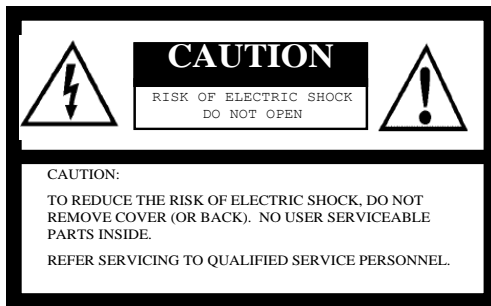


SENTECH

STC-CL33A
STC-CLC33A
Product Specification

Small Cubic Type – VGA CCD
Color / Monochrome Camera Link Camera

Safety Precautions



For U.S.A.

Warning:

This equipment generates and uses radio frequency energy and if not installed and used properly, I.e., in strict accordance with the instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

For Canada

Warning:

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Product Precautions

- Handle the camera with care. Do not abuse the camera. Avoid striking or shaking it. Improper handling or storage could damage the camera.
- Do not pull or damage the camera cable.
- During camera use, do not wrap the unit in any material. This will cause the internal temperature of the unit to increase.
- Do not expose the camera to moisture, or do not try to operate it in wet areas.
- Do not operate the camera beyond its temperature, humidity and power source ratings.
- While the camera is not being used, keep the lens or lens cap on the camera to prevent dust or contamination from getting in the CCD or filter area and scratching or damaging this area.
- Do not keep the camera under the following conditions:
 - In wet, moist, and high humidity areas
 - Under hot direct sunlight
 - In high temperature areas
 - Near an object that releases a strong magnetic or electric field
 - Areas with strong vibrations
- Use a soft cloth to clean the camera. Use pressured air spray to clean the surface of the glass. DO not scratch the surface of the glass.

Copyright & Disclaimer

Sensor Technologies America, Inc. (DBA Sentech America) believes the contents and specifications of its website, catalog, documentation and ads are correct; however, Sentech America provides no representation or warranty regarding such information or product(s) contained therein. It is requested that Sentech America be given appropriate acknowledgement in any subsequent use of such work by a third party.

While every effort has been made to ensure that the details contained in Sentech America's website and all documentation are correct and up-to-date, Sentech America assumes no liability, legal or otherwise for any errors in listings, specifications, part numbers, process, software or model applications. Sentech America reserves the right to change specifications, product descriptions, product quality, pricing and application at any time without prior written or oral notice. Any party using such information assumes all risk for any and all damaged caused to themselves, a third party and/or property by virtue of incorrect information and/or failure of these products. By installing and/or using a Sentech America software development kit or other similar product and/or information obtained from Sentech America's website, catalog, documentation or ads, you hereby accept and understand these stated terms and conditions.

Content

| | |
|--|-------------|
| I. Specifications | 5-7 |
| A. Electronic Specifications / Mechanical Specifications / Environmental Specifications..... | 5-6 |
| B. Connector Specifications | 7 |
| II. Dimensions | 8-10 |
| A. Camera Dimensions | 8 |
| B. Tripod Dimensions | 9 |
| C. Camera Dimensions with Tripod..... | 10 |

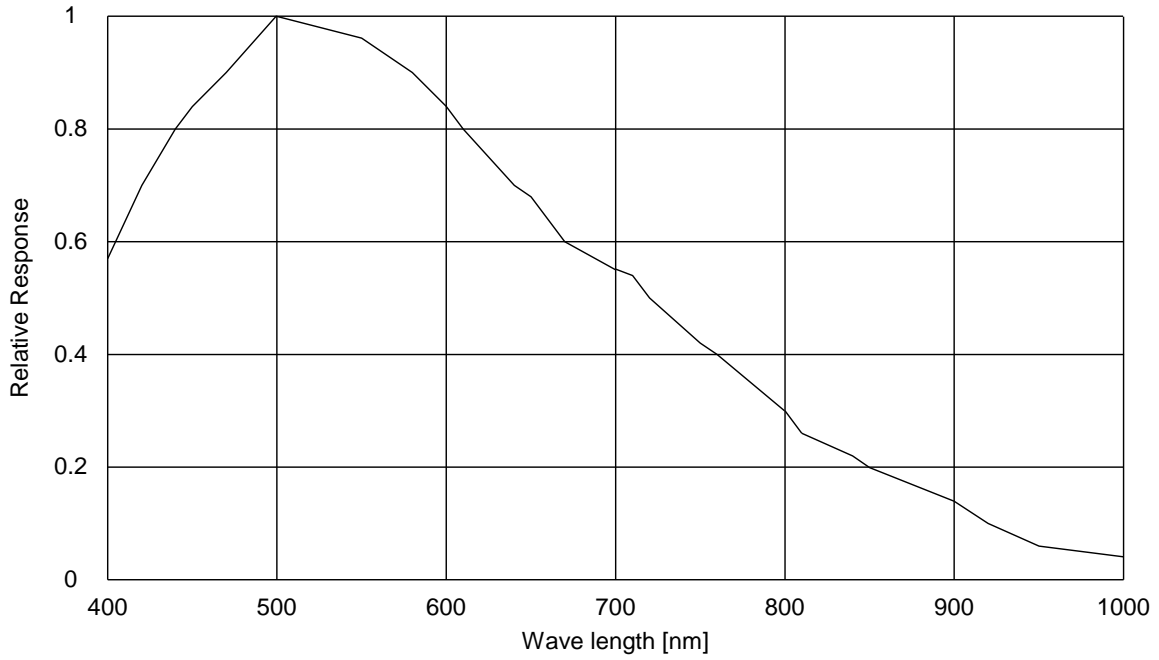
I. Specifications

A. Electronic Specifications / Mechanical Specifications / Environmental Specifications

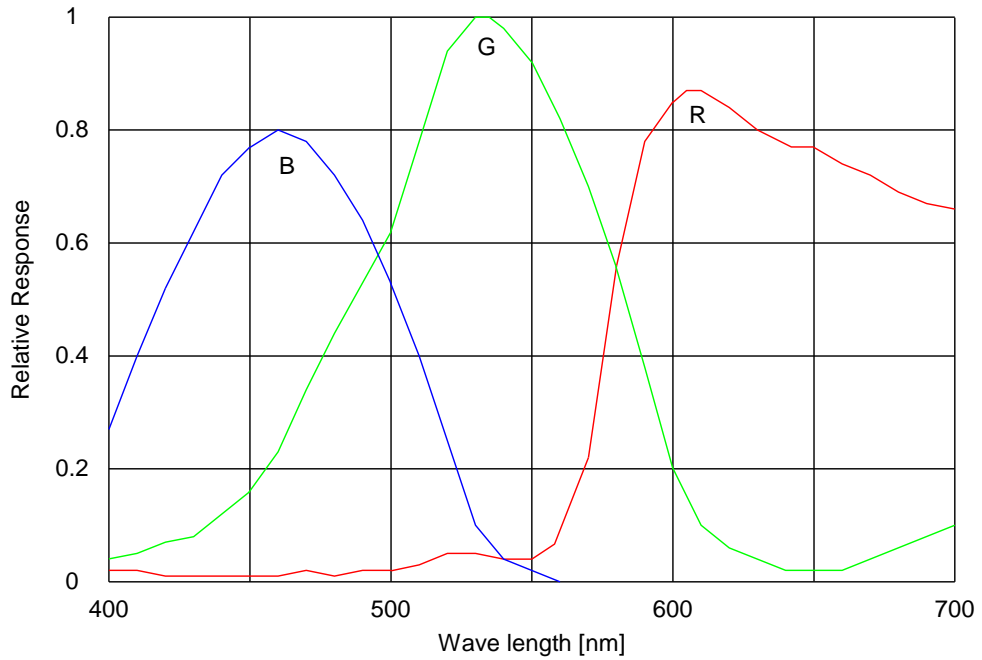
| Product | | STC-CLC33A | STC-CL33A | |
|------------------------------|--|--|---|--|
| Electronic Specifications | Imager | 1/3" interline VGA color progressive CCD: ICX424AQ | 1/3" interline VGA monochrome progressive CCD: ICX424AL | |
| | Total Picture Elements | 692 (H) x 504 (V) | | |
| | Active Picture Elements | VGA: 648 (H) x 494 (V) | | |
| | Chip Size | 5.79 (H) x 4.89 (V) mm | | |
| | Cell Size | 7.4 (H) x 7.4 (V) μ m | | |
| | Scanning System | Progressive | | |
| | Scanning Method | Full scanning, Partial full scanning, 1/2 partial scanning, 1/4 partial scanning, Variable partial scanning | Full scanning, Partial full scanning, 1/2 partial scanning, 1/4 partial scanning, Variable partial scanning, Binning, Binning partial scanning, Binning 1/2 partial scanning, Binning 1/4 partial scanning, Binning variable partial scanning | |
| | Vertical Frequency (Frame Rate) | 31.47 (30fps) / 62.94 (60fps) / 94.784 (90fps) Hz | | |
| | Horizontal Frequency | 15.7343 (30fps) / 31.4685 (60fps) / 47.2028 (90fps) kHz | | |
| | Pixel Frequency | 12.2727 (30fps) / 24.5454 (60fps) / 36.8181 (90fps) MHz | | |
| | S/N Ratio (Standard Deviation) | @ 8bit output | ≤ 3 Digit (Gain 0 dB) | |
| | | @ 10bit output | ≤ 10 Digit (Gain 0 dB) | |
| | Minimum Scene Illumination | 0.13 Lux at F1.2 | 0.12 Lux at F1.2 | |
| | Sync. System | Internal / External | | |
| | Video Output | Digital 8 or 10 bit Camera Link (Base configuration) | | |
| | Tap | 1 Tap | | |
| | Shutter Speed | OFF, 1/3 to 1/40,000 seconds (Variable at every H and clock) (30fps) OFF, 1/7 to 1/80,000 seconds (Variable at every H and clock) (60fps) OFF, 1/11 to 1/120,000 seconds (Variable at every H and clock) (90fps) | | |
| | Gain | 0 to 27 dB | | |
| | Gamma | 1.0 | | |
| | Power Supply | Input Voltage | DC 12V \pm 10% | |
| Consumption | | Less than 1.8 W | | |
| Trigger Mode | Edge preset trigger (V-reset, Non-reset) Pulse width trigger (V-reset, Non-reset) | | | |
| Communication | RS232 via Camera Link connector | | | |
| Mechanical Specifications | Dimensions | 28(W) x 28(H) x 29.5(D) mm (Not including lens mount and the connector) (28(W) x 28(H) x 40(D) mm (Not including the connector) | | |
| | Optical Filter | No IR cut filter | | |
| | Optical Center Accuracy | Positional accuracy in H and V directions: +/- 0.31 mm Rotational accuracy of Hand V: +/- 2.1 deg. | | |
| | Material | Case | Front, base, and rear: Aluminum die cast (ADC12) Cover: Steel sheet covered with zinc | |
| | | Tripod | Polycarbonate ABS | |
| | Lens Mount | C mount | | |
| | Interface Connector | HR10A-7R-6PB (Hirose) or equivalent | | |
| | Tripod | Tripod can be attached to 4 plates (4screws on the bottom plate, 3 screws on the other 3 plates) | | |
| Weight | Approximately 52g (Camera: 43g, tripod: 9g) | | | |
| Environmental Specifications | Temperature and Humidity | Operational | Temperature: -5 to 50°C; Relative Humidity: 0 to 85% (No condensation) | |
| | | Storage | Temperature: -30 to 65°C; Relative Humidity: 0 to 90% (No condensation) | |
| | Vibration | 20 Hz to 200Hz to 20Hz (5min./cycle), acceleration 10G, 3 directions 30 min. each | | |
| | Shock | Acceleration 70G, half amplitude 6ms, 3 directions 3 times each | | |
| | Standard Compliance | EMS: EN61000-6-2, EMI: EN55011 (Class B) | | |
| RoHS | RoHS compliant | | | |

Spectral Sensitivity Characteristics

STC-CL33A



STC-CLC33A



B. Connector Specifications

1. Camera Link Connector: SCR (3M) or equivalent

Caution: This product is not PoCL type. Only apply 12V power through the interface connector.

2. Power/IO Connector: HR10A-7R-6PB (Hirose) or equivalent
This connector is for a 12V DC power input and the other input and output signals.
The trigger input and sync input/output signals can be assigned through the camera setting communication.

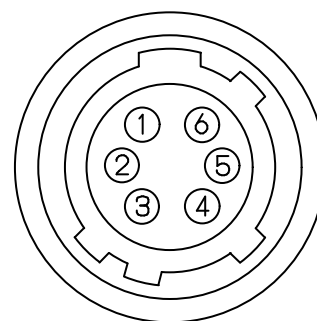
3. Pin Assignment:

A. Camera Link Connector

| Pin No. | Signal name | Pin No. | Signal name |
|---------|-------------|---------|-------------|
| 1 | GND | 14 | GND |
| 2 | X0- | 15 | X0+ |
| 3 | X1- | 16 | X1+ |
| 4 | X2- | 17 | X2+ |
| 5 | Xclk- | 18 | Xclk+ |
| 6 | X3- | 19 | X3+ |
| 7 | SerTC+ | 20 | SerTC- |
| 8 | SerTFG- | 21 | SerTFG+ |
| 9 | CC1- (TRG) | 22 | CC1+ (TRG) |
| 10 | CC2+ | 23 | CC2- |
| 11 | CC3- | 24 | CC3+ |
| 12 | CC4+ | 25 | CC4- |
| 13 | GND | 26 | GND |

B. Interface Connector

| Pin No. | Signal name | IN/OUT | Voltage | |
|---------|-------------|--------|-------------|---------------|
| | | | Low voltage | High voltage |
| 1 | GND | IN | 0V | |
| 2 | I/O-1 | IN | 0 to +0.5V | +2.5 to +5.0V |
| | | OUT | 0V | +3.3V |
| 3 | I/O-2 | IN | 0 to +0.5V | +2.5 to +5.0V |
| | | OUT | 0V | +3.3V |
| 4 | I/O-3 | IN | 0 to +0.5V | +2.5 to +5.0V |
| | | OUT | 0V | +3.3V |
| 5 | TRG OUT | OUT | OUT | 0V / +3.3V |
| 6 | +12V | IN | +12V | |



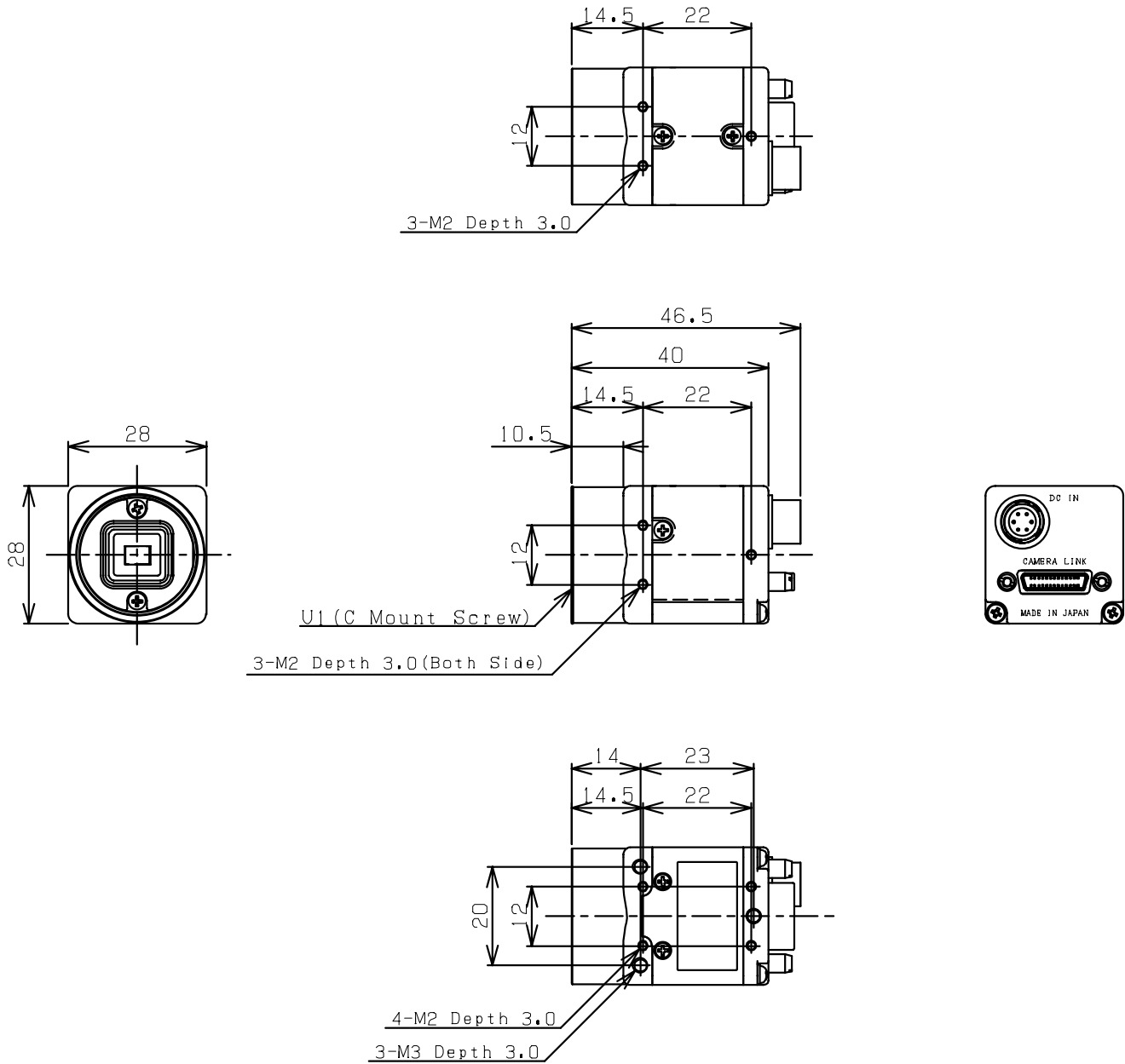
Note1: Trigger input signal can be assigned either on Camera Link connector (CC1) or on the No. 2 pin of the Power/IO connector through the camera setting communication.

Note2: The external sync signals (HD and VD) can be assigned on the following connectors through the camera setting communication.

- Camera Link connector (CC2: HD signal input, CC3: VD signal input) **or**
- Power/IO connector (No.4: HD signal input / output, No.3: VD signal input / output)

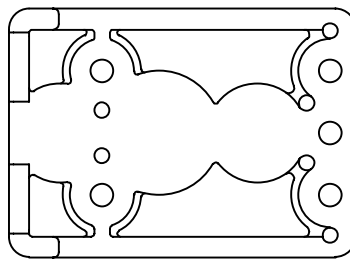
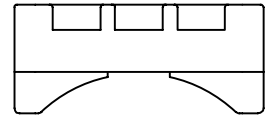
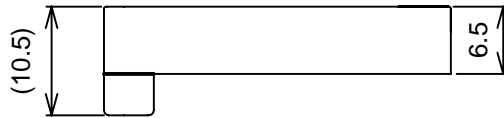
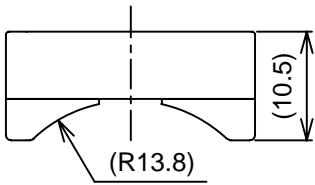
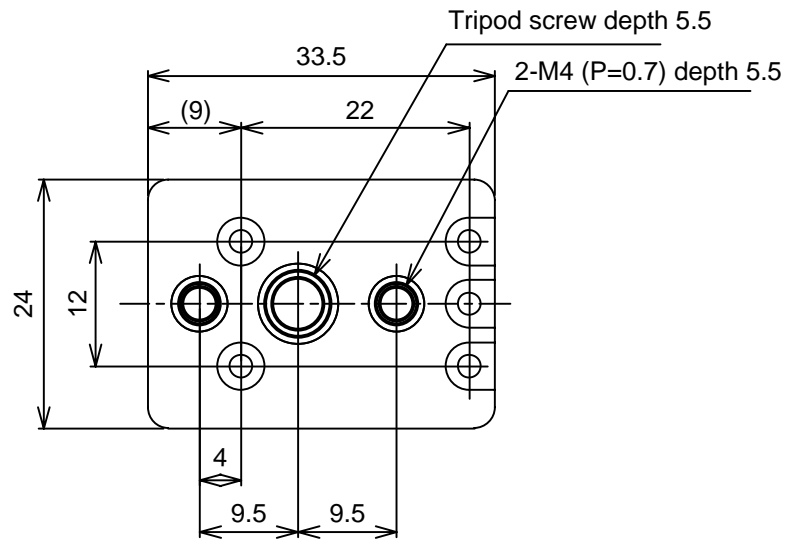
II. Dimensions

A. Camera Dimensions



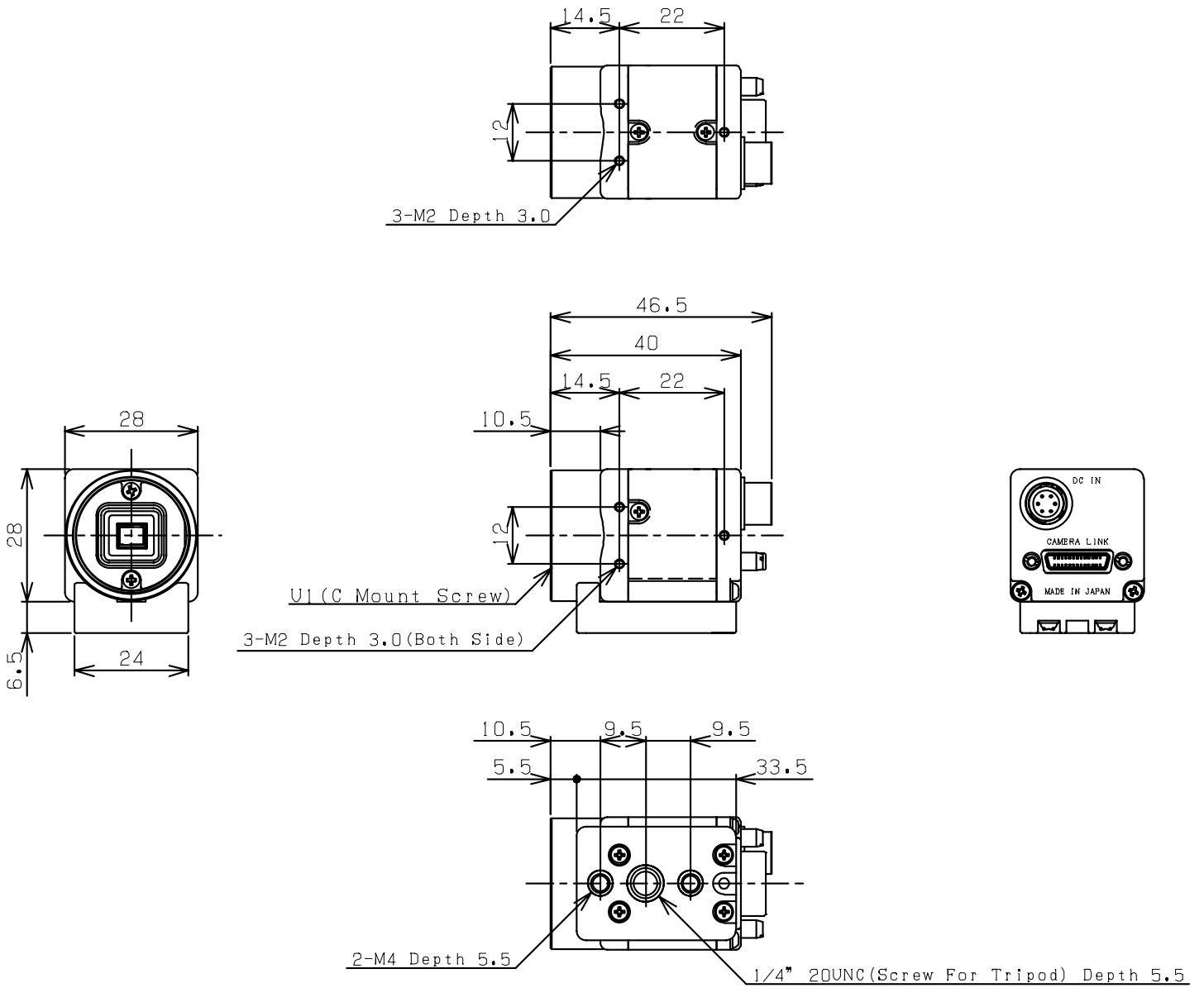
Unit: mm

B. Tripod Dimensions



Unit: mm

C. Dimensions (Camera with Tripod)



Unit: mm

Revisions

| Revision | Date (D/M/Y) | Changes | Changes |
|----------|--------------|--|---------|
| 1.0 | 19/06/2006 | Created Document | |
| 1.1 | 22/08/2006 | Update whole document | |
| 1.2 | 14/09/2006 | Update 1) Electronic specification | |
| 1.3 | 21/10/2006 | Update 1) Horizontal output timing chart | |
| 1.4 | 25/04/2007 | Update 1) Video output timing chart | |
| 1.5 | 1/10/2007 | Update 1) Mechanical specifications 2) Communication specifications 3) Tripod drawing 4) Camera modes | |
| 2.0 | 16/4/2008 | Separate document from "Specification" to "Specification" and "User's guide" | |
| 2.1 | 13/5/2008 | Update 1) Connector specifications (Change the descriptions) 2) Electronic specifications (Change to "Active picture elements") | |
| 2.2 | 9/12/2009 | Update 1) Pin assignment (Add the voltage range) | |
| 2.3 | 3/17/2009 | Update 1) Electronic specifications (Change the shutter speed) | |
| 2.4 | 23/4/2009 | Update 1) Pin assignment (Add connector drawing) | |
| 2.5 | 8/5/2009 | Update 1) Electronic specifications (change the minimum illumination) | |
| 2.6 | 18/8/2009 | Update 1) Electronic specifications (Change S/N ratio (standard deviation)) 2) Mechanical specifications (Change description of the dimensions) 3) Change the page number | |
| 2.7 | 14/7/2010 | Update 1) Electronic specification (Delete Effective Picture Element) 2) Connector specifications (Change "Interface connector" to "Power/IO connector") | |
| | 4/4/2011 | Correction 1) Corrected the CCD part number for CL33A | |
| 2.8 | 12/7/2011 | Update 1) Add the spectral sensitivity characteristics | |

Sensor Technologies America, Inc.

1345 Valwood Pkwy, Suite 320
Carrollton, Texas 75006-6891
TEL (972) 481-9223 FAX (972) 481-9209
URL <http://www.sentechamerica.com/>

Sensor Technology Co., Ltd.

7F, Harada Center Building
9-17, Naka cho 4chrome
Atsugi-city, Kanagawa
243-0018 Japan
TEL +81-46-295-7061 FAX +81-46-295-7066
URL <http://www.sentech.co.jp/>

Taiwan Sensor Technology, Inc.

3F-6, No. 9, Aiguo W, Rd., Jhong Jheng District
Taipei City 100, Taiwan, R.O.C.
TEL 886-2-2383-2331 FAX 886-2-2370-8775
EMAIL: sentech0501@yahoo.com.tw