

+ IQAir® AirVisual® Outdoor

Community Air Quality Monitor

Operating and Installation Manual



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Safety Information

WARNINGS

- Use of equipment, components and accessories other than those specified by IQAir may impair safety provided by the equipment. Safety of any system incorporating the equipment is the responsibility of the installer of the system.
- PoE power injector or USB adapter are not to be positioned so that it is difficult to unplug them.
- When using in covered outdoor areas, the PoE power injector or USB adapter is to be installed in a weatherproof enclosure or indoor with the cable routed through a wall or window feedthrough.

CAUTION

- The IQAir AirVisual Outdoor enclosure is designed to be water resistant to rain or spray. It is not designed to be waterproof when immersed. Setting it in a pool of water will result in flooding the inner compartment with water. This will severely damage your IQAir AirVisual Outdoor. DO NOT install the IQAir AirVisual Outdoor less than 1 meters or 3 feet from the ground. Setting the bottom of IQAir AirVisual Outdoor too close to a surface will result in water splashing back into the inlet and may result in damage to the device.
- DO NOT mount the IQAir AirVisual Outdoor upside down. To increase sampling efficiency, the PM sensor is covered by a porous screen but is not splash- or waterproof. The IQAir AirVisual Outdoor has ingress protection from top and front side for splash water. Direct injection of water into the device is likely to damage it.
- PoE power injector or USB adapter are not intended for outdoor use.
 1. Before plugging PoE power injector or USB adapter into a socket check if voltage and frequency corresponds to 100 to 240 V and to 50 to 60 Hz.
 2. Do not use the equipment at altitudes exceeding 2 000 meters (6 560 feet).
 3. The power to run the IQAir AirVisual Outdoor is 12 W (48.0 VDC and 0.25 A PoE or 5.2 VDC and 2.4 A USB). It is recommended to power the IQAir AirVisual Outdoor through the RJ45 Ethernet connector with the supplied PoE Injector and cables. There are no outputs available from the IQAir AirVisual Outdoor.
 4. The supplied power supply is rated to operate between 0°C to 45°C (32°F to 113°F) with humidity ranging from 0% to 95% noncondensing but the IQAir AirVisual Outdoor is rated to operate between –20°C to 50°C (-4°F to 122°F). IQAir recommends running the IQAir AirVisual Outdoor within these temperature limits.
 5. The IQAir AirVisual Outdoor is designed to be used outdoors in highly polluted areas where particulate concentrations can be as high 1000 µg/m³.

LASER SAFETY

- IQAir AirVisual Outdoor sensor modules are Class 1 laser-based instruments.
- During normal operation, you will not be exposed to laser radiation.
- DO NOT open the IQAir AirVisual Outdoor when it is powered ON.
- You will not be exposed to the laser radiation when the IQAir AirVisual Outdoor is disassembled.
- The PM sensor has a laser inside it. DO NOT open the PM sensor inside IQAir AirVisual Outdoor when it is powered ON

Precautions:

DO NOT remove any parts from the IQAir AirVisual Outdoor

WARNING

The use of controls, adjustments, or procedures other than those specified in this manual may result in exposure to hazardous optical radiation.

WARNING

If the IQAir AirVisual Outdoor is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

When operated according to the manufacturer's instruction, this device is a Class 1 laser product as defined by U.S. Department of Health and Human Services standards under the Radiation Control for Health and Safety Act of 1968.

This equipment is to be operated with provided accessories only. Equipment and accessories are to be supplied by IQAir or its agent only. In case of operation with USB adapter, use model ICP20-052-2400B from manufacturer Shenzhen Shi Ying Yuan Electronics Co., Ltd., Fl 5-7 Of West, Bldg 8, Hongye Industry Park, Lezhujiao Resident Squad, Huangmabu Community, Xixiang St., Bao'an District, 518126 Shenzhen, Guangdong Province, China only and keep ambient temperature of USB adapter at max. 25°C. This equipment is to be cleaned with a damp cleaning cloth wetted with warm water containing some drops of dishwashing detergent. After cleaning, dry it with a cloth.

This equipment is intended for use at supply voltages with fluctuations not exceeding +/-10 % and classified as overvoltage category II. This equipment is intended for use in environment classified as pollution degree 2 and it is not to be stored or used in wet locations.

FCC Statement

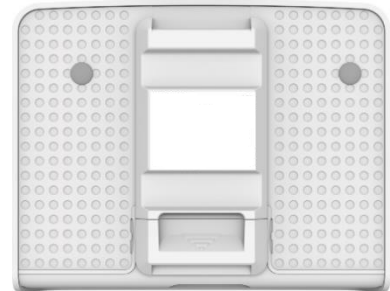
Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- reorient or relocate the receiving antenna;
- increase the separation between the equipment and receiver;
- connect the equipment into an outlet on a circuit different from that to which the receiver is connected;
- consult the dealer or an experienced radio/TV technician for help.



The location of compliance statements on the AirVisual Outdoor is found under the mounting plate.

ISED RSS Warning

This device complies with ISED licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ISED Radiation Exposure Statement:

This equipment complies with ISED RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with minimum distance 20 cm between the radiator and your body.

Cet appareil est conforme aux limites d'exposition de rayonnement RF ISED établies pour un environnement non contrôlé. Cet émetteur ne doit pas être co-implanté ou fonctionner en conjonction avec toute autre antenne ou transmetteur. Industrial cellular router doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Tout changement ou modification non expressément approuvé par la partie responsable de la conformité pourrait annuler l'autorisation de l'utilisateur à faire fonctionner l'équipement.

Getting to know your AVO

The IQAir AirVisual Outdoor air quality monitor, is designed to provide accurate, configurable and continuous air monitoring in covered outdoor areas. The monitor measures environmental parameters including temperature, humidity, pressure, CO2 and particulate matter.

The device can be mounted vertically on walls and poles. Power can be supplied with the provided PoE Injector (PoE – Power over Ethernet) and included cable or via the optional USB adapter. Connection to the internet can be made via Ethernet cable, Wi-Fi, or USB 4G modem (optional).

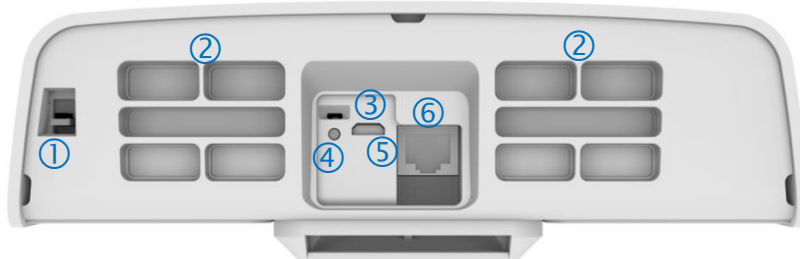
Please study this guide to familiarize yourself with the installation and connection of this IQAir product.

Packaging Content

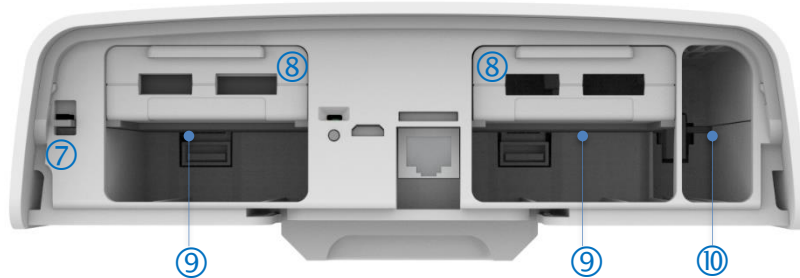
Unpack the device, in the box you will find:

- 1x AirVisual Outdoor
- 2x Air quality sensor modules (default option)
- 1x Mounting Plate
- 2x Wall mounting hardware (Wall anchors and screws)
- 2x Pole mounting hardware (Cable-ties)
- 1x Allen key
- 1x Ethernet Cable, 0.5 m
- 1x Ethernet Cable, 12 m
- 1x PoE power injector
- 1x Operation and installation manual

Component overview



- ① Air inlet temperature & humidity sensor
- ② Air inlets with insect mesh
- ③ LED indicator
- ④ Control button
- ⑤ Micro-USB socket
- ⑥ PoE Ethernet port



- ⑦ Temperature & humidity sensor
- ⑧ Air quality sensor modules (two modules shown)
- ⑨ Slots for additional air quality sensor modules
- ⑩ Slot for USB 4G modem

Operating modes

<p>LED indicator</p> 		Blue	Connected to the IQAir cloud
		Red	Not connected to cloud or network
		Red, blinking	Resetting / updating / self-testing
		Green	Wi-Fi setup; Wi-Fi hotspot paired
		Green, blinking	Wi-Fi setup; Wi-Fi hotspot open

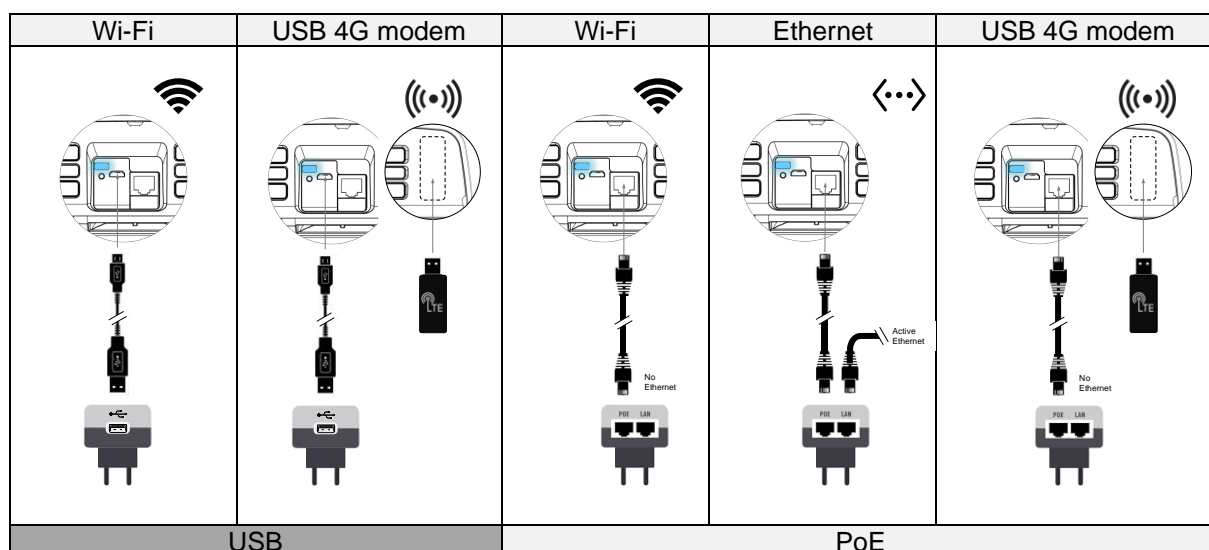
Setup and Configuration

The next few pages show how to install and configure the IQAir AirVisual Outdoor. First power the device with one of the two power options. Power can be supplied using the provided PoE injector (*PoE - Power over Ethernet*) and supplied Ethernet cable or via optional USB adapter and USB cable.

Connect the device to the internet with one of the three network options. The IQAir AirVisual Outdoor is equipped with two built-in connection types, Wi-Fi and Ethernet. A USB 4G modem is optional.





Power and network options

The IQAir AirVisual Outdoor supports multiple power and network options, the figure below shows how to power the device and connect it to the internet.



Connecting to the internet

Connection to the internet via Wi-Fi requires a few steps as shown in the IQAir AirVisual App, whereas connection via Ethernet or 4G should establish automatically the connection to the IQAir cloud and will not require network configuration in the App.

Wi-Fi	Ethernet
<p>①</p> <p>Install and log in to the IQAir AirVisual App</p> <p>Please delete any already installed versions of the AirVisual App from your smartphone</p> <p>Download and install the version</p> <p>Apple iOS version is available via Apple App Store</p> <p>Android version is available via Google Play Store</p> <p>Login to your AirVisual account</p>	
<p>②</p> <p>Add your AVO</p> <p>Follow the steps in the AirVisual App to add your AVO by scanning the QR code or manually entering the serial number.</p>	
<p>③</p> <p>Power-on your AVO</p> <p>Connect the power (either via USB or PoE)</p> <p>The LED on the AVO is lit red</p>	
<p>Configure Wi-Fi</p> <p>Follow the steps in the AirVisual App to connect the AVO to your Wi-Fi network</p> <p>The LED on the AVO changes color</p> <p>Green/ Red/ Off/ Red</p> <p>( /  / Off / )</p> <p>Can take up to 60 seconds!</p>	<p>④</p> <p>Ethernet or 4G connection</p> <p>Configuration starts automatically</p>
<p>⑤</p> <p>Confirm connection</p> <p>The LED on the AVO should turn bright blue  to indicate successful connection to the AirVisual cloud.</p>	
Wi-Fi	Ethernet

Mounting Instructions

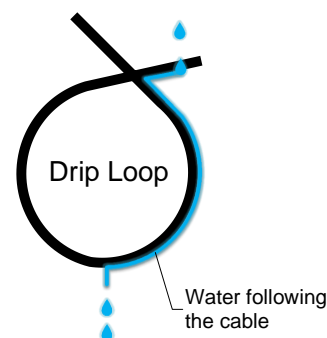
After successful network configuration, the device is now ready to be mounted in covered outdoor areas.



Configure your AVO and confirm that it is connected to the internet and IQAir Cloud (blue LED) before starting with the installation

Recommendations and considerations

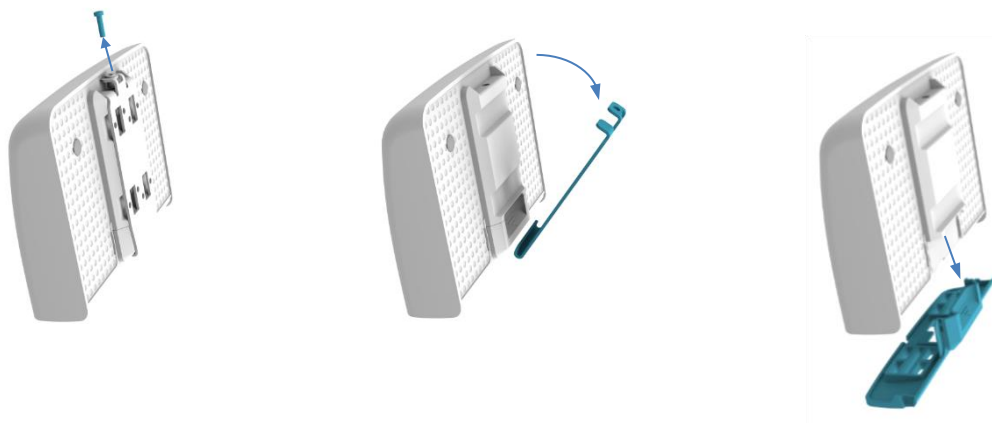
Installing	<p>The housing is designed to protect the device from the elements while allowing air to flow freely through the sensors.</p> <p>Always mount the AVO in a location with good air circulation. If possible, mount the sensor away from vents and not near direct pollution or smoke sources (BBQ, cooking exhaust).</p>
Mounting orientation	<p>Mount the AVO vertically e.g. onto a wall or pole, with the sensor opening facing downwards.</p> <p>It is not recommended to place the AVO flat on a surface. Dust that may collect on the surface will influence readings.</p>
Mounting height	<p>It's recommended to install the device at a minimum height of 1.5 m above the ground.</p>
Sunlight	<p>The AVO can be mounted in direct sun - this will, however, affect temperature readings. Mounting the AVO in a shady spot will produce temperature readings that are not affected by direct sunlight.</p>
Rain and snow	<p>The AVO power supply must be placed so that it will not get in contact with water or snow.</p> <p>It is generally recommended to mount the AVO in partially covered open spaces such as eaves and soffits or verandas, balconies and covered patios</p> <p>Always use "drip loops" for cables to prevent water running into the device or to the power supply.</p>



Removing the mounting plate

Loosen the hex socket screw with the supplied Allen key until the mounting plate can be released from the device. There is no need to remove the screw completely.

Only in case you need to insert a USB 4G modem or replace an air quality sensor module, the mounting plate and air inlet cover needs to be removed from the IQAir AirVisual Outdoor.



Remove the mounting screw

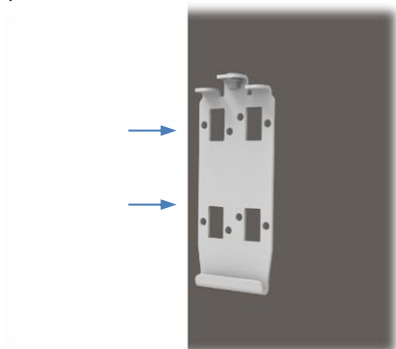
Remove the mounting plate

Slide off the air inlet cover

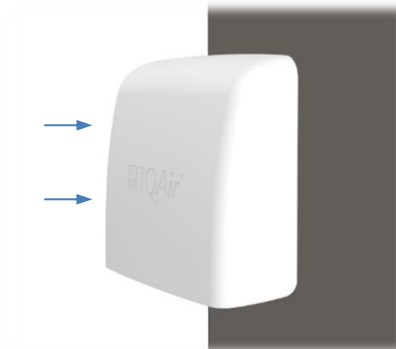
Mounting the device

To ensure the device is installed properly, you must follow the IQAir recommendations and considerations.

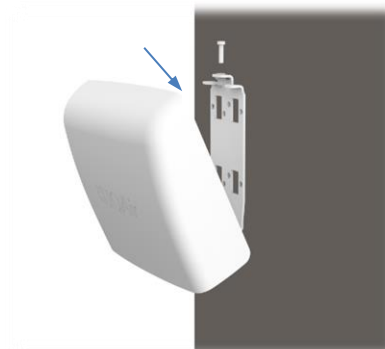
Use the supplied mounting hardware (wall anchors and screws or cable ties).



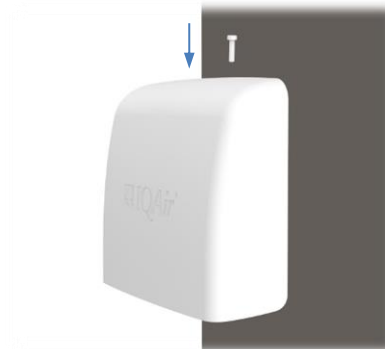
Push the device gently into the mounting plate.



Check if the air inlet cover is attached. Slot the device into the mounting hook.



Tighten the hex socket screw until snug.



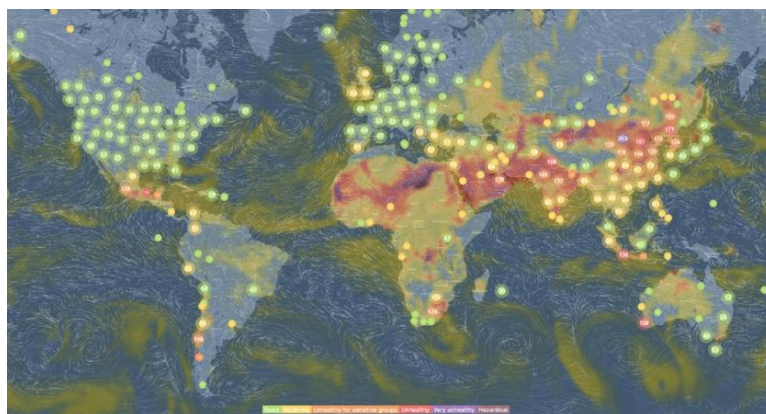
Technical Specifications

Size / Dimensions	- 20.2 x 6.9 x 16.2 cm (length x width x height)
Weight	- 608 g
Power	<ul style="list-style-type: none"> - Standard: via provided PoE injector (48 VDC 0.25 A) or IEEE-802.3at capable Ethernet switch and Ethernet cable - Optional: via specified USB adapter (5.2 V 2.4 A) and USB to micro USB cable
Power adapter	<ul style="list-style-type: none"> - Supply voltage Range: 100 to 240 V - Supply frequency Range: 50 to 60 Hz - Supply current max.: 0.6 A
Sensor modules	- Default update rate every 5 min
PM sensor	<ul style="list-style-type: none"> - Light scattering photo-sensor - American & Chinese AQI output - PM2.5: 0.3 to 2.5 μm - PM10: 0.3 to 10.0 μm - Concentration range: 0 to 4'000 $\mu\text{g}/\text{m}^3$ - Reaction time: 5 sec
CO2 sensor	<ul style="list-style-type: none"> - Non-dispersive infrared sensor (NDIR) - Measurement range: 400 to 10'000 ppm - Optional available, not standard
Temperature	- Measurement range: -30 to 60°C / -22 to 140°F
Humidity	- Measurement range: 0 to 100% RH, non-condensing
Atmospheric pressure	- Measurement range: 300 to 1'100 hPa

Join the Air Quality Community

IQAir reports data for more than 10,000 locations worldwide. Yet, still many places lack local air quality monitoring stations.

By making your AirVisual Outdoor public you can become an air quality data source for your local community.



Together, we can raise air quality awareness and provide the global air quality data needed for people, businesses and governments to implement change.

Visit us online for more information: **iqair.com**

Contact us

Have you questions about your device or the AirVisual app, please contact us:

- Website: iqair.com/contact
- Twitter: [@IQAir](https://twitter.com/IQAir)
- Instagram: [@iqair](https://www.instagram.com/iqair)
- Facebook: facebook.com/iqair

IQAir AG, Blumenfeldstrasse 10, Goldach, Switzerland, Phone +41 71 844 70 00