

This Operation Manual covers safety, camera functions, installation and the correct operating procedure for the W-02CDB3. First, we ask you to read this Operation Manual thoroughly, then install and operate the W-02CDB3 as advised. In addition, for future reference, we also advise safekeeping of this manual.

Please contact the distributor or dealer from which the W-02CDB3 was purchased, if you do not understand the installation, operation or safety instructions laid out in this manual. Not understanding the contents of the Operation Manual sufficiently may cause damage to the camera.

## Guide to the Safety Symbols

The definitions of the symbols used in this operation manual are:

- When you do not adhere to or take notice of the "Danger" sign, it may lead to a serious accident such as death or injury caused by fire or electric shock.
- When you do not adhere to or take notice of the "Warning" sign, it may cause severe damage such as a physical injury.
- When you do not adhere to or take notice of the "Caution" sign, it may incur injury and cause damage to peripheral objects in the immediate surroundings.

## Cautions for Safety

The W-02CDB3 is designed to be used safely; however, if not used correctly, it may lead to a physical accident caused by fire and electric shock. Therefore, please keep and read the "Cautions for safety" for protection against accidents.

- Do not disassemble and/or modify the W-02CDB3.**  
**Do not operate the W-02CDB3 with wet hands.**
- Use a stabilized power adaptor designed for DC+12V±10%, with a current capacity of more than 250mA for the W-02CDB3.**  
The recommended voltage is DC+12V±10%  
**Do not expose the W-02CDB3 to wetness or high moisture conditions.**  
The W-02CDB3 is designed and approved for indoor use only. The W-02CDB3 is not water-resistant or waterproof. If the location of the camera is outdoors or in an outdoor like environment, we recommend that you use an outdoor camera housing.
- Protect the W-02CDB3 from condensation.**  
Keep the W-02CDB3 dry at all times during storage and operation.
- Should the camera not work properly, switch off the power immediately. Then, check the camera according to the "Problem and Trouble Shooting" section.
- Avoid the striking of hard objects or dropping the W-02CDB3.**  
The W-02CDB3 uses high quality electrical parts and precision components.
- Do not wire the W-02CDB3 to any monitor using a video/power single transmission terminal. The W-02CDB3 is not designed for use with this type of equipment. We also advise you to read the operation manual of the monitor you plan to use before any connections are made.**
- Do not install the W-02CDB3 in a position subject to direct sunlight.**  
Sunlight shining directly onto the W-02CDB3 lens can cause damage to the CCD.
- Select a stable place for installation of the W-02CDB3.**  
Always fix the camera securely.  
See [Mounting Holes] section.
- Do not move the W-02CDB3 with the cables connected.**  
Before moving the W-02CDB3, always remove the video cable and power cable from the rear of the camera first.
- Avoid using the W-02CDB3 near any strong electromagnetic field.**  
After installing into main equipment, if the W-02CDB3 is exposed to electromagnetic waves causing the monitored image to become distorted, we recommend the camera be shielded by appropriate protective casing.

## Problems and Trouble Shooting

If any of the following problems occur when using the W-02CDB3,

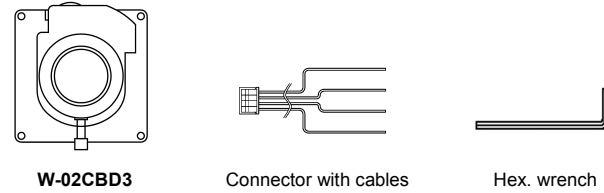
- An optimal picture cannot be obtained, after checking that all the cables and connections are correctly in place
- Smoke or any unusual odor emerges from the W-02CDB3.
- An object becomes embedded or a quantity of liquid seeps into the camera housing
- More than the recommended voltage or/and amperage has been applied to the W-02CDB3 by mistake
- Anything unusual occurring to any equipment connected to the W-02CDB3.

Disconnect the camera immediately according to the following procedures:

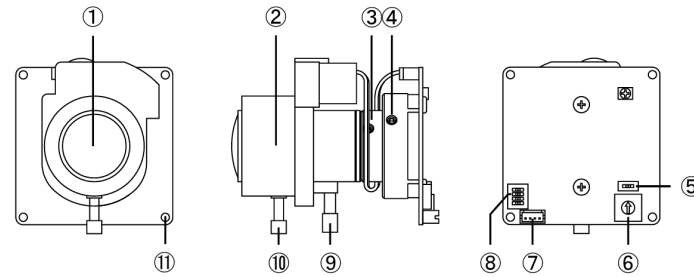
- ① Switch off the main power supply to the camera.
- ② Remove the power and video cables connected to the W-02CDB3.
- ③ Contact the distributor or dealer from which the W-02CDB3 was purchased.

## Contents

Using the contents figures below, check to make sure all parts are present before use.



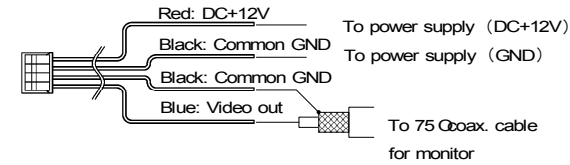
## Description of Parts



- ① LENS FRONT FACE
  - The light receiving face of the Lens  
(Dirt, water or oil deposits on the lens will cause an unclear picture on the monitor. Attach the lens cap to protect the lens from contamination and damage.)
- ② LENS
  - Varifocal auto iris lens (f2.8-10.5mm F1.2(2.8))
- ③ LENS MOUNT
  - Mount for the lens (Thread type)
- ④ FOCUSING ADJUSTMENT SCREWS
  - There are 3 hex. adjustment screws each placed at intervals of 120° for fine focusing of the lens.
- ⑤ AE MODE CONTROL SWITCH
  - The switch for selecting either electronic iris or electronic shutter.
- ⑥ SHUTTER SPEED CONTROL SWITCH
  - The switch for the electronic shutter speed control according to the object.
- ⑦ POWER IN/VIDEO OUT
  - The terminal for power input and video signal output. Use the attached connector with cables for this purpose.
- ⑧ FUNCTION SWITCHES
  - Functional switches for setting video level, mirror image and white balance.
- ⑨ ZOOM LEVER
  - The lever for focal length control (f2.8-10.5mm, with lock function)
- ⑩ FOCUS LEVER (FOCUSING ADJUSTMENT LEVER)
  - The lever for focus adjustment. (with lock function)
- ⑪ MOUNTING HOLES
  - The holes for mounting the camera.

## Power Supply and Wiring

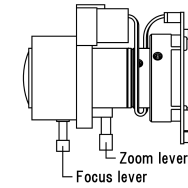
Use a stabilized power adaptor designed for DC+12V±10%, with a current capacity of more than 250mA.  
The wiring on the connector must be exact.  
Be careful not to touch the other terminal while wiring. Protect the wiring portion by using insulation tape after wiring. If the above care and attention is not adhered to, damage to the W-02CDB3 and power adaptor may occur or may cause fire.



## Lens

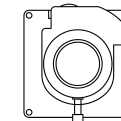
The varifocal auto iris lens is installed on this camera. Adjust the lens according to the following procedures.

- 1) Turn the [⑨ Zoom lever] to WIDE or TELE for adjustment of the angle of view, and lock.
- 2) Turn the [⑩ Focus lever] to FAR or NEAR for a clear image. (with lock function)



## Mounting Holes

As shown in the figure on the right. The W-02CDB3 provides four mounting holes (φ 2.2mm), one in each corner of the circuit board. Fix the unit securely using M2 screws. Once the board is secured proceed with the following steps below.



## Set-up and Operation

- 1) Ensure that the power to the W-02CDB3 and the peripheral equipment is turned off before making any connections.
- 2) Remove the lens mount cap from the W-02CDB3.
- 3) Connect the attached cable to ⑦ POWER IN/VIDEO OUT. See the [Power Supply and Wiring] section.
- 4) Connect a coaxial cable with 75Ω impedance, such as an RG-58/U or an RG-6/U to the monitor. Select a monitor with the same television system as the W-02CDB3: NTSC or PAL. A monitor with more than 500TV lines is recommended.
- 5) Select any required shutter mode by ⑤ AE MODE CONTROL SWITCH to suit your preferences. Since the varifocal auto iris lens is installed to W-02CDB3, using the fixed shutter mode is recommendable.
- 6) Turn on the power to the W-02CDB3, monitor and all other allied equipment. When a picture cannot be obtained on the monitor, or a strong smell of burning is present, or smoke is visible, check and follow the procedure mentioned in the [Problems and Trouble Shooting] section.
- 7) Adjust the lens while looking at the image on the monitor and if the picture is still out of focus, open the iris fully and loosen ④ FOCUSING ADJUSTMENT SCREWS with the hex. wrench and move the lens forwards, until a clear picture is obtained.
- 8) Select any required shutter speed by the ⑥ SHUTTER SPEED CONTROL SWITCH to one of its 10 positions. (Shutter mode is set to 0(OFF) upon shipment.)

No.	Mode	Shutter Speeds (Sec.)	
		NTSC	PAL
0	OFF	1/60	1/50
1	FL	1/100	1/120
2	ES	1/250	
3	ES	1/500	
4	ES	1/1000	
5	ES	1/2000	
6	ES	1/5000	
7	ES	1/100000	
8	ES	1/200000	
9	ES	1/500000	

9) Set the ⑧ FUNCTION SWITCHES according to your requirements.

Switch	Setting	Function and Effective Condition	Upon Shipment
1. & 2. White Balance	ATW [1=OFF] [2=OFF]	Automatically follows and adjusts to the changing color temperature of the illumination.	✓
	3200K [1=OFF] [2=ON]	Color correction to give natural color renditions under incandescent lighting.	
	5100K [1=ON] [2=OFF]	Color correction to give natural color renditions under bluish fluorescent light.	
3. Mirror Image	8200K [1=ON] [2=ON]	Color correction to give natural color renditions under bluish fluorescent light more than 5100K.	
	ON	When a mirror image is required.	
4. Video Level	OFF	When a normal image is required.	✓
	ON [100]	When dark areas on an object with contrasting light and dark area are monitored.	
	OFF [75]	When a standard video output level is required	✓

## Specifications

Model	W-02CDB3 (NTSC)	W-02CDB3 (PAL)
Pick-up Element	1/3 inch interline transfer CCD image sensor	
Number of Total Pixels	811(H) × 508(V)	795(H) × 595(V)
Number of Effective Pixels	768(H) × 494(V)	752(H) × 582(V)
Unit Cell Size	6.4 μm(H) × 7.5 μm(V)	6.53 μm(H) × 6.39 μm(V)
Imaging system	Ye, Cy, Mg, and G complementary color mosaic filters on chip	
Sync. System	Internal	
Scanning System	2:1 interlace	
Video Output	Composite video, 1.0 V(p-p) 75Ω (Unbalanced)	
Resolution (H)	More than 450TVL (Center)	
Minimum Illumination	0.5 lx. F1.2	
S/N	More than 50dB (AGC=3dB, γ=1.0)	
Electronic Shutter	1/60(50), 1/100(120), 1/250, 1/500, 1/1000, 1/2000, 1/5000, 1/10000, 1/20000, 1/50000 sec.	
White balance	ATW, 3200K, 5100K, 8200K	
AGC	3-24dB	
Gamma Characteristics	γ ≈ 0.45	
Video Level	100IRE / 75IRE	
Mirror image function	ON / OFF	
Power Supply	DC+12V±10%	
Power Consumption	1.14W (95mA)	
Operating Temperature	-10 ~ 40°C (Without condensation)	
Operating Humidity	Less than 95% RH	
Storage Temperature	-30 ~ 70°C (Without condensation)	
Storage Humidity	Less than 95% RH	
Lens Mount	φ 14mm	
Lens	Built-in vari-focal Lens f=2.8 - 10.5mm F1.2(2.8)	
Size	42(W) × 47(H) × 55.5(L) (mm)	
Weight	Approx. 55g	

- Design and specifications are subject to change without notice.
- Watec is not responsible for any inconvenience or the attendant damages to the video and monitoring recording equipment caused by misuse, mis-operation or improper wiring of our equipment.
- If for any reason the W-02CDB3 does not work properly, or if you have any questions regarding installation or operation, please contact the distributor or dealer from which it was purchased.

## Contact information

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