

INSTALLATION AND OPERATING INSTRUCTIONS

CLAIRSENSE INTELLIGENT INDOOR INFECTION-RISK SENSOR (CLS-IIIRS)

Version 1.0



DESIGN INTELLIGENT PRODUCTIVITY
www.clairsense.net



TURKISH STANDARDI-
ZATION INSTITUTE



CE MARKING EURO-
PEAN CONFORMITY



TECHNICAL INSPECTION
ASSOCIATION



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Foreword

We are pleased and congratulate our customers for choosing the market-leading CLAIRSENSE Intelligent Indoor Infection-Risk Sensor (CLS-IIIRS). Before commissioning, you should read this installation and operating instructions carefully to get to know the CLS-IIIRS and to ensure correct and safe use. The information and safety instructions in this installation and operating instructions are important for trouble-free operation of CLS-IIIRS. Therefore, keep this installation and operating guide safe. In case of loss, you can easily download the installation and operating instructions www.clairsense.net our website at any time.

If you give your CLS-IIIRS to other people for use, please also hand over these instructions and contact our support so that we can rewrite your account and update it accordingly to the new owner.

1 Subscription and Scope of Delivery

There are three subscription selections available, each with its own scope of delivery:

BASIC	PRO	BUSINESS
CLS-IIIRS	CLS-IIIRS and all features of BASIC	CLS-IIIRS and all Features of PRO
45-minute-intervals for < 24 hours	30-minutes-intervals for < 24 hours	15-minutes-intervals for < 24 hours
2 years Cloud-History	2 years cloud-History	3 years of cloud history
	- Email alerts - Cloud connection alerts (if the CLS-IIIRS goes offline due to a dead battery or other issue)	- Email alerts - Cloud connection alerts (if the CLS-IIIRS goes offline due to a dead battery or other issue)
Cloud Account	Cloud Account	Cloud Account

Scope of delivery

- 1 CLS-IIIRS
- Plug-in power supply 5V, 2.5 A
- Installation and Operating Instructions



2 Instruction Notes

Read this guide carefully before using your CLS-IIIRS. Keep this installation and operating instructions for future reference. If you give your CLS-IIIRS to other people to use, please also hand over this installation and operating guide and contact our support so that we can rewrite your cloud account and update it accordingly.

3 Warnings

Only open the CLS-IIIRS to change the battery, if your device is powered by batteries. No other changes or modifications are to be made. If damage is due to incorrect or improper handling, the claim for use and the warranty are void. In addition, damaged equipment must be compensated in this way.

- CLS-IIIRS does not contain any user-serviceable parts. If you notice any errors or misconduct, please contact our support team immediately.
- Only use the supplied plug-in power supply to connect CLS-IIIRS to the mains.
- Use CLS-IIIRS for indoor use only.
- Use CLS-IIIRS only in dry and dust-free environments. Do not expose the appliance to moisture, vibration or constant heat, such as sunlight or heat. Also, avoid exposing the appliance to cold or mechanical stress.
- Place or mount the CLS-IIIRS out of the reach of children and animals or persons with intellectual disabilities to avoid possible harm to both the device and persons or living beings.
- We assume no liability for damage to property or personal injury caused by improper handling or non-compliance with the safety warnings. In such situations, you are solely responsible for them. In addition, in such cases, you are obliged to pay for the device provided in your subscription. We do not accept any liability for possible consequential damages.

- Any use of CLS-IIIRS that is not described in these installation and operating instructions leads directly to the exclusion of warranty and liability.
- ARTEQ R&D AND ENGINEERING LTD. assumes no liability for damages caused by incorrectly determined or misrepresented values or predictions for the preservation of health and proposed countermeasures.

4 Function and device overview

CLS-IIIRS monitors and analyzes harmful concentrations in indoor air, i.e., that have a negative impact on human health, concentration and performance. According to the index value (Indoor Air Quality Index – IAQ), the sum of harmful air particles, such as PM2.5-PM10, volatile organic compounds (VOCs), carbon dioxide (CO2) calculated considering temperature, humidity and barometric pressure. Depending on the subscription model chosen, customers receive updated data at regular intervals of 45, 30 or 15 minutes, which are transmitted directly from the CLAIRSENSE cloud via configured Wi-Fi with Internet access. In addition to the 24/7 activity, CLS-IIIRS provides a 7-day predictive intelligent forecast of possible disease and infection risks. In addition, users receive efficient recommendations to take proactive countermeasures to minimize risk.

5 General System Information

After initial commissioning, the CLS-IIIRS undergoes a calibration process of up to one hour. During this phase, the values determined are not relevant. Deviations are also to be expected within the first four hours after the calibration is complete, as the device adapts to the environment during this time. Only after this initialization period does the CLS-IIIRS provide reliable data on air quality and health prognosis.

6 Intelligent Novelty Health Factor

The global unique selling proposition of CLS-IIIRS is characterized by its smartness. In addition to measurements and analyses of harmful indoor air, CLS-IIIRS proves its true artificial intelligence. Based on the currently prevailing indoor air quality, CLS-IIIRS directly analyzes whether there is a risk of disease and infection that is harmful to human health. In addition, CLS-IIIRS also determines future values in its 24/7 activity. Every 45, 30 or 15 minutes (depending on the subscription), the data is updated and based on this, new calculations are made for a 7-day prognosis of a possible risk of illness and infection. Data such as room size, number of people in the room and the length of stay of the people provide the CLS-IIIRS with detailed data for the display and prediction of disease and infection risk. With this continuous health check, CLS-IIIRS enables early and forward-looking prevention. The risk of illness and infection is indicated by factors in the CLAIRSENSE dashboard/app.

Depending on the weighting of the current and predicted disease and infection risk, CLS-IIIRS identifies the need for action and shares all necessary information via CLAIRSENSE dashboard/app.

7 Commissioning

Please read this section in its entirety before starting commissioning.

1. Carefully remove the CLS-IIIRS from the packaging and check the scope of delivery for completeness.
2. Choose a suitable place for the device.
3. Connect CLS-IIIRS to the power outlet using the supplied plug-in power adapter and turn on the device.
4. CLS-IIIRS is connected to the Internet. Therefore, make sure that your Wi-Fi is working.

Please refer to the setup (see Chapter 9) to fully configure the device and install the associated CLAIRSENSE app.

General information

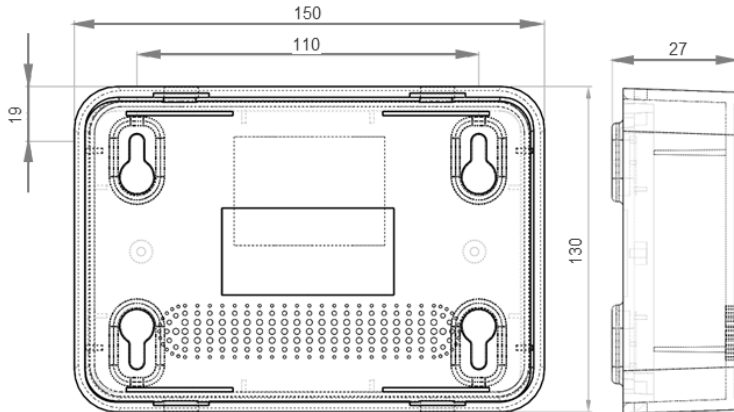
When laying the cable, make sure that it is not stretched tight. Lay the cable in such a way that it does not become an obstacle. Never pull on the cable of CLS-IIIRS.

Use as a tabletop device

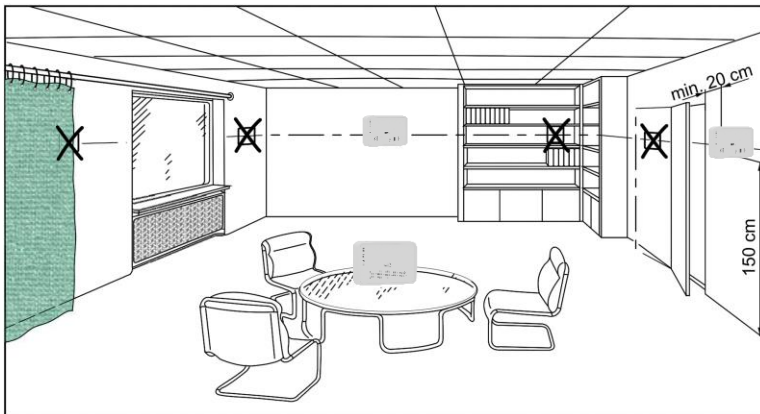
CLS-IIIRS can be placed on a table or other equivalent, horizontal surface. In any case, make sure that the CLS-IIIRS has a good footing, cannot wobble and is secured against falling.

Assembly

For wall mounting, the device offers holes provided at the bottom. Assembly is only permitted when the device is un-powered. Do not attach the CLS-IIIRS to magnetic fields and avoid assembly near ferromagnetic material. For example, 3.0 mm × 30 mm Phillips screws with flat head in combination with 5 mm standard S5 dowels are suitable for installation. Before drilling holes, make sure you don't drill into pipes, etc. The dimensions are in mm.



CLS-IIIRS can be mounted in a variety of ways – be it on drywall, in flush-mounted boxes or on smooth plaster.



In addition, please note the following placement instructions for optimal functioning:

- Ideally, mount the CLS-IIIRS at a height of 1.5 meters above the ground. In no case should the mounting height be less than 0.9 meters.
- Do not place or mount CLS-IIIRS inside shelves, behind curtains or other similar covers. In addition, avoid exterior walls, direct heat sources and draughts, as an unfavorable location can lead to falsification of the measurement results.
- Seal cans or installation lines to avoid interference with measurements.

- Position the CLS-IIIRS at least 5 meters away from windows, air filters, and fresh air outlets to avoid interference with the measurement.
- If the recommended distance cannot be maintained, install the CLS-IIIRS in a central location between windows and air outlets, placing it closer to the air outlet than the air intake.

8 Troubleshooting

Behavior	Reason	Solution
Indicator light flashes red	The device is connected to the mains but cannot connect to the Internet.	Check your internet connection and make sure the Wi-Fi settings are correct. If necessary, consult Chapter 7 or your router's documentation for further steps.
Indicator light does not flash at all	CLS-IIIRS is not receiving power, or the device is turned off	Make sure that the device is correctly connected to the mains and that the power switch (if any) is turned on. Also, check that the outlet is running power and that all connections are tight and secure.
Indicator light flashing blue	The CLS-IIIRS was unable to connect via Bluetooth	Make sure Bluetooth is enabled on your smartphone and within range of the CLS-IIIR. Then try to restart the device and pair it again. Also, check if other Bluetooth devices could interfere with the connection and turn them off if necessary. If the problem persists, refer to Chapter 9 Setting up the CLS-IIIR.

9 Setup

Requirements

- Operating system: iOS 11.0 or later or Android 10.0 or later
- Internet connection via Wi-Fi, Bluetooth

General information

Please note that CLS-IIIRS requires a stable internet connection for data updates and forecast calculations. Make sure you connect to the internet using your Wi-Fi, as updating your CLS-IIIR's mobile data can result in additional costs for your provider.

Functionality

CLS-IIIRS shows you all the important indicators of air quality in your room via CLAIRSENSE dashboard/app.

The dashboard/app provides you with the following features:

- Real-time indoor air quality measurements, including pollutant concentrations and particulate levels.
- Historical view of indoor air quality data to identify trends over a period.

- Notifications and warnings when defined limits are exceeded or when disease and infection risks are detected.
- Personalized recommendations for actions to improve and maintain health.
- Ability to remotely control and adjust settings to optimize monitoring.
- Built-in support and tips for maintaining and servicing your CLS-IIIRS device.
- An intuitive and user-friendly interface that allows easy navigation and interpretation of air quality data.

Registration

Please follow the steps below to register:

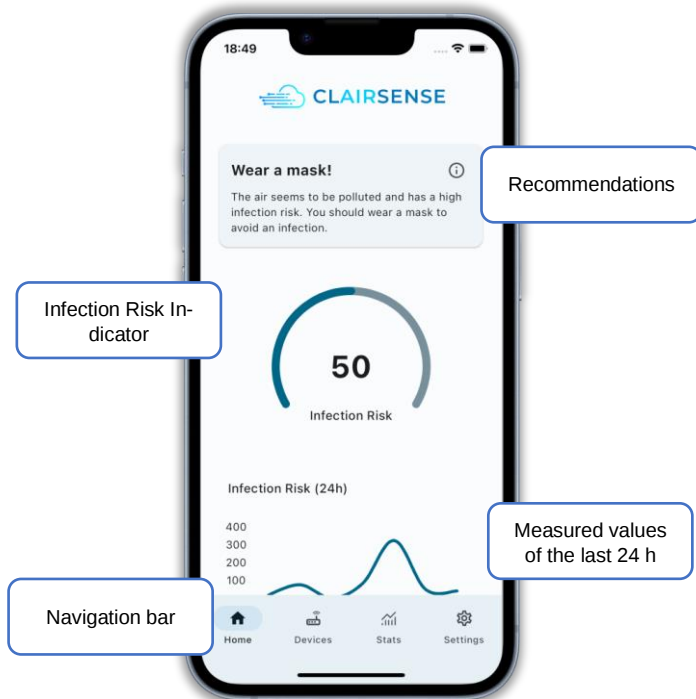
1. When registering, enter your email within the app.
2. Enter your desired password and confirm it by repeatedly entering it in the appropriate field.
3. Read the Privacy Policy carefully and confirm it with a tick that you have read and accept the Privacy Policy.
4. Confirm your entries by clicking on Register. You will then receive a confirmation email shortly, which you can use to confirm your account.
5. After confirming your account, you can then log in to the CLAIRESENSE app with your password and have access to the dashboard.

Setting up the CLS-IIIR

To set up your CLS-IIIR, please follow these steps:

1. Make sure your smartphone/tablet is connected to Wi-Fi.
2. Install the CLAIRESENSE app on your smartphone/tablet.
3. Enable Bluetooth on your smartphone to enable a connection to the CLS-IIIRS.
4. Connect the CLS-IIIRS to the plug-in power supply and turn on the device.
5. Open the CLAIRESENSE app and log in or register if you don't have an account yet.
6. Within the CLAIRESENSE app, navigate to the Devices section.
7. Add a new device by tapping the plus sign (+).
8. Scan the QR code that can be found on the CLS-IIIRS.
9. Enter the name and location of the device, as well as the average number of people in the room and the frequency of ventilation.
10. Tap Connect to initiate device setup.
11. Your smartphone/tablet will now establish a Bluetooth connection to the CLS-IIIRS. Enter the Wi-Fi password when prompted.
12. Once the Wi-Fi connection between the CLS-IIIRS and the intended network has been established, the setup process is complete.

How to use the CLAIRSENSE app



After starting the CLAIRSENSE app, an active notification will appear on your screen in the upper area, which adapts to the more measured indoor air quality and the determined risk of illness and infection. Personalized recommendations are based on the current environmental data.

In the middle of the CLAIRSENSE app is the infection risk indicator. This circular display shows you the current risk score, and just below it you are presented with a graph that shows the risk of illness and infection over the last 24 hours, so you can easily track the changes in air quality and risk of infection over time.

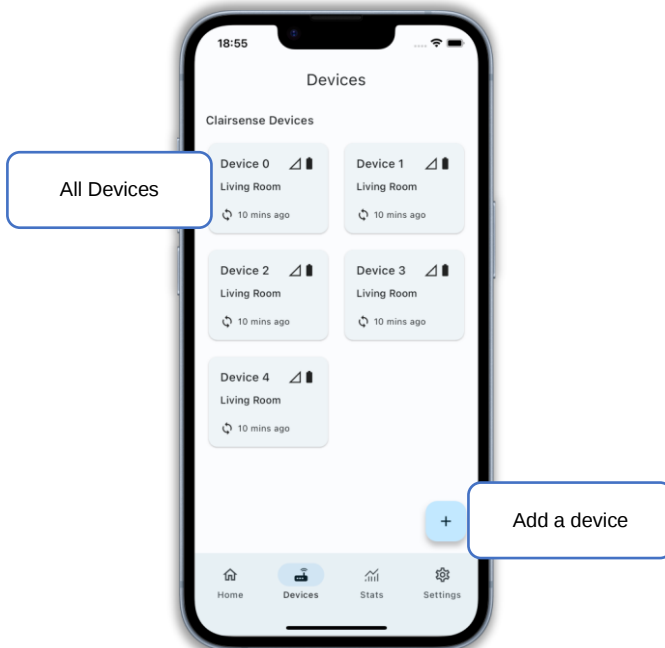
The interactive navigation bar at the bottom of the screen allows you to navigate through the CLAIRSENSE app:

- Select Home to return to the home page with the main display.
- At Devices, you'll find a list of all connected devices, with the option to customize settings.
- Stats gives you a detailed view of historical data and air quality statistics.

- In Settings, you can configure the CLAIRSENSE app according to your personal needs.

Overview of devices

In the device page of the CLAIRSENSE app, all connected devices are clearly displayed. Each device is listed in a separate field that contains the name of the device that has been assigned.



At the bottom of the page, there is a blue button with a plus sign. You can add more CLAIRSENSE devices to this list here. On the specific device page, which you can access by tapping on a specific device in the CLAIRSENSE app, you can perform a variety of actions:

Current infection risk score: The current infection risk score is displayed centrally, which helps you to assess the current risk of infection in the monitored environment.

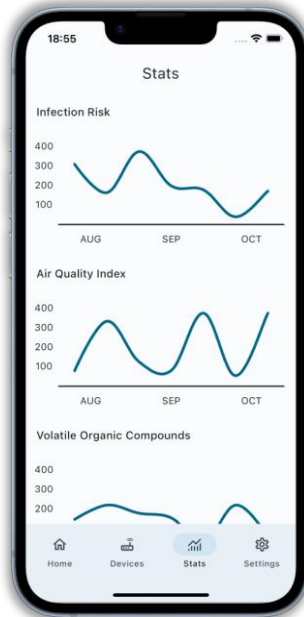


Up-to-date values: Above you will find the current readings for temperature, CO2 concentration, humidity and volatile organic compounds (VOCs), giving you an instant overview of indoor air quality.

Value histories of the last 24 hours: Further down the page, you will see graphs that show the history of the measured values for VOC, CO2 equivalent, and temperature over the last 24 hours. This historical data allows you to identify trends and understand how indoor air quality has changed throughout the day.

This gives you a comprehensive picture of the indoor air quality values measured by your CLS-IIIRS, and based on this information, it helps you take appropriate measures to improve indoor air quality and minimize the risk of illness and infection.

Air Quality Measurements



On the statistics screen (Stats) of the CLAIRESENSE app, you can see long-term trends of various measurement parameters in the form of diagrams. These will help you understand the evolution of indoor air quality and infection risk over longer periods of time:

Infection Risk: This value is based on the analysis of various indicators. A higher value indicates an increased risk of infection, which is particularly important to take preventive protective measures.

Air Quality Index: This metric aggregates several air quality parameters to give an overall assessment of air quality. It is crucial because poor indoor air quality can promote the transmission of pathogens and affect well-being.

Volatile Organic Compounds (VOCs): VOCs can be released from solid or liquid substances and affect indoor air quality. Some VOCs are known to increase infections.

Temperature: Temperature affects the survivability and spread of airborne pathogens. Temperatures that are too warm or too cold can affect the risk of infection indoors.

Humidity: Humidity plays an important role in the spread of respiratory diseases. Too little humidity can dry out airways, making them more susceptible

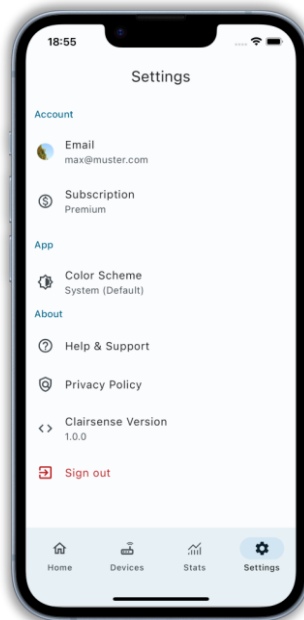
to infections, while too much moisture can promote mold growth and allergens.

Pressure: Although barometric pressure is not directly related to the risk of infection, it can affect other measurements and is important for the correction and accuracy of the other CLS-IIIRS values.

By understanding these parameters, you can better understand how the risk of infection in your environment is calculated and how you can use this information to improve the indoor climate and thus well-being.

Settings

In the Settings section of the CLAIRSENSE app, you can adjust your user account and app-specific settings.



Account:

Email: This will display your email address associated with your CLAIRSENSE account.

Subscription: Here you can view your current subscription status.

App:

Color Scheme: Choose the color scheme of the app. The default setting is System, which means that the app will adopt the color scheme of your device.

About:

Help & Support: Access to help resources and customer support in case you need help or have questions about the app.

Privacy Policy: Read the Privacy Policy to understand how your data will be handled.

CLAIRSENSE version: Here you can see the currently installed version of the app.

At the bottom of the page, you will find the Sign out option, which allows you to log out of your account.

10 Factory Reset

The factory settings of the CLS-IIIR can be restored. In the process, all settings of the device will be lost. The data in the cloud is not affected.

To restore the CLS-IIIR to factory settings, follow these steps:

1. Make sure your CLS-IIIRS is connected to the supplied plug-in power supply and to the mains and turned on.
2. Open the CLAIRSENSE app on your smartphone/tablet.
3. Make sure Bluetooth is enabled on your smartphone so that the CLAIRSENSE app can connect to the CLS-IIIRS.
4. In the app, navigate to the Devices section.
5. Select the device you want to reset.
6. Go to Device Settings.
7. Scroll down and tap Factory Reset.

11 Maintenance and cleaning

CLS-IIIRS does not contain any user-serviceable parts. Clean CLS-IIIRS with a soft, clean, dry and lint-free cloth. For the removal of heavier dirt, use only antistatic cloths. Do not use solvent-based cleaning agents or damp wipes. Otherwise, the plastic housing and the inscription can be attacked, as well as particles penetrating the interior can impair the function of CLS-IIIRS.

12 Specifications

The serial number of your CLS-IIIR can be found on the bottom of the device.

General	
Supply voltage	5 VDC
Power consumption	500 mA
Protection	IP20
Dimensions (without cable and plug-in power supply)	156 x110 x27 mm
Weight (without cable and plug-in power supply)	250g
Connectivity	
Bluetooth LE	2.4 GHz
Wi-Fi Radio Frequency	2.4 GHz
Sensors and Measurements	
Temperature	-40... 85°C
Humidity	0...100%
Pressure	300...1100 hPa
Gas Sensor	
Response time (τ 33-63%)	< 1 sec
Sensor-to-sensor deviation	+/- 15% +/- 15
Humidity Sensor	
Response time (τ 33-63%)	8 s
Accuracy Tolerance	± 3% relative humidity
Hysteresis	≤ 1.5% relative humidity
Pressure sensor	
RMS Noise	0.12 Pa
Sensitivity error	± 0.25%
Temperature Coefficient Offset	±1.3 Pa/K
Particulate sensor	
Size range of mass concentration	0.3 to 2.5 μm
Precision of mass concentration (100 to 1000 $\mu\text{g}/\text{m}^3$)	±10 %
Laser wavelength (DIN EN 60825-1 Class 1)	660 nm

We reserve the right to make technical changes.

If you have any technical questions about the device, please contact our support.

13 Compliance / Certificates

ARTEQ R&D AND ENGINEERING LTD. hereby declares that this equipment is in accordance with the essential requirements and the other relevant regulations of the relevant directives. The full declaration of conformity can be found at www.clairsense.net. The CE mark is an over-the-counter mark that is aimed exclusively at the authorities and does not contain any assurance of properties.



14 Notes in case of defective devices

Please do not dispose of defective equipment on your own, as they are the property of ARTEQ R&D AND ENGINEERING LTD. In the event of a defect, please contact our support immediately.

15 Imprint

Documentation, ARTEQ R&D AND ENGINEERING LTD, Turkey

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Changes in line with technical progress may be made without notice. Version 1.0 (November 2023)

WARRANTY CERTIFICATE

CLAIRSENSE products manufactured by our company ARTEQ F&D UND ENGINEERING LTD. are guaranteed against defects in material and workmanship for a period of 2 (two) years from the date of delivery.

During the warranty period, cables that are found to be defective by mutual agreement will be replaced with new ones as quickly as possible. This replacement is free of charge.

Cables that fail due to user-induced faults such as transportation, storage, installation, processing errors outside the areas of use and application conditions specified in our product catalog and on our website are not covered by the warranty.

CLAIRSENSE by ARTEQ F&D UND ENGINEERING LTD.

Date

