



VEIT AIRCLEANER AC 10 / AC 20

Combatting viruses and bacteria chemically-free

AGENDA



1. **INTRODUCTION** GENERAL / UV-C-RADIATION
2. **YOUR BENEFITS** AC 10 / AC 20
3. **TECHNICAL DETAILS** GENERAL / AC 10 / AC 20
4. **APPLICATION AREAS** AC 10 / AC 20
5. **YOUR HEALTH IS IMPORTANT TO US**
6. **QUALITY OUR PROMISE**
7. **TESTS AND STUDIES** BOSTON UNIVESITY / DR. HÖNLE AG / STERILIZATION WITH UV-LIGHT / BAUA
8. **VEIT GMBH**



**TAKE A DEEP BREATH
WITH THE NEW VEIT AC SERIES
ENJOY THE ADVANTAGES OF A GERM
AND VIRUS-FREE INDOOR CLIMATE.**



INTRODUCTION UV-C-RADIATION

Many people run the risk of becoming infected with viruses and bacteria and are also spreading them. The micro-organisms present in the air - such as viruses, bacteria, yeasts and mould - occur particularly in heavily frequented areas such as airports, doctors' surgeries, hospitals and in industry. They endanger the health of people, contaminate raw materials or spoil food.

To limit the risk of infection, UV-C radiation can be used to disinfect the air and destroy viruses and bacteria.



UV-C-RADIATION:

- ✓ UV-C is ultraviolet radiation below 280 nm wavelength, which is not visible to the human eye
- ✓ Germs, viruses and spores are reliably reduced and hygiene and storage conditions are improved
- ✓ UV-C light has been used for over 40 years to disinfect air, surfaces and water
- ✓ UV-C has the biggest effect at a wavelength of 254 nm. This is the range of the UV-C lamps we use (low-pressure lamps, service life approx. 9,000 hours)

AGENDA



1. INTRODUCTION GENERAL / UV-C-RADIATION
2. **YOUR BENEFITS AC 10 / AC 20**
3. TECHNICAL DETAILS GENERAL / AC 10 / AC 20
4. APPLICATION AREAS AC 10 / AC 20
5. YOUR HEALTH IS IMPORTANT TO US
6. QUALITY OUR PROMISE
7. TESTS AND STUDIES BOSTON UNIVESITY / DR. HÖNLE AG / STERILIZATION WITH UV-LIGHT / BAUA
8. VEIT GMBH

YOUR BENEFITS AC 10 / AC 20

The new VEIT air cleaners AC 10 / AC 20 clean your air with the proven UV-C technology

- ✓ High efficiency
(up to 99% of bacteria are killed)
- ✓ Without chemicals and use of ozone
- ✓ Odour neutralisation of the air
- ✓ Low space requirement
- ✓ Continuous operation possible
- ✓ Fast and effective disinfection
- ✓ Flexible application possibilities
- ✓ Easy handling
- ✓ Low acquisition and maintenance costs
- ✓ Made in Germany

AGENDA



1. INTRODUCTION GENERAL / UV-C-RADIATION
2. YOUR BENEFITS AC 10 / AC 20
3. **TECHNICAL DETAILS GENERAL / AC 10 / AC 20**
4. APPLICATION AREAS AC 10 / AC 20
5. YOUR HEALTH IS IMPORTANT TO US
6. QUALITY OUR PROMISE
7. **TESTS AND STUDIES** BOSTON UNIVESITY / DR. HÖNLE AG / STERILIZATION WITH UV-LIGHT / BAUA
8. VEIT GMBH

TECHNICAL DETAILS GENERAL

- ✓ **CASE:** stainless steel (rustproof) with powder coating and a front cover with air grille for air inlet and outlet on both sides
- ✓ **FAN:** a powerful fan guides the airflow through a dust filter (filter flow) into the system and disinfects along the UV-C lamps to clean it of germs and viruses
- ✓ **CASE INTERIOR:** Contains germicidal UV-C lamps
- ✓ **UV-C-LAMPS:** The air is sterilized by the UV-C lamps. The clean air is returned (without contamination) to the environment
- ✓ **HUMAN HEALTH:** Due to the design of the device, UV-C rays are harmless to health and cannot cause skin or eye irritation

TECHNICAL DETAILS AC 10



- ✓ Dimension: 855x320x325mm (HxWxD)
- ✓ Supply voltage: 230V (50Hz)
- ✓ Emitter power: 1 x 95W
- ✓ Protection class IP 20
- ✓ Suitable for rooms up to 30m² (depending on the room height)

Output:

- 9.000 operating hours per UV-C lamp
- Continuous operation possible

Design:

- Compact VEIT-Design
- UV-C radiation does not leak out of the case

Flexible placement options:

- Easy positioning due to mobile base frame
- Optionally available with wall bracket



Fan:

- High air flow (80m³/h)
- Low noise operation <40dB

Maintenance:

- Easy filter and lamp change possible

TECHNICAL DETAILS AC 20



- ✓ Dimensions: 400x1200x400mm (HxWxD)
- ✓ Supply voltage: 230V (50Hz)
- ✓ Installation site: in the middle of the room
- ✓ Emitter power : 2 x 95W
- ✓ Protection class IP 21
- ✓ Suitable for rooms up to 120m² (depending on the room height)

Fan:

- High air flow (300m³/h)

Design:

- Compact VEIT-Design

Maintenance:

- Easy filter and lamp change possible

Bracket:

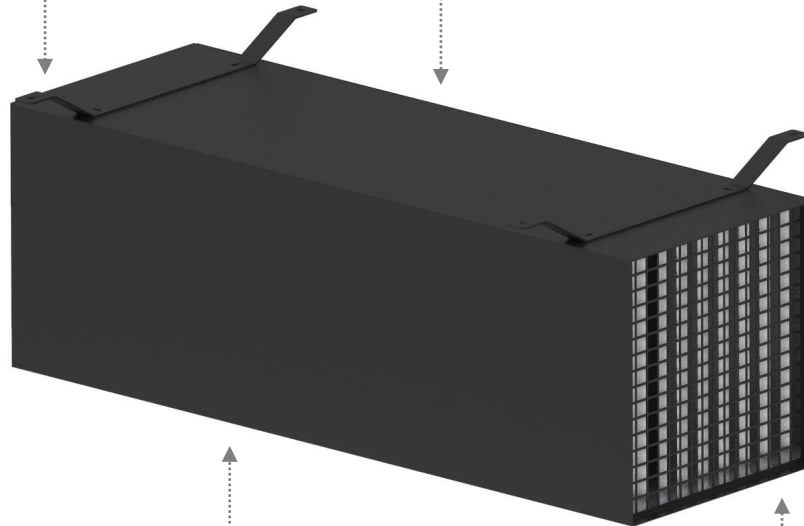
- Possibility for ceiling mounting

Output:

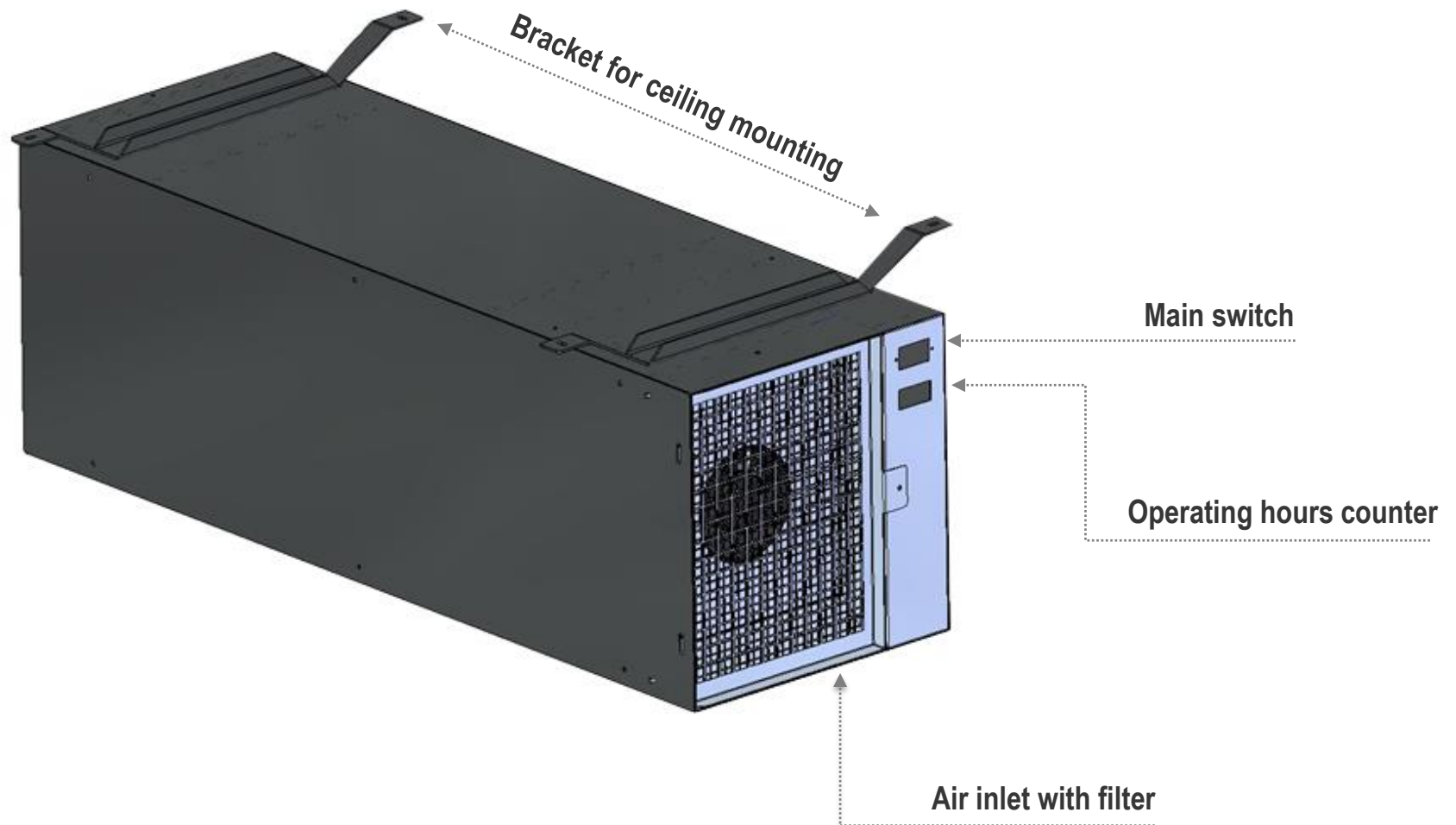
- 9.000 operating hours per UV-C lamp
- Continuous operation possible

Option:

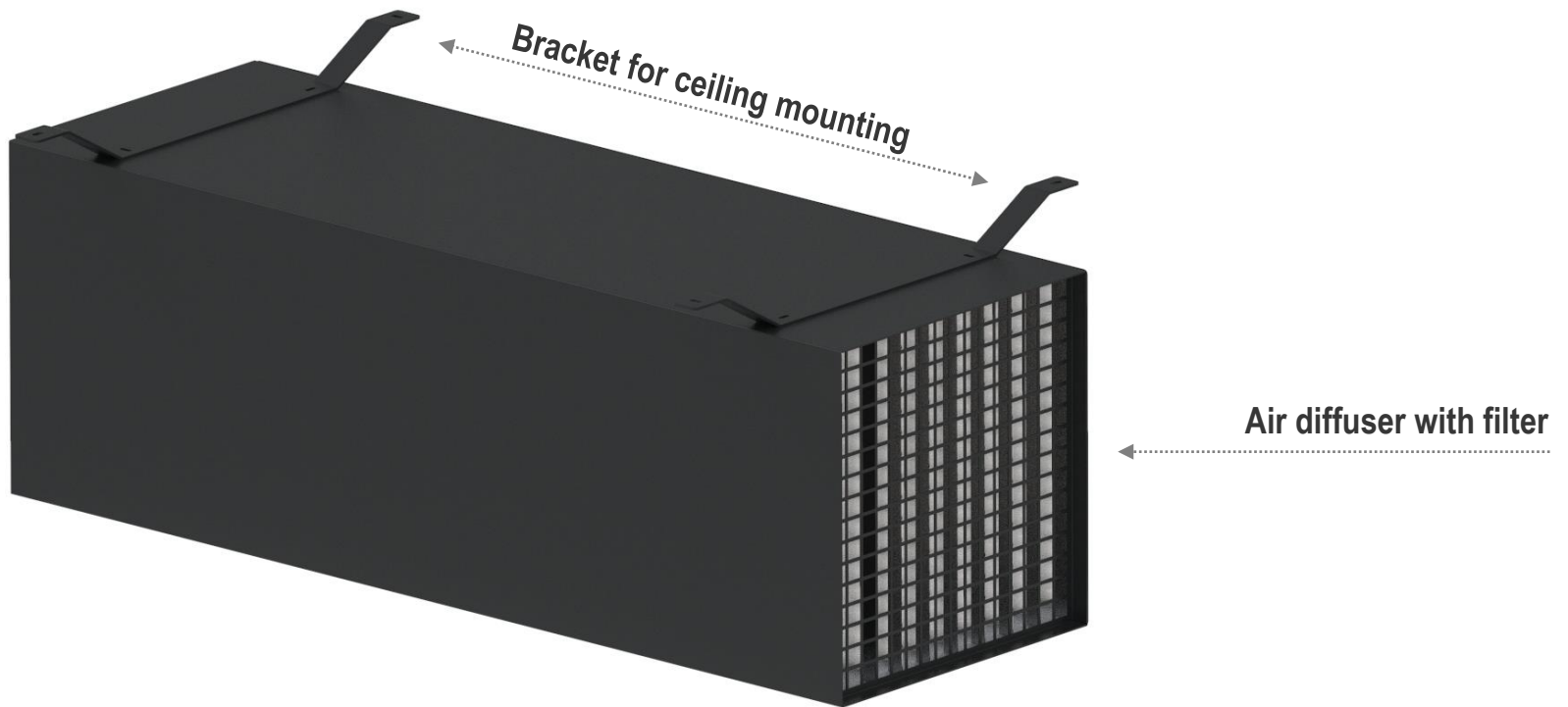
- Simple operation by radio remote control



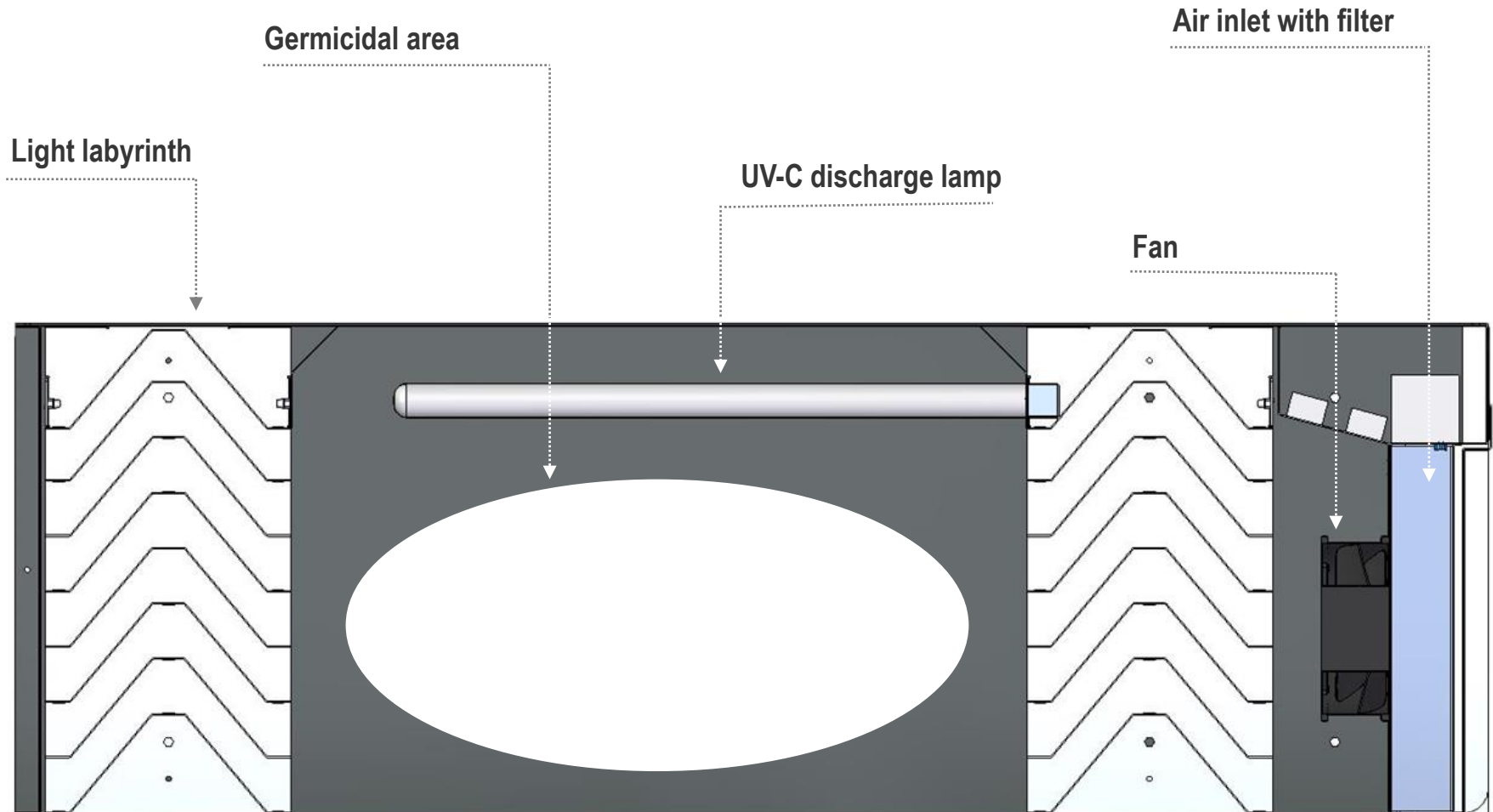
TECHNICAL DETAILS AC 20 BACK SIDE VIEW



TECHNICAL DETAILS AC 20 FRONT SIDE VIEW



TECHNICAL DETAILS AC 20 CROSS SECTION VIEW



AGENDA



1. INTRODUCTION GENERAL / UV-C-RADIATION
2. YOUR BENEFITS AC 10 / AC 20
3. TECHNICAL DETAILS GENERAL / AC 10 / AC 20
4. **APPLICATION AREAS AC 10 / AC 20**
5. YOUR HEALTH IS IMPORTANT TO US
6. QUALITY OUR PROMISE
7. TESTS AND STUDIES BOSTON UNIVESITY / DR. HÖNLE AG / STERILIZATION WITH UV-LIGHT / BAUA
8. VEIT GMBH

APPLICATION AREAS AC 10



- ✓ City and municipality offices
- ✓ Banks, service institutions
- ✓ Medical practices, dental laboratories, massage studios
- ✓ Shopping centers, grocery stores
- ✓ Furniture stores, building centers
- ✓ Gastronomy, kitchens, hotel industry
- ✓ Butchers, production facilities
- ✓ Fitness studios, cinemas, swimming pools
- ✓ Airports, buses, train, large-capacity taxis
- ✓ and much more

APPLICATION AREAS AC 20



- ✓ Hospitals
- ✓ Retirement homes
- ✓ Office buildings
- ✓ Manufacturing industry
- ✓ Public institutions
- ✓ and much more

AGENDA



1. INTRODUCTION GENERAL / UV-C-RADIATION
2. YOUR BENEFITS AC 10 / AC 20
3. TECHNICAL DETAILS GENERAL / AC 10 / AC 20
4. APPLICATION AREAS AC 10 / AC 20
5. **YOUR HEALTH IS IMPORTANT TO US**
6. QUALITY OUR PROMISE
7. TESTS AND STUDIES BOSTON UNIVESITY / DR. HÖNLE AG / STERILIZATION WITH UV-LIGHT / BAUA
8. VEIT GMBH

YOUR HEALTH IS IMPORTANT TO US



With the AC - series you can clean the air 24 hours 7 days a week, because the UV-C radiation does not escape from the housing. We can ensure this by means of our intensive tests and measurements in our R&D development laboratory.

TEST REPORT Measurement of UV radiation



TITLE	PRODUCT	PROJECT NUMBER	VB-NUMBER
Measurement of UV radiation	AC 20		2020_009
ELECTRICAL SAFETY TEST SETUP			
	SK0 <input type="checkbox"/>	SK1 <input type="checkbox"/>	SK2 <input type="checkbox"/>
Protective conductor resistance (<0.3 Ohm)	<input checked="" type="checkbox"/>	Touch current (<0.5 mA)	<input type="checkbox"/>
Insulation resistance (>0.25 MOhm / >1 MOhm / >2 MOhm)	<input checked="" type="checkbox"/>	Function correct (<0.5 mA)	<input checked="" type="checkbox"/>
Differential current (<3.5 mA)	<input type="checkbox"/>		



Date of creation: 14 May 2020

1

TEST REPORT Measurement of UV radiation



TARGET AND PURPOSE

Detection of the maximum UV-C radiation outside the AC 20.

TESTING / TEST SETUP / MEASUREMENT METHOD

Which test setup and which method was used for the test execution?

The AC 20 prototype is running an endurance test. During this test a dose measurement of UV-C light is done. The dose measurement was done by a „Gigahertz-Optik X1 Optometer“.

BOUNDARY CONDITIONS

Which measurement devices, tools, device options, drawing no. etc was used?

- AC 20 (164298-initial batch)
- Light labyrinth (164287_003_0)
- Dust filter type 15150, G1 G3 / ISO coarse 30% for air intake and air exhaust
- Philips UV-C lamp 2x 65Watt (254nm HG-lamp)
- Measurement device: Gigahertz-Optik X1 Optometer
- Measured points: Determination of the "Radiation-Hot-Spot"
- Hot-Spot: Air exhaust

MEASUREMENT

Which physical dimensions are measured?

UV-C radiation [$\mu\text{J}/\text{cm}^2$]

2

TEST REPORT Measurement of UV radiation



RESULT / ASSESSMENT / OBSERVATION

Has the objective and purpose of the test been fulfilled?

Findings: The dose of radiation is behaving approximately linear, due to this a measurement period of 2h was chosen.



Measurement with Filter Test:

Result: Maximum dose of radiation directly at the exhaust (Measurement with filter) = $17.8031 \mu\text{J}/\text{cm}^2$

Interpretation: According to the study „Occupant UV Exposure Measurements for Upper-Room Ultraviolet Germicidal Irradiation“ (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4854786/>) oder VEG020-009: a maximum daily dose of $6.0 \mu\text{J}/\text{cm}^2$ for a duration of 8 hours is classified as harmless.

As the dose of radiation is behaving approximately linear, the measured value can be extrapolated. The result is a dose of $0.7 \mu\text{J}/\text{cm}^2$ which is far below the permitted dose.



Measurement without Filter Test:

Result: Maximum dose of radiation directly at the exhaust (Measurement without filter) = $549.24 \mu\text{J}/\text{cm}^2$

Interpretation: According to the study „Occupant UV Exposure Measurements for Upper-Room Ultraviolet Germicidal Irradiation“ (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4854786/>) oder VEG020-009: a maximum daily dose of $6.0 \mu\text{J}/\text{cm}^2$ for a duration of 8 hours is classified as harmless. As the dose of radiation is behaving approximately linear, the measured value can be extrapolated. The result is a dose of $2.2 \mu\text{J}/\text{cm}^2$ which is far below the permitted dose.

SUMMARY

The maximum dose of UV radiation which passes out of the AC 20 is classified as harmless. Even there is close contact to the device.

Signature

veit
GmbH
Johannes-Lampy-Str. 18
D-50894 Leiningerdeich
Postfach 10 17 65
D-50894 Leiningerdeich

Date

14. 05. 2020

3

AGENDA



1. INTRODUCTION GENERAL / UV-C-RADIATION
2. YOUR BENEFITS AC 10 / AC 20
3. TECHNICAL DETAILS GENERAL / AC 10 / AC 20
4. APPLICATION AREAS AC 10 / AC 20
5. YOUR HEALTH IS IMPORTANT TO US
- 6. QUALITY - OUR PROMISE**
7. TESTS AND STUDIES BOSTON UNIVESITY / DR. HÖNLE AG / STERILIZATION WITH UV-LIGHT / BAUA
8. VEIT GMBH

QUALITY OUR PROMISE



VEIT stands for outstanding quality. Through a continuous improvement process, quality is maintained at the highest level guaranteed.

You can rely on us:

- We run comprehensive initial tests
- We monitor our quality constantly and
- We continuously improve our products

The entire company has been certified according to DIN EN ISO 9001.



AGENDA



1. INTRODUCTION GENERAL / UV-C-RADIATION
2. YOUR BENEFITS AC 10 / AC 20
3. TECHNICAL DETAILS GENERAL / AC 10 / AC 20
4. APPLICATION AREAS AC 10 / AC 20
5. YOUR HEALTH IS IMPORTANT TO US
6. QUALITY OUR PROMISE
7. **TESTS AND STUDIES** BOSTON UNIVESITY / DR. HÖNLE AG / STERILIZATION WITH UV-LIGHT / BAUA
8. VEIT GMBH

TESTS UND STUDIES BOSTON UNIVERSITY



Tests to deactivate the virus have recently been conducted and confirm the effectiveness of UV-C light.

The study was carried out by Boston University in the USA. Its National Emerging Infectious Diseases Laboratories (NEIDL) tested the effectiveness of Philips UV-C lamps in inactivating SARS-CoV-2, the virus that causes COVID-19. Inoculated material was treated with different doses of UV-C radiation from a Signify light source and inactivation was evaluated under different conditions. The university concluded that UV-C light can reduce the SARS-CoV-2 virus by up to 99.9%. "Our test results show that above a certain dose of UV-C radiation, viruses were completely inactivated: Within seconds, we could no longer detect a virus," summarizes Dr Anthony Griffiths, Associate Professor of Microbiology at Boston University School of Medicine. This is critical in the current situation where companies are looking for ways to continue their operations and services in a safe environment.

TESTS UND STUDIES DR. HÖNLE AG



In a laboratory in Frankfurt, the irradiation of corona viruses was tested with equipment from the company Dr. Höhle AG based in Gräfelfing. The viruses were irradiated with UV-C discharge lamps and UV-LEDs. The elimination rate of the virus was 99.4 %.

Almost all corona viruses could therefore be deactivated and rendered harmless by UVC radiation. In all cases, only a few seconds were needed for this - a great success in the fight against the SARS-CoV-2 viruses, which many experts had already suspected and which has now been scientifically proven. The results of the tests could have far-reaching consequences. Further tests are to be carried out at the "Fraunhofer Institute" in the near future.

TESTS UND STUDIES STERILIZATION WITH UV-LIGHT



In South Korea, researchers from the private Korea University, together with developers from Seoul Voss and Sensor Electronic Technology, Inc. (SETi) have shown in a study that they can kill corona viruses with an LED solution from the two companies. In an irradiation time of 30 seconds, 99.9% of the viruses were eliminated.

In addition to coronavirus, the study also examined how violeds technology affects other bacteria. Again, a sterilization rate of 99.9% was shown for bacteria such as Escherichia coli, Staphylococcus Aureus, Pseudomonas Aeruginosa, Klebsiella Pneumonia and Salmonella Typhimurium.

UC sterilization is particularly suitable for combating viruses on surfaces and also for air sterilization. UV light is already being used for this purpose and new solutions for the special requirements against the corona virus are currently being developed.

"What has to be taken into account for ventilation and air-conditioning systems (RLT systems)?

If RLT systems (e.g. ventilation and air conditioning ducts) are operated without recirculated air or the recirculated air is passed through suitable filters or other devices to reduce the virus concentration and the RLT systems are maintained properly (inspection, cleaning, filter change, etc.), the concentration of viruses in the room air and thus the probability of infection by SARS-CoV-2 can be reduced if virus excretors are present. Such air conditioning systems should therefore not be switched off during operating or working hours, but preferably run continuously. If this is not possible, the operating times of the HVAC systems should be extended before and after the rooms are in use so that complete air exchange is achieved (e.g. by about 2 hours for normal use such as offices).

What should be considered for mobile or decentralized devices?

Mobile or decentralized devices for circulating air, such as fans (e.g. floor standing fans), devices for personal cooling (e.g. hose and split devices) or devices for heating (e.g. fan heaters) should only be used in rooms with individual occupancy, as the air flow increases the spread of viruses in the room air and such devices do not contribute to a reduction of the virus concentration in the room air".

AGENDA



1. INTRODUCTION GENERAL / UV-C-RADIATION
2. YOUR BENEFITS AC 10 / AC 20
3. TECHNICAL DETAILS GENERAL / AC 10 / AC 20
4. APPLICATION AREAS AC 10 / AC 20
5. YOUR HEALTH IS IMPORTANT TO US
6. QUALITY OUR PROMISE
7. TESTS AND STUDIES BOSTON UNIVESITY / DR. HÖNLE AG / STERILIZATION WITH UV-LIGHT / BAUA
8. **VEIT GMBH**

The VEIT Group with its head office in Landsberg, Germany, is worldwide the leading manufacturer of ironing equipment, fusing machines, pressing machines as well as refinishing equipment for garments.

For more than 60 years the products of the VEIT Group have been models of outstanding quality and maximum efficiency, which is also reflected in the new products in the area of cleaning, germ and virus protection.

ARRANGE YOUR PHONE INDIVIDUAL APPOINTMENT WITH YOUR EXPERT!





VEIT AIRCLENADER AC 10 / AC 20

Our response to viruses and bacteria