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# Instruction manual VOMC301XX Action Camera

## SAFETY

### Water

- 1 Do not use Aqua Cam in water 5M deep or more or for longer than 30 minutes.
- 2 Avoid using Aqua Cam in hot spring or hot water more than 40°C (104°F)
- 3 Pour water in a container, immerse Aqua Cam for 5 min or so and clean salt, sand, etc. by shaking Aqua Cam or pressing the buttons in water.
- 4 Do not let water or sand enter Aqua Cam when port cover is open. It may cause trouble Aqua Cam. Do not open or close port cover with wet or sandy hands. Open port cover after drying your hands thoroughly.
- 5 Do not let foreign materials such as sand, hair, dust, etc. captured in the water-proof packing.
- 6 Water may leak into Aqua Cam if port cover is not closed tight. The warranty is not applicable to damage caused by water leakage.
- 7 Ensure that port cover is closed thoroughly before using Aqua Cam. Water leakage may be caused.
- 8 Do not open port case while using Aqua Cam waterside.
- 9 Images taken in water using Aqua Cam may not be clearer than normal images, but it is not a trouble.
- 10 Aqua Cam does not float in water.

### After using Aqua Cam

- 1 It is recommended to wash Aqua Cam with fresh water within 60 minutes after using it.
- 2 When contaminated by chemicals (thinner, benzene, alcohol, disposable towel, insect repellent, sunscreen, insecticide, etc.) including detergent, soap, oil, etc, immediately wipe off with dry cloth.
- 3 Immediately wash off with clean water after using Aqua Cam in sea water. Corrosion or deformation of the product may be caused.
- 4 Even small foreign materials may cause water leakage. Make sure that there is no defect in the water-proof packing.
- 5 Do not clean Aqua Cam with a sharp object. Scratch on the waterproof packing and O-ring contact surface may cause water leakage.
- 6 Carefully check there is any sand, hair, salt, dust, threads, dirt, etc. on the O-ring. If found, be sure to wipe off with a soft cloth or tissue paper.
- 7 Be careful not to leave any cloth or tissue paper fibers on the O-ring after cleaning it
- 8 Check the O-ring for cracks, skewing, distortion, fine splitting, scratches, embedded sand, etc. Replace O-ring if you find any of these.
- 9 Check the O-ring contact surface on Aqua Cam in the same way

### O-ring

- 1 Aqua Cam port cover uses an O-ring to maintain its waterproof.
- 2 O-ring maintenance is very important. Failure to do O-ring maintenance may lead to water leaks
- 3 The serviceable life of the O-ring varies with frequency of use of the port cover and conditions. Generally, it is about one year.

### Storage

- 1 Do not expose Aqua Cam to direct sunlight or heating instruments. Do not leave it inside a parked vehicle in the summer season.
- 2 Do not use the product near fire (Do not put it in an electric oven.)
- 3 When port cover is open and closed in a cold place like ski ground, snow or water drop got into the operating parts such as port cover, button, microphone etc. may be frozen, leading to improper operation of Aqua Cam.
- 4 Do not store or use Aqua Cam in very hot, humid spaces such as sauna room, etc.
- 5 Do not have behaviors such as dismantling, compression, penetration, etc.

### Temperature

- 1 Aqua Cam temperature rise while using it for a long time.
- 2 Quality of image may be degraded as Action Cam temperature rises.
- 3 It is recommended to leave for 10 minutes or longer until Aqua Cam inside temperature to decrease to safe level.
- 4 The exterior surface of Aqua Cam may get hot but it is not a malfunction.
- 5 When Aqua Cam temperature reaches 70°C, Aqua Cam power automatically turns off for the safety.
- 6 Battery lifetime may be reduced at temperature range 0~-10°C.

### Others

- 1 Aqua Cam design, specification and operation manual are subject to change without prior notice.
- 2 Figures in the user's manual may look different from the actual Aqua Cam.
- 3 Audio and video of Aqua Cam is subject to being affected by electromagnetic radiation at specific frequencies.
- 4 This wireless equipment may cause radio interference and should not provide any service associated with safety of human life.
- 5 Use only the accessories (charger, holder, etc.) from the specified vendors.
- 6 This product has passed through the drop test at 1.5m above a plywood plate of 5cm in thickness. However, this does not guarantee damage free, fault free and water proof performance under all situations.

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### ★ A fixed form



☞ Like the picture above, Aqua cam is tied using Handlebar Mount / Adhesive Mount at the place where you want to set

☞ This product is not being used as "Portable device", instead be used as fixed position.

## BASIC PACKAGE BUNDLE ITEMS

Aqua Cam (1)  
Micro USB cable (1)  
Handlebar Mount (1)  
Adhesive Mount (1)  
User's Manual  
Warranty Certificate  
Charging port cover (1)

### ★Replacing the PORT COVER

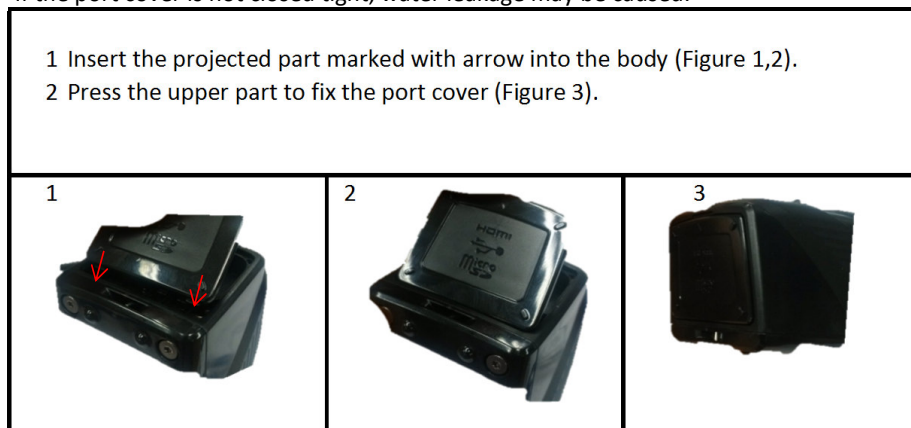
Bundle provides a charging port cover for water resistance environment

☞To be water resistance, you must use 'Duran USB cable'

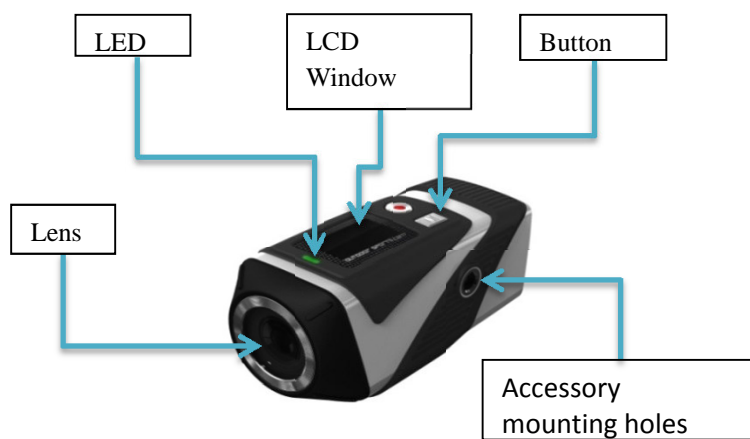


### ★Closing the PORT COVER

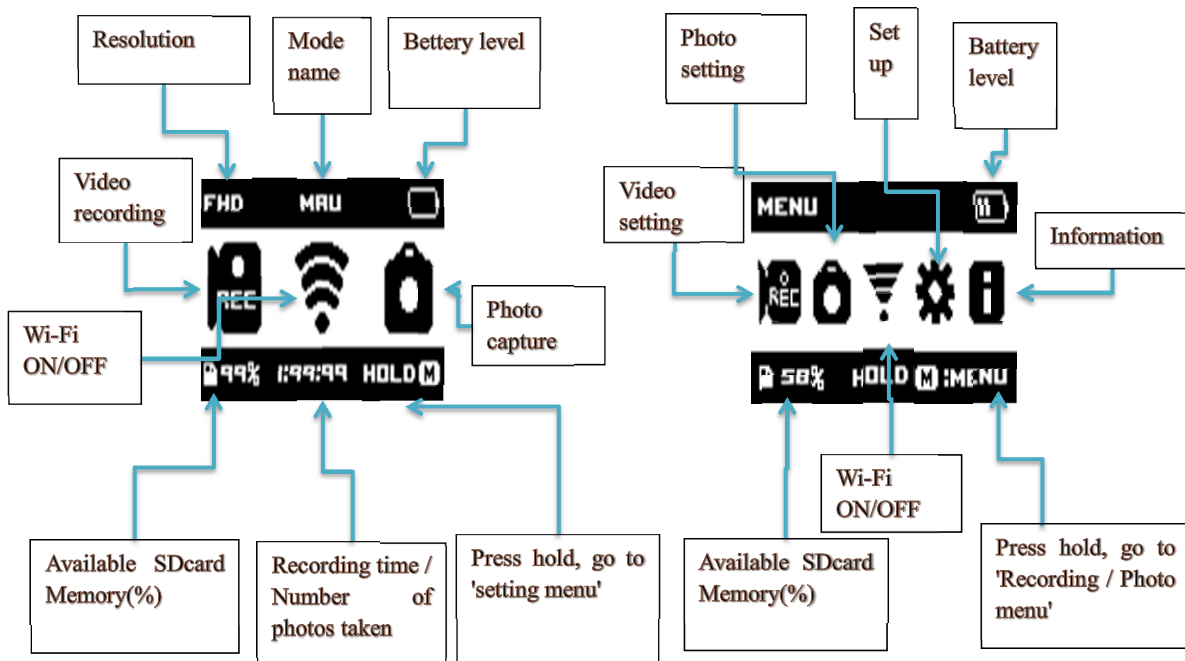
If the port cover is not closed tight, water leakage may be caused.

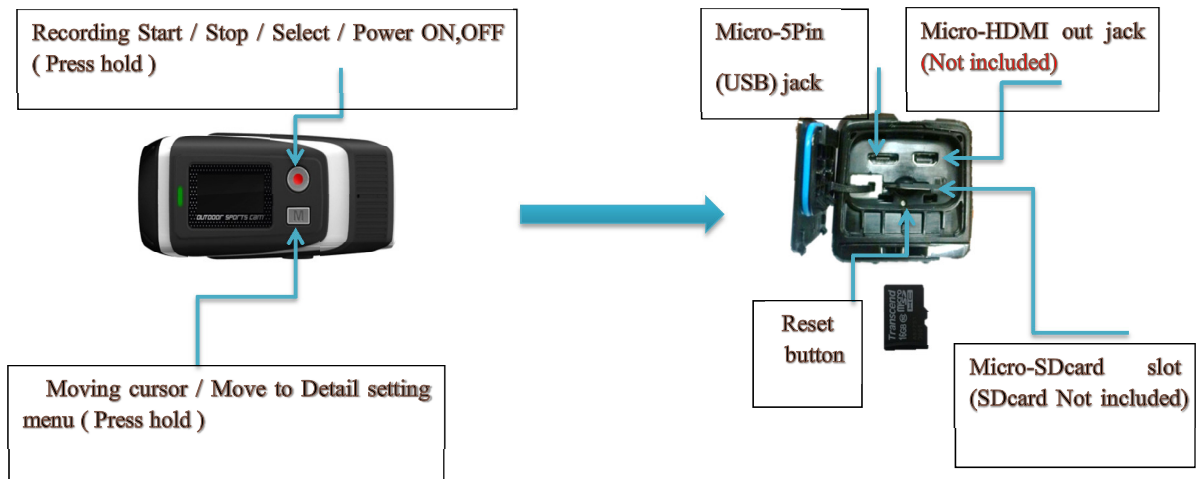


## APPEARANCE DESCRIPTION



## DISPLAY DESCRIPTION





### **Battery**

The red LED flashes when the camera battery goes down below 10%.

If the battery is discharged during recording, the video will be stored and the power will go off.

### **Auto Power Off**


The power will automatically turn off if operation is temporarily stopped for more than 5 minutes.

This function is not available in the following situation

- Shooting movie or photo
- Application control is being connected
- While data and image is being transferred
- HDMI connection is being made

### **Charging the battery**

1. Connect Aqua Cam to the computer or AC/DC adaptor with the micro usb cable (AC/DC adaptor is not included)
2. The LED lamp lights up in red.
3. The LED turns off when the battery is fully charged.
4. If you do not intend to use Aqua Cam for a period, charge Aqua Cam every 3 to 6 months

 Sometimes In order to protect the life of the battery AQUA CAM goes into Trickle charge mode, this mode is not turned off LED lamp after Charging completed, so in this case, stop charging.

### **Charging time**

Via AC charger : Approx. 180 min.

Via a computer USB: Approx. 270 min.

### **Recordable time**

Approximate time available when you use a fully charged battery (Units: minutes)

Continuous recording time(Mode:FHD)- 140

## SD CARDS

### Inserting micro SD card

1. open port cover (Portable or Charging)
2. Insert micro SD card in the correct direction until it clicks.
3. Close port cover (Portable or Charging)

### To eject micro SD card

1. Open port cover (portable or Charging)
2. Slightly push micro SD card
3. Close port cover (Portable or Charging)

### Recordable time

Estimated recording time of movie (Units: minutes)

Memory capacity		8GB	16GB	32GB
MODE	FHD	95	200	290



Make sure a micro SD card has been inserted before using Aqua Cam

4GB, 8GB, 16GB and 32GB Micro SD cards are available.

Recommendation: It is recommended to use a micro SD card of Class4 or faster, 4GB~32GB Sandisk, Samsung or Transcend.



## VIDEO RECORDING



OPERATION	DISPLAY
<ol style="list-style-type: none"> <li>1 Place the cursor on  then press the Recording (Select) button.</li> <li>2 Video recording starts with the icon blinking.</li> <li>3 If you want to finish recording, press the Recording (Select) button again.</li> </ol>	

### **NOTE**

BEEP: Start Recording – Twice short / Finish Recording – Once long

LED: The purple LED flashes during recording

## PHOTO CAPTURE





OPERATION	DISPLAY
<ol style="list-style-type: none"> <li>1 Place the cursor on  then press the Recording (Select) button.</li> <li>2 Photo capturing starts with the icon blinking.</li> </ol>	

### **NOTE**

BEEP: Twice short

LED: The purple LED blinks twice short during photo capturing.

## WI-FI ON/OFF

OPERATION	DISPLAY
<ol style="list-style-type: none"> <li>1 Place the cursor on  then press the Recording (Select) button.</li> <li>2 WI-FI ON  WI-FI OFF </li> </ol>	



### **NOTE**

Indicator shows strength of WI-FI signal in real time on center of the display panel

1. When the signal is strong, indicator shows 4 bars

2. When the signal is weak, indicator shows dot

## VIDEO

OPERATION	DISPLAY
1 Press and hold moving cursor more than 2 seconds to move setting mode	
2 Place the cursor on  and press the Recording (Select) button.	
3 Press moving cursor to move to right mode	
4 Press Recording (Select) button to select setting (Resolution, Mode, File delete)	
5 When complete select, press and hold moving cursor more than 2 seconds to complete	

Resolution	FHD 30FPS (1920x1080 16:9) HD 30FPS, 60FPS (1280x720 16:9) WVGA 120FPS (840x480 16:9)
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Mode	Manual Time lapse 1/3/5 sec Single 1/5/10/30 min Multi 1/5/10/30 min
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### NOTE


Time lapse: Video is captured and stored by the specified second (not supported by WVGA 120FPS.)

Single: Recording automatically stops after a specified time



Multi: Continue to create recording files with a specified length until recording finishes

Loop recording: Keep recording by deleting the oldest file when the micro SD card memory is full (files are created by one minute)

**(Loop recording is allowed only in VIDEO/MANUAL mode)**

File Delete	
OPERATION	DISPLAY
1 Place the cursor on a file to be deleted.	
2 Check by pressing the Recording (Select) button	
3 Press and hold M button more than 2 seconds to confirm delete	
4 Delete confirm pop-up on display	

## PHOTO

OPREATION	DISPLAY
1 Place the cursor on  and press the Recording (Select) button.	
2 Select Detail setting (Resolution, Mode, Image quality, File delete)	

### NOTE

LED: LED on for each shot

BEEP : Sounds on for each shot

Resolution	2304x1296 (16x9)
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Mode	Manual Time lapse 1/3/5/10/30 sec Burst shot
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Image quality	Super fine Fine Normal
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



### NOTE

Time lapse: Photo is taken by the specified seconds interval

Burst shot: Continuous 10 shots a second

**File delete: Same as Video file delete**



#### WI-FI ON/OFF

OPREATION	DISPLAY
1 Place the cursor on  and press the Recording (Select) button. 2 WI-FI ON  WI-FI OFF 	

#### NOTE

Real time display depending on signal strength  
Same as the WI-FI function of MAIN.

#### SET UP

OPREATION	DISPLAY
1 Place the cursor on  and press the Recording (Select) button. 2 Configuration change (Upside down, Date/Time, MIC, BEEP, LED, WHITE BALANCE, Format, Factory set)	

#### Set up

Upside down(Up/Down reverse): Use for mounting Aqua Cam reversed

Date/Time: Aqua Cam time setting

**Button Operation: Choose number(Recording / Select button), Move cursor / EXIT('M' button)**

Mic.: ON/OFF

BEEP(Sound): ON/OFF

LED: ON/OFF

WHITE BALANCE: Camera setting to produce natural colors based on different light conditions such as outdoor or indoor light

**Options: AUTO, DAYLIGHT, CLOUD, TUNGSTEN mode**

Format: Delete all files in the SD CARD



Factory set: Reset all settings

#### NOTE

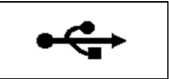
Default settings: Video-FHD30/Manual, Photo -SFINE/Manual

LED-ON, MIC-ON, White Balance-AUTO, Up/Down Reserve-OFF, BEEP-ON, Loop recording -OFF

#### INFORMATION

OPREATION	DISPLAY
1 Place the cursor on  and press the Recording (Select) button. 2 Software version, Wi-Fi MAC address information	


# TRANSFERRING FILES

OPERATION	DISPLAY
1.Connect the Aqua-Cam to your computer using the USB cable provided. 2.Check that USB connection is displayed on the LCD screen. 3.File location: Removable storage (SD CARD)->DCIM folder ->100MEDIA->Video (100VIDEO),Photo (100PHOTO)	

## NOTE

Loop recording file location: Removable storage (SD CARD)->LOOP folder ->100MEDIA->Video (100VIDEO), Photo (100PHOTO)  
File name: LOOP####

#### HDMI TV OUT

OPERATION	DISPLAY
1. Connect Aqua Cam to TV using the micro HDMI cable. 2. Check that the HDMI icon is automatically displayed on the LCD. 3. You can play video/photo through TV.	

#### Button Operation after connecting TV

##### Video, photo List screen

###### **M' button**

Press short - Move the list forward

Press hold - Move to the photo folder and the video folder

###### **Recording (Select) button**

Press short - Move the list backward

Press hold - Play photo and video

##### Video, photo Play screen

###### **M' button**

Press hold - Wind backward (2~32x)

Press short - Wind forward

###### **Recording (Select) button**

Press short – Halt/Play

Press hold – Finish

You can view the video/photo list of loop recording by connecting HDMI from SETTING -> SET UP -> LOOP RECORDING -> ON.

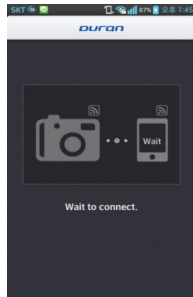
You can purchase micro HDMI cable separately.

## APPLICATION

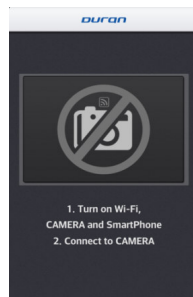
You can download applications from the APP Store and the Play store (key word: Duran)

## Connection

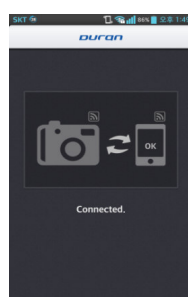
1. Turn on the Aqua-Cam.
2. Connect to the Wi-Fi signal (initial name: Duran####/ password: 1234567890) of Aqua-Cam on a smart phone.  
 ☞ You can change Wi-Fi password at 'Detail setting' of application.
3. Run the application.
4. In the event of automatic connection fail, click the Camera icon to retry connection.



Auto connection

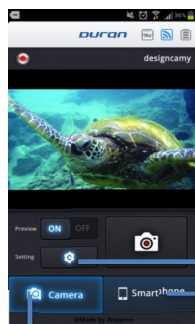


Connection fail

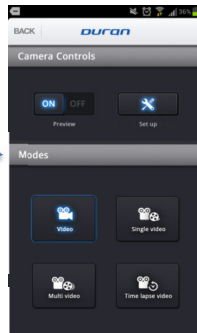


## Key functions

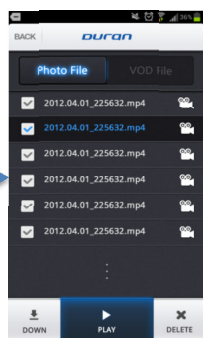
1. Preview ON/OFF, recording, photo, video (You can view a preview and recording at the same time)  
 ☞ except time-lapse mode or resolution WVGA



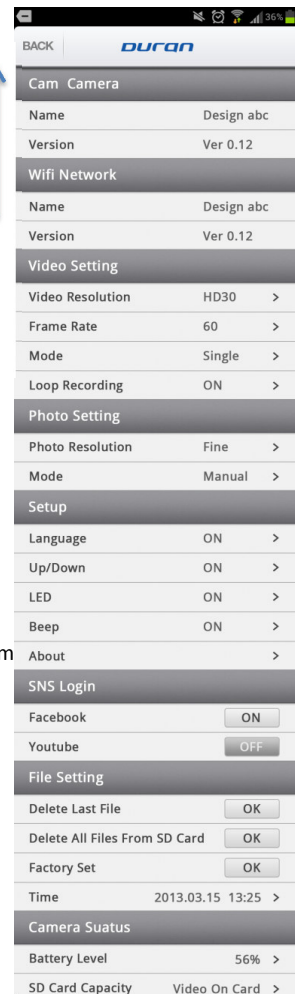
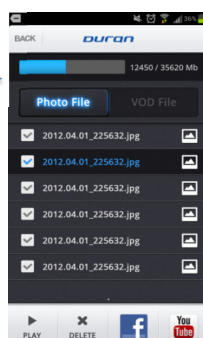
2. Quick mode change:  
 Quick change among favorite modes (video-manual, photo-manual, burst shot, time-lapse photo)




3. Download and play video and photo in a smart phone



4. SNS upload and play video and photo files from



## FIRMWARE UPGRADE

OPERATION	DISPLAY
1.Download the update file from the website and store it in the Micro SD card.	
2.Insert the SD card into the camera.	
3. Update is automatically performed when entering 'MENU' -> 'INFORMATION'.	
4.You can view the update progress state on the LCD display.	

### **NOTE**

You can also upgrade firmware by importing the firmware file with the camera and computer connected through USB without removing the SD card.

After update the first time in about 20 seconds boot time is required due to optimization (with BEEP sound )

After optimizing please restart AQUA CAM

The update is available only in the battery level 3 or higher.

Website :<http://www.duran.co.kr>

# **SPECIFICATION**

CPU	A55(Ambarella)
Video Resolution	Full HD real-time recording 1080p, 30fps 720p, 30fps 720p, 60fps WVGA, 120fps
Photo Resolution	Resolution 2304 x 1296 (Super Fine, Fine, Normal)
C-MOS Sensor	AR0330 ( 1/3" CMOS Sensor 3.5-mega pixel )
LENS	FULL HD LENS -. Image plan : 16.5mm, Composition : 1GM+5G+HRCF, F NO : f 2.0
Angle of view	D : 140, H : 108, V : 80(Degree)
OS	RTOS
Cable	Water Proof Continuous Power Supply Cable( Self- development )
Extenal memory	MicroSD/4G~32G
Internal Microphone	Voice recording
Video format	H.264 compression recording, saves as MP4 format
Audio format	PCM(MONO)
Photo format	JPEG
Wi-Fi	Wi-Fi, Preview on APP
White Balance	WB3100 / WB5100 Calibration
Battery	1340mAh Rechargeable li-ion battery
Display	OLED( Dot Matrix:128×64)
Wi-Fi Module	IEEE 802.11 b/g/n (1-Stream) ATHEROS
Application	Wi-Fi connect, Preview on APP (IOS, Android) Multilateral lauguage
Water Proof	IPX 7 - 5m ( without case )
Setting	LED On/Off, Beep On/Off, LCD display, Upside down
Update	By SD card
Size	36X84X33 , 110g



# **TROUBLE SHOOTING**

Problem/Situation	Remediation/Solution
Cannot turn on Aqua Cam. The power turns off suddenly.	<p>Battery pack is weak or depleted. Check battery indicator level and recharge the battery pack. Depending on Aqua Cam temperature, the power may turn off automatically</p> <p>The power will automatically turn off if operation is temporarily stopped for more than 5 minutes.</p>
Cannot take video/photo.	1.Memory is full. Delete some unnecessary videos/photos or insert a new SD card. 2.Power is off. Press the [Power Button] to turn on.
The camera is frozen	Press the reset button to reboot. (there is a reset button below SD Card slot )
The date imprinted on the photo is incorrect	Set the date and time in the [set up] menu
Why do some of my indoor photo blurry and dark?	<p>1.Poor lighting. Take photo in better lighting.</p> <p>2.The camera extends photo exposure time under low light/indoor condition. Keep the camera (and the target subject) steady when take photo.</p> <p>3. Place the camera on a flat and steady surface, or use a tripod when take photo.</p>
The color of the video/photo is not natural	Select the proper white balance option to match the light source.
Transmission stops due to static electricity or magnetic interference while sending data (data transmission fail)	Restart the application program or reconnect the communication cable (USB).
No button works	Press the Reset key to restart.
If the Wi-Fi password is lost	Select 'Factory set' then password is 1234567890 ('SETTING' ->'SET UP' -> 'Factory set')
Computer doesn't recognize Aqua Cam	<p>Turn on Aqua Cam and connect to computer</p> <p>When the battery level is low, charge the camera</p>
The lens gets fogged	Moisture condensation has occurred. Turn off Aqua Cam and wait about an hour for the moisture to evaporate
The date or time is incorrect	Set the date and time again