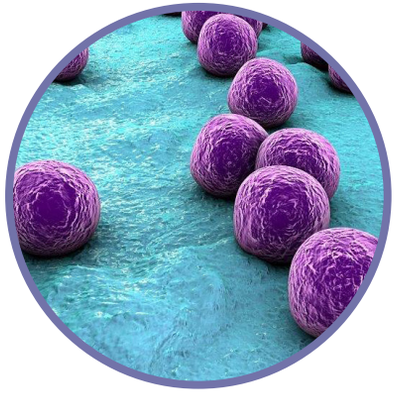
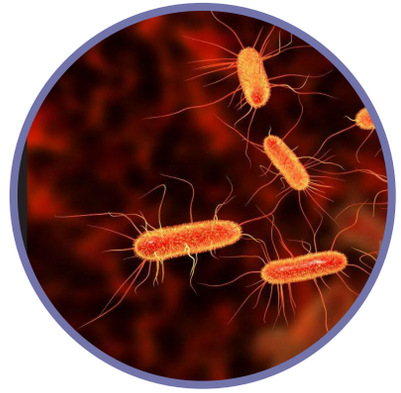
ZAPARAY®
SUSTAINABLE DISINFECTION

HIGH LEVEL DISINFECTION
FOR HEAT SENSITIVE INSTRUMENTS

HEALTHCARE ASSOCIATED INFECTIONS ARE ONE OF THE MOST COMMON ADVERSE EVENT IN CARE DELIVERY. *

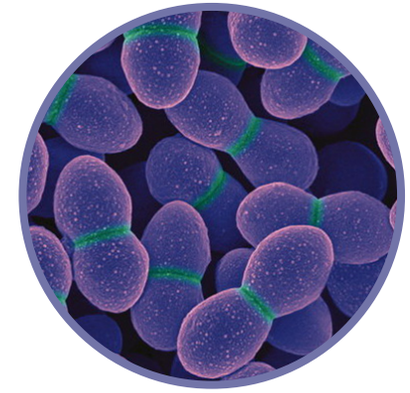


Staphylococcus aureus



Escherichia coli

Acinetobacter baumannii



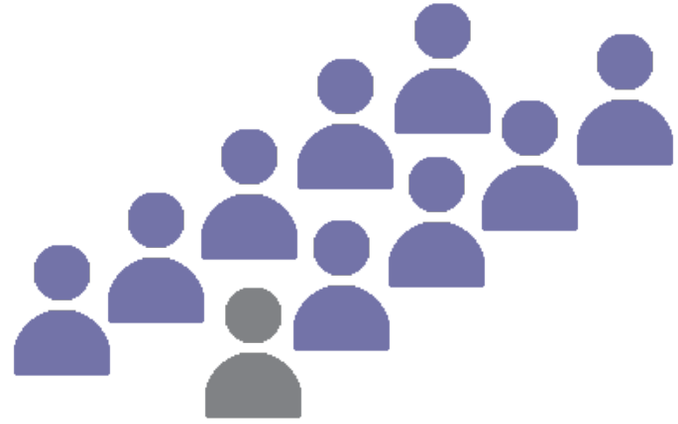
Enterococcus hirae

DID YOU KNOW ?

7%

15%

7% of patients in acute-care hospital in high income countries and 15% of patients in low and middle income countries suffer a HAI



On average, 1 in 10 affected patients will die from their HAI

55-70%

Effective Infection prevention and control measures are estimated to prevent 55-70% of HAIs

*https://www.cdc.gov/hai/organisms/organisms.html

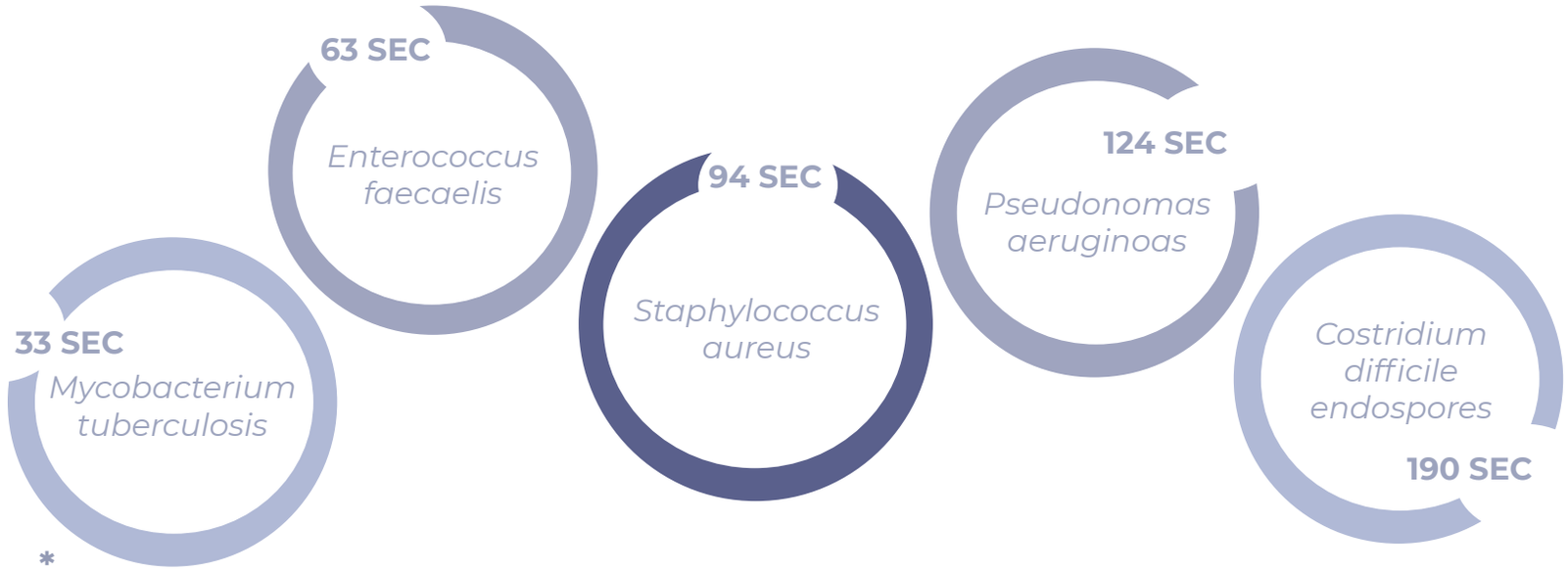
WHAT IF MANUAL DISINFECTION BECAME ...

AUTOMATED & VALIDATED

COST & LABOR EFFICIENT

EFFECTIVE AGAINST RESISTENT ORGANISMS

JOIN US IN CREATING SAFER, HEALTHIER ENVIRONMENTS WITH OUR UNIQUE UV-C LED DISINFECTION FOR HEAT SENSITIVE OBJECTS !



seconds to achieve a 99,999% reduction

* ZAPARAY devices provide a minaimum radiation of 4,73 w/m2
https://nvlpubs.nist.gov/nistpubs/jres/126/jres.126.021.pdf

WHY USE UV-C LED RADIATION ?

COST EFFICIENT

A long lifespan, no lamp replacements, and minimal electricity use. One single radiaton dose consumes only 5W of electricity.

HEAT FREE ASSURANCE

UV-C LED's work at room temperature, safeguarding your instruments without heat or warm-up times.

ECO FRIENDLY

Reduce chemical use and save water with UV-C LED disinfection, enjoy a mercury-free solution.

VALIDATED & AUTOMATED

Prevent cross-contamination. Consistent, reproducible object disinfection.

IMPROVED & DECENTRALIZED

Manual disinfection does not always ensure sufficient pathogen reduction.

Biocidal resistance becomes a challenge in preventing HAI's.

TIME EFFICIENT

Easy to use, single button operated. Guaranteed disinfection in less than 5 minutes.

As the instruments remain dry, no need for additional handling.

SAFETY FIRST

The RAY-TWO features no fragile glass tubes and the UV-C LED's are immediately switched off by the triple safety circuit.

HARMLESS FOR ALL MATERIALS

UV-C LED radiation produces no harmful ozone gas.

All materials can be disinfected, such as plastics or electronic devices.
No cooling, 100% silent operation.

YOUR PARTNER FOR SUSTAINABLE UV-C LED DISINFECTION

Ultraviolet (UV) radiation is a form of light, invisible to the human eye, that exists on the electromagnetic spectrum between X-rays and visible light.

UV-C radiation has been used in industrial and medical applications for decades, traditionally with fragile, glass mercury vapor lamps. The patented ZAPARAY devices exclusively use safe UV-C LEDs.

ZAPARAY devices incorporate the latest optical innovations: custom UV-C transparent glass and proprietary UV-C LED reflectors. Our unique UV-C LED radiation validation electronics guarantee the correct UV-C dose.

Our mission?

ZAPARAY's mission is to provide chemical-free disinfection technology by spearheading the migration from UV-C mercury discharge lamps to UV-C LED technology.

>99,9999999 %
UV-C
HIGH LEVEL DISINFECTION

* *Staphylococcus aureus* ATCC 25923 – experiments 20221012-1120-1121 – University Ghent – Siwe Hannah

SCIENCE

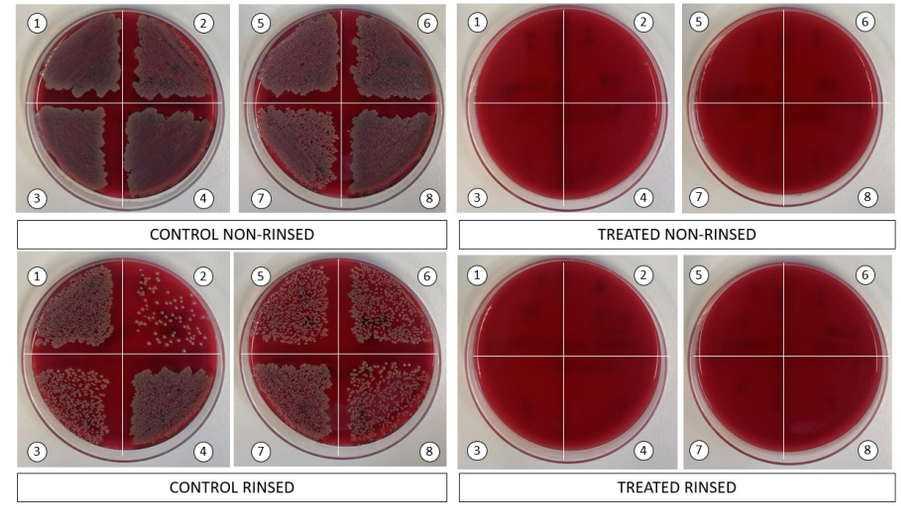
BIOLOGICAL TESTING

Our devices are tested upon numerous different pathogens in certified and research microbiological laboratories, extending **EN14855 and BS8628.**

- Melbec Microbiology Laboratories (UK)
- UGent Laboratory of virology Prof Nauwynck (corona)
- UGent Laboratory of virology Prof Meuleman (hepatitis)
- UGent Laboratory of bacteriology Prof Cools

ZAPARAY invested three years in R&D, setting up collaborations with KU Leuven, UGent and UZGent.

These research projects resulted in customer-oriented product development with accompanying biological studies.



BACTERIAL TEST ATCC 25923

SPAULDING CLASSIFICATION OF MEDICAL INSTRUMENTS

non-critical	semi-critical	critical
Contact with intact skin	Contact with mucosa / body fluids	Enters sterile site
Low / Intermediate Level Disinfection	High Level Disinfection	Sterilization
Reduces all organisms except spores	Reduces all organisms and some spores	Reduces all organisms

ZAPARAY ACHIEVES TOP MARKS IN UV-C DISINFECTION TESTING !

A NEW INDUSTRY STANDARD

ZAPARAY has achieved the BS 8628:2022 certification.

To address the lack of standardized testing for UV-C devices, the European disinfectant standard writing body released a new standard in Spring 2022: BS 8628:2022.

This standard is tailored for **UV-C disinfection devices,** based on the existing EN 17272:2020 airborne surface disinfection standard with minor adjustments. It focuses on assessing the efficacy of UV-C devices in disinfecting surfaces within enclosed spaces.

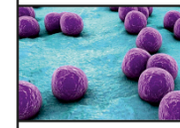
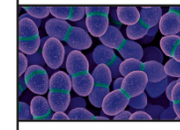
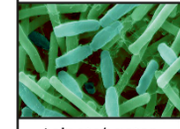
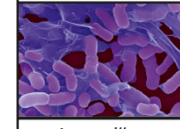
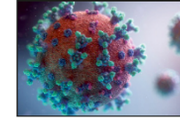
In the Efficacy Test of BS 8628:2022, stainless steel carriers are inoculated with microorganisms and placed inside a test chamber. The UV-C manufacturer defines the specific carrier test location (this is the 'weakest spot', the area with least radiation in the device) and defines minimal UV-C dose to be registered by the UV-C sensors.

After recording the requested UV-C radiation dose, carriers are processed, and the results are expressed in logarithmic scale for compliance assessment.

Key Features of BS 8628:

- Standardized method
- Quantitative assessment
- Wide microorganism coverage
- Direct radiation focus
- Process time determination
- Regulatory Compliance

HIGH LEVEL UV-C DISINFECTION ?
Ask for the BS 8628 compliance!

obtained log reduction	ZAPARAY
Staphylococcus aureus 	5,74
Enterococcus hirae 	5,83
Escherichia coli 	5,44
Bacillus subtilis 	4,89
Acinetobacter baumannii 	5,73
Aspergillus brasiliensis 	2,80
Mycobacterium terrae 	6,08
Porcine respiratoir coronavirus 	7,20

SUSTAINABLE DISINFECTION

Our strategic foresight and sustainable vigilance can make this world a better place to work and to live.
Our aim is to develop innovative medical-grade solutions that **safeguard both people and the planet** from the dangers of water and air contamination and minimize the risk of biological and chemical hazards.

Our sustainble approach explained:

WE DRIVE THE SHIFT FROM MERCURY TUBES TO LED COMPLYING WITH THE MINIMATA CONVENTION

ZAPARAY DEVICES ARE 100% RECYCLEABLE

OUR PRODUCTS ELIMINATE THE NEED FOR GAS OR CHEMICALS, PRIORITIZING BOTH SAFETY AND SUSTAINABILITY

5W OF ENERGY PER CYCLE, REDUCING ENVIRONMENTAL IMPACT WHILE MAINTAINING SUPERIOR PERFORMANCE

NO DERMATOLOGIC SIDE EFFECTS, ENSURING THE WELL-BEING OF HEALTCARE WORKERS

ZAPARAY DEVICES, A SOLID INVESTMENT

SAVE **3$** PER DISINFECTION CYCLE *

- 100 % EFFECTIVE
- 50% LESS EXPENSIVE
- 2X AS FAST

*IN COMPARISON TO MANUAL DISINFECTION

INTRODUCING THE RAY-ONE

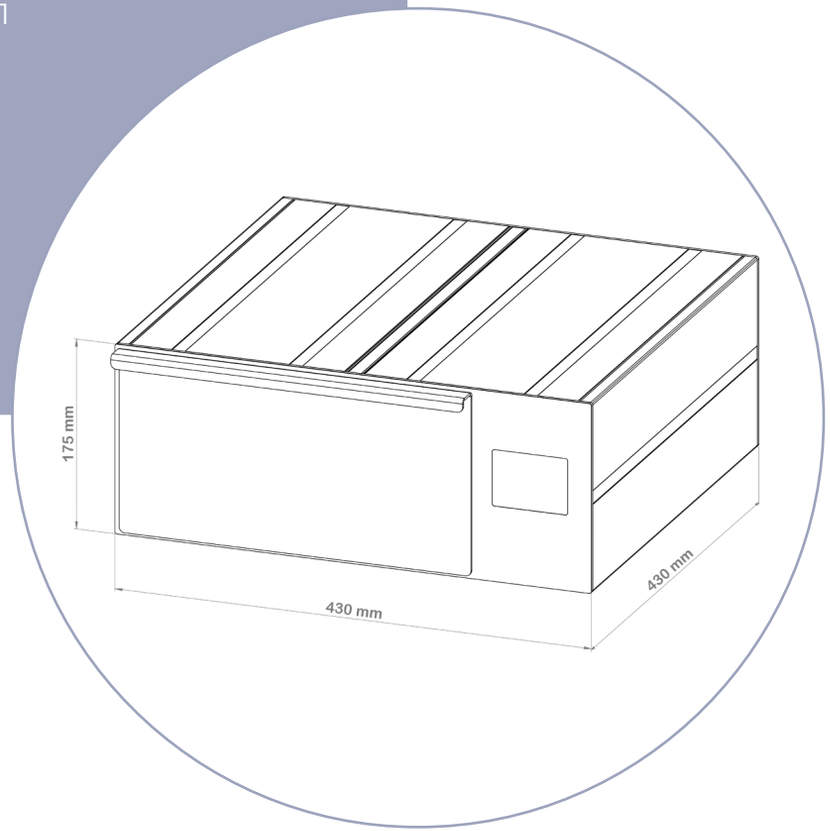
The RAY-ONE streamlines and enhances your daily disinfection routines with its **user-friendly, automated,** and secure design. UV-C disinfection complements existing procedures, offering viral and bacteriological reduction on surfaces, right after manual cleaning of visible contaminants. This automated approach not only ensures effectiveness but also lightens the burden on your workload, promoting biological safety.

RAY-ONE's UV-C radiation disinfects at room temperature. Moreover, it utilizes UV-C **LED** radiation sources, eliminating the annual lamp replacement cost of conventional mercury UV-C lamps. These LEDs are carefully enclosed to prevent UV-C radiation from escaping, ensuring **maximum safety.**

UPGRADE TO RAY-ONE AND EXPERIENCE SUSTAINABLE DISINFECTION.

PRODUCT SPECIFICATIONS RAY-ONE

UV-C source	UV-C LEDs
active area (WxD)	255 x 353 mm
maximum object height	85 mm
maximum object weight	4.0 kg
user-friendly	touch screen illumination
safety circuits	double safety door switch
power	230V- 50Hz
power consumption	5W max per cycle
certification	CE marked, EN-61000-6, EN-61010-1
device weight	17 kg
dimensions (WxDXH)	430 x 430 x 175 mm
(compatible with 19” rack)	
maximum vertical load	80 kg
possible discoloration certain polymers	> 1000 cycles
minimum product lifespan	6 years @ 60 cycles / working day
service interval	yearly, limited
warranty	24 months, extendible up to 5 years



included:

- RAY-PROOFER,for radiation monitoring
- UVSEE™ bags, 300x200 mm, 5 pcs
- power cord, 2,5m, with standard plug (BE)

CE

ZAPARAY RAY-ONE - HOW TO USE

ADVISE

Prior to starting a radiation cycle with the RAY-ONE, it is essential to ensure that the objects slated for disinfection are thoroughly cleaned, free from any visible dirt or droplets.

The intended use of the ZAPARAY RAY-ONE is sustainable UV-C LED disinfection of non-hollow objects with non-porous outer surfaces.
The RAY-ONE should not be used for reprocessing medical devices or for sterilization.

1.

Make sure the **objects** you want to disinfect are **cleansed** from dirt, blood, saliva...

2.

Disinfect your hands or use the special UVSEE® bags to put your objects in.

3.

Open drawer and load your objects, with respecting 3 cm distance from each border.

4.

Make sure the objects allow a 2 cm gap in between. There must be no shadow or coverage, all object surfaces need to be visible.

5.

Close drawer and press **START** within 5 seconds.

6.

A purple light will flash during the cycle.

7.

When light returns to green, the RAY-ONE disinfection **cycle is finished**.

8.

Prior to removing your objects from the drawer, **disinfect your hands** if you chose not to use the UVSEE® bags.

9.

Take out the objects.
Restart procedure.


ZAPARAY

INTRODUCING THE RAY-TWO

RAY-TWO: Realtime UV-C monitoring

Rest assured with our **100% guaranteed UV-C radiation dose**.

At the heart of the RAY-TWO UV-C LED disinfection device lies our patented UV-C controller, serving as the nerve center for **precision and traceability.** It generates a comprehensive log file that captures vital internal device data, including the **duration, date, and time of each disinfection cycle**, ensuring complete transparency and accountability in your disinfection processes.

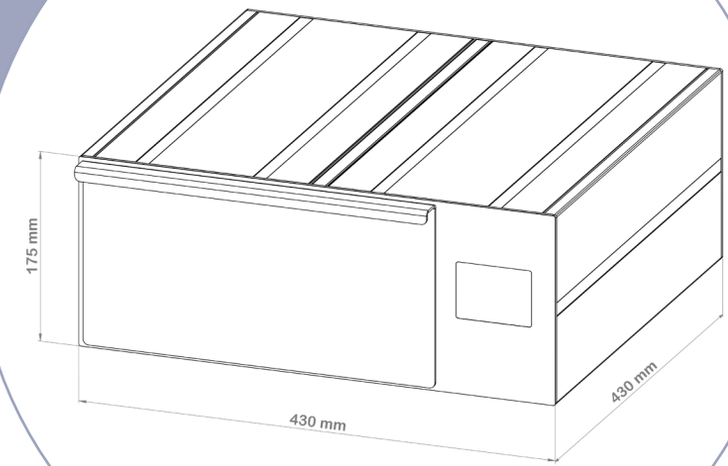
In every single disinfection cycle, the UV-C dose is meticulously calculated in real-time. **Two UV-C sensors** vigilantly monitor the radiation until de required dose has been effectively applied.

RAY-TWO's UV-C disinfection operates at room temperature. Moreover, it utilizes UV-C **LED** radiation sources, eliminating the annual lamp replacement cost of conventional mercury UV-C lamps. These LEDs are carefully enclosed to prevent UV-C radiation from escaping, ensuring **maximum safety.**

UPGRADE TO RAY-TWO AND EXPERIENCE SUSTAINABLE DISINFECTION.

PRODUCT SPECIFICATIONS RAY-TWO

UV-C source	UV-C LEDs
active area (WxD)	220 x 320 mm
maximum object height	80 mm
maximum object weight	4 kg
UV-C LED dose per cycle, guaranteed!	100mJ/ cm2 UV-C @ 268nm (+/- 10nm)
certification	CE marked, EN 61000-6, EN 61010-1
user interface	3,5” TFT Touchscreen
safety circuits	radiation sensors + interlock + double safety doorswitch
power	230V - 50 Hz
power consumption	5W max per cycle
dimensions (WxDxH) (19” rack compatible)	430 x 430 x 175 mm
weight device	17 kg
maximum vertical load	80 kg
potential discoloration of certain polymers	> 1000 cycles
minimum product lifespan	6 years @ 60 cycles / working day
service interval	yearly, limited
warranty	24 months, extendible up to 5 years



included:

- power cord 2,5m with standard plug
- USB cable
- UVSEE™ bags, 300x200 mm, 5 pcs

CE

ZAPARAY RAY-TWO - HOW TO USE

ADVISE

Prior to starting a radiation cycle with the RAY TWO, it is essential to ensure that the objects slated for disinfection are thoroughly cleaned, free from any visible dirt or droplets.

The intended use of the ZAPARAY RAY TWO is sustainable UV-C LED disinfection of non-hollow objects with non-porous outer surfaces.
The RAY TWO should not be used for reprocessing medical devices or for sterilization.

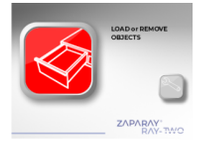
1.

Make sure the **objects** you want to disinfect are **cleansed** from dirt, blood, saliva...

2.

Disinfect your hands or use the special UVSEE® bags to put your objects in.

3.



Open drawer and load your objects, with respecting 3 cm distance from each border.

4.

Make sure the objects surfaces **do not overlap**. There must be no shadow or coverage, all objects surfaces need to be visible.

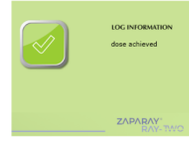
5.

Close drawer and press **START** within 5 seconds.

6.

The **patented RAY-CONTROL** will display the radiated UV-C energy in mJ/cm2 received from both UV-C sensors

7.



A green display announces a successful radiation cycle. The dose provided, radiation time and service counter are displayed on screen.

8.

Prior to removing your objects from the drawer, **disinfect your hands** if you chose not to use the UVSEE® bags.

9.

Take out the objects.
Restart procedure.

APPLYING UV-C LED DISINFECTION IN YOUR PRACTICE

DENTAL (LABS)

curing lamps
X-ray film holders
loupe glasses

MEDICAL

Pachymeters
Wearable sensors
Stethoscopes

HOSPITALS

Communication electronics
Remote control units
Sleep monitoring devices

UVSEE BAG

Safe logistic disinfection cycles with **UVSEE™ Bags by ZAPARAY.** Experience seamless logistics in the transportation of disinfected objects with ZAPARAY's innovative UVSEE™ bags.

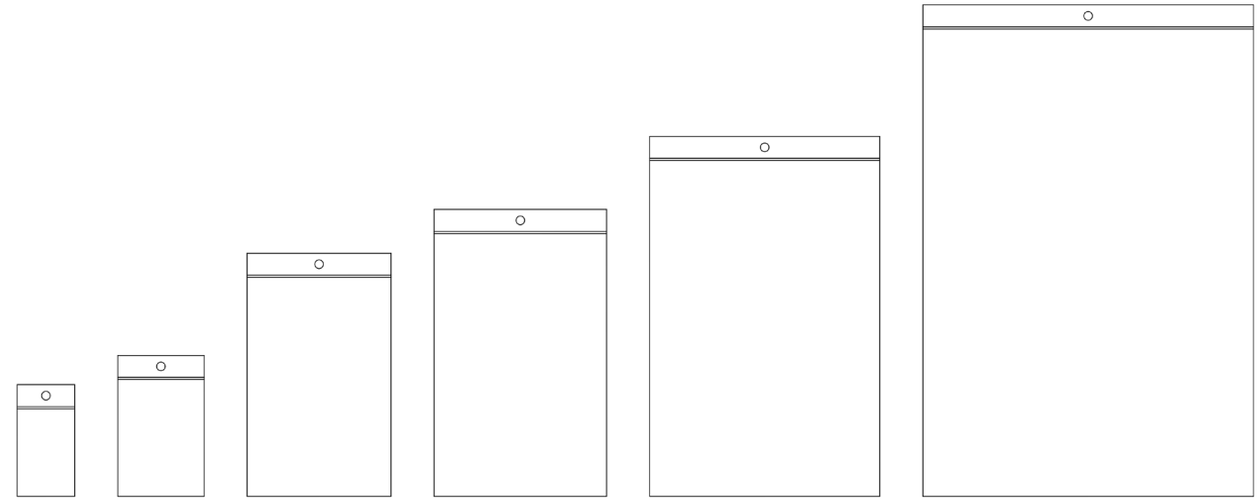
What sets UVSEE™ BAGS apart is the patented **transparency to UV-C radiation.** Your objects are being disinfected inside the bag. These transparent bags are specifically designed to facilitate the **safe handling of disinfected objects** while minimizing the risk of re-contamination during logistics.

Specific UVSEE™ bags also feature a single passage indicator, which, following exposure to UV-C-LED radiation, reveals a distinctive **'UVC RADIATED' mark in blue**. This visual confirmation assures you that the object has undergone thorough disinfection, enhancing peace of mind.

NOT RADIATED

UV-C-LED RADIATED

With UVSEE bags, you have the flexibility to choose from various sizes, catering to your specific needs.



QUARTZ ACCESSORIES

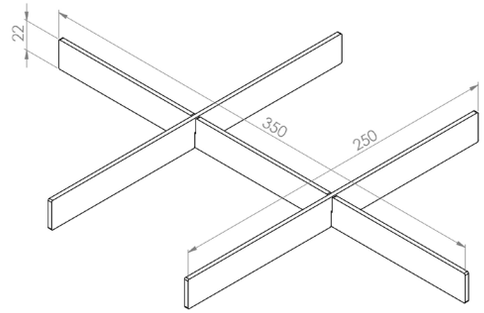
Quartz is a type of glass that is made from pure silica. It is extremely transparent to UV-C light, making it ideal for use in UV-C disinfection applications.

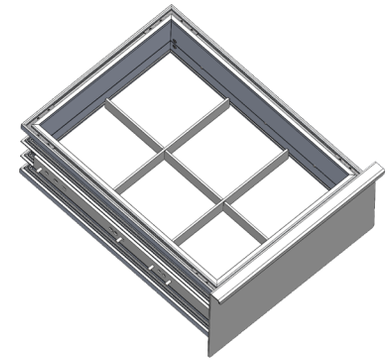
Benefits

- Increasing the efficiency of the UV-C disinfection process
- Preventing cross-contamination of objects
- Made of durable quartz that is transparent to UV-C radiation

DRAWER DIVIDER

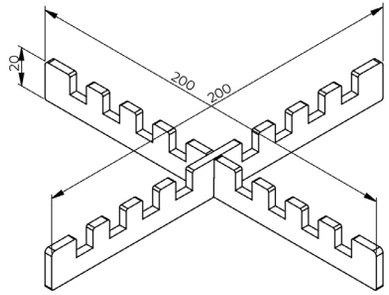
- Article code: ZA-00-G-001
- Dimensions: 250mm x 350mm x 27mm

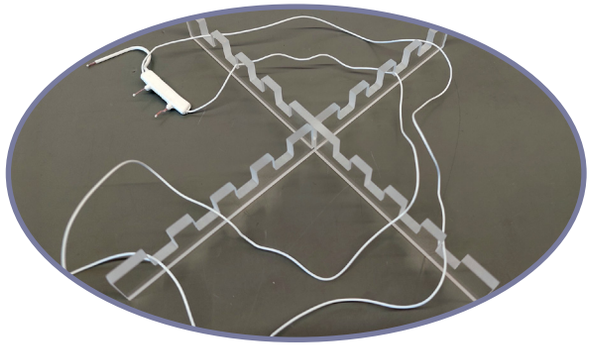




WIRE SEPARATOR

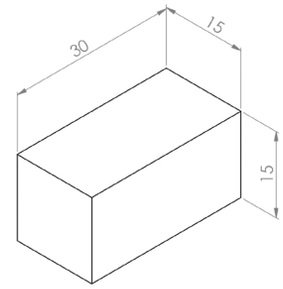
- Article code: ZA-00-G-003
- Dimensions: 200mm x 200mm x 20mm

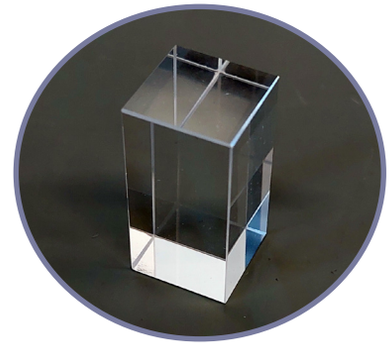




PULSE OXIMETER SEPARATOR

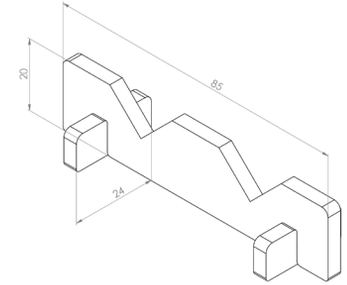
- Article code: ZA-00-G-004
- Dimensions: 30mm x 15mm x 15mm

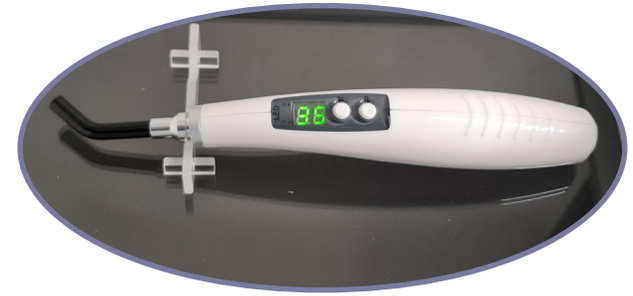




ROLL-STOP

- Article code: ZA-00-G-002
- Dimensions: 85mm x 25mm x 20mm





ZAPARAY, YOUR UV-C LED INNOVATOR

ZAPARAY is a Belgian company focused on UV-C LED innovation, resulting in sustainable disinfection solutions.

ZAPARAY's R&D team has over 20 years of experience with LED technology.
We continuously invest in fundamental research supporting the usage of UV-C LED for fast micro-biological reduction purposes. Next to application research with the universities UGhent & KU Leuven, we have a PhD track exploring the wavelength sensitivity of bacteria and Hepatitis viruses.

ZAPARAY®

SUSTAINABLE DISINFECTION

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