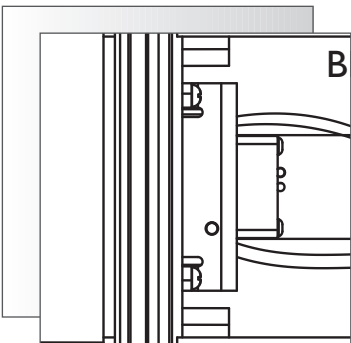
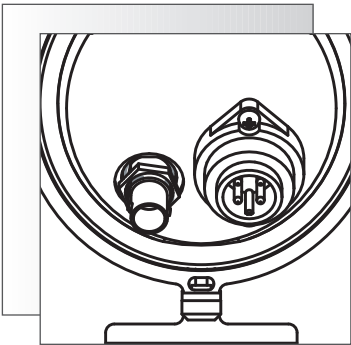
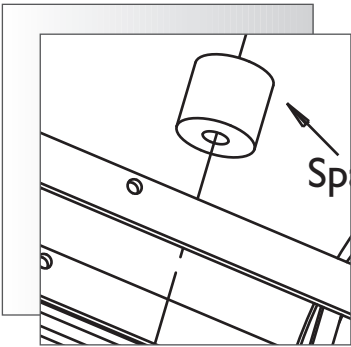
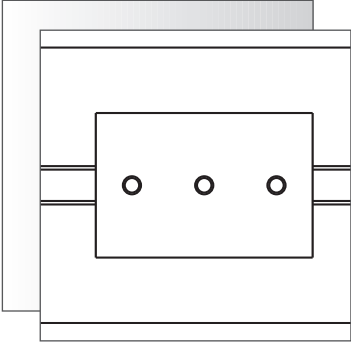
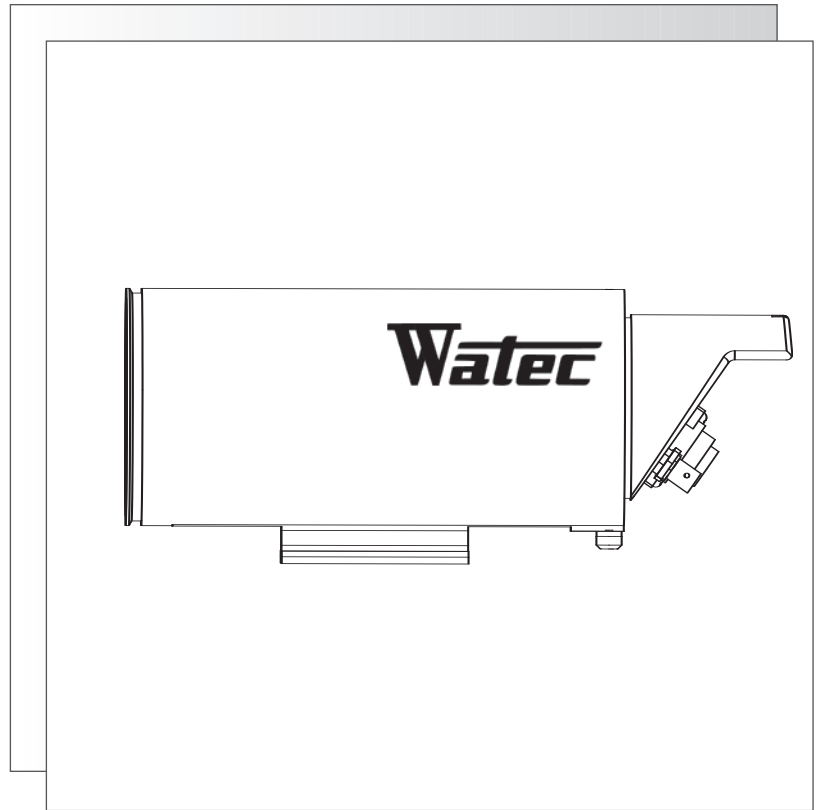


Watertec




WATERPROOF OUTDOOR CAMERA HOUSINGS



APAQ2000 SERIES

INSTALLATION AND OPERATING INSTRUCTIONS
WWW.WATECCAMERAS.COM

IMPORTANT SAFEGUARDS

1. Read Instructions - All the safety and operating instructions should be read before the unit is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - All warnings on the unit and in the operating instructions should be adhered to.
4. Follow Instructions - All operating and use instructions should be followed.
5. Cleaning - Unplug the unit from the outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. Attachments - Do not use attachments not recommended by the product manufacturer as they may cause hazards.
7. Accessories - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury to a person and serious damage to the unit. Use only with a stand, tripod, bracket, or mount recommended by the manufacturer or sold with the product. Any mounting of the unit should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.
 An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
8. Ventilation - Openings in the enclosure, if any, are provided for ventilation, to ensure reliable operation of the unit, and to protect it from overheating. These openings must not be blocked or covered. This unit should not be placed in a built-in installation unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
9. Power Sources - This unit should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply you plan to use, consult your dealer or local power company. For units intended to operate from battery power or other sources, refer to the operating instructions. This equipment is to be isolated from the mains supply by a limited power source as specified in EN60950:1992 Clause 2.11.
10. Grounding or Polarization - This unit may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.
Alternately, this unit may be equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
11. Power Cord Protection - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.

12. Power Lines - An outdoor system should not be located in the vicinity of overhead power lines or other electric light or power circuits or where it can fall into such power lines or circuits. When installing an outdoor system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal. U.S.A. models only - refer to the National Electrical Code Article 820 regarding installation of CATV systems.
13. Overloading - Do not overload outlets and extension cords as this can result in a risk of fire or electric shock.
14. Object and Liquid Entry - Never push objects of any kind into this unit through openings, as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.
15. Servicing - Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
16. Damage Requiring Service - Unplug the unit from the outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power supply cord or plug is damaged.
 - b. If liquid has been spilled or objects have fallen into the unit.
 - c. If the unit has been exposed to water and/or inclement weather (rain, snow, etc.).
 - d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
 - e. If the unit has been dropped or the cabinet has been damaged.
 - f. When the unit exhibits a distinct change in performance--this indicates a need for service.
17. Replacement Parts - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
18. Safety Check - Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.
19. Coax Grounding - If an outside cable system is connected to the unit, be sure the cable system is grounded. U.S.A. models only--Section 810 of the National Electrical Code, ANSI/NFPA No.70-1981, provides information with respect to proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
20. Lightning - For added protection of this unit during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power line surges.

SAFETY PRECAUTIONS



This label may appear on the bottom of the unit due to space limitations.



The lightning flash with an arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

1 UNPACKING

Unpack carefully. This is electromechanical equipment and should be handled with care.

Check for the following items:

- Verify the unit model number.
- Verify that parts listed as follows have been included.

Hardware Kit

Quantity	Part Description
1	BHCS, 1/4-20 x 1 1/4-inch
2	0.4 mm (0.016-inch) Plastic Spacer
1	.900" Plastic Spacer
2	1.65 mm (0.065-inch) Plastic Spacer
1	3.9 mm (0.154-inch) Plastic Spacer
1	Power Connection Kit
2	5/16" washers

If an item appears to have been damaged in shipment, replace it properly in its carton and notify the shipper. If any items are missing, notify Watec.

The shipping carton is the safest container in which the unit may be transported. Save it for possible future use.

2 SERVICE

If the unit ever needs repair service, the customer should contact Watec for return authorization and shipping instructions.

3 CARE AND MAINTENANCE

Clean the viewing window as needed with a mild, non-abrasive detergent in water and a soft cloth.

4 DESCRIPTION

The APAQ2000 Series of environmental housings are attractive aluminum enclosures designed for outdoor CCD camera installations.

These waterproof housings are dust-tight and can be submerged up to 1m (3.28ft.), (IP 67).

Note: Environmental ratings for enclosures based on Ingress Protection (IP) Code designations.

5 INSTALLATION

This installation should be made by a qualified service person and conform to all local codes.

5.1 Model Designation

Model No.	Voltage	Watts
APAQ2000	12VDC/24VAC	20 Maximum
APAQ2000H	24VAC	30 Maximum

Do Not Exceed 30 VAC Input on 24 VAC models. Operation above 30 VAC violates low voltage operation (Class 2 Specifications). Normal operation is 24 VAC.

5.2 Tools Required

- Flat blade screwdriver
- Phillips head screwdriver
- ½-inch (or 4 mm) hex wrench

5.3 Cable Requirements

Video Transmission (Coaxial)

Cable Type:	RG-59/U (Runs < 1000 ft) RG-11/U (Runs < 2000 ft)
Cable Size:	Outside diameter between 4.6 mm (0.181 in) & 7.9 mm (0.312 in).
Cable Shape:	Round.
Shield:	≥ 93% Braided Copper Shield.
Center Conductor:	Stranded Copper Center.
DC Resistance:	≤ 15 Ohms/1000 ft (RG-59/U) ≤ 6 Ohms/1000 ft (RG-11/U).
Cable Impedance:	75 Ohm.
Agency Rating:	UL.
Environmental:	Outdoor rated.
Temperature Rating:	≥ 80 °C.
Sources:	Belden 9259 Belden 9238.

Input Power Cord - North American

Cable Type:	SJTOW-A rated.
Cable Size:	Outside diameter between 4.2 mm (0.167 in) & 9.5 mm (0.375 in).
Cable Shape:	Round.
Conductors:	3 conductor version and 2 conductor version.
Agency Rating:	UL/C.S.A., UL VW-I.
Environmental:	Outdoor rated.
Temperature Rating:	105° C.
Voltage Rating:	300 V.
Sources:	Belden 19506 Belden 19509 Northwire 573939.

Input Power Cord - European

Cable Type:	H05RN-F3G0.75 and H05RN-F3G1.00.
Cable Size:	Outside diameter between 4.2 mm (0.167 in) & 9.5 mm (0.375 in).
Cable Shape:	Round.
Conductors:	3 conductor version and 2 conductor version.
Agency Rating:	VDE.
Environmental:	Outdoor rated.
Sources:	Olflex 1600252 Olflex 1600253

5.4 Cradle Removal

1. To begin removing the cradle from the housing, lower the retention screw completely on the bottom rear of the housing. See **Figure 1**.
2. Remove the cradle by grasping the rear handle and pulling the cradle assembly out of the housing. Be sure to keep the edges of the end caps clean and free of scratches.

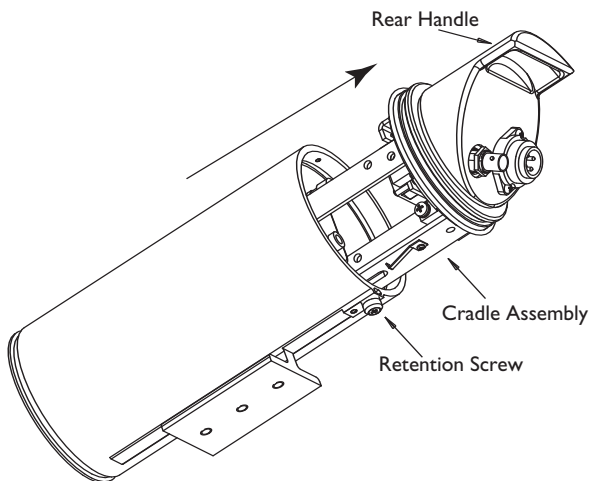


Figure 1 Removing Cradle Assembly

5.5 Camera Installation

With the cradle removed from the housing, follow all of the steps below.

1. Place the camera/lens combination into the cradle assembly.
 - 1.1 Fixed Lens Cameras: Position the camera/lens 1 mm (0.04-inch) away from the faceplate. The camera/lens is secured to the cradle with a 1/4-20 button head cap screw (BHCS) and the appropriate plastic spacer (see **Figure 2**).

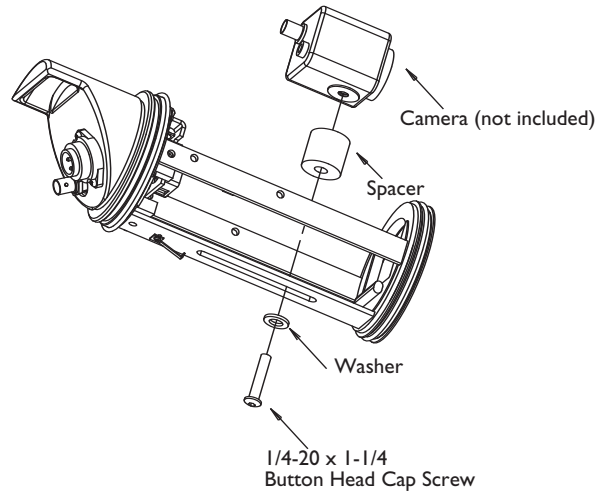


Figure 2 Mounting a Camera

- 1.2 Zoom Lens Cameras: Allow 3/16-inch (5 mm) clearance from the front face of the lens to the front faceplate of the cradle during the camera/lens assembly. This clearance provides the necessary space for the lens to extend outward when zooming. Secure the camera to the cradle with the 1/4 -20 BHCS and appropriate plastic spacer.

5.6 Power and Video Connections: Internal

1. Connect the 2 flying leads to the camera's power input. Connect the BNC Video Connector to the Camera as shown.

See **Figure 3** for locations.

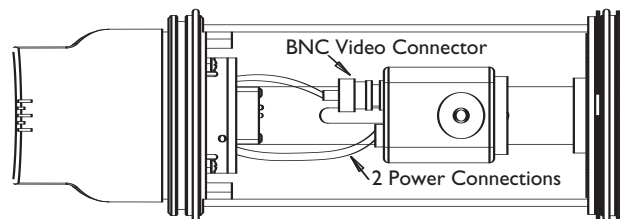
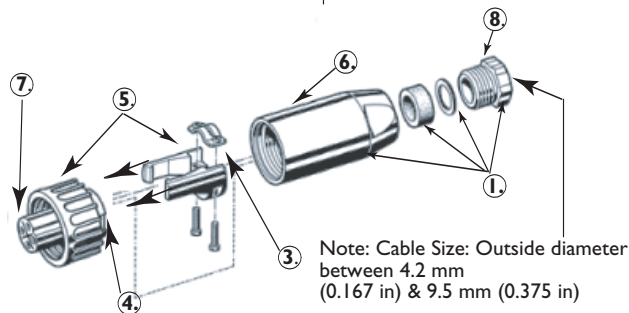


Figure 3 Camera Video and Power Connections

5.7 Power Connections: External

1. Use the Power Connector Kit (included) to route the power into the housing. See **Figure 4, Steps 1-8** to assemble Power Connection Kit .
2. See **Detail A** in **Figure 4** for the wiring configuration.

1. Assemble these 4 parts first. Then slide onto Power Cable. Do not Tighten.
2. Strip outer jacket of Power Cable 1/2". Strip the individual wires 3/8".
3. Slide stripped wires through harness. Attach bracket with two screws as shown. Do not tighten.
4. Insert stripped wires to Connector Plug. See **Detail A** for wiring configuration.
5. Snap these two pieces together tighten bracket over wires.
6. Attach this assembled end by sliding along cable and connecting to plug.
7. Connect the assembled kit to the mating power connector plug located on the housing cradle. See **Figure 5**.
8. Tighten around power cable to prevent slipping. Do this last.



Detail A Connector Plug

- Position 1 - 24VAC/12VDC+
- Position 2 - Not Used
- Position 3 - 24VAC/12VDC-
- Position 4 - Ground

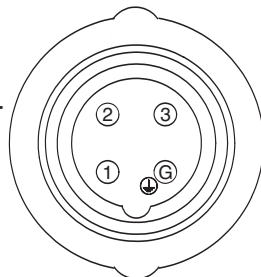


Figure 4 Power Connection Kit Assembly

3. Tighten Power Connection Kit (after assembly to housing) around power cable to prevent slipping.

5.8 Video Connection: External



WARNING: Only use the cables specified under Cable Requirements for wiring of the video coax connection.

1. Connect the video cable to the housing using an appropriate outdoor rated BNC connector. See **Figure 5** for location.

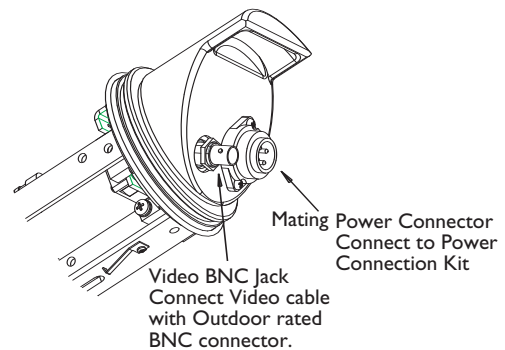


Figure 5 Video Connection

5.9 Cradle Assembly

1. Position the housing vertically and replace the cradle assembly by applying pressure onto the rear cap until the retaining ring stops against the housing. **DO NOT OVER TIGHTEN.** See **Figure 6**.
2. Tighten the retention Screw, making sure it is seated into the rear cap groove.
3. Attach the housing to the appropriate mount or pan/tilt using the instructions provided. According to the orientation of the housing, the cradle assembly may need to be rotated. To rotate the cradle assembly (while mounted), grasp the rear handle and rotate to the desired position. View the monitor while rotating.

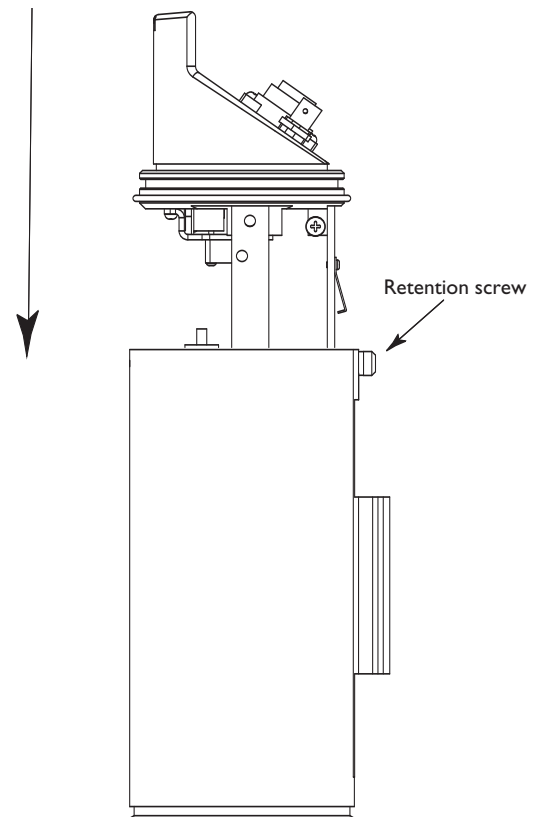
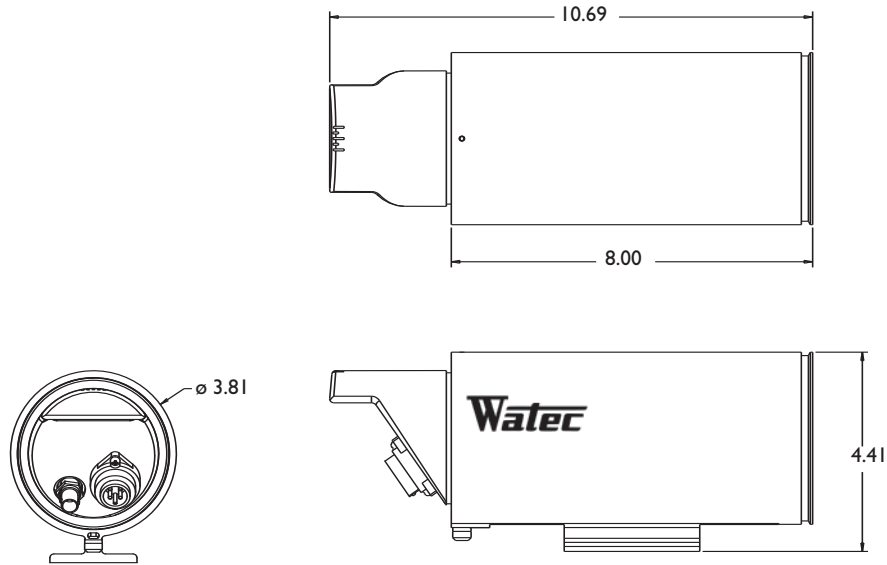


Figure 6 Cradle Assembly

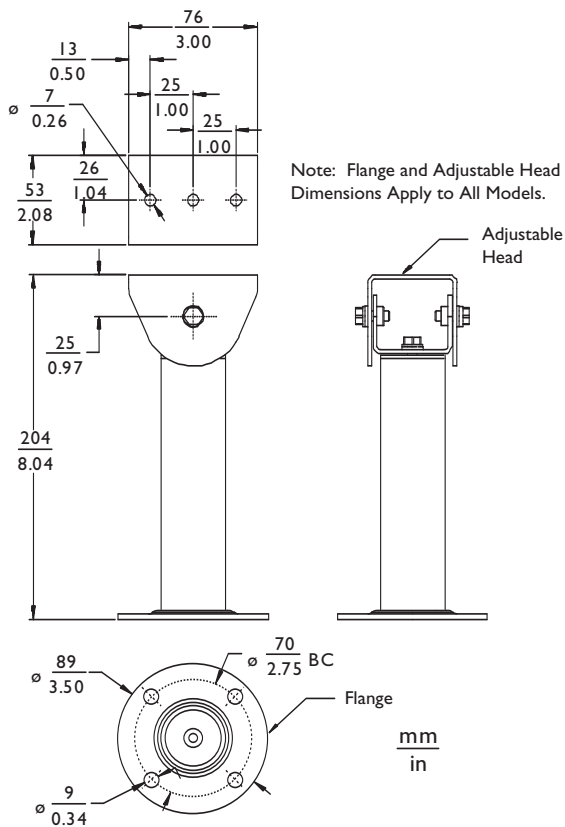
6 DIMENSIONAL OUTLINES

6.1 APAQ2000 Series



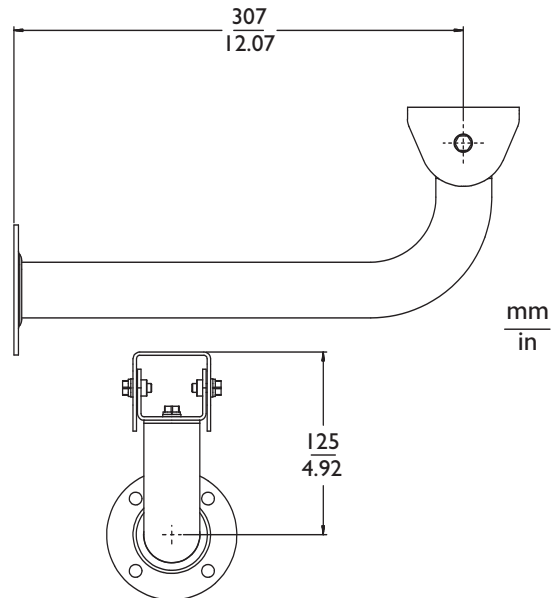
Dimensional Outline for the APAQ2000 Series

6.2 Standard Mounting Options, W9210 Column Mount and W9212 Wall Mount



Note: Flange and Adjustable Head Dimensions Apply to All Models.

Dimensional Outline for W9210 Column Mount



Dimensional Outline for the W9212 Wall Mount

7 CAMERA AND LENS PACKAGE

7.1 Camera Specifications

Quick Specs	WAT-902H2/3 ULTIMATE: !!! EXTREME LOW LIGHT !!!	
Minimum Illumination	0.0002 Lux F1.4	
S/N Ratio	50dB (AGC off)	
AGC	1. HI: 5-60dB 2.LO: 5-32dB 3. MGC: (5-60dB)	
Power Supply (DC)	12V±10%	
Operating Temps:	-10°C ~ +40° C	
Shutter Speeds	EI: 1/60sec.-1/100000 sec. EI:2 1/100sec.-1/100000sec. FL: 1/100sec. OFF: 1/60sec. Selectable: 1/250, 1/500, 1/1000, 1/2000, 1/5000, 1/10000, 1/100000sec.	
BLC	1. OFF: (DEFAULT) 2. Center 3. Lower 4. Center + Lower	

Visit www.wateccameras.com for full camera specs, including dimensions

Quick Specs	WAT-232 !!! 24Hour Solution !!!	
Minimum Illumination	0.1 Lux (Color) .006 Lux (Monochrome)	
S/N Ratio	50dB	
AGC	8-36 dB	
Power Supply (DC)	12V±15%	
Weight	150 g	
Operating Temps	-10°C ~ +40° C	
BLC	ON	OFF

7.2 Standard Lens Specifications W/Package

Quick Specs	5~50mm VariFocal Zoom	
Minimum Illumination	F1.4	
Focal Distance	Min: 5mm	Max: 50mm
Auto Iris	Video or DC	



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APAQ2000 Series

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