

Product brochure

# SCU-UV

## UV Disinfection System

Air filtration

Version 0.02  
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## PRODUCT OVERVIEW

Specialized system that provides effective disinfection of air in ventilation ducts. UV disinfection is a method based on irradiation with ultraviolet light of wavelength 254 nm and very high energy level.

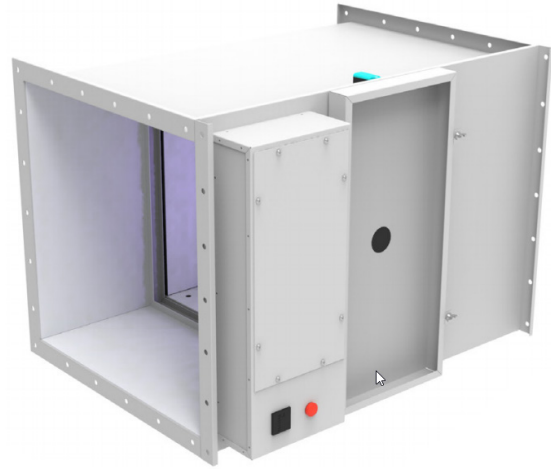
Depending on the radiation dose (J / cm<sup>2</sup>), UV light eliminates majority of pathogenic microorganisms from the supply air without the generation of harmful chemical compounds and by-products.

SCU-UV casing is produced from galvanized steel sheet, powdercoated in RAL 9010, 30% gloss.

- Elimination of airborne pathogenic microorganisms such as bacteria and viruses using UV technology
- Provides disinfected air in the room where you live
- Reduces the risk of disease and the spread of airborne infections
- Ensures safe environment

Possibility of installation in existing or new mechanical ventilation systems:

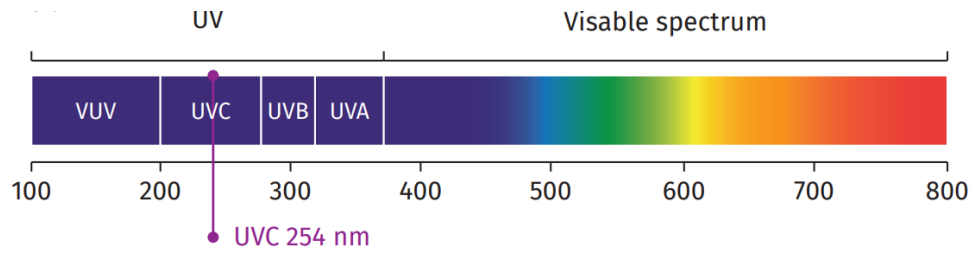
- Offices
- Hotels and restaurants
- Public institutions
- Shopping malls
- Hospitals and health facilities
- Industrial facilities
- Sports facilities and recreation areas



## TESTS AND CERTIFICATES

**Proven efficiency and safety at work:**

- Laboratory testing confirmed the efficiency of 97.8% to 99.5% in the inactivation of microorganisms, in accordance with ISO 15714: 2019 - Method of estimating the UV dose of radiation to microorganisms in the air passing through UVGI devices.
- Conducted testing and confirmed human safety in use according to ISO 15858: 2016 - UV-C devices - Permitted human exposure.
- The product has the CE mark - tested on LVD and EMC in accordance with low voltage directive 2014/35 / EU and electromagnetic compatibility 2014/30 / EU.
- Casing air leakage class C, according to EN 15727: 2010 - Ventilation in buildings, classification and leakage testing.

**FUNCTION**

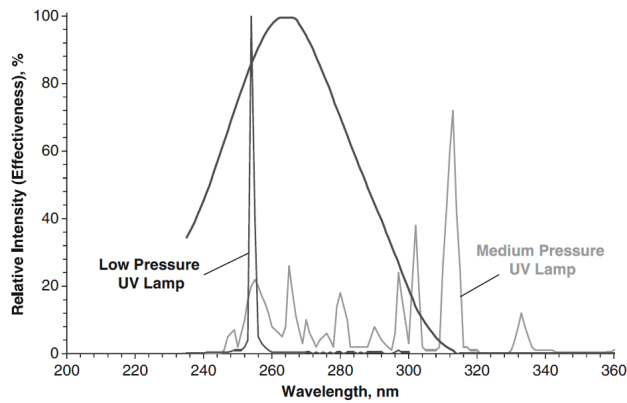
SCU-UV primary function is to neutralize pathogenic organisms and harmful chemical compounds in the supply air. The key principle is based on using ultraviolet germicidal irradiation (UGVI). UGVI is electromagnetic radiation which inactivates microorganisms and its ability to reproduce by causing photochemical change in nucleic acids.

Wavelengths in the UVC range are especially damaging to cells because they are absorbed by nucleic acids.

The germicidal effectiveness of UVC peaks at about 260–265 nm.

The UV light emitted by a source is expressed in Watts (W) and the irradiation density is expressed in watts per square meter ( $W/m^2$ ). For germicidal action dose is important.

The dose is the irradiation density multiplied by the time (t) in seconds and expressed in Joules per square meter ( $J/m^2$ ). (1 Joule is  $1W \times \text{second}$ ).

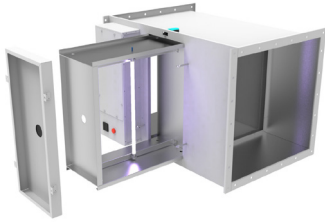


**The UV-C disinfection system is dimensioned to provide inactivation dose for the defined air volume flows.**

The inactivation dose is killing or inactivating at least 90% of all airborne pathogenic organisms ( $D_{90}$  kill rate). Microbial susceptibility to ultraviolet light varies widely between species of microbes. Bacteria, viruses and fungal spores respond to UV exposure at rates defined in terms of UV rate constants. Other parameters used to define UV susceptibility include the Z value or  $Z_{eff}$  (same as UV rate constant), the inactivation cross-section, the  $D_{90}$ , and variations of the  $D_{90}$  (i.e.  $D_{99}$ ,  $D_{99.9}$  etc.).

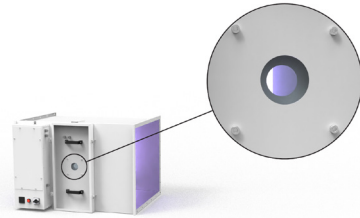
$D_{99.9}$  kill rate is achievable when using SCU-UV in combination with SCU with HEPA H14 filter.

**FEATURES**



**Removable control module / UV lamp supporting frame**

Possible dislocation of control module (e.g. wall mounting) with standard cable length 5 m.  
Easy service and replacement access to UV lamp's supporting frame.



**Inspection opening with UV protection**

Housing is equipped with built-in UV – protection safety glass for visual inspection of UV lamps



**LED operation indicator**

Located on the control module  
Green light indicates proper operation of the SCU-UV  
Red light indicates failure



**Pressure switch**

Device will be turned on only if AHU is operational.  
In case that there is no pressure difference in the duct , SCU-UV will be automatically turned off  
Pressure switch is located in control module.



**Service switch**

Main switch on the control module turns on/off entire device, allowing operator to approach device interior without any risk.



**Safety switch**

In case of unauthorized or accidental front cover opening, entire device shuts off to protect person from UV radiation.

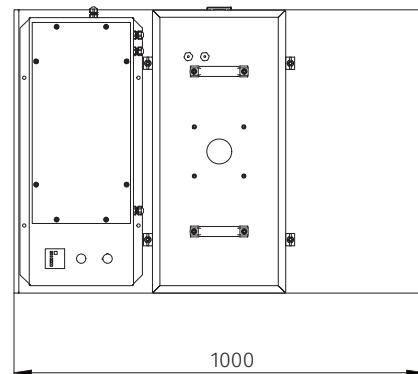
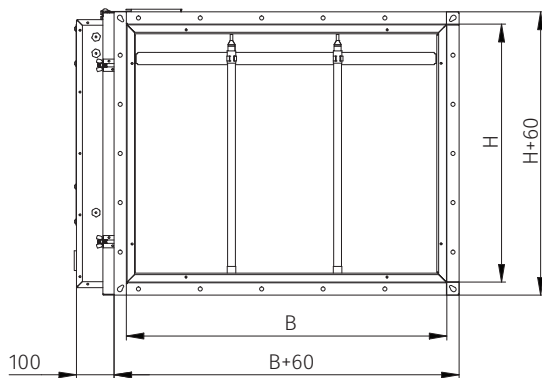
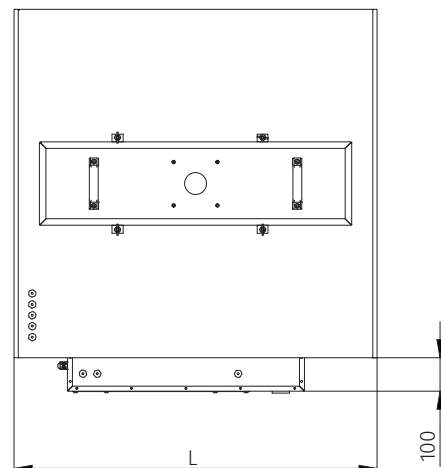
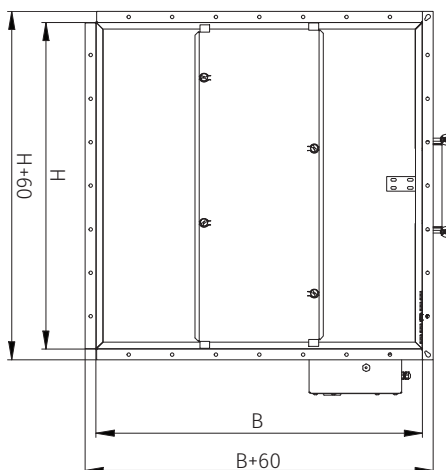


**Hour counter**

Counter measures working hours of the UV lamps. Average UV lamp lifetime is 9000 hours. After that UV lamp efficiency starts to drop.

**Ability to connect to BMS**

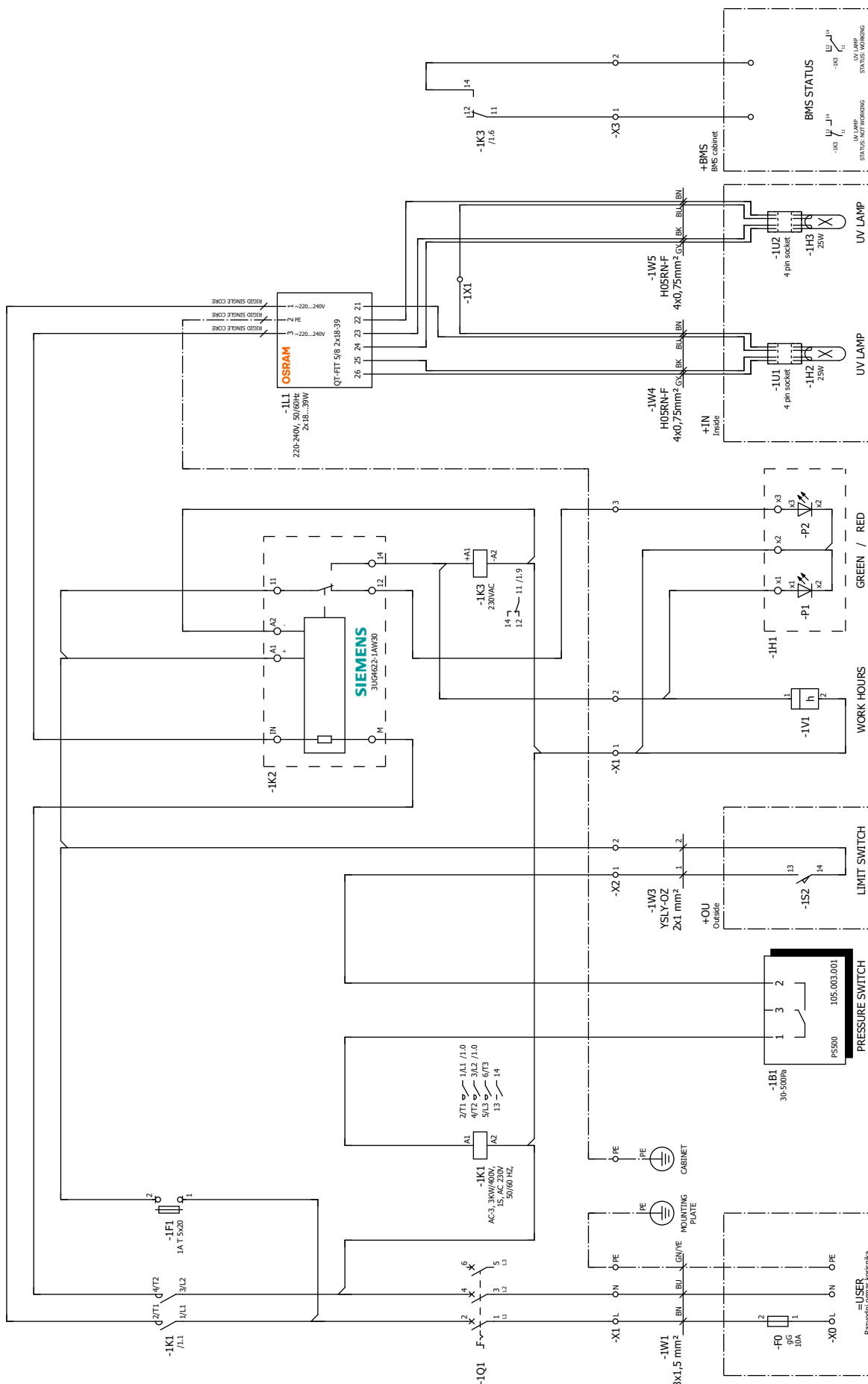
In case of any failure on the device, BMS will be notified with digital signal.

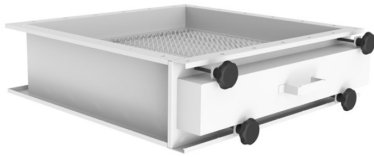
**DIMENSIONS****SCU-UV-LV (Low velocity)****SCU-UV-HV (High velocity)****TECHNICAL DATA**

Type	BxH [mm]	Airflow Q [m <sup>3</sup> /h]	No. of lamps	Nominal power	Voltage U [V]	Weight [kg]
SCU-UV-LV	325x630	1500-2300	1	25	230/50Hz	49
SCU-UV-LV	630x630	2300-4000	2	50	230/50Hz	60
SCU-UV-LV	782x630	4000-5500	2	50	230/50Hz	66
SCU-UV-HV	900x300	3200-4900	2	80	230/50Hz	55
SCU-UV-HV	900x600	6200-9800	3	120	230/50Hz	65
SCU-UV-HV	900x900	9000-14600	4	160	230/50Hz	76

# AIR FILTRATION UV DISINFECTION SYSTEM SCU-UV

## WIRING DIAGRAM



**RELATED PRODUCTS****PSCU Prefilter (G4, F7 or F9)**

Prefilter with different filter classes according to EN779 and EN 1822.

G4 - Coarse dust, particle size > 10 µm  
 F7, F9 - Fine dust, particle size 1 - 10 µm

**Material:**

Casing made out of galvanized steel  
 Powder coated in standard RAL 9010  
 Replaceable G4, F7 or F9 filter  
 Requires filter with handle  
 Easy filter insertion and replacement  
 Safe operator working environment  
 Filter saturation control

**Options**

Case made out of stainless steel (AISI 304 or 316)

**SCU Safe Change Unit with HEPA filter (H14)**

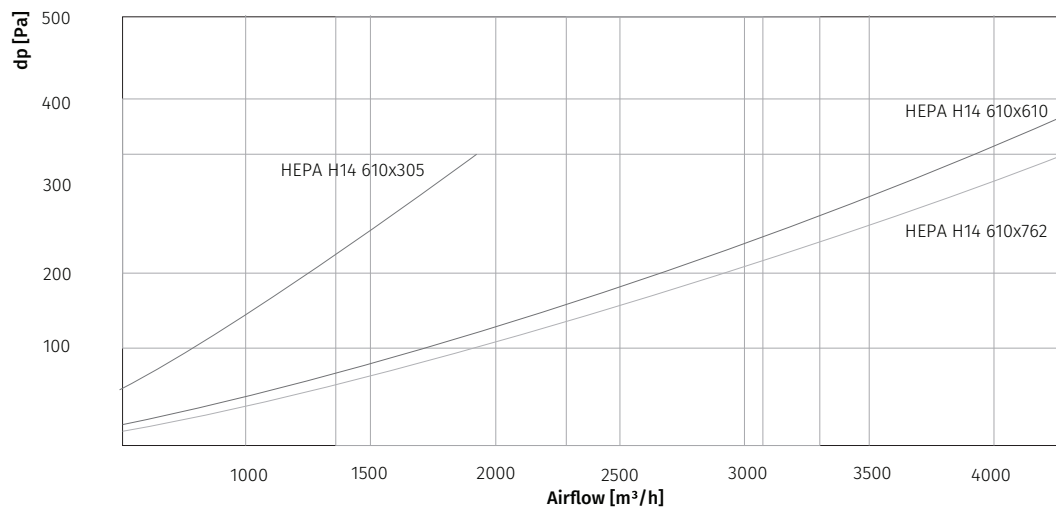
H14 - Suspended particulates, particle size < 1 µm  
 Final filters for clean rooms, Classes 10 or 1

**Material:**

Casing made out of galvanized steel  
 Powder coated in standard RAL 9010  
 Replaceable HEPA filter  
 Requires filter with handle  
 Easy filter insertion and replacement  
 DOP connection  
 Filter saturation control  
 Standard filter height: 48 mm. Other heights on request  
 Safe operator working environment

**Options**

Case made out of stainless steel (AISI 304 or 316)

**Airflow and pressure drop diagram for SCU with H14 HEPA filter**

**ORDERING KEY**

(1) Product type                      (2) Model                              (3) Dimension

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**SCU-UV                      -                      HV                      -                      900x600**

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(1) UV disinfection system	(3) Dimension
	<b>325x630 (LV)</b>
	<b>630x630 (LV)</b>
(2) <b>LV</b> (*Low velocity)	<b>782x630 (LV)</b>
<b>HV</b> (**High velocity)	<b>900x300 (HV)</b>
	<b>900x600 (HV)</b>
	<b>900x900 (HV)</b>

\* Low velocity model is suited for installation in combination with additional filtration device such as PSCU or SCU (see "Related products" on page 6)

\*\* High velocity model is suited for standalone installation without additional filtration devices.






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Projektiranje, proizvodnja i održavanje opreme za klimatizaciju, ventilaciju i čiste prostore.  
Design, production and service of Ventilation, Air-Conditioning and Cleanroom equipment.

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