



DISINFECTING WITH UV-C

UV-C TECHNOLOGY:
OUR ACE IN THE FIGHT
AGAINST COVID-19



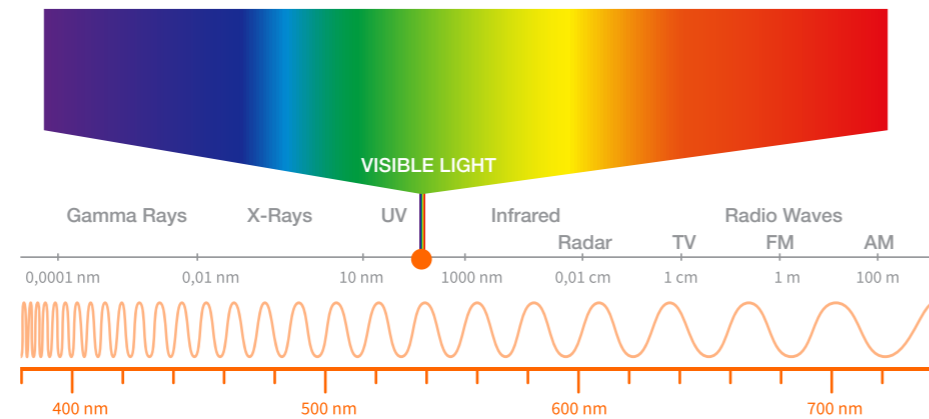
GENERAL UV-C KNOWLEDGE

The use of germicidal UV radiation has been used for over 100 years to combat the spread and transmission of infectious agents, such as viruses, bacteria and fungi because of its many positive properties – especially compared to other disinfection methods for example in the pharmaceutical sector and in food packaging.

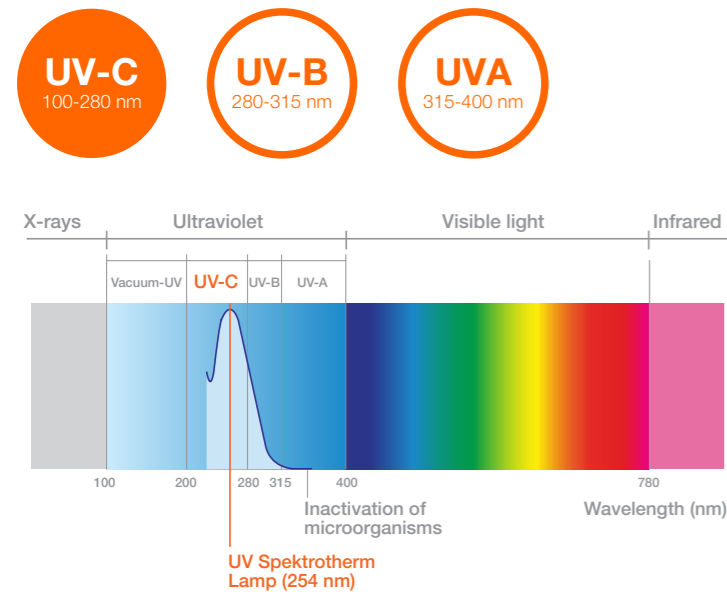
The term ultraviolet originates from Latin, which translates as beyond violet, which means that the wavelength is above the violet color, not visible to the human eye.

UV-C light destroys the DNA structure of a wide variety of viruses, bacteria and other pathogens within seconds and is therefore suitable for disinfecting water, air and surfaces. Until recently, only a few industries were using the purifying effect of ultraviolet radiation. However, with the spread of COVID-19, demand for UV-C lamps in all sectors worldwide has increased enormously. And no wonder. The benefits of this method of disinfection speak for themselves.

THE ELECTROMAGNETIC SPECTRUM



UV SPECTRUM



UV-C SPECTRUM DESTROYS VIRUS DNA ON THE WAVELENGTH AT 254 NM



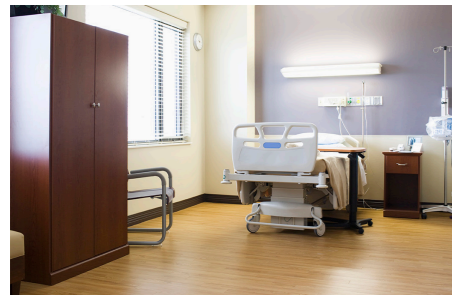
IMPRESSIVE BENEFITS OF LEDVANCE UV-C LIGHT:

- Disinfects without chemicals or toxic compounds
- Gives pathogens no opportunity to build up resistance
- Does not alter product properties during disinfection
- Leaves no residue or discoloration
- Does not produce ozone beyond 240 nanometers



PROFESSIONAL DISINFECTION FOR AIR AND SURFACES

Here are just a few examples of the pandemic-related uses of UV-C radiation.

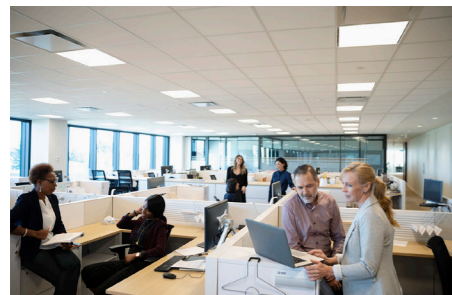


HOSPITALS

UV-C radiation is able to deactivate SAR-CoV-2's high viral loads and thus render them harmless.* The solution using UV-C technology to rapidly decontaminate medical areduces the risk of infection – for example through crosscontamination.

AVIATION

In an aircraft, the risk of infection from the finest airborne particles, known as aerosols, is considered to be particularly high. Regularly disinfecting the air reduces the risk of infection.



OFFICE

In many sectors, working from home can only be temporary. UV-C radiation plays an important role in a virus-free workplace. As well as surface disinfection, air disinfection lamps are essential in the office to prevent the spread of Coronavirus through the air conditioning system.

PUBLIC SPACES

The risk of infection is particularly high wherever groups of people gather. Escalator handrails and the handles of shopping trolleys are notable examples. Over the course of the Corona pandemic, UV-C lamps can and will be used wherever they are needed to prevent contact or airborne spread of COVID-19.



WHY CHOOSE LEDVANCE UV-C?



One of the two global lighting manufacturers with offices in >50 countries and R&D centers in Boston, Shenzhen, and Garching / Munich



Industry-leading in low pressure discharge technology for decades, holding several dozen core patents (more than 50 patents) in this field globally



Maker of T8 UV-C lamps with a proven track record - the LEDVANCE factory in Smolensk / Russia has been mass producing UV-C lamps since 2012



Dedicated research center on "light for human health & wellbeing", recently awarded from VDE for our proprietary BIOLUX® technology



Actively driving new requirements for disinfection on safety and effectiveness in standards and guidelines (e.g. member of UV-C disinfection working groups in leading industry associations¹⁾)

1) Global Lighting Association, Lighting Europe Association, ZVEI, IEC TC34 AG17 Standardization.

PORTFOLIO OVERVIEW



AIR DISINFECTION SOLUTIONS

LEDVANCE UV-C AIR DISINFECTOR PRODUCES CLEAN INDOOR AIR

- UV-C Air Disinfector
- UV-C Panel
- UV-C Recirculator



SURFACE DISINFECTION SOLUTIONS

UV-C LUMINAIRES & LAMPS FROM LEDVANCE MORE THAN JUST LIGHT

- Linear Housing UV-C & Sensor
- UV-C T8 Lamps



AIR DISINFECTION SOLUTIONS

UV-C AIR DISINFECTOR

Produces Clean Indoor Air

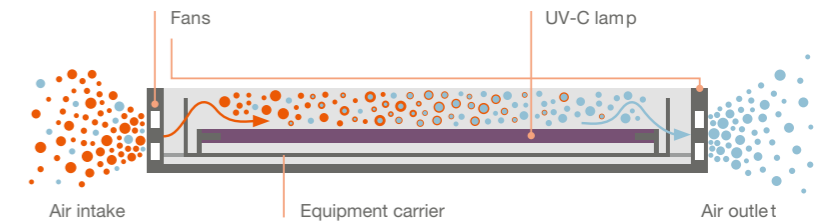
LEDVANCE UV-C AIR DISINFECTOR:

The LEDVANCE UV-C AIR DISINFECTOR contributes to better and healthier air quality in offices, commercial premises and medical practices, not just during COVID. The high-tech device cleans room air particularly effectively and entirely without chemicals – non-stop, even in the presence of people. It draws air in, disinfects it inside with the help of UV-C rays and releases it back into the room. Inactivating the microorganisms reduces the virus and bacteria load in the air to a minimum.

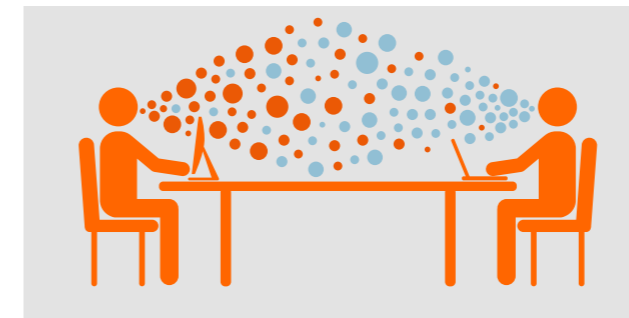
- Proven technology – air disinfection based on UV-C light
- Effective – inactivates up to 99.9 % of viruses and bacteria in one run
- Convenient – no filter, so it won't need replacing
- Quiet – extremely low-noise operation (ultra-silent)
- Safe – no leakage of UV-C rays, making it safe for humans and animals
- Gentle – chemical-free operation and ozone-free lamp

HOW IT WORKS

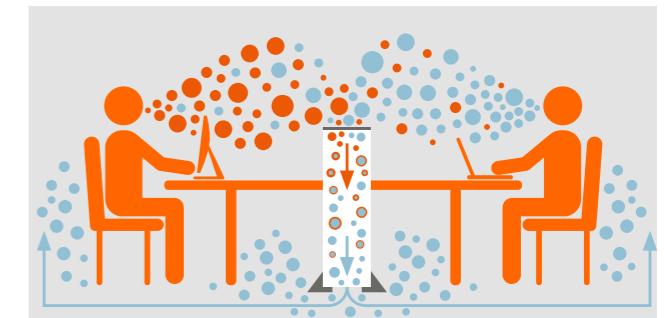
The ambient air is drawn into the closed housing with the help of a fans and exposed to the radiation from a UV-C tube. The sterilized air then flows out at the end of the device without any UV-C radiation escaping.



AEROSOL DISTRIBUTION – A COMPARISON



While speaking and breathing, aerosols contaminated with viruses can spread through the room.



The air disinfector continuously sucks in ambient air and deactivates the viruses on the aerosols.

TECHNICAL FEATURES

- Dimensions: 150×150×105 mm (H×W×L)
- Air flow rate of approx. 70 m³/h with two low-noise fans
- Recommended room size per device: 20m² at a ceiling height of 2,8m.
- Ready for connection including a 3m cable and plug. On/off switch integrated in the front.
- Housing: aluminum (white, powder-coated), gray end caps
- Lifetime: lamp 10 000 h, fan 25 000 h
- Optional accessories: wall mount, horizontal stand, vertical stand, pendant kit
- UV-C spectrum: effective peak wavelength of 254nm
- Including UV-C lamp: LEDVANCE T8 55 W/G13

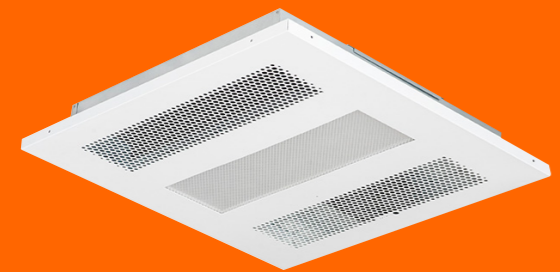


UVC PANEL

UV-C RECIRCULATOR



UV-C RECIRCULATOR + LED 3300 LM UGR<19



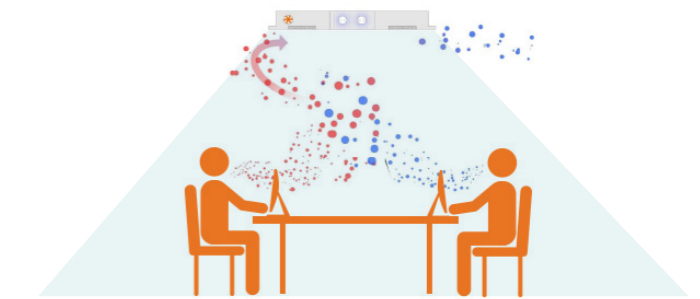
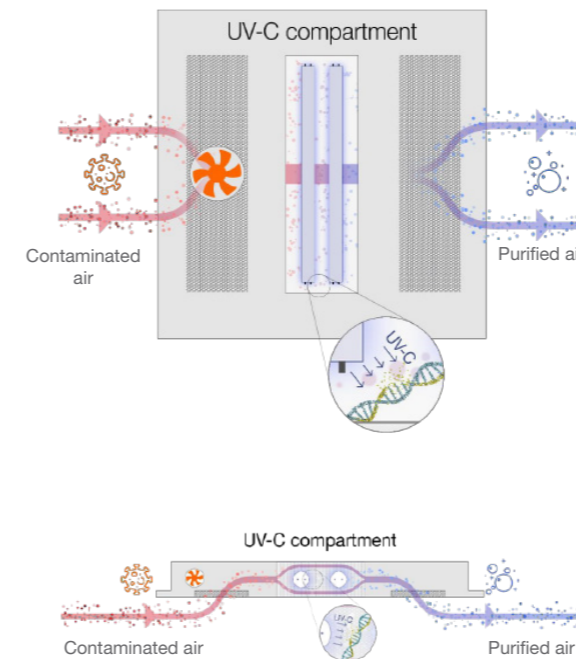
BENEFITS

- Constant air disinfection
- Safe and reliable
- 3 years guarantee
- Silent fan - does not interfere with everyday work
- No direct UV-C exposure due to special design of UV-C compartment
- Increased germicidal action due to high gloss polished aluminium inside UV-C compartment

FEATURES

- Long lifetime UV-C: 10.800hrs
- Long Lifetime LED: 50,000hrs
- Housing dedicated to UV-C Tube
- Two versions: UV-C recirculatory, UV-C recirculator + LED
- Low glare – UGR<19 with 3300lm
- Closed housing equipped with fans
- Equipped with ozoneless UV tubes
- IP40
- Robust powder coated steel housing
- Increased germicidal action due to high gloss polished aluminium inside UV-C compartment

PRINCIPLE OF OPERATION



APPLICATION & COVERAGE AREA

CADR* - 60 [m³/h]

*CADR - Clean Air Delivery Rate

UVC Dose – 57 [J/m²]

Average lethal UVC-Dose for aerosolized SARS-CoV2*

D90 17 [J/m²]

D99 34 [J/m²]

D99,9 54 [J/m²]

Inactivation Rate: 99.9%



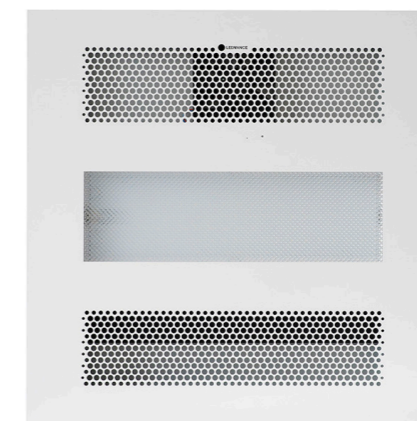
Designed for LEDVANCE



Low glare – UGR<19 with 3300lm



UVC: 10.800hrs
LED: 50.000hrs



Silent fan - does not interfere with everyday work



No UV-C leakage due to special UV-C compartment



Robust powder coated steel housing

PRODUCT DATA TABLE

Model	EAN40	W	UVC Power	Housing Material	Lumen Output	CCT	LED Lifetime	UV-C Lifetime	CADR	Fan Lifetime	Fan Noise	Operating Temp. Ingress	IP	Shield
UVC PANEL 600 RECIRCULATOR 2X25W WT	4058075634411	55W	16,4W (UV)	Powder Coated Steel	-	-	-	10.800hrs @ L70	60m³/h	160.000hrs	<45 db	+10 ... +40	IP40	3 year
UVC PANEL 600 RECIRCULATOR 2X25W + LED 30W 4000K WT	4058075634428	91W (30W LED)	16,4W (UV)	Powder Coated Steel	3300lm UGR<19	4000 K	50.000hrs @ L70	10.800hrs @ L70	60m³/h	160.000hrs	<45 db	+10 ... +40	IP40	3 year
UVC PANEL SURFACE PANEL FRAME	4058075642010	-	-	Powder Coated Steel	-	-	-	-	-	-	-	+10 ... +40	-	3 year
UVC PANEL 625 FRAME	4058075642027	-	-	Powder Coated Steel	-	-	-	-	-	-	-	+10 ... +40	-	3 year

*Based on LEDVANCE R&D scientific-paper research, status 21.04.2021



UV-C RECIRCULATOR

Closed germicidal UV-irradiator for wall mounting



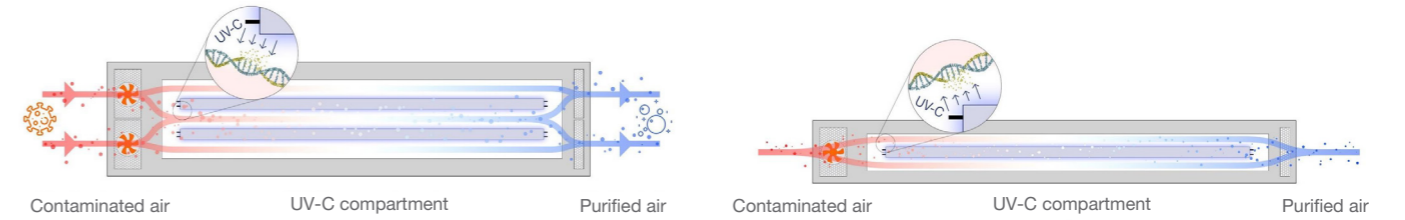
BENEFITS

- Constant air disinfection
- Safe and reliable
- 3 years guarantee
- Silent fan - does not interfere

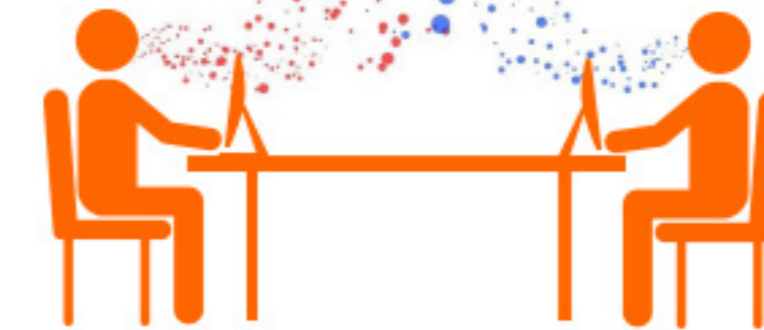
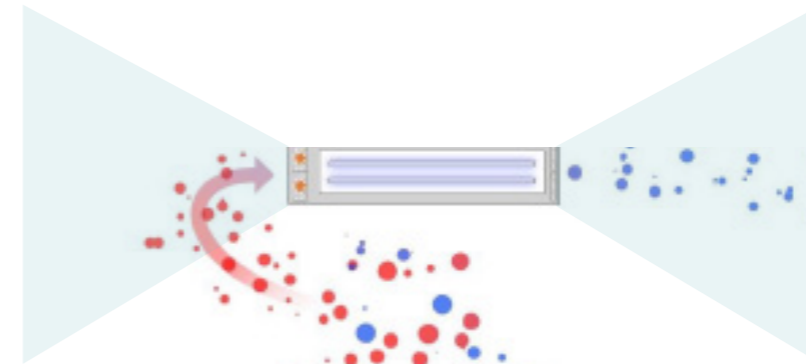
FEATURES

- Long lifetime UVC: 10.800 hrs
- Housing dedicated to T8 UVC G13
- Closed housing equipped with fans and switch
- Equipped with ozoneless UV tubes
- Available in two housing : 600 millimetres (15 watts) and 1055 millimetres (30 watts)
- Wall mounting
- IP20
- Robust powder coated steel housing

PRINCIPLE OF OPERATION



REDUCING OF VIRUS CONCENTRATION IN THE AIR



Coverage area 25 (m2)*

APPLICATION & COVERAGE AREA

CADR* - <72 [m³/h]

*CADR - Clean Air Delivery Rate

UVC Dose – 27 [J/m²]

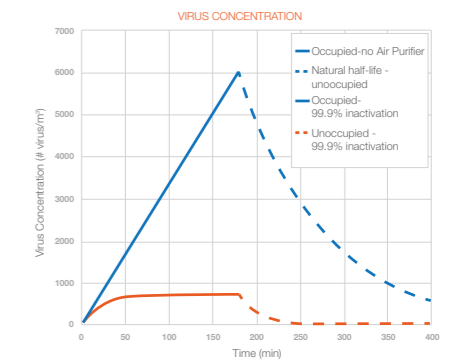
Average lethal UVC-Dose for aerosolized SARS-CoV2*

D90 17 [J/m²]

D99 34 [J/m²]

D99,9 54 [J/m²]

Inactivation Rate: >90%



ON/OFF switch



UVC: 10.800hrs



No UVC leakage due to special UVC compartment



Silent fan - does not interfere with everyday work

Model	EAN40	W	UVC Power	Housing Material	UV-C Lifetime	CADR	Operating Temp. Ingress	IP	Shield
UVC RECIRCULATOR 2x15W WT	4058075621015	60W	10,2W (UV)	Powder Coated Steel	10.800hrs @ L70	54-63m³/h	+10 ... +40	IP40	3 year
UVC RECIRCULATOR 2x30W WT	4058075621022	100W	25,2W (UV)	Powder Coated Steel	10.800hrs @ L70	60-72 m³/h	+10 ... +40	IP40	3 year

*Based on LEDVANCE R&D scientific-paper research, status 21.04.2021

LINEAR HOUSING UVC & SENSOR

Safety is always the first priority. Delay starting design, UV-C lamp lights up 30 seconds after luminaire is powered on, allowing people to clear the room before disinfection.

BENEFITS

- Built-in PIR sensor, which automatically turns off the lamp in the presence of people.
- Switch off the luminaire is required to reset the sensor, offering maximum protection to human being.

FEATURES







- Equipped with a 30,000h long-life electronic ballast.
- Coverage area up to 150m² (depending on installation height)
- Long lasting anti-UV coating on all parts of the luminaire: body, screws and plastic parts
- Available in 3 sizes, works with 3 different wattages LEDVANCE UV-C lamps.



LINEAR HOUSING UV-C & SENSOR USPs

- PIR** **IR sensor – safety Kit**
 - 30s starting delay
 - Switch off luminaire once detecting people
- ECG** Integrated long life ECG ballast - match to LEDVANCE UV-C T8
- G13** Standard G13 socket
- 150 sqm** Coverage area up to 150 sqm (depends on height installation)
- UV-C RESIST** **Anti UV coating:**
 - Lamp holder
 - Screws
 - Plastic parts

PRODUCT DATA TABLE

Model	EAN	W	V	w≤W	K	L [mm]	DELAY START	t _{in}		IP		F		
LINEAR HOUSING 4401xTUBE UVC SENSOR	4058075522084	18W	220-240V 50/60Hz	N/A	N/A	604 x 54 x 75 mm	30s	30000hrs	3 year	IP20		CE RoHS Reach	PIR	8
LINEAR HOUSING 9001xTUBE UVC SENSOR	4058075522060	33W	220-240V 50/60Hz	N/A	N/A	1061 x 54 x 5 mm	30s	30000hrs	3 year	IP20		CE RoHS Reach	PIR	8
LINEAR HOUSING 12001xTUBE UVC SENSOR	4058075659292	39W	220-240V 50/60Hz	N/A	N/A	1261 x 54 x 75 mm	30s	30000hrs	3 year	IP20		CE RoHS Reach	PIR	8

LEDVANCE UVC T8 LAMPS

Efficient and environmentally friendly disinfection

BENEFITS

- Effective and environment-friendly disinfection without chemicals
- Do not produce ozone during disinfection, thanks to special protection in the glass tube
- Last up to 20 percent longer than competitors' comparable products (10,800h / L70B50).

FEATURES

- 10,800 hours Lamp Life
- Emits high intensity UV-C radiation (30% UV-C)
- Single UV-C emission peak of 253.7nm
- Contains low level of mercury
- Made of glass
- Base: G13
- Available in three lengths: 440 millimetres (15 watts / 25 watts), 900 millimetres (30 watts / 55 watts) and 1.200 millimetres (36 watts / 75 watts).
- Operates with conventional or electronic ballasts

T8 UVC LAMP USP's

- OZONE FREE** Ozone free due to special glass standard
- G13** Standard G13 socket
- ~5% higher radiated power** compared to competition
- CCG ECG** Standard operation with CCG and ECG
- 10 800hrs L70B50** 10 800hrs 20% higher lifespan compared to competition
- ✓** Own design under LEDVANCE brand



PRODUCT DATA TABLE

Model	EAN	W	V	w Δ W	λ	\varnothing d [mm]	DELAY START	t ₉₀		IP		GLASS	
UVC T8 15W G13	4058075502604	15W	55V	5,1W	254nm	26 x 436mm	N/A	10,800hrs	1 year	IP20	CE, EAC	Ozon free due to special glass	25
UVC T8 25W G13	4058075502628	25W	46V	8,2W	254nm	26 x 436mm	N/A	10,800hrs	1 year	IP20	CE, EAC	Ozon free due to special glass	25
UVC T8 30W G13	4058075502642	30W	96V	12,6W	254nm	26 x 893mm	N/A	10,800hrs	1 year	IP20	CE, EAC	Ozon free due to special glass	25
UVC T8 36W G13	4058075502666	36W	103V	15,7W	254nm	26 x 1198mm	N/A	10,800hrs	1 year	IP20	CE, EAC	Ozon free due to special glass	25
UVC T8 55W G13	4058075502680	55W	83V	18,9W	254nm	26 x 893mm	N/A	10,800hrs	1 year	IP20	CE, EAC	Ozon free due to special glass	25
UVC T8 75W G13	4058075502703	75W	110V	26,7W	254nm	26 x 1198mm	N/A	10,800hrs	1 year	IP20	CE, EAC	Ozon free due to special glass	25

USE UV-C LAMPS CORRECTLY AND OBSERVE SAFETY INSTRUCTIONS for exposed UV-C lamps only

- UV-C disinfection devices should not be used directly on the body as they can damage the skin and eyes. For this reason, some safety instructions must be observed during use.
- UV-C lamps should only be directed at the surface to be disinfected. It is essential to avoid radiation to the skin or eyes.
- Any living thing must be protected from exposure to UV-C (in excessive dose). No people, animals or plants should be present while the ultraviolet sanitizer is in operation.
- The use of UV-C lamps is meant for indoor air and surface sterilization in enclosed rooms.
- The UV-C lamp should be switched off immediately after disinfection.
- In addition, information on the packaging and in the accompanying instruction book must be followed precisely.

CONSUMER PRODUCTS

LEDVANCE UV-C DISINFECTION BOX



UV-C closed system Box suitable for disinfection of daily used devices like mobile phones, glasses, keys, etc.

- Dimensions: 219*126*63 mm - Up to Iphone 11 Pro Max
- Type C USB charging port
- Two disinfection modes:
 - 6-minute Disinfection: appr. 25 times per full charged battery
 - 9-minute Disinfection: appr. 16 times per full charged battery
- LED wavelength 270-280nm
- CE (Safety, EMC), RoHS, REACH, lithium battery safety IEC62133, UN38.3 test report
- Safety mechanism: UV radiation stops as soon its opened

Model	t(h)	W	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)
UVC BOX 5V 1A TYPE C USB LEDV	1,000 hrs, up to 6 years	5	155	238	78

LEDVANCE UV-C HEPA AIR PURIFIER



Air Purifier equipped with VIOLEDS UVC LEDs which prove 99.9% disinfection of SARS-CoV-2 (Covid19)

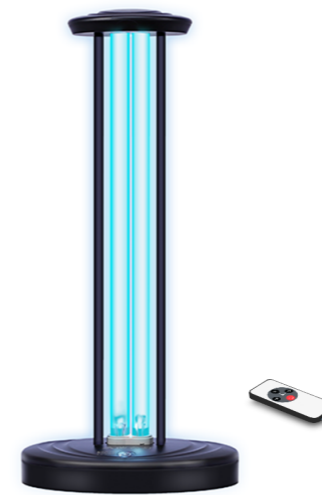
- Disinfection: Provides healthy environment by 3-steps
 - H13 HEPA filter prevents aerosol particles from passing though
 - Disinfection of the HEPA filter by the VIOLEDS LEDs
 - Additional disinfection of the air in the Air Purifier by using VIOLEDS LEDs
- Cleaning: Provides dust-free air by removing pollen and microdust (Particulate Matter (PM) 2,5)
- Deodorization: Provides pleasant environment by eliminating odors and cigarette smoke
- Discreet: Quiet operation (38 dB*) – all values
- Safe: No UV-C radiation emitted from the product, Mercury free
- Mobile: Small and lightweight design, operation via USB plug
- Adjustable: 3 speeds for air purification (low, med, high)
- Flexible: Ideal for usage in small rooms and cars (CADR** 8 m3/hr) Replacement HEPA-Filters sold separately (double pack)

Model	W	t(h)	K	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)
UV-C HEPA AIR PURIFIER	4,5	20.000h	White	85	85	160
HEPA REPL FILTER	N/A	6 months	Grey	55	55	15

* Clean Air Delivery Rate

** All values under 40db are æ

ULTRAVIOLET AIR SANITIZER / REMOTE CONTROLER



- Equipment for home use that inactivates viruses and kills bacteria within a radius of up to 40m².
- Delay starting design. UV-C lamp lights up 30 seconds after the equipment is powered on, allowing people to clear the room before disinfection.
- 30-seconds audible alarm which alerts user that the equipment will start operating soon
- No ozone emission, thanks to special protection in the glass tube
- Additional protection thanks to built-in long-range remote controller for remote operation
- RF technology remote controller ensures reliable control even behind walls.
- 15min, 30min, 60min 3 timer settings for different application area
- Emits UV radiation 253.7 nm: 1.2W / m²
- 8,000h long UV-C lamp lifetime

Model	W	V	Type	UV-C OUTPUT	t(h)
ULTRAVIOLET AIR SANITIZER RC 36W	36	220-240V 50/60Hz	Type C	1,2W/m ²	8.000h
ULTRAVIOLET AIR SANITIZER RC 36W	36	220-240V 50/60Hz	Type G	1,2W/m ²	8.000h

ULTRAVIOLET AIR SANITIZER



- Equipment for home use that inactivates viruses and kills bacteria within a radius of up to 30m².
- Delay starting design. UV-C lamp lights up 27 seconds after the equipment is powered on, allowing people to clear the room before disinfection.
- Built-in safety sensor, which automatically turns off the equipment when it detects any movement.
- 12-seconds audible alarm which alerts user that the equipment will start operating soon.
- Built in timer that shutdowns the equipment automatically after 30 or 60 min.
- No ozone emission, thanks to special protection in the glass tube
- Emits UV radiation 253.7 nm: 0.53W / m²
- 5,000h long UVC lamp lifetime

Model	W	V	L (mm)	UV-C OUTPUT	t(h)
ULTRAVIOLET AIR SANITIZER 32W	32	220-240V 50/60Hz	120x120x246 mm	0,53W/m ²	5.000h

SMART + CEILING FAN UV-C STERILIZATION



Smart+ WIFI Ceiling Fan with integrated UVC Purification

- Special design of fan blade, brings more comfortable wind and blowing range

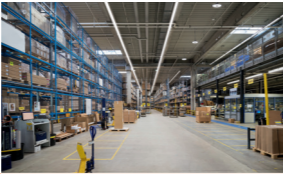



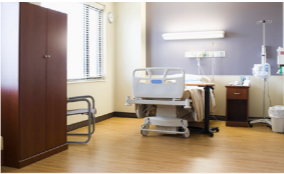
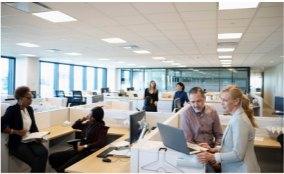


Offering whole range of Smart+ WIFI functionality:

- Dimmable: 10%~100%
- Night Light
- Fan Timing: 1H/2H/4H/8H
- Memory Function
- Lamp Timing: 30min/60min
- Adjustable Air Volume: 1000/700/300
- Remote control included for network independent function

Model	W	t(h)	L	K	LENGTH (mm)	WIDTH (mm)	HEIGHT (mm)
SMART+ UV-C CEILING FAN REM	TBD	30.000	2600	2700-6500K	580	580	185

DISINFECTION FOR AIR AND SURFACES

PORTFOLIO OVERVIEW

										
		Industry	Hospitality	Parking	Shop	Healthcare	Office	Residential	Outdoor/ Transportation	
Consumer	Air	SMART+ CEILING FAN UVC STERILIZATION						✓		
		UV-C HEPA AIR PURIFIER		✓				✓	✓	
	Surface	UV-C DISINFECTION BOX							✓	
		UV-C TABLE LAMP AIR SANITIZER + SENSOR		✓			✓		✓	
		UV-C TABLE LAMP AIR SANITIZER		✓			✓		✓	
		UVC T5 TUBE	✓	✓		✓	✓	✓	✓	
		UVC DULUX S, S/E		✓		✓	✓	✓	✓	
		UVC DULUX L		✓		✓	✓	✓	✓	
Professional	Air	UV-C PANEL		✓		✓	✓	✓		
		UV-C RECIRCULATOR		✓		✓	✓	✓		
		UV-C AIR DISINFECTOR		✓		✓	✓	✓	✓	
	Surface	UV-C BATTEN + SENSOR	✓	✓		✓	✓	✓		
		UV-C T8 TUBE	✓	✓		✓	✓	✓		

ABOUT LEDVANCE

With offices in more than 50 countries and business activities in more than 140 countries, LEDVANCE is one of the world's leading general lighting providers for professional users and end consumers. Having emerged from OSRAM's general lighting division, LEDVANCE offers a wide-ranging portfolio of LED luminaires for a broad spectrum of applications, intelligent lighting products for Smart Home and Smart Building solutions, one of the most comprehensive ranges of advanced LED lamps in the lighting industry, traditional light sources, an LED Strip System and light management systems.



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