

# LATEST PRODUCTS 02

**HAMAMATSU**

PHOTON IS OUR BUSINESS

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LIFE SCIENCE & MEDICAL SYSTEMS

06

CYTOQUBE® Light-Sheet Microplate Cytometer | C15200-01RGBU

## Next generation 3D screening



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Compact & affordable

OPTICAL SENSORS

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Flame Sensor Module | C16956-02  
UV sensor module for  
combustion monitoring

Dear Readers,

Welcome to the 2nd edition of Hamamatsu's Latest Products. In this biannual release, we've curated a selection of key products, ranging from light and radiation sources to optical sensors, components, and complete systems.

We are excited to announce our first Photonics Innovation Awards. These awards, aimed at start-ups, OEMs, and established industry players, provide the opportunity for participants to address critical challenges all while winning valuable prizes. If you are interested in hearing more, please visit [award.hamamatsu.eu](http://award.hamamatsu.eu) for further information.

Enjoy the read!

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Discover our full product range, visit our website:

[www.hamamatsu.com](http://www.hamamatsu.com)

LIGHT & RADIATION SOURCES

Mid-Infrared LED

L15893-0330CA, L15894-0390CA, L15895-0430CA

Compact mid-infrared LED

Leveraging Hamamatsu's advanced crystal growth and processing technology, this compact mid-infrared LED is an ideal light source for CH<sub>4</sub> and CO<sub>2</sub> detectors. It features a surface-mount package with peak emission wavelengths of 3.3 μm, 3.9 μm, and 4.3 μm.

UPDATE

The package size is reduced compared to the previous products L1589x-C series.

APPLICATION EXAMPLES

- Gas detection (CH<sub>4</sub>, CO<sub>2</sub>)



FEATURES

- High output
- High-speed response
- High reliability
- Low power consumption
- Surface mount type ceramic package



[Learn more](#)

OPTICAL SENSORS

Infrared Detector Module with Preamp

C17212-011, C17213-011, C17214-011

Easy-to-use InAsSb detector module with built-in preamp

These room-temperature modules feature an integrated amplifier that can detect infrared light with a simple connection to a DC power supply. Equipped with back-illuminated InAsSb photodetectors, these modules are available in wavelengths of 5 μm, 8 μm, and 10 μm bands. We also welcome requests for custom devices that suit your application.

UPDATE

Compared to the previous C12494 series, these modules offer a lower cost due to their room-temperature operation and provide a faster response speed of 10 MHz. By adopting the back-illuminated InAsSb photodetectors, optical design can be done easily because irradiation on the entire photosensitive area is not required.



APPLICATION EXAMPLES

- High-speed gas analysis (combined with QCL)
- CO<sub>2</sub> laser monitor (C17214-011)

FEATURES

- High-speed response: 10 MHz typ.
- Compact size
- Easy to use
- Operates just by connecting to DC power supply
- Circuit design optimized for detector characteristics



[Learn more](#)



## Optics Module C16028-01

Compact fluorescence detection optics module containing excitation light source and detector

This module consists of Si photodiodes, LEDs for exciting fluorescent reagents, optical systems, and circuits. It is also equipped with trigger input for independently controlling the ON/OFF of each LED.

### UPDATE

We have newly added an optics module specifically designed for fluorescence detection applications to our lineup. This module enables the measurement of two types of fluorescent reagents (FAM and ROX) with a single device.

### APPLICATION EXAMPLES

- PCR inspection equipment
- Fluorescence measurement equipment



[Learn more](#)

### FEATURES

- Low-level light detection in  $10^{-10}$  W order
- Excitation light source capable of irradiating with constantly fixed light levels
- Supports detection of two types of fluorescent reagents (FAM, ROX)
- Compact case: 60 × 60 × 22 mm
- Easy construction of evaluation system, such as alignment with other optical components



## Optical Transceiver P16548-01AT

For 1.25 Gbps optical free-space communication

This product is an optical transceiver integrating both a transmitter and a receiver. The transmitter utilizes an 850 nm VCSEL, and by combining it with a driver IC that compensates for temperature, it is possible to do stable communication over a wide operating temperature range. The receiver consists of a PIN photodiode and a signal processing IC, providing high-speed operation.

### UPDATE

This is a new product to our lineup.

### APPLICATION EXAMPLES

- Short-distance board-to-board communication
- Communication through rotation mechanism

[Learn more](#)

### FEATURES

- Data rate: 100 Mbps to 1.25 Gbps
- Transmission distance: 25 mm to 100 mm
- Full duplex two-way communication
- Supports 360° degree rotation mechanism

## Flame Sensor Module C16956-02

Ideal for combustion monitoring, UV sensor module

This module consists of a UVTRON® discharge and flame sensor integrated with a driver circuit and a signal processing circuit such as for processing of background noise. Besides acquiring information such as UV detection signals and sensitivity (detection count), this module allows checking the UVTRON operation with the internal UV-LED. The light-receiving section of this module has a G1 female thread for easy connection to combustion equipment.

### UPDATE

This is a new product to our lineup.

### APPLICATION EXAMPLES

- Boiler and hydrogen boiler flame monitoring
- Fire detection in hazardous material handling areas
- Detection of discharges on high-voltage power lines
- Fire detection in facilities and warehouses
- Forest fire detection



### FEATURES

- Spectral response range: 185 nm to 260 nm
- High sensitivity, high speed response
- G1 female thread for easy connection to combustion equipment



[Learn more](#)

## QPM Optical Module C16999-10, C16999-20, C16999-30

In-line compatible quantitative phase microscopy to detect surface defects

This is an optical module for building interference microscopes, QPM (Quantitative Phase Microscopy) which provides nano-scale vertical resolution.

### UPDATE

This is a new product to our lineup.

### APPLICATION EXAMPLE

- Defect inspection on semiconductor surface
- Microparticle inspection



### FEATURES

- Compact and lightweight
- Compatible with in-line configuration (for embedded applications)
- High-speed and real-time measurement
- Reduced total cost



[Learn more](#)



## Photon Counting Head H10682-110W

Photon counting head with a thin, highly efficient light-collecting lens

This new device consists of a metal package photomultiplier tube, along with a high-speed photon counting circuit and a high-voltage power supply circuit. The high voltage supply for the photomultiplier tube and the discrimination level are preset to optimum values, allowing photon counting measurement by just connecting a +5 V supply.

### UPDATE

It is integrated with a newly designed condenser lens offering high light-collecting efficiency.

### APPLICATION EXAMPLES

- Compact in-vitro diagnostic instruments



[Learn more](#)

### FEATURES

- Spectral response range: 380 nm to 700 nm
- Effective area: 21 mm dia.
- Low voltage operation: + 5 V



## CYTOQUBE® Light-Sheet Microplate Cytometer C15200-01RGBU

Next generation 3D screening

CYTOQUBE is a Light-Sheet Microplate Cytometer that performs high-speed fluorescence imaging and analysis for both 2D and 3D cell-cultured samples. During the image acquisition process, fluorescence intensity and 3D morphological information of the objects (cells, spheroids, or organoids) are analyzed, and the results are displayed upon completion of the scan.

### UPDATE

This is a new product to our lineup.

### APPLICATION EXAMPLES

- 3D samples (spheroids, organoids, patient-derived tissue samples, bioprinting samples, etc.)
- 2D samples (established cells, primary cultured cells, differentiated cells derived from iPS cells, etc.)



[Learn more](#)

### FEATURES

- Scanning capability of 1536, 384 and 96 well microplates
- Unique patented technology, Zyncscan® for high-throughput, ease of use and reliability
- Fast 3D fluorescence imaging
- High-throughput analysis

### IMPRESSUM

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