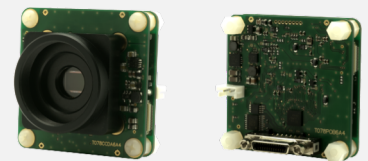




Camera module for Micro satellite “WAT-078H”

Major features

- Adopt high sensitivity CCD sensor suitable for operation in space
- Low cost design realized by diversion of industrial parts
- Flexible customization by utilizing design assets



Major applications expected

- Satellite monitoring in outer space, Surface observation of the planet
- Mounting in space exploration equipment



<https://www.wsvi.jp/>

Camera module for Micro satellite "WAT-078H"

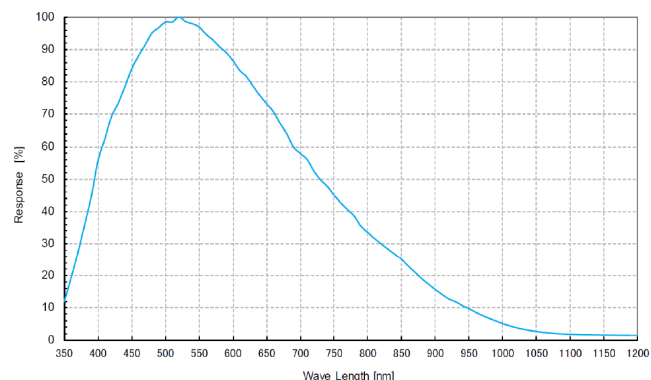
Basic specifications

Image sensor	1/1.8" CCD Image sensor
Total number of pixels / Number of effective pixels	1688(H) x 1248(V) / 1644(H) x 1236(V)
Cell size	4.4[μm] x 4.4 [μm]
Synchronization / Scanning method	Internal synchronization / progressive scan
Electronic shutter	High speed shutter [sec] : 1/25, 1/50, 1/100, 1/200, 1/400, 1/1000, 1/2000, 1/4000, 1/10000 Low speed shutter [FRM] : 1~128 (can be set in 1 frame unit)
CDS gain	can be set in 0 to 18 [dB], 3 [dB] increments (standard: 6 [dB])
PGA gain	can be set in increments of -0.54 to 36.1 [dB], about 0.036 [dB]
Video output interface	LVDS(12Bit, CameraLink Base configuration) 1TAP (60MHz) / 2TAP (30MHz) switchable
Video output format	1636[H] x 1220[V], 25[fps]
Supply voltage / range	DC+5[V] \cdot 4~16[V]
Lens mount	CS mount
weight	Approximately 38 [g] (with connector) / about 35 [g] (without connector)

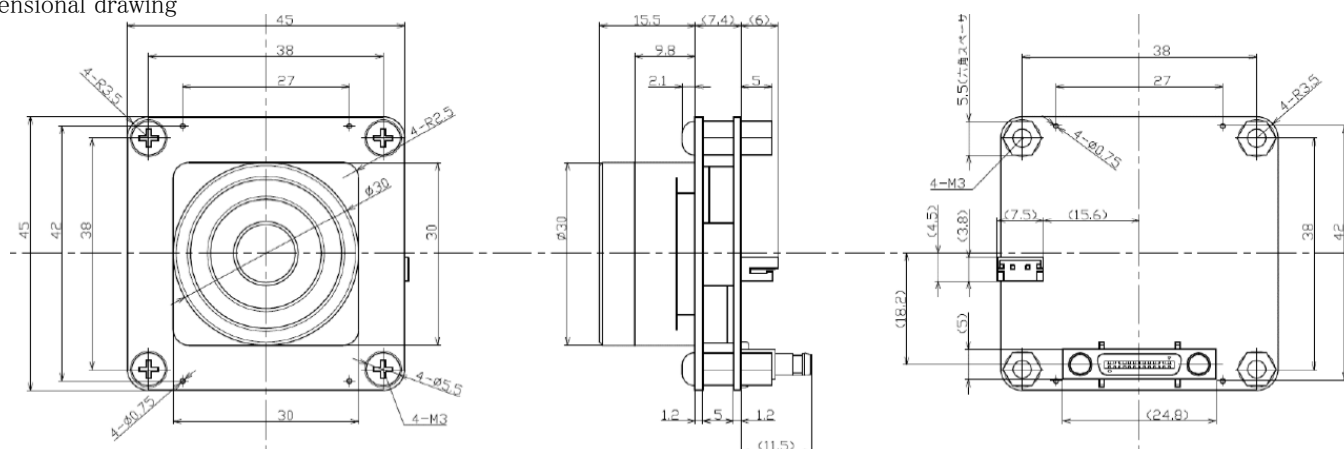
Other features

- Square grid, adopt progressive scan CCD sensor
- Electronic shutter function (global shutter)
- VGA gain setting function
- Detailed digital conversion, A/D resolution 12 [Bit]
- CameaLink (Base configuration) with high versatility is adopted
- External trigger shutter function
(Equipped with a random trigger function that can obtain arbitrary exposure time at arbitrary timing)

Spectral Sensitivity Characteristics



Dimensional drawing



WATEC SPACE VENTURES

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● The contents of this document are as of 2018 April.

● The contents of this document are subject to change without notice. Please contact us for product details.



Move the world with creative products

Watec Space Ventures Inc. is a company established in February 2018 with the investment from industrial camera manufacture "Watec" based in Yamagata prefecture, Japan. Utilizing the development know-how of cameras for small satellites for over 10 years, we will develop a compact camera system for high reliability and low cost. By providing camera sensing technology at low cost, we contribute to the reduction of space development cost which was a barrier to existing space enterprises as well as companies for entering new space companies.

Company profile

Company name	Watec Space Ventures Inc.
Representative	Jumpei HARADA
Business	Development, manufacture and sale of industrial
Head Office	Tsuruoka City, Yamagata, JAPAN
Tokyo Office	Chiyoda-ku, Tokyo, JAPAN
Contact	TEL +81-50-3699-6987 / FAX +81-3-4586-6389
Major Stockholder	Watec Holdings Co., Ltd.
Major Banks	Yamagata Bank, Sumitomo Mitsui Banking
URL	https://www.wsvi.jp/

01 Industrial equipment sales business

We offer optimal solutions for industrial cameras through sales and support of industrial cameras mainly related to Watec products and other related equipment.

02 Space related business

We will provide camera system for space, centering on camera module "WAT-078H" for small satellite jointly developed with Hokkaido University. We also do business using data obtained from small satellites.

03 business development

We are engaged in research and development of new business utilizing Watec Group's basic technology accumulated over 30 years and customer base spreading in 60 countries around the world.

