

IBPA®

INDOOR AIR QUALITY FOR WELL-BEING, SUSTAINABILITY AND ENERGY EFFICIENCY.



Recomendado por:



Certificados de Ahorro Energético
Fondo Nacional de Eficiencia Energética - RD 36/2023
Tradable White Certificates
National Energy Efficiency Action Plans - 2012/27/UE



BREEAM

WELL™



ABOUT IBPA®

IBPA® is the technology based on ventilation standards for the **improvement of indoor air quality** through low-range dielectric electrostatics (no corona effect), which is integrated into the building existing HVAC system for air pathogens removal.

CHARACTERISTICS :

- **Applicable to tertiary buildings**, new or retrofit, with fix or variable (VAV, DVC) mechanical ventilation.
- **Improves indoor air quality** for **energy savings** in the HVAC system and **decarbonization**.
- **100% European and American ventilation standards and presence of people compatible**.
- **Zero ozone or by-products** production.

AIR PATHOGENS:

- Particulate matter
- Mould and Spores
- Viruses and Bacteria
- VOC's
- Odour and Gases

IBPA®, the first energy saving measure in a building:



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IBPA®: The SUSTAINABILITY AND DECARBONIZATION solution.



Improves the building indoor air quality and efficiency energy, optimizing the minimum and continuous ventilation outdoor air-flow rates, **reducing primary energy consumption** in:

Heat + Ventilación + Air Conditioning

1st Building energy consumption



Reduces the carbon footprint of the building at its highest consumption, helping its net-zero emissions.



Reduces the construction budget, in new buildings and rehabilitation projects, by optimising ventilation air-flow rates and building thermal loads, so the size and power and cost of the whole HVAC system.



Increases the value of the building, being a guarantee of obtaining the **LEED, WELL, BREEAM or DGNB** certifications maximum score.



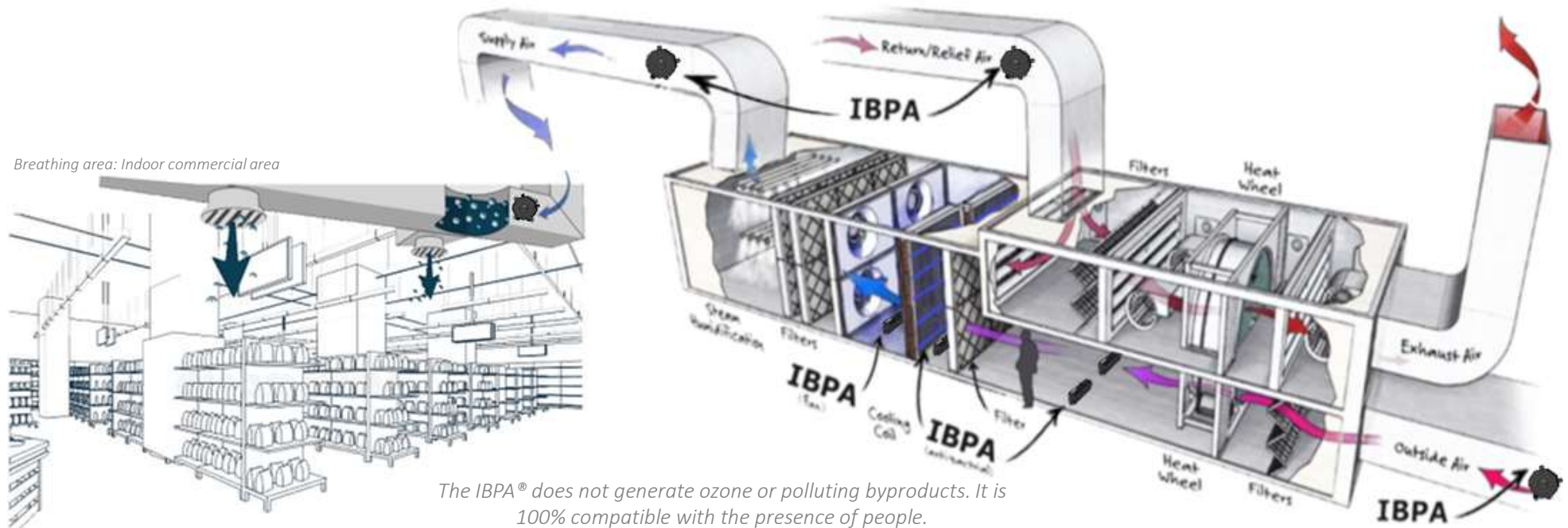
IBPA® in figures.

Building annual HVAC consumption



IBPA:[®] Where is it installed?

IBPA[®] is integrated along the buildings's ventilation and air conditioning system, without works, in air conditioners, impulsion and return duct lines, and in the diffusion or indoor units, to treat all the air that affects the respiratory area, thus guaranteeing the homogeneous treatment and correct elimination of pathogens from the air.



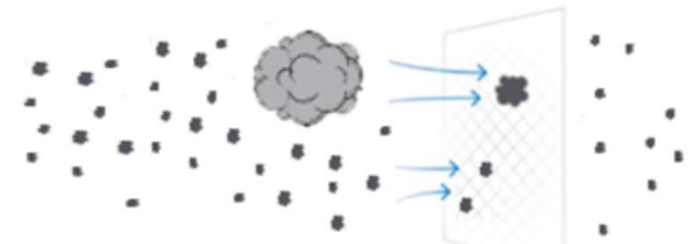
IBPA®: ¿How does it work?.



IBPA® employs an electrostatic field in the conveyed air to aggregate organic and inorganic particles, making them larger and heavier. This increases particle decay rates and enhances the capture efficiency of existing filters, raising their performance to levels comparable with filters four to five categories higher.



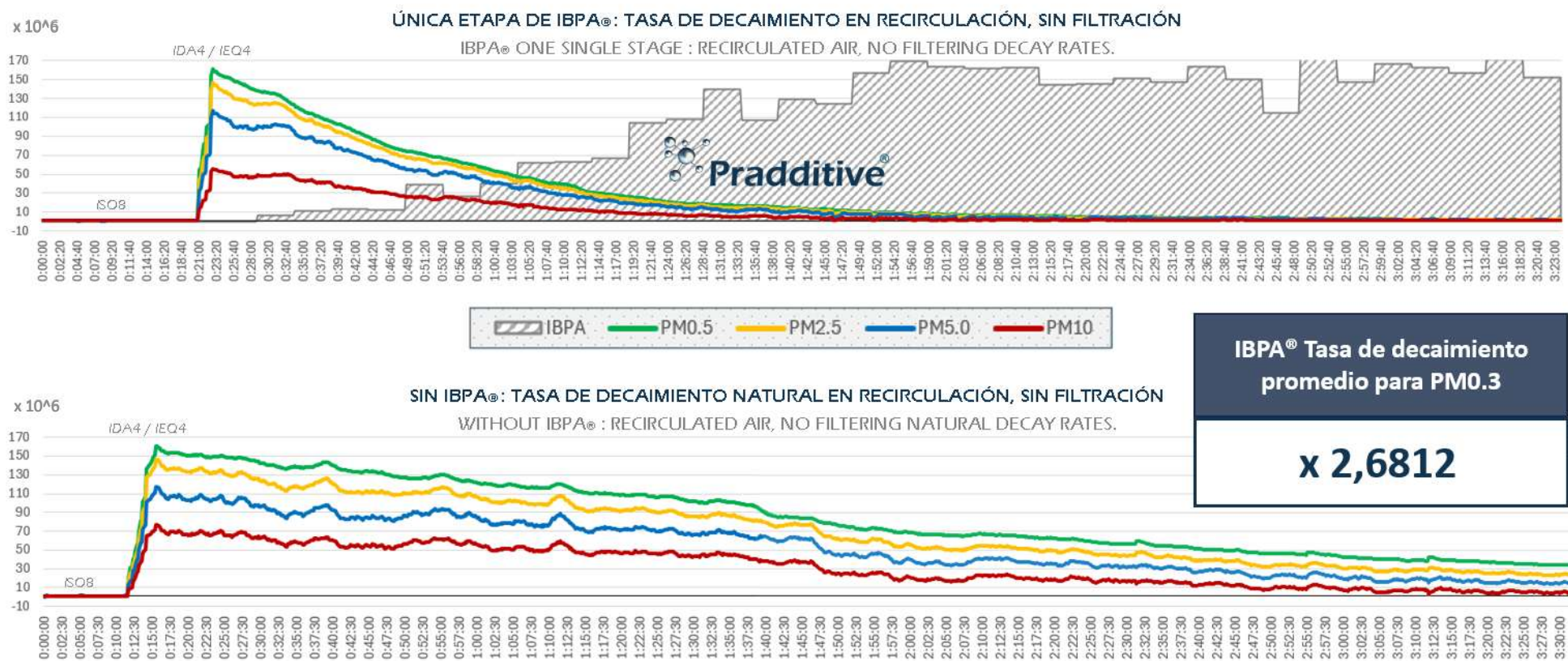
Without IBPA®:



With IBPA®:



IBPA® ¿How does it work?. Particles decay rates.



IBPA® ¿How does it work?. EQUIVALENT Filtration and Outdoor Supply Airflow.

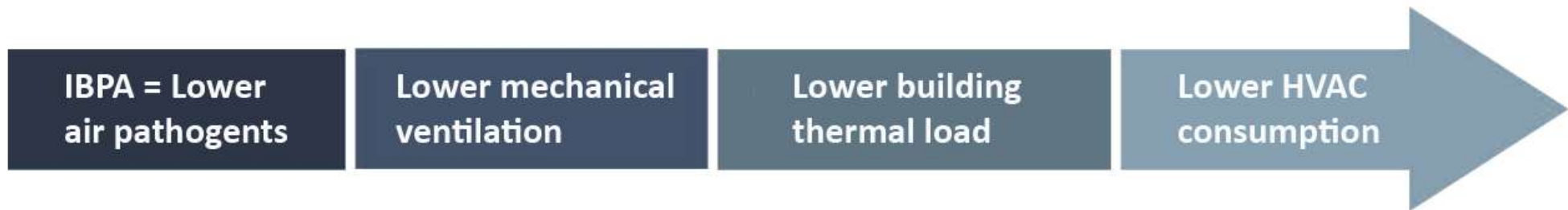
		Partículas / Particles: [PM0.3]			STANDARD ASHRAE 52.2 / EN779 / ISO 16890		
		FILTRACIÓN REGULAR / REGULAR FILTRATION			MINIMA FILTRACIÓN IBPA® EQUIVALENTE / IBPA® MIN. EQUIVALENT FILTRATION		
		Climatizador (UTA) Air handling unit (AHU)	Ud. Interior Indoor unit	Eficacia (ηtotal) CADR (ηtotal)	Climatizador (UTA) Air handling unit (AHU)	Ud. Interior (Ui) / Filtro terminal (T) Indoor unit (Ui) / Terminal Filter (T)	Eficacia (ηtotal) CADR (ηtotal)
Total en el área respiratoria Total breathable area filtration	Individual Single	M5 [MERV 10]	-	0,10000	IBPA® + G1 [MERV 1] + IBPA®	-	0,99531
		M6 [MERV 12]	-	0,17500	IBPA® + G1 [MERV 1] + IBPA®	-	0,99531
		F7 [MERV 13]	-	0,52500	IBPA® + G1 [MERV 1] + IBPA®	-	0,99531
		F8 [MERV 14]	-	0,70000	IBPA® + G1 [MERV 1] + IBPA®	-	0,99531
		F9 [MERV 16]	-	0,80000	IBPA® + G1 [MERV 1] + IBPA®	-	0,99531
	Con Prefiltración With pre-filter	G4 + M5 [MERV 8 + MERV 10]	-	0,12250	IBPA® + G1 [MERV 1] + IBPA®	-	0,99531
		G4 + M6 [MERV 8 + MERV 12]	-	0,19563	IBPA® + G1 [MERV 1] + IBPA®	-	0,99531
		G4 + F7 [MERV 8 + MERV 13]	-	0,53688	IBPA® + G1 [MERV 1] + IBPA®	-	0,99531
		G4 + F8 [MERV 8 + MERV 14]	-	0,70750	IBPA® + G1 [MERV 1] + IBPA®	-	0,99531
		G4 + F9 [MERV 8 + MERV 16]	-	0,80500	IBPA® + G1 [MERV 1] + IBPA®	-	0,99531
	Convencional Regular	G4 + M5 [MERV 8 + MERV 10]	G2 [MERV4]	0,12250	IBPA® + G1 [MERV 1] + IBPA®	G1 [MERV 1] + IBPA®	0,99967
		G4 + M6 [MERV 8 + MERV 12]	G2 [MERV4]	0,19563	IBPA® + G1 [MERV 1] + IBPA®	G1 [MERV 1] + IBPA®	0,99967
		G4 + F7 [MERV 8 + MERV 13]	G2 [MERV4]	0,53688	IBPA® + G1 [MERV 1] + IBPA®	G1 [MERV 1] + IBPA®	0,99967
		G4 + F8 [MERV 8 + MERV 14]	G2 [MERV4]	0,70750	IBPA® + G1 [MERV 1] + IBPA®	G1 [MERV 1] + IBPA®	0,99967
		G4 + F9 [MERV 8 + MERV 16]	G2 [MERV4]	0,80500	IBPA® + G1 [MERV 1] + IBPA®	G1 [MERV 1] + IBPA®	0,99967
	Sala Limpia Clean Rooms	G4 + M5 + F7 [MERV 8 + MERV 10 + MERV 13]	H13 (terminal)	0,9997916	IBPA® + G1 [MERV 1] + M5 [MERV 10] + IBPA®	G1_Ui [MERV 1] + IBPA® + G1_T [MERV 1] + IBPA® Terminal	0,9999802
		G4 + M5 + F9 [MERV 8 + MERV 10 + MERV 16]	H13 (terminal)	0,9999123	IBPA® + G1 [MERV 1] + M5 [MERV 10] + IBPA®	G1_Ui [MERV 1] + IBPA® + G1_T [MERV 1] + IBPA® Terminal	0,9999802
		G4 + M5 + F7 [MERV 8 + MERV 10 + MERV 13]	H14 (terminal)	0,9999792	IBPA® + G1 [MERV 1] + M5 [MERV 10] + IBPA®	G1_Ui [MERV 1] + IBPA® + G1_T [MERV 1] + IBPA® Terminal	0,9999802
		G4 + M5 + F9 [MERV 8 + MERV 10 + MERV 16]	H14 (terminal)	0,9999912	IBPA® + G1 [MERV 1] + M5 [MERV 10] + IBPA®	G1_Ui [MERV 1] + IBPA® + F7_T [MERV 13] + IBPA® Terminal	0,9999912
		G4 + M5 + F7 [MERV 8 + MERV 10 + MERV 13]	U15 (terminal)	0,9999979	IBPA® + G1 [MERV 1] + M5 [MERV 10] + IBPA®	G1_Ui [MERV 1] + IBPA® + E11_T [MERV 17] + IBPA® Terminal	0,9999990
		G4 + M5 + F9 [MERV 8 + MERV 10 + MERV 16]	U15 (terminal)	0,9999991	IBPA® + G1 [MERV 1] + M5 [MERV 10] + IBPA®	G1_Ui [MERV 1] + IBPA® + E12_T [MERV 18] + IBPA® Terminal	0,9999999

Se tienen en cuenta las medianas de eficiencia por categoría de filtro de acuerdo a la norma. / Median values by efficiency and filter category according to the standard are taken into account.

ε_{v, Sala}: Eficacia de la ventilación en la sala limpia para el cálculo de las renovaciones hora por UNE EN 14644-16:2020. / ε_{v, CRoom}: Ventilation effectiveness in the cleanroom for the calculation of air changes per hour (ACH) according to ASHRAE 170 & 241.



IBPA®: The EFFICIENCY ENERGY solution.



European standards: Optimized ventilation outdoor airflow rates based in UNE-EN-13799:2008 and UNE-EN-16798-1:2020, '*Percieved Air Quality Method*'.



Normativa Americana: Optimized ventilation outdoor airflow rates based in ASHRAE 62.1, '*Indoor Air Quality Procedure*'. LEED, WELL and BREEAM recognized method.



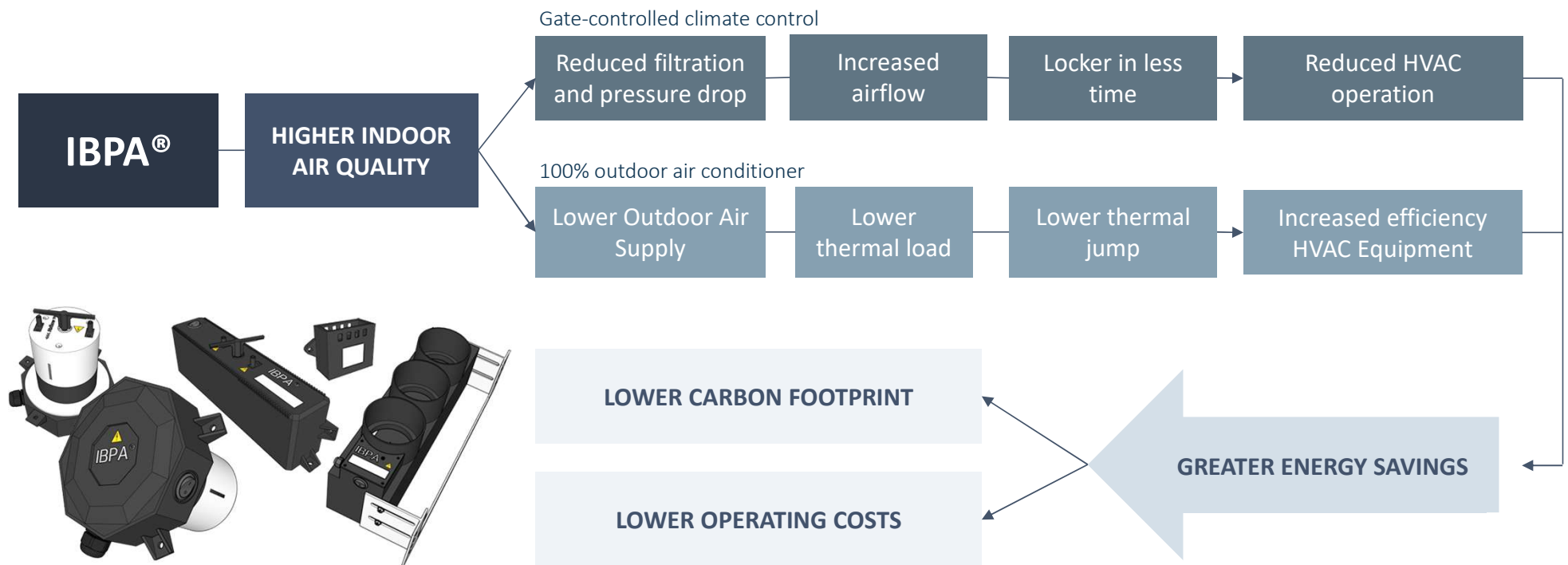
Technology specifically recommended by:



(Click to access documents)



IBPA[®]: Two ways of ENERGY SAVING, a single solution.



IBPA[®]: Energy Efficiency in Cleanrooms (UNE EN 14644-16:2020)



International standard that provides **guidelines to optimize energy consumption in cleanrooms** and controlled environments, **moving away from design based solely on air changes per hour:**



Flexible adjustment of temperature and humidity setpoints according to actual needs.



Optimization of air supply based on particle measurements and occupancy.



Importance of avoiding overspecification in User Requirement Specifications (URS).



Reduction of thermal loads and rationalization of outdoor air supply.



Use of comparative analysis to evaluate efficiency among different cleanrooms..



Applicable to new, existing, and refurbished (or renovated) installations.



IBPA®: Relationship between environmental pathogens with AIR QUALITY and WELL-BEING.



Increasing building air quality with IBPA® reduces environmental pathogens and brings it in line with air used in healthcare facilities, so improves oxidative stress and the well-being of occupants:

INDOOR AIR QUALITY			AIR QUALITY APPLICATIONS	
	WITHOUT IBPA®	Low quality	IDA 4	Not used (warehouses, garages)
		Medium quality	IDA 3	Hotel rooms, dwellings*, restaurants, stores, gyms.
		Rather good quality	IDA 2	Hotel common areas, offices, kindergartens.
	GRANTED WITH IBPA®	Optimum quality	IDA 1	Hospital
		Clean room / White room	ISO 8	Triage box
		Clean room / White room	ISO 7	Emergency surgery room
		Clean room / White room	ISO 6	Precision surgery room

* Dwellings are not classified by IDA's, which are exclusive for tertiary buildings; this chart represents their equivalence for information purposes only..



IBPA®: The SUSTAINABILITY solution.



Buildings account for **36%** of the total energy consumed in the world.



HVAC is the largest energy consumption, accounting for **55%** of a building's total GHG emissions, on average.



Improving indoor air quality means at least an **11%** reduction in global emissions and up to 21%. IBPA® makes it possible.



SDG targets, achievable with IBPA®:



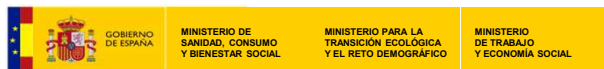
IBPA®

IBPA®: TECHNICAL SHEETS

PRAA-DM8150iClean / VISSIONAIR®.
PRAA-DM4050iClean / VISSIONAIR®.
PRAA-FC8150iClean / VISSIONAIR®.
PRAA-FC4050iClean / VISSIONAIR®.
PRAA-MIU2600/S.

PRAA-VMC-RD.
PRAA-VMC-FD.
PRAA-VMC-CP.
PRAA-iEXTEND.

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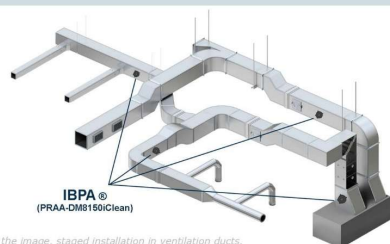


BREEAM® WELL™



IBPA® Series: PRAA-DM8150iClean / VISSIONAIR® – For ventilation ducts and up to 8,150 m³/h.

SPECS:



IBPA® DM8150 Series	PRAA-DM8150iClean	PRAA-DM8150iClean VISSIONAIR®
DUCTS:	Circular, from ø400 mm and Rectangular, from 400x400 mm.	
TREATED FLOW:	Up to 8,150 m³/h per device.	
DIMENSIONS (L x W x H):	178 x 178 x 178 mm, inserted in duct (100x90 mm)	
WEIGHT:	842g / 1.104g	
PRESSURE LOSS (2m/s):	5,6 Pa in ø200, 0 Pa > ø400mm / 6,8 Pa in 240 x 140 mm, 0 Pa > 500x450 mm	
VOLTAGE/CURRENT:	AC, de 12V. a 240V.	
CONSUMPTION / FREQUENCY:	12 W (220 V.) / 50-60 Hz	17 W (220 V.) / 50-60 Hz
PRODUCTION (+/-):	> 400 x 10⁻⁶	
HOUSING MATERIAL:	Polymers, Polyactic Acid (100% Recyclable, Renewable and Biodegradable)	
CERTIFICATIONS:	CE, UL, cUL, UL 867, UL2998, OSHPO Seismic (OSP), IAQP (B2.1 ASHRAE)	
GUARANTEE:	2 years (extendable to 10 years).	
WIRELESS CONNECTIVITY:	NO	RS232 Modbus, LoRaWAN, Bluetooth, WIFI.
ALARMS (On, Off, Failure):	Wired (AC 250V/ 1A)	Wired (AC 250V/ 1A) & Wireless.
SELF-CLEANING:	YES (equipment without maintenance, or replacement of consumables)	
IAQ SENSOR:	NO	PM 0.3, PM 1, PM2.5, PM 10 CO2, Formaldehyde, VOCs Temperature and Relative Humidity

DESCRIPTION:

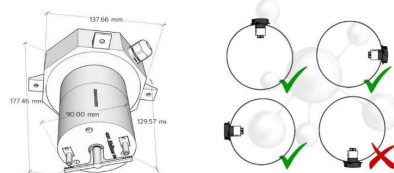
IBPA® Pre-treatment or Treatment stage in circular (≥600 mm) or rectangular (≥500x500 mm) ducts, internal or external, for the distributed treatment of supply, impulsion and return air, along the ventilation system.

Equipment without maintenance, or replacement of consumables. It has a self-cleaning system (iClean) of the anode and cathode. Alarm system pre-wired by dry contacts.

The VISSIONAIR® version integrates air quality probe, communications and wireless alarm system; RS232 Modbus, LoRaWAN, WIFI and Bluetooth, compatible with any BMS.

INSTALLATION:

It is installed from the outside, by drilling a ø 90 mm. hole in the duct. Screws and fixing hardware included. Electrical supply point must be provided to the equipment.



TECHNICAL SHEET

IBPA®

PRAA-DM8150iClean

For fiber or metal ventilation ducts, up to 8,150 m³h/unit.

info@pradditive.com
(+34) 630 95 57 15

www.pradditive.com

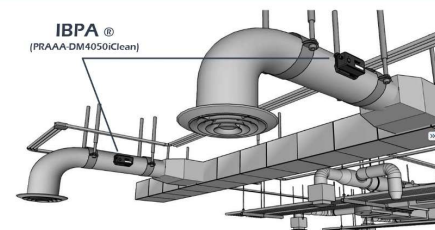
The image shown may differ with the equipment depending on the model chosen.



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IBPA® Series: PRAA-DM4050iClean / VISSIONAIR® – For ventilation ducts and up to 4,050 m³/h.

SPECS:



In the image, installation in circular ventilation ducts.

IBPA® DM4050 Series	PRAA-DM4050	PRAA-DM4050iClean	PRAA-DM4050iClean VISSIONAIR®
DUCTS:	Circular, up to 400 mm and Rectangular, up to 400x600 mm.		
TREATED FLOW:	Up to 4,050 m³/h per device.		
DIMENSIONS (L x W x H):	100 x 157 x 60 mm, inserted in the duct (5x40 mm)		
WEIGHT:	264g	315g	577g
PRESSURE LOSS (Pa):	0 Pa (No pressure drop)		
VOLTAGE/CURRENT:	AC 12V - 240V.		
CONSUMPTION / FREQUENCY:	4W (220 V) / 50-60 Hz	4W (220 V) / 50-60 Hz	9W (220 V) / 50-60 Hz
PRODUCTION (+/-):	> 200 x 10⁻⁶		
HOUSING MATERIAL:	Polymer, Poly(lactic Acid) (100% Recyclable, Renewable and Biodegradable)		
CERTIFICATIONS:	CE, UL, cUL, UL 967, UL 2996, GSHPD Seismic (GSPP, IAQP ISO 14001)		
GUARANTEE:	2 years (extendable to 10 years)		
WIRELESS CONNECTIVITY:	NO	NO	RS232 Modbus, LoRaWAN, Bluetooth, WPL
ALARMS (On, Off, Failure):	Wired (AC 250V / 1A)	Wired (AC 250V / 1A)	Wired (AC 250V / 1A) & Wireless.
SELF-CLEANING:	NO	YES (equipment without maintenance, or replacement of consumables)	PM 0.3, PM 1, PM 2.5, PM 10 CO2, Formaldehyde, VOCs Temperature and Relative Humidity
IAQ SENSOR:	NO	NO	

DESCRIPTION:

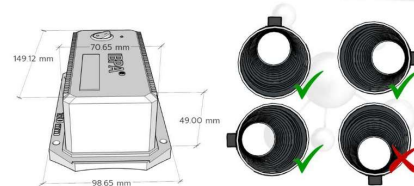
IBPA® Treatment or Terminal stage in circular ventilation ducts (all diameters, **up to Ø400 mm**) or **rectangular**, indoor or outdoor, for the treatment of **up to 4,050 m³/h** of air (supply, supply and return), along the ventilation system.

Available in a self-cleaning version (iClean) of the anode and cathode. No maintenance, or replacement of consumables. Alarm system pre-wired by dry contacts.

The VISSIONAIR® version integrates air quality sensor, communications and wireless alarm system; RS232 Modbus, LoRaWAN, WIFI and Bluetooth, compatible with any BMS.

INSTALLATION:

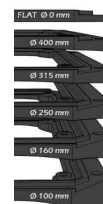
It is installed from the outside of the duct. Fixing plate for any diameter, screws and fixing hardware included. A feeding point must be brought to the equipment.



www.pradditive. Like me



Available in version:
VISSIONAIR®



The image shown may differ with the equipment depending on the model chosen.

TECHNICAL SHEET

IBPA®

PRAA-DM4050iClean

For fiber or metal ventilation ducting, up to 4,050 m³/h/unit.



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IBPA® Series: PRAA-FC8150iClean / VISSIONAIR® – For Air Handling Units (AHUs) or Rooftop Units.

SPECS:



IBPA®
(PRAA-FC8150iClean)

In the image, installation for 15,000 m3h in axial fan.

IBPA® FC8150 Series	PRAA-FC8150iClean	PRAA-FC8150iClean VISSIONAIR®
AIR CONDITIONERS:	UTAS or Rooftops. Improvement of the screening stage or for the sterilization of batteries.	
TREATED FLOW:	Up to 8,150 m3h per device.	
DIMENSIONS (L x W x H):	283 x 60 x 110 mm.	
WEIGHT:	630g.	790g.
PRESSURE LOSS (2m/h):	0 Pa (no pressure drop)	
VOLTAGE/CURRENT:	AC, de 12V. a 240V.	
CONSUMPTION / FREQUENCY:	12 W (220 V.) / 50-60 Hz	17 W (220 V.) / 50-60 Hz
PRODUCTION (+/-):	> 400 x 10 ⁻⁶	
HOUSING MATERIAL:	Polymer, Polylactic Acid (100% Recyclable, Renewable and Biodegradable)	
CERTIFICATIONS:	CE, UL, cUL, UL 867, UL2998, OSHPD Seismic (OSP), IAQP (62.1 ASHRAE)	
GUARANTEE:	2 years (extendable to 10 years).	
WIRELESS CONNECTIVITY:	NO	RS232 Modbus, LoRaWAN, Bluetooth, WIFI.
ALARMS (On, Off, Failure):	Wired (AC 250V/ 1A)	Wired (AC 250V/ 1A) & Wireless.
SELF-CLEANING:	YES (equipment without maintenance, or replacement of consumables)	PM 0.3, PM 1, PM2.5, PM 10
IAQ SENSOR:	NO	CO2, Formaldehyde, VOCs
		Temperature and Relative Humidity

DESCRIPTION:

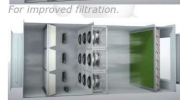
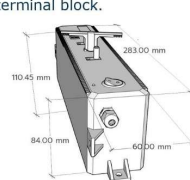
IBPA® Pre-treatment or Treatment stage in ventilation conditioner units, in the ear of the fans for the treatment of the supply and mixed air, or upstream of the filtration stage. No special bays are required in the AHU's or Rooftops.

Equipment without maintenance, or replacement of consumables. It has a self-cleaning system (iClean) of the anode and cathode. Alarm system pre-wired by dry contacts.

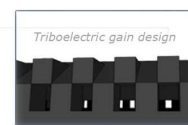
The VISSIONAIR® version integrates air quality probe, communications and wireless alarm system; RS232 Modbus, LoRaWAN, WIFI and Bluetooth, with BMS.

INSTALLATION:

It is installed by means of powerful magnets (included) in the ventilation train, without generating pressure loss and without breaking the manufacturer's warranty. The power supply can be taken directly from the air conditioning terminal block.



For battery sterilization.



Available in:
VISSIONAIR®

TECHNICAL SHEET

IBPA®

PRAA-FC8150iClean

For AHU's or Rooftops
conditioner units,
up to 8,150 m3h.

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(+34) 630 95 57 15

www.pradditive.com

The image shown may differ with the equipment depending on the model chosen.



BREEAM

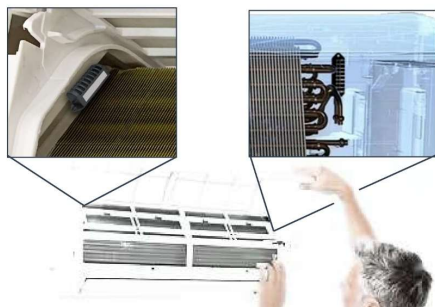
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IBPA® Series: PRAA-MIU2600S – For “Split” air conditioning units or hard-to-reach areas.

SPECS:



IBPA® serie MIU	PRAA-MIU2600S (Split unit)
CAUDAL TRATADO:	Hasta 2.600 m³/h por equipo.
DIMENSIONES (L x W x H):	24 x 23 x 81
PESO:	110g.
PÉRDIDA DE CARGA (2m/s):	0,00 Pa.
VOLTAJE / CORRIENTE:	AC 200 - 240 V.
CONSUMO / FRECUENCIA:	1,5 W (220V.) / 50-60 Hz.
PRODUCCIÓN (+/-):	30 x 10⁻⁶
MATERIAL DE LA CARCASA:	Polímero, Ácido Poliláctico (100% Reciclable, Renovable y Biodegradable)
CERTIFICACIONES:	CE, UL, cUL, UL 867, UL2998, OSHPD Seismic (OSP), IAQP (62.1 ASHRAE)
GARANTÍA:	2 años (extensible a 10 años).

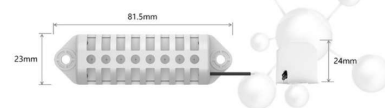
DESCRIPTION:

IBPA® Terminal stage in ‘Split’ type indoor units, for the localized treatment of filter downstream air by rooms. Highly recommended when seeking maximum **air quality in the respiratory area in the minimum available space**.

Extendable and adaptable. Includes junction box to distribute up to three emitters per Split. No self-cleaning system (iClean) is required if the ventilation supply flow is treated upstream with DM-iClean or FC-iClean IBPA® stages. It is ideal for establishing a real **barrier to the transmissibility of aerosolized pathogens, indoors**.

INSTALLATION:

It is installed by means of powerful magnets (included) in the ventilation train, without generating pressure loss and without breaking the manufacturer's warranty. Power can be taken directly from the terminal block of the indoor unit.



TECHNICAL SHEET

IBPA®

PRAA-MIU2600S

*For Split Indoor Units
and spaces difficult
to access.*

info@pradditive.com
(+34) 630 95 57 15

www.pradditive.com



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IBPA® Series: PRAA-MIU2600 – For indoor air conditioning units or hard-to-reach stages.

SPECS:



In the image, installation in the fan coil ventilation train and battery.

IBPA® MIU Series	PRAA-MIU2600
TREATED FLOW:	Up to 2,600 m³h per device.
DIMENSIONS (L x W x H):	46 x 40 x 25 mm
WEIGHT:	120g.
PRESSURE LOSS (2m/s):	0,00 Pa.
VOLTAGE/CURRENT:	AC 200 - 240 V.
CONSUMPTION / FREQUENCY:	4 W (220V.) / 50-60 Hz.
PRODUCTION (+/-):	45 x 10 ⁻⁶
HOUSING MATERIAL:	Polymer, Polyactic Acid (100% Recyclable, Renewable and Biodegradable)
CERTIFICATIONS:	CE, UL, cUL, UL 867, UL2998, OSHPD Seismic (OSP), IAQP (62.1 ASHRAE)
GUARANTEE:	2 years (extendable to 10 years).

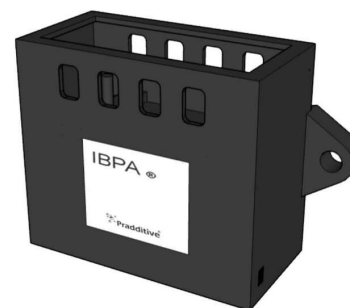
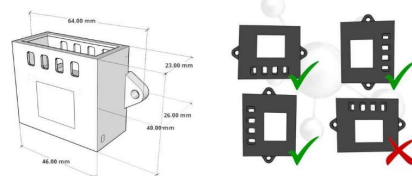
DESCRIPTION:

IBPA® Terminal stage in indoor air conditioning units or filtration boxes in clean rooms, for the localized treatment of filter downstream air by rooms. Highly recommended when seeking maximum **air quality in the breathable area in the minimum available space**.

Maintenance-free, no self-cleaning system (iClean) required if the general drive flow is driven to return and the return has been treated upstream with IBPA® DM-iClean or FC-iClean Treatment stages. It is ideal for establishing a real **barrier to the transmissibility of aerosolized pathogens, indoors**.

INSTALLATION:

It is installed by means of powerful magnets (included) in the ventilation train, without generating pressure loss and without breaking the manufacturer's warranty. Power can be taken directly from the terminal block of the indoor unit.



TECHNICAL SHEET

IBPA®

PRAA-MIU2600

For air conditioning indoor units and spaces of difficult to access.

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(+34) 630 95 57 15

www.pradditive.com

The image shown may differ with the equipment depending on the model chosen.



BREEAM

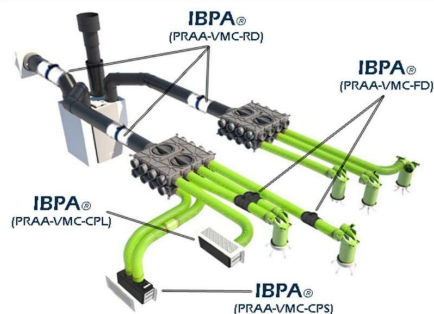
WELL



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Fondo Nacional de Eficiencia Energética - RD 36/2023
Tradable White Certificates
National Energy Efficiency Action Plans - 2012/27/UE

IBPA® Series: PRAA-VMC-CP – Diffusion boxes with grilles, for CMV systems, single or double flow.

SPECS:



IBPA® VMC-CP Series	PRAA-[1/3] CP75 [T/S]	PRAA-[1/3] CP90 [T/S]
DUCT DIAMETER:	ø75 mm. Semi-rigid.	ø90 mm. Semi-rigid.
CONDUIT CONNECTION:	On Top (T) or On Side (S)	
TREATED FLOW:	Up to 2,600 m³/h per device.	
DIMENSIONS (L x W x H):	100 x (200 / 300 / 400) mm.	
WEIGHT:	623g / 745g / 932g.	
PRESSURE LOSS (2m/s):	0 Pa. (No pressure drop)	
VOLTAGE/CURRENT:	AC. 0-12V. a 240V.	
CONSUMPTION / FREQUENCY:	4 W (220 V.) / 50-60 Hz	
PRODUCTION (+/-):	45 x 10 ⁻⁶	
HOUSING MATERIAL:	Polymer, Polylactic Acid (100% Recyclable, Renewable and Biodegradable)	
CERTIFICATIONS:	CE, UL, cUL, UL 867, UL 2096, OSHO Seismic (OSP), WQP (62.1 ASHRAE)	
GUARANTEE:	2 years (extendable to 10 years).	

DESCRIPTION:

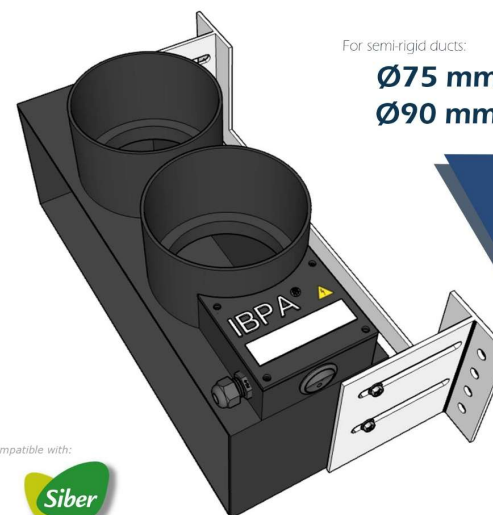
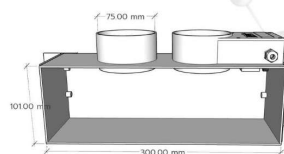
IBPA® in adjustable diffusion plenum boxes by grilles, for 1, 2 and 3 ducts of Ø75 and Ø90 mm, top or side loading, in controlled mechanical ventilation (CMV) systems.

Completion stage for the localized treatment of air by rooms, compatible with any design, brand or model of grilles. Designed for quick installation in drive with zero pressure loss.

Highly recommended when seeking **maximum air quality in the respiratory area**. In combination with the RD Series IBPA® units, it is ideal for establishing a true **barrier to the transmissibility of aerosolized pathogens indoors**.

INSTALLATION:

A 220V power supply point must be brought to the equipment. It is fixed to the vertical or horizontal wall by means of extendable and adjustable anchoring fittings.



For semi-rigid ducts:

Ø75 mm.
Ø90 mm.

TECHNICAL SHEET

IBPA®

PRAA-VMC-CP

*IBPA® plenum diffusion box.
Dimmable, up to 3 ducts,
top- or side-loading,
for CMV systems.*



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www.pradditive.com

The image shown may differ with the equipment.



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IBPA® Series: PRAA-VMC-CP – Available references for semi-rigid $\varnothing 75$ mm or $\varnothing 90$ mm ducts.

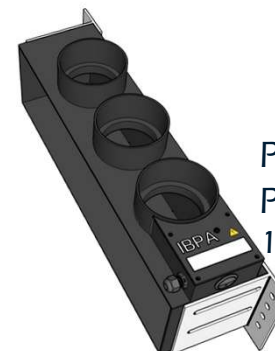
Top load(T).



PRAA-VMC-1CP75T
PRAA-VMC-1CP90T
100x200 mm



PRAA-VMC-2CP75T
PRAA-VMC-2CP90T
100x300 mm



PRAA-VMC-3CP75T
PRAA-VMC-3CP90T
100x400 mm

Side load (S).



PRAA-VMC-1CP75S
PRAA-VMC-1CP90S
100x200 mm



PRAA-VMC-2CP75S
PRAA-VMC-2CP90S
100x300 mm

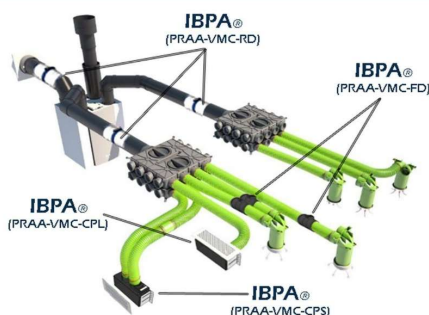


PRAA-VMC-3CP75S
PRAA-VMC-3CP90S
100x400 mm



IBPA® Series: PRAA-VMC-RD – For circular ducts in CMV systems, single or double flow.

SPECS:



IBPA® VMC-RD Series	PRAA-VMC-RD100	PRAA-VMC-RD120	PRAA-VMC-RD150	PRAA-VMC-RD200
CIRCULAR DUCT:	ø100 mm	ø120 mm	ø150 mm	ø200 mm
TREATED FLOW:	Up to 4,050 m³/h per device.			
DIMENSIONS (L x W x H):	250 x 162 x 177 mm	250 x 182 x 197 mm	250 x 212 x 227 mm	250 x 262 x 277 mm
WEIGHT:	370g	395g	421g	480g
PRESSURE LOSS (2m/s):	0,0097 Pa.	0,0086 Pa.	0,0043 Pa.	0,0017 Pa.
VOLTAGE/CURRENT:	AC 200 - 240 V.			
CONSUMPTION / FREQUENCY:	4 W (220 V.) / 50-60 Hz			
PRODUCTION (h·s):	45 x 10³			
HOUSING MATERIAL:	Polymer, Poly(lactic Acid) [100% Recyclable, Renewable and Biodegradable]			
CERTIFICATIONS:	CE, UL, cUL, UL 867, UL 2998, CSHPD Seismic (OSP), IAQP (B2.1 ASHRAE)			
GUARANTEE:	2 years (extendable to 10 years).			

DESCRIPTION:

IBPA® Treatment stage in **controlled mechanical ventilation (CMV)** systems, single and double flow. Designed for quick installation in **circular ducts from Ø100 to Ø200 mm**, causing zero pressure loss.

In combination with the IBPA® VMC-FD series for semi-rigid ducts, it **increases the equivalent airflow by reducing the mandatory external air input**. In VMC equipment with recirculation, it allows the reduction of the filter category [IBPA + MERV8 = MERV13], reducing pressure loss while maintaining environmental hygiene.

It complies with UNE-EN-13799:2008, UNE-EN16798:2020 and ASHRAE 62.1, and scores in **LEED, WELL, BREEAM, DGNB**.

INSTALLATION:

A 220V power supply point must be brought to the equipment. It is fixed to the vertical or horizontal face by means of standardised anchor flanges for circular conduit.



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Supports:



The image shown may differ with the equipment.

TECHNICAL SHEET

IBPA®

PRAA-VMC-RD

For Controlled Mechanical Ventilation (CMV) systems in circular conduits



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BREEAM

WELL

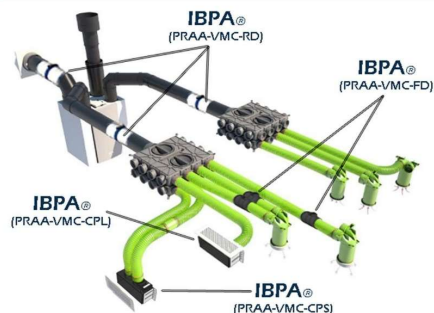
DGNB



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IBPA® Series: PRAA-VMC-FD – For semi-rigid ducts in VMC systems, single or double flow.

SPECS:



IBPA® VMC-FD Series	PRAA-VMC-FD75	PRAA-VMC-FD90
SEMI-RIGID DUCT:	ø75 mm	ø90 mm
TREATED FLOW:	Up to 4,050 m³h per device.	
DIMENSIONS (L x W x H):	250 x 162 x 177 mm	250 x 190 x 205 mm
WEIGHT:	120g	
PRESSURE LOSS (2m/s):	0,09 Pa.	0,06 Pa.
VOLTAGE/CURRENT:	AC 200 - 240 V.	
CONSUMPTION / FREQUENCY:	4 W (220V.) / 50-60 Hz.	
PRODUCTION (t/y):	45 x 10 ⁶	
HOUSING MATERIAL:	Polymer, Polyactic Acid (100% Recyclable, Renewable and Biodegradable)	
CERTIFICATIONS:	CE, UL, cUL, UL 867, UL2098, OSHPD Seismic (OSP), IAQP (62.1 ASHRAE)	
GUARANTEE:	2 years (extendable to 10 years).	

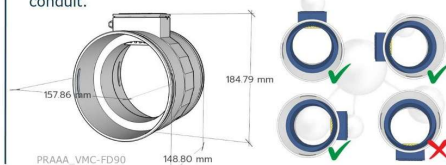
DESCRIPTION:

IBPA® Terminal stage for semi-rigid ducts from Ø75mm to Ø90 mm in controlled mechanical ventilation (CMV) systems, upstream of the air conditioning indoor unit or supply grilles, for localized treatment of air by rooms, compatible with the **SIBER® PURE AIR® system of quick anchors**. Designed for quick installation in drive or return, with zero pressure loss.

Highly recommended when seeking **maximum air quality in the respiratory area**. In combination with the RD Series IBPA® units, it is ideal for establishing a true **barrier to the transmissibility of aerosolized pathogens indoors**.

INSTALLATION:

A 220V power supply point must be brought to the equipment. It is fixed to the vertical or horizontal face by means of standardised anchor flanges for semi-rigid conduit.



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For semi-rigid ducts:

Ø75 mm.
Ø90 mm.

TECHNICAL SHEET

IBPA®

PRAA-VMC-FD

For CMV semi-rigid ducts,
compatible with
SIBER® PURE AIR®
system anchors



100% compatible with the SIBER® PURE AIR® flexible duct system. The image shown may differ with the equipment.



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IBPA®

BUSINESS CASES BY SECTORS

HERITAGE BUILDINGS (Museums)
RETAIL (Department stores)
OFFICES (LEED, WELL, BREEAM).
HOSPITALS

EDUCATIONAL (Universities / Colleges)
RETAIL (Restaurants)
OFFICES (NetZero)
HOTELS

Recomendado por:



MINISTERIO DE
SANIDAD, CONSUMO
Y BIENESTAR SOCIAL

MINISTERIO PARA LA
TRANSICIÓN ECOLÓGICA
Y EL RETO DEMOGRÁFICO

MINISTERIO
DE TRABAJO
Y ECONOMÍA SOCIAL



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National Energy Efficiency Action Plans - 2012/27/UE



BREEAM® WELL™





BUSINESS CASE

IBPA®

CASA BATLLÓ
HERITAGE BUILDING
UNIVERSAL UNESCO

(Architect, Antoni Gaudí)
Barcelona
Spain



ENERGY COST:

0,14 € / kWh



UE SUBSIDUES:

--,-- € / MW saved.



SUSTAINABILITY:

< 1,72 years Payback.

Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES:

Casa Batlló is a building by the brilliant **Antonio Gaudí**, modernist exponent and visionary architect, pioneer in concepts ahead of his time such as concern for **environmental hygiene and indoor air quality**. Visited by more than 1.5 million visitors a year, today a **UNESCO World Heritage Site**, it is as a whole a large chimney with natural cross ventilation.

In 2020, Pradditive developed for Casa Batlló an **IBPA® system for visitor safety and heritage preservation**; protecting them from environmental aggressions based on the reduction of particulate matter and VOCs, which contributed to its recognition as "**Best Monument in the World**", in 2021, ahead of the Tower of London or the Duomo of Milan.

SOLUTIONS:

IBPA® integration to the existing air conditioning system (retrofit), without disturbing works, with the building in operation, compensating natural ventilation flows:

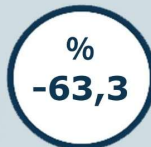
- Design of the IBPA solution for the building.
- Project Management, installation and commissioning of the IBPA (*Commissioning*).
- Certification of the result obtained by an accredited CAI/IAQ laboratory. First building in Europe to receive the APPLUS Ionized Air Quality Certification.
- First building in Spain, to be considered safe for airborne transmission of pathogens, by quantification of particulate matter and bacteriophage MS2 (COVID surrogate)

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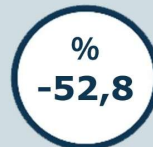
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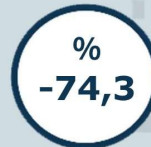
REDUCTION
PARTICULATE



REDUCTION
VOCs



REDUCTION
BACTERIA



REDUCTION OF
MOLDS



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Tradable White Certificates
National Energy Efficiency Action Plans - 2012/27/UE



BUSSINES CASE

IBPA®

MNAC CATALONIA NATIONAL MUSEUM OF ART

Innova Gallery (2022)
Barcelona
Spain



ENERGY COST:

0,14 € / kWh



UE SUBSIDUES:

--,-- € / MW saved.



SUSTAINABILITY:

< 1,19 years Payback.

Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES:

Indoor air quality is vital in the **preservation of museum heritage**. In 2022, the MNAC - Museu d'Art Nacional de Catalunya, pioneered the choice of **IBPA® for the reduction of the exposure of the works of art under custody to physical and chemical agents present in the polluted air** such as suspended particulate matter, mold and bacteria colonies, and suspended volatiles responsible for their pigment oxidation **is paramount in their preservation** for generations to come.

IBPA® improved the original air quality from ISO9 to ISO8 in the respiratory area and after complete air renewal.

SOLUTIONS:

IBPA® integration to the existing HVAC system (retrofit), without disturbing works, with the building in operation, without replacing the original filtration:

- Design of the IBPA solution for Innova Gallery.
- Project Management, installation and commissioning of the IBPA (Comissioning).
- Certification of the result obtained by CAI/IAQ accredited laboratory.

Results obtained with IBPA®:

	ISO	PM 5	PM 0.5	BACTERIAS	HONGOS
SIN IBPA:	9	71.378	2.507.420,49	30	30
CON IBPA:	8	7.420	1.331.802	10	8
REDUCCIÓN:		89,6%	46,9%	66,7%	73,3%

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BUSINESS CASE

IBPA®

COMMERCIAL LOCATION LARGE SURFACE

Area: 8,000 m2
Seville
Spain



%
-75,4

ANNUAL VENTILATION
CONSUMPTION

%
-20,7

ANNUAL HVAC
CONSUMPTION

%
-12,4

ANNUAL BUILDING
CONSUMPTION

Years
2,86

PAYBACK
(€0.065/kWh)



ENERGY COST:

0,12 € / kWh



UE SUBSIDUES:

--,-- € / MW saved.



SUSTAINABILITY:

< 1,77 years Payback.

Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES:

Ventilation and air conditioning (HVAC) in retail retailers accounts for the highest consumption in their total energy balance. **Reduce HVAC consumption, to achieve decarbonization goals and increase competitiveness.**

It is a large commercial premises (8,000 m2) of DIY and household goods, within a shopping centre, with opening hours of 16h/day and 325 days/year.

It has *rooftops* with its own production and a recirculation stage to diffusion through bars for the sales room, and a VRF system, accompanied by an energy recovery system, for the office area.

SOLUTIONS:

Improvement of the existing filtration with IBPA, in a single integration phase (*retrofit*), without disturbing works, with the building in operation, without replacing any existing machine and without modifying the original installation:

- Design of the IBPA solution for the Sales and Offices Room.
- Replacement of existing G4 + F7 filters with IBPA + G4 (equivalent to F7), **eliminating 450pa of pressure loss in ventilation.**
- Project Management, installation and commissioning of the IBPA (*Commissioning*).
- Certification of the result obtained by an accredited CAI/IAQ laboratory.
- Coordination of the Energy Savings Certificate

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w w w . p r a d d i t i v e . c o m



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BUSINESS CASE

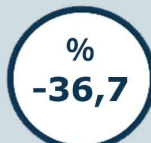
IBPA®

COMMERCIAL FACILITY LARGE SURFACE

Surface area: 3,000 m2
Santiago de Compostela
Spain



OUTSIDE AIR
SUPPLY



HVAC ANNUAL
CONSUMPTION



BUILDING ANNUAL
CONSUMPTION



PAYBACK
(0,15€/kWh)



ENERGY COST:

0,15 €/ kWh



UE SUBSIDUES:

--,-- €/ MW saved.



SUSTAINABILITY:

< 1,53 años Payback.

Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES:

Ventilation and air-conditioning (HVAC) in large-scale retail accounts for the largest share of total energy consumption. **Reducing HVAC consumption, to achieve decarbonization objectives and increase competitiveness.**

It is a large commercial premises (3,000 m2) of electronics and household appliances, within a shopping center, with opening hours of 13h/day and 313 days/year.

It has Rooftops with its own production and recirculation stage with diffusion through grilles for the sales room, and a VRF system, with energy recovery, for the office area.

SOLUTIONS:

Improvement of indoor air quality with IBPA, in a single integration phase (retrofit), without disturbing works, with the building in operation, without replacing any existing machine and without modifying the original installation:

- Design of the IBPA solution for the Sales Room and Offices.
- Recalculation of the new mandatory minimum ventilation in RITE (UNE 13799:2008 and UNE 16798-1:2020) and reduction of thermal loads.
- Project Management, installation and commissioning of the IBPA (Commissioning).
- Certification of the result obtained by IAQ accredited laboratory.
- Coordination of the Tradable White Certificates TWC, european efficiency energy direct subsidies.

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BUSINESS CASE

IBPA®

AUTOLICA – MERCEDES-BENZ
Showroom and office building.

Area: 5,500 m2
Sant Cugat - Barcelona
Spain

%

-71,8

ANNUAL VENTILATION
CONSUMPTION

%

-31,7

ANNUAL HVAC
CONSUMPTION

%

-14,9

ANNUAL BUILDING
CONSUMPTION

Years

2,18

PAYBACK
(€0.14/kWh)

 **ENERGY COST:** **0,14** € / kWh

 **UE SUBSIDUES:** **--,--** € / MW saved.

 **SUSTAINABILITY:** **< 0,52 años** Payback.
Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES:

Optimize the design of the building's thermal installations, reduce annual HVAC consumption, to achieve the **highest DGNB certification** and the company's **decarbonization** objectives, increasing its competitiveness.

It is a commercial area (1,500 m2) in the automotive sector, within an office building (4,000 m2). It has two AHUs with production and recirculation stage to diffusion through grilles for the sales room, and a VRF system, accompanied by an energy recovery system, for the office area.

SOLUTIONS:

Reduction of the external air supply flow by 45%, reducing the size of the AHUs by 35% and the thermal ventilation load and the installed thermal power by 15%.

- Design of the IBPA solution for the Sales and Offices Room.
- Replacement of existing G4 + F7 filters with IBPA + G4 (equivalent to F7), **eliminating 450pa of pressure loss in ventilation.**
- Project Management, installation and commissioning of the IBPA (*Commissioning*).
- Certification of the result obtained by means of a CAI/IAQ laboratory.
- Tests for DGNB certification (maximum score in IAQ and impact on the environment).

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w w w . p r a d d i t i v e . c o m



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BUSINESS CASE

IBPA®

UPF UNIVERSITY
Audiovisuals 54 building
Increase in occupancy.

Area: 15,000 m2
Barcelona
Spain

%
-36,9

SUPPLY AIR REDUCTION
(UNE 13799:2008)

%
-36,9

INCREASED THE
OCCUPATION

**GOING
1**

ACHIEVED
WITH IBPA®

**Years
0**

PAYBACK
(€0.14/kWh)



ENERGY COST:

0,14 € / kWh



UE SUBSIDUES:

--,-- € / MW saved.



SUSTAINABILITY:

0 años Payback.

Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES:

Over the years, building 54 (Workshops) of the **Pompeu i Fabra University of Barcelona** presents **new needs for occupancy and ventilation**, as the percentage of student enrolments in its institution increases.

The existing air conditioner cannot supply more air than planned in its design and the renovation of the installation is planned by increasing the ventilation, ducts and air conditioning system.

The IBPA® is used to, based on the improvement of indoor air quality and the improvement of the equivalent air flow, adequately justify the increase in the occupancy of the building while maintaining the current installation and flow.

SOLUTIONS:

Use of the IBPA® to improve indoor air quality above the regulatory ADI of the building, which makes it possible to **reduce the contribution of outdoor air and**, as is the case, **justify** in UNE 13799:2008 and 16798-1:2020 **the increase in occupancy** for the current flow.

- Design of the IBPA solution for the building (Talleres building).
- Calculation of ventilation in RITE (UNE-EN-13799:2008) with IBPA and the reduction of thermal loads.
- Project Management, installation and commissioning of the IBPA (*Commissioning*).
- Certification of the result obtained by an accredited CAI/IAQ laboratory.

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w w w . p r a d d i t i v e . c o m



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BUSINESS CASE

IBPA®

NetZERO OFFICE BUILDING
(LEED PLATINUM)

Surface: 15.000 m²
Barcelona
Spain

%

-17,9

LEED VENTILATION
(UNE 167981 Vs ASHRAE 62.1+30%)

%

-36,3

HVAC ANNUAL CONSUMPTION

%

-21,8

BUILDING ANNUAL CONSUMPTION

Years

3,69

PAYBACK
(0,15 €/kWh)

 **ENERGY COST:**

0,15

€/ kWh

 **UE SUBSIDUES:**

--,--

€/ MW saved.

 **SUSTAINABILITY:**

< 2,39 años

Payback.

Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES:

HVAC consumption, in high performance buildings seeking to be carbon neutral, represents around 60% of the total energy balance.

LEED PLATINUM is being pursued, using IBPA to **improve indoor air quality** and optimize the building's ventilation so to **reduce thermal load and HVAC power needs**.

The building is an 15,000 m2 office building with a restaurant, distributed on the first floor, six upper floors and 300 parking spaces. It has three primary air conditioners, with enthalpy recovery and adiabatic pre-cooling on the exhaust side, which are fed by ducts and diffusion through grilles.

SOLUTIONS:

Use of the IBPA, which represents an 18% decrease over LEED ventilation (IAQ Str.6: +30%), optimization of thermal power and sizing of ventilation, air conditioning, production and recovery installations. la p.

- Building's IBPA solution design (offices and restaurant).
- Calculation of ventilation in RITE (UNE-EN-16798-1:2020 - CAP Vs ASHRAE 62.1 - IAQP) with IBPA and reduction of thermal loads.
- Application of LEED IAQ strategy 6 (+30%).
- Project Management, installation and commissioning of the IBPA solution.
- Certification of the results obtained by a third party IAQ accredited laboratory.

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BUSINESS CASE

IBPA®




**GREEN BUSINESS DISTRICT
OFFICE BUILDING**
(LEED y WELL PLATINUM)

Area: 13,300 m2
C/ Zamora - Barcelona
Spain

%
-35,9

VENTILATION – LEED
(Indirect Method Vs ASHRAE 62.1 IAQP)

%
-32,3

ANNUAL HVAC
CONSUMPTION

%
-24,8

ANNUAL BUILDING
CONSUMPTION

Years
3,19

PAYBACK
(€0.14/kWh)



ENERGY COST:

0,14 € / kWh



UE SUBSIDUES:

--,-- € / MW saved.



SUSTAINABILITY:

< 2,11 años Payback.

Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES:

HVAC consumption, in high-performance buildings that seek to be carbon neutral, represents around 60% of the total energy balance of the building.

The building obtains LEED and WELL PLATINUM, using **IBPA to improve indoor air quality and reduce the minimum necessary ventilation flows, optimizing thermal installations and their cost.**

It is an office building with a restaurant of 13,300 m2, distributed on the ground floor, six upper floors and 300 parking spaces. It has three primary air conditioners, with enthalpic recuperator and adiabatic pre-cooling on the extraction side, which feed through ducts a diffusion through grilles.

SOLUTIONS:

Use of the IBPA that represents a 36% reduction in the minimum mandatory ventilation flows originally calculated by the Indirect Method, maintaining the regulatory ADI, applying the Perceived Air Quality Method (UNE 16798:2020) or IAQP (62.1 ASHRAE), thus seeking the optimization of the thermal power and the dimensioning of the ventilation installations, air conditioning, production and recovery.

- Design of the IBPA solution for the building (offices and restaurant).
- Calculation of ventilation in RITE (UNE-EN-16798-1:2020 - CAP Vs ASHRAE 62.1 - IAQP) with IBPA and the reduction of thermal loads.
- Implementation of IAQP ASHRAE 62.1
- Project Management, installation and commissioning of the IBPA (*Commissioning*).

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 **Pradditive®**
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BUSINESS CASE

IBPA®

GREENVIA BUILDING

(LEED & WELL GOLD)

Office building
Area: 6,350 m2
Barcelona
Spain

%

-24,6

VENTILATION – LEED
(A 167981 Vs ASHRAE 62.1 +30%)

%

-42,1

ANNUAL HVAC CONSUMPTION

%

-21,6

ANNUAL BUILDING CONSUMPTION

Years

1,32

PAYBACK
(€0.15/kWh)

 **ENERGY COST:**

0,15 € / kWh

 **UE SUBSIDUES:**

--,-- € / MW saved.

 **SUSTAINABILITY:**

< 0,23 años Payback.

Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES:

A double LEED and WELL certification is pursued, using **IBPA to improve indoor air quality and optimize ventilation and thermal installations** in the building.

It is a unique office building with commercial space of 6,350 m2, distributed over three open-plan floors without pillars, with double-height ceilings that give a great feeling of spaciousness in the workspaces. It has two large air conditioners connected to a ventilation system that provides from below through bars.

The IBPA system for improved air quality is noteworthy, which guarantees low levels of particles, organic compounds, molds, viruses, bacteria and radon.

SOLUTIONS:

Use of the IBPA that involves a reduction in ventilation, the optimization of thermal power and the dimensioning of ventilation, air conditioning, production and recovery installations.

- Design of the IBPA solution for the building (offices and commercial area).
- Calculation of ventilation in RITE (UNE-EN-16798-1:2020 - CAP Vs ASHRAE 62.1 - IAQP) with IBPA and the reduction of thermal loads.
- Implementation of IAQ LEED strategy 6 (+30%)
- Project Management, installation and commissioning of the IBPA (*Commissioning*).

The Payback calculation has been made based on the savings produced with respect to the building without IBPA. Considering the cheapening of HVAC equipment,

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BUSINESS CASE

IBPA®

4* BOUTIQUE HOTEL

UE Tradable White Certificates
project ID: SD-A58425448

60 guest rooms, 3.000 m²
Madrid
Spain



%
-45,4

VENTILATION
OUTDOOR AIRFLOW

%
-43,9

HVAC ANNUAL
CONSUMPTION

%
-17,5

BUILDING ANNUAL
CONSUMPTION

Years
3,14

PAYBACK
(0,15 €/kWh)



ENERGY COST: **0,15** € / kWh.



UE SUBSIDUES: **150,00** € / MW saved.



SUSTAINABILITY: **< 2 years** Payback.

Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES:

The HVAC annual consumption in a hotel is its second largest operating cost, only behind staff payroll and, depending on the case, ahead of F&B. **Reducing HVAC consumption in order to achieve decarbonisation targets and increase competitiveness is a priority** for the hotelery and hospitality sectors.

This is a 60 guest executive rooms boutique hotel in the downtown of an European capital. The hotel has a restaurant, SPA - Wellness and congress centres as main facilities. The building has two primary air AHU's (12,000 m³h), without recirculation, which feed through ducts to a fan coil system.

SOLUTIONS:

Improvement of indoor air quality with IBPA®, in a single integration phase (retrofit), without disturbing works, with the building in operation, without replacing any existing machines and without modifying the original installation:

- IBPA® solution design.
- Calculation of the new optimized ventilation outdoor airflow rates based in european standards.
- Project Management, installation and commissioning of the IBPA® solution.
- Certification of the result obtained by an accredited IAQ laboratory.
- Coordination of the Tradable White Certificates and european subsidies with the local and European Administrations.

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BUSINESS CASE

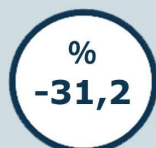
IBPA®

RESTAURANT
FAST FOOD – Chalet Type

Area: 290 m2
Badajoz
Spain



VENTILATION



ANNUAL HVAC
CONSUMPTION



ANNUAL BUILDING
CONSUMPTION



PAYBACK
(€0.15/kWh)



ENERGY COST: **0,15** € / kWh



UE SUBSIDUES: **--,--** € / MW saved.



SUSTAINABILITY: **< 1 years** Payback.

Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES:

In a restaurant, the kitchen and its consumer equipment reduce HVAC consumption by up to 45% of the total energy balance.

The aim is to reduce consumption, using **IBPA to improve indoor air quality, optimise ventilation and thermal installations** in the building.

It is an isolated restaurant, of 290 m2, distributed between the retail and dining area, and the kitchen and storage area. It has a plate recuperator that supplies primary air to an independent VRF cassette system in the dining room and an air conditioner that distributes air conducted through bars to the outbuildings, kitchen and sales counter.

SOLUTIONS:

IBPA project that involves a 59.4% reduction of the previous minimum ventilation flows and a reduction in thermal loads, which affect the behaviour and annual consumption of the existing installation.

- Design of the IBPA *Retrofit* solution for the building.
- Calculation of the new minimum ventilation, in RITE with IBPA and reduction of thermal loads.
- Project Management, hot installation, non-stop installation.
- Implementation of the IBPA (*Commissioning*).
- Management of the CAE / White Certificates, in accordance with RD.36/2023 and EU Directive 2006/32/EC.

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BUSINESS CASE

IBPA®

RESTAURANT

Independent, in hotel
(Change HVAC installation)

Area: 300 m2
Madrid
Spain



VENTILATION



ANNUAL
VENTILATION
CONSUMPTION



ANNUAL HVAC
CONSUMPTION



PAYBACK
(€0.15/kWh)



ENERGY COST:

0,15 € / kWh



UE SUBSIDUES:

--,-- € / MW saved.



SUSTAINABILITY:

0 years Payback.

Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES:

In a restaurant, the kitchen and its consumer equipment reduce HVAC consumption by up to 70% of its total energy balance. Ventilation cannot be reduced except in the dining room.

The aim is to reduce consumption in the dining area, using the **IBPA to improve indoor air quality, optimise ventilation and thermal installations** in the building.

It is an independent restaurant, of 290 m2, distributed between the dining area, and the kitchen and storage area. It has a plate recuperator that supplies primary air to an independent VRF cassette system in the dining room.

The kitchen and dining room airs are treated with IBPA:

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SOLUTIONS:

IBPA project that involves a 59.4% reduction of the previous minimum ventilation flows and a reduction in thermal loads, which affect the behaviour and annual consumption of the existing installation.

- Design of the IBPA solution for the restaurant's new HVAC system.
- Calculation of the new minimum ventilation, in RITE with IBPA and reduction of thermal loads.
- Project Management, hot installation, non-stop installation.
- Implementation of the IBPA (*Commissioning*).
- Management of the CAE / White Certificates, in accordance with RD.36/2023 and EU Directive 2006/32/EC.

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BUSINESS CASE

IBPA®

CLINIC HOSPITAL CLEAN ROOMS

Thoracic and Respiratory Unit
Intensive Surveillance BOX
Barcelona
Spain



ISO
8

ISO
INITIAL

ISO
6/7

ISO WITH
IBPA®

%
50,3

TVOC
REDUCTION

%
77,5

FORMALDEHIDE
REDUCTION



Improves the ISO classification of critical facilities (cleanrooms).



It increases capacity and flexibility, being able to **enable new areas of laboratories and precision operating rooms, in hours**, without modifying the current installation.



PAYBACK : < 1 year Payback.

Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES & SOLUTIONS:

- Despite having an H14 filter at the head-end and terminal F9, it **does not meet the required ISO7 classification** (ISO 14644-1).
- TVOC and HCHO levels are very high**, resulting in a "Nonconformance".
- The box is NOT properly overpressurized as its mandatory (ISO 14644-3)** with respect to the dirty zone, nor is the dirty zone with respect to the hospital. If so, it would have been classified as ISO6.

The aim is **to improve indoor air quality with IBPA®**, by retrofitting into the existing HVAC system, **without construction work or stopping the facility.**

RESULTS:

After complete air renewal (1h), with IBPA®,

ISO 14644-1		INITIAL SITUATION		WITH IBPA®	
ID.		PM > 5.0	PM > 0.5	PM > 5.0	PM > 0.5
1		18.613	704.446	1.053	152.000
2		7.706	484.133	1.626	159.106
3		5.568	293.693	1.146	132.186
4		4.528	228.320	1.093	118.560
5		10.000	264.253	1.533	133.653
6		14.640	311.173	2.013	154.333
AVERAGE:		10.176	381.003	1.411	141.640

PM REDUCTION:	-	-	86%	63%
ISO ACHIEVED:	8	8	6	7
CLASSIFICATION:	8		7	

ZONE	INITIAL SITUATION (ppm)		WITH IBPA® (ppm)	
	HCHO	TVOC	HCHO	TVOC
Corridor	0,67	1,03	0,14	0,41
Box 6	0,53	0,82	0,13	0,51
AVERAGE:	0,60	0,93	0,14	0,46
REDUCTION:	-	-	77,5%	50,3%

Clasifica: ZWEI Ingeniería, SL - NCB 2/3. D. Javier García Palomo. ID. Informe: SL-5742.

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BUSINESS CASE

IBPA®

IGTP

HEALTH RESEARCH INSTITUTE
GERMANS TRIAS I PUJOL

Cell Culture laboratories
Barcelona
Spain



ISO
9/8

ISO
INITIAL

ISO
8/7

ISO WITH
IBPA®

%
92

TVOC
REDUCTION

%
85

PARTICULATE MATTER
REDUCTION



Improves the ISO classification of critical facilities (cleanrooms).



Reduces chemical air pollutants (VOCs/VOCs) to acceptable exposure limit values.



PAYBACK : < 1 year Payback.

Includes UE White Certificates subsidies + Carbon Footprint Offset.

OBJECTIVES & SOLUTIONS:

The objective is to **improve the laboratory's classification to assess IBPA capability** in a newly classified facility (ISO 14644-1) with no apparent operational problems.

- **The laboratory** classifies adequately and **achieves the required ISO 8.**
- **TVOC levels are too high**, resulting in a "Non-conformance".

Indoor air quality is sought to be improved with IBPA®, by retrofitting into the existing HVAC system, **without works and with the installation running**, to obtain the new classification and reduce the TVOC levels..

RESULTS:

After two complete air renewal (2h), with IBPA®,

ISO 14644 ID.	INITIAL SITUATION		WITH IBPA®	
	PM>5.0	PM>0.5	PM>5.0	PM>0.5
Laboratory	81.224	1.840.974	15.888	278.934
Antechamber	7.416	539.625	1.412	92.533

ISO 14644 ID.	ISO CLASSIFICATION		REDUCTION (PM)	
	INITIAL	WITH IBPA®	PM>0.5	PM>5.0
Laboratory	9	8	80%	85%
Antechamber	8	7	81%	83%

ID.	TVOC (Ug/m3)		REDUCTION TVOC
	INITIAL	WITH IBPA®	
Laboratory	3.509.000	287.000	92%
Antechamber	3.126.000	835.000	73%

Certif: Tratamientos Samar, S.L. D. Ester Villanueva Carmona. Id. Informe: EV-22-0604/1.

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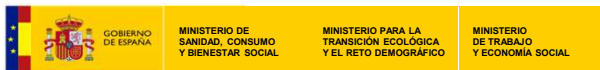
*Rendimiento HVAC/R
Eficiencia Energética
Calidad de aire interior*

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Recomendado por:



BREEAM®

WELL™



Co-leading the bold since 1997:

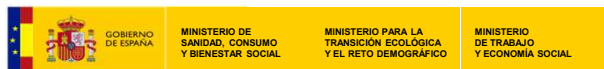


Catálogo comercial V.24..08.05

IBPA® TRAINNING

Selection of air cleaning technologies

Recomendado por:



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Tradable White Certificates
National Energy Efficiency Action Plans - 2012/27/UE



BREEAM®

WELL™



TRAINING: Suitability of air purification systems in BUILDINGS (EUROPE AND ASHRAE).



ASHRAE establishes air cleaning as strategic when establishing building decarbonization strategies.

https://www.ashrae.org/file%20library/about/position%20documents/pd_filtration-and-air-cleaning_2024.pdf



Physical principle cleaning air technologies are not restricted by European and American regulations.



Chemical or physicochemical principle technologies. The biocide or bi-products they emit can never come into breathable area or be in direct contact with occupants.



Air cleaning systems should be integrated into ventilation and air conditioning to treat the whole breathable area. ASHRAE dissuades but no prohibits portable units.

DOCUMENTATION TO BE REQUESTED TO ANY AIR CLEANNING SYSTEM:



ZERO-OZONE GENERATION CERTIFICATION.



NO BY-PRODUCTS GENERATION CERTIFICATION.



TRAINING: Regulatory compliance of air purification systems in BUILDINGS (EUROPE)

