

*The air purifiers*



# VIROLINE

**THE** concept to combat viruses and bacteria



# UV-C IRRADIATION



The part of the UV-C spectrum that is particularly relevant for air disinfection is between 200-280 nm. In many real-life situations, using UV-C restores much of the security that makes practically normal business operation possible. Viruses can be effectively eliminated from the inhaled air and the contact surfaces. UV-C concepts can make an important contribution to reducing virulence and thus protect against many new infections.

## EFFICIENT LAMP

Type	Sterilizing lamp
Operational life	9000 h
Capacity	18 W
UV-C range	254 nm
Diameter	28 mm
Length	227 mm

### Assessment of the Federal Office for Radiation Protection

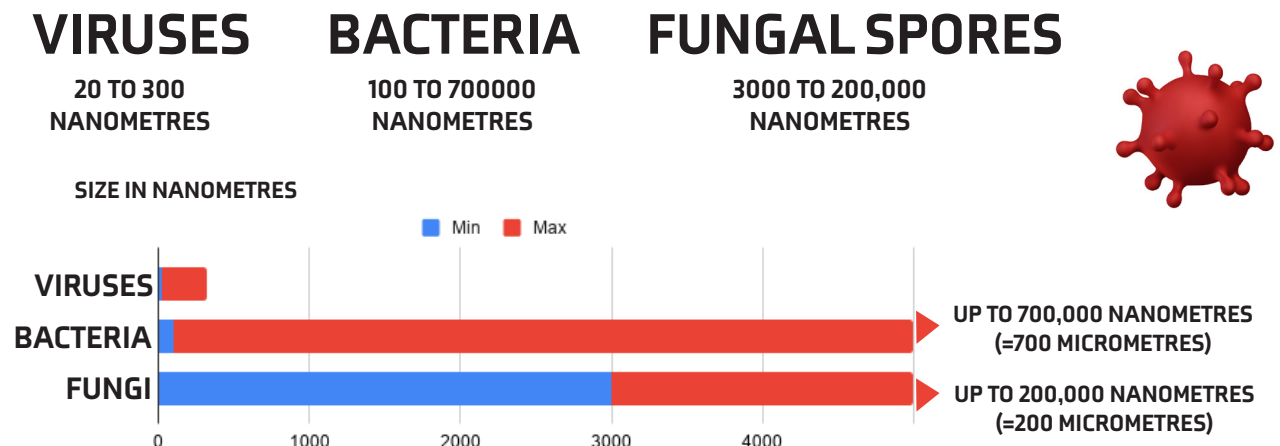
UV-C radiation is able to kill bacteria and viruses. Disinfection systems or methods in which people are securely protected against UV radiation pose no problems with regard to radiation protection. These include systems in which the UV-C source is installed

in a closed unit or in which the source is shielded in a way that ensures that any persons present are not exposed to any UV-C radiation.

Source: German Federal Office for Radiation Protection

## DISINFECTION

The many different types of viruses and bacteria make it clear just how important it is to adopt hygiene measures to stop them spreading. Despite all the rules, it is not possible to clean everything with disinfectants. At operating facilities and in production halls, aerosols in the air and germs settling on frequently handled surfaces are risks that can be reduced.



# FILTER TECHNOLOGY



In the field of filter technology, we distinguish between the classes G1 to G4, M5 to M6, F7 to F9, E10 to E12, H13 to H14 and U15 to U17. Filters of filter class H14 should be used in order to reliably filter viruses, bacteria, fungal spores and other germs.

Our filters are tested in accordance with standard EN 1822:2011.

H14		
FILTRATION	TEST AEROSOL	SIZE
99.995%	DI-ETHYLHEXYL-SEBACATE	100 - 300 NANOMETRES

## FILTER CERTIFICATION

Violine Compac/Maxi/Tower HEPA filter H14, tested according to DIN EN 1822

Filter class	Test aerosol	Overall efficiency value in MPPS in %	Overall value of permeability level in MPPS in %	Local efficiency value in MPPS in %	Local level of permeability level in MPPS in %	Obsolete: DIN EN 1822:1988 (predecessor DIN 241184)
E10	DEHS (Di-Ethyl-Hexyl-Sebacate) MPPS 0,1 - 0,3 µm	≥ 85	≤ 15	–	–	H10
E11		≥ 95	≤ 5	–	–	H11
E12		≥ 99,5	≤ 0,5	–	–	H12
H13		≥ 99,95	≤ 0,05	≥ 99,75	≤ 0,25	H13
H14		≥ 99,995	≤ 0,005	≥ 99,975	≤ 0,025	H14
U15		≥ 99,999 5	≤ 0,000 5	≥ 99,997 5	≤ 0,002 5	U15
U16		≥ 99,999 95	≤ 0,000 05	≥ 99,999 75	≤ 0,000 25	U16
U17		≥ 99,999 995	≤ 0,000 005	≥ 99,999 9	≤ 0,000 1	U17

Source: VDMA Air Filtration Information (2015-02)

### Conduct of a filter test as per DIN EN 1822

First, the fractional efficiency is measured at the flat filter medium and the particle size at minimum efficiency (particle size with largest permeability level) is determined (MPPS). The overall efficiency of the filter element at minimum efficiency (particle size with largest permeability level) (MPPS) is determined at nominal volume flow. In glass fibre media, the particle size at minimum efficiency (particle size with largest permeability level) is 0.1 to 0.2 µm; in the case of PTFE membrane filter media, it is less than 0.1 µm.

Source: VDMA Air Filtration Information (2015-02)

### Recommendation of the Federal Environment Agency

Mobile air purifiers often make use of high-performance particulate filters (HEPA filters of classes H 13 or H 14) which reduce the concentrations of fine dust and infectious particles in the air. Some of these devices also use UV disinfection intended to render viruses inactive in addition to or instead of the particulate filters. Mobile air purification devices are not intended as a substitute but as a complement to active ventilation and in cases where organisational measures such

as reducing the numbers of persons present or increasing the distance between them are not possible.

Source: "Ventilation in Schools"/Recommendations of the Federal Environment Agency on air replenishment and efficient ventilation for the reduction of the risk of infection



# VIROLINE SMART



Viroline Smart cleans the air from germs such as bacteria and viruses. It is optimised for use in many different spaces such as laboratories, administrative buildings, workshops, conference rooms and entrance areas. A low-noise, high-performance fan draws in the air.

The plant is based on a two-stage filter concept. The contaminated air is guided through a microfilter into the stable housing. In the housing, the germs are efficiently eliminated by means of a high-performance UV-C lamp. Similar to the principle of a mouth and nose protector, the Viroline Smart Microfilter G4 absorbs dust and aerosols, which according to the German Robert Koch Institute are frequently the carriers of viruses. Viruses attached to these small droplets are consistently inactivated by the continuous UV-C irradiation. This way Viroline Smart progressively cleans all the air in the room.

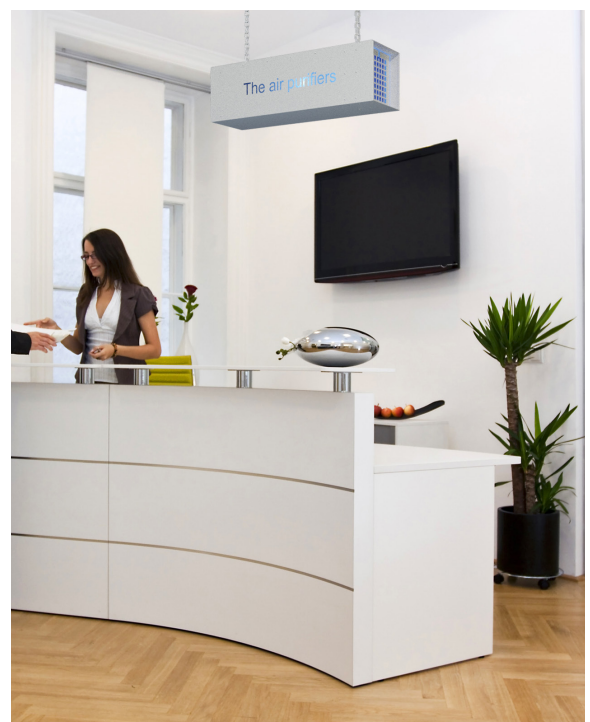
The walls of the housing are made from robust stainless steel and ensure reliable protection against the UV-C radiation. Viroline Smart is best suspended at the required height by means of ceiling hooks.

The microfilter mats and the UV-C lamps can be changed without tools if required. The device is low-maintenance and energy-saving. The Viroline Smart Basic can be controlled by a timer. The WiFi version enables switching on and off via smartphone.

- Extremely quiet
- Robust stainless steel construction
- Optional WiFi operation
- High-performance UV-C lamp

## TECHNICAL DATA

Version	Basic	WiFi
Filter technology	UV-C irradiation, 2 x microfilter G4	
Fan power	27 W	38 W
Voltage	230 V/50 Hz	
Max. volume flow	400 m <sup>3</sup> /h	700 m <sup>3</sup> /h
Size (W x D x H)	1000 x 290 x 290 mm	1000 x 345 x 345 mm
Weight	16 kg	19.5 kg
Volume	43 dB(A)	43 dB(A)
Construction	Brushed stainless steel construction	
Article number	21110400	21110700
Price	1499.00 €	1795.00 €



# VIROLINE COMPAC S

The Viroline Compac S reliably removes fine dust and germs such as bacteria and viruses from the air. The device reduces pathogens in the air in the long term, lowers the risk of infection and promotes the well-being of people in the room. The mobile room air purifier is the intelligent solution for everyone who is looking for a device that discreetly and reliably emits clean and unpolluted air - and all this at an unbeatable price/performance ratio. It is therefore perfect for use in hotels, restaurants, medical practices, hairdressing salons, nursing homes, schools and daycare centres.

The ambient air is fed into the device from above, passed through a HEPA filter of class H14 (certified according to DIN EN 1822), in which bacteria, viruses and molds then adhere. The filtered air is then directed back into the room from behind, barely noticeable. These high-performance filters have shown to separate out more than 99.995 percent of all fine suspended particles larger than 0.1 µm and are so effective that they are also used in hospitals and laboratories. The motor of the system is controlled by an integrated frequency converter, which allows the power of the system to be regulated individually.

A further feature is that the unit can be easily moved around in the room thanks to its castors, so that it can always be placed where required.

The Viroline Compac S is ready for use directly out of the box. Simply connect the plug and turn it on at the power button. If necessary, the filters can be easily removed and replaced.

- Exceptionally quiet
- Unbeatable price
- Adjustable
- Ready for immediate use



## TECHNICAL DATA

Filter technology	HEPA H14-Filtration
Fan power	750 W
Voltage	230V/50 Hz
Max. volume flow	between 250 and 1.000 m <sup>3</sup> /h
Size (W x D x H)	580 x 580 x 1010 mm
Weight	90 kg
Volume	between 39 and 65 dB(A)
Construction	Powder-coated steel construction
Article number	2111 0801
Price	1.850,00 €

## ADD-ON: Silencer



- Cancels noise
- Lateral airflow

Article number  
Price

2111 0800 01  
223,00 €

# VIROLINE MAXI

Violine Maxi cleans the air of germs, bacteria and viruses. It is suitable for larger rooms and workshops.

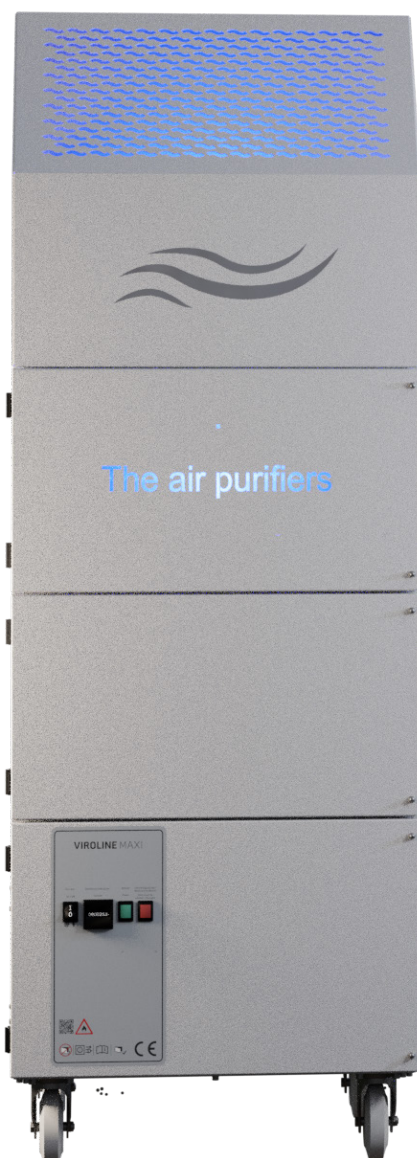
The air is sucked in at a height of almost 2 m and is then guided through a UV-C irradiation section.

This device is additionally equipped with an H14 filter that efficiently blocks viruses and bacteria.

Germs that are not directly killed by the UV-C light are caught by the H14 filter and are then eliminated by continuous exposure to the UV-C irradiation.

The clean air is fed back into the room via the rear of the Violine Maxi.

The device is equipped with lockable industrial castors and manufactured from powder-coated sheet steel. The H14 filter cassette and the UV-C lamp can be conveniently removed via maintenance hatches. The UV-C light can also be turned off if required.



- For mobile use
- UV-C + H14: Double the safety
- Compact construction
- Intelligent air flow concept

## TECHNICAL DATA

Filter technology	UV-C irradiation, Pre-filter mat G4, H14 filtration
Fan power	550 W
Voltage	230 V/50 Hz
Max. volume flow	1500 m <sup>3</sup> /h
Size (W x D x H)	665 x 681 x 1930 mm
Weight	167 kg
Volume	49 dB(A)
Construction	Powder-coated steel construction
<b>Article number</b>	<b>2111500</b>
<b>Price</b>	<b>2.450,00 €</b>



# VIROLINE TOWER



Viroline Tower is an indoor-air suction and filtration unit which cleans the air of germs, bacteria and viruses. Viroline Tower is suitable for halls and large rooms of up to 500 m<sup>3</sup>. It is used in airports, railway stations, production halls, municipal halls as well as in sports and leisure halls.



At a height of over three metres, the contaminated air is sucked in from a radius of up to 30 metres and is guided through a UV-C irradiation section.

Surviving germs that have not been directly killed by the UV-C- light are caught by the H14 filter and are then eliminated by continuous exposure to the UV-C irradiation.

The clean air is fed back into the room via the floor-level air outlets.

Viroline Tower can be easily positioned in the room by means of crane lugs and lift truck-compatible skids. It is manufactured from powder-coated sheet steel. The H14 filter cassette and the UV-C lamp can be conveniently removed via the maintenance hatches. The UV-C light can also be turned off if required.



Large air flow radius



Slender construction



Easy to position






Aerosol extraction at high level

## TECHNICAL DATA



Filter technology	UV-C irradiation, Pre-filter mat G4, H14 filtration
Fan power	550 W
Voltage	230 V/50 Hz
Max. volume flow	3000 m <sup>3</sup> /h
Size (W x D x H)	785 x 800 x 3200 mm
Weight	235 kg
Volume	65 dB(A)
Construction	Powder-coated steel construction
Article number	21113000
Price	4.980,00 €

# SPARE PARTS




## VIROLINE SMART

Spare part	Article number	Price
 UV-C lamp	100310	35,00 €
 Micro filter G4, set of 2 Basic	100311	14,00 €
 Micro filter G4, set of 2 WiFi	100312	14,00 €


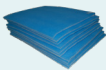

## VIROLINE COMPAC

Spare part	Article number	Price
 Add-On: Silencer	2111 0800 01	223,00 €
 Hepa filter H14 610 x 610 x 292 mm	978005141	395,00 €

## VIROLINE MAXI

Spare part	Article number	Price
 UV-C lamp	100310	35,00 €
 Pre-filter mats G4, Set of 10 610 x 610 x 20	10032	119,00 €
 Hepa-Filter H14 610 x 610 x 292 mm	50202146629	395,00 €

## VIROLINE TOWER

Spare part	Article number	Price
 UV-C lamp	100310	35,00 €
 Pre-filter mats G4, Set of 10 592 x 592 x 20 mm	100329	115,00 €
 Hepa-Filter H14 592 x 592 x 300 mm	20170260114	395,00 €