

This operation manual covers safety, camera functions, installation and the correct operating procedure for the WAT-2300. First, we ask you to read this operation manual thoroughly, then install and operate the WAT-2300 as advised. In addition, for future reference, we also advise safekeeping of this manual.

If you do not understand the installation, operation or safety instructions expressed in this manual, please contact the distributor or dealer from where the WAT-2300 was purchased. Not understanding the contents of the operation manual sufficiently may cause damage to the camera, personal belongings and/or result in injury.

Guide to the Safety Symbols

Symbols used in this operation manual:

- "Danger", may lead to a serious accident such as death or injury caused by fire or electric shock.
- "Warning", may cause severe damage such as a physical injury.
- "Caution", may incur injury and cause damage to peripheral objects in the immediate surroundings.

Cautions for Safety

The WAT-2300 is designed to be used safely. If not used safely, it may lead to a physical accident caused by fire and electric shock. Therefore, please keep and read the, "Cautions for safety" below for protection against accidents.

- Do not disassemble and/or modify the WAT-2300.**
Do not operate the WAT-2300 with wet hands.
- Use a stabilized power adaptor designed for DC+12V±10%, with a current capacity of more than 250mA for the WAT-2300.** The recommended voltage is DC+12V±10%. Also, we advise the Use of an "inline fuse" power line to protect the camera and peripheral equipment, where applicable.
- Do not expose the WAT-2300 to wetness or high moisture conditions.**
The WAT-2300 is designed and approved for indoor use only. The WAT-2300 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 WAT-2300 from condensation.**
Keep the WAT-2300 dry at all times during storage and operation. Should the camera not work properly, unplug the power immediately. Then check the camera according to the "Problems and Trouble Shooting" section.

- Avoid the striking of hard objects or dropping the WAT-2300.**
The WAT-2300 uses high quality electrical parts and precision components and may inadvertently be damaged if not cared for properly.
- Do not connect any power supply directly to the video out terminal of the unit.**
Do not connect the WAT-2300 with any monitor using a video/power single transmission terminal. The WAT-2300 utilizes HD-TV1 output and 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 WAT-2300 in a position subject to direct sunlight.**
Sunlight shinning directly onto the WAT-2300 lens can cause damage to the sensor.
- Select a stable place for installation of the WAT-2300.**
Use an appropriately rated mount durable and strong for all installation position.
- Do not move the WAT-2300 with the cables connected.**
Before moving the WAT-2300, always remove the video cable and power cable from the rear of the camera first.
- Avoid using the WAT-2300 near any strong electromagnetic field.**
In the event of exposure to electromagnetic waves (causing the monitored image to become distorted) we recommend the camera be shielded by an appropriate protective casing.

Problems and Trouble Shooting

Trouble Shooting:
Disconnect the camera immediately should any of the following occur:

- 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 WAT-2300
- 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 WAT-2300 by mistake
- Anything unusual occurring to any equipment connected to the WAT-2300

Required Action:
① Switch off the main power supply to the camera.
② Remove the power and video cables connected to the WAT-2300.
③ Contact the distributor or dealer from which the WAT-2300 was purchased.

About EMC

The WAT-2300 is in conformity with EMC test standards carried out by authorized organizations in Japan.

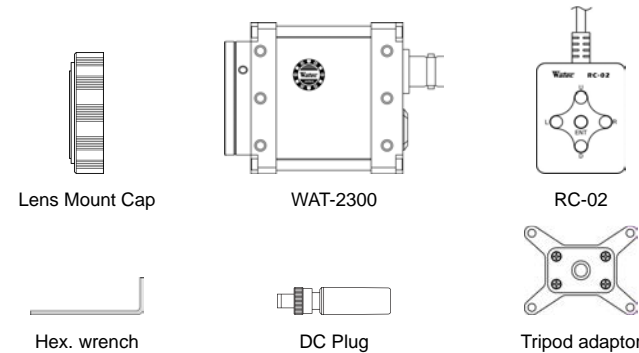
FCC Part15 class B
EN61000-6-3/EN50130-4

※ Please use an auxiliary power supply (eg: UPS) to this camera to comply with EN50130-4 of EMC standards.

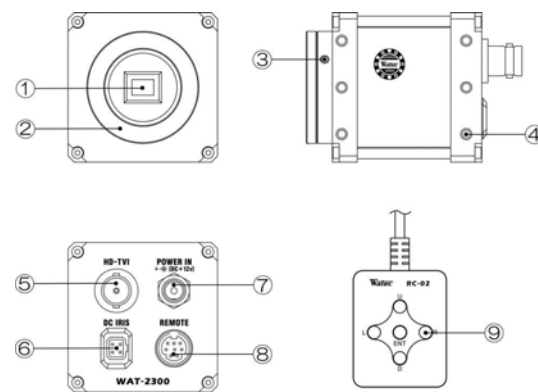
Do not modify the WAT-2300. A modified camera may not conform to EMC test standards.

Contents

Referring to the illustration below, confirm all parts are present upon receipt of camera.



Description of Parts



- ① IMAGE SENSOR/Sensor Window
The light receiving face of the image sensor (Dirt, water or oil deposits on the image sensor will cause an unclear picture on the monitor. Attach the lens cap to protect the lens and the sensor from contamination and damage.)
- ② LENS MOUNT
Mount for the lens (CS-mount)
- ③ CS Mount Set SCREWS (Consider using "BACK FOCUS" screws instead)
There are 3 adjustable hexagonal screws. Each screw is placed at intervals of 120° around the housing for fine focusing of the lens.
- ④ CAMERA MOUNTING FEATURES
These mounting features are used to mount the camera. Bolt Size: M3, Depth 4mm. If utilizing a tripod, please attach the supplied tripod adaptor by fixing the 4 bolt locations. There are a total of 24 mounting features encompassing the sides, top and bottom of the camera.

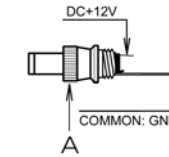
- ⑤ VIDEO OUT (BNC)
The terminal for HD-TV1 signal output
- ⑥ DC-IRIS SOCKET
This socket is for the DC auto-iris lens cable connector.
- ⑦ POWER IN Terminal (with a lock)
Connection for DC power plug to power the camera.
- ⑧ REMOTE CONTROL TERMINAL
The terminal designed for connection with the remote control for setting the function on the screen.
- ⑨ Remote Control Unit
Remote control unit providing access to adjustments, settings the functions on the screen (OSD).

Power Supply

Use a stabilized power adaptor designed for DC+12V, with a current capacity of more than 250 mA. Use the optional DC plug if the shape or polarity of the DC plug of the power adaptor to be used is not compatible with the camera (See the drawing below).



The wiring of the connector must be exact. Be careful not to touch the other terminal while wiring. Protect the wiring portion by using insulation tape or shrink tubing after wiring. To prevent inadvertent disconnection while in use, please secure the connector to the power terminal on the camera by turning "A" in the figure to the right in the clockwise direction. If the above care and attention is not adhered to, damage to the WAT-2300 and power adaptor may occur and may also cause fire.



Set-up and Operation

- 1) Ensure that the power to the WAT-2300 and the peripheral equipment is turned off before making any connections.
- 2) Remove the lens mount cap from the WAT-2300 and attach the CS-mount lens. Use the optional C-mount adaptor (34CMA-R) when a C-mount lens is used.
- 3) Connect the iris control cable to ⑥DC-IRIS SOCKET on the WAT-2300 when a DC auto-iris lens is being used. If the aperture is not stable, please adjust by using the camera setting adjustment software.
- 4) Connect ⑤ VIDEO OUT on the WAT-2300 with the monitor, using a high-frequency coaxial cable with 75Ω impedance.
- 5) Insert the power plug of the power adaptor into ⑦POWER IN on the back panel of the WAT-2300. Confirm that the power adaptor is not connected to the power supply before insertion of the power plug into ⑦POWER IN.
- 6) Turn on the power to the WAT-2300, monitor and all other allied equipment. When a picture cannot be obtained on the monitor, or a problem occurs, check and follow the procedure mentioned in the "Problems and Trouble Shooting" section.
- 7) Adjust the focus and iris until optimal image clarity though the lens is achieved. If the picture is still out of focus, open the iris fully and loosen ③CS Mount Set SCREWS with the hex wrench and move the lens forwards until a fully focused and clear picture is obtained.

Manual Lens	Adjust the focus and iris to the best position on the lens.
Motorized Zoom Lens	Back focus is required via CS Mount. Set Screw adjustment as well as possible. Adjust the iris level on the camera, then adjust the focus on the lens. See below.
DC Auto-iris Lens	Adjust the iris level on the camera, then adjust the focus on the lens. See below.

- 8) When detailed settings are required or a clear image is not obtained, connect the remote control to ⑧REMOTE CONTROL TERMINAL, then set the functions on the screen by ⑨OPERATION BUTTON
- Please connect the optional serial communication cable to ⑧ REMOTE CONTROL TERMINAL to change the camera settings with the software if needed.

Options

To purchase these options, please contact the distributor or dealer from which you purchased the WAT-2300.



C-mount Adaptor (34CMA-R)

This lens mount adaptor is used to convert a CS-mount to a C-mount.



Mini Stand (MS50)

A convenient stand for the WAT-2300. With this stand, the camera can be adjusted to any desired angle.



Serial Communication Cable (CB-03)

The cable for changes the camera settings with the software.

Specifications

Model	WAT-2300	
Pick-up Element	1/2.8-inch CMOS image sensor	
Number of Total Pixels	1952(H) × 1236(V)	
Number of Effective Pixels	1080p	1920(H) × 1080(V)
	720p	1280(H) × 720(V)
Unit Cell Size	2.8μm × 2.8μm	
Imaging System	RGB+W array mosaic filters on chip	
Sync. System	Internal	
Scanning System	Progressive	
Video Output	HD-TV1	
Output Format	1080p30, 1080p25, 720p60, 720p50, 720p30, 720p25	
Minimum Illumination	0.1 lx. F1.2	
S/N	More than 50dB	
Function Settings	OSD(On Screen Display) operated by remote controller / RS-232(Compatible)	
AE Mode	EI + AGC / AGC / FL / MANUAL	
Shutter Speed	OFF, 1/100, 1/120, 1/200, 1/500, 1/1000, 1/2000, 1/5000, 1/10000 sec.	
Flicker Less Mode	AUTO / 50Hz / 60Hz / OFF	
AGC	HIGH / MEDIUM / LOW	
MGC	0 - 30dB	
White Balance	ATW / PWB / Preset / MANUAL	
Noise Reduction	HI / MEDIUM / LOW / OFF	
Privacy Mask	16 areas (RS-232)	
Mirror Image	ON (H-FLIP, V-FLIP, ROTATE) / OFF	
Back Light Compensation	ON / OFF	
Defog	ON / OFF	
White Blemish Correction	1023 pixels	
Lens Iris	DC	
Power Supply	DC+12V±10%	
Power Consumption	1.92W (160mA)	
Operating Temperature	-10 - +50°C	
Operating Humidity	95% RH or less (Without condensation)	
Storage Temperature	-30 - +70°C	
Storage Humidity	95% RH or less (Without condensation)	
Lens Mount	CS mount (Back focus adjustable)	
Size	48(W) × 48(H) × 69.5(D) (mm)	
Weight	Approx. 130g	

- 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 WAT-2300 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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