

#AIREVOLUTION

Introducing



TADIRAN AIROW™



Meet

TADIRAN AIROW™

An indoor air purification device,
That easily fits into your ducted air conditioner




INNOVATIVE TECHNOLOGY

That Ensures the Indoor Air is Clean and Safe

Tadiran AIROW is a simple plug and play purification technology that is installed inside any ducted air conditioning system, it utilizes **Hydrogen Peroxide** (H_2O_2) to effectively neutralize pathogens in indoor spaces, EPA¹ declared that indoor spaces can be 2-5 times more polluted than outdoor spaces.



¹Purified Hydrogen Peroxide, U.S. EPA- <https://www.epa.gov/iaq-schools/why-indoor-air-quality-important-schools#:~:text=EPA%20studies%20of%20human%20exposure,percent%20of%20their%20time%20indoors.>

In FDA-cleared lab tests  **TADIRAN AIROW**
has been proven to eliminate COVID² viruses³,
bacteria ⁴ and 98.93% mold⁵ at up to
99.998%

5

²TADIRAN AIROW reduced detected SARS-COV-2 aerosol levels by 99.998% within 1 ½ hour (1 cubic meter test chamber). ³TADIRAN AIROW reduced MS2 levels by 99.9988% in 2½ hours (1 cubic meter test chamber). ⁴TADIRAN AIROW reduced Staphylococcus Epidermidis by 99.9973% in 2½ hours (1 cubic meter test chamber). ⁵TADIRAN AIROW reduced levels of Aspergillus Niger by 98.93% in 2 hours (1 cubic meter test chamber).

It's a proven fact!

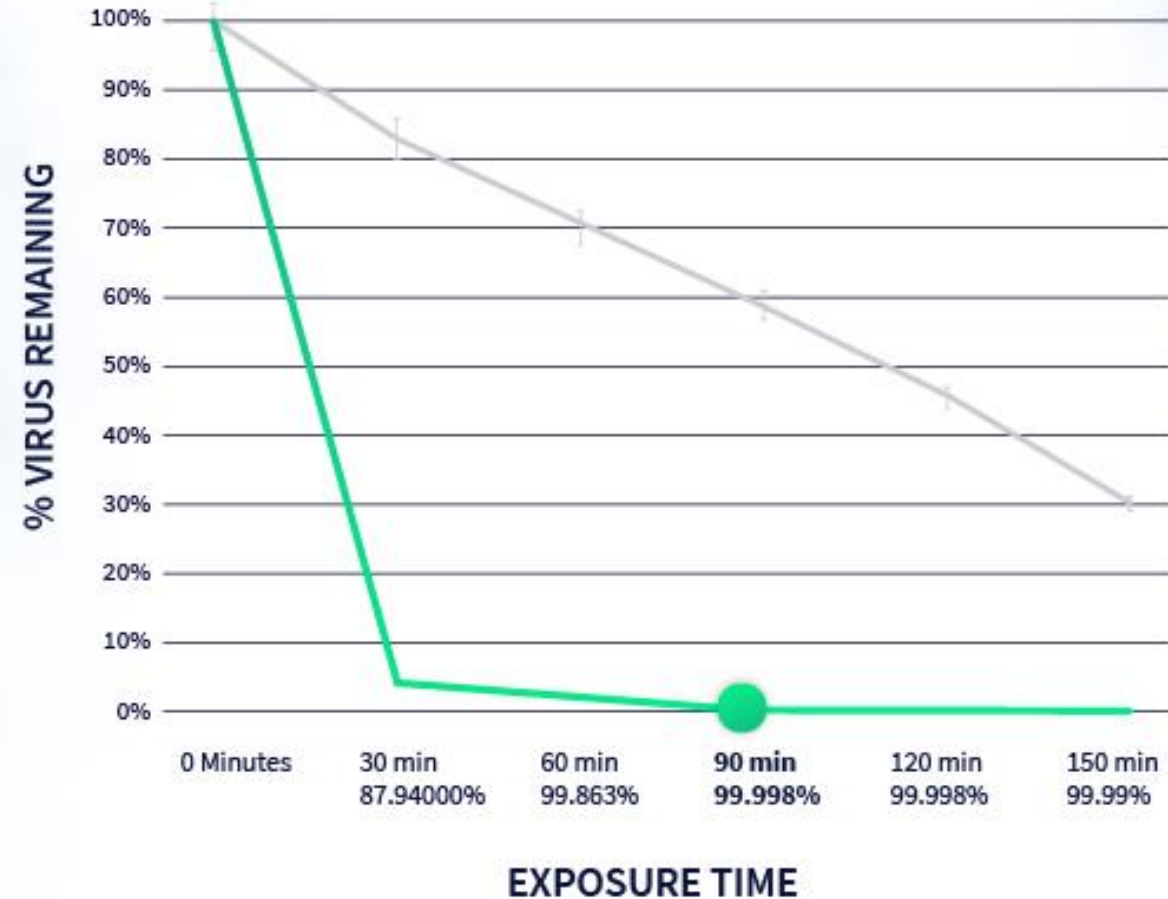
TADIRAN AIROW eliminates COVID⁵



COVID-19

SARS-CoV-2 NUETRALIZATION

TADIRAN AIROW Control



*In a one cubic meter test chamber

⁵ TADIRAN AIROW reduced detected SARS-COV-2 aerosol levels by 99.998% within 1 ½ hours [1 cubic meter test chamber]

WHAT IS Hydrogen Peroxide?



Hydrogen Peroxide is a common chemical compound that is often used as an antiseptic, oxidizer and bleaching agent known to be a highly effective cleanser that reduces microbial contaminants from the air. Hydrogen Peroxide's properties have made it a popular choice for use in common household products such as toothpaste, antiseptic for a cut and even used for sterilization in medical and surgical procedures for more than 100 years. Hydrogen Peroxide is a **SAFE**, highly effective, nontoxic cleanser when used at appropriate levels according to OSHA's² standard.

Leveraging water molecules (H_2O) already present in the air, Tadiran AIROW converts water (H_2O) & Oxygen (O_2) molecules into less than **7 ppb** of Hydrogen Peroxide. Tadiran AIROW is a SAFE solution with **over 50x times** less concentration than OSHA's recommendation of 1,000 PPB and can still achieve a **99.9988%-98.93%** reduction of airborne pathogens.

[Download Hydrogen Peroxide white paper →](#)

² OSHA STANDERS: The legal airborne permissible exposure limit (PEL) is 1,000 ppb averaged over an 8-hour work shift.

Health Guidelines for Hydrogen Peroxide, US Dept. of Labor, Occupational Safety & Health Administration, OSHA - <https://www.osha.gov/>

WHY USE **Hydrogen Peroxide**?



**Highly effective in neutralizing
Viruses, bacteria & molds**



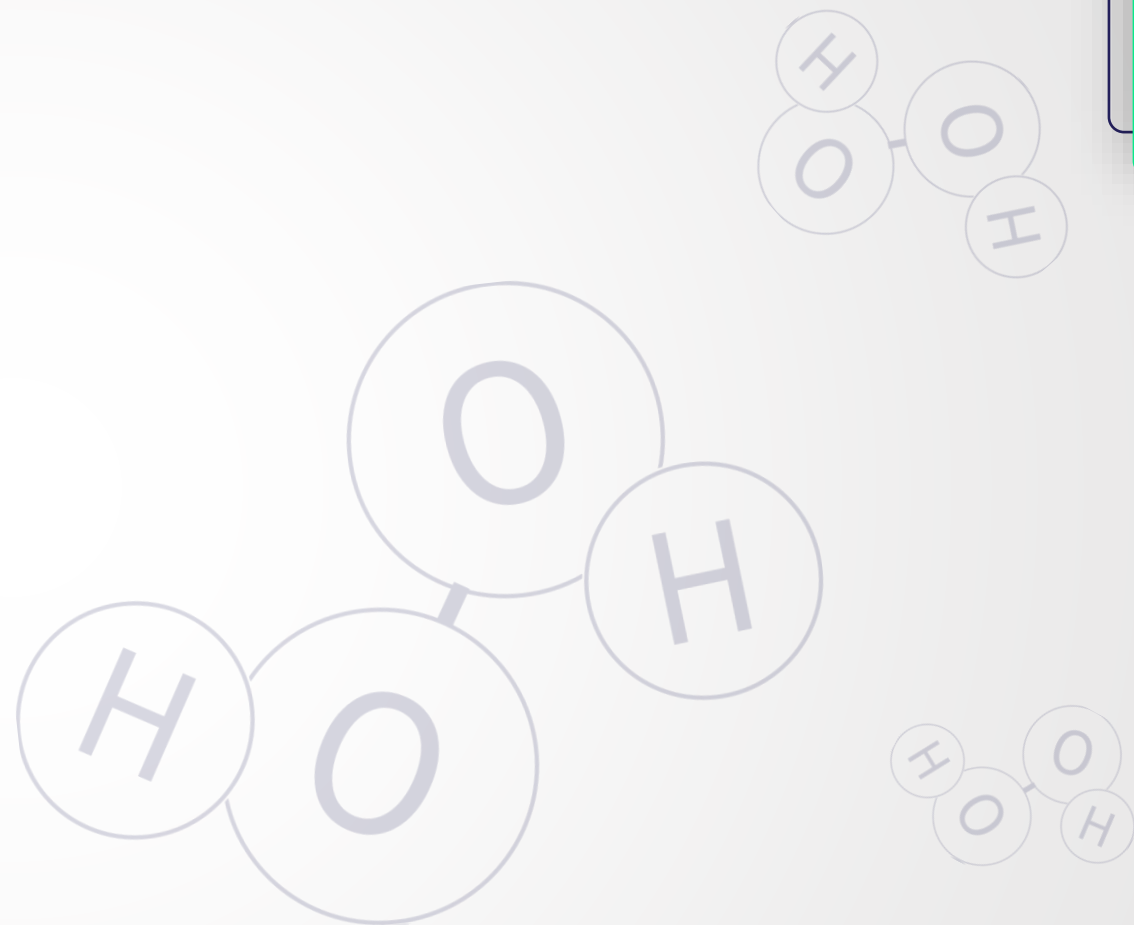
Safe to use in any size space



**Purifies large spaces &
reaches inaccessible areas**



Has a long-lasting effect
up to 24 hours after the unit is turned off





Hydrogen Peroxide GENERATOR

Patented Purification Technology

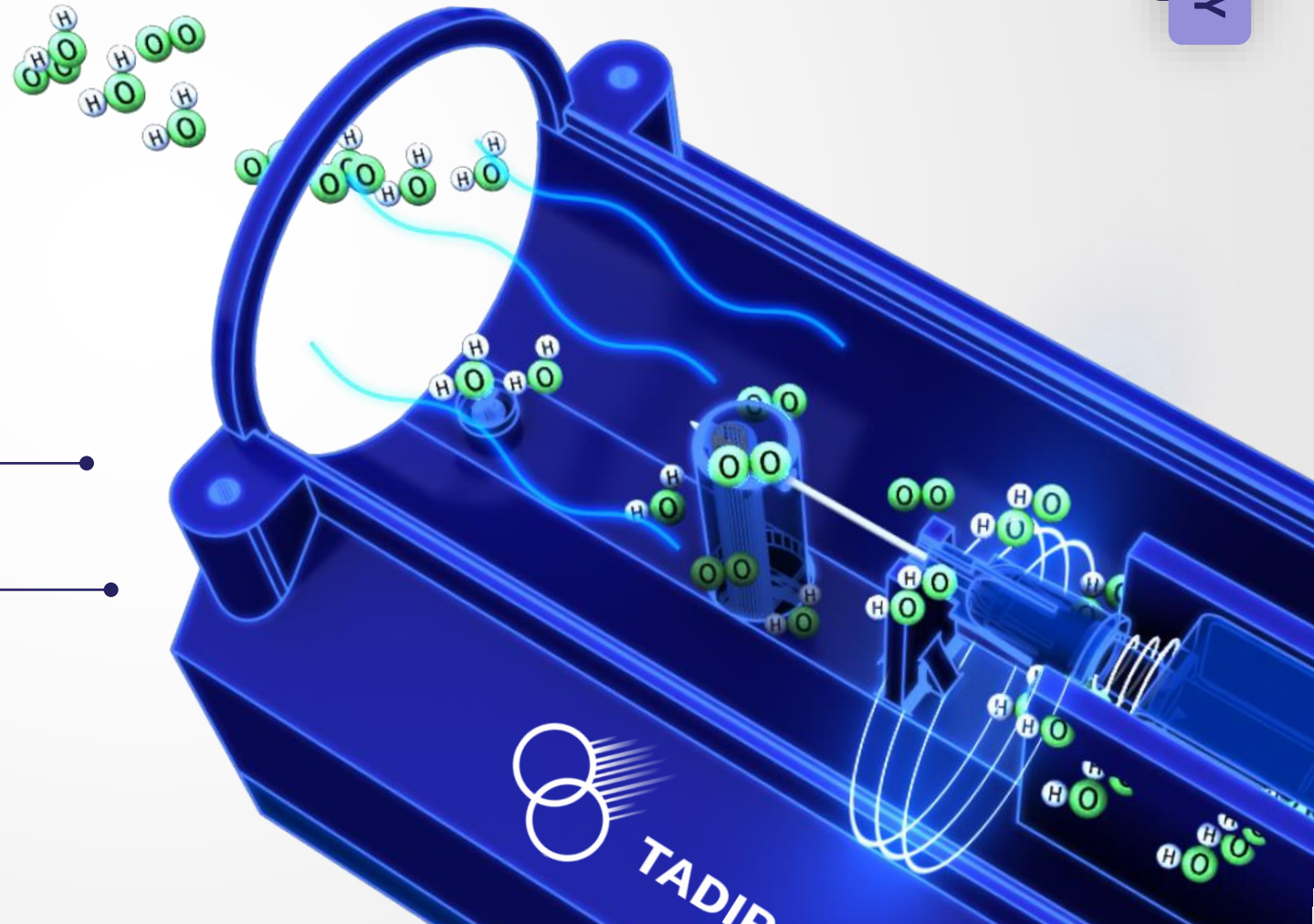
THE TECHNOLOGY

INNOVATIVE & SAFE.

{1} Patented Self-Cleaning Mechanism (#Riskin-3)

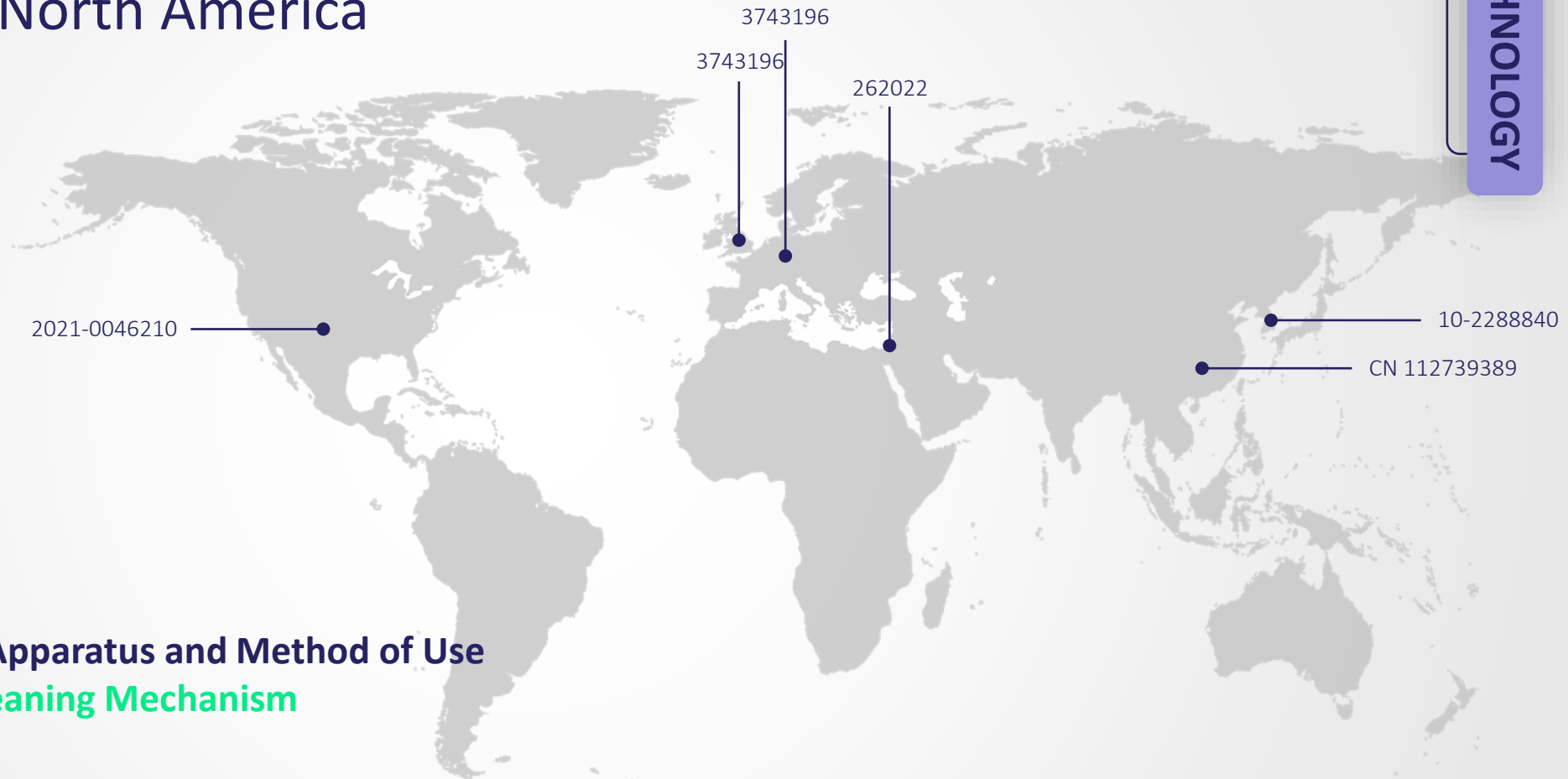
{2} Patented Method of Use (#262022)

[Download Our Patents →](#)



A RECOGNIZED PATENT

Globally and in North America



{ 1

Air Disinfection Apparatus and Method of Use
Patented Self-Cleaning Mechanism

{ 2

Method and Device for Cleaning of Ionizing Electrodes
Patented Method of Use



{ 1

Patented Self-Cleaning Mechanism

When a reduction in electrical current is detected, the needle is moved in a motion that creates friction, enabling it to release collected dust.





No Ions



{ 2

Patented Method of Use

Produces Hydrogen Peroxide by generating an electrical discharge without releasing any ions into the air.

WHY ARE WE SAFE?



Global Standard

Tadiran AIROW Produces Hydrogen Peroxide In Amounts Far Below The OSHA Approved Limit

According to OSHA³: “The legal airborne permissible exposure limit (PEL) is 1,000 ppb averaged over an 8-hour work shift.”

Tadiran AIROW creates less than 7 ppb which is:

Over 50x less than the permissible amount.

WHY ARE WE EFFICIENT?

Wondering what all these numbers mean?

Let's take 1ppb of Hydrogen Peroxide as an example



99.9988%

1 ppb means that each single 1cm_3 of air contains approximately

17,700,000,000,000

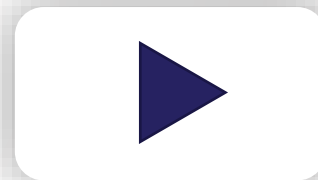
Of Hydrogen Peroxide gas molecules making them less than 10 micron apart.

Therefore, airborne Bacteria, viruses and molds can't travel far before being eliminated by this effective technology.

HOW IT WORKS

Take an inside look at the **Tadiran AIROW** Purification Technology:

- 1** | **O₂ and H₂O are streamed through the electrical discharge zone**
- 2** | **O₂ is separated into two Oxygen atoms that combine with the H₂O molecules in the airflow – transforming it into Hydrogen Peroxide (H₂O₂)**
- 3** | **Hydrogen Peroxide (H₂O₂) is released into the air in the conditioned space**
- 4** | **Once Hydrogen Peroxide (H₂O₂) encounters COVID, bacteria, viruses or mold it inactivates and breaks these into harmless CO₂ molecules which fade into the air**



WHAT IT OFFERS?



TADIRAN AIROW 1™ BENEFITS

- A** | Function & Features
- B** | Certified & Validated
- C** | Proven By Test Results
- D** | Live Successful Tests

THE PRODUCT



FUNCTION & FEATURES



Eradicator of Bioaerosols - Eliminates COVID, Bacteria and Viruses by up to **99.9988%**



Built-in monitoring circuit - for operation indication/BMS integration capability



Zero Maintenance - due to patented automated self-cleaning mechanism



Long-lasting effect – continues to purify the air up to 24 hours after the unit is turned off



Plug & Play - easy to install in any ducted AC system⁴



Vast Functionality – applicable anywhere: from residential, to schools, new construction, hospitality, and senior living



Low Electricity Usage - consumption of 1W



Low TCO- zero expenses on maintenance and part replacement

⁴ Is installed in the air inlet of the indoor unit. Only qualified and licensed HVAC technicians may install this device.

CERTIFIED & VALIDATED



Precisely Right.

TÜV Rheinland

RECOGNIZED
COMPONENT



Intertek

Intertek US

Meets California ozone emissions
limit: CARB certified.

California Air Resources Board
(CARB)








Validated for zero ozone
emissions (UL 2998)



CE Certified

PROVEN BY OUR TEST RESULTS

6 Log Net Reduction

Bioaerosol Type	Species/Protocol	Testing Lab	Results	Labs & Marks
Virus	RNA Virus MS2 Bacteriophage	Aerosol Research and Engineering Laboratories	99.9988%	 
Bacteria	Staphylococcus Epidermis vegetative (+)	Aerosol Research and Engineering Laboratories	99.9973%	
Mold Spore	Aspergillus Niger	Aerosol Research and Engineering Laboratories	98.93%	
COVID	SARS-COV-2	Innovative Bioanalysis	99.998%	
Volatile Organic Compounds (VOC)	Method TO-15	EMSL Analytical laboratories	VOC emission safe	 EMSL ANALYTICAL, INC.
Formaldehyde	Method 2016	EMSL Analytical laboratories	Reduction in levels of Formaldehyde	
Hydrogen Peroxide	OSHA 1019	LCS Laboratory-Canada	< 7 PPB	
Ozone Emission	IEC 60335-2-65 UL 867, UL2889	TUV/Intertek	2.5 PPB- Ozone Free Zero Ozone Emission	 Precisely Right.



LIVE FIELD TEST



hylabs

Live field experiment conducted in the largest chain of movie theatres in Israel



Up to
88%

Decrease in levels of bacteria

~ **88%**

Decrease in the levels of mold



[Download our Cinema City Live Field Experiment](#) →

⁷ TADIRAN AIROW reduced up to 90% in levels of bacteria and mold in a 700 m³ cinema auditorium the size of 700 m³. Tested by Hylabs. Scientific overview & protocol was developed by Professor Ariel Kushmaro of Ben Gurion University of the Negev.



TADIRAN AIROW™

THE VALUE

THE SOLUTION THAT IS BOTH EFFICTIVE AND SAFE

SAFE

- ✓ Low levels of Hydrogen Peroxide
- ✓ Ozone Free
- ✓ VOC Emission Tested
- ✓ NO IONS

EFFICIENT

- ✓ Eliminates testes patogens by up to 99.998%
- ✓ Proactive and long-lasting effect
- ✓ Covers large spaces & treats inaccessible spaces

ECONOMICAL

- ✓ Value for money
- ✓ Lower total cost of ownership
- ✓ Zero operating costs
- ✓ Low energy usage



Zero Maintenance



H2O2
Proactive Technology



Ozon Free*



Highly Effective Against
Biological Pathogens



Low Energy Usage



Global Patents



Plug & Play



VOC Emission safe

*UL 2998/ OZONE FREE - TADIRAN AIROW Is verified as zero ozone. Meets UL 2998, does not emit more than 0.005PPM as tested per UL 867.



TADIRAN AIROW 1™

HOW TO INSTALL?

Installation Manual

Air Purifier

Model: TADIRAN AIROW 1™

INSTALLATION MANUAL - CONTENTS

1. The Device
2. Included Parts
3. System Specification
4. How Does It Work?
5. How To Operate the Device?
6. Prior to Installation: Inspection & Location
7. Installation Steps
8. Installation Completion: Verification
9. Safety
10. Warranty
11. Getting the Best Performance From Your System

THE DEVICE



INCLUDED PARTS

The Tadiran AIROW device kit contains the following items:



TADIRAN AIROW 1



*** WIRED POWER SUPPLY**

230 VAC \pm 10%



INSTALLATION MANUAL



**BRACKET AND
INSTALLATION SCREWS**

* Component to be updated with latest version

OPTIONAL PARTS

To be purchased separately:



INSTALLATION PLATE

P/N:51619205400



DISPLAY KIT

P/N:51619204400

SPECIFICATION



TADIRAN AIROW 1™

Electrical

Power Supply Input Voltage	230 VAC ± 10%
Power Supply Output Voltage	12 VDC +-5%
AC Power Consumption	3 W Max
Device Power Consumption	1 W Max

Mechanical

Weight	0.66 lbs / 300 g
Dimensions	5.4" x 4.1" x 3.0" / 136 x 104 x 75 mm
Housing Material	ABS plastic
Color	White

Environment

Operation Temperature	23°F - 131°F / -5°C to +55°C
Operation Humidity	20%-90%, <u>Non-Condensing</u>
Air Flow Rating	4000 M3/H

Features

LED Indication	Green: Proper Operation / Red: Failure
Maintenance Free	Self-Cleaning Mechanism

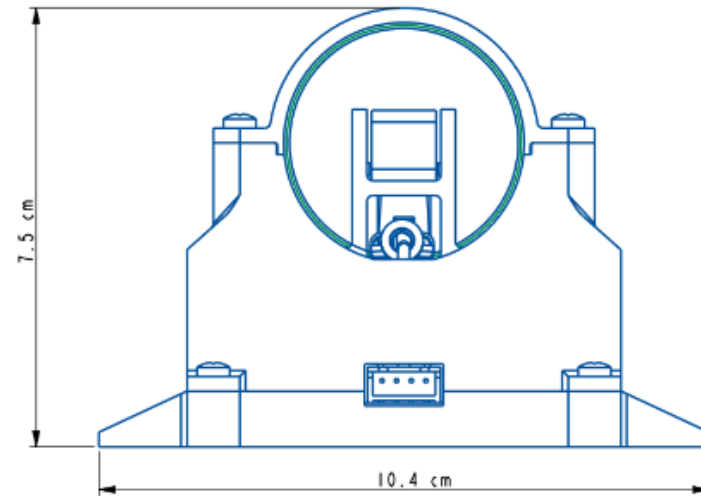
Gas Emission

Hydrogen Peroxide Concentration	< =15 ppb
Ozone Concentration	<5 ppb

OUTLINE DRAWING

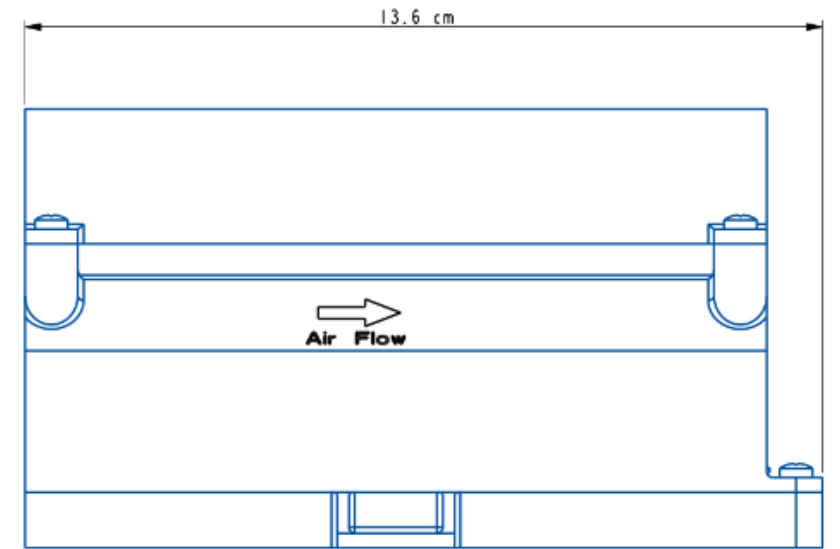


Front View



front view

Side View

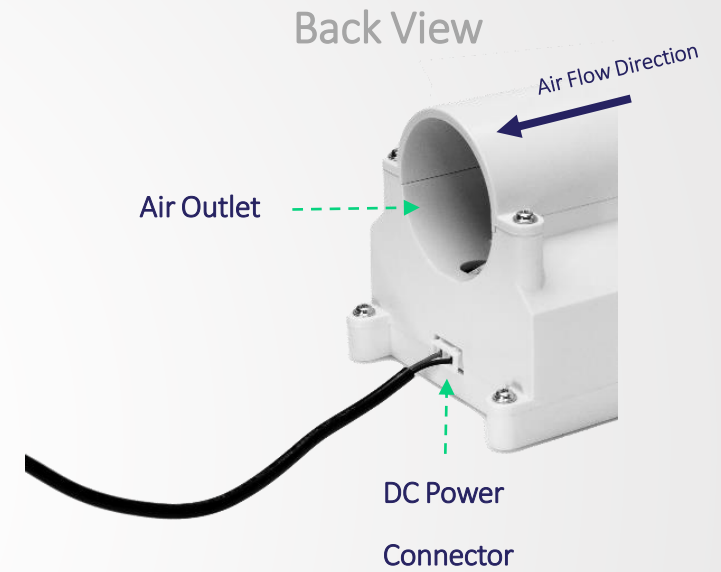
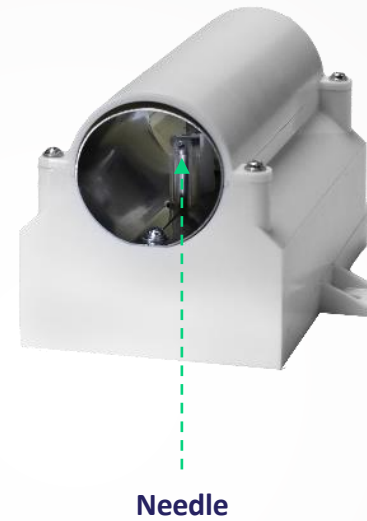


side view

*All dimensions are in inches

MEET TADIRAN AIROW 1™

HOW DOES IT WORK?

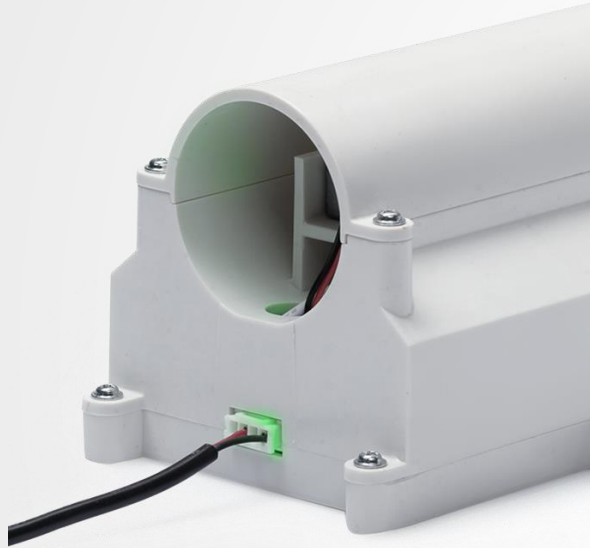


The Tadiran AIROW, converts moisture (H₂O) and Oxygen (O₂) into Hydrogen Peroxide (H₂O₂). Hydrogen peroxide is capable of effectively treating the polluted air in the air-conditioned space. The Hydrogen Peroxide destroys bacteria, viruses and mold when emitted into the air-conditioned space, striking the perfect balance between safety and efficiency.

The principle of operation is based on the formation of an electric field between a medical needle located in the center of the device and a metal cylinder that surrounds the inside of the device. The device includes an automatic needle cleaning mechanism that operates when the electronic circuit detects the need for cleaning. You will hear a clicking sound when the automatic cleaning mechanism is activated.

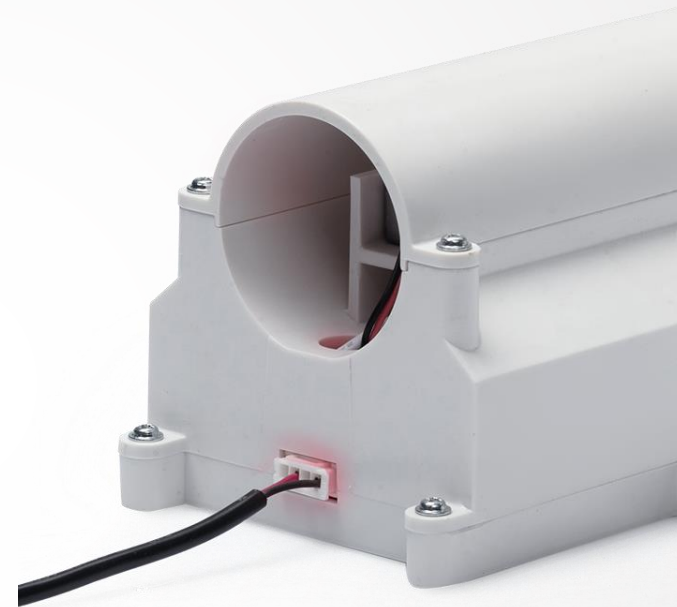
MEET TADIRAN AIROW 1™

HOW TO OPERATE THE DEVICE?



Device Activated

The device operates when it is connected to the power supply, and immediately starts purifying the air entering in the air-conditioned space.



Device Adjust

When activated, a **green LED** indicator inside the unit lights up to indicate the correct operation of the device. A **red LED** indicates a malfunction.

INSPECTION PRIOR TO INSTALLATION

After carefully opening the carton, unpack and inspect your Tadiran AIROW. Check the following:

✔ **No Damage to the Tadiran AIROW Box**

✔ **No Damage to the Tadiran AIROW Device and Accessories**

✔ **Important! The Air Flow Direction** - an arrow on the Tadiran AIROW unit

indicates the correct air direction. Ensure the device is oriented according to the arrow's direction, so that power supply connector face is located inwards towards the indoor unit.



Safety Disclaimer – Please NOTE!

- Only qualified technicians may install this Tadiran device.
- The installation is to be carried out in accordance with applicable regulations.
- Please read the instructions carefully.

LOCATION OF THE



TADIRAN AIROW 1™

This section provides instructions on where to locate the Tadiran AIROW within an HVAC indoor unit.

- ✔ **Installation Location** - The Tadiran AIROW is installed inside the indoor air conditioning system.
- ✔ **Installation Direction** - The device is to be installed either in the return air side ,the air supply outlet of the air conditioner ductwork, or in the indoor unit between the filter and coil where the air flows through the Tadiran AIROW unit in the arrow direction.
- ✔ **Environmental Conditions** - To assure proper operation, verify that the temperature surrounding the device is within 23°F -131°F and relative humidity is kept under 20% to 90%, **Non Condensing**.
- ✔ **Device Footprint** – The footprint of the device is 5.3 x 4.1 inch.
- ✔ **Clearance** - Allow 2-inch clearance for air inlet and outlet at both device’s openings. Ensure the surface area of installation is free of dust, cables, and any other interference.
- ✔ **Air Flow Velocity** - To assure proper operation, verify the air velocity through the device will be 320 ft/min or above.

Safety Hazard – Please NOTE!

Disconnect the air conditioner and the Tadiran AIRROW from the mains supply before performing the installation or before servicing the device.

INSTALLATION STEPS



TADIRAN AIROW 1™

INSTALLATION:

1

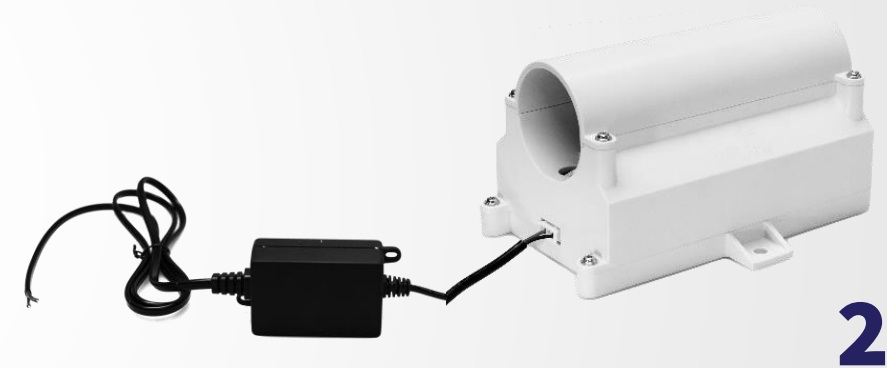
Connect the white connector of the DC Power Supply cable to the Tadiran AIROW DC Power Connector.

NOTE: To stop the appliance operation, disconnect the DC power supply.

Following is a diagram of the electrical connections, describing the Tadiran AIROW connections to the electrical box. In order to power the Tadiran AIROW only when the indoor fan is on, connect the power supply input to the indoor unit fan control.

2

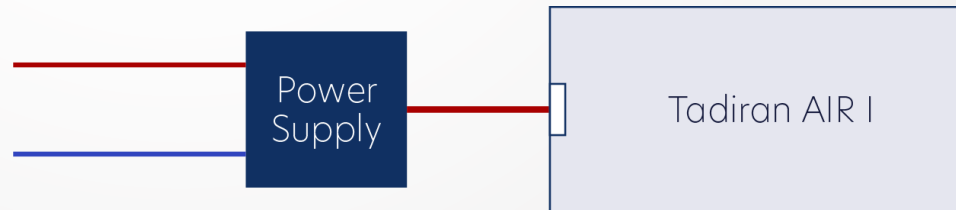
To disconnect the unit from the power supply, disconnect the DC power white connector from the Tadiran AIROW unit.



1

24VAC from Room Thermostat Fan Relay (Terminal G)

24VAC Neutral (Terminal C)

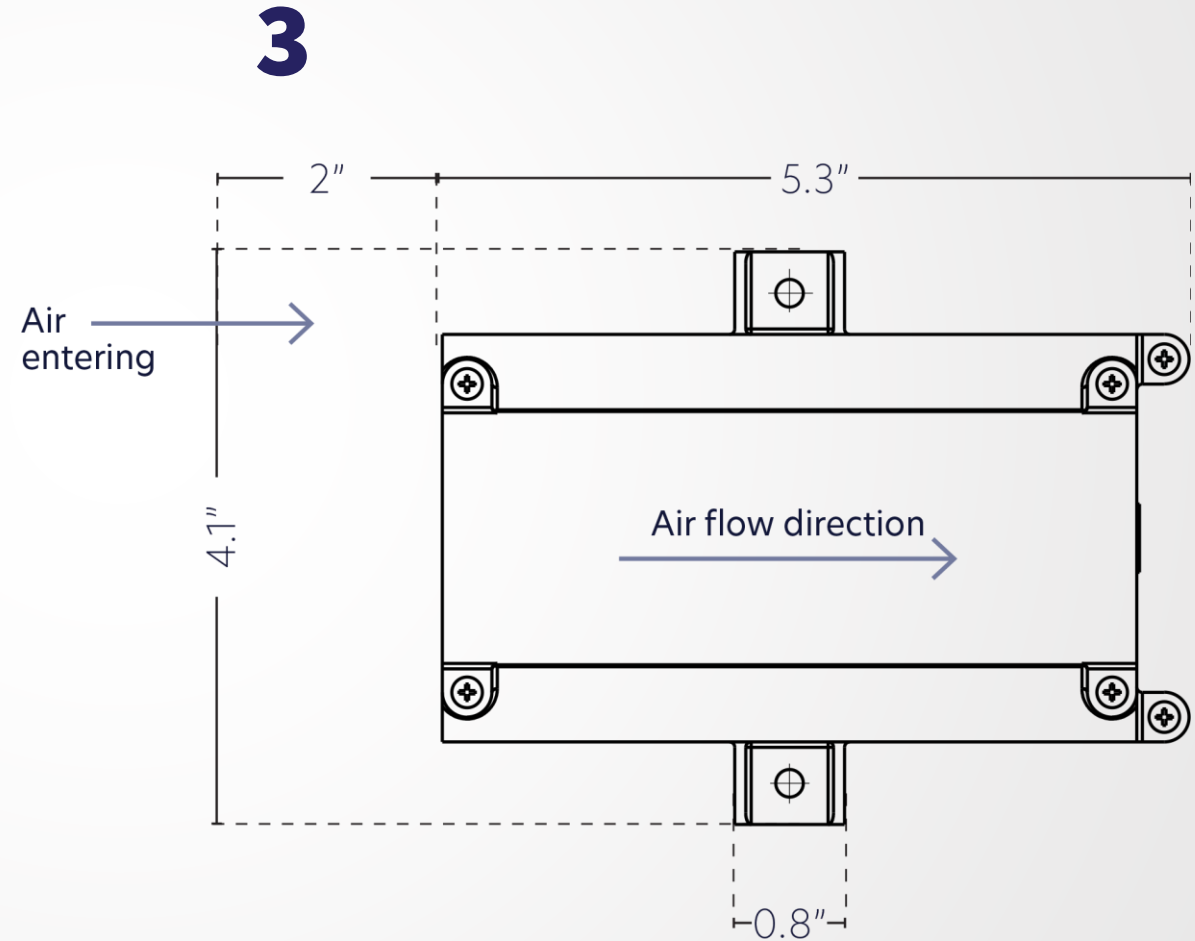


NOTE: Means for the disconnection of the supply mains must be incorporated in the fixed wiring in accordance with the wiring rules.

INSTALLATION:

3

The following installation diagram describes the required minimum space dimensions for safe appliance installation:



*All dimensions are in inches

INSTALLATION:

4

Two magnets are attached to the base of the unit. Mount the Tadiran AIROW to a metal surface using this **easy-to-install** option.



4



PLUG & PLAY

INSTALLATION USING A BRACKET

1

Use this installation option where the duct wall is coated with insulation material or where it is required to locate the device closer to center of the air flow, for the purpose of obtaining the necessary air velocity of 320 ft/min.

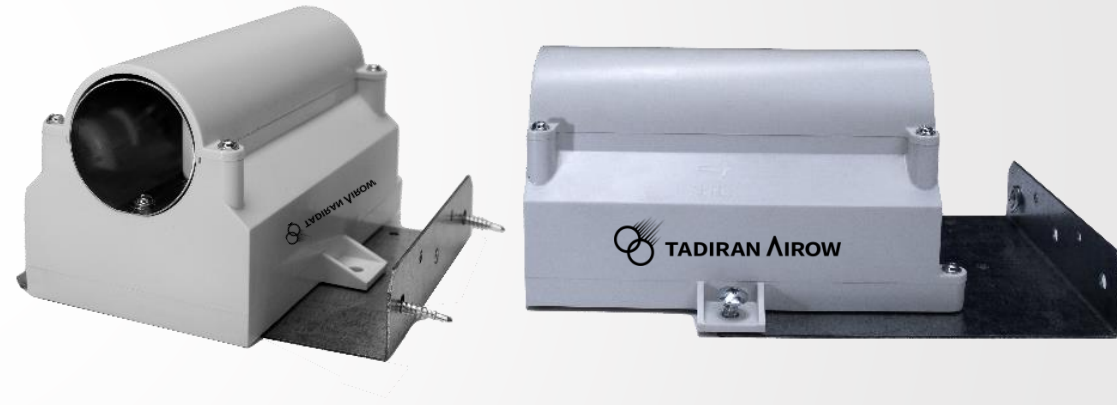
1



2

Mount the Tadiran AIROW on the bracket.

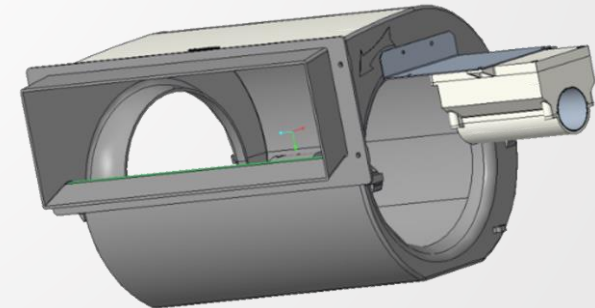
2



3

To install the Tadiran AIROW on a blower housing (inside the IDU), refer to the drawing below.

3

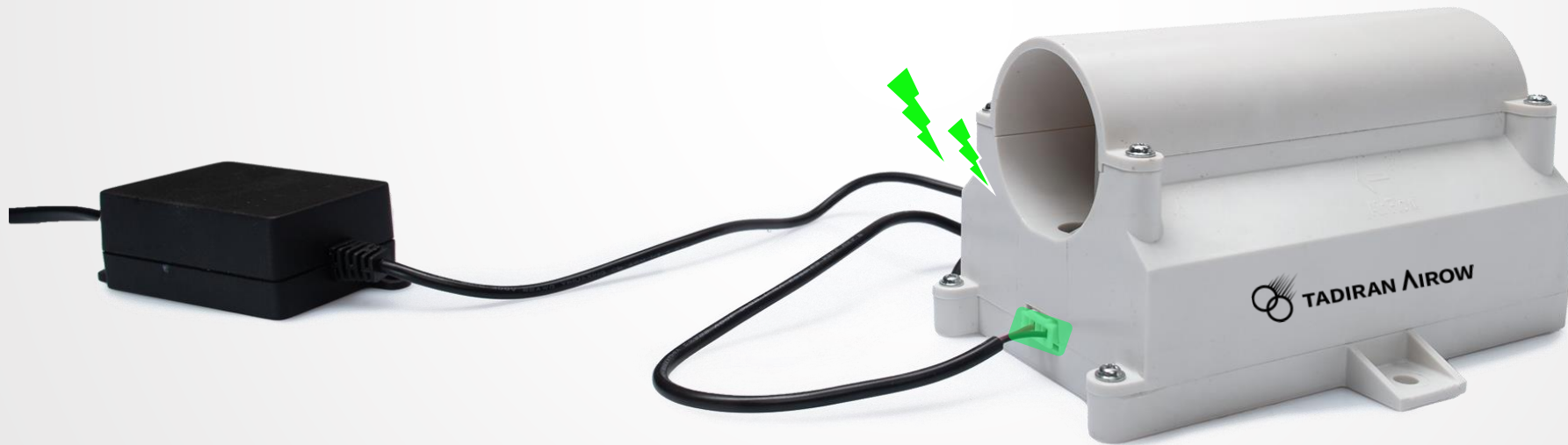


Disclaimer

- Magnets kit is not supplied, and intended to be purchased separately.
- Magnets kit is intended for IDU or air inlet duct installation.

VERIFICATION

A green light will appear immediately after connecting the DC power. This indicates proper operation of the device.



WARRENTY

Activating Warranty

To activate 3-year warranty, follow instructions on the warranty certificate. For a system issue that is under warranty, please be prepared to provide the following:

- ✔ **The Serial Number (Stamped on warranty card).**
- ✔ **A Copy of the Bill of Sale or Invoice.**
- ✔ **Proof of Installation by a Licensed HVAC Contractor**

Contact office@balanceair.com or your local distributor for any further questions.

Indication for Use & Legal, Patent Info

INDICATION FOR USE

- ✔ This product is not a medical device and is not intended to be used as a medical device or to cure any disease or condition, nor should it be used in the mitigation, treatment, or prevention of any disease or condition.

LEGAL NOTICE

- ✔ Only qualified and licensed HVAC technicians may install this device. Electricity should never be connected while touching the inner parts of any electric device. Tadiran will not be liable for any loss or damage in any case of misuse or installation by a non-qualified person or not with compliance to the directions included in this manual.

PATENTS INFORMATION



Patented Method of Use

USA Patent No. U.S.A 2021-0046210

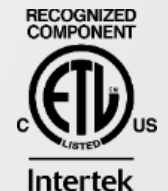
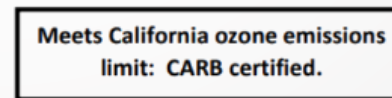
Patented Self-Cleaning Mechanism :

USA Patent No. U.S.A 9,630,185



Confirms To:

CARB Certified (California Air Resources Board)
cETLus recognized component mark (UL 867 + CSA C22.2)
Validated for zero ozone emissions (UL 2998)



MADE IN EUROPE

Safety Hazard

- ✔ This appliance must only be powered with short-circuit proof, safety extra low voltage (SELV) corresponding to the marking on the appliance.
- ✔ This appliance must only be supplied at SELV.
- ✔ This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- ✔ This appliance is not intended to be installed as a stand-alone device. It is always installed in an indoor system of a ducted air conditioner (the receiving equipment).
- ✔ Verify that the installation is performed in accordance with the installation diagrams.
- ✔ Means for disconnection of the supply mains must be incorporated in the fixed wiring in accordance with the wiring rules.
- ✔ This instruction is intended for installing the purifier in the receiving equipment.
- ✔ Note that the device contains a sharp needle which carries high voltage and might cause injury upon physical contact with the enclosed needle point.

- ✔ The mains to the DC power supply (not supplied) should have a contact separation in all poles that provide full disconnection under overvoltage category III conditions. The means for disconnection shall be either a 2-pole switch or a quick disconnect mains plug.
- ✔ The device technology will only be effective while the HVAC fan is turned on.

NOTE!

- ⚠ **Only qualified and licensed HVAC technicians may install this device.**
- ⚠ **The installation is to be conducted in accordance with applicable regulations.**



TADIRAN AIROW FOR SPLIT

AVAILABLE
SOON





Thank you.



TADIRAN AIROW

Join our #AIROWEVOLUTION
www.tadiran-international.com

APPENDIX

Resources

IAQ & SCHOOLS	PUBLICATIONS
How Does Indoor Air Quality Impact Student Health and Academic Performance?	US Environmental Protection Agency
Mold in Schools	US Environmental Protection Agency
Why Indoor air quality is important to schools	US Environmental Protection Agency
Indoor air quality and health in schools	Brazilian Journal of Pulmonology, 2014
Indoor Air QQuality in Primary Schools	International Journal of Environment and Pollution (Int J Environ Pollut), 2012
The Right to Breath Healthy Indoor Air in Schools	European Federation of Asthma and Allergy Associations, 2001
Schools Indoor Pollution & Health Observatory Network in Europe	Sinphonie - School Indoor Pollution and Health, and Regional Environmental Center, 2014
Creating Healthy Indoor Air Quality in Schools	US Environmental Protection Agency
IAQ & CHILDREN	PUBLICATIONS
Assessing Impact of Household Intervention on Indoor Air Quality and Health of Children with Asthma in the US-Mexico Border: A Pilot Study	Journal for Environmental & Public Health, 2020
IAQ & PETS	PUBLICATIONS
An observational study of the role of indoor air pollution in pets with naturally acquired bronchial/lung disease	Veterinary Medicine and Science, 2020
Association between indoor air pollution and respiratory disease in companion dogs and cats	Journal of Veterinary Internal Medicine, 2018
Does air pollution affect our furry friends	Minnesota Pollution Control Agency,
IAQ & OFFICE BUILDINGS	PUBLICATIONS
Economic, Environmental and Health Implications of Enhanced Ventilation in Office Buildings	Enviromental Research & Public Health, 2015
Assessment of Indoor Air Quality Problems in Office-Like Environments: Role of Occupational Health Services	Enviromental Research & Public Health, 2018