EAU

SURFACE

AIR RANGE

UVGERMI®

ULTRAVIOLETS DE HAUTE TECHNOLOGIE

THE UV SPECIALIST FOR AIR TREATMENT.

MADE IN FRANCE

GERMI RCLEAN

R75 FILTER+

White edition

Black edition

UVGERMI, ZAC de la Nau, 19240 Saint-Viance, FRANCE
EXPORT DIVISION:
Tel.: +33 476 616 083
Mail: export@uvgermi.fr
www.uvgermi.fr

WHY TREAT AIR?

The air in our indoor environments **is increasingly contaminated** by bacteria, viruses, fungi, as well as volatile organic compounds and fine particles.

In recent years, **with the increased awareness** regarding the risks posed by these pollutants, **neutral air treatment technologies** that do not require chemical biocides have become more relevant in schools, medical environments, offices, premises open to the public, transport, etc.

With these recent health and environmental challenges, UV Germi offers **a natural disinfection system,** an environmental process **without the need for chemicals** by using **ultraviolet technology.**

SOURCES OF INDOOR AIR POLLUTION

HUMAN ORGANIC RELEASES
CO^2, bacteria & viruses

TEXTILES
Stale tobacco smoke

HOUSEWORK AND CLEANING
Dust, VOCs

VENTILATION SYSTEMS
Dust & mould

RUGS & CARPETS
Dust, VOCs & dust mites

FLOORING, WALL-COVERING & FURNITURE
formaldehydes,

COPIERS AND PRINTERS
ozone, VOCs

OUTDOOR AIR
dust, PM 2.5, combustion gases

ULTRAVIOLET TECHNOLOGY

UV Germi has developed a system that reproduces **the bactericidal effect of sunlight**, more specifically UV rays.

UVs are invisible to the human eye. They are located **between X-rays and visible light in the electromagnetic spectrum.** The UV waveband is **between 100 and 400 nanometres** (a billionth of a meter).

UV-Cs (at the accurate wavelength of 253.7 nanometres) **naturally destroy** bacteria, viruses and parasites, **without requiring chemicals.** The physical reaction of this light at this specific wavelength **breaks the DNA of microorganisms** (viruses, bacteria, moulds, pollens). It also represents a risk to human health.

This technology is much better for the environment and for human health than chemical disinfection. The fact that**no chemicals are used for treatment** reduces the negative impact on the receiving environment and makes this process **completely environmentally friendly.** Furthermore, the process leaves no residue.

BENEFITS OF THIS TECHNOLOGY

- The process is physical and not chemical, so **remains friendly for the environment.**
- **UVs are very effective at inactivating most microorganisms,** especially those that are harmful to human health and which are sometimes resistant to certain chemicals
- **UV technology also reduces operational costs**. These only include lamp replacement and power consumption, mainly due to the very limited risks in terms of safety

TREATMENT AGAINST PATHOGENS

(bacteria, viruses and moulds)

The table opposite presents the **removal rate in one pass** for various microorganisms.

** The device, when operating continuously, will guarantee a large number of passes and a*

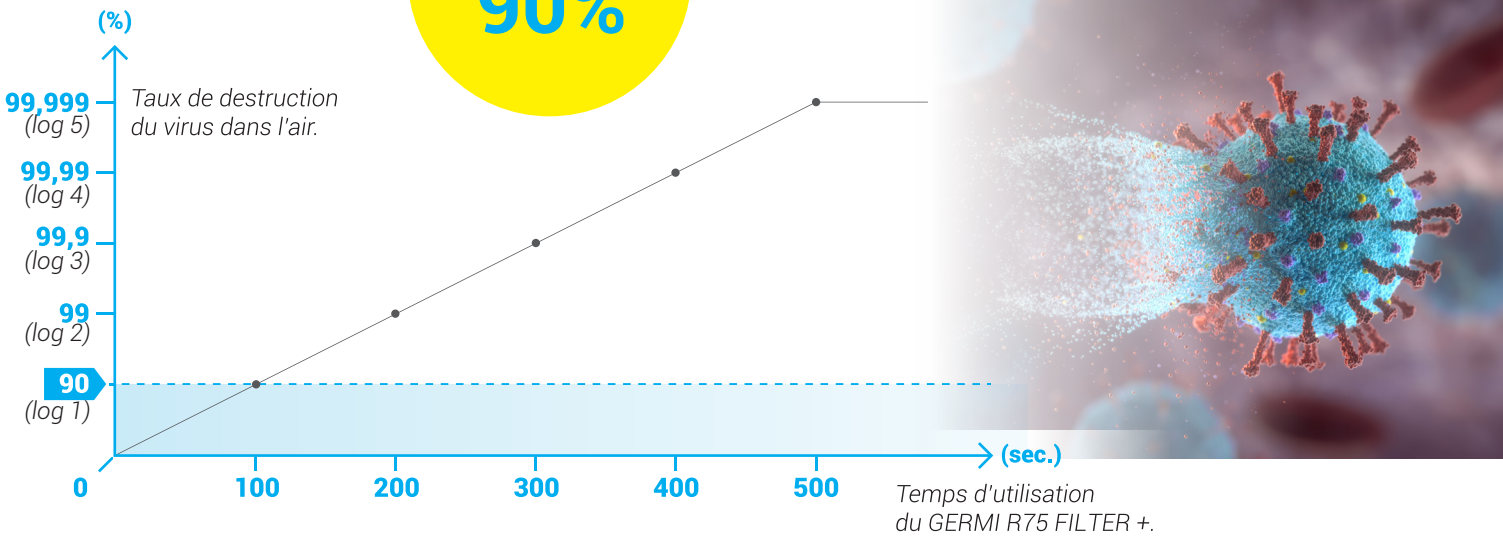
MICROORGANISMS	REMOVAL RATES FOR EACH PASS THROUGH THE REACTOR (%)
Influenza Virus	75
E. Coli	75
Salmonellae	32-80
Bacilli	22-99
Streptococcus	85
Staphylococcus	74-86 *
Legionellae	38-99 *
Aspergillus	80
Hepatis	61 *

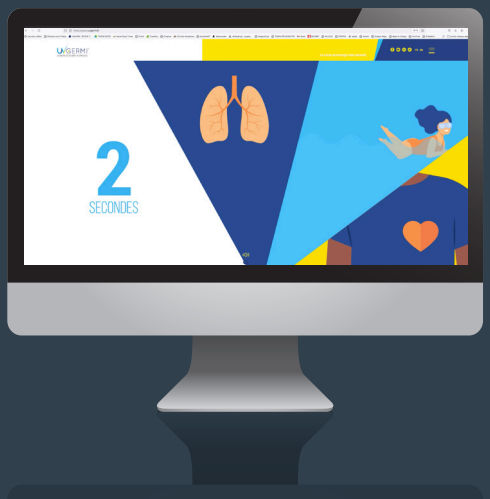
EFFECTIVENESS OF THE UVGERMI TECHNOLOGY

Tested in an international biomedical *research centre on* AH1N1 *HUMAN CORONAVIRUS.* *

*(Report on request).

REMOVAL GREATER THAN 90%





FIND OUT MORE ON OUR ENTIRE **AIR RANGE**!

as well as on our **WATER** and **SURFACE** treatment ranges

REMOVAL OF VOLATILE ORGANIC COMPOUNDS (VOCS)

On top of creating unpleasant smells, VOCs in ambient air are known to be toxic for humans, some being identified as carcinogenic.

UVGERMI technology has been selected for a **European collaborative research and development project** to study the improvement of air quality in aircraft.

Pollutants are completely destroyed and transformed into CO_2, a harmless molecule in minute concentrations.

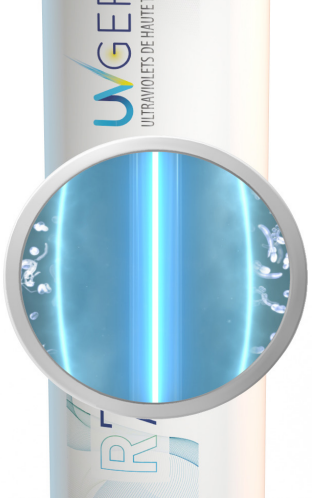
FINE PARTICLE TREATMENT

Our devices are equipped with filters to trap PM1 fine particles (particle size below 1 µm). As these particles can penetrate deep in the human respiratory system, they may cause respiratory and cardiovascular diseases.

The effectiveness of these filters defined according to the requirements of**NF EN ISO 16890 standard:** *"Air filters for general ventilation - Part 1: Technical specifications, requirements and classification system based upon particulate matter efficiency (ePM)"* varies between 50 et 80%.

UV VS. FILTRATION?

	HEPA	UVGERMI TECHNOLOGY
Technological processes	**Separation** *(fibre membrane)*	**Photocatalysis** *(photoreaction of UVs on a catalyst)* **and f7 filtration**
Destruction of bacteria and viruses	✖	✔
Destruction of VOCs (Hydrocarbons, solvents, etc.)	✖ *(only trapped)*	✔
Blocking of PM2.5 fine particles	✔	✔
Odour removal	✖	✔
Silent operation	✔	✔
Man/machine coexistence	✔	✔
Maintenance	**Regular filter replacement** *to maintain its performances*	*Replace lamp and filters* **at least once a year**
Installation	**Simple**	**Simple**
Mobility	✔	✔
Cost	+	−



NO RISK FOR HUMANS

The risk of UV rays leaking from the different sides of the device is guaranteed as non-existent through the use of a:

- **Metallic screen** on the upper section of the reactor core to prevent any upward emission
- **Stainless steel body** which is entirely opaque to UV to prevent any risk of UV leakage on the sides
- At the base of the GERMI R75 Filter+ purifier lamp, **a piece of opaque UV resistant material** is provided to avoid any direct impact on the lower part of the device.

STUDY VALIDATING THE PERFORMANCES
OF THE GERMI R75 FILTER+® AND THE GERMI RCLEAN®

In 2017, our device was selected by the Ecole des Mines de Douai, for a study entitled "Treatment of indoor air by photocatalysis, evaluation of the safety of air treatment systems by photocatalysis" financed by the ADEME (Agence de l'Environnement et de la Maitrise de Energy). **It was ranked as the most effective among 20 other products.**

The technological performance of GERMI R75 devices **allowed UVGERMI to be selected for the AIRCLEAN program** funded by the Single Interministerial Fund (FUI) which aims to improve air quality in aircraft cabins.

PERFORMANCE ANALYSIS - *Dimensions certified by the NF536 air purifier mark.*

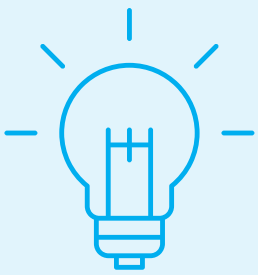
In one single pass, no by-products detected (ozone, formaldehyde, CO, NO) during tests with VOCS.

	TEST STANDARD	R75 FILTER+® RESULTS
Flow treated (m^3/h)	NF B44-200 (2016)	165-120-80 (m^3/h)
Electrical P (W)		110-101-95 (W)
Noise Lw (dBA)	NF EN ISO 3741 (2012)	64-57-54 (dBA)
Particle filtration	NF EN ISO 16890 (2017)	0.3-0.5 µm = 26.3% 1-2 µm = 54.3% 3-5 µm = 95.4%
VOC removal		Acetone = 0%; Acetaldehyde = 25%; Heptane = 63%; Toluene = 77%, Formaldehyde: 21%
Bacteria removal (Staphylococcus Epidermidis)	NF B44-200 (2016)	95.6%
Fungi removal (Aspergilus Brasilensis)		80.9%
Allergen removal (cat)	At $Q_{V\ max}$	82%

WE HAVE OBTAINED THE NF 536 AIR PURIFIER certification (identification number 21.12.011)

TECHNICAL SPECIFICATIONS

	GERMI R75 FILTER+®	GERMI RCLEAN®
FLOW	70-150 m3/h	400-1100 m3/h
SURFACE AREA TREATED	20-200 m^2	150-350 m^2
CEILING HEIGHT	2.5 m	3.0 m
LAMP SERVICE LIFE	9,000 h	9,000 h
NUMBER OF LAMPS	1 x 75 Watts	10 x 75 Watts
PARTICLE FILTER	Yes F7	Yes F7
MAX POWER	100 W	700 W
WEIGHT	22 kg	95 kg
TRANSPORT	Can be moved - with 4 wheels	Can be moved - with 4 wheels and 2 han-
DIMENSIONS (HxWxD)	1196 x 260 x 260 mm	1934 x 605 x 528 mm
POWER SUPPLY	230 Volts	230 Volts
INTERFACE AT THE FRONT	• ON/OFF switch • Selection of the air flow Light strip indicator (Lamp service life)	Touch screen (HMI Option) Lamp status Alarm if maintenance required Air flow settings
NOISE LEVELS (from 2 m at min. operation)	< 40 dBA	< 50 dBA



Our purifiers must be in operation as often as possible and especially with several people in the same room. Thus, the UVGERMI Research and Innovation department has developed air purification systems that are efficient and silent.

40 DB	45-65 DB	70-80 DB	85-95 DB	100-110 db
whispers	*normal voice*	*high voice*	*shouting*	*conversation is difficult*

UVGERMI®
ULTRAVIOLETS DE HAUTE TECHNOLOGIE

UVGERMI, ZAC de la Nau, 19240 Saint-Viance, FRANCE
EXPORT DIVISION:
Tel.: +33 476 616 083
Mail: export@uvgermi.fr
www.uvgermi.fr