

The logo for SENTTECH, featuring the word "SENTTECH" in a bold, blue, sans-serif font. The letters "T" and "E" are underlined with two parallel blue lines. The logo is set against a white rectangular background.

**SENTTECH**

**STC-GE33A / GEC33A**

**STC-GE83A / GEC83A**

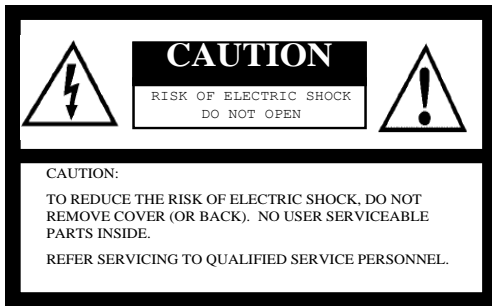
**STC-GE152A / GEC152A**

**STC-GE202A / GEC202A**

## **Product Specification**

**GigE Vision  
Color / Monochrome CCD Camera Series**

## Safety Precautions



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.

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.

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. Specifications

A. Electronic Specifications / Mechanical Specifications / Environmental Conditions

1. STC-GE33A / STC-GEC33A

| Product                   |  | STC-GEC33A  | STC-GE33A   |  |
|---------------------------|--|---|---|--|
| 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   |   |  |
|                           | Vertical Frequency (Frame Rate)  | 89.91172 Hz at full resolution<br>0.72028 to 360.33325 Hz adjustable via the communication<br>Maximum frame rate depends on the AOI setting<br>Maximum frame rate of the camera(360.33325) is 104 vertical resolution AOI setting |   |  |
|                           | Horizontal Frequency   | 47.2028 kHz   |   |  |
|                           | Pixel Frequency  | 36.8181 MHz   |   |  |
|                           | Noise Level  | @ 8bit output   | ≤ 3 Digit (Gain 0 dB)                                   |  |
|                           |  | @ 10bit output  | ≤ 12 Digit (Gain 0 dB)                                  |  |
|                           |  | @ 12bit output  | ≤ 48 Digit (Gain 0 dB)                                  |  |
|                           | Minimum Scene Illumination   | 25.75 Lux at F1.2, 89.91172 Hz  | 0.58 Lux at F1.2, 89.91172 Hz                           |  |
|                           | Sync. System   | Internal  |   |  |
|                           | Video Output   | Digital 8, 10 or 12 bit Raw Data<br>or<br>RGB 8 bit   | Digital 8, 10 or 12 bit Raw Data                        |  |
|                           | Interface  | IEEE802.3 (1000BASE-T)  |   |  |
|                           | Protocol   | GigE Vision® 1.2 and GenICam™ 2.0 compliant   |   |  |
|                           | Exposure Time  | Preset continuous mode: 10 useconds to 16,777,216 useconds<br>Preset trigger mode: 10 useconds to 16,777,216 useconds<br>Pulse width mode: 10 useconds to Unlimited   |   |  |
|                           | ALC  | Auto iris lens, electronic iris and AGC (ON/OFF)  |   |  |
|                           | Gain   | 0 to 20.4 dB  |   |  |
|                           | Gamma  | Gamma 1.0 (Factory default) or uploadable gamma table   |   |  |
|                           | AOI Function   | Programmable AOI setting via the communication  |   |  |
|                           | Smear Reduction  | Selectable ON/OFF via the communication   |   |  |
|                           | Color Interpolation  | Available on RGB output   | N/A   |  |
| White Balance Function    | Auto, manual and push-to-set white balance is available on both Raw data output and RGB output             | N/A   |   |  |
| Trigger Mode              | Edge preset trigger, Pulse width trigger (unlimited long exposure)   |   |   |  |
| Communication             | UART communication through Ethernet port   |   |   |  |
| I/Os                      | One opto-isolated input and two LVTTTL outputs   |   |   |  |
| Auto IRIS lens control    | DC IRIS control input with video level target, peak/average and zone weight settings via the communication |   |   |  |
| Power                     | Input Voltage  | +10.8 to +26.4 Vdc  |   |  |
|                           | Consumption  | Less than 5.0 W   |   |  |

| Product                      |                         | STC-GEC33A  | STC-GE33A  |
|------------------------------|-------------------------|---|--|
| Mechanical Specifications    | Dimensions              | 35 (W) x 35 (H) x 50.6 (D) mm excluding connectors  |  |
|                              | Optical Filter          | IR cut filter on  | No filter  |
|                              | Optical Center Accuracy | Positional accuracy in H and V directions: +/- 0.3 mm<br>Rotational accuracy of H and V: +/- 1.5 deg.   |  |
|                              | Material                | Aluminum (AC)   |  |
|                              | Lens Mount              | C mount   |  |
|                              | Connectors              | RJ45 connector<br>Power/IO connector: HR10A-7R-6PB (Hirose) or equivalent<br>DC IRIS lens connector: M1951 (EMUDEN) or equivalent                       |  |
|                              | Camera Mount Screws     | Two 1/4" Tripod screw holes: (One on each top and bottom plate),<br>Twelve M4 screws holes: (Four on each top and bottom plate, two on each side plate) |  |
| Weight                       | Approximately 120 g     |   |  |
| Environmental Specifications | Operational Temperature | Minimum   | Environmental Temperature -5°C   |
|                              |                         | Maximum   | Camera housing temperature (top plate) shall not exceed 65°C<br>(This corresponds to an environmental temperature of approximately 35°C) |
|                              | Storage Temperature     | Environmental Temperature -30°C to 65°C   |  |
|                              | Vibration               | 20Hz to 200Hz to 20Hz (5min./cycle), acceleration 10G, 3 directions 30 min. each  |  |
|                              | Shock                   | Acceleration 38G, half amplitude 6ms, 3 directions 3 times each   |  |
|                              | Standard Compliancy     | EMS: EN61000-6-2, EMI: EN55011  |  |
|                              | RoHS                    | RoHS Compliant  |  |

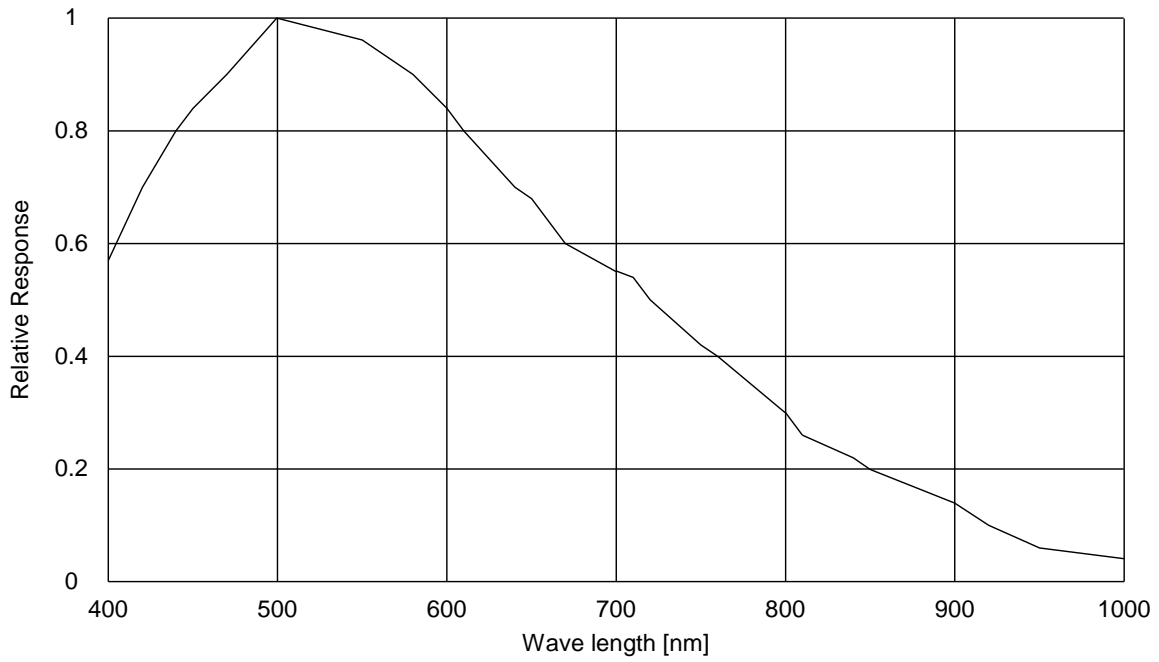
Note: Please use this camera in surrounding temperature conditions that are less than 35°C or in conditions where the camera's top case plate is less than 65°C.

When the camera is used in surrounding temperatures that exceed 35°C, please make sure that the camera is set up to properly radiate heat (maintaining the camera's top case plate's temperature to be less than 65°C).

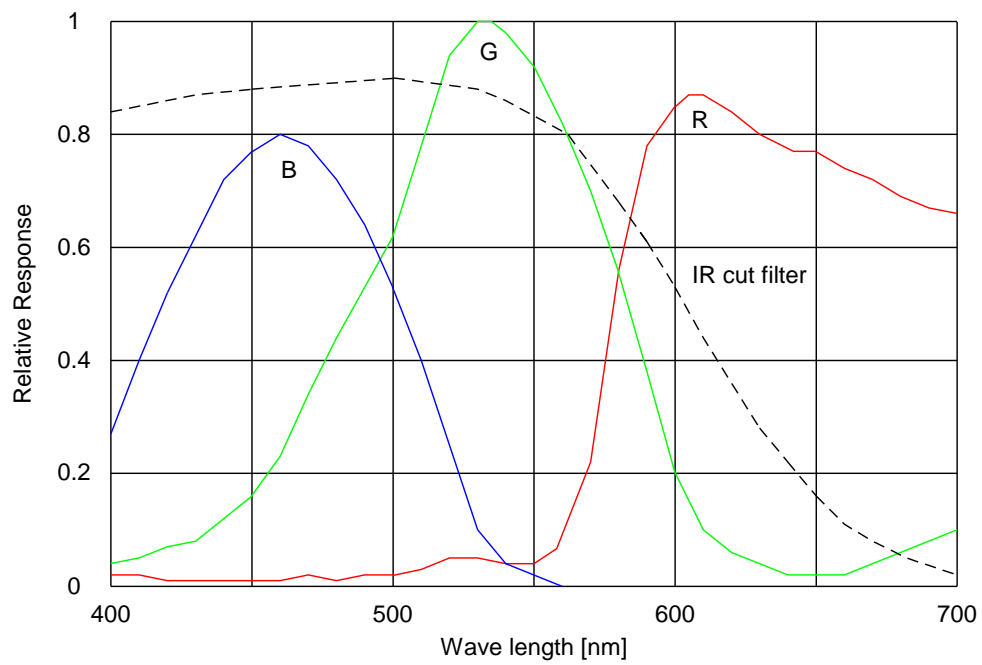
Taking these steps will maintain the heat rating of the electronic components of the camera.

## Spectral Sensitivity Characteristics

STC-GE33A



STC-GEC33A (with IR cut filter)



## 2. STC-GE83A / STC-GEC83A

| Product                   |  | STC-GEC83A  | STC-GE83A   |  |
|---------------------------|--|---|---|--|
| Electronic Specifications | Imager   | 1/3" Interline XGA color progressive CCD: ICX204AK  | 1/3" Interline XGA monochrome progressive CCD: ICX204AL |  |
|                           | Total Picture Elements   | 1077 (H) x 788 (V)  |   |  |
|                           | Active Picture Elements  | XGA: 1024 (H) x 768 (V)   |   |  |
|                           | Chip Size  | 5.5 (H) x 4.92 (V) mm   |   |  |
|                           | Cell Size  | 4.65 (H) x 4.65 (V) $\mu$ m   |   |  |
|                           | Scanning System  | Progressive   |   |  |
|                           | Vertical Frequency (Frame Rate)  | 36.42113 Hz at full resolution<br>0.44238 to 150.21358 Hz adjustable via the communication<br>Maximum frame rate depends on the AOI setting<br>Maximum frame rate of the camera(150.21358) is 146 vertical resolution AOI setting |   |  |
|                           | Horizontal Frequency   | 28.9907 kHz   |   |  |
|                           | Pixel Frequency  | 36.818175 MHz   |   |  |
|                           | Noise Level  | @ 8bit output   | $\leq$ 3 Digit (Gain 0 dB)                              |  |
|                           |  | @ 10bit output  | $\leq$ 12 Digit (Gain 0 dB)                             |  |
|                           |  | @ 12bit output  | $\leq$ 48 Digit (Gain 0 dB)                             |  |
|                           | Minimum Scene Illumination   | 24.70 Lux at F1.2, 36.42113 Hz  | 0.95 Lux at F1.2, 36.42113 Hz                           |  |
|                           | Sync. System   | Internal  |   |  |
|                           | Video Output   | Digital 8, 10 or 12 bit Raw Data<br>or<br>RGB 8 bit   | Digital 8, 10 or 12 bit Raw Data                        |  |
|                           | Interface  | IEEE802.3 (1000BASE-T)  |   |  |
|                           | Protocol   | GigE Vision <sup>®</sup> 1.2 and GenICam <sup>™</sup> 2.0 compliant   |   |  |
|                           | Shutter Speed  | Preset continuous mode: 10 useconds to 16,777,216 useconds<br>Preset trigger mode: 10 useconds to 16,777,216 useconds<br>Pulse width mode: 10 useconds to Unlimited   |   |  |
|                           | ALC  | Auto iris lens, electronic iris and AGC (ON/OFF)  |   |  |
|                           | Gain   | 0 to 20.4 dB  |   |  |
|                           | Gamma  | Gamma 1.0 (Factory default) or uploadable gamma table   |   |  |
|                           | AOI Function   | Programmable AOI setting via the communication  |   |  |
|                           | Smear Reduction  | Selectable ON/OFF via the communication   |   |  |
|                           | Color Interpolation  | Available on RGB output   | N/A   |  |
|                           | White Balance Function   | Auto, manual and push-to-set white balance is available on both Raw data output and RGB output  | N/A   |  |
|                           | Trigger Mode   | Edge preset trigger, Pulse width trigger (unlimited long exposure)  |   |  |
|                           | Communication  | UART communication through Ethernet port  |   |  |
| I/Os                      | One opto-isolated input and two LVTTTL outputs   |   |   |  |
| Auto IRIS lens control    | DC IRIS control input with video level target, peak/average and zone weight settings via the communication |   |   |  |
| Power                     | Input Voltage  | +10.8 to +26.4 Vdc  |   |  |
|                           | Consumption  | Less than 5.0 W   |   |  |

| Product                      |                         | STC-GEC83A  | STC-GE83A  |
|------------------------------|-------------------------|---|--|
| Mechanical Specifications    | Dimensions              | 35 (W) x 35 (H) x 50.6 (D) mm excluding connectors  |  |
|                              | Optical Filter          | IR cut filter on  | No filter  |
|                              | Optical Center Accuracy | Positional accuracy in H and V directions: +/- 0.3 mm<br>Rotational accuracy of H and V: +/- 1.5 deg.   |  |
|                              | Material                | Aluminum (AC)   |  |
|                              | Lens Mount              | C mount   |  |
|                              | Connectors              | RJ45 connector<br>Power/IO connector: HR10A-7R-6PB (Hirose) or equivalent<br>DC IRIS lens connector: M1951 (EMUDEN) or equivalent                       |  |
|                              | Camera Mount Screws     | Two 1/4" Tripod screw holes: (One on each top and bottom plate),<br>Twelve M4 screws holes: (Four on each top and bottom plate, two on each side plate) |  |
|                              | Weight                  | Approximately 120 g   |  |
| Environmental Specifications | Operational Temperature | Minimum   | Environmental Temperature -5°C   |
|                              |                         | Maximum   | Camera housing temperature (top plate) shall not exceed 65°C<br>(This corresponds to an environmental temperature of approximately 35°C) |
|                              | Storage Temperature     | -30°C to 65°C   |  |
|                              | Vibration               | 20Hz to 200Hz to 20Hz (5min./cycle), acceleration 10G, 3 directions 30 min. each  |  |
|                              | Shock                   | Acceleration 38G, half amplitude 6ms, 3 directions 3 times each   |  |
|                              | Standard Compliancy     | EMS: EN61000-6-2, EMI: EN55011  |  |
|                              | RoHS                    | RoHS Compliant  |  |

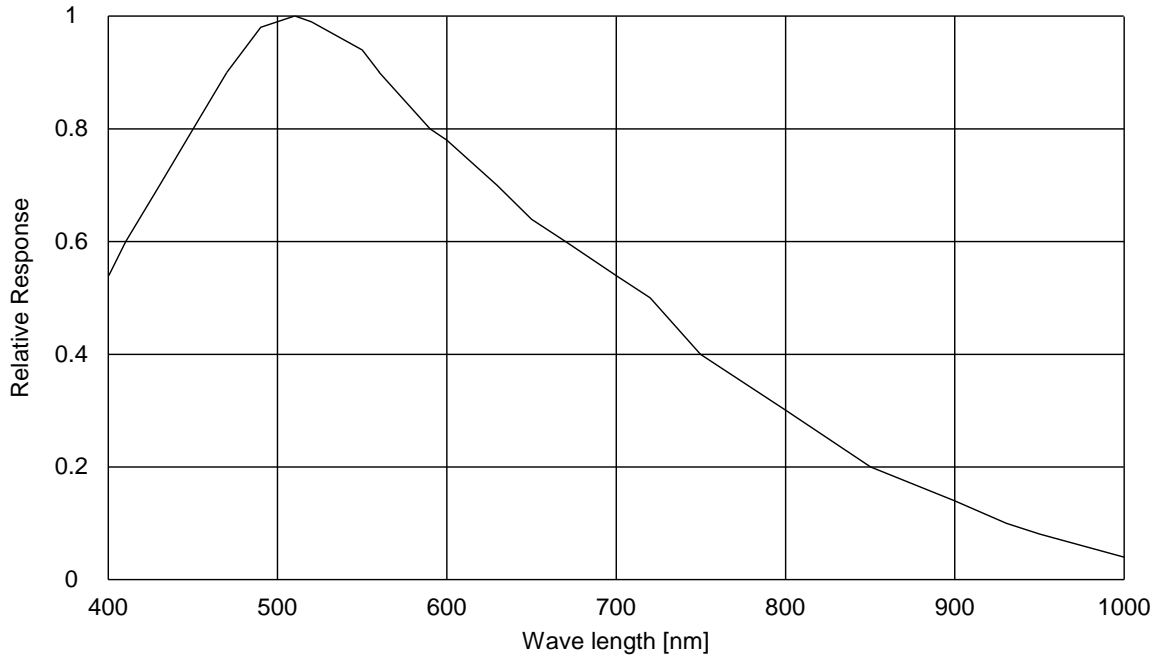
Note: Please use this camera in surrounding temperature conditions that are less than 35°C or in conditions where the camera's top case plate is less than 65°C.

When the camera is used in surrounding temperatures that exceed 35°C, please make sure that the camera is set up to properly radiate heat (maintaining the camera's top case plate's temperature to be less than 65°C).

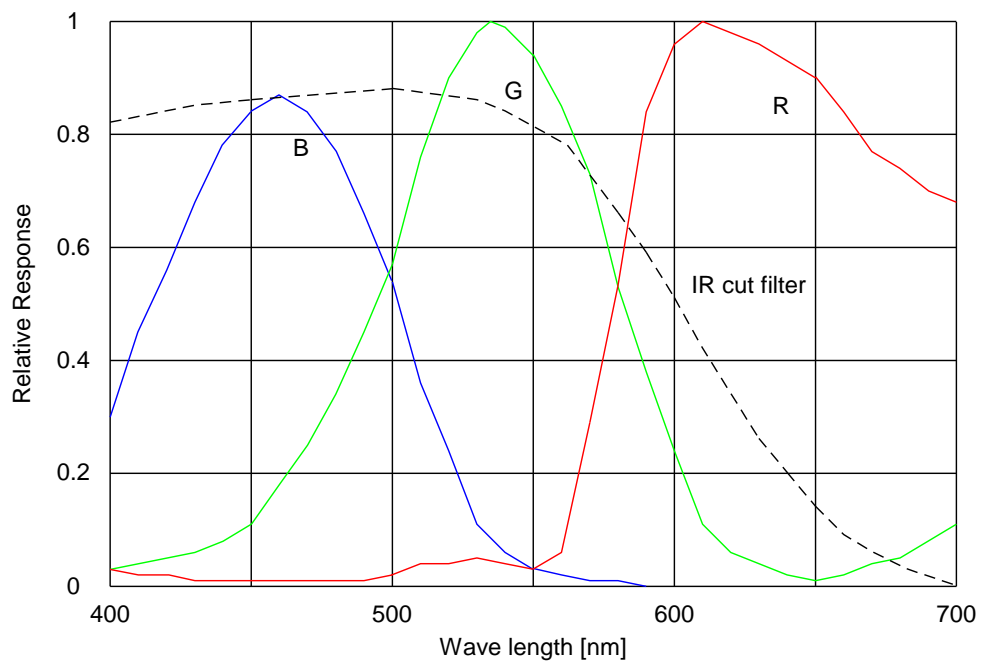
Taking these steps will maintain the heat rating of the electronic components of the camera.

## Spectral Sensitivity Characteristics

STC-GE83A



STC-GEC83A (with IR cut filter)



### 3. STC-GE152A / STC-GEC152A

| Product                   |  | STC-GEC152A   | STC-GE152A   |  |
|---------------------------|--|---|--|--|
| Electronic Specifications | Imager   | 1/2" Interline SXGA color progressive CCD: ICX205AK   | 1/2" Interline SXGA monochrome progressive CCD: ICX205AL |  |
|                           | Total Picture Elements   | 1434 (H) x 1050 (V)   |  |  |
|                           | Active Picture Elements  | SXGA: 1360 (H) x 1040 (V)   |  |  |
|                           | Chip Size  | 7.6 (H) x 6.2 (V) mm  |  |  |
|                           | Cell Size  | 4.65 (H) x 4.65 (V) μm  |  |  |
|                           | Scanning System  | Progressive   |  |  |
|                           | Vertical Frequency (Frame Rate)  | 19.25954 Hz at full resolution<br>0.31387 to 77.03817 Hz adjustable via the communication<br>Maximum frame rate depends on the AOI setting<br>Maximum frame rate of the camera(77.03817) is 200 vertical resolution AOI setting |  |  |
|                           | Horizontal Frequency   | 20.5688 kHz   |  |  |
|                           | Pixel Frequency  | 36.818175 MHz   |  |  |
|                           | Noise Level  | @ 8bit output   | ≤ 3 Digit (Gain 0 dB)                                    |  |
|                           |  | @ 10bit output  | ≤ 12 Digit (Gain 0 dB)                                   |  |
|                           |  | @ 12bit output  | ≤ 48 Digit (Gain 0 dB)                                   |  |
|                           | Minimum Scene Illumination   | 15.49 Lux at F1.2, 19.25954 Hz  | 0.41 Lux at F1.2, 19.25954 Hz                            |  |
|                           | Sync. System   | Internal  |  |  |
|                           | Video Output   | Digital 8, 10 or 12 bit Raw Data<br>or<br>RGB 8 bit   | Digital 8, 10 or 12 bit Raw Data                         |  |
|                           | Interface  | IEEE802.3 (1000BASE-T)  |  |  |
|                           | Protocol   | GigE Vision® 1.2 and GenICam™ 2.0 compliant   |  |  |
|                           | Shutter Speed  | Preset continuous mode: 10 useconds to 16,777,216 useconds<br>Preset trigger mode: 10 useconds to 16,777,216 useconds<br>Pulse width mode: 10 useconds to Unlimited   |  |  |
|                           | ALC  | Auto iris lens, electronic iris and AGC (ON/OFF)  |  |  |
|                           | Gain   | 0 to 20.4 dB  |  |  |
|                           | Gamma  | Gamma 1.0 (Factory default) or uploadable gamma table   |  |  |
|                           | AOI Function   | Programmable AOI setting via the communication  |  |  |
|                           | Smear Reduction  | Selectable ON/OFF via the communication   |  |  |
|                           | Color Interpolation  | Available on RGB output   | N/A  |  |
|                           | White Balance Function   | Auto, manual and push-to-set white balance is available on both Raw data output and RGB output  | N/A  |  |
|                           | Trigger Mode   | Edge preset trigger, Pulse width trigger (unlimited long exposure)  |  |  |
|                           | Communication  | UART communication through Ethernet port  |  |  |
| I/Os                      | One opto-isolated input and two open-collector outputs   |   |  |  |
| Auto IRIS lens control    | DC IRIS control input with video level target, peak/average and zone weight settings via the communication |   |  |  |
| Power                     | Input Voltage  | +10.8 to +26.4 Vdc  |  |  |
|                           | Consumption  | Less than 5.0 W   |  |  |

| Product                      |                         | STC-GEC152A   | STC-GE152A   |
|------------------------------|-------------------------|---|--|
| Mechanical Specifications    | Dimensions              | 35 (W) x 35 (H) x 50.6 (D) mm excluding connectors  |  |
|                              | Optical Filter          | IR cut filter on  | No filter  |
|                              | Optical Center Accuracy | Positional accuracy in H and V directions: +/- 0.3 mm<br>Rotational accuracy of H and V: +/- 1.5 deg.   |  |
|                              | Material                | Aluminum (AC)   |  |
|                              | Lens Mount              | C mount   |  |
|                              | Connectors              | RJ45 connector<br>Power/IO connector: HR10A-7R-6PB (Hirose) or equivalent<br>DC IRIS lens connector: M1951 (EMUDEN) or equivalent                       |  |
|                              | Camera Mount Screws     | Two 1/4" Tripod screw holes: (One on each top and bottom plate),<br>Twelve M4 screws holes: (Four on each top and bottom plate, two on each side plate) |  |
|                              | Weight                  | Approximately 120 g   |  |
| Environmental Specifications | Operational temperature | Minimum   | Environmental Temperature -5°C   |
|                              |                         | Maximum   | Camera housing temperature (top plate) shall not exceed 65°C<br>(This corresponds to an environmental temperature of approximately 35°C) |
|                              | Storage Temperature     | -30°C to 65°C   |  |
|                              | Vibration               | 20Hz to 200Hz to 20Hz (5min./cycle), acceleration 10G, 3 directions 30 min. each  |  |
|                              | Shock                   | Acceleration 38G, half amplitude 6ms, 3 directions 3 times each   |  |
|                              | Standard Compliancy     | EMS: EN61000-6-2, EMI: EN55011  |  |
|                              | RoHS                    | RoHS Compliant  |  |

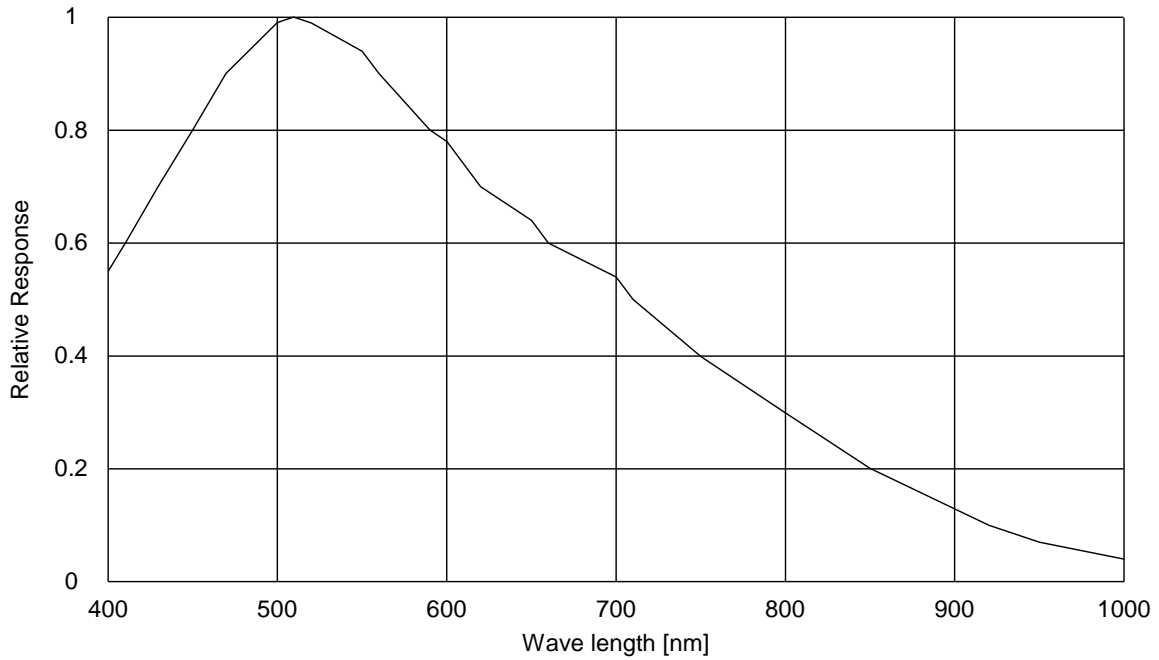
Note: Please use this camera in surrounding temperature conditions that are less than 35°C or in conditions where the camera's top case plate is less than 65°C.

When the camera is used in surrounding temperatures that exceed 35°C, please make sure that the camera is set up to properly radiate heat (maintaining the camera's top case plate's temperature to be less than 65°C).

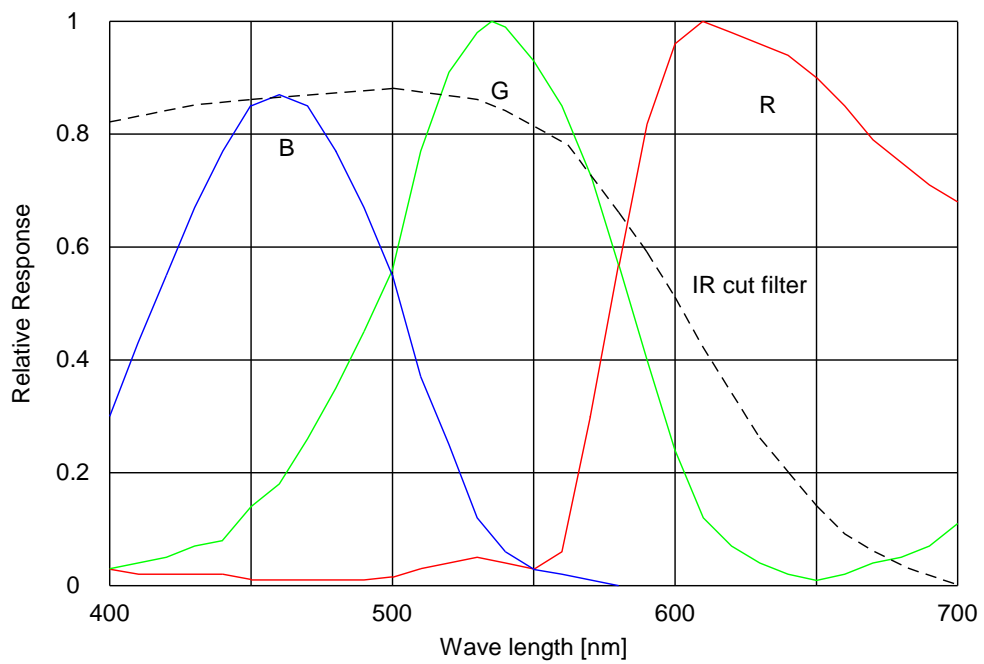
Taking these steps will maintain the heat rating of the electronic components of the camera.

## Spectral Sensitivity Characteristics

STC-GE152A



STC-GEC152A (with IR cut filter)



## 4. STC-GE202A / STC-GEC202A

| Product                   |  | STC-GEC202A   | STC-GE202A   |  |
|---------------------------|--|---|--|--|
| Electronic Specifications | Imager   | 1/1.8" Interline UXGA color progressive CCD: ICX274AQ   | 1/1.8" Interline UXGA monochrome progressive CCD: ICX274AL |  |
|                           | Total Picture Elements   | 1688 (H) x 1246 (V)   |  |  |
|                           | Active Picture Elements  | UXGA: 1624 (H) x 1236 (V)   |  |  |
|                           | Chip Size  | 8.5 (H) x 6.8 (V) mm  |  |  |
|                           | Cell Size  | 4.4 (H) x 4.4 (V) μm  |  |  |
|                           | Scanning System  | Progressive   |  |  |
|                           | Vertical Frequency (Frame Rate)  | 15.31668 Hz at full resolution<br>0.29261 to 61.26674 Hz adjustable via the communication<br>Maximum frame rate depends on the AOI setting<br>Maximum frame rate of the camera(61.26674) is 230 vertical resolution AOI setting |  |  |
|                           | Horizontal Frequency   | 19.1761 kHz   |  |  |
|                           | Pixel Frequency  | 36.8181 MHz   |  |  |
|                           | Noise Level  | @ 8bit output   | ≤ 3 Digit (Gain 0 dB)                                      |  |
|                           |  | @ 10bit output  | ≤ 12 Digit (Gain 0 dB)                                     |  |
|                           |  | @ 12bit output  | ≤ 48 Digit (Gain 0 dB)                                     |  |
|                           | Minimum Scene Illumination   | 7.27 Lux at F1.2, 15.31668 Hz   | 0.16 Lux at F1.2, 15.31668 Hz                              |  |
|                           | Sync. System   | Internal  |  |  |
|                           | Video Output   | Digital 8, 10 or 12 bit Raw Data<br>or<br>RGB 8 bit   | Digital 8, 10 or 12 bit Raw Data                           |  |
|                           | Interface  | IEEE802.3 (1000BASE-T)  |  |  |
|                           | Protocol   | GigE Vision® 1.2 and GenICam™ 2.0 compliant   |  |  |
|                           | Shutter Speed  | Preset continuous mode: 1 useconds to 16,777,216 useconds<br>Preset trigger mode: 1 useconds to 16,777,216 useconds<br>Pulse width mode: 1 useconds to Unlimited  |  |  |
|                           | ALC  | Auto iris lens, electronic iris and AGC (ON/OFF)  |  |  |
|                           | Gain   | 0 to 20.4 dB  |  |  |
|                           | Gamma  | Gamma 1.0 (Factory default) or uploadable gamma table   |  |  |
|                           | AOI Function   | Programmable AOI setting via the communication  |  |  |
|                           | Smear Reduction  | Selectable ON/OFF via the communication   |  |  |
|                           | Color Interpolation  | Available on RGB output   | N/A  |  |
|                           | White Balance Function   | Auto, manual and push-to-set white balance is available on both Raw data output and RGB output  | N/A  |  |
|                           | Trigger Mode   | Edge preset trigger, Pulse width trigger (unlimited long exposure)  |  |  |
|                           | Communication  | UART Communication through Ethernet port  |  |  |
| I/Os                      | One opto-isolated input and two open-collector outputs   |   |  |  |
| Auto IRIS lens control    | DC IRIS control input with video level target, peak/average and zone weight settings via the communication |   |  |  |
| Power                     | Input Voltage  | +10.8 to +26.4 Vdc  |  |  |
|                           | Consumption  | Less than 5.00 W  |  |  |

| Product                      |                         | STC-GEC202A   | STC-GE202A   |
|------------------------------|-------------------------|---|--|
| Mechanical Specifications    | Dimensions              | 35 (W) x 35 (H) x 50.6 (D) mm excluding connectors  |  |
|                              | Optical Filter          | IR cut filter on  | No filter  |
|                              | Optical Center Accuracy | Positional accuracy in H and V directions: +/- 0.3 mm<br>Rotational accuracy of H and V: +/- 1.5 deg.   |  |
|                              | Material                | Aluminum (AC)   |  |
|                              | Lens Mount              | C mount   |  |
|                              | Connectors              | RJ45 connector<br>Power/IO connector: HR10A-7R-6PB (Hirose) or equivalent<br>DC IRIS lens connector: M1951 (EMUDEN) or equivalent                       |  |
|                              | Camera Mount Screws     | Two 1/4" Tripod screw holes: (One on each top and bottom plate),<br>Twelve M4 screws holes: (Four on each top and bottom plate, two on each side plate) |  |
|                              | Weight                  | Approximately 120 g   |  |
| Environmental Specifications | Operational Temperature | Minimum   | Environmental Temperature -5°C   |
|                              |                         | Maximum   | Camera housing temperature (top plate) shall not exceed 65°C<br>(This corresponds to an environmental temperature of approximately 35°C) |
|                              | Storage temperature     | Environmental Temperature: -30°C to 65°C  |  |
|                              | Vibration               | 20Hz to 200Hz to 20Hz (5min./cycle), acceleration 10G, 3 directions 30 min. each  |  |
|                              | Shock                   | Acceleration 38G, half amplitude 6ms, 3 directions 3 times each   |  |
|                              | Standard Compliancy     | EMS: EN61000-6-2, EMI: EN55011  |  |
|                              | RoHS                    | RoHS Compliant  |  |

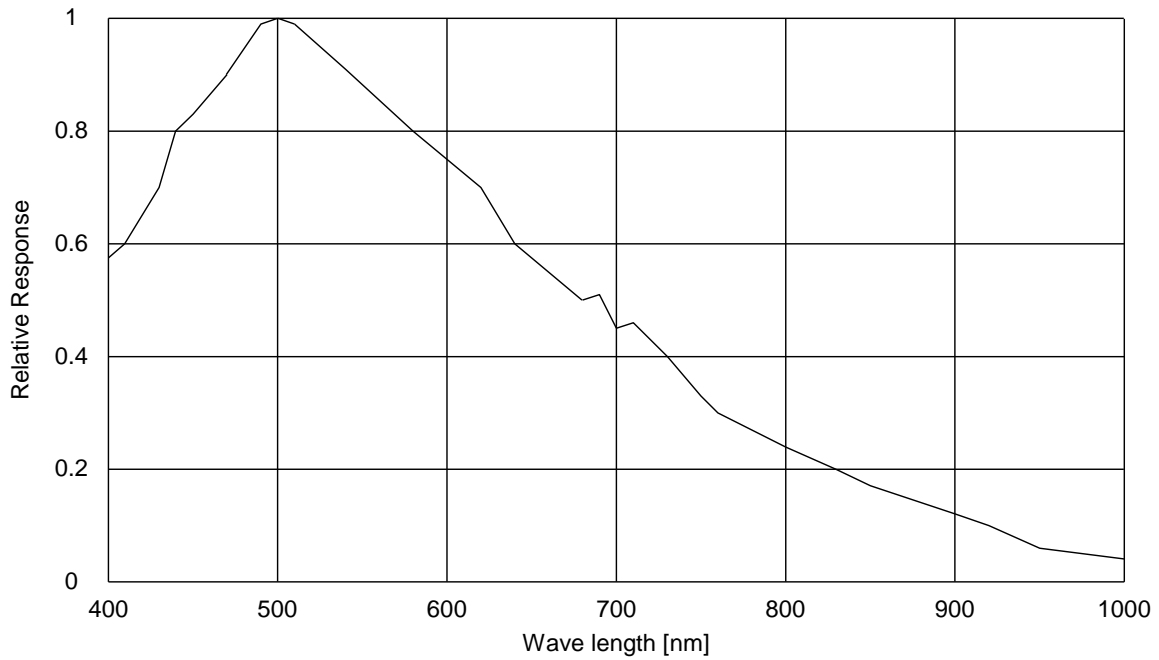
Note: Please use this camera in surrounding temperature conditions that are less than 35°C or in conditions where the camera's top case plate is less than 65°C.

When the camera is used in surrounding temperatures that exceed 35°C, please make sure that the camera is set up to properly radiate heat (maintaining the camera's top case plate's temperature to be less than 65°C).

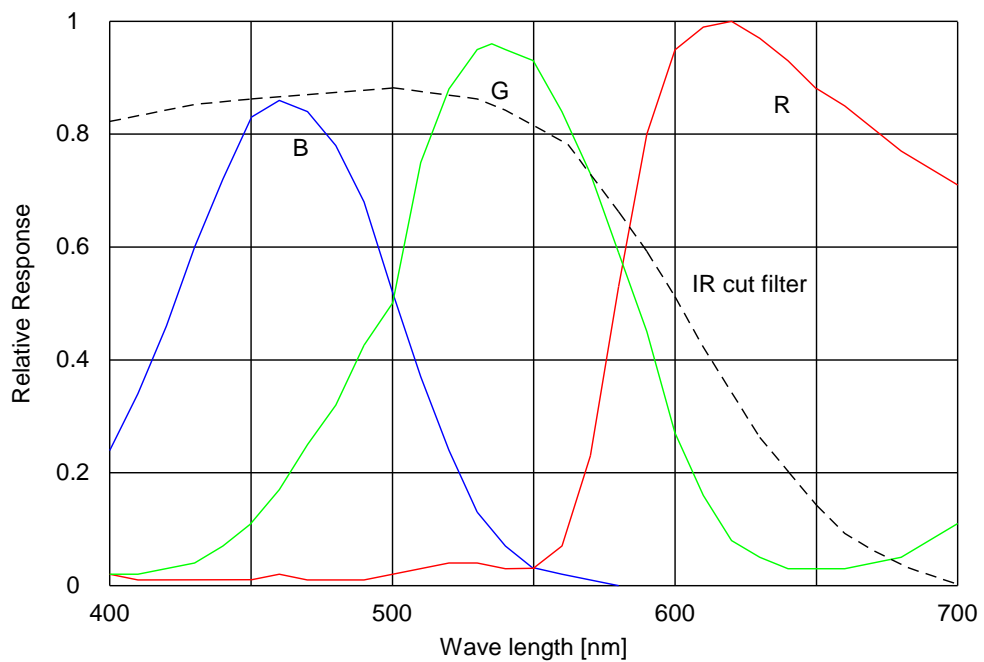
Taking these steps will maintain the heat rating of the electronic components of the camera.

## Spectral Sensitivity Characteristics

STC-GE202A



STC-GEC202A (with IR cut filter)



## B. Connector Specifications

### 1. RJ45 Connector:

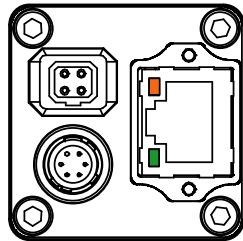
Caution: This product is **not** a PoE type. Apply power (+10.8 to +26.4Vdc) **only** through the Power/IO connector.

Pin Assignment:

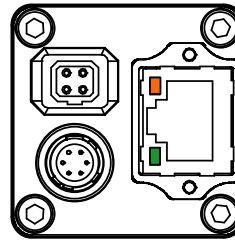
| Pin No. | Signal Name |
|---------|-------------|
| 1       | TA+         |
| 2       | TA-         |
| 3       | TB+         |
| 4       | TC+         |
| 5       | TC-         |
| 6       | TB-         |
| 7       | TD+         |
| 8       | TD-         |

LED Information:

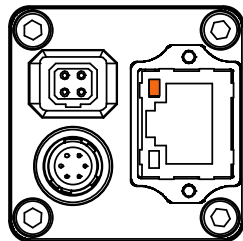
| Green LED      | Yellow LED            | Status              |
|----------------|-----------------------|---------------------|
| Green Light ON | Orange Light ON       | Power ON            |
| Green Light ON | Orange Light Blinking | 1 Gb Transferring   |
| Light OFF      | Orange Light Blinking | 100 Mb Transferring |



The camera is powered-on



Green light: ON  
Yellow light: Blinking  
1 Gb Transferring



Green light: OFF  
Yellow light: Blinking  
100 Mb Transferring

Please use a 1Gb supported NIC, HUB and LAN cable. Check that the NIC and HUB being used is “1Gb transferring”.

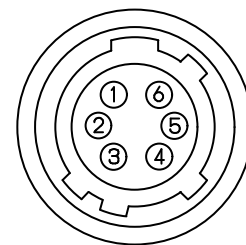
Damaging or mishandling the CAT5e cable may cause the transferring speed to change from 1Gb to 100Mb. If this happens, please replace the CAT5e cable.

2. Power/IO Connector: Connector: HR10A-7R-6PB (Hirose) or equivalent.

This connector is for the DC power input and the input and output signals.

Pin Assignment:

| Pin No. | Signal Name | IN/OUT | Signals            | Initial Output   |
|---------|-------------|--------|--------------------|------------------|
| 1       | GND         | IN     | GND                |                  |
| 2       | IO_OUT1     | OUT    | +3.3V LVTTTL       | FrameTriggerWait |
| 3       | IO_OUT2     | OUT    | +3.3V LVTTTL       | ExposureActive   |
| 4       | TRG_In-     | IN     | Isolated -         |                  |
| 5       | TRG_In+     | IN     | Isolated +         |                  |
| 6       | POWER IN    | IN     | +10.8 to +26.4 Vdc |                  |



a. Input Signal

TRG IN: Input the trigger signal

High: +3.0 to +26.4V

Low: Smaller than 1.0V

b. Output Signals

Set the output signals from the power/IO connector.

The following six output signals are selectable with the software or communication.

1) FrameTriggerWait

The user can check the camera condition (camera exposure and image output processing by the trigger signal with this FrameTriggerWait signal).

a) High status (3.3V): No processing by the trigger signal. The camera accepts the trigger signal.

b) Low status (0V): The camera is exposed and the image output processes by the trigger signal.

The camera default setting is the input trigger signal is INVALID while at the low status of this signal. When the exposure starts while the image output by the next trigger signal, please change the camera setting (Device code: 00H, Command: 13H) to accept the trigger signal while the image outputs.

The noise appears on the image when the exposure begins while the image is output. The noise appears on the image when the start exposure while the image is output. In this case, please change the “H reset” for the exposure start mode (Device code: 00H, Command: 12H) to change the exposure start point to the next HD timing.

2) UserOutput

The status of the UserOutput signal can change with the “UserOutputValue”.

3) ExposureActive

The user can check the exposure time with the ExposureActive signal.

a) High status (3.3V): The camera is exposing

b) Low status (0V): The camera is not exposed

4) TriggerAuxiliary

The TriggerAuxiliary signal is the input trigger signal.

5) TriggerInternal

The TriggerInternal signal is the input trigger signal with the trigger delay time.

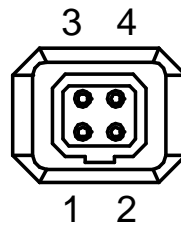
6) SensorReadOut

The SensorReadOut signal is the FVAL signal, which is the image output period of the time.

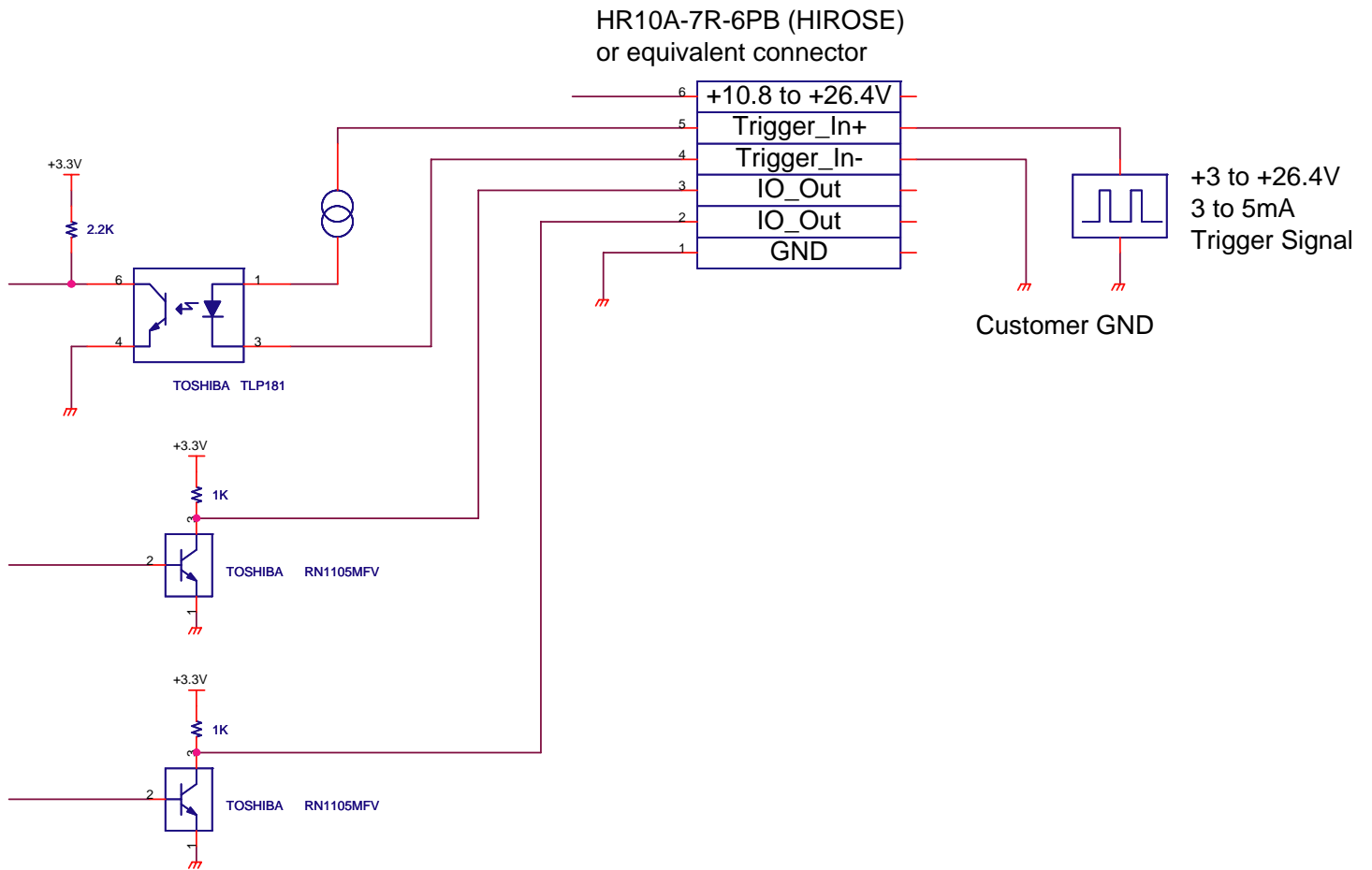
3. DC IRIS Lens Connector: M1951 (EMUDEN) or equivalent.

Pin Assignment:

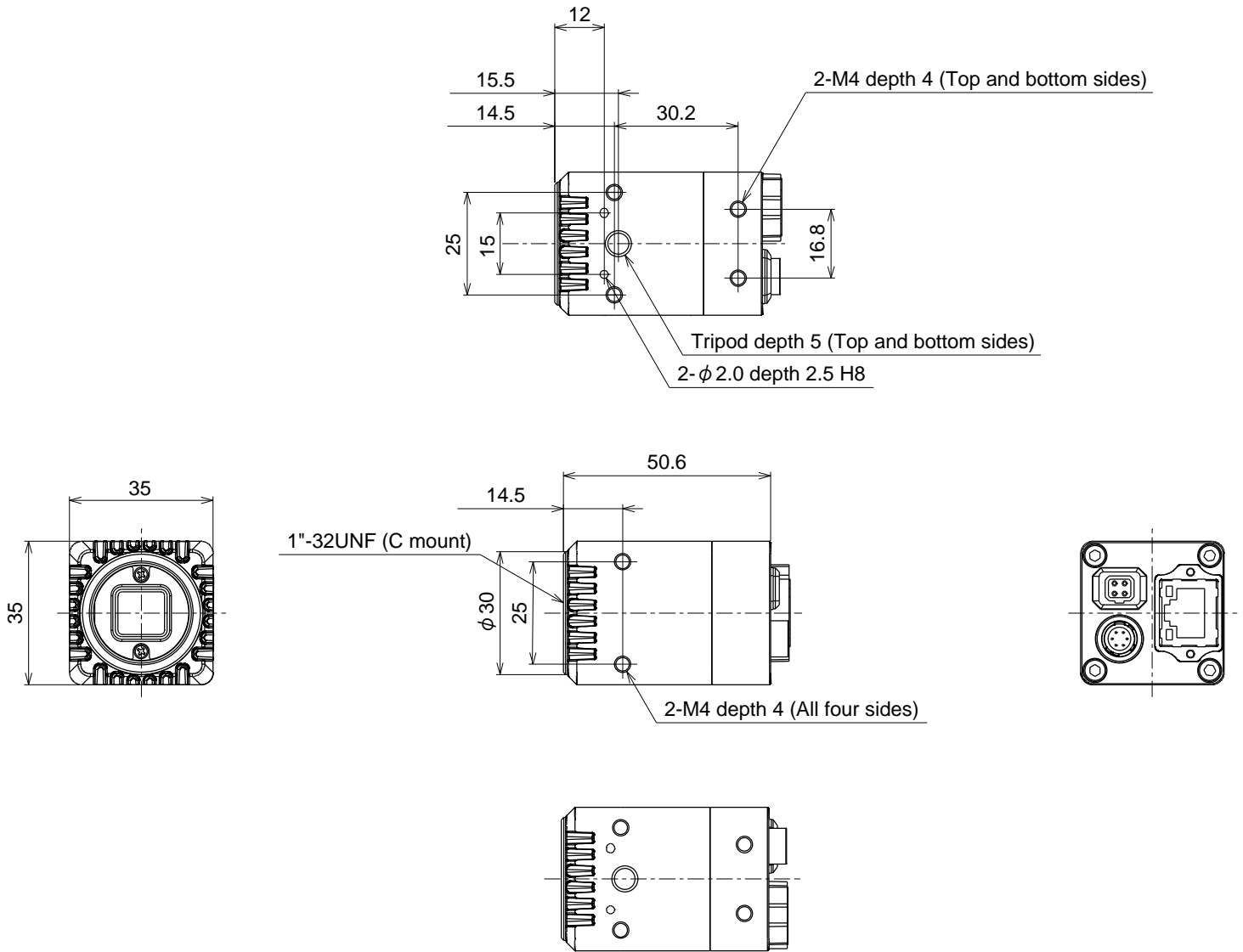
| Pin No. | Signal Name |
|---------|-------------|
| 1       | DAMP-       |
| 2       | DAMP+       |
| 3       | DRIVE+      |
| 4       | DRIVE-      |



## II. I/O Circuits



### III. Dimensions



Unit: mm

Revision

| Rev. | Date           | Change   | Notes  |
|------|----------------|--|--|
| 1.0  | Aug. 8, 2009   | New Document   |  |
| 1.1  | Aug. 18, 2009  | Update<br>1) Electronic Specifications   |  |
| 1.2  | Sept. 2, 2009  | Update<br>1) Dimensions (Change drawing)<br>2) Mechanical Specifications (Change dimensions)<br>3) Mechanical Specifications (Change description of optical filter)<br>4) Electronic Specifications (Add CCD out method for STC-GE/GEC500A)<br>5) Electronic Specifications (Change description of plus width trigger)   |  |
| 1.3  | Sept. 8, 2009  | Update<br>1) Imager for GE/GEC83A is XGA<br>2) Pixel Frequency for GE/GEC500A is 64MHz<br>3) Video output: "Digital 8, 10, or 12 bit Raw Data GigE Vision"<br>4) Power Supply → Power<br>5) Gamma: "Programmable gamma setting via the communication (Factory default as 1.0)"<br>6) ROI function added<br>7) Communication: Communication through Ethernet Connector<br>8) Page 11: Description of Interface connector changed  |  |
| 1.4  | Dec. 8, 2009   | Update<br>1) Change power/IO connector, IO configurations and related specifications.  |  |
| 1.5  | Mar. 13, 2010  | Update<br>1) Deleted "STC-GE133A/GEC133A"<br>2) Dimensions (Change Drawing)<br>3) Mechanical Specifications (Changed Dimensions)<br>4) Electronic Specifications (Delete RGB 10/12 bit from video output)  |  |
| 1.6  | May 6, 2010    | Update<br>1) Electronic Spec: Changed auto iris lens type from DC iris to Video Iris<br>2) Electronic Spec: Changed input power range from "9 to 28Vdc" to "10.8 to 26.4 Vdc"<br>3) Electronic Spec: Entered weight<br>4) Mechanical Spec: Changed auto iris lens type<br>5) Connector Spec: Changed input power range and auto iris lens type   |  |
| 1.7  | May 17, 2010   | Update<br>1) Electronic Spec: Changed S/N Ratio to Noise Level   |  |
| 1.8  | May 21, 2010   | Update<br>1) Electronic Spec: Changed Video Output<br>2) Electronic Spec: Changed ALC<br>3) Electronic Spec: Smear Reduction<br>4) Electronic Spec: Added Color Interpolation row<br>5) Electronic Spec: Added White Balance Function row<br>6) Electronic Spec: Added I/O's row<br>7) Mechanical Spec: Dimension: Changed 49.5(D) to 49.6(D)<br>8) Mechanical Spec: Changed wording of Optical Filter<br>9) Mechanical Spec: Changed wording of Camera Mount Screws<br>10) Pg.15, Section 2.Power/IO Connector: Changed pin no. 4&5 last column | Note: Per STJ's noted changes to ver 1.8. Changes to the minimum illumination and the power consumption were not present. Both are still TBD status. |
| 1.9  | July 28, 2010  | Update<br>1) Electronic specifications (Change minimum scene illumination)<br>2) Electronic specifications (Change power consumption)<br>3) Electronic specifications (Change the shutter speed)<br>4) Electronic specifications<br>(Change auto Iris lens type from Video iris to DC iris)<br>5) Change dimensions<br>6) Mechanical specifications<br>(Change optical filter, color model has IR cut filter)<br>7) Environmental specifications<br>(Delete humidity)  |  |
| 2.0  | Sept. 17, 2010 | Update<br>1) Add I/O circuits<br>2) Connector specifications<br>(Add the explanation of the TRG READY OUT and EXP OUT signal)  |  |

| Rev.             | Date            | Change  | Notes                               |
|------------------|-----------------|---|-------------------------------------|
| 2.3<br>(2.1~2.3) | Nov. 29, 2010   | Update<br>1) Electronic specifications (Delete the scanning method)<br>2) Electronic specifications (Change the frame rate)<br>3) Electronic specifications (Change the protocol)<br>4) Electronic specifications (Change the shutter speed)<br>5) Electronic specifications (Change the gain range)<br>6) Electronic specifications (Change ROI to AOI)<br>7) Electronic specifications (Change number of the input for I/O's)<br>8) Mechanical specifications (Change the dimensions)<br>9) Mechanical specifications (Change the screw holes)<br>10) Environmental specifications (Change the temperature)<br>11) Connector specifications (Change the power/IO connector)<br>12) I/O circuits (Change the I/O circuits)<br>13) Dimensions (Change the drawing)<br>14) Change the dimension for STC-GE500A/GEC500A |                                     |
| 2.4              |                 | Update<br>1) Connector spec (changed the description for the input and output signals)<br>2) Changed the I/O circuits<br>3) Electronic spec (Change horizontal and pixel frequency for the GE/GEC83A)<br>4) Electronic spec (change frame rate)<br>5) Electronic spec (change the minimum scene illumination)<br>6) Environmental spec (Change operational temp)<br>7) Change note about the operational temp<br>8) Connector spec (Add the LED info for RJ45 connector)  | Received revision 2.4 & 2.5 on 1/14 |
| 2.5              |                 | Update<br>1) Connector spec (change the initial signal for the Power/IO connector)  |                                     |
| 2.6              | March 3, 2011   | Update<br>1) Added the spectral sensitivity characteristics to each resolution.   |                                     |
| 2.7              | March 15, 2011  | Update<br>1) Mechanical Spec (Added Optical Center Accuracy)<br>2) Environmental Spec (Changed operational temperature)<br>3) Electronic Spec (Change the frame rate for the GE/GEC500A)<br>4) Environmental Spec (Revise shock and standard conformity)  |                                     |
| 2.8              | April 1, 2011   | Update<br>1) Connector specifications (Change the LED information for the RJ45 connector)<br>2) Environmental specifications(Changed the operational temperature)   |                                     |
| 2.9              | July 8, 2011    | Update<br>1) Change the I/O circuits<br>2) Electronic Spec (Change frame rate for 83 and 152)<br>3) Separate the STC-GE/GEC500A from document   |                                     |
| 3.0              | July 27, 2011   | Update<br>1) Electronic Spec (revised the imager part number for STC-GEC83A)  |                                     |
| 3.01             | August 24, 2011 | Update<br>Changed the output signal name (from FrameActive to SensorReadOut)  |                                     |

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