

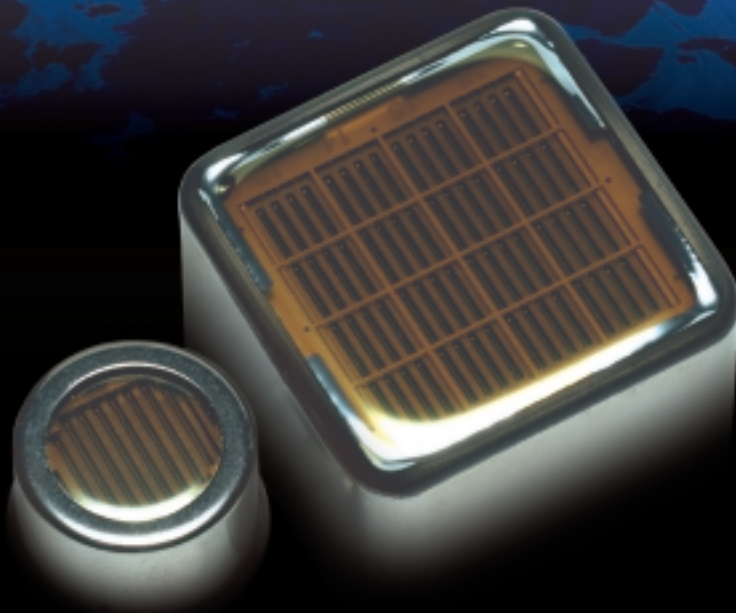
UBA

Ultra Bialkali

SBA

Super Bialkali

Photomultiplier Tube Series



Hamamatsu
"Bialkali Climbing Party"
Has Now Reached

"43% QE"!

Always been a leader in Photonic Device performance, Hamamatsu has now developed a PMT with a quantum efficiency (QE) of 43%. In all kinds of high-precision light measurements, high sensitivity and high QE are absolutely essential elements in extending detection limits and unlocking new knowledge. For Hamamatsu, however, this 43% QE is just one more step along the road. Aiming for the peak of PMT performance will open up all kinds of new possibilities.

HAMAMATSU

WEB SITE www.hamamatsu.com

UBA (Ultra Bialkali), SBA (Super Bialkali) PHOTOMULTIPLIER TUBE SERIES

UBA

Ultra Bialkali

SBA

Super Bialkali



Type No.	Type [Ⓐ]	Outline No.	Suitable Socket Assembly / Outline No.	Quantum Efficiency			Dynode Structure / Stage [Ⓑ]	Socket	Maximum Ratings [Ⓒ]		Anode to Cathode Supply Voltage (V)
				Peak Wavelength (nm)	at Peak Wavelength Typ. (%)	at 400 nm Typ. (%)			Anode to Cathode Voltage (V)	Average Anode Current (mA) [Ⓓ]	
R9880U-110	SBA	①	E10679 ①	330	40	37	MC / 10	E678-12W	1250	0.1	1000
R7600U-100	SBA	②	E5996 ②	350	35	34	MC / 10	E678-32B	900	0.1	800
R7600U-200	UBA	②	E5996 ②	350	43	40	MC / 10	E678-32B	900	0.1	800
R7600U-100-M4	SBA	③	E7083 ③	350	35	34	MC / 10	E678-32B	900	0.1	800
R7600U-200-M4	UBA	③	E7083 ③	350	43	40	MC / 10	E678-32B	900	0.1	800
H8711-100	SBA	④	—	350	35	34	MC / 12	—	-1000	0.017	-800
H8711-200	UBA	④	—	350	43	40	MC / 12	—	-1000	0.017	-800
H7546B-100	SBA	⑤	—	350	35	34	MC / 12	—	-1000	0.023	-800
H7546B-200	UBA	⑤	—	350	43	40	MC / 12	—	-1000	0.023	-800
R3998-100-02	SBA	⑥	E990-29 ④	350	35	34	B+L / 9	E678-14C	1500	0.1	1000
R6231-100	SBA	⑦	E1198-26 ⑤ E1198-27 ⑥	350	35	34	B+L / 8	E678-14W	1500	0.1	1000
R6233-100	SBA	⑧	E1198-26 ⑤ E1198-27 ⑥	350	35	34	B+L / 8	E678-14W	1500	0.1	1000

Notes

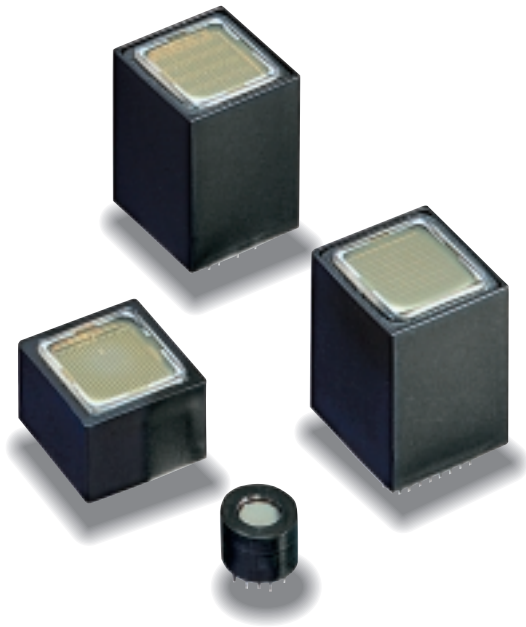
Ⓐ Photocathode: Bialkali, Window Material: Borosilicate glass

Ⓑ MC: Metal channel B+L: Box and linear-focused

Ⓒ Operating ambient temperature range for the photomultiplier itself is -30 °C to +50 °C.

However, when photomultiplier tubes are operated below -30 °C at their base section, please consult us in advance.

Ⓓ Average over any interval of 30 seconds maximum.



Hamamatsu Tops Its Own Super Bialkali Photocathode !

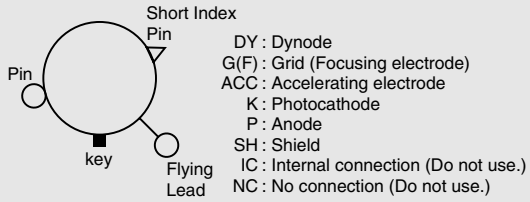
The concept "匠" or "Takumi" is a traditional quality and skill of the Japanese craftsman. This term is given to those who pour their whole spirit into creating an object. Grippled by this "Takumi" spirit for long years, Hamamatsu has succeeded in making a PMT bialkali photocathode with a quantum efficiency (QE) of 43%. Holding on to this "Takumi" spirit will help Hamamatsu continually push the PMT to still higher performance levels. Aiming for the ultimate in PMT performance will open up all kinds of new possibilities.

Cathode Luminous Sensitivity Typ. ($\mu\text{A/lm}$)	Cathode Blue Sensitivity Index (CS 5-58) Typ.	Cathode Radiant Sensitivity		Anode Luminous Sensitivity Typ. (A/lm)	Anode Radiant Sensitivity Typ. (A/W)	Gain Typ.	Dark Current (After 30 min)		Rise Time Typ. (ns)	Transit Time Typ. (ns)	Type No.
		Peak Wavelength (nm)	at Peak Wavelength Typ. (mA/W)				Typ. (nA)	Max. (nA)			
135	14	390	120	540	4.8×10^5	4.0×10^6	1	10	0.57	3.6	R9880U-110
105	13.5	400	110	105	1.1×10^5	1.0×10^6	2	20	1.4	9.6	R7600U-100
135	15.5	400	130	135	1.3×10^5	1.0×10^6	2	20	1.4	9.6	R7600U-200
105	13.5	400	110	140	1.4×10^5	1.3×10^6	2 / 4ch	20 / 4ch	1.2	9.5	R7600U-100-M4
135	15.5	400	130	175	1.7×10^5	1.3×10^6	2 / 4ch	20 / 4ch	1.2	9.5	R7600U-200-M4
105	13.5	400	110	210	2.2×10^5	2.0×10^6	0.8 / ch	4 / ch	0.83	12	H8711-100
135	15.5	400	130	270	2.6×10^5	2.0×10^6	0.8 / ch	4 / ch	0.83	12	H8711-200
105	13.5	400	110	30	3.3×10^4	3.0×10^5	0.2 / ch	2 / ch	1.0	12	H7546B-100
135	15.5	400	130	40	3.9×10^4	3.0×10^5	0.2 / ch	2 / ch	1.0	12	H7546B-200
130	13.5	420	110	130	1.1×10^5	1.0×10^6	5	25	3.4	23	R3998-100-02
130	13.5	420	110	30	2.5×10^4	2.3×10^5	10	30	5.0	48	R6231-100
130	13.5	420	110	30	2.5×10^4	2.3×10^5	10	30	6.0	52	R6233-100

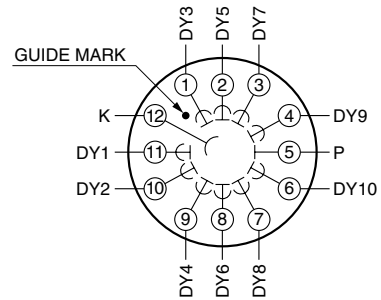
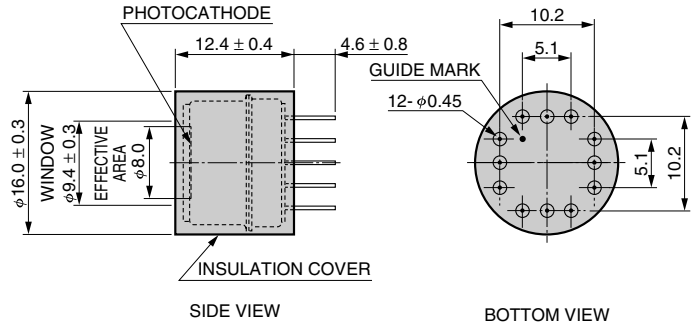
UBA (Ultra Bialkali), SBA (Super Bialkali) PHOTOMULTIPLIER TUBE SERIES

BASING DIAGRAM SYMBOLS

All base diagrams show terminals viewed from the base end of the tube. Each symbol used in basing diagrams signifies the following.

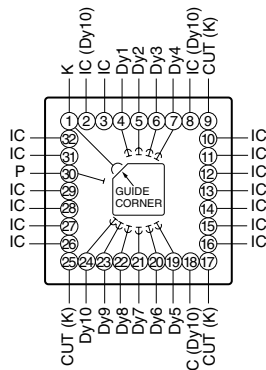
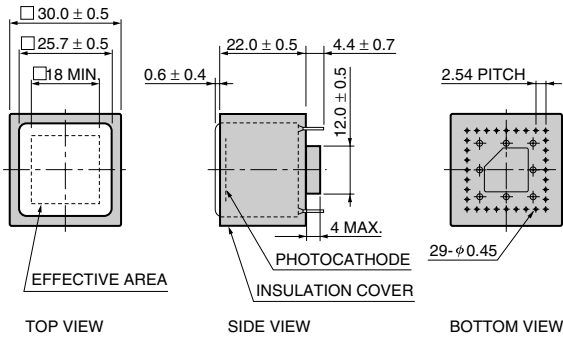


1 TO-8 Metal Package Type R9880U-110



TPMHA0539EB

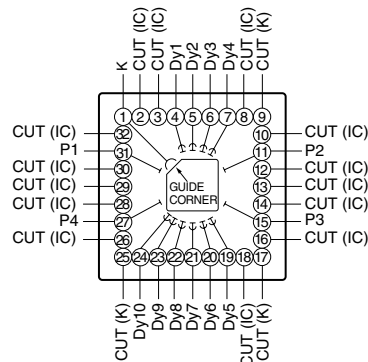
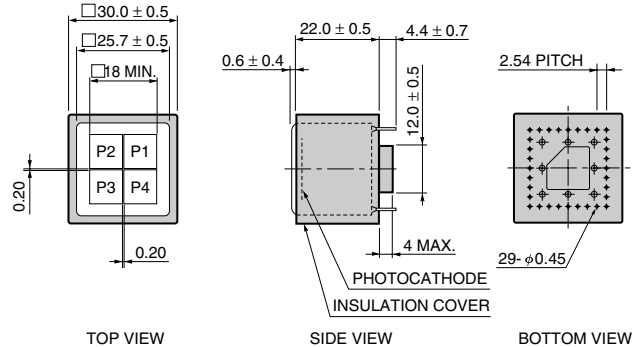
2 30 mm Metal Package Type R7600U-100/-200



Basing Diagram

TPMHA0540EA

3 2 × 2 Multinode Type R7600U-100-M4/-200-M4



Basing Diagram

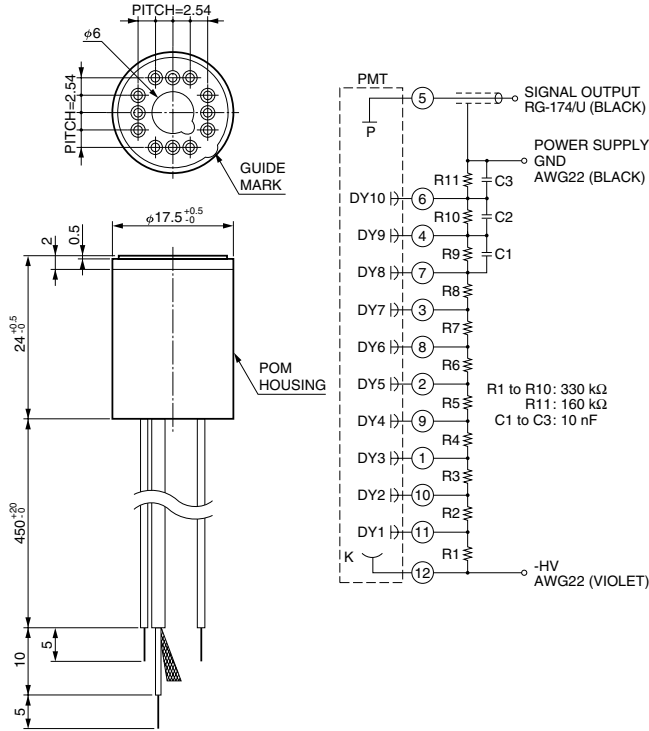
TPMHA0541EA

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D-TYPE SOCKET ASSEMBLIES

① E10679

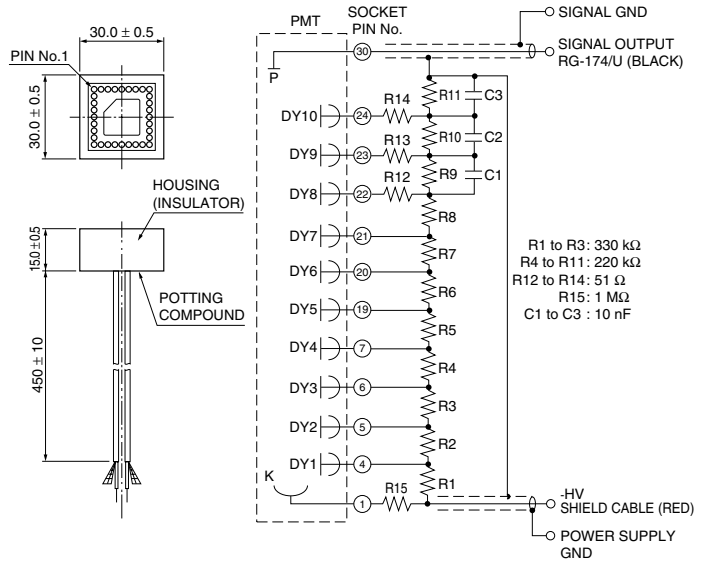
for R9880U-110



TACCA0299EA

② E5996

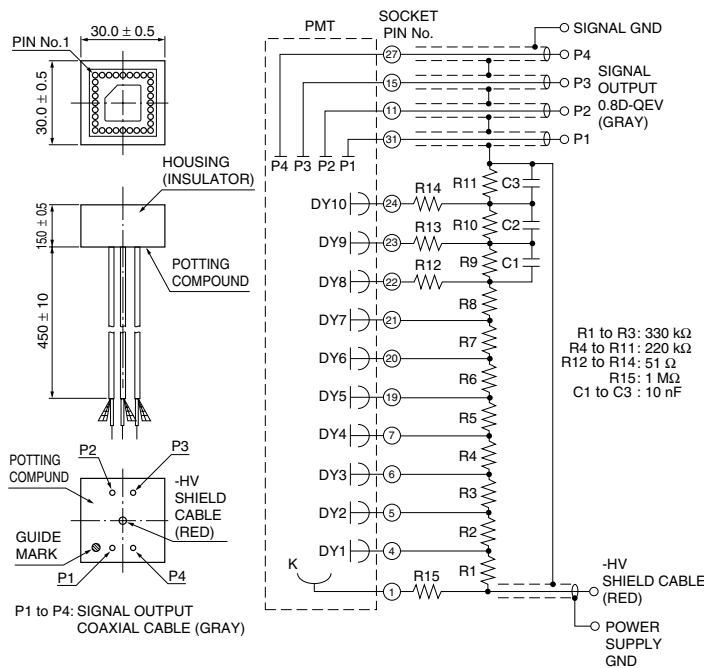
for R7600U-100/-200



TACCA0234ED

③ E7083

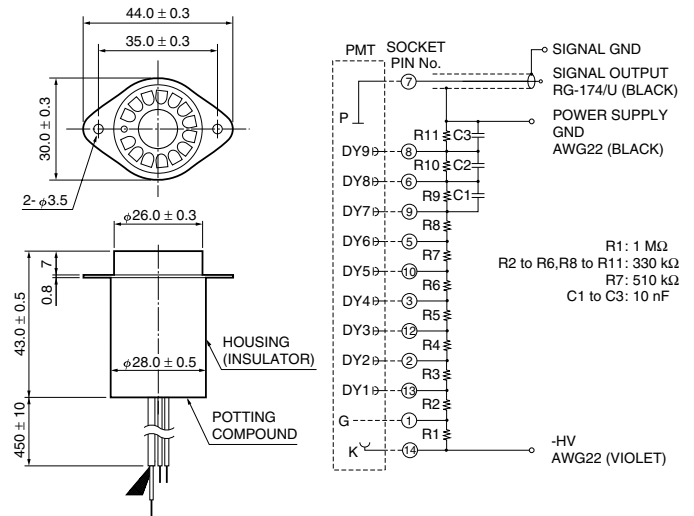
for R7600U-100-M4/-200-M4



TACCA0162EE

④ E990-29

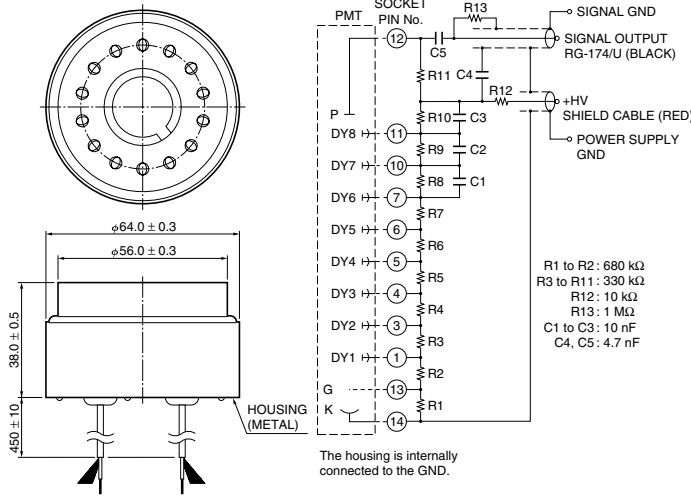
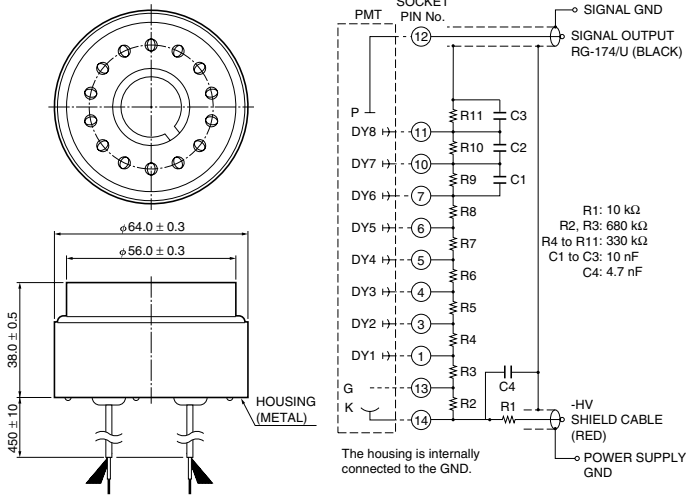
for R3998-100-02



TACCA0215EC

⑤ E1198-26 for R6231-100, R6233-100

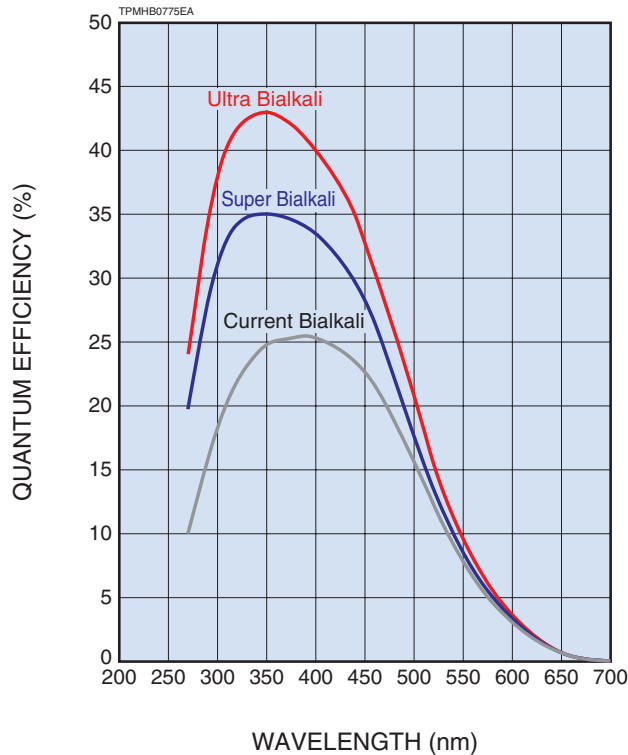
⑥ E1198-27 for R6231-100, R6233-100



TACCA0224EC

TACCA0225EB

● TYPICAL SPECTRAL RESPONSE CHARACTERISTICS (R7600U-100/-200 Series)



HAMAMATSU

HAMAMATSU PHOTONICS K.K., Electron Tube Division

314-5, Shimokanzo, Iwata City, Shizuoka Pref., 438-0193, Japan

Telephone: (81)539/62-5248, Fax: (81)539/62-2205

www.hamamatsu.com

Main Products

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Sales Offices

ASIA:

HAMAMATSU PHOTONICS K.K.
325-6, Sunayama-cho,
Hamamatsu City, 430-8587, Japan
Telephone: (81)53-452-2141, Fax: (81)53-456-7889

U.S.A.:

HAMAMATSU CORPORATION
Main Office
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

Western U.S.A. Office:

Suite 200, 2875 Moorpark Avenue
San Jose, CA 95128, U.S.A.
Telephone: (1)408-261-2022, Fax: (1)408-261-2522
E-mail: usa@hamamatsu.com

United Kingdom:

HAMAMATSU PHOTONICS UK LIMITED
Main Office
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

South Africa Office:

PO Box 1112, Buccleuch 2066,
Johannesburg, Republic of South Africa
Telephone/Fax: (27)11-802-5505

France, Portugal, Belgium, Switzerland, Spain:

HAMAMATSU PHOTONICS FRANCE S.A.R.L.
Main Office
19, Rue du Saule 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

Swiss Office:

Dornacherplatz 7
4500 Solothurn, Switzerland
Telephone: (41)32/625 60 60,
Fax: (41)32/625 60 61
E-mail: swiss@hamamatsu.ch

Belgian Office:

Scientific Park, 7, Rue du Bosquet
B-1348 Louvain-La-Neuve, Belgium
Telephone: (32)10 45 63 34
Fax: (32)10 45 63 67
E-mail: epirson@hamamatsu.com

Spanish Office:

Centro de Empresas de Nuevas Tecnologías
Parque Tecnológico del Vallés
08290 CERDANYOLA, (Barcelona) Spain
Telephone: (34)93 582 44 30
Fax: (34)93 582 44 31
E-mail: spain@hamamatsu.com

Germany, Denmark, The Netherlands, Poland:

HAMAMATSU PHOTONICS DEUTSCHLAND GmbH
Main Office
Arzbergerstr. 10,
D-82211 Herrsching am Ammersee, Germany
Telephone: (49)8152-375-0, Fax: (49)8152-2658
E-mail: info@hamamatsu.de

Danish Office:

Please contact Hamamatsu Photonics Deutschland GmbH.

The Netherlands Office:

PO Box 50.075, NL-1305 AB Almere Netherlands
Telephone: (31)36-5382-123, Fax: (31)36-5382-124
E-mail: info@hamamatsu.nl

Poland Office:

ul. sw. A. Boboli 8,
02-525 Warszawa, Poland
Telephone: (48)22-646-00-16, Fax: (48)22-646-00-18
E-mail: info@hamamatsu.de

North Europe and CIS:

HAMAMATSU PHOTONICS NORDEN AB
Main Office
Smidesvägen 12,
SE-171 41 Solna, Sweden
Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01
E-mail: info@hamamatsu.se

Russian Office:

Riverside Towers
Kosmodamianskaya nab. 52/1, 14th floor
RU-113054 Moscow, Russia
Telephone/Fax: (7)495 411 51 54
E-mail: info@hamamatsu.ru

Italy:

HAMAMATSU PHOTONICS ITALIA S.R.L.
Main Office
Strada della Moia, 1/E
20020 Arese (Milano), Italy
Telephone: (39)02-93 58 1733, Fax: (39)02-93 58 1741
E-mail: info@hamamatsu.it

Rome Office:

Viale Cesare Pavese, 435, 00144 Roma, Italy
Telephone: (39)06-50513454, Fax: (39)06-50513460
E-mail: inforoma@hamamatsu.it

MAR. 2008

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