

---

# RADIANT PURITY: WITH THE EXTENSIVE UV-C LAMP RANGE FROM LEDVANCE



# LEDVANCE UV-C LAMPS: RADIATING A BETTER QUALITY

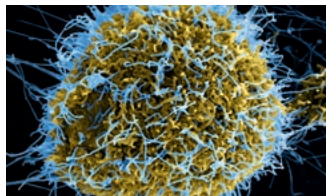
Microorganisms can seriously impact people's health and well-being. By means of the germicidal LEDVANCE UV-C lamps, we help developers and manufacturers create disinfection solutions that provide greater protection for people's health and enhance their quality of life.

## CHEMICAL-FREE, FAST, ALL-PURPOSE

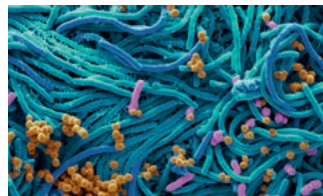
It has long been known that UV-C radiation has a disinfecting effect. The specific section of the UV-C wavelength range (100–280 nm) responsible for this effect is the "Germicidal spectrum" between 250 and 270 nm.

**Ozone-free technology: the special glass used in LEDVANCE UV-C lamps reliably filters out the ozone-generating wavelengths around 185 nm.**

## EFFECTIVE AGAINST ALL MICROORGANISMS



Viruses



Bacteria



Fungi

UV-C radiation alters the DNA or RNA structure of microorganisms, so preventing further replication. It has proven to be effective against viruses, bacteria and fungal spores. Recent studies have confirmed that UV-C is also able to effectively inactivate the SARS-CoV-2-virus.<sup>1-4</sup>

<sup>1</sup> „Ultraviolet Germicidal Irradiation Handbook; UVGI for Air and Surface Disinfection; Wladyslaw Kowalski, 2009.“ [Online].

<sup>2</sup> Innovative Bioanalysis, „Efficacy of a wall mounted device against aerosolized SARS-CoV-2.“ LED professional Review (LPR), Issue 84, Mar-Apr, 2021, p-16.

<sup>3</sup> Storm, N., et al., „Rapid and complete inactivation of SARS-CoV-2 by ultraviolet-C irradiation.“ Nature Sci Rep 10, 22421 (2020).

<sup>4</sup> A. Bianco, et al., „UV-C irradiation is highly effective in inactivating and inhibiting SARS-CoV-2 replication.“ medRxiv 2020.06.05.20123463.

# OF LIFE

Technologies of this kind have been in use for quite some time now, in the food industry or for water purification, for example. Since the start of the Covid-19 pandemic, however, demand for UV-C-based solutions has risen enormously. Here are the most important advantages:

- Extremely effective disinfection without chemicals or toxic compounds
- Works in a matter of seconds or minutes (depending on the dose and application situation)
- Wide range of application scenarios for thorough disinfection of air, water and surfaces
- Can be used to kill all microorganisms: viruses, bacteria, fungi
- Pathogens are unable to form resistance to UV-C radiation
- Particularly economic method of disinfection

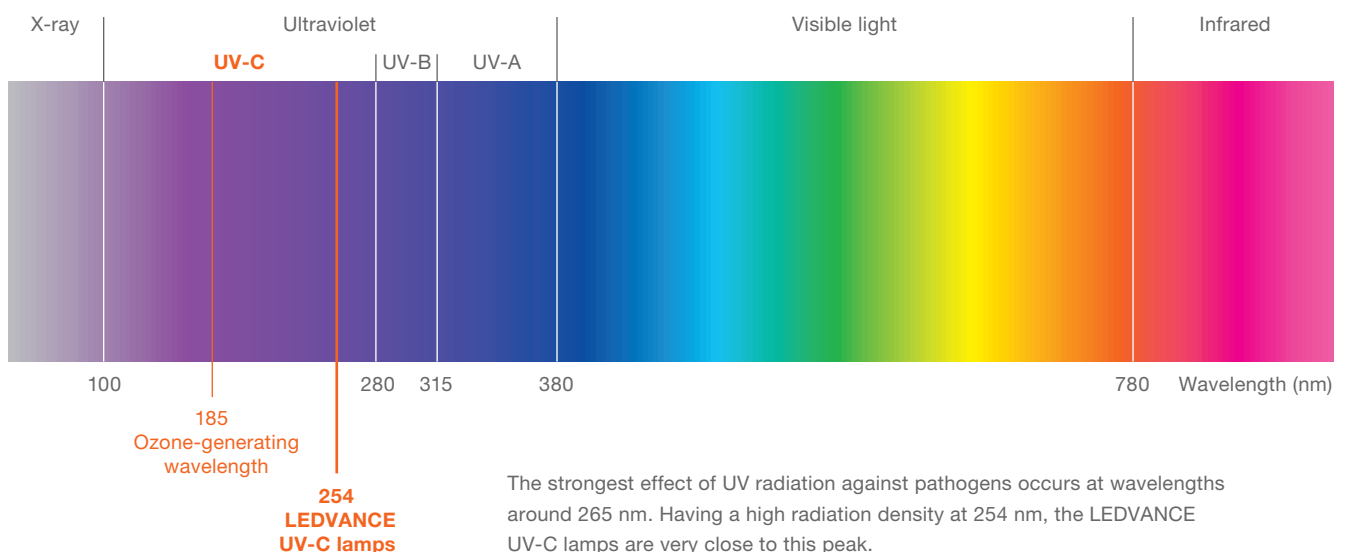
## SUCCESSFULLY PROTECTING HEALTH WITH LEDVANCE

Low-pressure mercury discharge lamps (LPD) are currently the most efficient known converters of electrical energy into disinfecting UV-C radiation. As one of the leading suppliers of LPD lamps worldwide, LEDVANCE offers UV-C lamps of outstanding quality for a wide range of application areas.

## SAFETY IS KEY

Without appropriate safety measures, UV-C radiation can be dangerous for humans – eyes and skin should never be exposed to direct or reflected UV-C rays. UV-C lamps from LEDVANCE conform to the most stringent quality and safety standards (including ISO 9001/14001 and CB certification). In doing so, they fulfill a critical prerequisite for developing safe solutions to combat health-threatening pathogens.

## THE ELECTROMAGNETIC SPECTRUM



# ONE TECHNOLOGY – A FASCINATING NUMBER OF APPLICATION SCENARIOS

Air-conditioning, air purifiers, water purification systems, disinfection cabinets, UV ceiling luminaires for cleaning inside air, disinfection robots, and many others. In contrast to other disinfection methods that are very limited in their areas of application, UV-C lamps can be used in an extremely wide range of scenarios.

Especially in recent times, innovative engineers have come up with a whole series of new uses for UV-C technology. The UV-C portfolio from LEDVANCE contains suitable and reliable radiation sources for a broad range of requirements

**UV-C radiation can be used in a wide range of scenarios for thorough disinfection of air, water and surfaces.**

- Hospitals and doctors' surgeries
- Clean rooms
- Office rooms
- Air-conditioning systems
- Schools, daycare centers, locker rooms
- Warehouses
- Food processing
- Publicly accessible rooms

## AIR PURIFICATION

The air in closed rooms can contain a large number of microorganisms. As part of fine aerosols, they can remain in the air for a considerable period of time. The air in medical facilities, labs, offices, schools, food processing plants and many other locations can be efficiently disinfected and purified by using UV-C lamps installed in fixtures such as air ducts, air-conditioning systems, air purifiers and ceiling luminaires.

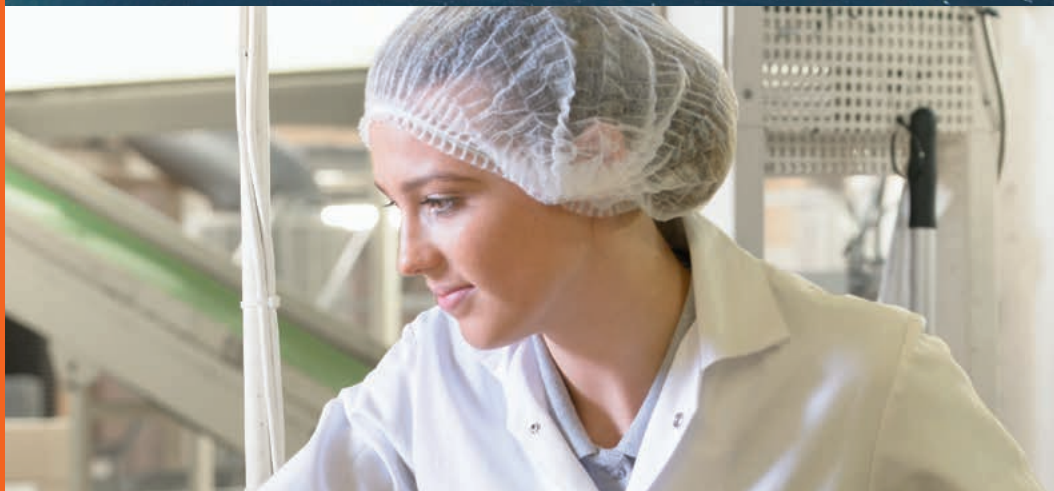


- Water companies
- Sewage systems
- Swimming pools
- Water dispensers
- Ultrapure water systems
- Food processing

### WATER DISINFECTION

Bacteria, viruses and fungi can quickly turn water into an undrinkable or even health-threatening substance. By means of continuous UV-C irradiation – in special flow chambers, for example – any microorganisms can be eliminated within a short space of time. Key advantage: The disinfection requires no chemical additives, making it an odorless process without any troublesome side-effects.

- Hospitals and doctors' surgeries
- Other aseptic zones
- Healthcare and nursing
- Food and pharmaceutical industries



### SURFACE DISINFECTION

Microorganisms can survive on surfaces for up to a number of days. Even thorough mechanical cleaning cannot remove them entirely. In particularly sensitive areas – such as clinics, doctors' surgeries or food processing plants – UV-C irradiation brings a crucial boost to the level of hygiene. A further plus is that the disinfection requires no chemical additives or cleaning agents, making it an odorless process without any troublesome side-effects.

Important: The surfaces requiring treatment must be directly exposed to the UV-C radiation. It has no impact on areas that are in shadow or only indirectly exposed.





# CASE STUDY: UV-C LAMPS IN THE FIGHT AGAINST THE PANDEMIC

## LEDVANCE MOLSHEIM, FRANCE

Since the start of the Covid-19 pandemic, many disinfection and protection measures have been implemented in companies. At LEDVANCE, in addition to established standard measures, UV-C lamps with LINEAR HOUSING were installed to minimize the risk of infection.

### FACTS AT A GLANCE

#### TECHNOLOGY AGAINST THE PANDEMIC

Owing to Covid-19, the demand for disinfection solutions is rising dramatically. LEDVANCE UV-C-based disinfection solutions meet these demands. In fact, the germicidal effect has been known for decades and is used in the medical field, in water treatment, in the food industry, and so on.

#### UV-C LAMPS ARE EFFECTIVE AGAINST VIRUSES

The UV-C radiation, especially at the wavelength of 265nm, alters the DNA or RNA structure of microorganisms, and thus prevents their replication. Installation of UV-C solutions in a given location is very simple to perform but safety measures need to be in place.



### UV-C LAMPS\*



\* this is not a medical device

### LINEAR HOUSING



# ROOMS EQUIPPED WITH UV-C LAMPS FOR THE SAFETY OF EMPLOYEES

## THE CHALLENGE

The pandemic and the fact that LEDVANCE employees in the logistics department cannot work in their home offices has accelerated the installation of LEDVANCE UV-C lamps, especially in sensitive locations such as the canteen, break rooms and medical service area. In addition, LEDVANCE wanted to optimize the hygienic measures to reassure the employees and to make them feel safe.

## THE SOLUTION

At the LEDVANCE company canteen, 23 LINEAR HOUSING equipped with UV-C T8 30W lamps were installed. The logistics break rooms, the first aid stations in the warehouse and the medical service area were also equipped with LINEAR HOUSING and UV-C lamps.

“Type C ultraviolet radiation, which has a spectrum with a wavelength between 200 and 280 nanometers and is commonly referred to as UV-C, is known to be extremely effective against viruses and other germs.

The Lighting Union underlines in its press release of May 15th, 2020 that ‘From a health point of view, this is good news because UV-C will participate in the fight against Covid-19’. LEDVANCE UV-C solutions respond to current health issues”.

Pierre-Yves Monleau,  
Marketing Manager at  
LEDVANCE Molsheim, FRANCE

The treatment based on LINEAR HOUSING with UV-C lamps is carried out in 30-minute cycles, several times a day, without human presence in the room. It is started up once the room is empty of any occupants and by using a keyed control box (only qualified persons have access to this). These LEDVANCE UV-C lamps have a concentrated ultraviolet emission at 253.7 nm to allow disinfection of exposed surfaces and of the air.

The facilities are sized to deliver an average dose of 290 J/m<sup>2</sup> on the ground allowing 99.9% elimination of SARS-CoV-2 and 90% of most viruses and bacteria listed by biological laboratories.

The special glass of these lamps prevents the emission of radiation at 185 nm which is mainly responsible for the formation of ozone in the room.

LINEAR HOUSING are equipped with a presence detector and an activation time delay. This system provides additional security because if movement is detected, UV-C emission is immediately stopped. This is a matter of safety because UV-C radiation is dangerous for humans and generates risks for the skin, but also for the cornea and the retina after a few minutes of

exposure at a short distance. Dedicated information has also been provided to all employees so that they understand the benefits of UV-C and to make them aware of the dangers of exposure to these same rays.

## THE BENEFITS

Correctly sized, these different UV-C solutions, in addition to usual protective measures (reinforced cleaning, social distancing, mask wearing etc.), make it possible to inactivate viruses such as SARS-CoV-2 very efficiently and thus enhance the safety of employees at their workplace. In addition to other safety measures and increased cleaning, the employees of the company feel reassured, and these measures allow for business continuity with a sense of optimism.

## SUMMARY

LINEAR HOUSING with LEDVANCE UV-C lamps ensure the treatment of air and surfaces. By reaching all exposed surfaces, UV-C radiation is an excellent complement to cleaning and manual disinfection of surfaces. The installation has been arranged to target, in particular, the most frequently used areas, for example beverage dispenser control buttons. After the disinfection cycle is complete, the air and all exposed surfaces will have been treated.



LEDVANCE canteen equipped with UV-C lamps for optimized Covid-19 protection at the food counter and in the dining area

# QUALITIES YOU CAN RELY ON: LEDVANCE UV-C LAMPS

The LEDVANCE UV-C portfolio boasts a broad range of UV-C low-pressure mercury vapor lamps with different sizes, wattages, currents and radiated power in the relevant wavelength area from 200 to 280 nm.

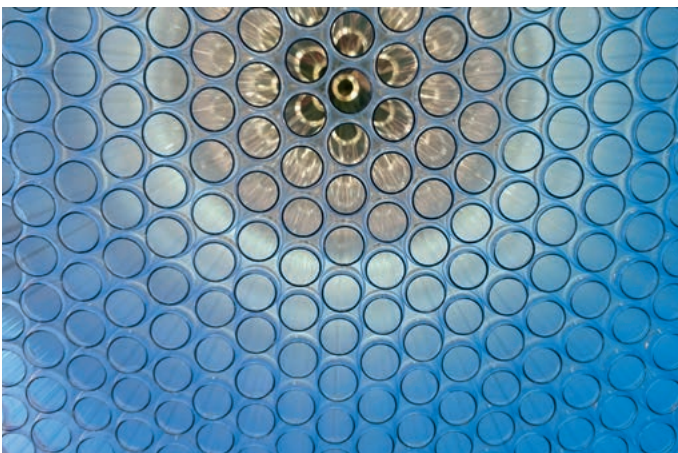
The outstanding quality of our products is the result of our decades of experience as global leader in the area of low-pressure discharge lamps, with over 50 patents in this field. LEDVANCE is also actively involved in the UV-C working groups of the leading trade associations.<sup>1</sup>

Our factory in Smolensk has been manufacturing UV-C T8 lamps since 2012. This factory (just like all other LEDVANCE locations) has been certified in accordance with ISO 9001 and ISO 14001.

## LEDVANCE UV-C LAMPS: BENEFITS AT A GLANCE

- UV-C lamps of outstanding quality
- Effective and environmentally-friendly disinfection without chemicals
- High UV-C radiation density at around 254 nm
- Sophisticated and reliable technology
- Glass bulbs with filter function absorb the ozone-generating 185 nm range.
- Long lifetime
- Low mercury content

<sup>1</sup> Global Lighting Association, Lighting Europe Association, ZVEI, IEC TC34 AG17 Standardization





# TECHNICAL DATA

## UV-C T8



Product name	Product number (EAN10)	UV-C Power [W]	Lifetime B50L70 [h]	Base	Unit of Packaging
UVC T8 15W G13	4058075502604	5.1	10800	G13	25 × 1
UVC T8 25W G13	4058075502628	8.2	10800	G13	25 × 1
UVC T8 30W G13	4058075502642	12.6	10800	G13	25 × 1
UVC T8 36W G13	4058075502666	15.7	10800	G13	25 × 1
UVC T8 55W G13	4058075502680	18.9	10800	G13	25 × 1
UVC T8 75W G13	4058075502703	26.7	10800	G13	25 × 1

## UV-C T5 SHORT



Product name	Product number (EAN10)	UV-C Power [W]	Lifetime B50L70 [h]	Base	Unit of Packaging
UVC T5 4W	4058075594722	0.9	7 000	G5	25 × 1
UVC T5 L 6W	4058075594746	1.8	10 000	G5	25 × 1
UVC T5 L 8W	4058075594760	2.1	10 000	G5	25 × 1
UVC T5 L 11W	4058075594807	2.6	10 000	G5	25 × 1
UVC T5 L 16W	4058075594821	3.7	10 000	G5	25 × 1

## UV-C DULUX S



Product name	Product number (EAN10)	UV-C Power [W]	Lifetime B50L70 [h]	Base	Unit of Packaging
UVC DULUX S 5W	4058075595521	1.4	9 500	G23	10 × 1
UVC DULUX S 7W	4058075595668	1.9	9 500	G23	10 × 1
UVC DULUX S 9W	4058075595743	2.6	9 500	G23	10 × 1
UVC DULUX S 11W	4058075595781	3.2	9 500	G23	10 × 1

## UV-C DULUX S/E



Product name	Product number (EAN10)	UV-C Power [W]	Lifetime B50L70 [h]	Base	Unit of Packaging
UVC DULUX S/E 7W	4058075595842	1.9	9 500	2G7	10 × 1
UVC DULUX S/E 9W	4058075595903	2.6	9 500	2G7	10 × 1

## UV-C DULUX L



Product name	Product number (EAN10)	UV-C Power [W]	Lifetime B50L70 [h]	Base	Unit of Packaging
UVC DULUX L 18W	4058075595248	5.5	9 000	2G11	10 × 1
UVC DULUX L 24W	4058075595286	7.3	9 000	2G11	10 × 1
UVC DULUX L 36W	4058075595347	10.8	9 000	2G11	10 × 1
UVC DULUX L 55W	4058075595446	17.0	9 000	2G11	10 × 1

# THE PERFECT COMPLEMENTS: OSRAM CONTROL GEARS

LEDVANCE UV-C lamps operate with both electrical and conventional control gears (ECG/CCG). The ideal complements are the ECGs from OSRAM. These devices are perfectly tailored for use with our UV-C lamps, from both a technical and operating perspective.

## COMPATIBILITY WITH OSRAM ECG



LAMP	UV-C T8		UV-C T5		UV-C DULUX																	
	G13	G5	SHORT	G5	S	S/E	L															
	G13	G5		G5	G23	2G7	2G11															
PRODUCT NAME	UVC T8 15W G13	UVC T8 25W G13	UVC T8 30W G13	UVC T8 36W G13	UVC T8 55W G13	UVC T8 75W G13	UVC T5 L 4W G5	UVC T5 L 6W G5	UVC T5 L 8W G5	UVC T5 L 11W G5	UVC T5 L 16W G5	UVC DULUX S 5W G23	UVC DULUX S 7W G23	UVC DULUX S 9W G23	UVC DULUX S 11W G23	UVC DULUXS/E 7W 2G7	UVC DULUXS/E 9W 2G7	UVC DULUX L 18W 2G11	UVC DULUX L 24W 2G11	UVC DULUX L 36W 2G11	UVC DULUX L 55W 2G11	
EAN10	4058075502604	4058075502628	4058075502642	4058075502666	4058075502680	4058075502703	4058075594722	4058075594746	4058075594760	4058075594807	4058075594821	4058075595521	4058075595668	4058075595743	4058075595781	4058075595842	4058075595903	4058075595248	4058075595286	4058075595347	4058075595446	
ECG	EAN10	PRODUCT NAME																				
1 lamp operation	4008321329059	QTP 5 1x80		•																	•	
	4008321873729	QTP-OPTIMAL 1x54-58																				
	4008321873743	QTP-OPTIMAL 1x18-40	•		•	•					•	•						•	•	•		
	4008321181572	QTP-D/E 1x10-13/220-240						•	•	•					•	•						
	4008321873927	QT-FIT 5/8 1x18-39/220-240			•	•				•												
2 lamps operation	4008321117922	QTP-DL 2x36-40/220-240																				•
	4008321390172	QTP-DL 2x55 GII		•																		•
	4008321880253	QTP-OPTIMAL 2x54-58																				
	4008321873767	QTP-OPTIMAL 2x18-40	•		•	•												•	•	•		
	4008321329158	QTP-M 2x26-32																•				
CCG operation			•	•	•	•	•					•	•	•	•			•	•	•	•	

System match not tested – combination based on product data sheets



Products of OSRAM GmbH,  
distributed by LEDVANCE



## ABOUT LEDVANCE



# 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.

LEDVANCE GmbH  
Parkring 29–33  
85748 Garching  
Germany  
**LEDVANCE.COM**

LEDVANCE is the expert partner for installers and lighting professionals. To match our extensive range of luminaires we also offer a large portfolio of innovative LED lamps in excellent brand quality. Further information about our range of lamps and services is available online at [www.ledvance.com](http://www.ledvance.com)

Partner:



**LEDVANCE.COM**