

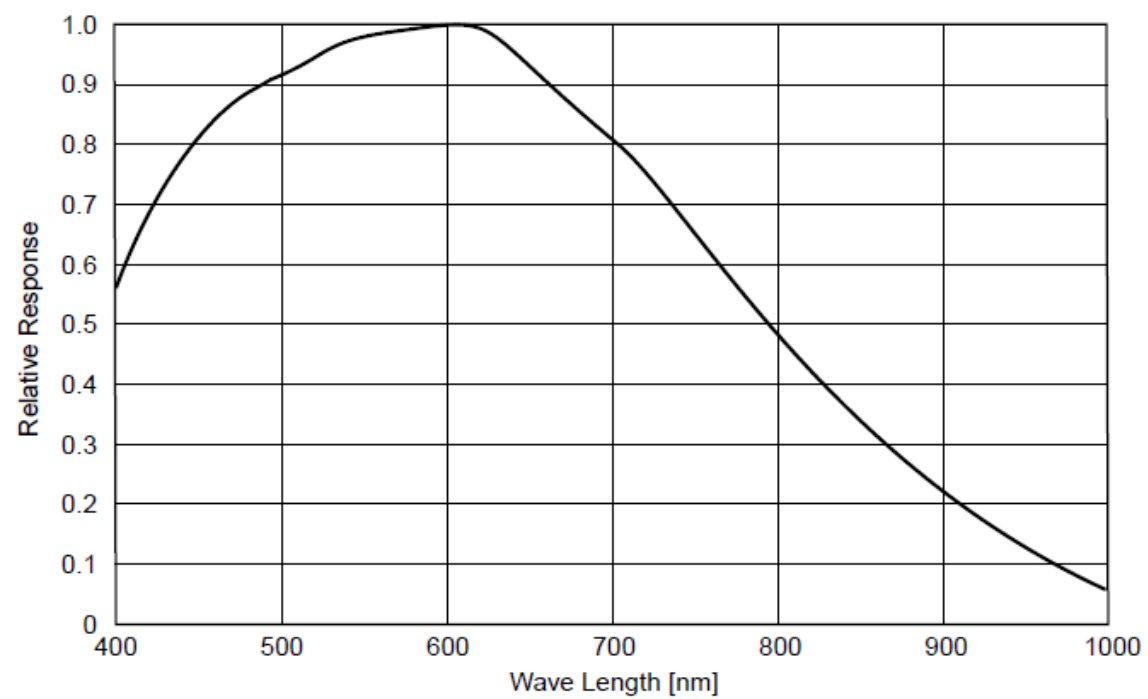
# ***W*atec**

## **WAT-320D/W**



## Spectral response

WAT-320D/W EIA





Monochrome CCD Camera

## WAT- 320DW

### Operation Manual

This Operation Manual covers safety, camera functions, installation and the correct operating procedure for the WAT-320D/W. First, we ask you to read this Operation Manual thoroughly, then install and operate the WAT-320D/W as advised. In addition, for future reference, we also advise safe keeping of this manual.

Please contact the distributor or dealer from which the WAT-320D/W 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 meanings 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 WAT-320D/W is designed to be used safely; however, electrical goods may lead to a physical accident caused by fire and electric shock if not used correctly. Therefore, please keep and read the “Cautions for safety” for protection against accidents.



- **Do not disassemble and/or modify the WAT-320D/W.**
- **Do not operate the WAT-320D/W with wet hands.**



- **Use a stabilized power adaptor designed for DC+12V±10%, with a current capacity of more than 250mA for the WAT-320D/W.**  
The recommended voltage is DC+12V±10%
- **Protect the WAT-320D/W from condensation.**  
Keep the WAT-320D/W 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 “Problems and Trouble Shooting” section.



- **Avoid the striking of hard objects or dropping the WAT-320D/W.**  
The WAT-320D/W uses high quality electrical parts and precision components.
- **Do not connect any power supply directly to the video out terminal of the unit.**  
Do not connect the WAT-320D/W with any monitor using a video/power single transmission terminal. The WAT-320D/W 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-320D/W in a position subject to direct sunlight.**  
Sunlight shinning directly onto the WAT-320D/W lens can cause damage to the CCD.
- **Select a stable place for installation of the WAT-320D/W.**  
Use a support of durable strength around an installation position on a ceiling or wall when a camera stand or tripod is used.
- **Do not move the WAT-320D/W with the cables connected.**  
Before moving the WAT-320D/W, always remove the video cable and power cable from the rear of the camera first.
- **Avoid using the WAT-320D/W near any strong electromagnetic field.**  
After installing into main equipment, if the WAT-320D/W is exposed to electromagnetic waves causing the monitored image to become distorted, we recommend the camera be shielded by appropriate protective casing.

### EMC Conformity

The WAT-320D/W is in conformity with EMC test standards carried out by authorized organizations in Japan.

E I A FCC Part15 class B



Do not modify the WAT-320D/W. A Modified camera may not conform to EMC test standards.

### Problems and Trouble Shooting

If any of the following problems occur when using the WAT-320D/W,

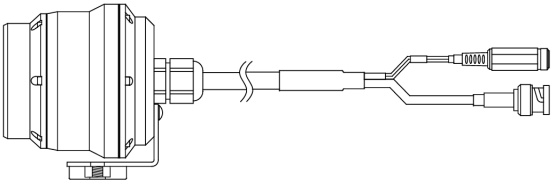
- An optimal picture cannot be obtained, after checking that all the cables and connections are correctly in place.
- Smoke or any unusual odor emerges from the WAT-320D/W.
- An object becomes embedded or a quantity of liquid seeps into the camera housing.
- More than the recommended voltage or/and amperage has been applied to the WAT-320D/W by mistake.
- Anything unusual occurring to any equipment connected to the WAT-320D/W.

Disconnect the camera immediately according to the following procedures:

- ①Switch off the main power supply to the camera.
- ②Remove the power and video cables connected to the WAT-320D/W.
- ③Contact the distributor or dealer from which the WAT-320D/W was purchased.

### Contents

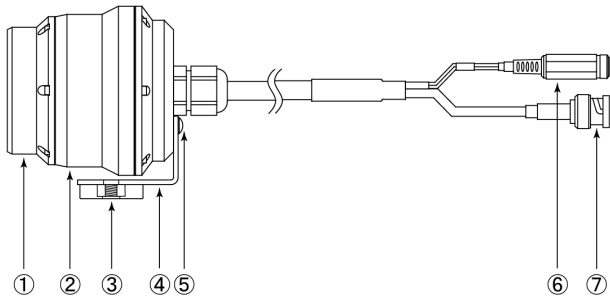
Check to make sure all parts are present before use.



### Power Supply

Use a stabilized power adaptor designed for DC+12V±10%, with a current capacity of more than 250mA.

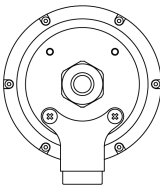
### Description of parts



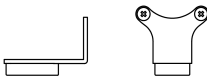
- ①FRONT GLASS (Tempered glass)
  - Dirt, water or oil deposits on the front glass will cause an unclear picture on the monitor and scratches might become permanent damage. Do not dismount the front glass.
- ②HOUSING MAIN BODY
  - This case is uses aluminum and is given alumite treatment.
- ③TRIPOD MOUNTING SCREW HOLES
  - Mounting holes for stands. The size of these threads are 1/4”, 20 threads, 4.5±0.2mm, which is the same as any standard camera tripod (U1/4”).
- ④BRACKET
  - The bracket for fixing to the camera.
- ⑤BRACKET MOUNTING SCREWS
  - The screws for mounting the bracket to the camera.
- ⑥POWER IN
  - The terminal designed for connection with the DC-plug of the power adaptor.
- ⑦VIDEO OUT (BNC)
  - The terminal for composite video signal output.

### Set-up and Operation

- 1) Ensure that the power to the WAT-320D/W and the peripheral equipment is turned off before making any connections.
- 2) Connect ⑦VIDEO OUT on the WAT-320D/W with the monitor, using a coaxial cable with 75Ω impedance, such as an RG-58/U or an RG-6/U. Select a monitor with the same television system as the WAT-320D/W: EIA or CCIR. A monitor with more than 600TV lines is recommended.
- 3) Insert the power plug of the power adaptor into ⑥POWER IN. Confirm that the power adaptor is not connected to the power supply before insertion of the power plug into ⑥POWER IN.
- 4) Turn on the power to the WAT-320D/W, monitor and all other allied equipment. When a picture cannot be obtained on the monitor, check and follow the procedure mentioned in the 【Problems and Trouble Shooting】 section.
- 6) When a change of installation position is required, set ④BRACKET to your required position after removing ⑤BRACKET MOUNTING SCREWS from the WAT-320D/W, then retighten ⑤ BRACKET MOUNTING SCREWS firmly. Angular settings for ceiling and wall are also available.



<Back side of the WAT- 320D/W>



<④BRACKET >

### Specifications

Model		WAT-320D/W (EIA)
Pick-up Element		1/2 inch interline transfer CCD image sensor
Number of Total Pixels		811(H)×508(V)
Number of Effective Pixels		768(H)×494(V)
Unit Cell Size		8.4 μm(H)×9.8 μm(V)
Sync. System		Internal
Scanning System		2:1 interlaced
Video Output		Composite video, 1.0 V(p-p), 75Ω(Unbalanced)
Resolution (H)		More than 570TVL (Center)
Minimum Illumination		0 lx. (at IR LED)
LED	Wavelength	940nm
	IR Distance	30m
	IR LED	12 units
S/N		More than 50dB (AGC=5dB, γ=1.0)
A/E mode		1/60 – 1/100000 sec.
AGC		5 – 50dB
Gamma Characteristics		γ ≒0.35
Power Supply		DC+12V±10%
Power Consumption		2.04W (170mA) / Max: 3.84W (320mA)
Operating Temperature		-10 – +50°C (Without condensation)
Operating Humidity		Less than 95% RH
Storage Temperature		-30 – +70°C (Without condensation)
Storage Humidity		Less than 95% RH
Built-in Lens		Mono-focal lens (f=8.0 F1.6)
Cable Length		10m
Size		φ72 × 98 (mm)
Weight		Approx. 1.1g (Including cable)

- 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-320D/W 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

**Watec Co., Ltd.**

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