



SELCO Foundation | 16th May 2020

Solar UV Disinfection Solutions

For varied applications

TABLE OF CONTENTS

Solar UV Disinfection Technologies for Space Disinfection

Solar UV Disinfection Technologies for Masks, PPEs other objects

Disinfection technologies for automobiles/ vehicles

UV Disinfectant for Health Centers



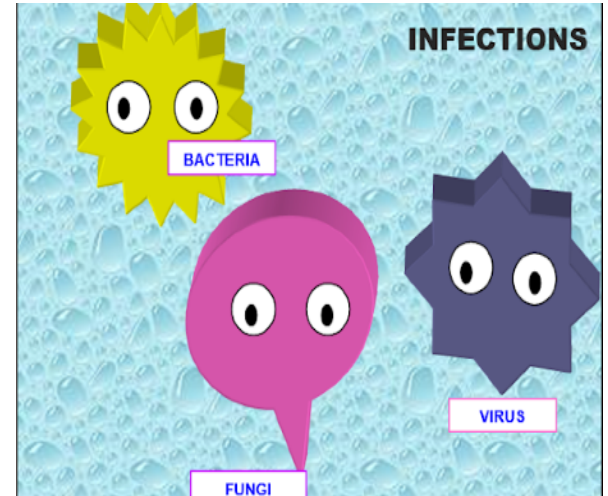
Need for UV Disinfectant for Health Centers

Healthcare Acquired infection (HAI's) also known as nosocomial infections, are infections that patients acquire during their presence in a healthcare setting such as hospitals, long-term care facilities, clinics. HAI's can happen in any health care facility, including hospitals, ambulatory surgical centers, and long - term care facilities. Bacteria, fungi, viruses or other less common pathogens can cause HAI's. HAI's affect 10% of patients during their stay.

UVGI(UltraViolet Germicidal Irradiation) is one of the most effective method in preventing infections that are chiefly spread through smaller droplets and not by direct contact or larger respiratory droplets.

UVGI uses these “destructive properties” of UV light to target pathogens. It is thus considered effective in disinfecting the air and helps in preventing certain infectious diseases from spreading. Another term used for UVGI is UV-C.

UV-C lights are able to penetrate the cell wall of microorganisms, & alter the DNA structure such that the microorganisms.



Solar UV Disinfection Solutions For varied applications



UVC Disinfectant

UVC Cleaning Systems Inc. is located in Canonsburg, PA, United States and is part of the Rental & Leasing Industry.

Manufacturer: [UVC Cleaning Systems Inc](#)
Headquarters: US
Availability: Globally



Mobile UVC with Casters



W15 Wall Mount Unit



Safety Certificates



ETL, CE, CSA, and FCC Certified



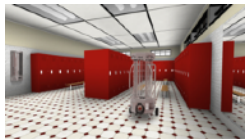
RoHS, WEEE, and EPA compliant



Clients



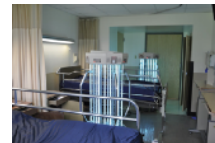
No. of Installations



Contract Environmental Services



Institutions



Nursing/ Rehab

Technology is certified to the National Electrical Manufacturers Association (NEMA WD7) standard

Mobile UVC with Casters



It is a portable solution with Stainless steel handles & protective cage

Features



UVC
18 emitters



For Large areas
Device link for up to 8 units wirelessly



Intelligent Dosage
Automatically determines UVC dosage & avoid human error



Motion sensors
Avoids accidental exposure to UV light



Remote control



Emergency stop switch



LED indicators



Data storage
in memory card



Weight
124 lbs
(56.2 kg)



Height
60.5"



Width
21"

Load Details



2340 W



16 ft x 13 ft



15 mins for 1 cycle



Solar Panel
3.96 kWp
(330 Wp, 24 V x 12 nos)



Solar Battery
200 Ah, 96 V
(200 Ah, 12 V x 8 nos)



Solar Inverter
5 kVA, 4 kW, 96 V



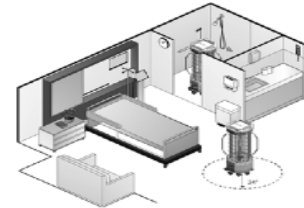
4.25 lakhs INR

Solar system Design for 1 time Operation

Lease Model (INR)

1 year - 1.2 lakhs INR
2 years - 94,363 INR
3 years - 75,415 INR

Sales Model (INR)



Link for detailed information

Assumptions: Sunshine hours - 5 hours, Days of Autonomy - 2, Load efficiency - 80 %

W15 Wall Mount Unit



It is a portable solution, easy to install, operate, and handle, so any level of staff members can operate the machine for sanitization

Features



UVC
11 emitters



For Large areas
Device link for up to 8 units wirelessly



Intelligent Dosage
Automatically determines UVC dosage & avoid human error



Motion sensors
Automatically detects the non availability of humans and turns on the UVC light



Remote control



Emergency stop switch



LED indicators



Data storage
in memory card



Weight
55 lbs
(25 kg)



Height
47.5"



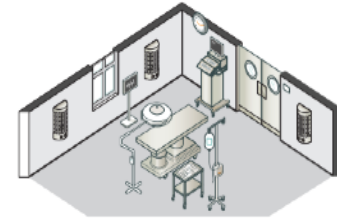
Width
26"

Lease Model (INR)

1 year - 1 lakhs INR
2 years - 75,112 INR
3 years - 66,810 INR



Sales Model (INR)



Link for detailed information

Load Details



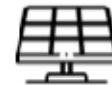
1430 W



16 ft x 13 ft



15 mins for 1 cycle



Solar Panel
1.98 kWp
(330 Wp, 24 V x 6 nos)



Solar Battery
200 Ah, 48 V
(200 Ah, 12 V x 4 nos)



Solar Inverter
4 kVA, 3 kW, 48 V



2.5 lakhs INR

Solar system Design for 1 time Operation

Assumptions: Sunshine hours - 5 hours, Days of Autonomy - 2, Load efficiency - 80 %

STERO -360 – UV Mobile Sterilizer Machine



It is a portable solution, easy to install, operate, and handle, so any level of staff members can operate the machine for sanitization

Features



UVC
Long Lamp
Technology



WiFi enabled



Onboard Data logger
Performance statistics are
stored per cycle of usage



Automated disinfection
system with minimal
human intervention.



Operator must
wear UV
protective glasses



Timer



360 coverage



Smart device
protected



Weight

88 lbs
(40 kg)



Height

59"



Width

16"



Safety Certificates



Clients



No. of
Installations



Manufacturer: [Alpha The UV Expert](#)
Headquarters: Mumbai
Availability: Pan India

[Clients link](#)

50 plus Nos.

1.47 lakhs INR



Link for detailed information

Load Details



650 W



12 ft x 12 ft



10 mins for 1
cycle

Solar system Design for 1 time Operation



Solar Panel
660 Wp
(330 Wp, 24 V x 2 nos)



Solar Battery
200 Ah, 24 V
(200 Ah, 12 V x 2
nos)



Solar Inverter
1.4 kVA, 1 kW, 24 V



85,000 INR

Assumptions: Sunshine hours - 5 hours, Days of Autonomy - 2, Load efficiency - 80 %

UV Room Sterilizers



It is a portable solution & Treat both the air & the surface of rooms at the same time

Features



UVC
4 emitters



Timer



360 coverage



Operator must wear UV protective glasses



Remote control



Height
157.48"

Load Details



164 W



15 ft x 10 ft



15 mins for 1 cycle

Manufacturer: Hitech UV
Headquarters: Mumbai
Availability:



Safety Certificates



Clients

Leelavathy Hospital,
Bombay
ITC Hotel, Bangalore,
Oberoi Hotel, Mumbai



No. of
Installations

50 plus Nos.

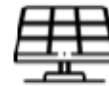


42,000 INR



Link for the detailed information

Solar system Design for 1 time Operation



Solar Panel
100 Wp
(100 Wp, 12 V x 1 nos)



Solar Battery
100 Ah, 12 V
(100 Ah, 12 V x 1 nos)



Solar Inverter
375 VA, 300 W, 12 V



30,000 INR

Assumptions: Sunshine hours - 5 hours, Days of Autonomy - 2, Load efficiency - 80 %

UV Room Sanitizer



It is a portable solution & Guard rails are provided around lamp to prevent accidental lamp breakage

Features



UVC
8 emitters



360 coverage



On-delay timer for personnel safely prior to treatment



Micro tech UPS
1 hours backup



Ozone Free



Operator must wear UV protective glasses



Remote control



Timer



Weight
44 lbs
(20 kg)



Height
59"



Width
16"

Load Details



240 W

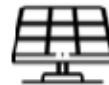


8 ft x 6 ft x 12 ft



1 Hr for 1 cycle

Solar system Design for 1 time Operation



Solar Panel
150 Wp
(150 Wp, 12 V x 1 nos)



Solar Battery
150 Ah, 12 V
(150 Ah, 12 V x 1 nos)



Solar Inverter
500 VA, 400 W,
12 V



35,000 INR

Manufacturer: Hitech UV
Headquarters: Mumbai
Availability:



Safety Certificates



Clients

Catalyst Biotechnology Pvt. Ltd., U.P



No. of Installations

1 nos.



1.1 lakhs INR



Link for detailed information

Assumptions: Sunshine hours - 5 hours, Days of Autonomy - 2, Load efficiency - 80 %

UV - ARM UVC Room Sanitizer




It is a portable solution & ARM is a high - output UV disinfection robot using unique room mapping technology to deliver a fast and effective germicidal dose of continuous wave UVC energy killing germs and pathogens


Features

 **UV Technology**
UVC - LED

 **Digital Timer/Counter**

 **Remote operation with Smartphone**

 **4 Infrared motion sensors** Avoids accidental exposure to UV light

 **Inbuilt LED Driver**

 **LED life**
50,000 hours

 **Tri colour LED indicators**

 **Height**
59"


 **Width**
13.8"

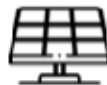
 **Woring arm length**
24"


Load Details

 **150 W**

 **10 ft x 10 ft**

 **1 hour 45 min for 1 cycle**

 **Solar Panel**
200 Wp
(100 Wp, 12 V x 2 nos)

 **Solar Battery**
100 Ah, 12 V
(100 Ah, 12 V x 1 nos)

 **Solar Inverter**
375 VA, 300 W, 12 V

 **40,000 INR**

Solar system Design for 1 time Operation

Assumptions: Sunshine hours - 5 hours, Days of Autonomy - 2, Load efficiency - 80 %



Safety Certificates



Clients

No



No. of Installations

0



86,250 INR

in Process

Manufacturer: [Loko Technology](#)
Headquarters: Bengaluru
Availability: Pan India



[Link for detailed information](#)

It was designed and developed by Laser Science & Technology Centre (LASTEC) based in Delhi with the help of New Age Instruments and Materials Private Limited, Gurugram

Features



**UVC
6 emitters**



WiFi enabled
upto 10m
operating
distance



Portable



**Inbuilt
Timer**



**Audio &
Visual Safety
Alarm**



**LED
indicators**



**Weight
77 lbs
(35 kg)**



**Height
74.8"**



**Width
15.7"**



Motion sensors
Avoids accidental
exposure to UV light



Inbuilt memory
to store log information



**360°
illumination**

Load Details



800 W



12 ft x 12 ft



10 min for 1 cycle



**Solar Panel
660 Wp
(330 Wp, 24 V x 2 nos)**



**Solar Battery
200 Ah, 24 V
(200 Ah, 12 V x 2
nos)**



**Solar Inverter
2 kVA, 1.6 kW, 24 V**



85000 INR

Solar system Design for 1 time Operation



Safety Certificates

No



Clients

**DRDO, Atmoic
Research centre, Air
Force**

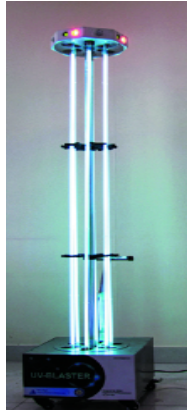


**No. of
Installations**

**50 plus by
June 2020**



2 lakhs INR



[Link for detailed information](#)

Assumptions: Sunshine hours - 5 hours, Days of Autonomy - 2, Load efficiency - 80 %

Comparison of UV Sterilizers for Health Centers



SL. No.	Product	Manufacturers	Technology	Power consumption	Area it covers	Time taken	Solar system	Cost of device	Solar system Cost	Total Cost
1	Mobile UVC with Casters	UVC Cleaning Systems Inc	UVC	2340 W	16 ft x 13 ft	15 min	Panel: 3.96 kWp Battery: 200Ah, 96 V Inverter: 5 kVA, 4 kW, 48 V	1.2 lakhs INR (1 year lease)	4.25 lakhs INR	5.45 lakhs INR
2	W15 Wall Mount Unit	UVC Cleaning Systems Inc	UVC	1430 W	16 ft x 13 ft	15 min	Panel: 1.98 kWp Battery: 200Ah, 48 V Inverter: 4 kVA, 3 kW, 48 V	1 lakhs INR (1 year lease)	2.5 lakhs INR	3.5 lakhs INR
3	STERO -360 – UV Mobile Sterilizer Machine	Alpha The UV Expert	UVC	650 W	12 ft x 12 ft	10 min	Panel: 660 Wp Battery: 200Ah, 24 V Inverter: 1.4 kVA, 1 kW, 24 V	1.47 lakhs INR	85,000 INR	2.32 lakhs INR
4	UV Room Sterilizer	Hitech UV	UVC	164 W	15 ft x 10 ft	15 min	Panel: 150 Wp Battery: 150 Ah, 12 V Inverter: 500 VA, 400 W, 12 V	42,000 INR	30,000 INR	72,000 INR
5	UV Room Sanitizer	Green Lab Equipments	UVC	240 W	8 ft x 6 ft	1 hour	Panel: 100 Wp Battery: 100 Ah, 12 V Inverter: 375 VA, 300 W, 12 V	1.1 lakhs INR	35,000 INR	1.45 lakhs INR
6	UV - Arm UVC Room Sanitizer	Lokoza Technology	UVC - LED	150 W	10 ft x 10 ft	1 hour	Panel: 200 Wp Battery: 100 Ah, 12 V Inverter: 375 VA, 300 W, 12 V	86,250 INR	40,000 INR	1.26 lakhs INR
7	UV Blaster	New Age Instruments & Materials	UVC	800 W	12 ft x 12 ft	10 min	Panel: 660 Wp Battery: 200 Ah, 24 V Inverter: 2 kVA, 1.6 kW, 24 V	2 lakhs INR	85,000 INR	2.85 lakhs INR

LSK, PPE Disinfector & Mask Disinfectors



- UV radiation degrades polymers, which presents the possibility that UVGI exposure could degrade the ability of a disposable respirator to protect the worker.
- UVGI could be used to effectively disinfect disposable respirators for reuse, but the maximum number of disinfection cycles will be limited by the respirator model and the UVGI dose required to inactivate the pathogen.
- N95 Masks Degrade 1.25% at 120 J/cm² = 1200000 J/m²
- Thus, N95 Masks can be Disinfected considerable number of times before degradation*
- UV irradiation were found most promising for mask reuse in the modern hospital infrastructure (up to 20 cycles) when tested on a fabric with particle filtration efficiency $\geq 95\%$.
- When compared to other treatments involving certain liquids vapors, steam, alcohol, and bleach all led to degrading efficiency of filtration if carried out without extreme caution

Reference: <https://www.ncbi.nlm.nih.gov/pubmed/25806411>

*Usage of N95 masks over 20 times: http://web.stanford.edu/group/cui_group/papers/Lei_Cui_MEDARXIV_2020.pdf

Pass Through Dual Door UV-C Sterilizing Chamber 'MAC'

- Double Door With Auto Interlock
- Maximizes Bio-security protocols
- Kills a majority of viruses in a recommended five-minute disinfection cycle
- Provide an effective disinfection operation where no other methods exist
- Rugged shelving supports heavy items
- Digital LCD display with a countdown timer
- Pass-through interlocked lockout protects against accidental exposure
- Heavy Duty Stainless Steel Chamber (SS-304)
- Easy to use one-button operation
- The Pass-Through Dual Door UV-C Sterilizing Chamber is ideal for small-scale use, limiting the import of pathogens through everyday items like cell phones, food, eyeglasses, and tools, while the large chamber is great for facilities or entrances with a higher volume of people coming and going every single day
- Suitable in banks, account rooms, money exchange centers
- Price: INR.69,800/- GST + Freight

Manufacturer Name: [Macro Scientific Engineering Works](#)



[Link for detailed product information](#)

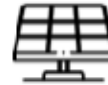
Technical Specifications



Typical five-minutes exposure in Pass Through Dual Door UV-C Sterilizing Chamber

MODEL	#SC-1 (Small Pass Through Chamber)
Input Voltage	220-230 V/ 50/60Hz
Opening Power / Current	50W / 670mA
Standby Power / Current	7W/100mA
Germicidal Lamps	15 Watts x 4 Lamps
Outside Mechanical Dimensions	29.5' (L) x 23' (W) x 23.5' (H) / (750 x 584 x 600 mm) (Tolerance +5%)
No. of Doors	2 (Interlockable)
No of Trays	1 (At Base)
Timer Setting	In seconds and minutes
Output	254 nm UV-C

Solar system Design (2 hours backup)



Solar Panel
80 Wp
(80 Wp, 12 V x 1 nos)



Solar Battery
60 Ah, 12 V
(60 Ah,12 V x 1 nos)



Solar Inverter
150 VA,12 V



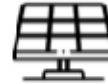
40000 INR

Assumptions: Sunshine hours - 5 hours, Days of Autonomy - 2, Load efficiency - 80 %

Technical Specifications & Ordering Information

MODEL	#STERI-MINI(SS)	#STERI-2L(SS)
External Size	300mm(W) X 300mm(D) X 250mm(H)	500mm(W) X 500mm(D) X 450mm(H)
MOC (Option)	Stainless Steel (SS-202) or Stainless Steel (SS-304)	Stainless Steel (SS-202) or Stainless Steel (SS-304)
Germicidal Lamps	1 Lamps (100 W)	2 Lamps (20 W)
No. of Trays	1	1
No. of Doors	1	1
Timer	In Seconds	In Seconds
Output	254 nm UV-C	254 nm UV-C
Utilities	For small parcel or equipment only	For small as well as big office files, Laptop etc.

Solar system Design (2 hours backup)- Model 1



Solar Panel
80 Wp
(80 Wp, 12 V x 1 nos)



Solar Battery
60 Ah, 12 V
(60 Ah, 12 V x 1 nos)

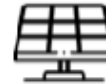


Solar Inverter
150 VA, 12 V



40000 INR

Solar system Design (2 hours backup)- Model 2



Solar Panel
80 Wp
(75 Wp, 12 V x 1 nos)



Solar Battery
60 Ah, 12 V
(50 Ah, 12 V x 1 nos)



Solar Inverter
150 VA, 12 V



45000 INR

Assumptions: Sunshine hours - 5 hours, Days of Autonomy - 2, Load efficiency - 80 %

Portable UV-C Chamber 'MAC' MSW-509 (UVC)



- Maximizes Bio-security protocols
- Kills a majority of viruses in a recommended disinfection cycle (user settable)
- Removable Shelf supports small items (Removable to keep office files etc. or bigger items)
- Provide an effective disinfection operation where no other methods exist
- Stainless Steel (SS-202) or Stainless Steel (SS-304), as ordered
- Easy to use one-button operation
- STERIMAX ® Portable UV-C Chamber is an eco-friendly and cost-effective tool that uses ultraviolet C (UV-C) light sterilization to kill viruses and other pathogens before they enter secure areas. The UV-C light fixes key vulnerabilities found on everyday items like food packets, cell phones & iPad, laptops, salons, beauty parlors, industries, offices, office files and documents, medical and research labs, hospitals, etc. by destroying the bacteria's ability to multiply and spread disease
- **Price :14,990/-+GST +Freight**

Manufacturer Name: [Macro Scientific Engineering Works](#)



[Link for detailed product information](#)

Corona Oven



- The product has been designed basis the study done on SARS virus and has brought the same to market with an Effective product
- Corona Oven makes UV application precise and effective based on superior and science backed design.
- Corona Oven is as easy to use as a microwave. Current version of Corona Oven 2.0,2.0S requires 8min to sanitize where as Corona Oven 2.0Pro requires only 4 min
- These ovens have been used in 40+ police stations in Bengaluru ,DCP offices, Narayana Eye Hospital, Sakra Hospital, Ben Franklin Eye Examination centers and also for several households
- New product also under developing stage in which hot air is used along with UV irradiation
- **Product certified from IISC Bengaluru**

Manufacturer Name: [Log 9 Materials, Bengaluru](#)



MODEL	Corona Oven 2.0 S (70 W)	Corona Oven 2.0 (110 W)	Corona Oven 2.0Pro (150 W)
Price in INR	10,999/-	14,366/-	21,599/-

[Link for Govt.e marketplace](#)
[Click here for detailed information](#)
[Click here for video information](#)

Corona Oven- Technical Specifications



MODEL	Corona Oven 2.0,2.0S,2.0Pro
Capacity	20 L, 33 L, 40 L
Body	Stainless Steel (SS-202)
Germicidal Lamps	1 Lamps
No. of Trays	1
No. of Doors	1
Timer	In Seconds and minutes
Output	254 nm UV-C
Utilities	For currency notes (40-50), A4 sheets (12-14), masks, PPEs, keys, laptops, purse, food materials, cell phones
Buyers	Karnataka Police Department, Govt Health Departments, Hospitals, commercial shops and domestic users



Corona Oven could provide a viable option for quick sterilization and reuse of such PPE and lower the pressure on PPE inventory



Personal Protective Equipment (PPE)



Flash sterilization of medical equipment



Reusable inventory such as intubation tubes



Fruits & vegetables, kitchen utensils, water bottles, keys, toys, clothes, slippers & other daily use items.



Fruits



Water Bottles



Baby Milk Bottles



Keys



Remotes



Slippers

[Newspaper article on Corona Oven](#)
[Link for detailed product information](#)
[Certification from IISC Bengaluru](#)

Pricing of Corona Oven



Solar system Design (2 hours backup)

Corona Owen 2.0 S (70 W)



Solar Panel
75 Wp
(75 Wp, 12 V x 1
nos)

Solar Battery
60 Ah, 12 V
(60 Ah, 12 V x 2
nos)

Solar Inverter
180 VA, 175 W,
12 V



35000 INR

Solar system Design (2 hours backup)

Corona Owen 2.0 (110 W)



Solar Panel
100 Wp
(100 Wp, 12 V x 1
nos)

Solar Battery
80 Ah, 12 V
(80 Ah, 12 V x 1
nos)

Solar Inverter
250 VA, 200 W,
12 V



40000 INR

Solar system Design (2 hours backup)

Corona Owen 2.0 Pro (150W)



Solar Panel
150 Wp
(150 Wp, 12 V x
1 nos)

Solar Battery
100 Ah, 12 V
(100 Ah, 12 V x
1 nos)

Solar Inverter
350 VA, 300 W,
12 V



45000 INR

Assumptions: Sunshine hours - 5 hours, Days of Autonomy - 2, Load efficiency - 80 %

Lokoza Sanitise-40 for sanitising of masks

- Lamp Type–UV LED
- Inbuilt Ionizer with air blower
- Power Source 110/230VAC,50/60Hz
- Power Rating:**20W/40W**
- Power Indicator Illuminated Switch
- Operation Modes Indicated by LED
- Mode Of Operation: Automatic
- **Approximate cycle time per batch – 2 min**
 - For 50 Nos. masks – 100 min
 - For 100 Nos. masks – 200 min
 - For 200 Nos. masks– 400 min

Model	Power in Wattage (W)	Price*
UV-SANITIZE-20	10	INR 11,290
UV-SANITIZE-40	20	INR 15,974
UV-SANITIZE-80	40	INR 29,453

Manufacturer Name: [Lokoza Technology](#)



[Link for detailed information](#)

Applied for certification from IISC-Bengaluru & CE



Product Comparison of Lokoza Technologies Pvt Ltd



SL. No.	Model Name	Power Rating (as per the manufacturer)	Capacity	Size	Weight	Sanitizing Type
1.	UV SANITIZE-20	10 W	20 Ltrs	200mm x 200mm x 300mm	5.5 Kg	UVC Sanitizing
2.	UV SANITIZE-40	20 W	40 Ltrs	300mm x 300mm x 450mm	8.1 Kg	UVC Sanitizing
3.	UV SANITIZE-40	40 W	80 Ltrs	450mm x 450mm x 600mm	12.2 Kg	UVC Sanitizing
4.	UVO3 SANITIZE-20	10 W	20 Ltrs	200mm x 200mm x 300mm	5.5 Kg	UVC + OZONE (O3) Sanitizing
5.	UVO3 SANITIZE-40	20 W	40 Ltrs	300mm x 300mm x 450mm	8.1 Kg	UVC + OZONE (O3) Sanitizing
6.	UVO3 SANITIZE-40	40 W	80 Ltrs	450mm x 450mm x 600mm	12.2 Kg	UVC + OZONE (O3) Sanitizing

Price Comparison-Lokoza Technologies Pvt Ltd



SL. No.	FEATURES	P O W E R RATING	SOLAR CAPACITY			OVERALL SYSTEM COST* (Approximately)
			50 Nos.	100 Nos.	200 Nos.	
1.	UV SANITIZE-20 & UVO3 SANITIZE-20	10 W	Solar Panel – 50 Wp Solar Battery – 30 Ah Micro Inverter – 150 VA	Solar Panel – 60 Wp Solar Battery – 40 Ah Micro Inverter – 150 VA	Solar Panel – 75 Wp Solar Battery – 50 Ah Micro Inverter – 150 VA	INR 30,000/- to INR 40,000/-
2.	UV SANITIZE-40 & UVO3 SANITIZE-40	20 W	Solar Panel – 60 Wp Solar Battery – 40 Ah Micro Inverter – 150 VA	Solar Panel – 75 Wp Solar Battery – 50 Ah Micro Inverter – 150 VA	Solar Panel – 120 Wp Solar Battery – 80 Ah Micro Inverter – 150 VA	INR 35,000/- to INR 50,000/-
3.	UV SANITIZE-40 & UVO3 SANITIZE-40	40 W	Solar Panel – 75 Wp Solar Battery – 50 Ah Micro Inverter – 150 VA	Solar Panel – 120 Wp Solar Battery – 80 Ah Micro Inverter – 150 VA	Solar Panel – 180 Wp Solar Battery – 120 Ah Micro Inverter – 150 VA	INR 40,000/- to INR 60,000/-

PPE KIT UV-C STERILIZATION CHAMBER MSW-509 (PPE)



- Maximizes Biosecurity protocols.
- Kills a majority of viruses in a recommended five-minute disinfection cycle.
- Provide an effective disinfection operation where no other methods exist.
- Digital LCD display with a countdown timer.
- Interlocked lockout protects against accidental exposure.
- Heavy Duty Stainless Steel (SS-202) or Stainless Steel (SS-304) construction (Option).
- Easy to use one-button operation.
- Chemical-free disinfection.
- *Typical five-minutes exposure in UV-C Sterilization Chamber
- Can disinfect 2 PPEs at a time

Manufacturer Name: [Macro Scientific Engineering Works](#)



[Link for detailed product information](#)

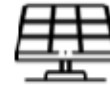
PPE KIT UV-C STERILIZATION CHAMBER MSW-509 (PPE)



Typical five-minutes exposure in UV-C Sterilizing Chamber

Model	#LC-6
MOC (Option)	Stainless Steel (SS-202) or Stainless Steel (SS-304)
Input Voltage	220-230 V/ 50/60Hz
Power Consumption	150 W (<i>approximate</i>)
Germicidal Lamps	6 Lamps
Outside Mechanical Dimensions	600 x 600 x 1500 mm
Timer Setting	59 Minutes, 59 Seconds
Timer	In Seconds
Output	254 nm UV-C

Solar system Design



Solar Panel
150 Wp
(150 Wp, 12 V x 1 nos)



Solar Battery
100 Ah, 12 V
(100 Ah, 12 V x 1 nos)



Solar Inverter
350 VA, 300 W, 12 V



45000 INR

Assumptions: Sunshine hours - 5 hours, Days of Autonomy - 2, Load efficiency - 80 %

[Link for Certifications](#)

Certification and Previous Clients of Macro Scientific Instruments



[Link for the certifications](#)

UV Cab-Garment /PPE Disinfector



- Reliable automatic operate the UV + ionized air Filters and lights.
- Hands free
- Automatic ON / OFF within 10 SEC
- 304 stainless steel construction
- Built-in warm white, electronically ballasted, 5800k lighting provides excellent illumination of the work zone and reduces operator fatigue.
- The cabinet is mobile on casters and may be fixed in place via the built-in leveling feet. All cabinet components are clean room compatible.
- Kills up to 99% of surface germs and pathogens within 20 min exposure.
- UL listed components with lamp life of 50000 hours

Model	UV-CAB10	UV-CAB20
Nominal Size	1.2meters	1.8 Meters
Power Consumption	250 W	500 W
(WxDxH)	1340 X 740X2240mm	1950X740X2240mm
Storage Capacity	16 garments on Hangers (4"model)	24 garments on Hangers (6" model)
Net Weight	150kg	250kg
Price	₹ 2,35,950*	₹ 3,21,750*

Manufacturer Name: [Loko Technology](#)



[Link for detailed product information](#)

Applied for certification from IISC-Bengaluru & CE



Solar system Design (20 minutes backup)



Solar Panel
150 Wp
(150 Wp, 12 V x 1 nos)



Solar Battery
150 Ah, 12 V
(150 Ah, 12 V x 1 nos)

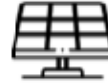


Solar Inverter
500 VA, 400 W, 12 V



50000 INR

Solar system Design (20 minutes backup)



Solar Panel
500 Wp
(250 Wp, 24 V x 2 nos)



Solar Battery
200 Ah, 24 V
(200 Ah, 12 V x 2 nos)



Solar Inverter
1 kVA, 800 W, 24 V



65000 INR

ULTIMA-UVC+Thermal Disinfection Tunnel



- Eco-friendly product design for safety and ease of operation
- Kills microorganisms in a recommended 2 minutes
- Pass-through chamber deactivates the DNA
- Easy-to-use, one button operation
- Power Source 120/230 VAC, 50/60Hz Power ON Indicator Illuminated Switch Power Rating: 500W / 1000W Delay timer to turn unit ON 5 seconds delay Power Interruption Memory Device will resume operation after set point Operation Modes Indicated by LED Mode of operation: Automatic and Manual
- ULTIMA 500- ₹ 2,37,120/- *
- ULTIMA 1000- ₹ 2,99,520/- *
- ULTIMA 250- ₹ 2,18,750/-*

**Prices are exclusive of taxes*

Model	ULTIMA-500	ULTIMA-1000
The Length of the machine	2000mm	2000mm
Working Area	1000mm	1000mm
Conveyor belt width	500mm	500mm
Per Day Capacity	650 to 750 Nos	1400 to 1500 Nos

Manufacturer Name: [Lokozo Technology](#)



[Click here for more information](#)

Applied for certification from IISC-Bengaluru & CE



Price Comparison for ULTIMA- UVC+ Thermal Disinfection Tunnel

Sl. No	Model Name	Power Rating (as per the manufacturer)	Solar Capacity (2 hrs. of operation)	System Cost* (Approximately)
1.	ULTIMA 250	250 W	Solar Panel – 300 Wp Solar Battery – 200 Ah, 12 V Inverter – 850 VA, 12 V	50,000 INR
2.	ULTIMA 500	500 W	Solar Panel – 600 Wp Solar Battery – 200 Ah, 24 V Inverter – 800 VA, 24 V	80,000 INR
3.	ULTIMA 1000	1000 W	Solar Panel – 1 kWp Solar Battery – 400 Ah, 24 V Inverter – 1.6 kVA, 24 V	1,30,000 INR

About 80 percent of India's workforce operates in the informal economy. This means around 400 million people's livelihoods depend on informal work, with no social protections. So this is the most affected informal sector by this Pandemic. Below the few solutions to disinfectant the labournet services.

Sl. No	Description	Technology	Type	Application
1	Disinfectant channel	Fluid/Sprinklers	Tunnel/Canopy/Enclosure	Used for in & out entrances of service centers, food processing units and community Livelihoods.
2	Handheld UV Sanitizer	UV	Handheld (Rechargeable)	Used for Surface Sanitization like workplace, computer, floor, bed, vehicle interiors etc
3	Disinfectant Atomizer	Steam/Fog	Handheld	Used for Air, Vehicle, home, office, Hospitonals, & Vehicle interior disinfection etc
4	Partition in Car's	Fiberglass/Plastic	Shield/Enclosure	Social distancing in Cabs/Ambulances for Isolation

Description	Technology	Type	Application	Capacity	Power consumption	Size (Approx)
Disinfectant tunnel/ Enclosure/ Canopy	Fluid/Sprinklers	Enclosure/ Tunnel/ Canopy/gate	Used for in & out entrances service centers- Bike, Car, Etc.	80 litres to 500 litres	0.5 hp -2 hp, AC 230V	5*5*7.5ft



If we propose DC Surface Pumps- Range	Power consumption range	Solar system design for 1hr Back up for <180w model	No of vehicles can sanitize per/hour	Approximate solar system cost*
0.25hp to 1 hp VDC	180w to 800w, 24V	Solar Panel: 50 Wp Solar Battery: 40 Ah Charge Controller: 30 A, 24 V	25-35	35000 INR



References:

- <https://drive.google.com/open?id=1-8BFxEeSbrR2KUOF7mbq9g-eWocldFI3>
- https://drive.google.com/open?id=1kuRdT5_da4dbk8URtsHSL2d8_PhyyN1
- https://drive.google.com/open?id=1EpEMZG_vkG7rmlkCwOTHAK8W1edRp-jR

Handheld UV Sanitizer



Description	Technology	Type	Application	Power consumption	Solar system design- 5w<15 mins/Vehicle/ 2hrs	Approximate Cost
Handheld UV Sanitizer	UV	Fixed/Handheld	Used for Surface Sanitization like workplace, vehicle interior parts etc(Car, Ambulance etc)	5w to 40wt 12V USB model type	Solar Panel: 20 Wp Solar Battery: 20 Ah Charge Controller:12V, 10 A	7500 INR



Portable UV Sanitizer



UV Sanitizer- Fixed model

Disinfectant Atomizer



Description	Technology	Type	Application	Capacity	Smoke output	Power consumption	Fluid used
Disinfectant Atomizer	Steam	Handheld	Used for Air & Interior sanitizer	100ml to 1.5L	2000 cu.ft/min	400w & 900w- AC 230V	Alcohol based/ Hydrochlo ride



Disinfectant Atomizer

Time takes to sanitize one vehicle	No of vehicles can sanitize per/her Avg (Bike, Car, Lorry cabin, Ambulance, etc)*	Solar system design for 2 hrs back up	Approximate cost of solar powering.	Cost of the Atomizer. AC 230V, Single phase
5mins	12-15*	Solar panel: 250 Wp*2, 24 V Solar Battery: 135 Ah*2 Inverter 1.6 kVA, 24 V	70,000 INR	400 W - 4950 INR 800 W - 7950 INR



References:

- <https://drive.google.com/open?id=1XmNSiqpE7yBJ0XDkJqzbznV6PgxSyl9>
- <https://drive.google.com/open?id=1AASr4f35LjGP4onWL7LFLdtNthPVWPlc>
- <https://www.youtube.com/watch?v=3Nj88fGlcxs>
- https://docs.google.com/spreadsheets/d/1tLXEvkIPyBKejzeRa_6uHz-tja9ywDnpCkMkCrt8oDU/edit?usp=sharing

Isolation in Vehicles



This is an Fiberglass/Plastic used to make a partition in Cars and even other vehicles which leads to maintain a social distance in public vehicles. This can be installed both first and second row of the Taxis.



References:

1. <https://www.thequint.com/tech-and-auto/car-and-bike/why-using-plastic-barriers-in-cars-is-not-a-practical-solution-to-covid19>
2. <https://www.rushlane.com/cabs-install-fiberglass-partition-12360246.html>

Thank You!

Do get in touch for further
information and assistance.

Write to us at:

covid19@selcofoundation.org

SELCO Foundation COVID-19 Response Website:

covid-19.selcofoundation.org



SELCO Foundation