

## Stable Operation in High Magnetic Fields beyond 1 Tesla 25 mm (1 Inch) Diameter, Proximity Photocathode and Fine Mesh Dynodes

### GENERAL

Parameter		Description/Value	Unit
Spectral Response		300 to 650	nm
Wavelength of Maximum Response		420 ± 50	nm
Photocathode	Material	Bialkali	—
	Minimum Effective Area	17.5	mm dia.
Window	Material	Borosilicate glass	—
	Shape	Plano-plano	—
Dynode	Secondary Emitting Surface	Bialkali	—
	Structure	Fine mesh	—
	Number of Stages	15	—
Base		17-pin glass base	—
Suitable Socket		E678-17A (supplied)	—

### MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	2300	V dc
	Between Anode and Last Dynode	200	V dc
Average Anode Current		0.01	mA

### CHARACTERISTICS (at 25 °C)

Parameter		Min.	Typ.	Max.	Unit
Cathode Sensitivity	Luminous (2856K)	—	80	—	μA/lm
	Blue Sensitivity Index (CS 5-58)	—	9.5	—	—
	Quantum Efficiency at 390nm	—	23	—	%
Anode Sensitivity	Luminous (2856K)	—	40	—	A/lm
Gain	At 0 tesla	—	5.0 × 10 <sup>5</sup>	—	—
	At 1 tesla	—	1.8 × 10 <sup>4</sup>	—	—
Anode Dark Current (after 30min. storage in darkness)		—	5.0	30	nA
Time Response	Anode Pulse Rise Time	—	1.5	—	ns
	Electron Transit Time	—	5.6	—	ns
	Transit Time Spread (FWHM)	—	0.35	—	ns
Pulse Linearity (at 2 % Deviation)		—	180	—	mA

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

### VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	.....	Dy15	P
Ratio	2	1	1	1	1	1	1	.....	1	1

Supply Voltage : 2000 V dc,    K : Cathode,    Dy : Dynode,    P : Anode

※ R5506 (UV glass window) is also available.

Subject to local technical requirements and regulations, availability of products included in this promotional material may vary. Please consult with our sales office. Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications are subject to change without notice. No patent rights are granted to any of the circuits described herein. ©2001 Hamamatsu Photonics K.K.

# PHOTOMULTIPLIER TUBE R5505

Figure 1: Typical Spectral Response

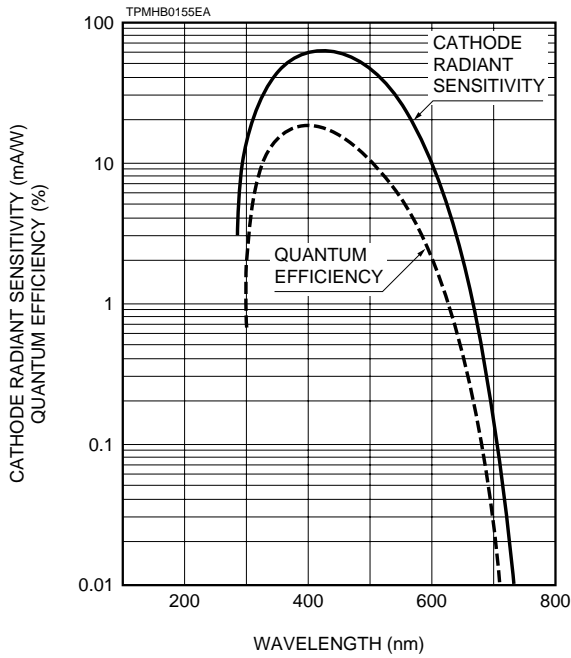


Figure 2: Typical Gain in Magnetic Fields (Parallel to Tube Axis)

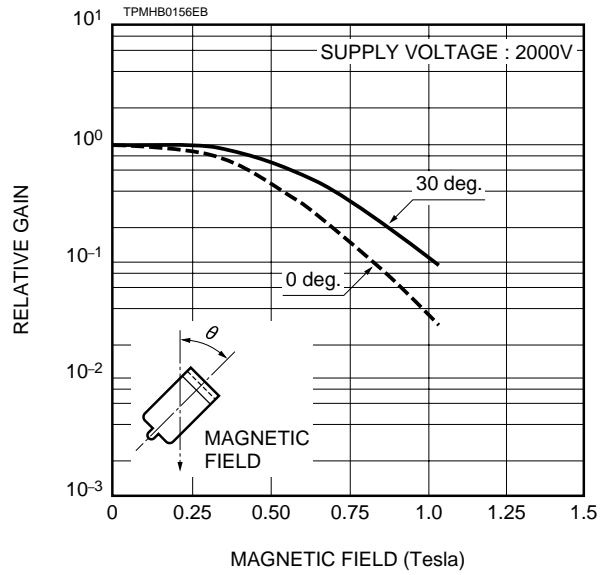
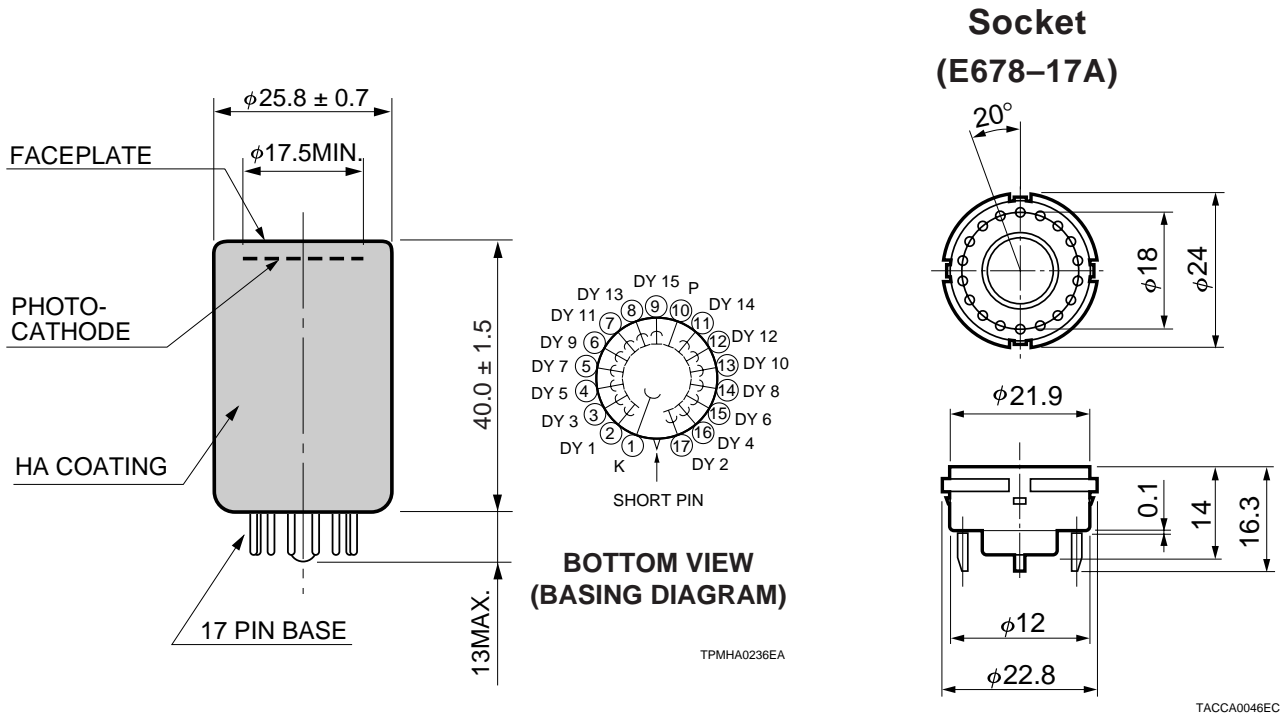


Figure 3: Dimensional Outline and Basing Diagram (Unit : mm)



# HAMAMATSU

HOME PAGE URL <http://www.hamamatsu.com>

HAMAMATSU PHOTONICS K.K., Electron Tube Center

314-5, Shimokanzo, Toyooka-village, Iwata-gun, Shizuoka-ken, 438-0193, Japan, Telephone: (81)539/62-5248, Fax: (81)539/62-2205

U.S.A.: Hamamatsu Photonics Corporation, 360 Foothill Road, P. O. Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: [usa@hamamatsu.com](mailto:usa@hamamatsu.com)

Germany: Hamamatsu Photonics Deutschland GmbH, Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-2658 E-mail: [info@hamamatsu.de](mailto:info@hamamatsu.de)

France: Hamamatsu Photonics France S.A.R.L.: 8, Rue du Saulé Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 10 E-mail: [infos@hamamatsu.fr](mailto:infos@hamamatsu.fr)

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road Welwyn Garden City Hertfordshire AL7 1BW, United Kingdom, Telephone: 44-(0)1707-294888, Fax: 44(0)1707-325777 E-mail: [info@hamamatsu.co.uk](mailto:info@hamamatsu.co.uk)

North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171-41 SOLNA, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01 E-mail: [info@hamamatsu.se](mailto:info@hamamatsu.se)

Italy: Hamamatsu Photonics Italia: S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39)02-935 81 733, Fax: (39)02-935 81 741 E-mail: [info@hamamatsu.it](mailto:info@hamamatsu.it)

TPMH1078E04  
JAN. 2001