

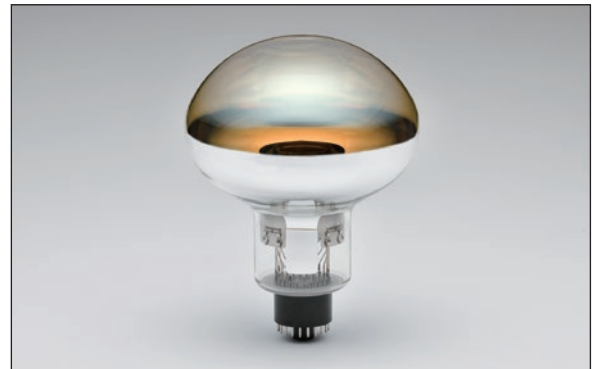
FEATURES

- Hemispherical window
- High time resolution

APPLICATIONS

- High energy physics

SPECIFICATIONS



GENERAL

Parameter		Description / Value	Unit
Spectral response		300 to 650	nm
Wavelength of maximum response		420	nm
Photocathode	Material	Bialkali (R14688), Super bialkali (R14688-100)	—
	Minimum effective area	φ190	mm
Window material		Borosilicate glass	—
Dynode	Structure	Box and Line	—
	Number of stages	10	—
Direct interelectrode capacitances	Anode to last dynode	Approx. 3	pF
	Anode to all other dynodes	Approx. 7	pF
Base		20-pin base JEDEC B20-102	—
Weight		Approx. 830	g
Suitable socket		E678-20B (supplied)	—
Operating ambient temperature		-30 to +50	°C
Storage temperature		-30 to +50	°C

MAXIMUM RATINGS (Absolute maximum values)

Parameter		Value	Unit
Supply voltage	Between anode and cathode	2200	V
	Between anode and last dynode	300	V
Average anode current		0.1	mA
Ambient pressure (Gauge)		0.7	MPa

CHARACTERISTICS (at 25 °C)

Parameter	R14688			R14688-100			Unit	
	Min.	Typ.	Max.	Min.	Typ.	Max.		
Cathode sensitivity	Luminous (2856 K)	40	80	—	—	105	—	μA/lm
	Radiant at 420 nm	—	80	—	—	110	—	mA/W
	Blue sensitivity index	6	10	—	12.5	13.5	—	—
	Quantum efficiency at 390nm	—	25	—	32	35	—	%
Anode sensitivity	Luminous (2856 K)	—	800	—	—	1100	—	A/lm
	Radiant at 420 nm	—	0.8 × 10 ⁶	—	—	1.1 × 10 ⁶	—	A/W
Gain		—	1.0 × 10 ⁷	—	—	1.0 × 10 ⁷	—	—
Applied voltage for typical gain		—	1750	—	—	1750	—	V
Anode dark current (after 30 min storage in darkness)		—	100	1000	—	500	1000	nA
Dark count (after 15 h storage in darkness)		—	4000	8000	—	6000	10 000	s ⁻¹
Time response	Anode pulse rise time	—	2.2	—	—	2.2	—	ns
	Electron transit time	—	37	—	—	37	—	ns
	Transit time spread (FWHM)	—	1.0	—	—	1.0	—	ns
Single photoelectron	PHD (Peak to valley ratio)	2	3	—	2	3	—	—
Pulse linearity	at 2 % deviation	—	40	—	—	40	—	mA
	at 5 % deviation	—	60	—	—	60	—	mA

NOTE: Anode characteristics are measured with a voltage distribution ratio shown below.

VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	Dy1	G	Dy2	Dy3	Dy4	Dy5	Dy6(Acc)	Dy7	Dy8	Dy9	Dy10	P
Ratio	11	1.5	4	4.5	1.5	1.5	1	1.2	2	2.2	3	1.7	
Capacitors in μF										0.01	0.01	0.01	

Supply voltage: 1750 V, K: Cathode, Dy: Dynode, P: Anode, G: Grid, Acc: Accelerating electrode

PHOTOMULTIPLIER TUBE R14688/R14688-100

Figure 1: Typical spectral response

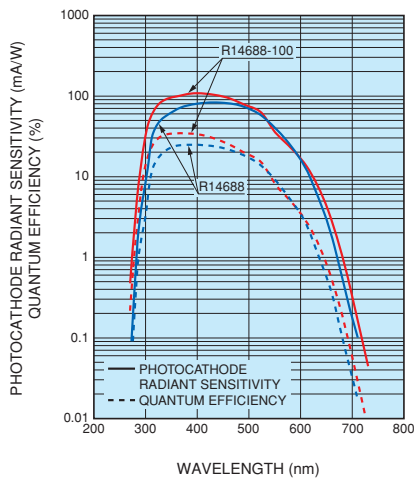


Figure 2: Typical gain

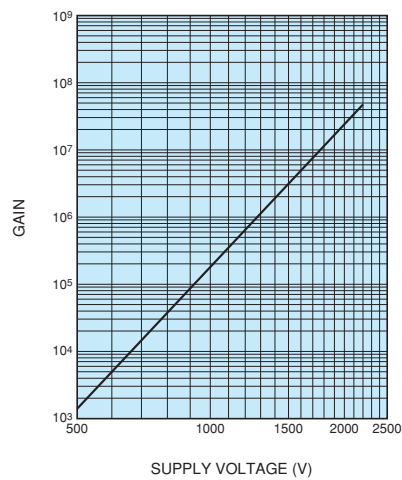


Figure 3: Typical transit time spread

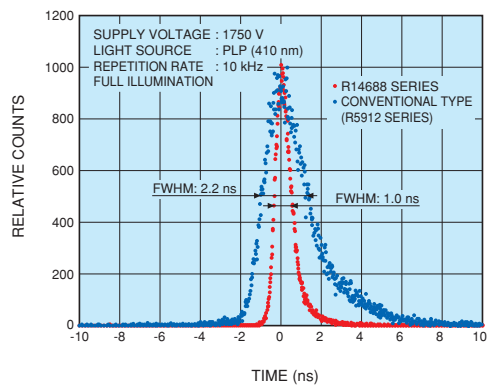
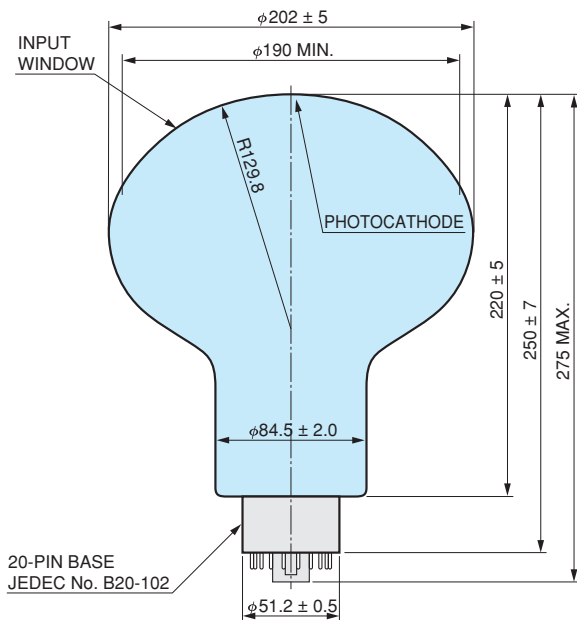
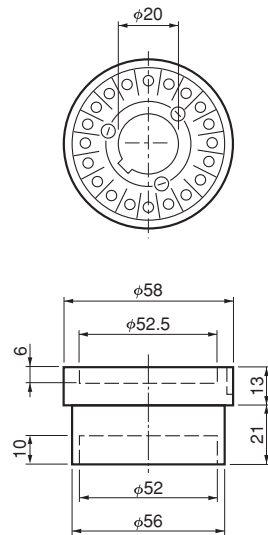


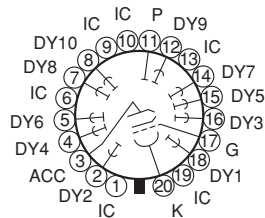
Figure 4: Dimensional outline (Unit: mm)



Socket (E678-20B)



TACCA0003EA



Basing diagram (Bottom view)

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