

## **SANITIZATION SYSTEM LED UV-C**

## **UV-C RAYS**

UV-C rays are ultraviolet rays, not visible to the human eye, with a wavelength between 100 and 280 nanometers. The germicidal power of UV-C rays on bacteria and viruses is well known, due to its ability to break the molecular bonds of DNA and RNA that make up these microorganisms. UV-C rays, which have long been widespread in the medical, food, laboratories, atc. sectors: have a proven sterilization property on instruments, surfaces and

etc. sectors, have a proven sterilization property on instruments, surfaces and environments, and develop their greatest effectiveness at 254 nanometers.

**UV-C LED EURAPO** is the sanitizing system of the exchange coil and, consequently, of the ambient air flow that passes through it, that utilizes the UV-C rays emitted by innovative LED lights instead of traditional lamps.

The **EURAPO UV-C LED** system, at the wavelength of about 254 nanometers, provides a power of 0.25 mW/cm2 in the area of maximum irradiation. The publication ASHRAE (2019 HVAC Application, Ch. 62 Ultraviolet Air and Surface Treatment) determines in 0.15 mW/cm2 the power necessary for an effective treatment of the surface of the exchange coil.

## From the Walker study (Effect of Ultraviolet ger-

*micidal Irradiation on Viral Aerosol of 2007*) dedicated to a virus of the Coronavirus family, it is highlighted that the virus is deactivated with an energy of 7 J/m2, corresponding to a power of 0.70 mW/cm2 per second. Given these conditions, it is estimated that after three air recirculations in the volume of a sample room, LED UV-C EURAPO reaches the energy required for a suitable sanitization of the ambient air.

**LED UV-C EURAPO** can be applied to our entire range of concealed and with casing fan coils (Sigma, Prisma, Concealed and Low Body).



## STRONG POINTS OF THE EURAPO UV-C LED SYSTEM

**SAFETY:** the accurate design and subsequent laboratory tests have highlighted how the EURAPO UV-C LED system does not disperse any UV-C rays outside the fan coils.

**EFFICIENCY AND DURABILITY:** thanks to the use of LEDs instead of lamps, a constant emission is obtained over time, in fact an efficiency drop of only 10% was found after 20,000 hours of use. The lifetime of the LEDs is estimated at around 30,000 hours.

**WORKING TEMPERATURE:** the LED lights, unlike the lamps, do not emit heat, consequently the temperature of the air entering the heat exchanger are not altered. UV-C LED EURAPO can be safely used in a range of air temperatures between 5 °C and 55 °C without there being any decay of effectiveness as is the case for lamp systems (*ASHRAE manual 2016, Ch. 17*).



**REDUCED MAINTENANCE:** with the use of a normal mechanical class G3 filter, no extraordinary cleaning of the LED lights is required. Only ordinary cleaning of the filter is recommended, to be done every season change under normal use conditions.

**ECOLOGY:** the EURAPO UV-C LED solution has a limited impact on the environment thanks to the absence of Mercury and/or other harmful substances.

**CONSUMPTION:** with an absorbed electrical power ranging from a minimum of 13 W (size 110) to a maximum of 60 W (size 228.1 - 328) the impact on consumption is really at a very low level.

**DIMENSIONS:** The EURAPO UV-C LED system and its positioning do not involve any dimensional or aeraulic efficiency change of the fan coils.



**CONTROL PHILOSOPHY:** The functioning of the UV-C LED system is connected to the control given to the fan, when it is ON (at any speed) the LED system will be activated.

This solution fits well with OMNIBUS and **OMNIBUS 360** regulation and does not involve high impact electrical and electronic modifications in case of refit.

The power supply of the system, perfectly integrated into the side of the fan coil, is composed by a power supply and an alarm card that provides a free contact (normally open or closed) that can be personalized by the customer with the addition of an alarm (in presence of a Supervision system) or a warning light that indicates the operating status.





UV-C Rays generator	LED stripes	
Power supply	230/1/50 Hz	
Wavelenght	254 nanometers	
LED stripes lifetime	30.000 hours	
Recommended filter	G3	
Filter cleaning	Recommended every 6 months under normal use conditions	
LED cleaning	Not necessary with G3 filter	
Ozone emission	Absent	
Activation of the LEDs	When the fan is ON – Compatible with Asynchronous and EC (EST) motors	
Controls compatibility	EURAPO controls or other controls following the wiring diagrams provided by the manufacturer	

ELECTRICAL ABSORPTION AND DIMENSIONAL DATA		
Fancoil size	Lenght LED stripes (mm)	Power consumption (W)
110	298,9	12,9
112 - 512	431,6	18,6
114 - 514	547,8	23,7
216 - 516	680,6	29,4
218	813,4	35,1
220/222 – 520/522	929,6	40,2
224/226 – 524	1178,6	50,9
228.1 – 328 – 528	1378	59,6

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As programs and technologies are always improving, description, data and drawings must be intended as merely indicative and can be modified.