

UV-C Disinfection for the Industry

BuR Lighting - Disinfection

BuR Lighting - UV-C Disinfection:

In addition to technical LED lighting, BuR Lighting also offers UV-C special units. Their task is not energy-efficient lighting, but the effective disinfection of the circulating air.

Lighting and disinfection can be installed, switched and operated in combination in almost all industrial applications. These are independent systems and applications that are used in parallel by industrial companies.

BuR Lighting works in the field of air and surface disinfection with the highly specialized manufacturer Sterilsystems GmbH from Austria. All UV-C devices are exclusively equipped with own UV-C emitters (wavelength 253.7 nm).



Source: Illustrations Sterilsystems GmbH

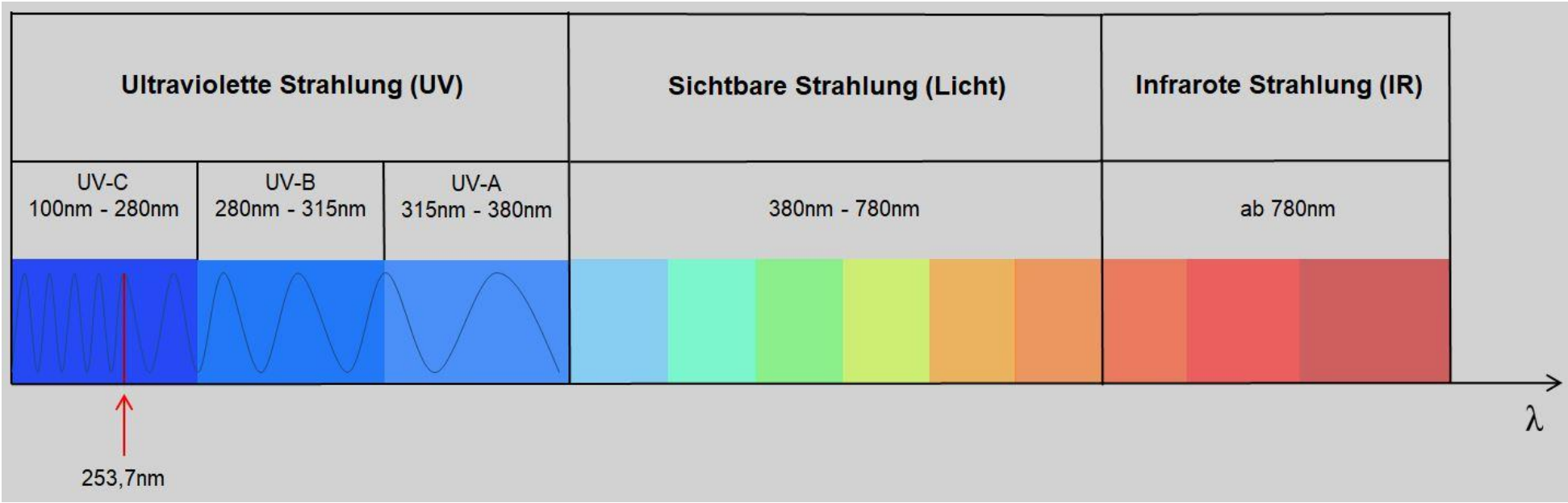
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UV-C Radiation, Spectrum

UV-C Radiation:

UV-C is the spectral portion of ultraviolet radiation that does not occur on earth since UV-C radiation is almost completely absorbed by the earth's atmosphere. The UV wavelength ranges are divided up as follows:

- UV-C: 100-280 nm (UV-C disinfection is most effective at a wavelength of 253.7 nm)
- UV-B: 280-315 nm
- UV-A: 315-400 nm



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UV-C Effect

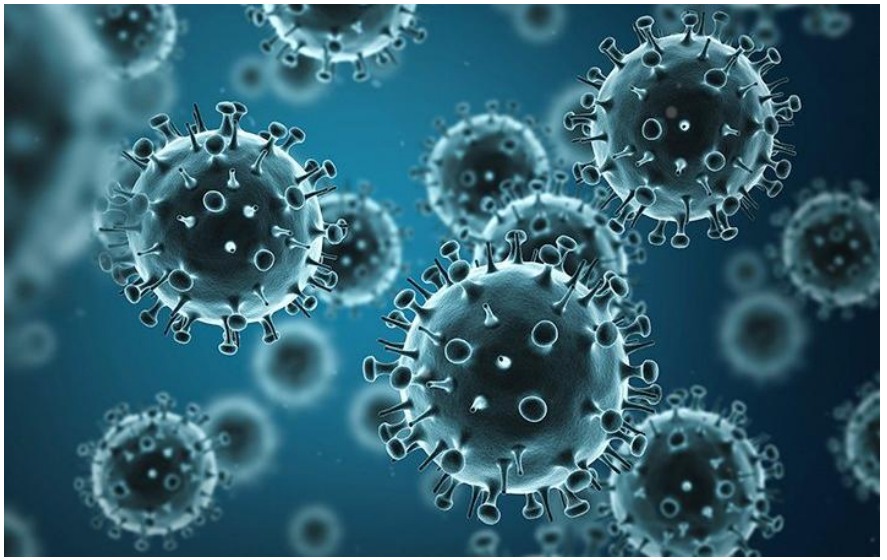
UV-C Radiation and Effect:

UV-C radiation has been successfully applied for more than 40 years and is used for an ever increasing range of applications. Due to the particular "life hostility" of this radiation, technically generated or artificial UV-C radiation is used to combat pathogenic microorganisms in the air or on surfaces. Microorganisms such as:

- bacteria
- viruses
- mildew
- yeasts
- spores

UV-C radiation takes effect in a few seconds. The UV-C irradiation time in connection with the irradiance influences the dose of UV-C rays. The exact exposure can be calculated exactly.





Sources: https://www.gefaessmedizin.net/ und
https://www.micro-ident.de/zahnaerzte/periimplantitis/bakterien/

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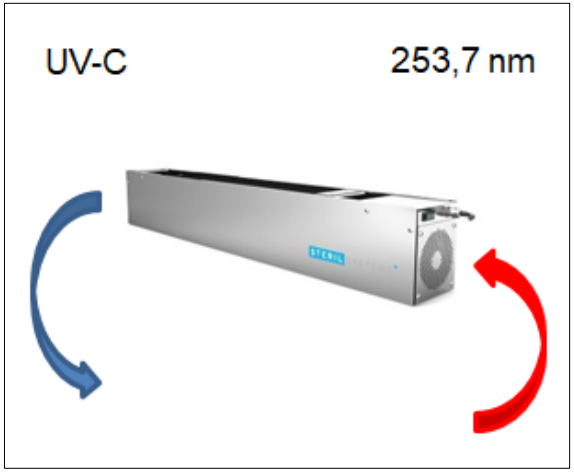
UV-C Air Disinfection, Function, Standards

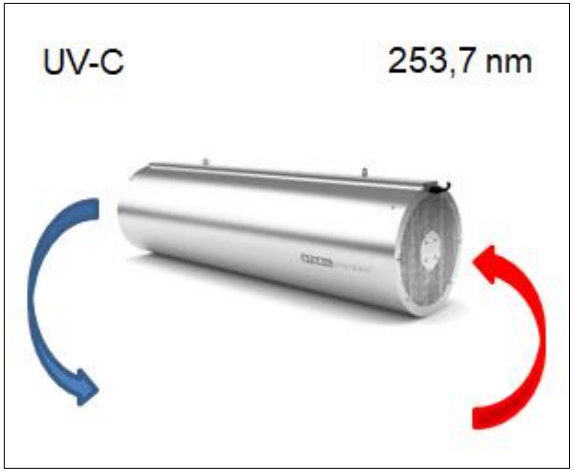
Principle / Function:

- Constant sucking in, disinfecting and releasing of clean air with shielded UV-C source by high-quality stainless steel units.

In Compliance with Standards and Guidelines:

- Machinery Directive 2006/42/EC
- EN ISO 12100 Safety of machinery
- EN 614-1: 2000 + A1: 2008 Safety of machinery
- EN 14120 Safety of machinery – Guards
- EN ISO 14123: 2015 Safety of machinery
- EN 12198-1: 2008 + A1: 2008 Safety of machinery - Part 1
- EN 13732: 2013 Food processing machinery
- EN 60204-1: 2006 Safety of machinery - Electrical equipment
- EMV Directive 2014/30/EU
- EN 61000-6-2: 2005 + AC:2005 Electromagnetic compatibility (EMC)
- EN 61000-6-4: 2007 Electromagnetic compatibility (EMC) - Part 6-4
- EN 60034-1: 2010 Rotating electrical machines
- EN 61204-3: 2000 Low voltage power supplies - Part 3
- RoHS Directive 2011/65/EU





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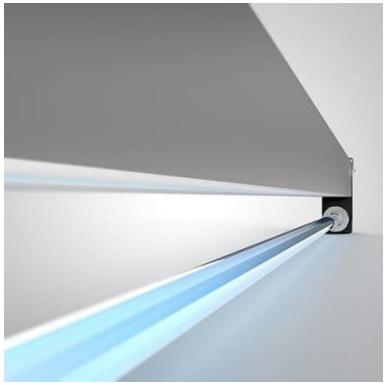
UV-C Emitters

UV-C Emitters - Technology:

UV-C emitters remind us of regular light-generating fluorescent lamps. UV-C radiation (monochromatic radiation at 253.7nm) is mostly generated by low pressure discharge lamps. The emitters are equipped with a 4-pin socket; they start gently with filament preheating (warm start) and reach their maximum radiation intensity and the optimum operating temperature after approx. 3 minutes. Advantages:

- Constant UV disinfection performance
- High temperature independent UV-C output
- Moisture protection
- Easy maintenance
- Life Span in normal operation: 16.000h





General Safety Instructions:

- Never touch the UV-C emitter with the naked hand
- Disconnect UV-C units from the power grid during maintenance work
- UV-C emitters should only be replaced with safety goggles, protective gloves and protective clothing
- Touching the UV-C emitters only 10 minutes after switching off
- Do not touch irradiated surfaces immediately after application due to risk of burns
- Testing UV resistance and color fastness of materials to be irradiated

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UV-C Standing Devices

UV-C Standing Devices:

- Mounting: foot
- Housing: high quality steel
- Resistant to rust and acids
- Electronic ballast: IP54
- Electrical wiring: IP54
- Service indication: LED display
- Disinfection capacity constant high for 160 m3/h
- Shielded UV-C lamps
- Easy replacement of UV-C lamps (2x23W)
- Freely movable device
- 3m supply line with 230V plug





UV-C Disinfection:

- Disinfection performance constantly high
- 24h operation with shielded UV-C source possible
- Easy replacement of the UV-C lamps
- The UV-C devices are maintenance-free and filterless (no need to change and dispose of filters)

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UV-C Devices

UV-C Ceiling Devices:

- Housing made of high quality stainless steel V4A / V2A
- Resistant to rust, acids and bases
- Construction open and / or closed
- Electronic ballast: protection class IP54
- Electrical wiring: protection class IP54
- Service indication: LED display
- Pendant or ceiling mounting simple



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UV-C Advantages

Advantages of UV-C Disinfection:

- Disinfection under active public traffic immediately
- Reliable environmentally friendly disinfection method
- Germs and viruses up to 99.99% less
- No use of chemicals - no toxic substances
- Dry process and no moisture
- Heating behaviour temperature neutral
- No residues or formation of resistance

- Improve room quality
- Improve product quality
- Well-being through a greater sense of security
- Increase productivity
- Reduce risk of employee absences

- Improve breathing air quality
- Reduce infection risks
- Reduce allergies
- Reduce mucous membrane complaints
- Reduce unpleasant odors
- Taste changes of the air hardly existent



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UV-C Applications

Application Areas UV-C Disinfection:

- Social Room
- Meeting Room
- Office
- Reception
- Hallway and Corridor
- Control and Measuring Workplace
- Kitchen, Cold Storage Room, Cold Cell
- Laboratory
- Stock
- Food Room and Ripening Room
- Assembly and Assembly Line
- Public Area
- Canteen
- Production Hall
- Quality Control
- Clean Room
- Training and Seminar Room
- Locker Room, Toilet and Washroom
- Workbench and Workshop
- Tool and Material Supply









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