

# COLOR DOME CAMERA

# C-CV202-3 CU

Thank you for purchasing TOA's Color Dome Camera.

Please carefully follow the instructions in this manual in order to ensure long, trouble-free use of your color dome camera.

## 1. SAFETY PRECAUTIONS

- Before installation or use, be sure to carefully read all the instructions in this section for correct and safe operation.
- Make sure to observe the instructions in this manual as the conventions of safety symbols and messages regarded as very important precautions are included.
- We also recommend you keep this instruction manual handy for future reference.

### **WARNING**

Do not expose the unit to rain or an environment where it may be splashed by water or other liquids, as doing so may result in fire or electric shock.

### **WARNING**

Indicates a potentially hazardous situation which, if mishandled, could result in death or serious personal injury.

- Use the unit only with the voltage specified on the unit. Using a voltage higher than that which is specified may result in fire or electric shock.
- Use screws and bolts that are appropriate for the ceiling's or wall's structure and composition. Failure to do so may cause the unit to fall, resulting in material damage and possible personal injury.
- Install the unit only in a location that can structurally support the weight of the unit and the mounting bracket. Doing otherwise may result in the unit falling down and causing personal injury and/ or property damage.
- Do not install the unit outdoors since it is designed for indoor use. If installed outdoors, the aging of parts causes the unit to fall down, possibly resulting in personal injury. Also, when it is exposed to rain, an electric shock may result.
- To prevent a fire or electric shock, never open the unit case nor modify the unit as there are high voltage components inside the unit. Refer all servicing to your nearest TOA dealer.
- Should any of the following irregularity be found during use, disconnect the power supply and contact your TOA dealer. Do not attempt to further use the unit because a fire or electric shock may result.
  - If you detect smoke or a strange smell coming from the unit
  - If water or any metallic object gets into the unit
  - If the unit falls, or the unit case breaks
  - If the power supply cord is damaged (exposure of the core, disconnection, etc.)
  - If no image appears
- Do not insert nor drop metallic objects or flammable materials in the ventilation slots of the unit's cover, as this may result in fire or electric shock.
- Have the unit periodically checked by the dealer from where it was purchased. Should the unit or its mounts corrode or structurally deteriorate, the unit could fall down, possibly resulting in personal injury.

### **CAUTION**

Indicates a potentially hazardous situation which, if mishandled, could result in moderate or minor personal injury, and/or property damage.

- Avoid installing the unit in humid or dusty locations, in locations exposed to the direct sunlight, near the heaters, or in locations generating sooty smoke or steam as doing otherwise may result in fire or electric shock.
- Note correct polarity (positive and negative orientation) when connecting the power supply cable. Incorrect connection may cause failure of other equipment connected.
- Leave the installation of the unit to your TOA dealer because the installation requires expert experience and skills. If the unit falls, this could cause personal injuries.
- Do not hang down from the camera as this may cause it to fall down or drop, resulting in personal injury and/ or property damage.
- Disconnect the power supply, and unplug the power supply plug from the AC outlet for the safety purposes when cleaning or leaving the unit unused for long periods of time. Doing otherwise may cause a fire or electric shock.

CU version complies with Part 15 of the FCC Rules.

#### **Note**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

#### **Modifications**

Any modifications made to this device that are not approved by TOA Corporation may void the authority granted to the user by the FCC to operate this equipment.

This Class B digital apparatus compliance with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## 2. GENERAL DESCRIPTION

The C-CV202-3 Color Dome Camera is an indoor-use camera and is equipped with a high-resolution camera and lens. It is designed to operate on 12 V DC, which is supplied by an external power supply unit. Since its 2X vari-focal, auto-iris lens is built inside the camera, its angle of view can be manually adjusted.

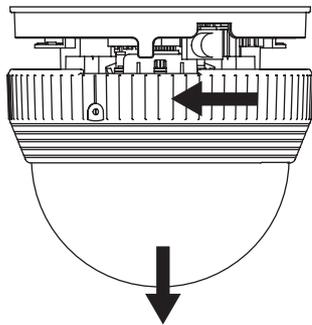
## 3. HANDLING PRECAUTIONS

- Do not direct the camera lens to the sun or strong lighting or light reflection.
- Do not give the camera a great shocks or vibration, as this will damage the camera.
- It is recommended that the camera be always used in locations where the ambient temperature ranges from -10°C to +50°C and humidity levels of less than 90% to ensure that no condensation is formed.
- To clean, wipe with a dry soft cloth. Never use benzene, thinner or chemically processed towel as the unit's plastic or other parts may be deformed or discolored.
- When dust has settled on the camera's lens, lightly clean using a commercial camera blower or cleaning paper.
- Installing the camera cables in close proximity to fluorescent lamps or other electrical appliances can downgrade the picture quality. In such cases, change the wiring.
- If there is a strong electric or magnetic field near the camera, such as television transmission antennas, motors or transformers, this may distort or roll the monitor picture. In such cases, run the entire wiring route through metal conduit tubing.
- Do not install the camera in locations where solvents or chemicals are used as the camera's dome cover may be deformed or discolored.
- Use the external power supply unit of the following rating.  
12 V DC, over 0.5 A

## 5. INSTALLATION

### 1. Detach the dome cover.

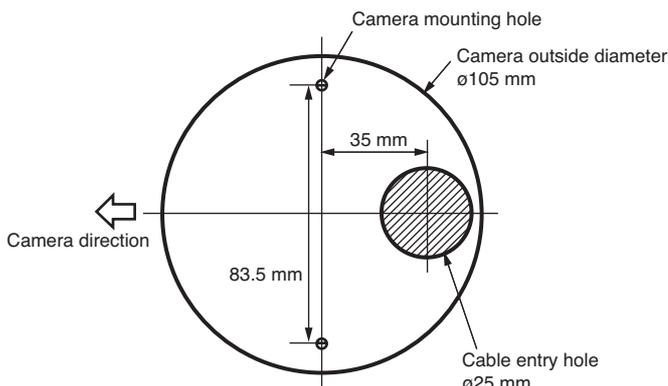
Turn the dome cover counterclockwise to detach from the camera section.



### 2. Determine the wiring method.

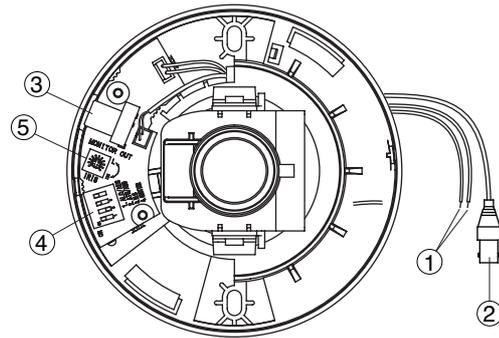
#### 2-1. Unexposed wiring

Make a cable entry hole in the ceiling.

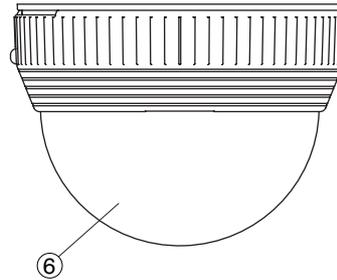


## 4. NOMENCLATURE

[ bottom view ]



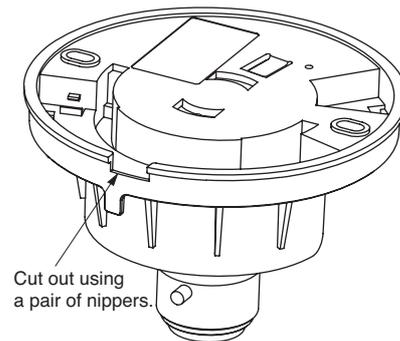
[ side view of the camera with a dome cover ]



- (1) Power Input cable (12 V DC)
- (2) Video output terminal (BNC-R jack)
- (3) Monitor output terminal (RCA pin jack)
- (4) Mode setting switch
- (5) Iris control
- (6) Dome cover

#### 2-2. Open wiring

Cut out the thin camera section shown below using a pair of nippers.



### 3. Connect the coaxial cable to the Video output terminal, and the power supply cable to the power input cable.

Match the polarities when connecting the power supply cable to the power input cable.

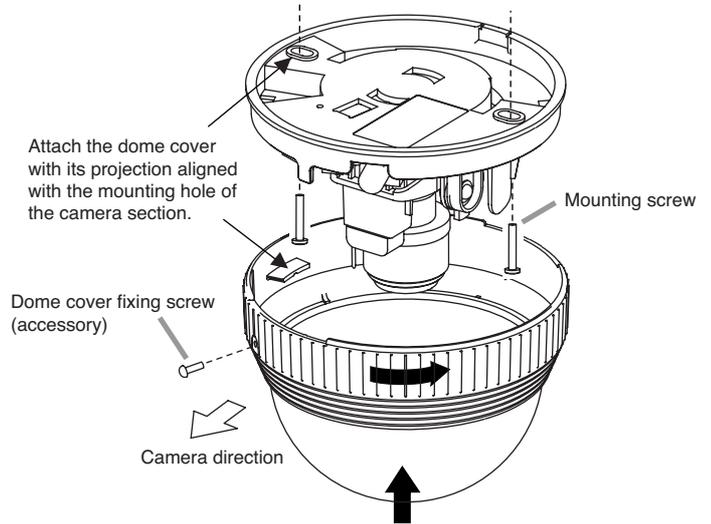
The red cable of the power input cable is positive, while the black one of that is negative.

Apply a self adhesive insulating tape both at the power supply cable connection with the power input cable, and BNC connection.

- Mount the camera section to the ceiling using 2 mounting screws.  
Because the mounting screws are not supplied with the camera, prepare appropriate screws for the application. (Use screws that are over 4 mm in nominal diameter and longer than 25 mm.)
- Attach the dome cover to the camera section after completing all necessary adjustments.  
Insert the dome cover to the camera section, then turn it clockwise until it locks into place.  
After attaching the dome cover, fit it using a supplied dome cover fixing screw.  
When detaching the dome cover, first remove the screw, then detach the dome cover.

**Note**

Do not forcefully tighten the screw. Extreme force is applied to the screw and the screw could not be removed, as this may cause the dome cover not to become detached.



## 6. ADJUSTMENT

- Switch on the power supply of 12 V DC after completing camera connections.  
The power is supplied to the camera.

- Connect the monitor to the Monitor Output terminal to permit a picture to be viewed on the monitor.

**Note**

When the monitor output terminal is connected, a video signal cannot be output to the video output terminal.

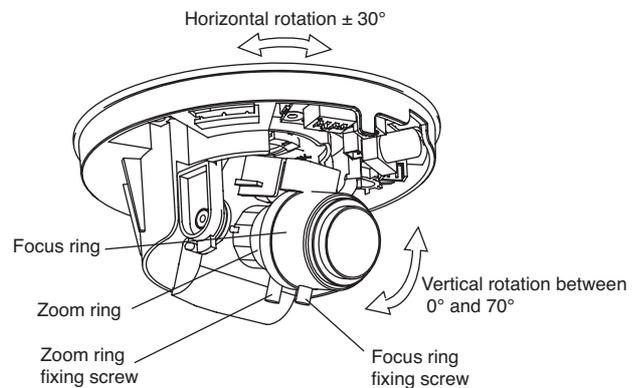
- Set the Shutter Speed switch to ON if light flicker is annoying.  
Light flicker may interfere with the view under fluorescent lamps in the area where power frequency is 50 Hz. In such cases, set the Shutter Speed switch to "ON" position, and the image free from flickering can be obtained.

**Note**

If the Shutter Speed switch is set to the ON position, sensitivity is reduced compared to operation in the OFF position. When using the camera in a dark location, or where light flicker is not an annoyance, set the switch to the OFF position.

- Adjust the camera angle.  
Camera angle can be adjusted for up to 60°(± 30°) for horizontal rotation, and between 0° and 70° for vertical rotation.

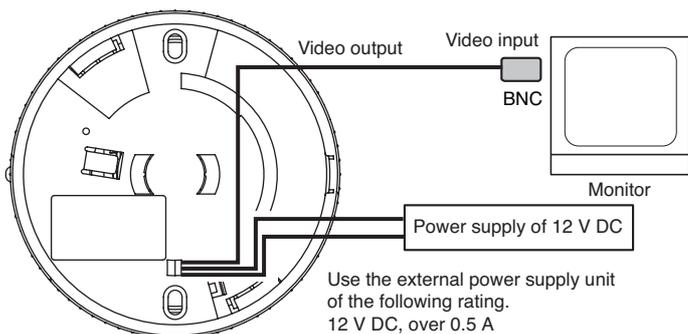
- Adjust the angle of view with the Zoom ring and adjust the focus with the Focus ring for the best possible picture reproduction. After lens adjustment completion, tighten both the Zoom ring fixing screw and the Focus ring fixing screw.



**Notes**

- Since the Iris control (for sensitivity adjustment) is factory-preset to an optimum position for general use, avoid tampering with it in normal conditions. Turning the control unnecessarily could cause reduced picture quality or equipment failure. When the Iris control needs to be readjusted to match a specific subject, first set both the Adjustment switch and the Backlight Compensation switch to the OFF position, then adjust the control to an optimum level. After adjustment, place a hand over the lens for several seconds and then release to check the lens for correct iris operation.
- If the focus is adjusted for a subject under good lighting conditions, the subject may go out of focus when conditions become dark. To avoid this, adjust the lens focus after setting the Adjustment switch to the ON position. Be sure to switch it back to the OFF position after completing lens adjustment.

## 7. CONNECTIONS



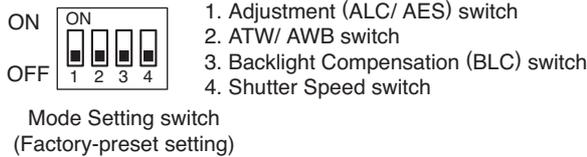
Use the external power supply unit of the following rating.  
12 V DC, over 0.5 A  
Match the polarity of the power supply cable with that of the power input cable (+, -) when connecting.

**Note**

If the Video output is not terminated at 75 Ω, video pictures are not properly displayed. Make sure that the output has been terminated at 75 Ω at the connected monitor or switcher.

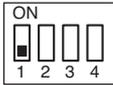
## 8. ABOUT THE MODE SETTING SWITCH

Set the Mode Setting switch for the best possible picture reproduction depending on installation conditions.



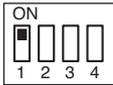
### Adjustment (ALC/ AES) switch

Set this switch when adjusting the lens focus.



#### Standard position:

Set to OFF after lens adjustment completion. Set to this position during normal use.



#### Adjustment position (during adjustment):

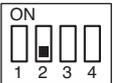
Use this position when focusing the lens. If the focus is adjusted for a subject under good lighting conditions, the subject may go out of focus when conditions become dark. Set the Adjustment switch to ON only when performing focus adjustment.

#### Note

The color of the screen may periodically vary under fluorescent lighting when the Adjustment switch is set to ON. Light flicker may interfere with the view in the area where power frequency is 50Hz.

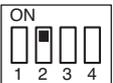
### ATW/ AWB switch

Set the white balance operation.



#### ATW:

Set to this position during normal use. The camera's white balance automatically changes as an object's color temperature varies.

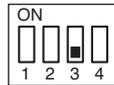


#### AWB:

Use this switch when the difference between the displayed color and actual color is annoying. Shoot the white object, then turn the switch ON. The camera operates on the initially-set white balance even if an object's color temperature changes.

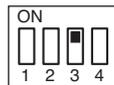
### Backlight Compensation (BLC) switch

Set this switch so that the subject is not displayed in black when backlit.



#### Standard position:

Set to this position during normal use. Backlight Compensation function does not operate when the switch is set to this position.

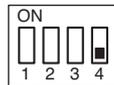


#### Backlight Compensation position (when backlit):

This position compensates images from being displayed in black when the image is backlit.

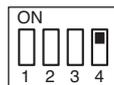
### Shutter Speed switch

Set this switch to the ON position when annoying screen image flicker is detected.



#### Standard position:

Set to this position during normal use.



#### Shutter Speed position:

Annoying screen flicker may result under fluorescent lighting in areas operating with a power frequency of 50 Hz. In such cases, set the Shutter Speed switch to the ON position to permit a flicker-free picture to be viewed.

#### Note

If the Shutter Speed switch is set to the ON position, sensitivity is reduced compared to operation in the OFF position. When using the camera in a dark location, or where light flicker is not an annoyance, set the switch to the OFF position.

## 9. SPECIFICATIONS

Power Source	12 V DC $\pm$ 10%
Power Consumption	1.5 W (120 mA)
Image Device	1/4 Type IT-CCD
Number of Effective Pixels	768 (H) x 494 (V) (380,000 pixels)
Scanning System	2:1 interlace
Scanning Frequency	Horizontal: 15.734 kHz, Vertical: 59.94 Hz
Monitor output	VBS1.0 V(p-p), 75 $\Omega$ , RCA pin jack
Video Output	VBS1.0 V(p-p), 75 $\Omega$ , BNC-R jack
Synchronizing System	Internal synchronization
Resolution	Horizontal: 480 lines (at center) Vertical: 350 lines (at center)
S/ N Ratio	50 dB
Minimum Illumination	8 lx (50 IRE), 2 lx (20 IRE)
White Balance Mode	ATW/ AWB
Focal length	f=2.8 mm - 5.8 mm

#### Note

The design and specifications are subject to change without notice for improvement.

Maximum Aperture Ratio	1:1.4 - 1.8
Iris	Auto-iris
Angle of view	Horizontal: 76.7° - 38.3° Vertical: 56.8° - 28.7°
Adjustment Switch	ON/ OFF (used for focus adjustment)
Other Functions	Backlight compensation, Shutter speed (1/60, 1/100), Iris control
Operating Temperature	-10°C to +50°C
Operating Humidity	Under 90% RH (no condensation)
Applications	Indoor use
Finish	Case: ABS resin, cool gray Dome cover: Acrylic resin, smoked
Dimensions	$\phi$ 107 x 78.7 (h) mm
Weight	170 g

#### • Accessory

Dome cover fixing screw (2.6 x 8) ..... 1