

MULTIZONE®

Technical Data Sheet

General Presentation

MULTIZONE DOPAIR® is a mobile solution for air decontamination of risk areas in hospitals. Instantly operational, it does not need any installation to run and it can reach performances expected for ISO 8 (NF EN ISO 14644-1).

MULTIZONE DOPAIR® helps preventing hospital borne diseases thanks to the combined action of filtration and cold plasma technology.

Advantages

Plug & Play operation
Mobility and easy installation
Small and compact
4 wheels with 360° rotation
2 wheels lockable
Air flow adjustable to 800 m³/h

Device capable of running 24hrs /
7 days / year
Low sound level
Multifunction control and display
panel



Applications



MULTIZONE DOPAIR® is suitable for use in risk 2 ISO 8 , as per NF EN ISO 14644-1 Standards.

Few examples of application:

ICUs,
Isolation wards,
Neonatal Department,
Bronchoscopy,
Recovery rooms,
Oncology,
Hematology,
Endoscopy,
Emergency,
Sterilization,
Pediatrics,
Maternity wards,
X-Ray rooms, etc,
but also in offices, pharmacy, laboratories,



ISO Standards (NF EN ISO 14644-1)

ISO Standards classify Cleanrooms into different classes.

For each risk zone, ISO standards specify technical performances to be achieved.

Among them,

- **Decontamination kinetics class:** Particles decontamination kinetics at a level of 0,5 micron/m³ is set by the time necessary to reach a 90% decontamination rate from the initial pollution peak level. For example, CP 10 means that it requires 10 min to reach 90% decontamination rate.
- **Bacteriological class:** it indicates the maximum concentration of number of viable particles per cubic meter of air (cfu/m³). For example, M10 means that this level accepts a maximum concentration of 10 viable particles per cubic meter of air (cfu/m³).

ISO Class	0,1 µm	0,2 µm	0,3 µm	0,5 µm	1 µm	5 µm
ISO 1	10	2				
ISO 2	100	24	10	4		
ISO 3	1 000	237	102	35	8	
ISO 4	10 000	2 370	1 020	352	83	
ISO 5	100 000	23 700	10 200	3 520	832	29
ISO 6	1 000 000	237 000	102 000	35 200	8 320	293
ISO 7				352 000	83 200	2 930
ISO 8				3 520 000	832 000	29 300
ISO 9				35 200 000	8 320 000	293 000

Target							Means	
No human presence but furniture				During activity				
Designation of area	Particle classification of area to protect	Kinetics target level Classification of particle decontamination at 0,5 micron/m	Target level of bacteriological classification of the area to protect	Air temperature (except for specific needs)	Air humidity (approximate)	Maximum sound pressure	Type of air flow in area to protect	Room air renewal rate
AREA 4	ISO 5 Class 100	CP5	M1	19°C to 26°C	45% 65%	48 dBA	Unidirectional flow	Zone under the air flow Air speed 0,25m/s à 0,35m/s Fresh air rate 6vol/H
AREA 3	ISO 7 Class 10 000	CP10	M10	19°C to 26°C	45% 65%	45 dBA	Unidirectional flow or not	15 volumes/hour
AREA 2	ISO 8 Class 100 000	CP20	M100	19°C to 26°C	45% 65%	40 dBA	Non unidirectional flow	10 volumes/hour
AREA 1	Non-specific areas (1)					35 dBA		



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References:

Medical department:

Bastia Hospital – Corsica x1
Saint Joseph Hospital – Marseille x1
Duponchel Dental Clinic – Serris x1
Ambroise Paré Clinic – Paris x2
L'Orangerie Clinic – Strasbourg x6
Orléans CHR – Orléans x1

Records and Museums

CNAM – Paris x4
La Piscine Museum – Roubaix x2
Pau Department Hotel – Pau x1



World:

UAE – Dubai x1
Malaysia – Kuala Lumpur x1
Saudi Arabia – Riyadh x60
Indonesia : x 40
Europe – Italy x6
Tchad – La Renaissance Hospital x1

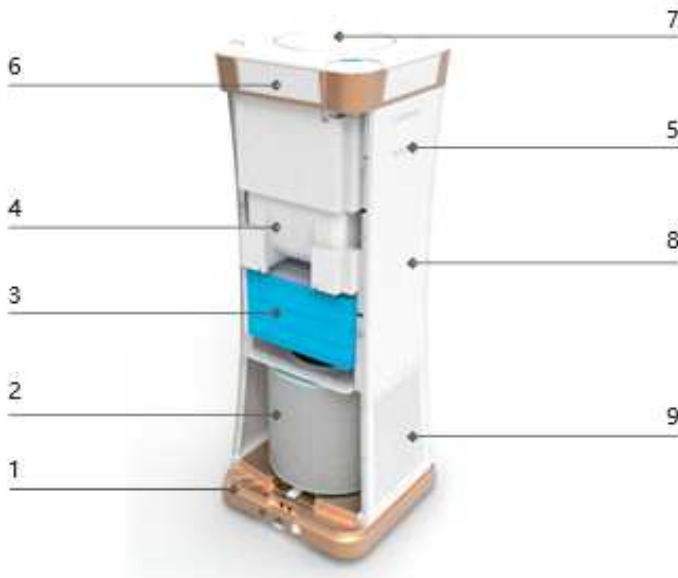


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Structure of the device

General Structure
<ul style="list-style-type: none"> • Rectangular shape for air diffusion at 360° • 4 rotative wheels (including 2 with brakes) for an easy handling. • Air supply on top on a rectangular way. • Intake filtration on the bottom 4 corners • Air supply filtration.



1-1

- | | | |
|-----------|------------|------------------------|
| 1. Base | 4. Fan | 7. Operation Interface |
| 2. Filter | 5. Sensor | 8. Shell |
| 3. Deck | 6. Air Out | 9. Air In |



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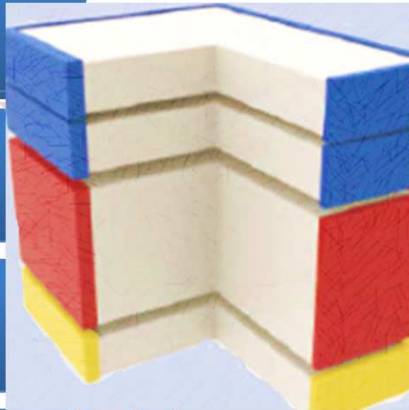
Working Principle

STAGE 4 : PLASMA REACTOR
Bacteriological action

STAGE 3 HIGH FILTRATION
Small particles reduction Hepa Filter

STAGE 2
Carbon Filter VOC & Odors reduction

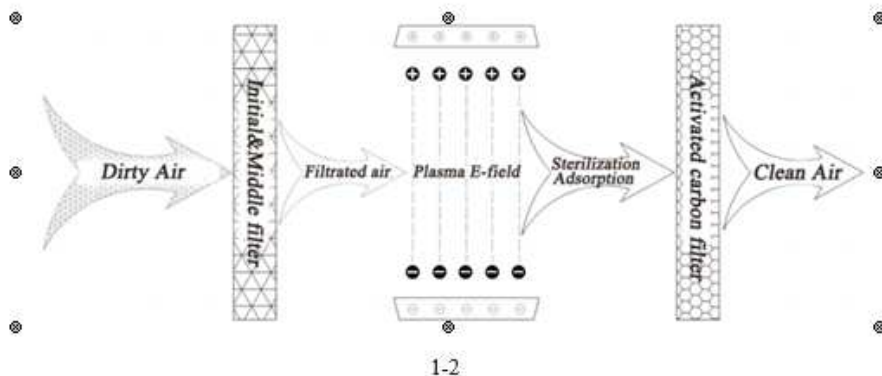
STAGE 1
Carbon Filter VOC & Odors reduction



Base comprehensive with 3 filters integrated

- 1) Pre-filtration action: a pre-filter retains synthetic dust.
- 2) Carbon filtration: to trap of odors, VOCs, etc. with carbon filter which effectively destroys smokes, formaldehydes, ammonia, benzene and other harmful gases.
- 3) High efficient filtration: a HEPA filter retains the finest particles
- 4) Plasma reactor: for microbiological destruction.

1.2 work principle



The plasma reactor process

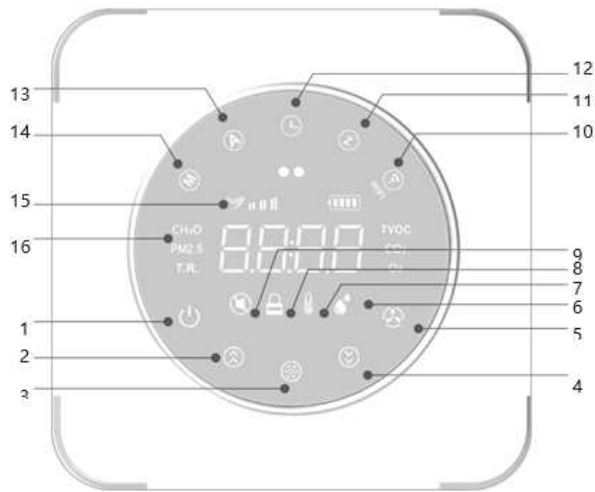
Cold plasma is a weakly ionized gas. When an applied voltage reaches the ignition voltage of the gas, the gas molecules are breakdown, resulting in a hybrid (ionization of the plasma), including electronics, various ions, atoms and radicals. Although electronic discharge process temperature is high, but heavy particle temperature is low, the entire system exhibits a low temperature, so called low-temperature plasma. To degradation of pollutants via low temperature plasma, high-energy electrons, free radicals, and other reactive species will act on the pollutants in the exhaust gases. So that contaminant molecules and bacteria will break down in a very short time, and the various reactions occurring subsequent to achieve degradation of pollutants, kill bacteria, achieve the purpose of disinfection.



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Control board – LCD Screen



- | | | | |
|--------------------|----------------|------------------|-----------------|
| 1. Switch | 5. Wind Speed | 9. Sleep Mode | 13. Auto Mode |
| 2. Up | 6. Humidity | 10. WIFI Network | 14. Manual Mode |
| 3. Functional Mode | 7. Temperature | 11. Sleep Mode | 15. Fan Speed |
| 4. Down | 8. Child lock | 12. Timer Mode | 16. Other Info |

Multizone DOPAIR® is equipped with an intuitive high definition LCD touch display. The control board will allow the user to adjust the airflow speed and to select the operating mode required. The control board also shows alarms for filter clogged, fan or plasma reactor malfunctions.

ADJUSTABLE AIR FLOW:

Choose between 4 different levels of airflow:

Manual, Time control, Automatic, Sleep



Functionalities:

Speed: Air flow management. 4

speeds to choose: up to 800 m³/h

Fan mode: selection of fan mode.

Automatic / timer)

LCD Screen: showing time, temperature, humidity, fan mode, airflow speed level, alarms.

ON/OFF: Start / shutdown

Multizone DOPAIR



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Technical Characteristics

		ROOM DOPAIR®
Air flow	m3/h	Up to 800
Air supply		On top at 360°
Control panel		Multi-function LCD Touch screen
Dimensions	mm	900x340x340mm
Weight	kg	15
Air intake filtration		Pre-filter – carbon - Hepa
Cold plasma		Reactor plasma
Power supply	V, Hz	220 V / 60 Hz
Mobility		4 wheels

Sound level

Sound level			
at 2 m			
m3/h	520	760	800
dB(A)	35,7	44,7	45,2



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Usage Instructions

Filters replacement frequency:

Comprehensive filter made for Pre filter – Carbon Filter – Hepa :
to be replaced every 6-8 months.

These frequencies are indicative only. They may differ according to the usage and the site conditions.

Plasma generator: Lifetime = 25000 hours.

