WIDE DYNAMIC RANGE COLOR CAMERAS

(Lens is optional)

DESCRIPTION

TOA DSP Color Cameras are designed for high performance, extending their capabilities to surpass those achieved with human eyesight. The images that these cameras provide are extremely natural-looking and closely relate to how the human eye views images. This high performance is maintained even with less than perfect lighting conditions such as backlighting. The cameras are also able to offer an enhanced night vision function thanks to an electronic sensitivity booster and B/W mode that is built-in. Even in poor light conditions, images will always stay clear and visible, facilitating effective monitoring.

FEATURES

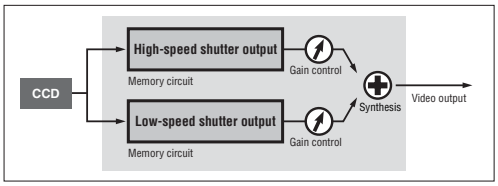
- **New Wide Dynamic Range**
  Provides a new level of performance with natural looking images even in backlight condition.
- **500-line high resolution (NTSC)**
- **Minimum required illumination level of as low as 0.5 lx (50 IRE)**
- **Day/Night operation**
  Clear images are provided even in unsatisfactory light by B/W mode.
- **Maximum 64X sensitivity booster**
  Enables increasing sensitivity to take color images even in night conditions.
- **Privacy masking function**
  Allows privacy protection for up to 4 locations.
- **Can be controlled from a distant location**
  Using the C-RU10 Camera Remote Unit allows convenient control of camera parameters.
- **Backlight compensation**
  Allows optimal viewing of dark areas in a backlight condition.
- **Newly developed DSP**
- **Easy focusing without using the ND filter**
- **Alarm input**
- **Motion detection**
- **Fully automatic operation mode shift**
- **Easy menu-driven setup**
- **2X Electric Zoom**
- **Screen Reverse function (Horizontal/Vertical)**

TOA

C-CC364

WIDE DYNAMIC RANGE COLOR CAMERA

New DSP



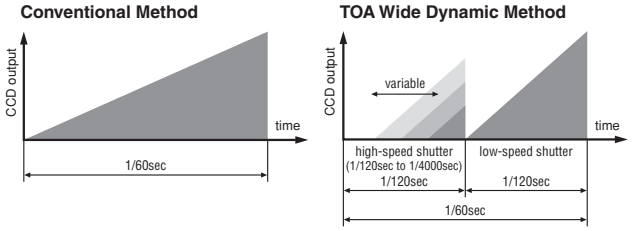
Crucial to achieving the extremely wide dynamic range function is the new TOA proprietary DSP.
Using sophisticated digital video processing allows electronically combining two separate images taken with different shutter speeds to result in one perfect image.

New Wide dynamic range

The C-CC364 camera achieve a remarkable dynamic range . The wide dynamic range allows optimizing an image by automatically adjusting both dark and light areas to ensure the targeted area has ideal contrast and visibility.

TOA Wide Dynamic Range Method

Conventional cameras employ a single speed of 1/60sec. when taking images. TOA's Wide Dynamic Range Method makes use of two shutter speeds, one set at 1/120sec. and one that is variable from 1/120sec. to 1/17000sec. to take two images which are electronically combined to produce a single, high-quality image.



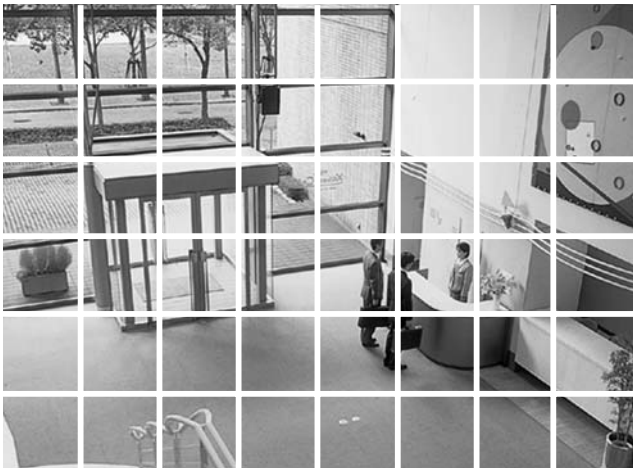
High-speed shutter loses details of indoor.

Low-speed shutter creates whiteout of outdoor.

Electronically combining the images taken using both low-speed and high-speed shutter gives single clear image.

User-definable target areas for wide dynamic range function.

Wide dynamic range intensity can be set to match the degree of backlighting present in the monitored area.
As the screen is divided into a grid of 48 segments, the desired target areas can be selected within this grid. For areas that do not require backlight compensation or have constant motion in them, the wide dynamic range function can be disabled, allowing this function to perform at its maximum. The wide dynamic range function intensity can also be adjusted to suit the degree of backlighting present.



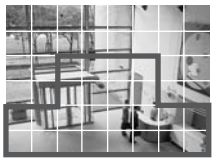
C-CC364

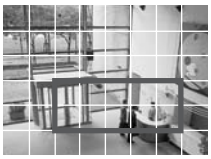
WIDE DYNAMIC RANGE COLOR CAMERAS

Backlight compensation

TOA'S Wide Dynamic Range cameras have been designed to overcome the problems encountered by conventional CCD cameras. Most of these problems originate from trying to accurately focus when the area of coverage includes areas with varying brightness. Because cameras in some cases are affected by the bright areas they are monitoring, there are some hard-to-see dark areas. When backlight compensation mode is selected, the camera divides an image into 48 segmented areas and compares the brightness in each area, to automatically adjust the required amount of backlight compensation for the desired segments.


48 segmented areas


Pattern 1

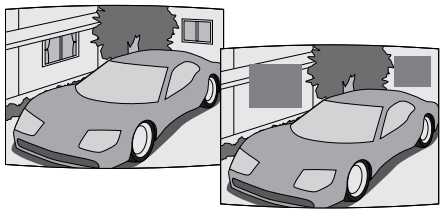

Pattern 2

The user selects the image area that is most important for viewing by segments. The backlight function then works to adjust light conditions concentrating on the selected image area, providing optimal view for effective monitoring.
The 3 segment selection options for compensation are:
Pattern 1 that selects segments located in the center and lower half of the screen. Pattern 2 for a user-defined single area.
Manual for precise user-defined control for selecting one or more segments that will be backlight-compensated.

* Backlight compensation is switched off when the wide dynamic range function is used.

Privacy masking function

For privacy protection, users are allowed to select up to 4 locations to be masked in a camera's field of view.



Motion Detection Function

A screen is divided into 48 segments, and motion detection is performed in each of the segmented areas. When motion is detected, motion-detection signals can be output from the remote unit C-RU10 via the coaxial cable used for sending image signals from the camera.

*This function is possible only when the camera is used together with the C-RU10.

Output of both image and alarm signals via a single cable

The camera is equipped with a terminal for input of sensor signals. The alarm signals from a sensor can be superposed on the coaxial cable used for transmitting images captured by the camera. This feature reduces cumbersome cabling.

*This function is possible only when the camera is used together with the C-RU10.

High resolution images

TOA cameras provide a high horizontal resolution level of 500 lines for excellent image quality.

Minimum required illumination of 0.5 lx

Featuring high sensitivity that is minimum required illumination of 0.5 lx (50 IRE), TOA cameras deliver clear color and full motion images even under poor lighting conditions.

Maximum 64 times sensitivity boost

Magnification sensitivity can be increased as needed all the way up to x64 in steps of x2, x4, x6, x8, x10, x16, x24, x32 and x64 to compensate for lighting conditions that may be unsatisfactory. Sensitivity is boosted automatically to the point where good images can be captured. The camera now works well with a minimum illumination level of as low as 0.01 lx, enabling night video surveillance in color.

Day/Night operation

When an illumination level of the monitoring area becomes too low for capturing clear images in color, the camera automatically switches to the B/W mode. This function makes it possible to monitor target and target areas that cannot be seen in normal light.

* boosting sensitivity may increase the afterimage phenomenon as shutter speed is reduced.
* Using B/W mode requires dedicated lens.


Sensitivity boost allows cameras to provide good color image quality for dark areas.

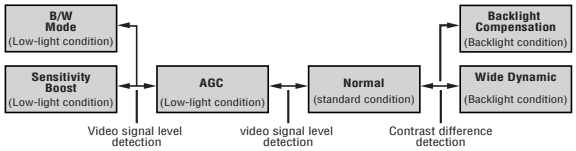

(Color image)


B/W mode.


(B/W image)

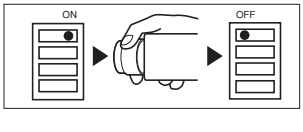
Fully automatic operation mode shift

TOA wide dynamic range cameras allow shifting between modes automatically, smoothly transitioning from mode to mode.



Focus adjustment switch for easy focusing

To simplify focusing even without using the ND filter, an adjustment switch is provided for foolproof focusing.



C-CC364

WIDE DYNAMIC RANGE COLOR CAMERA

(Lens is optional)

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- **Maximum 64X sensitivity booster**
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- **Privacy masking function**
  Allows privacy protection for up to 4 locations.
- **WDR cameras can be controlled from a distant location.**
  Using the C-RU10 Camera Remote Unit allows convenient control of camera parameters.
- **Backlight compensation**
  Allows optimal viewing of dark areas in a backlight condition.
- **Newly developed DSP**
- **Easy focusing without using the ND filter**
- **Alarm input**
- **Motion detection**
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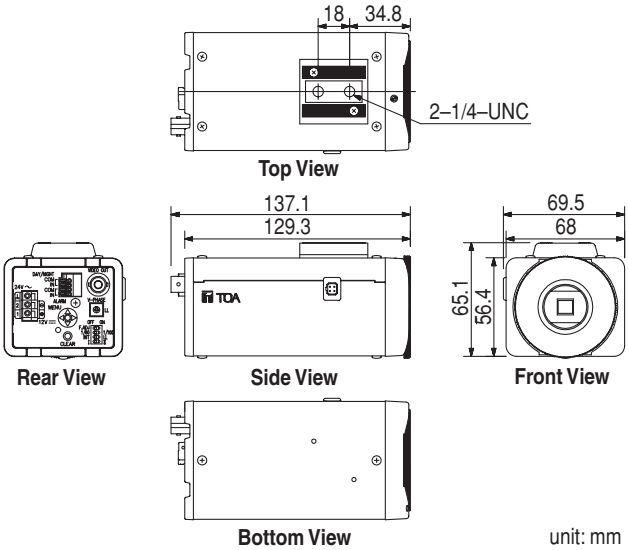
APPEARANCE AND DIMENSIONAL DIAGRAM



unit: mm

SPECIFICATIONS (NTSC)

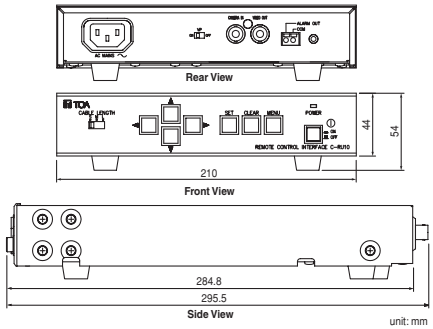
Power Source	24V AC, 50/60Hz or 12V DC
Power Consumption	4W
Image Device	1/3 type IT-CCD
Number of Effective Pixels	768 (H) × 494 (V) (380,000 pixels)
Scanning System	2:1 interlace
Scanning Frequency	Horizontal: 15.734kHz, Vertical: 59.94Hz
Video Output	VBS 1.0V (p-p) 75Ω, BNC
Synchronizing System	Internal/Line lock (phase adjustable)
Resolution	Horizontal: 500 lines (at center), Vertical: 350 lines (at center)
S/N Ratio	50dB (AGC OFF)
Minimum Required Illumination	0.5 lx (50 IRE), 0.1 lx (20 IRE) (F1.0) (sensitivity up: OFF) (color operation) 0.01 lx (F1.0) (sensitivity up: ON) (Black-and-white operation, incandescent lamp)
Automatic Electric Shutter Range	1: 2000 (F1.4 – 63)
Dynamic Range	46dB (wide dynamic ON)
Shutter Speed	1/60, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
Backlight Compensation	WIDE DYNAMIC/ON/OFF
AGC	Auto/Fixed/OFF
Sensitivity Up	OFF, 2, 4, 6, 8, 10, 16, 24, 32, 64 times
White Balance Mode	ATW/AWB/Manual
Character Display	Up to 16 characters (alphanumeric and symbols)
Other Function	Privacy Masking, Electronic Zooming (2X), Up-and-down, flip horizontal, Sync position switching (DIP switch), Flicker Reduction (DIP switch), Control switch (DIP switch), Chroma Level: Normal/Manual (MIN – MAX), Enhancer Level: Normal/Manual (soft –sharp)
Alarm Input	1 channel, no-voltage make contact input, open voltage: 10V DC, short-circuit: Under 5mA, loop resistance: Under 200Ω (alarm output from the camera remote unit), screwless connector, motion detector (alarm output from the camera remote unit)
Color/B&W Switching Input	1 channel, no-voltage make contact input, open voltage: 10V DC, short-circuit: Under 5mA, loop resistance: Under 200Ω
Lens Mount	CS mount
Auto-Iris Lens Output	DC input type/VIDEO input type (4-pin connector)
Operating Temperature	–10˚C to +50˚C
Operating Humidity	Under 90% RH (no due condensation produced)
Application	Indoor use
Finish	Case: Surface-treated steel plate, sand gray
Dimensions	69.5 (W) × 65.1 (H) × 137.1 (D)mm
Weight	450g

C-RU10

REMOTE CONTROL INTERFACE

Camera function settings, and color and brightness adjustments can be remotely controlled with ease by connecting the C-RU10 to a camera featuring camera remote function.
The C-RU10 permits control signals to be superimposed over the camera video signal by connecting cameras with a single coaxial cable, and motion detection or alarm signals from the camera to be received. With the use of an optional rack mounting bracket, it can be mounted in an EIA Standard equipment rack (1 unit size).

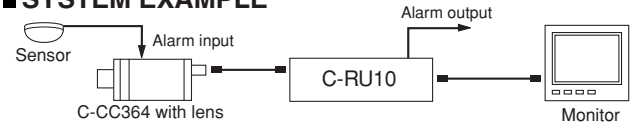
APPEARANCE AND DIMENSIONAL DIAGRAM



SPECIFICATIONS

Power Source	110 – 120V AC, 50/60Hz
Power Consumption	1W (24mA)
Camera Input	1 channel, VBS 1.0V (p-p), 75Ω, BNC
Video Output	1 channel, VBS 1.0V (p-p), 75Ω, BNC
Alarm Output	1 output, open collector output, withstand voltage: 24V DC, control current: Under 0.3 A
Cable Compensation Function	3-step switch (S, M, L)
Maximum Camera Cable Length	RG-11/U: 1000m RG-6/U: 800m RG-59/U: 600m
Vertical External Synchronization	ON: AC/DC type camera OFF: Single cable camera
Switch Function	MENU, CLEAR, SET, UP, DOWN, RIGHT, LEFT
Operating Temperature	–10˚C to +50˚C
Finish	Panel: Aluminum extrusion, black, 30% gloss, paint Case: Pre-coated steel plate, black, 30% gloss
Dimensions	210 (W) × 54 (H) × 295.5 (D)mm
Weight	1.6kg
Accessory	Power cord (2m) × 1
Applicable Camera (option)	C-CC354A (NTSC), C-CC364 (NT)
Option	Rack mounting bracket: MB-15B-BK (for rack mounting one C-RU10 unit) MB-15B-J (for rack mounting two C-RU10 units)

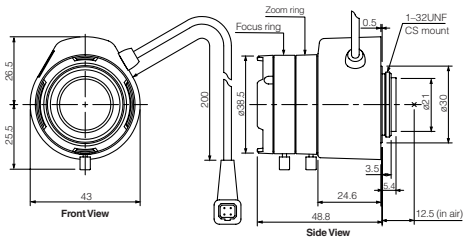
SYSTEM EXAMPLE



VARIFOCAL-IR LENS

CT-R3VFG

The CT-R3VFG DC type auto-iris 3X varifocal lens is designed to be used with light ranging from the visible to near-infrared portions of the spectrum. It allows systems equipped with a Day & Night function (color/monochrome switching) or an infrared illuminator to maintain focus on their subject.

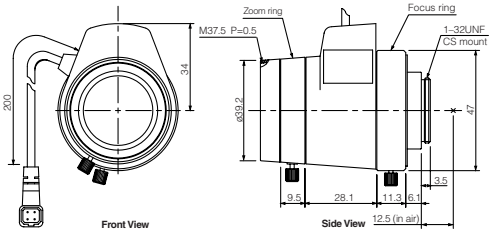


SPECIFICATIONS

Focal Length	3.5 – 10.5mm
Maximum Aperture Ratio	1:1.0 – 1.7
Image Format Size	4.8 (H) x 3.6 (V)mm
Angle of View	1/3 type CCD: Horizontal: 81.6° – 27.2° Vertical: 59.2° – 20.4° 1/4 type CCD: Horizontal: 59.2° – 20.4° Vertical: 43.6° – 15.3°
Aperture Range	F1.0 – F360
Object Distance	0.3m from the front of lens
Flange Back Length	12.5mm
Lens Mount	CS mount
Operating Temperature	–10˚C to +50˚C
Weight	65g

CT-R5VFG

The CT-R5VFG DC type auto-iris 5X varifocal lens is designed to be used with light ranging from the visible to near-infrared portions of the spectrum. It allows systems equipped with a Day & Night function (color/monochrome switching) or an infrared illuminator to maintain focus on their subject.



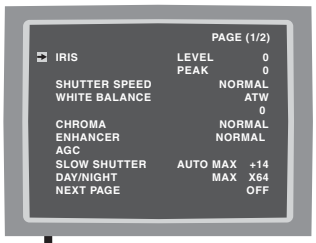
SPECIFICATIONS

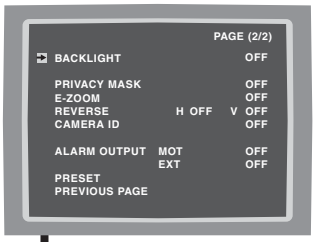
Focal Length	8.5 – 40mm
Maximum Aperture Ratio	1:1.3 – 1.7
Image Format Size	4.8 (H) x 3.6 (V)mm
Angle of View	1/3 type CCD: Horizontal: 33.5° – 7.1° Vertical: 24.4° – 5.3° 1/4 type CCD: Horizontal: 24.4° – 5.3° Vertical: 17.4° – 3.8°
Aperture Range	F1.3 – F360
Object Distance	0.8m from the front of lens
Flange Back Length	12.5mm
Lens Mount	CS mount
Operating Temperature	–10˚C to +50˚C
Weight	114g

Setup for Camera

Setup Screen

Conveniently allows setting up a camera and making adjustments and parameter changes through a menu-driven setup procedure.





Setting Item

- **IRIS** — Sets the iris level.
  - **LENS SELECT** — Sets the lens type.
- **SHUTTER SPEED** — Sets the shutter speed.
- **WHITE BALANCE** — Sets the camera's white balance (ATW/AWB/Manual).
- **CHROMA** — Adjusts the chroma level.
- **ENHANCER** — Sets the enhancer.
- **AGC** — Set the AGC (Auto/Fixed/OFF).
- **SLOW SHUTTER** — Sets the maximum sensitivity boost level..
- **DAY/NIGHT** — Sets The B/W mode.

Setting Item

- **BACKLIGHT** — Sets the backlight compensation.
  - **MANUAL/ PATTERN 1/ PATTERN 2** — Sets the backlight compensation area.
  - **WIDE DYNAMIC** — Sets the wide dynamic range cover area and the sensitivity level.
- **PRIVACY MASK** — Sets privacy masking area (four areas).
- **E-ZOOM** — Sets the electronic zoom (X2) area.
- **REVERSE** — Sets the H-REVERSE/V-REVERSE.
- **CAMERA ID** — Sets the camera's title.
- **ALARM OUTPUT** — Sets alarm operations.
  - **MOTION DETECTION** — Sets motion detection (LEVEL/AREA).
  - **EXTERNAL** — Sets external alarm inputs.
- **PRESET** — Allows resetting all functions and controls to default settings.

TOA Corporation

URL : http://www.toa.jp/

Specifications are subject to change without notice.
Printed in Japan (0604) 833-52-328-4B u