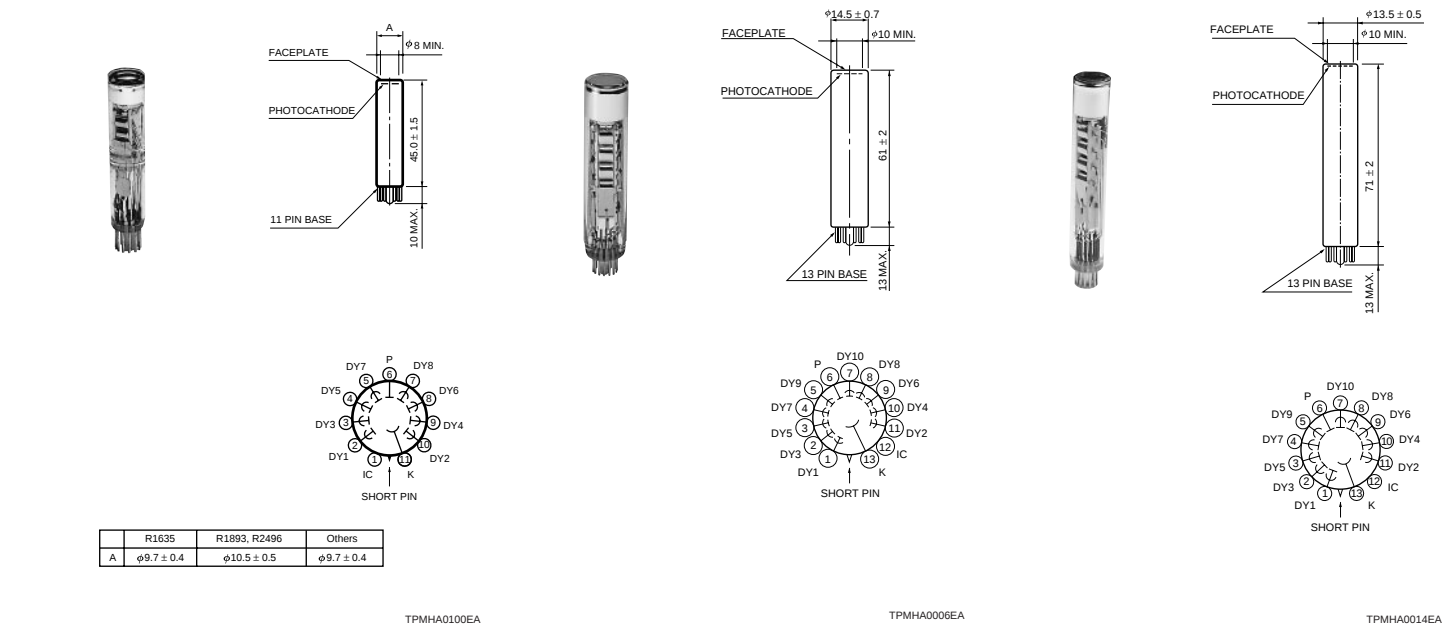
10mm (3/8") Dia. Types

R1893	Subminiature size, for UV range	200S	160 to 320	240	Cs-Te	Q	1	L/8	E678-11N*/4	1500	0.01	—	—
R1635	For visible range and scintillation counting	400K	300 to 650	420	BA	K	1	L/8	E678-11N*/4	1500	0.03	60	95
R2496	For UV to visible range, fast time response	400S	160 to 650	420	BA	Q	1	L/8	E678-11N*/5	1500	0.03	60	95
R1894	For UV to near IR range, general purpose	500K (S-20)	300 to 850	420	MA	K	1	L/8	E678-11N*/4	1500	0.03	80	120

13mm (1/2") Dia. Types

R1081	For VUV range, MgF ₂ window	100M	115 to 200	140	Cs-I	MF	4	L/10	E678-12A*	2250	0.01	—	—
R1080	For UV range, MgF ₂ window	200M	115 to 320	240	Cs-Te	MF	4	L/10	E678-12A*	1250	0.01	—	—
R759	For UV range	200S	160 to 320		Cs-Te	Q	3	L/10	E678-13A*/7	1250	0.01	—	—
R647	For visible range and scintillation counting	400K	300 to 650	420	BA	K	3	L/10	E678-13A*/7	1250	0.1	40	100
R4124	For visible range, fast time response				BA	K	5	L/10	E678-13A*/9	1250	0.03	40	95
R2557	Low noise bialkali photocathode	402K	375	375	LBA	K	3	L/10	E678-13A*/8	1500	0.03	25	40
R4177-01	High temperature, ruggedized type	401K			HBA	K	2	L/10	E678-13A*/	1800	0.02	20	40
R1463	Multialkali photocathode for UV to near IR range	500U	185 to 850	420	MA	U	3	L/10	E678-13A*/7	1250	0.03	80	120

1 R1893, R1635, R2496, R1894	2 R4177-01	3 R647, R2557, R1463, R759
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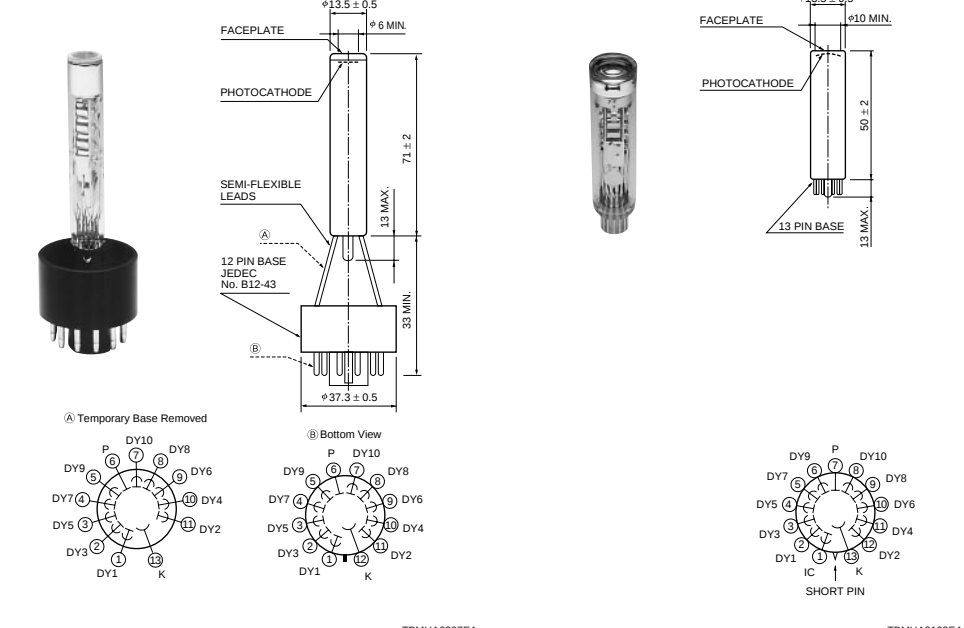


Cathode Sensitivity			Anode to Cathode Supply Voltage (Vdc)	Anode Characteristics							Notes	Type No.	
Blue (5-58) Typ. (μ A/lm-b)	Red / White Ratio Typ.	Radiant Typ. (mA/W)		Anode Sensitivity			Gain Typ.	Anode Dark Current (After 30 min.)		Time Response			
				Luminous		Radiant		Typ. (nA)	Max. (nA)	Rise Time Typ. (ns)			Electron Transit Time Typ. (ns)
				Min. (A/lm)	Typ. (A/lm)	Typ. (A/W)							

—	—	24 ^b	1250 ①	1.2 × 10 ³ ^b (A/W)	—	3.6 × 10 ³ ^b	1.5 × 10 ⁵	0.5	2.5	0.8	7.8		R1893
9.5	—	76	1250 ①	30	100	8.0 × 10 ⁴	1.1 × 10 ⁶	1	50	0.8	9.0	Photon counting type: R1635P UV glass window type: R3878	R1635
9.5	—	76	1250 ⑤	30	100	8.0 × 10 ⁴	1.1 × 10 ⁶	2	50	0.7	9.0		R2496
—	0.2	51	1250 ①	10	50	2.1 × 10 ⁴	4.2 × 10 ⁵	2	20	0.8	7.8		R1894

—	—	9.8 ^a	2000 ⑬	2 × 10 ² ^a (A/W)	—	9.8 × 10 ² ^a	1.0 × 10 ⁵	0.03	0.05	1.8	18		R1081
—	—	28 ^b	1000 ⑬	4 × 10 ³ ^b (A/W)	—	1.4 × 10 ⁴ ^b	5.0 × 10 ⁵	0.3	1	2.5	24		R1080
—	—	28 ^b	1000 ⑬	4 × 10 ³ ^b (A/W)	—	1.4 × 10 ⁴ ^b	5.0 × 10 ⁵	0.3	1	2.5	24		R759
9.5	—	76	1000 ⑬	30	100	7.6 × 10 ⁴	1.0 × 10 ⁶	1	15	2.5	24	Photon counting type: R647P UV glass window type: R960 Synthetic silica window type: R760	R647
9.5	—	76	1000 ⑰	30	100	8.0 × 10 ⁴	1.1 × 10 ⁶	1	15	1.1	12	UV glass window type: R4141	R4124
5.5	—	50	1250 ⑰	50	200	2.5 × 10 ⁵	5.0 × 10 ⁶	10 ^h	30 ^h	2.2	22		R2557
6.0	—	50	1500 ⑬	10	20	2.5 × 10 ⁴	5.0 × 10 ⁵	0.5	10	2.0	20		R4177-01
—	0.2	51	1000 ⑬	30	120	5.1 × 10 ⁴	1.0 × 10 ⁶	4	20	2.5	24	Photon counting type: R1463P	R1463

4 R1080, R1081	5 R4124
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Type No.	Remarks	Spectral Response			Photo-cathode Material	Window Material	Out-line No.	Dynode Structure No. of Stages	Socket Socket Assembly	Maximum Ratings		Cathode Sensitivity	
		Curve Code	Range (nm)	Peak Wave-length (nm)						Anode to Cathode Voltage (Vdc)	Average Anode Current (mA)	Luminous	
												Min. (μ A/lm)	Typ. (μ A/lm)

19mm (3/4") Dia. Types

R972	For VUV range, MgF ₂ window	100M	115 to 200	140	Cs-I	MF	2	L/10	E678-12A*	2250	0.01	—	—
R821	For UV range, synthetic silica window	200S	160 to 320	240	Cs-Te	Q	1	L/10	E678-12L*/ 13 14 15	1250	0.01	—	—
R1166	For visible range and scintillation counting	400K	300 to 650	420	BA	K	1	L/10	E678-12L*/ 13 14 15	1250	0.1	70	105
R2801	Low noise bialkali photocathode	402K		375	LBA	K	1	L/10	E678-12L*/ 13 14 15	1500	0.1	30	45
R1450	Small TTS, for scintillation counting	400K		420	BA	K	1	L/10	E678-12L*/ 17	1800	0.1	70	115
R3478	For visible range, fast time response				BA	K	6	L/8	E678-12L*/ 11 12	1800	0.1	70	115
R5611-01	For visible range, low profile				BA	K	5	CC/10	E678-12A*	1250	0.1	60	90
R3991	High temperature, ruggedized type, low profile	401K		375	HBA	K	5	CC/10	E678-12A*	1800	0.02	20	40
R1281	High temperature photocathode				HBA	K	3	L/10	E678-12A*	1800	0.02	20	40
R1617	Multialkali photocathode for visible to near IR range	500K (S-20)	300 to 850	420	MA	K	1	L/10	E678-12L*/ 13 14 15	1250	0.1	80	120
R1464	Multialkali photocathode for UV to near IR range	500U	185 to 850		MA	U	1	L/10	E678-12L*/ 13 14 15	1250	0.1	80	120
R1878	For photon counting in visible to near IR range	500K (S-20)	300 to 850		MA	K	4	L/10	E678-12L*/ 16	1500	0.1	80	120
R632-01	For near IR range, QE=0.05% Typ. at 1.06 μm	700K (S-1)	400 to 1200	800	Ag-O-Cs	K	1	L/10	E678-12L*/ 13 14 15	1500	0.01	10	20

1 R821, R1450, etc.	2 R972	3 R1281
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	R821	Others
A	φ19 ± 1	φ18.6 ± 0.7

R1450 has a plano-concave faceplate.

TPMHA0012EB

TPMHA0208EA

TPMHA0209EA

(at 25°C)

Cathode Sensitivity			Anode to Cathode Supply Voltage (Vdc)	Anode Characteristics								Notes	Type No.
Blue (5-58) Typ. (μ A/lm-b)	Red / White Ratio Typ.	Radiant Typ. (mA/W)		Anode Sensitivity			Gain Typ.	Anode Dark Current (After 30 min.)		Time Response			
				Luminous		Radiant Typ. (A/W)		Typ. (nA)	Max. (nA)	Rise Time Typ. (ns)	Electron Transit Time Typ. (ns)		
				Min. (A/lm)	Typ. (A/lm)								

—	—	9.8 ^a	2000 ¹⁵	2 × 10 ² ^a (A/W)	—	9.8 × 10 ² ^a	1.0 × 10 ⁵	0.03	0.05	1.6	17	Cs-Te photocathode type: R976	R972
—	—	28 ^b	1000 ¹⁵	4 × 10 ³ ^b (A/W)	—	1.0 × 10 ⁴ ^b	3.6 × 10 ⁵	0.3	0.5	2.5	27		R821
10.5	—	85	1000 ¹⁵	10	100	8.1 × 10 ⁴	9.5 × 10 ⁵	1	5	2.5	27	Synthetic silica window type: R762 UV glass window type: R750	R1166
6.0	—	55	1250 ¹⁵	50	300	3.7 × 10 ⁵	6.7 × 10 ⁶	15 ^b	45 ^b	2.2	25		R2801
11.0	—	88	1500 ¹⁷	100	200	1.5 × 10 ⁵	1.7 × 10 ⁶	3	50	1.8	19		R1450
11.0	—	88	1700 ⁶	100	200	1.5 × 10 ⁵	1.7 × 10 ⁶	10	300	1.3	14	Synthetic silica window type: R2076	R3478
10.5	—	85	1000 ¹⁸	10	50	4.7 × 10 ⁴	5.5 × 10 ⁵	3	20	1.5	17	Button stem type: R5611	R5611-01
6.0	—	51	1500 ¹⁸	5	15	1.9 × 10 ⁴	3.75 × 10 ⁵	0.1	10	1.0	13		R3991
6.0	—	50	1500 ¹⁵	20	50	6.5 × 10 ⁴	1.3 × 10 ⁶	0.5	10	1.9	21	Button stem type: R1281-02	R1281
—	0.2	51	1000 ¹⁵	30	120	5.1 × 10 ⁴	1.0 × 10 ⁶	4	20	2.5	27		R1617
—	0.2	51	1000 ¹⁵	30	120	5.1 × 10 ⁴	1.0 × 10 ⁶	4	20	2.5	27	Synthetic silica window type: R2027	R1464
—	0.2	51	1000 ¹⁶	30	150	6.1 × 10 ⁴	1.2 × 10 ⁶	100 ^b	250 ^b	1.7	24	Bialkali photocathode type: R2295	R1878
—	0.14 ^d	1.9	1250 ¹⁵	5	10	9.5 × 10 ²	5.0 × 10 ⁵	800 ^a	2000 ^a	2.2	25		R632-01

4 R1878	5 R5611-01, R3991	6 R3478
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	R5611-01	R3991
A	30 ± 1.5	28 ± 1.5

TPMHA0027EA

TPMHA0036EA

TPMHA0119EA

Head-On Type Photomultiplier Tubes

Type No.	Remarks	Spectral Response			Photo-cathode Material	Window Material	Out-line No.	Dynode Structure No. of Stages	Socket Socket Assembly	Maximum Ratings		Cathode Sensitivity	
		Curve Code	Range (nm)	Peak Wave-length (nm)						Anode to Cathode Voltage (Vdc)	Average Anode Current (mA)	Luminous	
												Min. (μ A/lm)	Typ. (μ A/lm)

25mm (1") Dia. Types

R5800	For scintillation counting	400K	300 to 650	420	BA	K	1	L/10	E678-14C*/18/19/20	1800	0.1	70	95
R4998	For visible range, fast time response				BA	K	4	L/10	E678-12A*	2500	0.1	60	70

25mm (1") Dia. Low Profile Types

R2078	For UV range	201S	160 to 320	240	Cs-Te	Q	2	CC/10	E678-12A*	2000	0.015	—	—
R1924	For visible range	400K	300 to 650	420	BA	K	3	CC/10	E678-14C*/18/19/20	1250	0.1	60	90
R3550	Low noise bialkali photocathode	402K		375	LBA	K	3	CC/10	E678-14C*/18/19/20	1250	0.1	30	50
R1288	High temperature, ruggedized type	401K		420	HBA	K	2	CC/10	E678-12A*	1800	0.02	20	40
R1925	For visible to near IR range	500K (S-20)	300 to 850	420	MA	K	3	CC/10	E678-14C*/18/19/20	1250	0.1	80	120
R5070	Prismatic window, multialkali photocathode with high sensitivity	502K	300 to 900		MA	K	3	CC/10	E678-14C*/18/19/20	1250	0.1	130	230

(at 25°C)

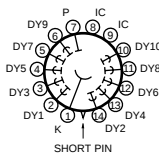
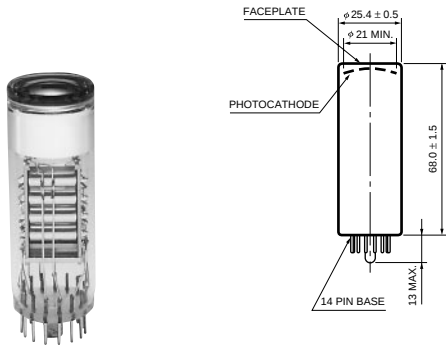
Cathode Sensitivity			Anode to Cathode Supply Voltage (Vdc)	Anode Characteristics								Notes	Type No.
Blue (5-58) Typ. (μ A/lm-b)	Red / White Ratio Typ.	Radiant Typ. (mA/W)		Anode Sensitivity			Gain Typ.	Anode Dark Current (After 30 min.)		Time Response			
				Luminous		Radiant Typ. (A/W)		Typ. (nA)	Max. (nA)	Rise Time Typ. (ns)	Electron Transit Time Typ. (ns)		
				Min. (A/lm)	Typ. (A/lm)								

11.0	—	88	1250 18	—	190	2.3 × 10 ⁵	2.0 × 10 ⁶	2	15	1.7	22		R5800
9.0	—	72	2250 22	100	400	4.1 × 10 ⁵	5.7 × 10 ⁶	100	800	0.7	10	Synthetic silica window type : R5320 TTS: 160ps	R4998

—	—	29 ^b	1500 18	4 × 10 ³ ^b (A/W)	—	1.5 × 10 ⁴ ^b	5.0 × 10 ⁵	0.015	0.1	1.5	14	Dark count: 5cps Typ.	R2078
10.5	—	85	1000 18	20	100	9.3 × 10 ⁴	1.1 × 10 ⁶	3	20	2.0	19	Photon counting type: R1924P Button stem type: R1288-01	R1924
6.5	—	50	1000 18	20	100	1.2 × 10 ⁵	2.0 × 10 ⁶	20 ^b	60 ^b	2.0	19		R3550
6.0	—	51	1500 18	8	15	1.9 × 10 ⁴	3.8 × 10 ⁵	0.1	10	1.5	14	Synthetic silica window type : R1926	R1288
—	0.2	51	1000 18	10	30	1.3 × 10 ⁴	2.5 × 10 ⁵	3	20	2.0	19		R1925
—	0.25	65	1000 18	20	100	2.8 × 10 ⁴	4.3 × 10 ⁵	3	20	2.0	19		R5070

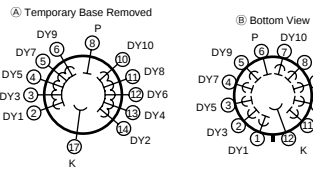
1 R5800

2 R2078, R1288



	R2078	R1288
A	0.8	0.5

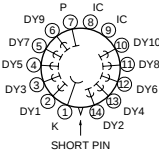
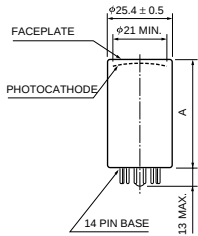
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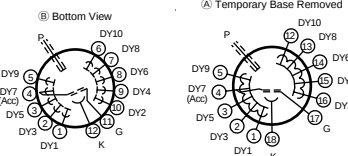
TPMHA0039EA

3 R1924, R1925, R3550, R5070

4 R4998



TPMHA0040EA



TPMHA0093EA

(Unit: mm)

Head-On Type Photomultiplier Tubes

Type No.	Remarks	Spectral Response			Photo-cathode Material	Window Material	Out-line No.	Dynode Structure No. of Stages	Socket Socket Assembly	Maximum Ratings Anode to Cathode Voltage (Vdc)	Cathode Sensitivity Average Anode Current (mA)	Cathode Sensitivity	
		Curve Code	Range (nm)	Peak Wave-length (nm)								Luminous	
												Min. (μ A/lm)	Typ. (μ A/lm)

28mm (1-1/8") Dia. Types													
R6835	For VUV range, MgF ₂ window	100M	115 to 200	140	Cs-I	MF	①	B + L/11	E678-14C*	2500	0.01	–	–
R6836	For UV range, MgF ₂ window	200M	115 to 320	240	Cs-Te	MF	①	B + L/11	E678-14C*	1500	0.01	–	–
R6834	For UV range, low profile	200S	160 to 320		Cs-Te	Q	②	B + L/11	E678-14C*/ 24/25	1500	0.01	–	–
R6095	For visible range and scintillation counting	400K	300 to 650	420	BA	K	①	B + L/11	E678-14C*/ 24/25	1500	0.1	60	95
R6427	For visible range, fast time re- sponse				BA	K	③	L/10	E678-14C*/ 22/23	2000	0.2	60	95
R374	Multialkali photocathode for UV to near IR range	500U	185 to 850		MA	U	①	B/11	E678-14C*/ 24/25	1500	0.1	80	150
R5929	Prismatic window, high cathode sensitivity	502K	300 to 900		MA	K	①	B/11	E678-14C*/ 24/25	1500	0.1	130	230
R2228	Extended red multialkali photo- cathode	501K			600	MA	K	①	B/11	E678-14C*/ 24/25	1500	0.1	100
R316-02	For near IR range, QE=0.06% Typ. at 1.06 μm	700K (S-1)	400 to 1200	800	Ag-O-Cs	K	①	B/11	E678-14C*/ 24/25	1500	0.01	10	20

28mm (1-1/8") Dia. Low Profile Type													
R3998-02	For visible range and scintillation counting	400K	300 to 650	420	BA	K	④	B + L/9	E678-14C*	1500	0.1	60	90

① R6835, R6836, etc.

Type No.	R6835 R6836	R6095, R374 R316-02, R2228 R5929 etc.	R6094
Bulb	MgF ₂ and Silica bulb	Others	Others
A	φ28.2 ± 0.8	φ28.5 ± 0.5	φ28.5 ± 0.5
B	φ23 MIN.	φ25 MIN.	φ25 MIN.
C	92 ± 2	112 ± 2	92 ± 2

R2228 has a plano-concave faceplate.

TPMHA0115EC

② R6834

TPMHA0226EC

③ R6427

TPMHA0387EA

④ R3998-02

TPMHA0114EA

Cathode Sensitivity			Anode to Cathode Supply Voltage (Vdc)	Anode Characteristics								Notes	Type No
Blue (5-58) Typ. (μ A/lm-b)	Red / White Ratio Typ.	Radiant Typ. (mA/W)		Anode Sensitivity			Gain Typ.	Anode Dark Current (After 30 min.)		Time Response			
				Luminous		Radiant Typ. (A/W)		Typ. (nA)	Max. (nA)	Rise Time Typ. (ns)	Electron Transit Time Typ. (ns)		
				Min. (A/lm)	Typ. (A/lm)								
—	—	12 ^a	2000 ²⁶	—	—	1.2 × 10 ³ ³	1.0 × 10 ⁵	0.03	0.05	2.8	22		R6835
—	—	28 ^b	1000 ²⁶	4 ^a -10 ³ ^b (A/W)	—	1.4 × 10 ⁴ ^b	5.0 × 10 ⁵	0.3	1	4	30		R6836
—	—	28 ^b	1000 ²⁶	4 ^a -10 ³ ^b (A/W)	—	1.4 × 10 ⁴ ^b	5.0 × 10 ⁵	0.3	1	4	30		R6834
11.0	—	88	1000 ²⁶	50	200	1.8 × 10 ⁵	2.1 × 10 ⁶	2	10	4	30	Low profile type : R6094	R6095
11.0	—	88	1500 ²¹	—	475	4.4 × 10 ⁵	5.0 × 10 ⁶	10	200	1.7	16	UV glass window type: R7056 Synthetic silica window type: R7057	R6427
—	0.2	64	1000 ²⁶	20	80	3.4 × 10 ⁴	5.3 × 10 ⁵	3	15	15	60	Synthetic silica window type: R376 High gain type: R1104	R374
—	0.25	65	1000 ²⁶	30	180	5.1 × 10 ⁴	7.8 × 10 ⁵	5	25	15	60		R5929
—	0.3	40	1000 ²⁶	20	150	3.0 × 10 ⁴	7.5 × 10 ⁵	8	30	15	60		R2228
—	0.14 ^d	1.9	1250 ²⁶	5	10	9.5 × 10 ²	5.0 × 10 ⁵	2000 ⁹	5000 ⁹	10	50		R316-02
10.5	—	85	1000 ¹¹	50	120	1.1 × 10 ⁵	1.3 × 10 ⁶	2	10	3.4	23		R3998-02

Voltage Distribution Ratio

The characteristic values tabulated in the catalog for the individual tube types are measured with the voltage-divider networks having the voltage distribution ratio shown below.

Distribution Ratio Codes	Number of Stage	Voltage Distribution Ratio																	
		K : Photocathode			Dy : Dynode			P : Anode		G : Grid		F : Focus							
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨	8	K	G	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Acc	Dy7	Dy8	P						
		2	—	2	1	1	1	1	1	—	1	1							
		1	1	1	1	1	1	1	1	—	1	1							
		1.3	4.8	1.2	1.8	1	1	1	1	0.5	3	2.5							
		3	—	1.5	1	1	1	1	1	—	1	1							
		3	—	1.5	1.5	1	1	1	1	—	1	1							
		7	—	1	1.5	1	1	1	1	—	1	1							
		4	0	1	1.4	1	1	1	1	—	1	1							
		2	2	1	1	1	1	1	1	—	1	1							
		1	—	1	1	1	1	1	1	—	1	0.5							
⑩ ⑪ ⑫	9	K	G1	G2	G3	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	P				
		1	—	—	—	1	1	1	1	1	1	1	1	1					
		3	1	—	—	1	1	1	1	1.5	1	1	1	1					
		5	0	3	0	1	1	1	1	1	1	1	1	1					
⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕	10	K	G	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	P					
		1	—	1	1	1	1	1	1	1	1	1	1	1					
		1	1	1	1	1	1	1	1	1	1	1	1	1					
		1.5	—	1	1	1	1	1	1	1	1	1	1	1					
		2	—	1	1	1	1	1	1	1	1	1	1	1					
		2	—	1	1.5	1	1	1	1	1	1	1	1	0.75					
		3	—	1	1	1	1	1	1	1	1	1	1	1					
		3	—	1	1.5	1	1	1	1	1	1	1	1	1					
		3	—	1.5	1	1	1	1	1	1	1	1	1	1					
		4	—	1	1.5	1	1	1	1	1	1	1	1	1					
		1.3	4.8	1.2	1.8	1	1	1	1	1	1.5	3	2.5 (Note 2)						
		1.5	—	1.5	1.5	1	1	1	1	1	1	1	0.5						
		1.5	—	1.5	1.5	1	1	1	1	1	1	1	1						
		K	Dy1	F2	F1	F3	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	P			
		11.3	0	0.6	0	3.4	5	3.33	1.67	1	1	1	1	1	1				
㉖ ㉗ ㉘ ㉙	11	K	G	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	Dy11	P				
		1	—	1	1	1	1	1	1	1	1	1	1	1					
		8	0.05	1	1	1	1	1	1	1	1	1	1	1	1				
		0.5	1.5	2	1	1	1	1	1	1	1	1	1	0.5					
		K	F2	F1	F3	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	Dy11	P		
5	1	2	0.02	3	1	1	1	1	1	1	1	1	1	1	1				
㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴	12	K	G	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	Dy11	Dy12	P			
		3	—	3	3	1	1	1	1	1	1	1	1	2	5				
		1	1	1	1	1	1	1	1	1	1	1	1	1	1				
		1.2	2.8	1.2	1.8	1	1	1	1	1	1	1.5	1.5	3	2.5				
		2	—	1	1	1	1	1	1	1	1	1	1	1	1				
		4	0	1	1.4	1	1	1	1	1	1	1	1	1	1	1 (Note 1)			
		4	0	2.5	1.5	1	1	1	1	1	1	1	1	1	1				
		1	3	1.2	1.8	1	1	1	1	1	1	1.5	1.5	3	2.5				
		4	0	1.2	1.8	1	1	1	1	1	1	1	1	1	1				
		6	0	1	1.4	1	1	1	1	1	1	1	1	1	1				
		1	—	1	1	1	1	1	1	1	1	1	1	1	1				
㊵	14	K	G1	G2	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	Dy11	Dy12	Dy13	Dy14	P
		2.5	7.5	0	1.2	1.8	1	1	1	1	1	1	1	1	1	1.5	1.5	3	2.5
㊶	15	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	Dy11	Dy12	Dy13	Dy14	Dy15	P	
		2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
㊷	16	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	Dy11	Dy12	Dy13	Dy14	Dy15	Dy16	P
		2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
㊸	19	K	Dy1	Dy2	Dy3											Dy17	Dy18	Dy19	P
		2	1	1	1											1	1	1	1

Note 1 : The shield pin should be connected to Dy5.
2 : Acc to be connected to Dy7 except R4998

NOTES

- Ⓐ * : Newly listed in this catalog.
- Ⓑ Refer to pages 88 and 89 for typical spectral response charts.
- Ⓒ Photocathode materials
BA : Bialkali
LBA : Low dark current bialkali
HBA : High temperature bialkali
MA : Multialkali
EMA : Extended red multialkali
- Ⓓ Window materials
MF : MgF₂
Q : Quartz (Fused Silica or Synthetic Silica)
K : Borosilicate glass
U : UV glass
- Ⓔ Basing diagram
- BASING DIAGRAM SYMBOLS**
All base diagrams show terminals viewed from the base end of the tube.

DY : Dynode
G(F) : Grid (Focusing Electrode)
ACC : Accelerating Electrode
K : Photocathode
P : Anode
SH : Shield
IC : Internal Connection (Do not use)
NC : No Connection (Do not use)
- Ⓕ Dynode structure
B : Box-and-grid
VB : Venetian blind
CC : Circular-cage
L : Linear-focused
B+L : Box and linear focused
FM : Fine Mesh
CM : Coarse Mesh
MC : Metal Channel
- Ⓖ ★ : A socket will be supplied with the tube.
■ : Sockets may be available from electronics supply houses or our sales office. (See pages 76 and 77.)
- Ⓗ The maximum ambient temperature range is -80 to +50°C except the following tubes using a high temperature bialkali photocathode which withstands from -80 up to +175°C. When a tube is operated below -30°C see page 86, "PRECAUTIONS FOR USE".

Diameter	Type No.	Diameter	Type No.
13mm (1/2")	R4177-01	38mm (1-1/2")	R1705
19mm (3/4")	R1281,R3991	51mm (2")	R4607-01
25mm (1")	R1288	—	—

- Ⓙ Averaged over any interval of 30 seconds maximum.
- Ⓚ Measured at the peak wavelength.
- Ⓛ Refer to page 72 for voltage distribution ratios.
- Ⓜ Anode characteristics are measured with the supply voltage and voltage distribution ratio specified by Note L.
- Ⓝ Anode characteristics are measured at the specified supply voltage on page 61.
- Ⓟ Anode characteristics are measured with the specified anode-to-cathode supply voltage.
- Ⓢ Ⓐ at 122nm
Ⓢ Ⓑ at 254nm
Ⓢ Ⓒ at 852nm
Ⓢ Ⓓ Measured using a red filter Toshiba IR-D80A.
Ⓢ Ⓔ at 4A/lm
Ⓢ Ⓛ at 10A/lm
Ⓢ Ⓜ at 1000A/lm
Ⓢ Ⓝ Dark counts per second (cps)
Ⓢ Ⓡ Dark counts per second (cps) after one hour storage at -20°C.
Ⓢ Ⓢ Background noise per minute (cpm)