

SENTECH

STC-RCL33A-C3

(Monochrome, Cubic head)

STC-RCLC33A-C3

(Color, Cubic head)

STC-RCL33A-R3

(Monochrome, Cylinder head)

STC-RCLC33A-R3

(Color, Cylinder head)

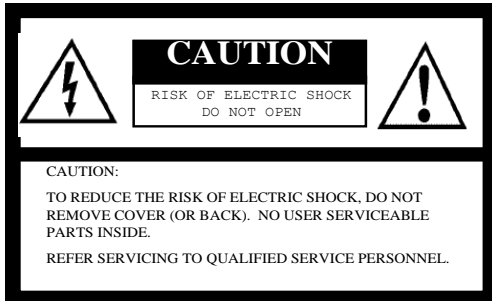
Product Specification

Small Remote Head

VGA CCD

Color / Monochrome CameraLink 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.

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I. Electronic Specifications / Mechanical Specifications / Environmental Conditions

A. Cubic Head Type: STC-RCL33A-C3 / RCLC33A-C3

| Product | | STC-RCLC33A-C3 | STC-RCL33A-C3 | |
|---------------------------|--|---|--|--|
| 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) μm | | |
| | Scanning System | Progressive | | |
| | Scanning Method | Full Scanning, Partial Full Scanning, ½ Partial Scanning, ¼ Partial Scanning, Variable Partial Scanning | Full Scanning, Partial Full Scanning, ½ Partial Scanning, ¼ Partial Scanning, Variable Partial Scanning, Binning, Binning Partial Scanning, Binning ½ Partial Scanning, Binning ¼ Partial Scanning, Binning Variable Partial Scanning | |
| | Vertical Frequency (Frame Rate) | 94.784 Hz | | |
| | Horizontal Frequency | 47.2028 kHz | | |
| | Pixel Frequency | 36.8181 MHz | | |
| | S/N Ratio (Standard Deviation) | @ 8bit output | ≤ 3 Digit (Gain 0 dB) | |
| | | @ 10bit output | ≤ 10 Digit (Gain 0 dB) | |
| | Minimum Scene Illumination | 0.11 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, ½ to 1/100,000 sec. (Variable at every H and clock) | | |
| | Gain | 0 to 27 dB | | |
| | Gamma | 1.0 | | |
| | Power Supply | Input Voltage | 12Vdc ± 10% | |
| Consumption | | Less than 3.5W | | |
| 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 | CCU | 28 (W) x 28 (H) x 36.5 (D) mm Not including the connector | |
| | | Head | 17 (W) x 17 (H) x 16.9 (D) mm | |
| | Optical Filter | No IR cut filter | | |
| | Optical Center Accuracy | Positional accuracy in H and V directions: +/- 0.31 mm Rotational accuracy of H and V: +/- 2.1 deg. | | |
| | Materials | Case | Front, base, and rear: Aluminum die cast (ADC 12) Cover: Steel sheet covered with zinc | |
| | | Tripod | Polycarbonate ABS | |
| | Lens Mount | M10.5 (P=0.5) (Male screw) | | |
| | Interface Connector | HR 10A-7R-6PB (Hirose) or equivalent | | |
| | Tripod | Tripod can be attached to 4 plates (4 screws on the bottom plate, 3 screws on the other 3 plates) | | |
| Weight | Approximately 150g | | | |
| Environmental Conditions | 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 | 10Hz to 150Hz, 0.35 half amplitude (Maximum acceleration 50m/s ²); 3 directions 8 times each | | |
| | Shock | Acceleration 150m/s ² , 6 directions 10 times each | | |
| | Standard Compliancy | EN61326; 1997/AnnexA+A1, 1998 (EMI: Class B) +A2: 2001 | | |
| | RoHS | RoHS Compliant | | |

B. Cylinder Head Type: STC-RCL33A-R3 / RCLC33A-R3

| Product | | STC-RCLC33A-R3 | STC-RCL33A-R3 | |
|---------------------------|--|---|---|--|
| Electronic Specifications | Imager | 1/3" Interline VGA Color Progressive CCD: ICX424AQB | 1/3" Interline VGA Monochrome Progressive CCD: ICX424ALB | |
| | 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) | 94.784 Hz | | |
| | Horizontal Frequency | 47.2028 kHz | | |
| | Pixel Frequency | 36.8181 MHz | | |
| | S/N Ratio (Standard Deviation) | @ 8bit output | <= 3 Digit (Gain 0 dB) | |
| | | @ 10bit output | <= 10 Digit (Gain 0 dB) | |
| | Minimum Scene Illumination | 0.11 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, 1/2 to 1/100,000 sec. (Variable at every H and clock) | | |
| | Gain | 0 to 27 dB | | |
| | Gamma | 1.0 | | |
| | Power Supply | Input Voltage | DC 12V \pm 10% | |
| Consumption | | Less than 3.5W | | |
| 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 | CCU | 28 (W) x 28 (H) x 36.5 (D) mm Not including the connector | |
| | | Head | 12 (W) x 12 (H) x 44 (D) mm | |
| | Optical Filter | No IR cut filter | | |
| | Optical Center Accuracy | Positional accuracy in H and V directions: +/- 0.31 mm Rotational accuracy of H and V: +/- 2.1 deg. | | |
| | Materials | Case | Front, base, and rear: Aluminum die cast (ADC 12) Cover: Steel sheet covered with zinc | |
| | | Tripod | Polycarbonate ABS | |
| | Lens Mount | M10.5 (P=0.5) (Male screw) | | |
| | Interface Connector | HR 10A-7R-6PB (Hirose) or equivalent | | |
| | Weight | Approximately 150g | | |
| | Environmental Conditions | 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 | | 10Hz to 150Hz, 0.35 half amplitude (Maximum acceleration 50m/s ²); 3 directions 8 times each | | |
| Shock | | Acceleration 150m/s ² , 6 directions 10 times each | | |
| Standard Compliancy | | EN61326; 1997/AnnexA+A1, 1998 (EMI: Class B) +A2: 2001 | | |
| RoHS | | RoHS Compliant | | |

II. Connector Specifications

A. Camera Link Connector: SDR (3M) equivalent

CAUTION: This is NOT a PoCL type product. Therefore, please apply the 12Vdc power only through the power/IO connector.

B. Power/IO Connector: HR10A-7R-6PB (Hirose) or equivalent. This connector is the input and output signals. Trigger input and sync input/output signals can be assigned through the camera setting communication.

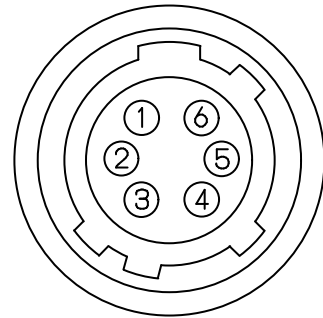
III. Pin Assignment

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 | SerTRG- | 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 / OUT | IN | 0 to +0.5V | +2.5 to +5.0V |
| | | | OUT | 0V | +3.3V |
| 3 | I/O - 2 | IN / OUT | IN | 0 to +0.5V | +2.5 to +5.0V |
| | | | OUT | 0V | +3.3V |
| 4 | I/O - 3 | IN / OUT | IN | 0 to +0.5V | +2.5 to +5.0V |
| | | | OUT | 0V | +3.3V |
| 5 | TRG OUT | OUT | OUT | 0V | +3.3V |
| 6 | +12Vdc | | | | |



Note 1: 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.

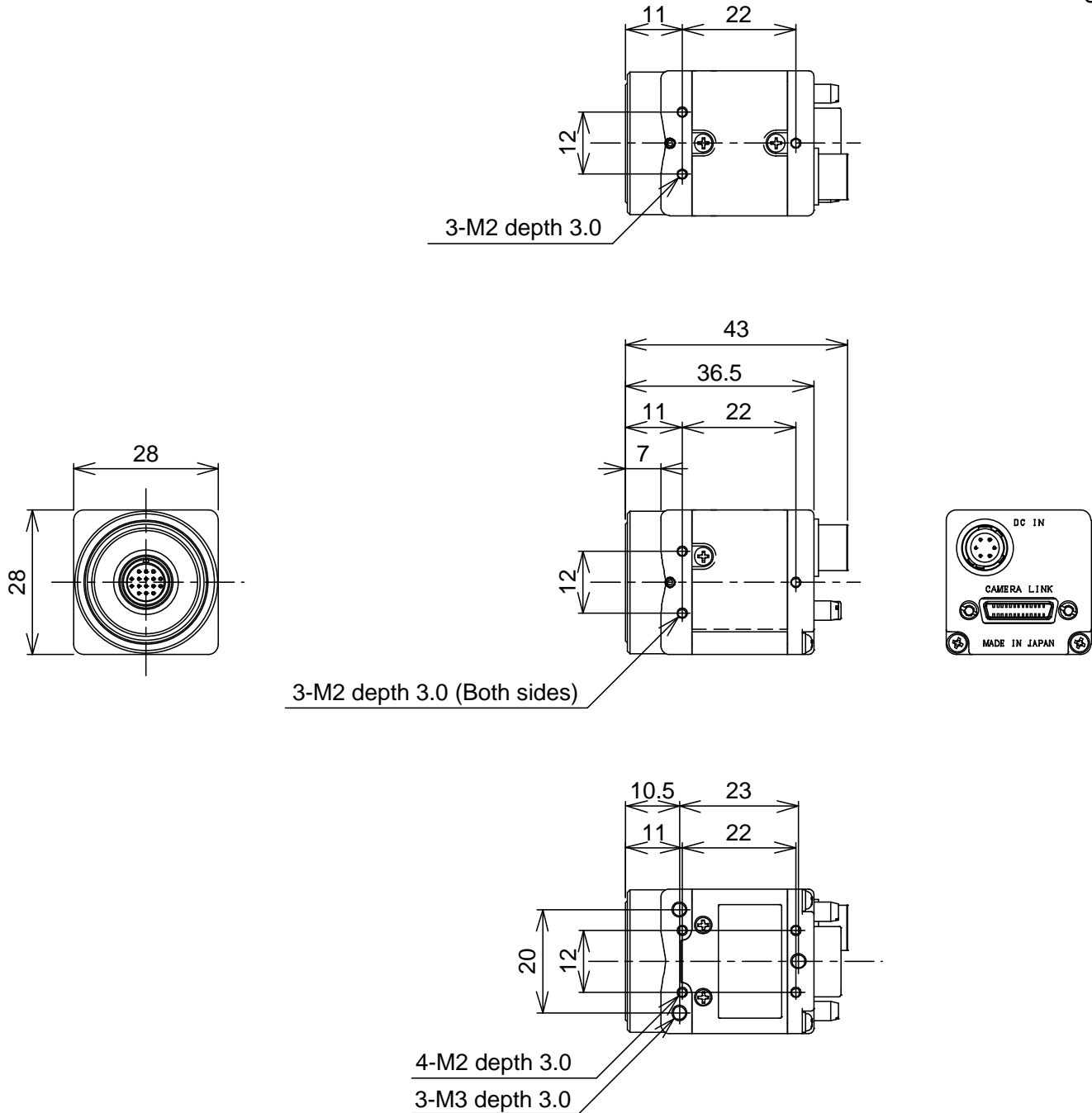
Note 2: The external sync signals (HD and VD) can be assigned on the following connectors through the camera settings communication.

- Camera Link connector (CC2: HD signal input, CC3: VD signal input) or
- Power/IO connector (No.4: HD signal input / output, No3: VD signal input / output)

IV. Dimensions

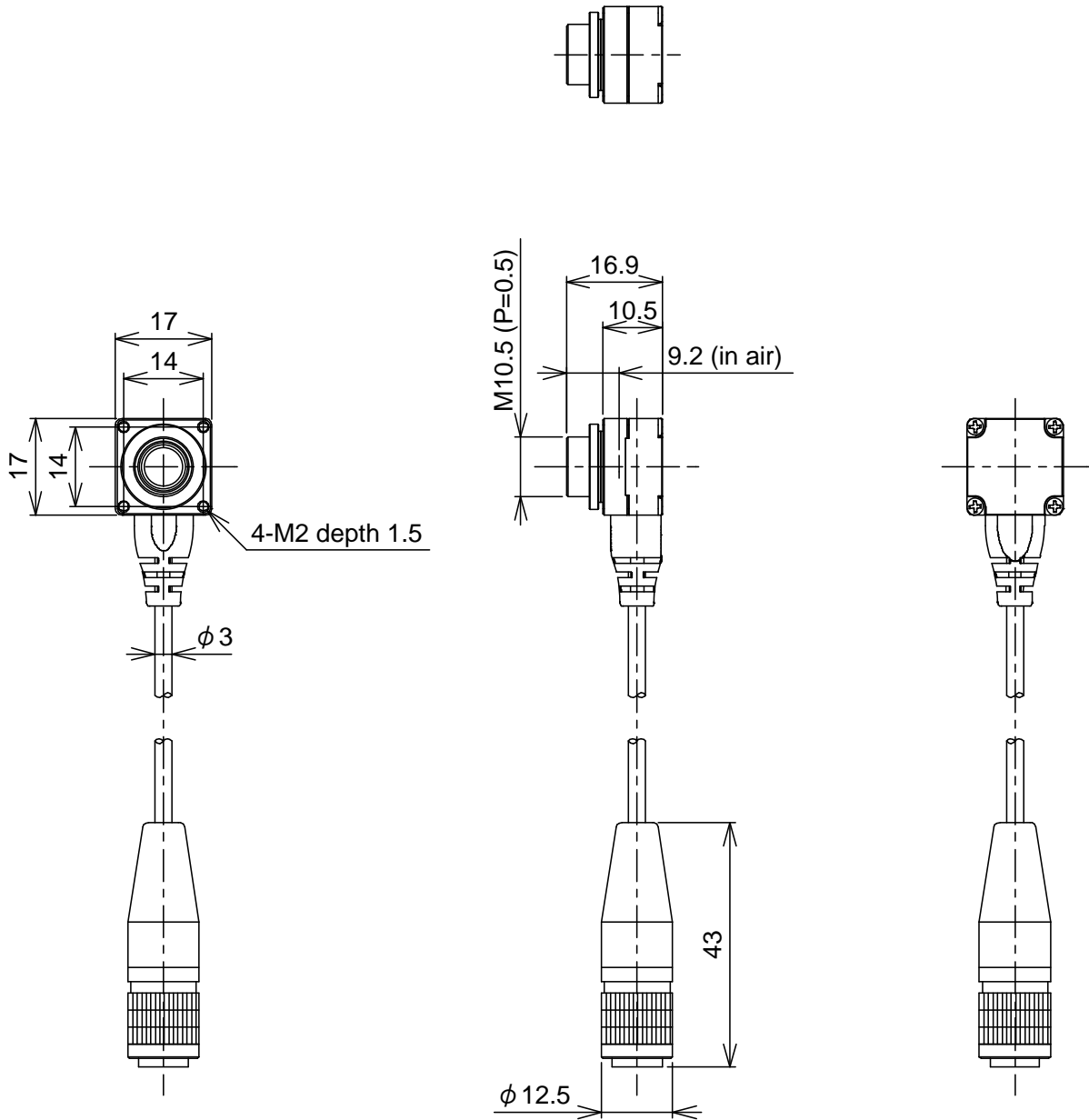
A. CCU Dimensions

Unit: mm



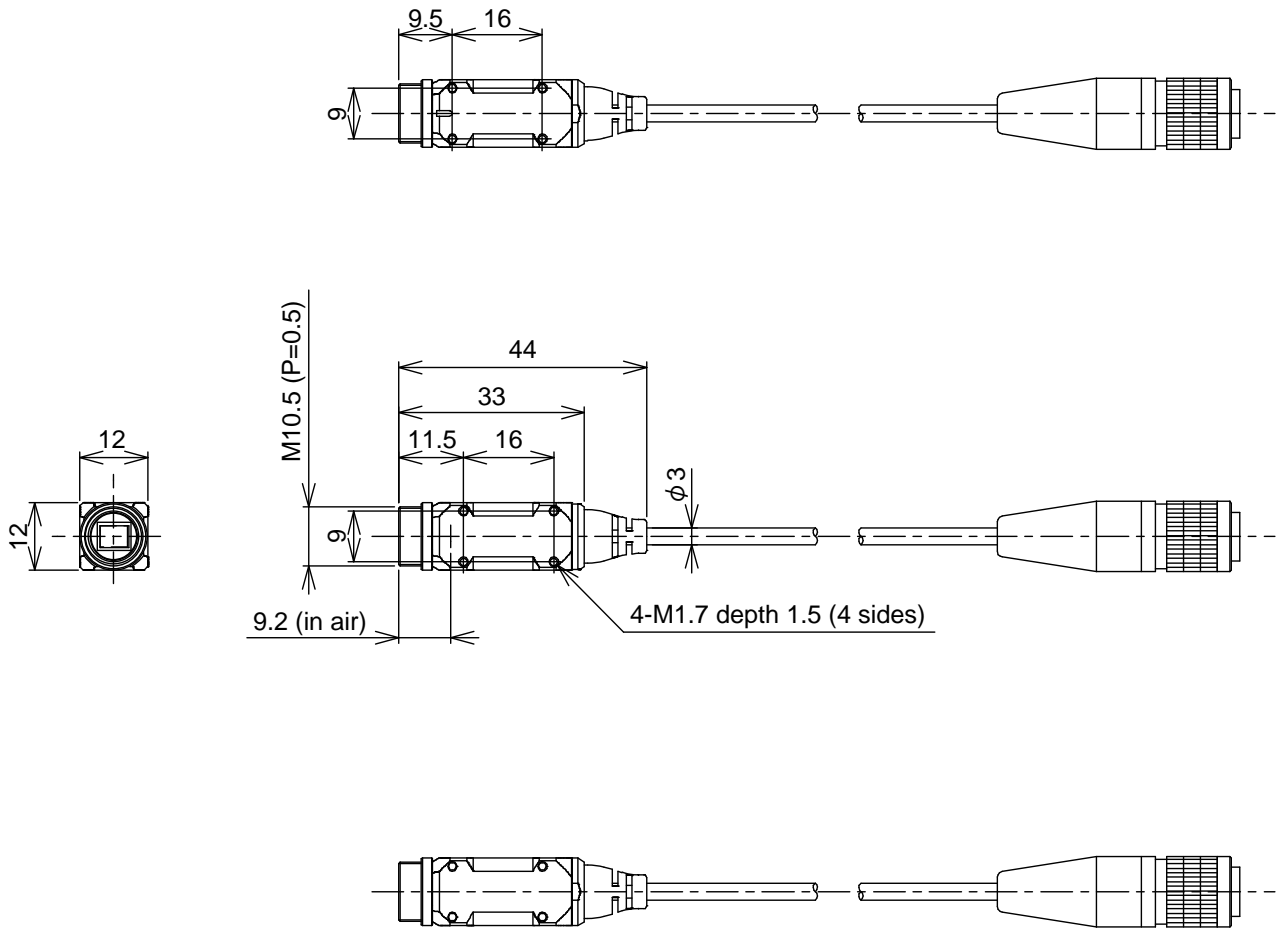
B. Dimensions of the Cubic Head (STC-RCL33A-C3 / RCLC33A-C3)

Unit: mm



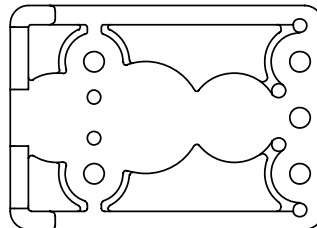
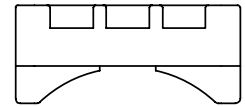
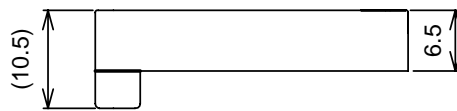
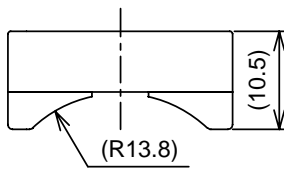
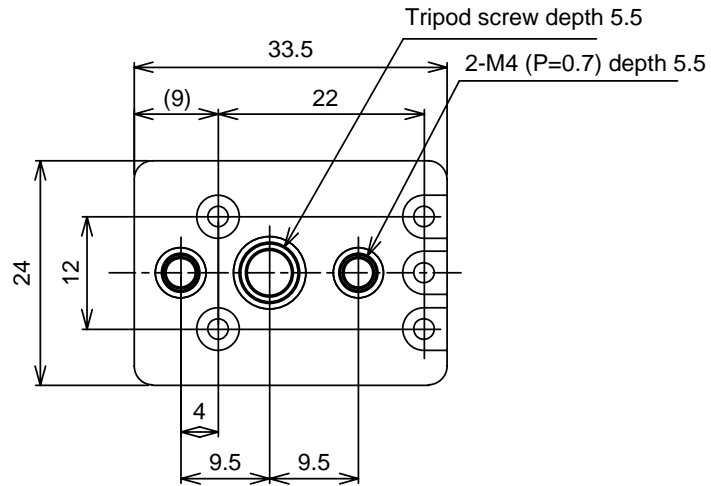
C. Dimensions of the Cylinder Head (STC-RCL33A-R3 / RCLC33A-R3)

Unit: mm



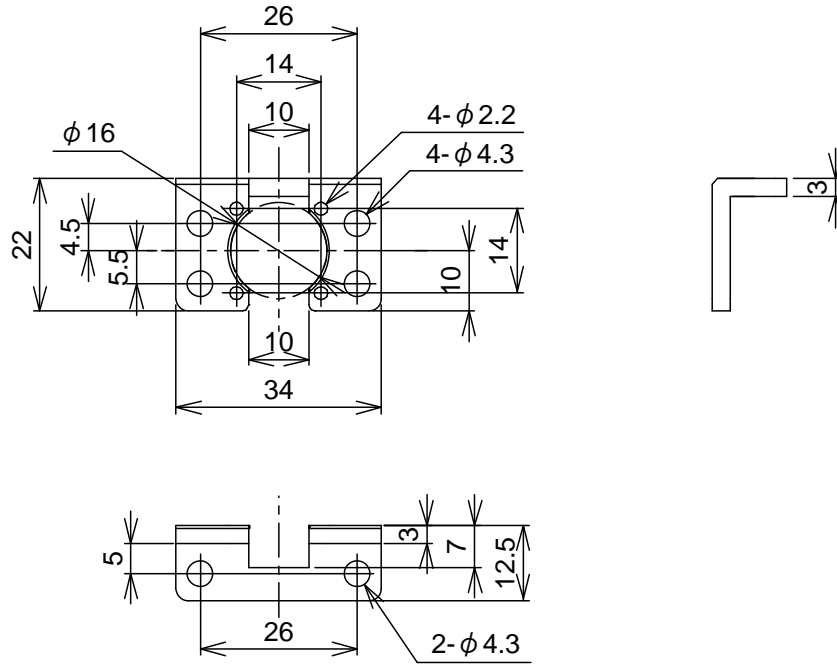
D. Dimensions of the Tripod for the CCU

Unit: mm



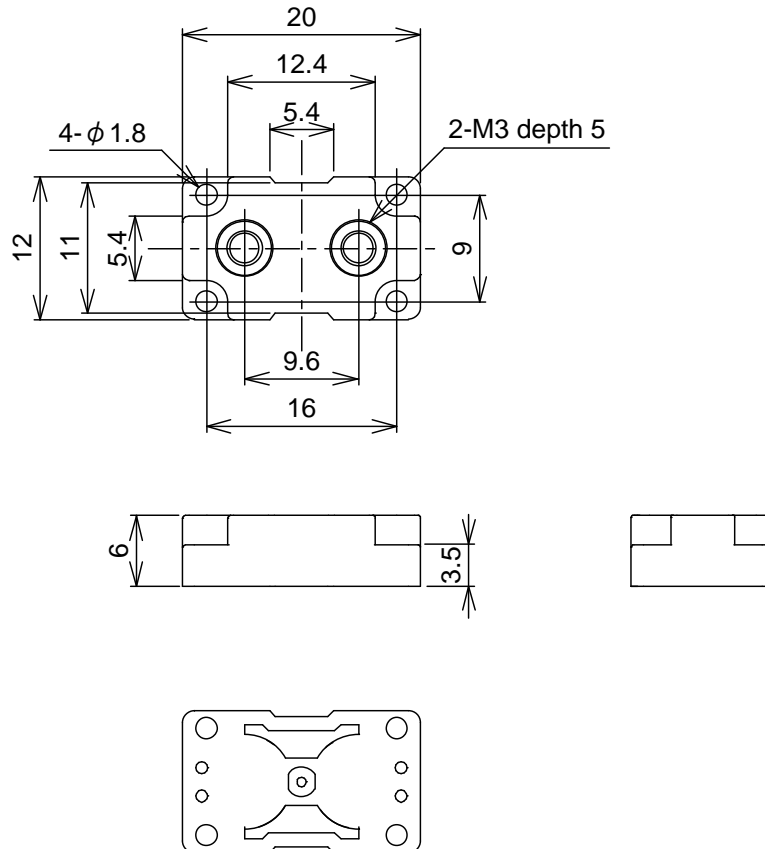
E. Dimensions of the Tripod for the Cubic Head (STC-RCL33A-C3 / RCLC33A-C3)

Unit: mm



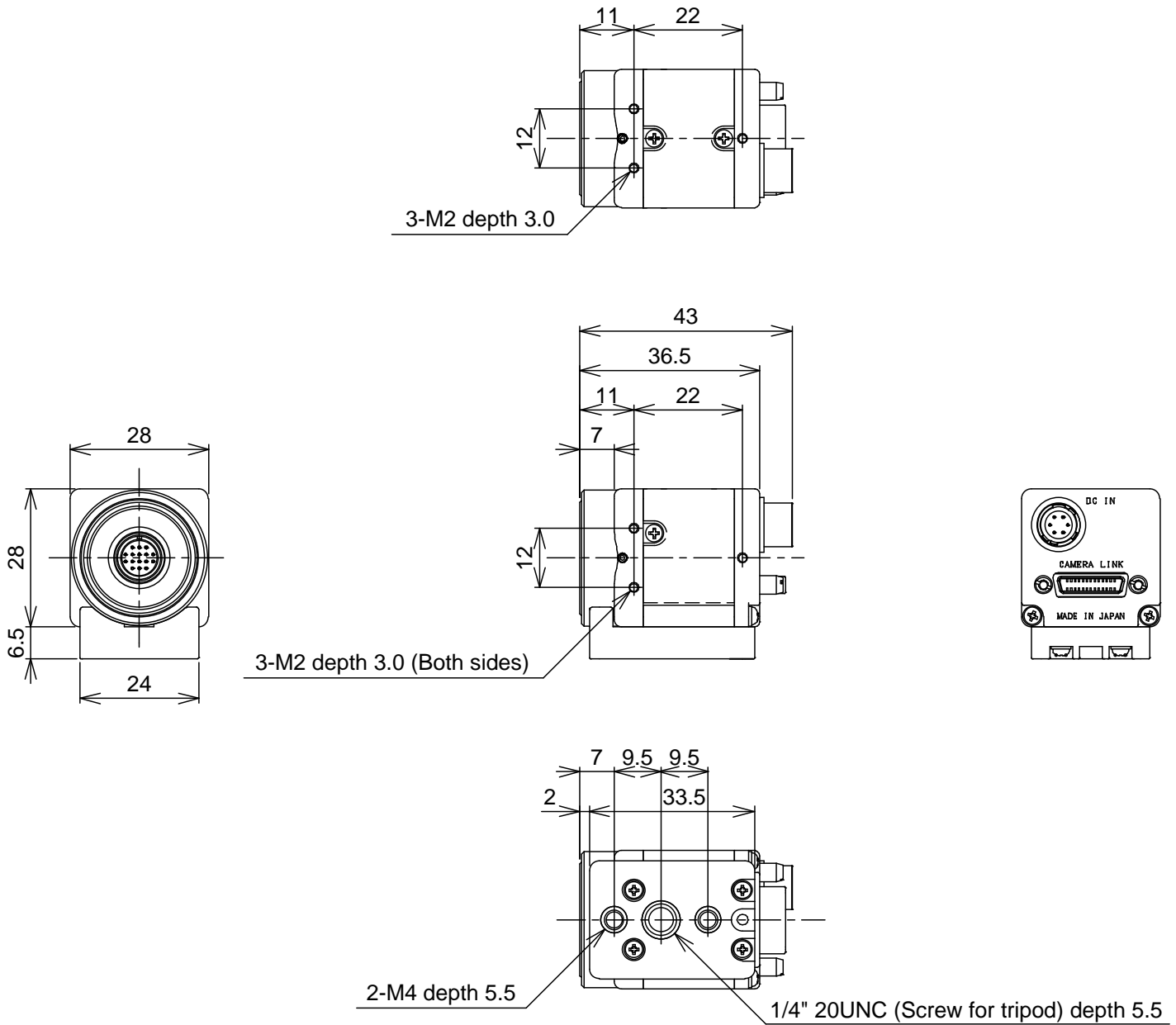
F. Dimensions of the Tripod for the Cylinder Head (STC-RCL33A-R3 / RCLC33A-R3)

Unit: mm



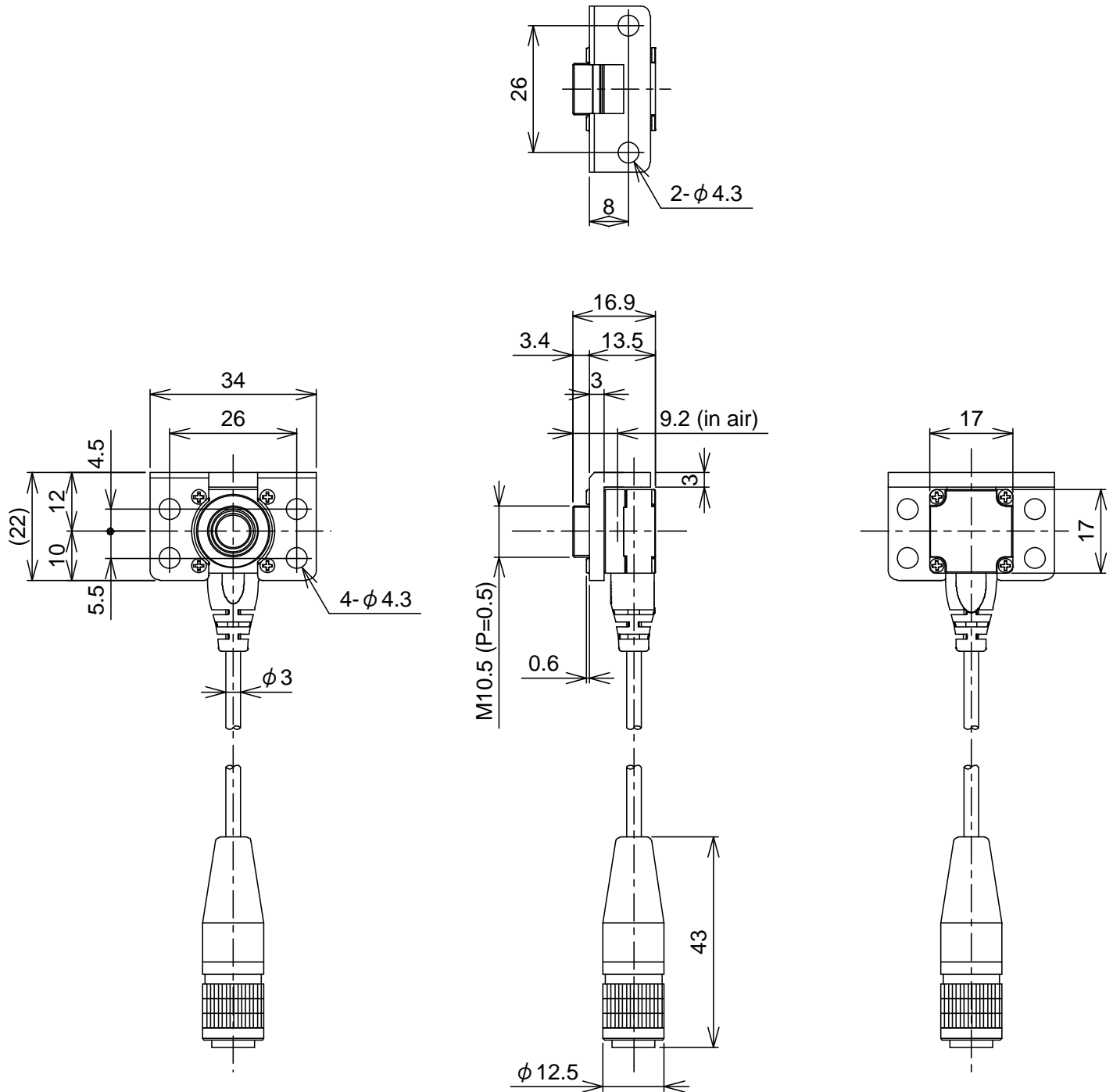
G. Dimensions of the CCU with the Tripod

Unit: mm



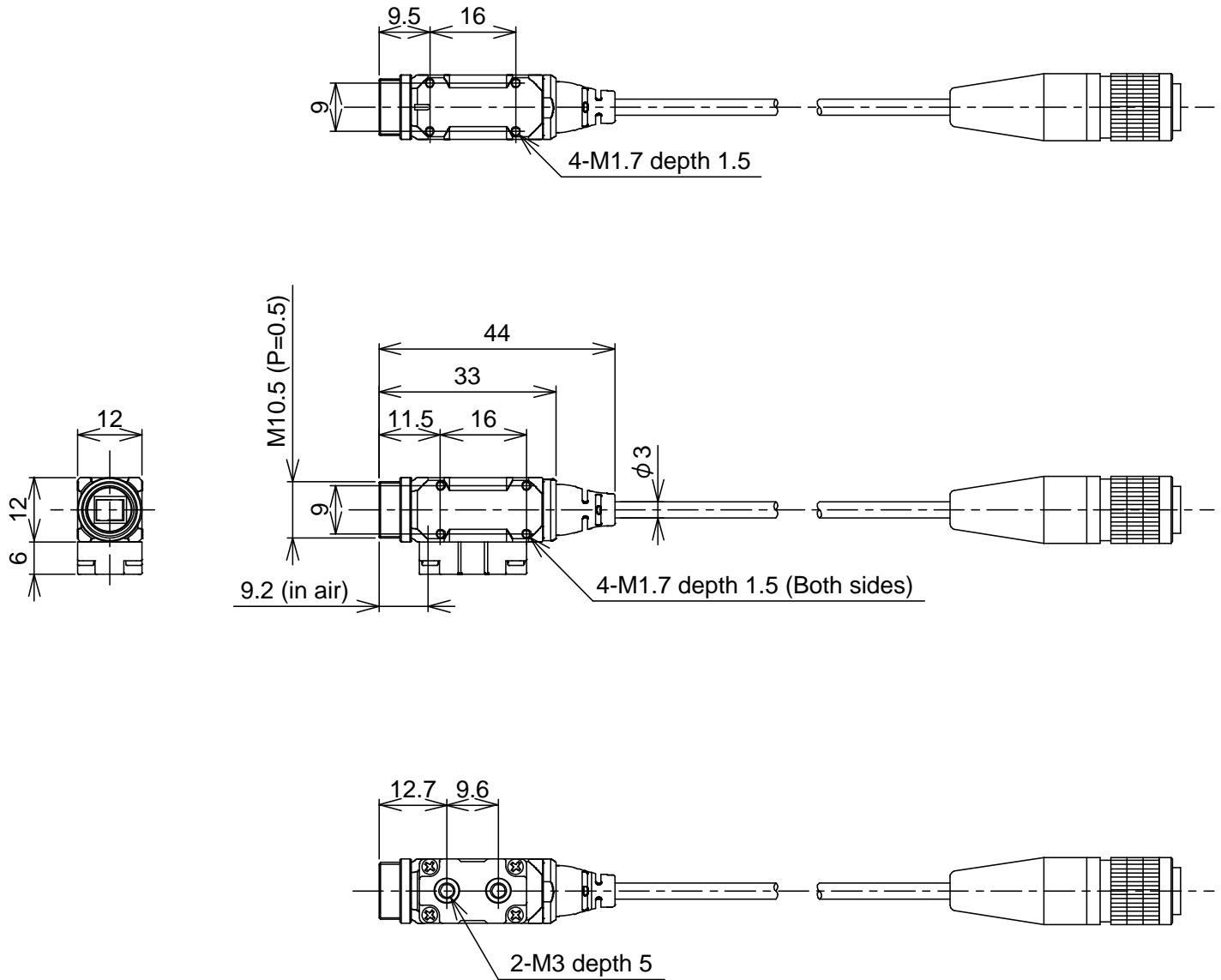
H. Dimensions of the Cubic Head with the Tripod (STC-RCL33A-C3 / RCLC33A-C3)

Unit: mm



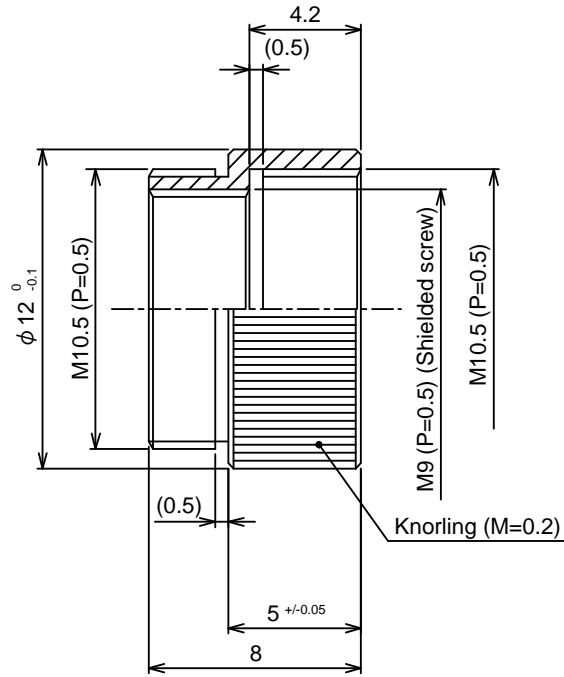
I. Dimensions of the Cylinder Head with the Tripod (STC-RCL33A-R3 / RCLC33A-R3)

Unit: mm



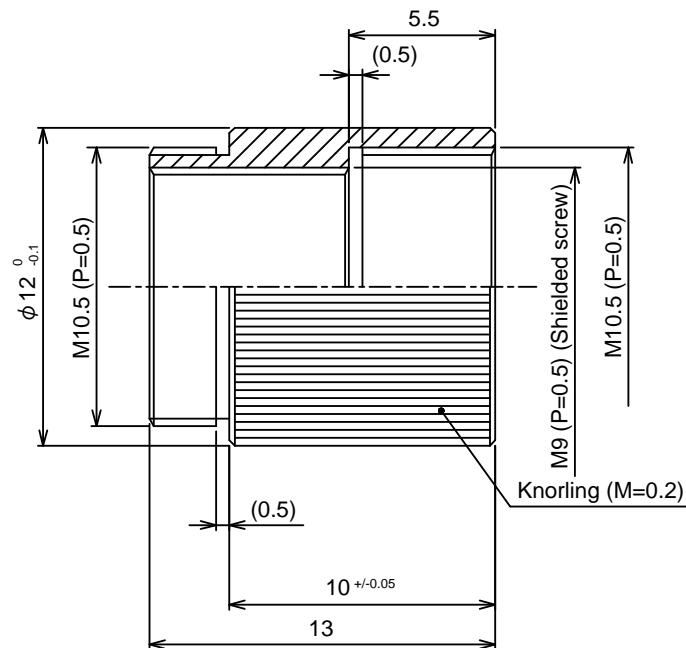
N. Dimensions of the Macro Ring No. 5

Unit: mm



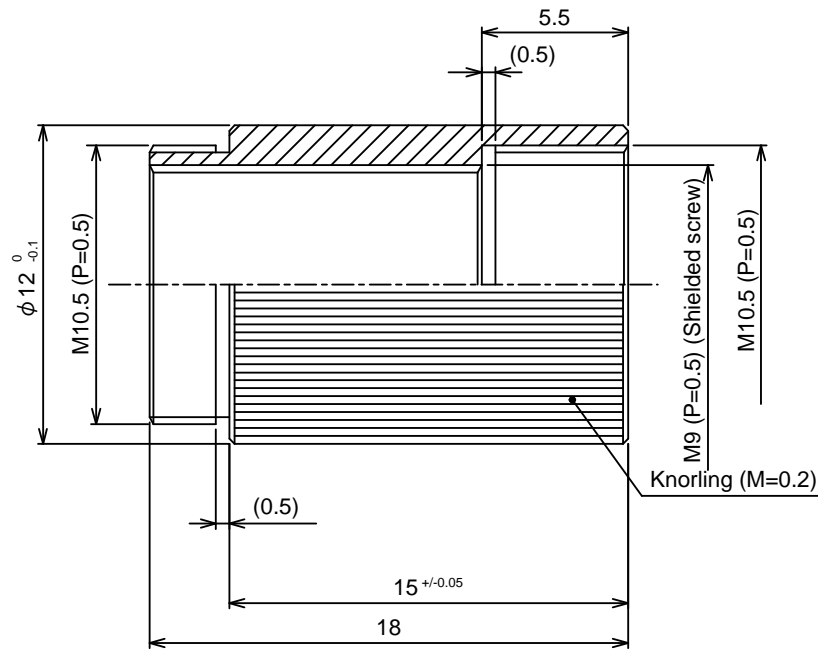
O. Dimensions of the Macro Ring No. 10

Unit: mm



P. Dimensions of the Macro Ring No. 15

Unit: mm



Revisions

| Rev | Date | Changes | Notes |
|------|------------|--|---|
| 1.0 | 2008/12/09 | STJ Created Document | |
| | 2009/3/12 | Created English version | |
| 1.1 | 2009/7/23 | Update 1. Electronic Spec (Changed the minimum illumination) 2. Environmental Conditions (Changed the vibration) | Rev 1.1 through 1.3 were submitted to STA from STJ on 7/14/2010 |
| 1.2 | 2009/8/18 | Update 1. Electronic Spec (Changed S/N ratio (standard deviation)) | |
| 1.3 | 2010/1/7 | Update 1. Electronic Spec (Deleted Effective Picture Element) 2. Connector Spec (Change "Interface connector" to "Power/IO connector") | |
| 1.3a | 2011/9/30 | Correction 1. This is a PoCL type product 2. Corrected the Pin No. 6 signal name to +12Vdc | |

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