

# COMPLETE SYSTEM FOR WASHING, DRYING, DISINFECTION, TRANSPORTATION AND DISTRIBUTION OF 3D GLASSES

RECOMMENDED BY DOLBY®  
RECOMMENDED BY RealD



## SPOTLESS

## WASHING & DRYING of 3D GLASSES

The core of Kooptech® System is the **Kooptech® WD Washer-Dryer** for 3D glasses equipped with **patented** function of **fast low-temperature drying**.

- **Fast, reliable washing & drying, at low temperature**
- Duration of full cycle:  
washing + drying = approx. 4.5 min
- **More than 13 cycles per hour**
- 3D glasses are loaded into a Washer-Dryer in **Kooptech® 3D glasses Baskets**
- **Kooptech® WD Washer-Dryer** can be used various types of 3D glasses



**IMAX®** **REAL D**

**DOLBY 3D** **XPAND™**  
V I S I O N

**VOLFONI®**  
CREATIVE 3D TECHNOLOGY

**masterImage**  
ABSOLUTELY 3D

**INFITEC**

- **Certificates**



- **Specification**

Nominal supply voltage <b>US*</b>	3-phase 208 VAC (±10%), 60Hz
Nominal supply voltage <b>EU*</b>	3-phase 400 VAC (±10%), 50Hz
Connection power	8.9 kW
Actual energy consumption	7.85 kWh
Sound level	< 70 dB (A)

\*other supply voltage versions available upon request

- **External dimensions and weight:**

width	750 mm	(29.5")
depth	1100 mm	(43.3")
height	1450 mm	(57.1")
weight	180 kg	(397 lbs.)

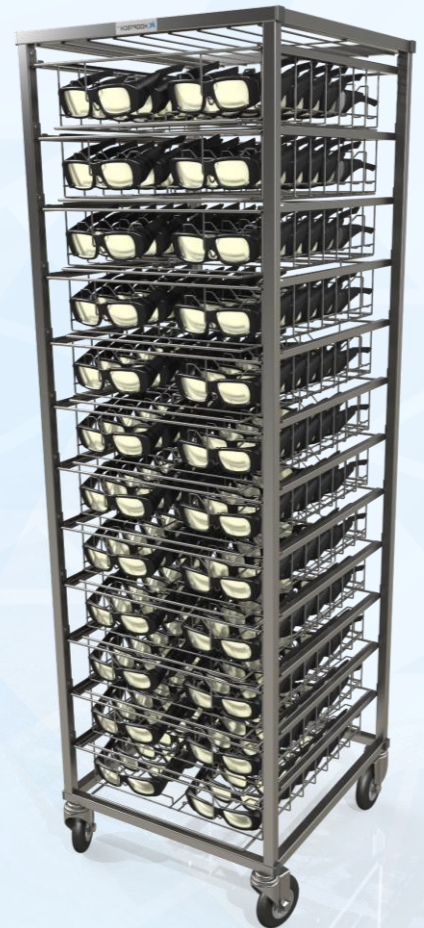
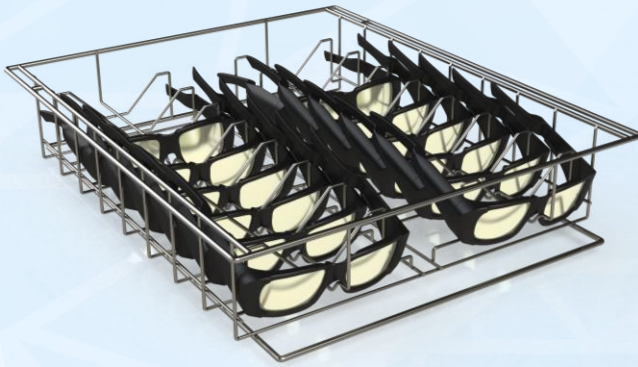
Water source efficiency	min. 2500 l/h	(660.4 gal./h)
Water source pressure	min. 3.0 bar	(43.5 psig)
Actual water consumption	13.5 l/cycle	(3.6 gal./cycle)
Washing Detergent consumption	12 ml/cycle	(0.4 oz./cycle)
Rinse Aid consumption	6 ml/cycle	(0.2 oz./cycle)

## STORAGE & TRANSPORTATION of 3D GLASSES

The part of Kooptech® System are **Baskets for 3D glasses** and **basket Trolleys**. It is an easy and convenient form of collection, transportation and distribution of 3D glasses.

- Each Trolley stores up to 12 removable Baskets for 3D glasses
- External dimensions and weight:
 

width	470 mm	(18.5")
depth	520 mm	(20.5")
height	1530 mm	(60.2")
weight	35 kg	(77 lbs.)
- 2 Baskets filled with 3D glasses can be directly transferred to Kooptech® Washer-Dryer
- A dedicated **Cover for 3D baskets** is used to hold 3D glasses in the Basket while it is being washed in Kooptech® Washer-Dryer



## CLEANING AGENTS for 3D GLASSES

Crucial component of efficient, reliable washing is a proper cleaning solution. Kooptech® developed **Washing Detergent** and **Rinse Aid** safe for 3D glasses with excellent cleaning properties activated in **low temperature**.

- **Washing Detergent** is activated in low-temperature
- **Rinse Aid** enables efficient rinsing and drying **without any spots left on the surface** of the 3D glasses
- Kooptech® **Washing Detergent** and **Rinse Aid** are the only cleaning agents on the market design specifically for cleaning of 3D glasses
- **Both Washing Detergent and Rinse Aid are safe for transportation**
- A set of Washing Detergent (10l) and Rinse Aid (5l) lasts for approx. 830 washing & drying cycles





## WHY KOOPTECH® SYSTEM?

### 3D GLASSES WASHING

Kooptech® WD Washer-Dryer for 3D glasses	Gastronomic dishwasher
Low and predictable costs	Costs impossible to predict
Cleaning liquid reaches whole surface of 3D glasses thanks to spin washing	Washing effectiveness depends on amount of baskets filled with 3D glasses, placed by the operator inside the dishwasher
Washing effectiveness does NOT depend on the operator	Washing effectiveness fully depends on the operator
Cleaning agents, activated in low temperature, designed specifically for cleaning 3D glasses – safe for eyewear and for the Washer-Dryer itself	Cleaning solution is more aggressive for eyewear, very often activated in higher temperature which causes progressive damage to 3D glasses

### 3D GLASSES DRYING

Kooptech® WD Washer-Dryer for 3D glasses		Other solutions	
<b>Drying of 3D glasses relies on:</b> <ul style="list-style-type: none"> <li>centrifugal removal of water from the 3D glasses surface after washing</li> <li>low temperature drying process</li> </ul>	<ul style="list-style-type: none"> <li>+ very low cost of drying 3D glasses</li> <li>+ no mechanical damage of lenses (scratches, tarnish)</li> <li>+ short drying time</li> <li>+ no temperature damage</li> <li>+ repeatability of the process</li> </ul>	Hot air drying	<ul style="list-style-type: none"> <li>- high cost</li> <li>- constant accumulation of chemicals on lenses surface causes formation of permanent stains and spots</li> <li>- temperature and mechanical damage of lenses</li> <li>- high cost of restoring glasses stock</li> </ul>
		Hand wiping	<ul style="list-style-type: none"> <li>- high cost</li> <li>- mechanical damage of lenses</li> <li>- high cost of restoring 3D glasses stock</li> </ul>
		Leaving 3D glasses 'to dry themselves'	<ul style="list-style-type: none"> <li>- constant accumulation of chemicals on lenses surface causes formation of permanent stains and spots</li> </ul>

### 3D GLASSES STORAGE AND PROTECTION

Kooptech® Trolley and Baskets for 3D glasses		Other solutions	
Separation of 3D glasses	+ lenses protected from damages	No separation of 3D glasses	- damaged, scratched lenses
Cleaned pieces are not touched by operator	+ patrons always get clean 3D glasses	Everything depends on operator	- fingerprints on lenses

All our products are manufactured in European Union.

#### Contact:

[office@kooptech-cinema.com](mailto:office@kooptech-cinema.com)

#### Manufacturer:

Kooptech-Cinema Sp. z o.o.  
Jagiellońska 88 St., building 16  
00-992, Warsaw, POLAND



# UV-C DB90.1 Disinfection Box

**RELIABLE REDUCTION  
of BACTERIA, VIRUSES and FUNGI**



## RELIABLE DISINFECTION REDUCTION OF BACTERIA, VIRUSES AND FUNGI

**Kooptech® UV-C DB.90.1 Disinfection Box is a universal solution for the reduction of bacteria, viruses and fungi with UV-C irradiation.**

**UV-C DB.90.1 Disinfection Box is to disinfect 3D glasses but can be used for many other items**

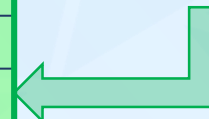
3D glasses are particularly vulnerable to contamination by various microorganisms because they are exposed to aerosols exhaled through nose and mouth, and they are in direct contact with human skin and in the vicinity of uncovered surfaces of the eyes.

Therefore, after the 3D glasses are washed and dried with the **Kooptech® System**, it is recommended that they are also treated with UV-C germicidal irradiation to enhance your Patrons' confidence in the theater environment. UV-C germicidal irradiation process can further decrease the risk of exposure to pathogens that cause infections<sup>1</sup>. UV-C irradiation has been successfully used for many years for disinfection\* purposes in water treatment and surface and air disinfection. It is also one of the methods of disinfection recommended by the US CDC<sup>2</sup> in the face of an outbreak of SARS-CoV-2 virus that causes COVID-19 disease.

Optimal placement of lamps inside the **UV-C DB90.1 Box** and the use of a highly reflective coating creates a uniform UV-C irradiation inside the box and maximizes the efficacy of UV-C irradiation on 3D glasses.

microbe	typical values for surface treatment				
	K [m <sup>2</sup> /J]	dose [mJ/cm <sup>2</sup> ] for reduction by			
		90%	99%	99.9%	99.99%
bacteria (veg.)	0.14045	2	3	5	7
viruses	0.03156	7	15	22	29
bacterial spores	0.01823	13	25	38	51
fungal cells/yeast	0.00700	33	66	99	132
fungal spores	0.00789	29	58	88	117

**Kooptech® UV-C DB90.1 Box provides an average dose of min. 150 mJ/cm<sup>2</sup> - higher than typical doses required for 99.99% reduction of microbes**



Developed based on International Ultraviolet Association Inc. resources<sup>3</sup>

**Kooptech® UV-C DB.90.1 Disinfection Box is accredited by a certified biotechnology laboratory.**

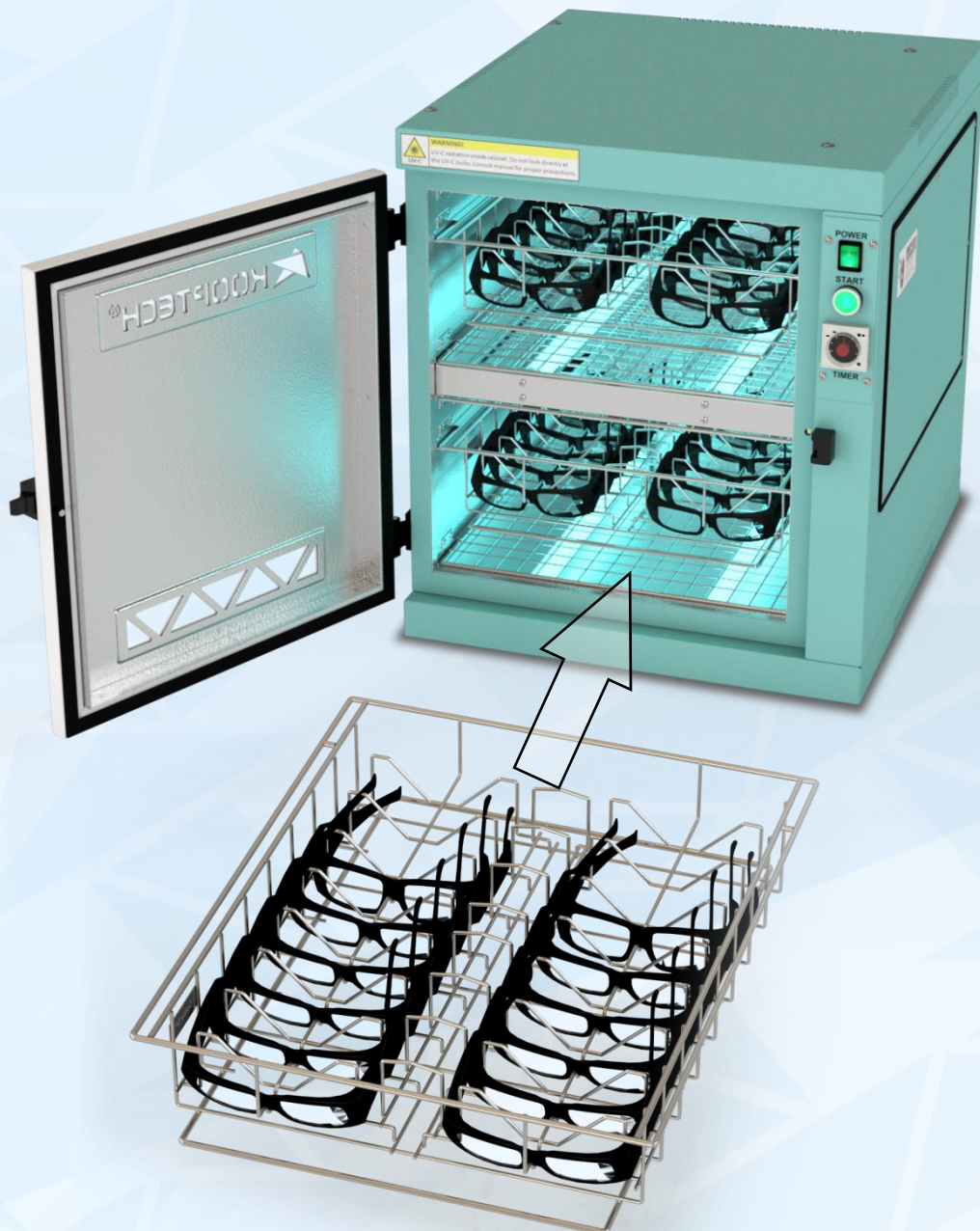
\*All references to 'disinfection' are referring generally to the reduction of pathogenic bioburden and are not intended to refer to any specific definition of the term as may be used for other purposes by the U.S. Food and Drug Administration or the U.S. Environmental Protection Agency.



## *KOOPTECH® UV-C DB90.1 Disinfection Box*

**Kooptech® UV-C DB90.1 (UV-C Box)** is designed to effectively work with **Kooptech® System** for washing, drying and storage of 3D glasses of all types.

- Baskets for 3D glasses that are used in the **Kooptech® System** can be placed in **Kooptech® Washer-Dryer (WD)**, **UV-C Box** and in transportation trolleys.
- Coordinated cycle times of both the **WD** and **UV-C Box** enable their simultaneous work. The duration of disinfection cycle for 2 Baskets with 3D glasses inside the **UV-C Box** equals approx. 3 minutes. Duration of washing-drying cycle in the **Kooptech® WD** equals approx. 5 minutes.
- Device is easy and safe to use – can be operated without any special training.
- UV-C Box is ready to use immediately after connecting to the power.
- Standard 15 W T8 UV-C lamps can be easily replaced.
- Various supply voltage options are available.



## **Other uses for your UV-C Disinfectio Box**





## **PREVENTION IS BETTER THAN CURE**

***Kooptech® UV-C DB.90.1 Box - this disinfection cabin is an all-purpose solution for effective reduction of bacteria, viruses and fungi by UV-C radiation.***



## ***Kooptech<sup>®</sup> UV-C DB.90.1 Box***

### ***EFFECTIVE DISINFECTION REDUCTION OF BACTERIA, VIRUSES AND FUNGI***

#### **A universal solution for disinfecting everyday items**

Many daily-used items may be subject to microbial contaminations. However, their source are not just aerosols exhaled through nose and mouth. Microorganisms present inside rooms can settle on surfaces of different items, causing their contamination. Since microorganisms can survive for many hours, systematic disinfection of personal items is an absolute necessity.

An effective and relatively inexpensive solution is to expose items surface to UV-C germicidal irradiation (light wavelength 254 nm). **The process of UV-C radiation significantly reduces the risk of exposure to disease-causing pathogens<sup>1</sup>. UV-C radiation is one of the disinfection methods recommended by US CDC<sup>2</sup> (Centers for Disease Control and Prevention) in the face of the SARS-CoV-2 virus pandemic which causes the COVID-19 disease.** For years, it has been successfully used in many industries, including food, medical, and others.

**Kooptech<sup>®</sup> UV-C DB.90.1 Disinfection Box**  
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1. Derraik, J.G.B.; Anderson, A.W.; Connelly, E.A.; Anderson, Y.C. 2020. Rapid evidence summary on SARS-CoV-2 survivorship and disinfection, and a reusable PPE protocol using a double-hit process, medRxiv DOI: 2020.04.02.20051409; <https://doi.org/10.1101/2020.04.02.20051409>.
2. Centers for Disease Control and Prevention, 2020: Decontamination and Reuse of Filtering Facepiece Respirators <https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html>



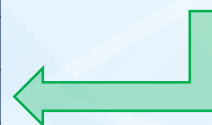
## KOOPTECH® UV-C DB90.1 Box

The typical value of UV-C irradiation inside the **UV-C DB90.1 Box**, at a distance of 100 mm away from the lamps, is  $10 \text{ W/m}^2$  ( $1 \text{ mW/cm}^2$ ). With a typical treatment time of 150 seconds, **the effective dose of UV-C irradiation is then equal to  $1500 \text{ J/m}^2$  ( $150 \text{ mJ/cm}^2$ )**.

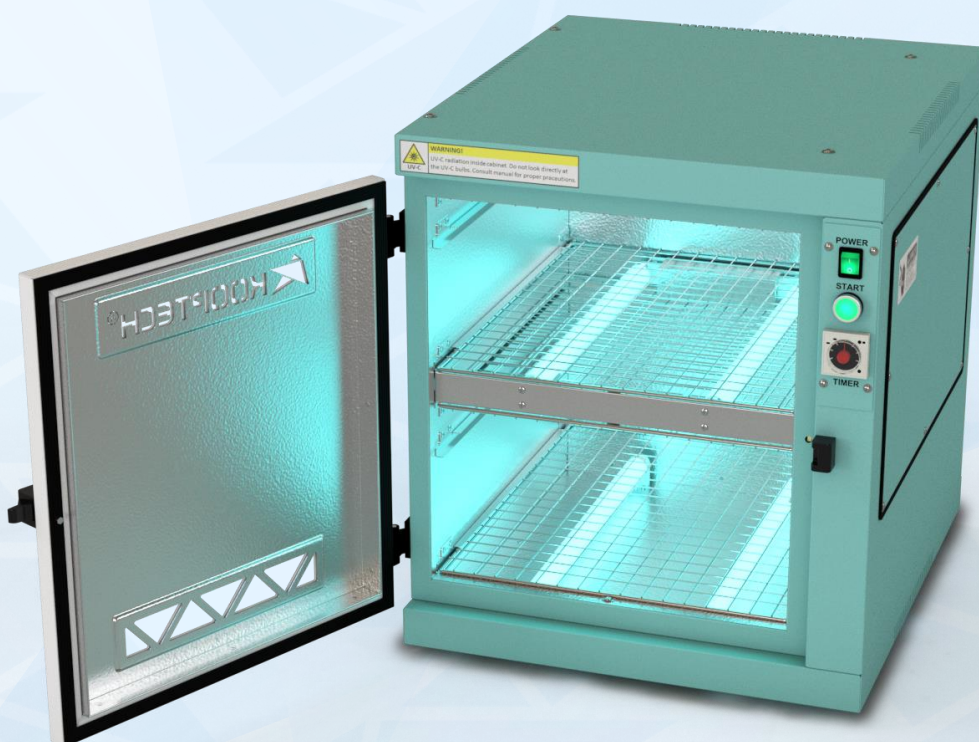
Based on data published by IUVA, the table below presents examples of bacteria, viruses and fungi, and effective doses of UV-C 254 nm irradiation required for various levels of reduction of microorganisms (highlighted are values below) the typical  **$150 \text{ mJ/cm}^2$**  of the **Kooptech® UV-C DB90.1**

microbe	typical values for surface treatment				
	K [ $\text{m}^2/\text{J}$ ]	dose [ $\text{mJ/cm}^2$ ] for reduction by			
		90%	99%	99.9%	99.99%
bacteria (veg.)	0.14045	2	3	5	7
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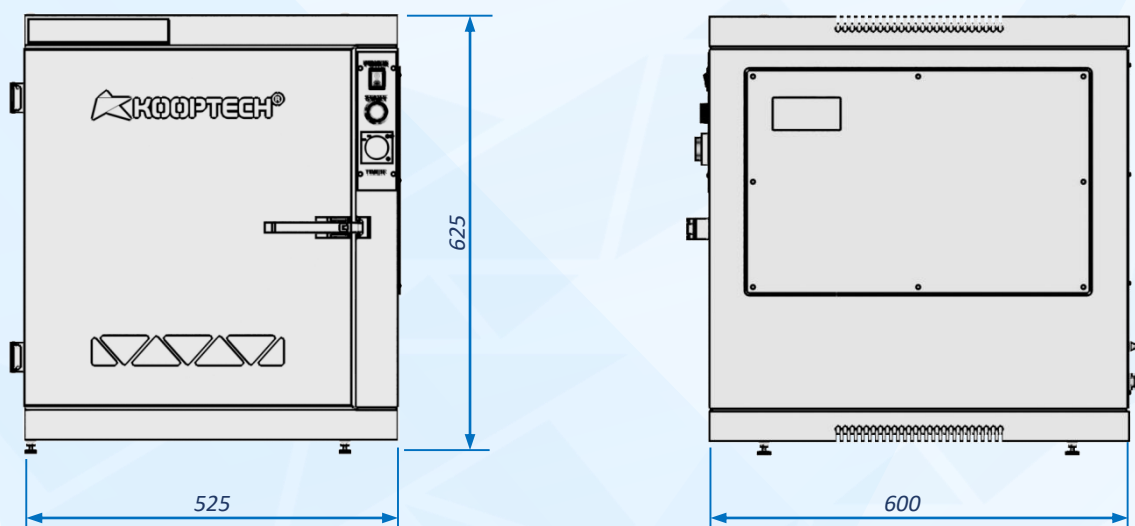


max load per shelf  
(4 kg)

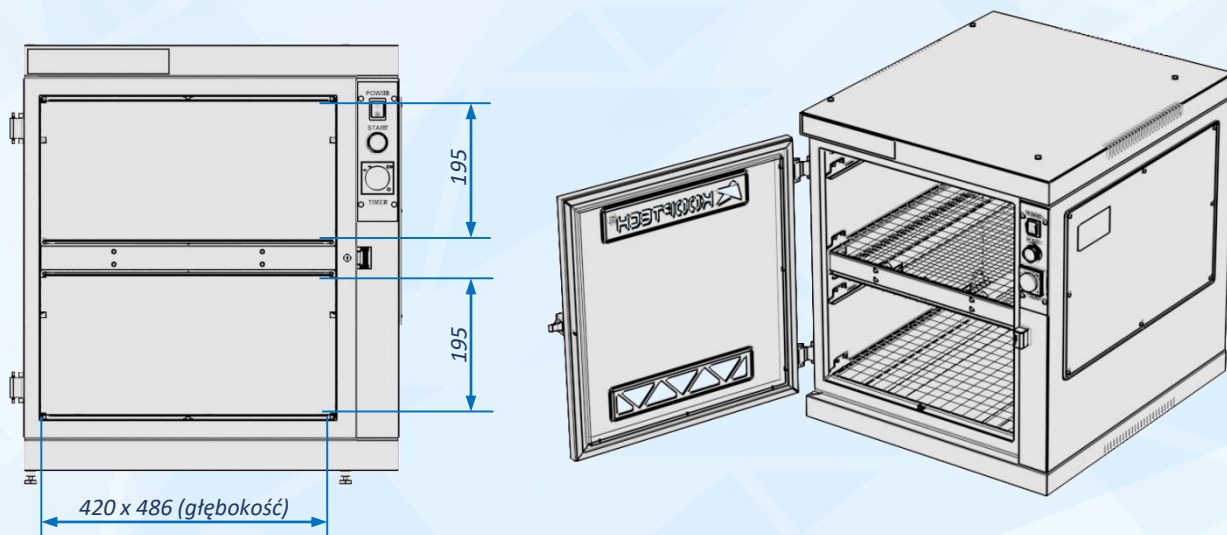


## TECHNICAL SPECIFICATION

### external dimensions



### Internal dimensions



Dimensions in millimeters

## TECHNICAL SPECIFICATION

parameter	Kooptech® UV-C DB90.1 Disinfection Box
dimensions (W x H x D)	525 mm x 625 mm x 600 mm
weight (without baskets)	35.0 kg
nominal supply voltage	1-phase, 230 VAC 50 Hz
connection power	90 W
power connection cable length	1.5 m
cycle time	3 min
max ambient temperature	35°C)
max ambient humidity	80% (no condensation)
UV-C lamps specification	6 x15 W T8 UV-C (254 nm germicidal lamps)
UV-C lamps life	9 000 hrs*
minimum UV-C irradiance 100 mm away from the lamps	10 W/m <sup>2</sup>

\*With Philips TUV T8 15W UV-C lamps, at depreciation of UV-C output by -10% (based on manufacturer's data)

**Contact:**

[office@kooptech-cinema.com](mailto:office@kooptech-cinema.com)

**Manufacturer:**

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