

## THz image intensifier (THz I.I.) C17198, C17371



The C17198 is an imaging device that utilizes metasurface technology for THz wave-to-electron conversion and has sensitivity in the THz wave region. It is useful as "THz beam visualizer" for laboratory use, where it can visualize and observe invisible THz waves at hand. In addition, it is capable of high-speed imaging at up to 1000 fps, making it possible to image high-speed phenomena that had been difficult to capture with conventional thermal THz cameras.

#### Features

- Sensitive for wide frequency band
- Real time imaging
- High-speed response
- Simple operation

#### Applications

- Real time THz wave beam monitor
- THz transmission imaging

### **TOPIC** A new detector using a metasurface

Metasurface is artificially designed fine surface structure and it is utilized for various promising technologies.

This structure has gold antenna patterns on a substrate such as quartz or silicone, and when THz wave is incident on the surface, electrons are emitted according to a priciple of field emission. THz wave is detected by multiplying these electrons.



# THz image intensifier (THz I.I.)

#### Specification of THz I.I. C17198

Parameter	Description/Value	Unit
Photocathode	Metasurface	-
Effective area	Ф16	mm
Window material	Silica glass	-
Maximum frame rate *1	1000	fps
Minimum E-field to detect	10	kV/cm
Recommended spectral response	0.7 to 1.3	THz
Operating ambient temperature	+5 to +50	°C
Weight	310	g

\*1 Depends on a specification of connected camera.

#### Specification of power supply C17371

Parameter			Description/Value	Unit
AC adapter	Input voltage	Min.	100	V
		Max.	240	v
	Input current	Max.	0.4	A
	Input rated frequency		50 / 60	Hz
Battery box	Input voltage	Min.	7.3	
		Тур.	9	V
		Max.	9.5	
	Input current	Max.	60	mA
Weight			295	g

### THz image intensifier (THz I.I.)

#### Dimensional outline (Unit: mm)

#### • THz I.I. C17198



Power supply C17371



\* Gate fuctions is unavailable in this module.

### THz imaging example

#### THz beam monitoring



#### **Imaging resolution**



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#### HAMAMATSU PHOTONICS K.K. www.hamamatsu.com

#### **Electron Tube Division**

314-5, Shimokanzo, Iwata City, Shizuoka Pref., 438-0193, Japan, Telephone: (81)539/62-5248, Fax: (81)539/62-2205

 S14-5, Shimitokalizo, Iwata City, Shizubaka Prel., 4-S5-0 195, Japain, Telephone: (b) JS39/02-22405
U.S.A.: HAMAMATSU CORPORATION: S60 Foothill Road, Bridgewater, NJ 08807, U.S.A., Telephone: (1)908-231-9060, Fax: (1)908-231-1218
Germany: HAMAMATSU PHOTONICS DEUTSCHLAND GMBH: Arzbergerstr. 10, 82211 Herrsching am Ammersee, Germany: Telephone: (49)8152-375-0, Fax: (49)8152-265-8. E-mail: info@hamamatsu.de
France: HAMAMATSU PHOTONICS FRANCE S.A.R.L: 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: info@hamamatsu.de
Norte Kingdom: HAMAMATSU PHOTONICS WE LIMITED: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire, AL7 18W, UK, Telephone: (41)707-29488, Fax: (44)1707-29488, Fax: (44)1707-2948, Fax: (44)1707-29488, Fax: (44)1707-2948, Fax: (44)1707-29488, Fax: (44)1707-2948, Fax: (44)180, Fax: (45)8-509-031-01. E-mail: info@hamamatsu.ec.uk
North Europe: HAMAMATSU PHOTONICS NELIMITED: 2 Howard 50, 1640 Kista, Sweden, Telephone: (46)8-509-031-01. E-mail: info@hamamatsu.ec.uk
North Europe: HAMAMATSU PHOTONICS IX LIMITED: 2 Howard 50, 1640 Kista, Sweden, Telephone: (43)8-509-031-01. E-mail: info@hamamatsu.ee
Italy: HAMAMATSU PHOTONICS (HINA) CO, LTD: 1210, Tower B, Jiaming Center, 27 Dongsanhuan Beliu, Chavang District, 100020 Beling, P.R. China, Telephone: (86)3-659-0081, Fax: (86)10-6586-4606, Fax: (88)3-659-0081, Fax: (86)3-659-0081, Fax: (86)10-6586-4606, Fax: (88)3-659-0081, Fax: (86)3-659-0081, Fax: ( TII1065E02

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