



IQeye Sentinel™ Series

Indoor/Outdoor Camera

Installation and Operating Instructions



Important Safeguards

**CAUTION**RISK OF ELECTRIC
SHOCK. DO NOT OPEN!

**CAUTION: BEWARE OF RISK OF ELECTRICAL SHOCK.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

Due to product size and space limitations, this label may not appear on all products.



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.

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD,
DO NOT EXPOSE UNITS TO RAIN OR MOISTURE.**



Attention: Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.

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3 Description

The Sentinel is a full featured, multi-megapixel H.264 Main Profile all-weather camera. With support for up to 5MP resolutions, this next generation camera provides multiple, individually configured H.264 and simultaneous MJPEG streams. Designed with the installer in mind, innovative features drastically reduce installation costs and time:

- The remote back focus feature greatly reduces installation time using the One-Touch Focus feature for sharp images, and allows fine focus adjustments from a remote computer eliminating the need for manual focus adjustments at the camera.
- Ethernet terminal punch-down eliminates the need to terminate with an RJ45 connector.
- Steel camera hangers allow the installer to work with both hands.

In addition, the wall, ceiling, parapet options, rugged aluminum construction, and IP66 weather resilience allow the camera to be installed in almost any harsh environment. At less than 7W power consumption, the Sentinel can be operational using Power-over-Ethernet.

4 Installation

NOTE: This manual describes how to install the IQeye Sentinel Series camera system, and details the wall, ceiling and parapet mounting options. Installations should be performed by qualified service personnel only in accordance with local codes.

5 Parts List

The following depicts the parts included (Figure 1):

1. Indoor / Outdoor Camera and Lens Module
2. Wall, Ceiling & Parapet Arm
3. Power / Data Back Box

Tools required:

3 mm Allen wrench (supplied)
Small straight-blade screw driver
Punch down tool (supplied)



Figure 1

6 Camera Fittings

The IQeye Sentinel cameras are shipped with Heyco Liquid Tight snap-in plugs (#4014) that are factory installed into the back box. These plugs are rated to IP67 and can adequately seal cable diameters that range from 3-5 mm (0.12-0.2 in).

For larger cables, like CAT5, it is recommended to replace the factory installed plugs with the optional Heyco Liquid Tight fittings (#3207) that are included in the accessory kit. These fittings are appropriate for cable diameters that range from 2.90 mm (0.114 - 0.250 in). Please visit www.iqeye.com for details on using these optional cable fittings.

7 Mounting Options



Figure 2

8 Camera Arm Removal

NOTE: The camera/arm needs to be removed from the back box to allow the back box to be mounted to the designated mounting wall, ceiling, or parapet surface.

1. Using the Allen wrench (supplied) loosen the 4 screws located on the corners of the power/data back box.
2. Unplug the two camera-side connections from the back box (Figure 3).
3. Remove the camera/arm module from the back box.



Figure 3

9 Mounting the Power / Data Back Box

Before mounting the power / data back box, determine if the camera installation will be wall, ceiling, or parapet and if the wiring will pass through the compression fittings in the back or the 1/2" NPT conduit mount on the bottom of the back box.

NOTE: If using the compression fittings in the back, it is recommended to replace the factory installed hole plugs with the optional Heyco Liquid Tight fittings (#3207) from the accessory kit where larger cables like CAT5 will be used.

NOTE: If using the 1/2" hole on the bottom of the junction box, a 1/2" (15 mm) NPT compression fitting can also be used. (Heyco P/N 3200 is also appropriate).

1. As the arrows (Figure 4) indicate, use the supplied wall mount template to locate the four mounting holes for the power/data back box.
2. Drill four (4) holes for the mounting screws using the included mounting template as a guide. If installing outdoors, apply a weatherproof sealant around each hole at the mounting surface.
3. Provided are four (4) #14 x 2" flanged (approximately 10 mm head x 50.1 mm in length), hex head screws that can be used to install into a variety of wood and metal substrates. If mounting into wooden studs, it is recommended that a 1/8" (3 mm) wide by 2" (4.8 cm) deep pilot hole be drilled prior to installing the screws. Alternatively, the installer can provide screws with a head diameter less than #14 (3/8" or 10 mm) in size so that they can fit into the junction box opening.

NOTE: It is recommended that each screw and the material it is being installed into be able to bear a minimum of 50 pounds (22 kilograms) of pull force.

4. Pass the power and data cables through the back box, then install the power / data back box on the mounting surface.



Figure 4

10 Terminating Power and Data Cabling Inside the Back Box

Power and data cabling must be routed to the right side (wall-side) of the back box. Cut all cables with sufficient slack to reach the connector terminals in the back box but not long enough to be pinched or obstruct the arm installation.

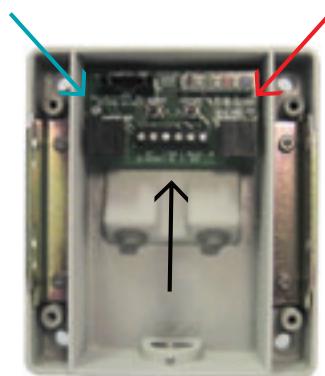


Figure 5

- Camera-Side Terminations
- Wall-Side Terminations
 - RJ-45
 - PunchDown Terminal
- Screw Terminal
 - Direct Power – 12-24VDC or 24VAC
 - Trigger In
 - Relay Out

1. Connecting Power:

The IQeye Sentinel can be powered via Ethernet using an IEEE 802.3af power source, or powered directly.

- **Powered via PoE:** Input from conforming IEEE 802.3af Power-over-Ethernet (PoE) power injector or switch.
- **Powered Directly:** Input voltage is 12-24V DC or 24V AC. IQeye Sentinel camera/housing modules include built-in bridge rectifier circuitry, so power wiring polarity can be installed with the + or - on either terminal without risk of damaging the camera or affecting performance.

NOTE: Using a power source with specifications other than those defined herein may result in errant functionality or damage to the camera, and will void the product warranty.

2. Connecting Data (Ethernet) Cable:

Route and connect the Ethernet cable to the Ethernet connections (RJ-45 - Figure 6 or Punch Terminal - Figure 7) labeled wall-side in the back box.

The two most common schemes for wiring CAT5 cables are 568A & 568B. The 568B wiring scheme is widely used in the US, and for off the shelf CAT5 cables. New installations should use the 568A CAT5 wiring scheme. It is important that the standard selected matches the building wiring.

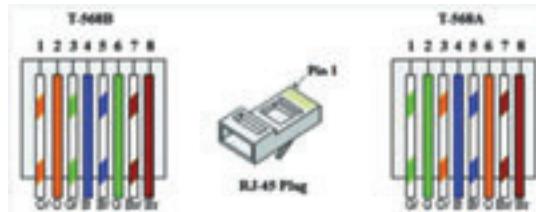


Figure 6



Type 66 Punch Down Block

Figure 7

11 Camera Arm Installation

The back box is provided with arm hangers on both sides to hold the camera/arm module on the back box to facilitate installation. (Figure 8)

NOTE: The arm hangers function perfectly at any orientation of the junction box and will firmly hold the camera and junction box cover in any of the wall, ceiling, or parapet mount configurations.



Figure 8

1. Insert the two (2) pins into the channel and slide the camera / arm module down until it locks in place on the arm hanger.

WARNING: Serious injury and / or damage to the unit can occur if the camera / arm module is not fully locked in place.

2. Connect Ethernet and terminal block cables from the camera to the left side (camera side) of the junction box.
3. If I/O connections are being used, attach them to the appropriate I/O terminals on the center terminal block of the back box (Figure 9).

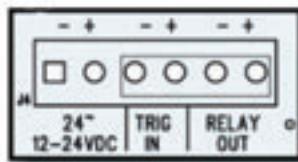


Figure 9

4. After all connections are made in the back box, remove the camera / arm hanger and secure to the back box by tightening the four (4) screws with the supplied Allen wrench (Figure 10).



Figure 10

5. If mounting the unit outdoors, please take necessary and thorough measures to ensure the camera unit is properly sealed from inclement weather. An example would be to use silicone sealer around the back of the base, being sure to surround all holes with a generous bead of sealant to the outer edge of the back box surface. The sealing method chosen should be in accordance with any local, state, county and country requirements and laws.

Blink Patterns

The IQeye Sentinel all-weather megapixel camera is equipped with two status indicator LEDs which can be seen on the back of the Sentinel enclosure. During normal operation, the following colors and patterns should be visible (Figure 11):

STATUS	LEFT LED	RIGHT LED
Power has just been applied	Solid RED	Solid RED
Connected to network but no network activity	Blinking GREEN	Solid GREEN
Connected to network with network activity	Intermittently blinking RED / GREEN	Solid GREEN
Immediately after power on indicates there is no power	DARK	DARK
NOTE: By default both LEDs will turn off after 60 seconds.		

Figure 11

If the Sentinel camera fails to power up or indicate a network connection or show activity, please contact IQinVision technical support for assistance.

12 Adjusting / Removing the Sunshield

CAUTION

The IQeye Sentinel sunshield is not captive to the camera enclosure. Handle the sunshield securely during adjustment, installation and / or removal.

NOTE: For indoor applications of the Sentinel, the sunshield may be removed for aesthetic reasons. Though it is not required for normal operation of the Sentinel, the following instructions detail proper adjustment / removal / installation of this sunshield.

1. Attaching Sunshield - Follow these steps to attach the sunshield to the Sentinel:
 - a. Ensure that the sunshield bracket is firmly attached to the Sentinel before attempting to attach the sunshield.
 - b. With the fluted fins on the sunshield toward the front of the camera, line up the grooves on the sunshield with the flanges on the sunshield bracket and gently slide the sunshield back into the bracket.
 - c. Once the sunshield is in the desired position, tighten the 3 mm set screw located on the top and center of the sunshield using the supplied 3 mm Allen wrench.
2. Adjustment/Removal - Using the supplied 3 mm Allen wrench, loosen the single (1) hex set screw on top of the sunshield. **DO NOT REMOVE THE SET SCREW.** Generally, only half a turn or less is required to sufficiently loosen the set screw for adjustment and/or removal of the sunshield.
 - a. Adjustment – With the set screw loose, gently move the sunshield back or forth to position, then re-tighten the set screw with the supplied 3 mm Allen wrench.

NOTE: To properly tighten the set screw turn until the screw starts to become tight then turn an additional 3/4 turn

- b. Removal – With the set screw loose, pull the sunshield forward until it is free of the sunshield bracket.
- c. Optional – The bracket that holds the sunshield can also be removed if desired. To remove the sunshield bracket, loosen and remove the two (2) 3 mm countersunk screws using the supplied 3 mm Allen wrench. The bracket can then be removed. Though it is not required for the integrity of the Sentinel unit, it is recommended to re-insert and tighten the two (2) 3 mm countersunk screws back into the Sentinel casing for future use.

13 PC Configuration of IQeye Sentinel

NOTE: The default user name for all IQeye devices is “root” and the default password is “system”.

IQeye cameras are configured for DHCP and will have an IP address assigned if a DHCP server is on the network. If a DHCP server is not available, the camera IP address will need to be configured using either IQfinder or IQmanager depending on the number of cameras being installed.

1. Insert the IQtools CD into the CD drive of the PC. Once the CD starts, run IQfinder either from the CD by clicking “Scan for IQeye cameras on my network” or by installing IQfinder on the local machine by selecting “Install IQfinder”.
2. Click “Scan for IQeye cameras on my network” to find IQeye cameras (Figure 12). The detected cameras will be displayed in the IQfinder window. Select a camera from the list and click “Assign IP” to edit the selected camera’s network settings.
3. The “Assign IP” window allows the IP Address, Subnet, and Gateway of the camera to be changed and alternatively the camera to be configured for DHCP operation. Click the “Apply” button after making the desired changes (Figure 13).



Figure 12



Figure 13

NOTE: Changing between a static IP address and DHCP will cause the camera to reboot.

4. To view a camera, double click a camera entry or highlight a camera in the list and click the “Web Page” button (Figure 14). The “Live” page will be displayed through the default browser (IE recommended). It is also possible to open Internet Explorer and enter the IP address of the IQeye camera in the address field of the browser. If prompted, install the Active X control (Figure 15).

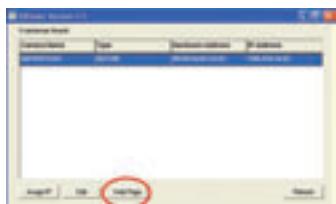


Figure 14

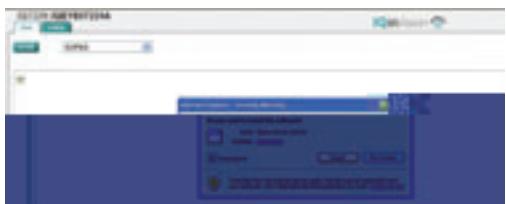


Figure 15

5. To perform further configuration of the camera, click on the “Setup” tab.

NOTE: The default username is “root” and the default password is “system”.

6. To prepare the camera to serve the H.264 stream (IQ86x Series), select H.264 from the video format drop-down (Figure 16). To view the H.264 stream full screen (without “Live” page controls) double click on the video area. Double click on the video image again to return back to the “Live” page.



Figure 16

7. For additional information and technical documents, please visit: www.iqeye.com

14 Camera / Lens Adjustment / Remote Back Focus

1. Using the supplied 3mm Allen wrench, loosen any two adjacent screws of the four available ball pivot screws (Figure 17). This should loosen the ball enough to allow repositioning of the camera to the desired orientation. Tighten the screws to secure the camera module in place.



Figure 17

2. For the ceiling or parapet mount, it may be necessary to rotate the lower portion of the ball bracket. This can be achieved by loosening the two 3 mm Allen screws on the bottom of the arm elbow (Figure 18).



Figure 18

NOTE: DO NOT REMOVE the screws in the elbow of the mount as they can be very difficult to re-insert.

Once the lower arm is rotated to the necessary position, retighten the elbow 3 mm screws.

3. Remove the lens cap with the supplied Allen wrench to expose the lens (Figure 19).



Figure 19

4. Browse to the camera homepage and go to the Setup > Focus tab (Figure 20).

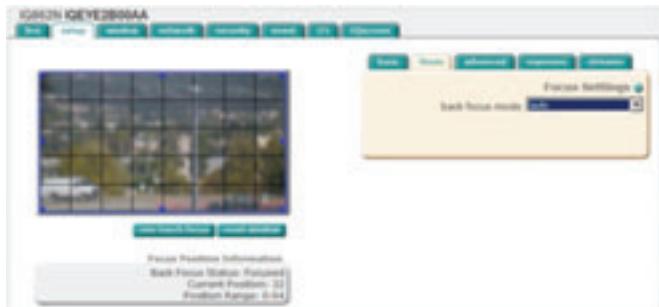


Figure 20

5. Set the iris on the lens to the 'Open' position then lock it down with the iris set screw.
6. If the back focus has been set before using the camera, click the "restore defaults" button on the Focus tab to reset the back focus adjustment.
7. Use the Varifocal adjustment on the lens to set the field-of-view, then lock the Varifocal adjustment set screw.
8. Focus the lens using the focus adjustment on the lens, then lock the focus adjustment set screw.

NOTE: The focus adjustment should be close to ensure the one-touch focus adjustment can be completed.

The following image (Figure 21) is an example of an image not focused enough to ensure a remote one-touch focus can be completed.

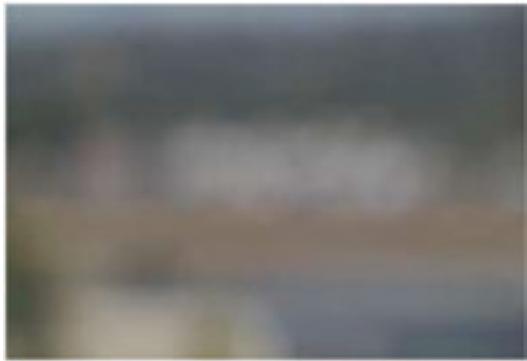


Figure 21

The following image (Figure 22) is an example of an image focused enough to ensure a remote one-touch focus can be completed.

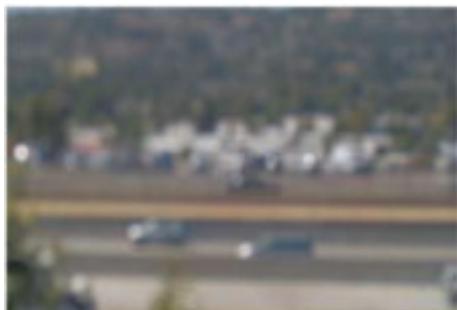


Figure 22

NOTE: IQinVision provides a desiccant pack for placement inside the lens cover assembly. IQinVision requires the desiccant pack to be installed to prevent fogging of the inside of the lens glass due to any moisture that is present when installing the camera.

9. Position the supplied desiccant pack above the lens and wrap it around the lens between the lens and the lens ring. The desiccant pack must be placed next to the lens within the inner chamber of the lens cover.

NOTE: Do not tuck desiccant pack into the outer chamber of the lens cover.

10. Clean all glass surfaces, including the surface of the lens, and the inside and outside of the lens cover, using a lens polishing cloth and approved lens / glass cleaning solution.
11. Carefully replace the lens cover, ensuring that no portion of the desiccant pack obscures the lens or protrudes beyond the inner lens chamber.
12. When the lens adjustments are complete, reinstall the lens cover and tighten the two (2) screws with the supplied Allen wrench. It is not necessary to apply significant force to tighten the lens cover screws. Once they are snug, turn an extra $\frac{1}{2}$ turn beyond snug.
13. On the Focus tab click the One-Touch Focus button to focus the video image (Figure 23).

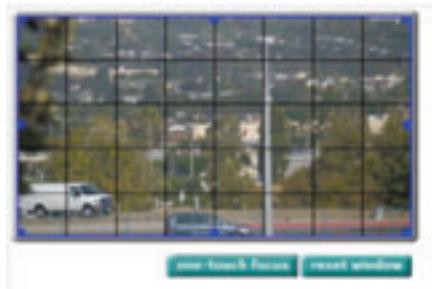


Figure 23



3/5 Year Limited Hardware Warranty

Warranty Coverage

IQinVision, Inc. ("IQinVision") warranty obligations are limited to the terms set forth below:

IQinVision warrants the original purchaser that the IQINVISION Network Video product enclosed with this limited hardware warranty will in respect of the hardware be free from defects in design, workmanship and materials under normal use. The warranty period for all cameras purchased before 1/1/2011 is two (2) years. The warranty period for "Alliance-mini" (IQDxxx) cameras purchased after 1/1/2011 is five (5) years. The warranty period for "Alliance-pro" (IQAxNx), "Alliance-mx" (IQM3xNE), "Alliance-mini" (IQD3xSV), and "3 Series" (IQ03xSI) cameras purchased after 3/1/2012 is five (5) years. All other cameras purchased after 1/1/2011 include a three (3) year warranty period from the date of the original end-user purchase ("Warranty Period").

The original purchaser shall without undue delay notify IQinVision of any defect which appears according to IQinVision's RMA Handling procedure, failure to which shall mean that the purchaser loses its right to have the defect remedied. A valid form of a bill of sale or receipt from an authorized retailer/distributor with the date of the original purchase must be presented to obtain warranty service. If a valid claim is received within the Warranty Period, the sole remedy of the original purchaser and IQinVision's sole and exclusive liability shall be limited to, at IQinVision's sole discretion, the repair or replacement of defective parts of the IQeye camera with new parts, or with serviceable used parts that are superior or equivalent in performance to new parts, without charge. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer. When a product or part is exchanged the replacement hardware becomes the property of the original purchaser and all hardware or part thereof that is replaced shall become the property of IQinVision.

This Limited Warranty is applicable in all countries and may be enforced by contacting IQinVision support worldwide, for more information please visit our web site www.iqeye.com

Exclusions and Limitations

This warranty does not apply (a) to faulty and improper installation, maintenance, service, repair and/or alteration in any way that is not contemplated in the documentation for the product or carried out with IQinVision's consent in writing, operational adjustments covered in the operating manual for the product or normal maintenance, (b) to cosmetic damages, (c) if the product is modified or tampered with, (d) if the product is damaged by acts of God, misuse, abuse, negligence, accident, normal wear and tear and deterioration, improper environmental conditions (including, but not limited to, electrical surges, water damage, chemical exposure, and/or heat/cold exposure) or lack of responsible care, (e) if the product has had the model or serial number altered, defaced or removed, (f) to consumables (such as storage media or batteries) (g) to products that have been purchased "as is" and IQinVision, the seller or the liquidator expressly disclaim their warranty obligation pertaining to the product, (h) to any non-IQinVision hardware product or any software (irrespective of packaged or sold with an IQinVision hardware product) and IQinVision products purchased from an unauthorized distributor/reseller, (i) to damage that occurs in shipment or (j) to damages by any other causes not related to defective design, workmanship and/or materials.

The warranty for the products shall run from IQinVision to End User customers only (including product purchased through authorized partners and resellers). Except as explicitly provided herein, IQinVision disclaims all other warranties, including the implied warranties of fitness for a particular purpose and merchantability.

All Inquiries for RMA and Warranty Repair should be directed to support@iqeye.com or to the following:

IQinVision
33122 Valle Road
San Juan Capistrano, CA 92675-4853 USA
Phone: +1-949-369-8100 or 1-877-850-0805 (toll-free in U.S.)
Fax: +1-949-369-8105

NOTE:

- > If the product is to be used outdoors or in dusty, humid, or other hostile environments, it must be suitably protected.
- > Further, camera products specifically, must be protected, whether in use or not, from exposure to direct sunlight or

halogen light – which may damage the camera image sensor. This applies to both indoor and outdoor use of the cameras.

- > For camera products supplied without a lens, extreme care should be used when mounting a lens on these products. Damage to the product due to incorrectly mounted lenses will invalidate this limited hardware warranty.
- > Failure to comply with any of the aforementioned requirements will invalidate this Limited Hardware Warranty.

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