

Emmi-X camera C8250-45 series

(Near-infrared photo emission camera)

Super high sensitive NIR camera detects emissions from devices driven under 0.5 V.

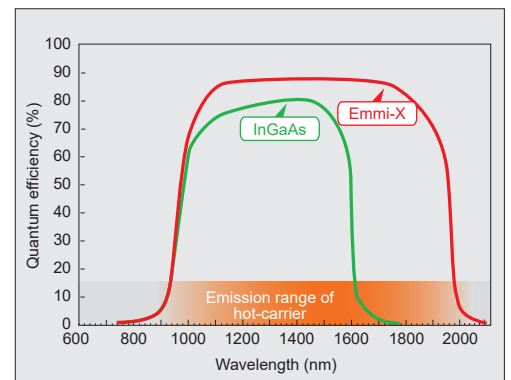


Features

- Higher sensitivity than InGaAs camera.
- Optimized optics design for both macro and micro observation.
- Selectable 3 filters to change cover range of wavelength depending on device design and emission status.

Application

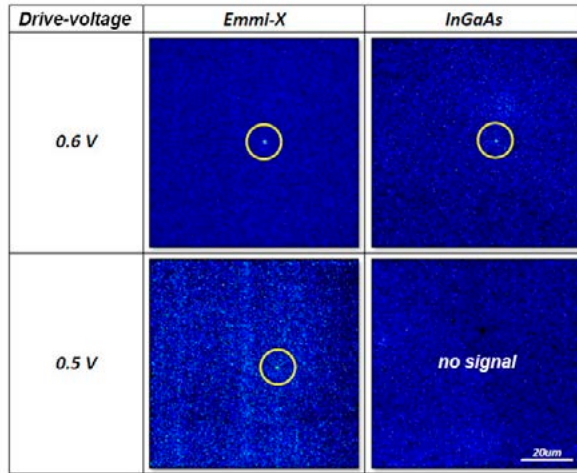
- Backside photo emission observation for advanced devices.



Failure Analysis Systems Option

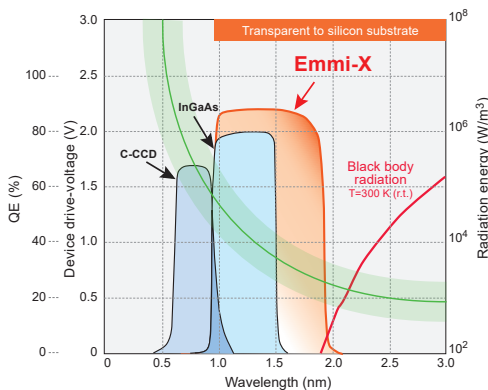
Case study

- **Purpose** Confirm detectability of photo emission by using an advanced device driven under 0.5 V.
- **Method** Observe a sample (design rule <20 nm) with 20× objective lens, Integration time 300 sec.
- **Result**



- **Conclusion** Emmi-X camera detected a photo emission from a device running under 0.5 V. It was not possible by an InGaAs camera because the center wavelength of emission from a low-voltage device shifts to longer region, that matches sensitive region of an Emmi-X camera.

Mechanism



The green curve shows center of photo emission wavelength from semiconductor devices. Following to drive-voltage down, wavelength gets longer and emission intensity gets weaker. Since an Emmi-X camera has higher sensitivity in longer wavelength than InGaAs camera, it is more suitable for photo emission detection for advanced devices than InGaAs camera.

Product configuration

| Product name | Type number | |
|--|-------------|------------------|
| Emmi-X camera 1k × 1k LN2 cooling for iPHEMOS® | C8250-45-20 | Camera main unit |
| Emmi-X camera peripherals 1k × 1k LN2 cooling for iPHEMOS® | C8250-45-30 | Peripherals |

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HAMAMATSU PHOTONICS K.K. www.hamamatsu.com

Systems Division

812 Joko-cho, Higashi-ku, Hamamatsu City, 431-3196, Japan, Telephone: (81)53-431-0124, Fax: (81)53-433-8031, E-mail: export@sys.hpk.co.jp

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, Bridgewater, NJ 08807, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: usa@hamamatsu.com

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-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: infos@hamamatsu.fr

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

North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 16440 Kista, Sweden, Telephone: (46)8-509 031 00, Fax: (46)8-509 031 01 E-mail: info@hamamatsu.se

Italy: Hamamatsu Photonics Italia S.r.l.: Strada della Moia, 1 int. 6, 20044 Arese (Milano), Italy, Telephone: (39)02-93 58 17 33, Fax: (39)02-93 58 17 41 E-mail: info@hamamatsu.it

China: Hamamatsu Photonics (China) Co., Ltd.: 1201 Tower B, Jianning Center, 27 Dongsanhuan Beilu, Chaoyang District, 100020 Beijing, P.R. China, Telephone: (86)10-6586-6006, Fax: (86)10-6586-2866 E-mail: hpc@hamamatsu.com.cn

Taiwan: Hamamatsu Photonics Taiwan Co., Ltd.: 8F-3, No.158, Section 2, Gongdao 5th Road, East District, Hsinchu, 300, Taiwan R.O.C. Telephone: (886)3-659-0080, Fax: (886)3-659-0081 E-mail: info@hamamatsu.com.tw

Cat.No.SSMS0058E02
JUL/2021 HPK
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