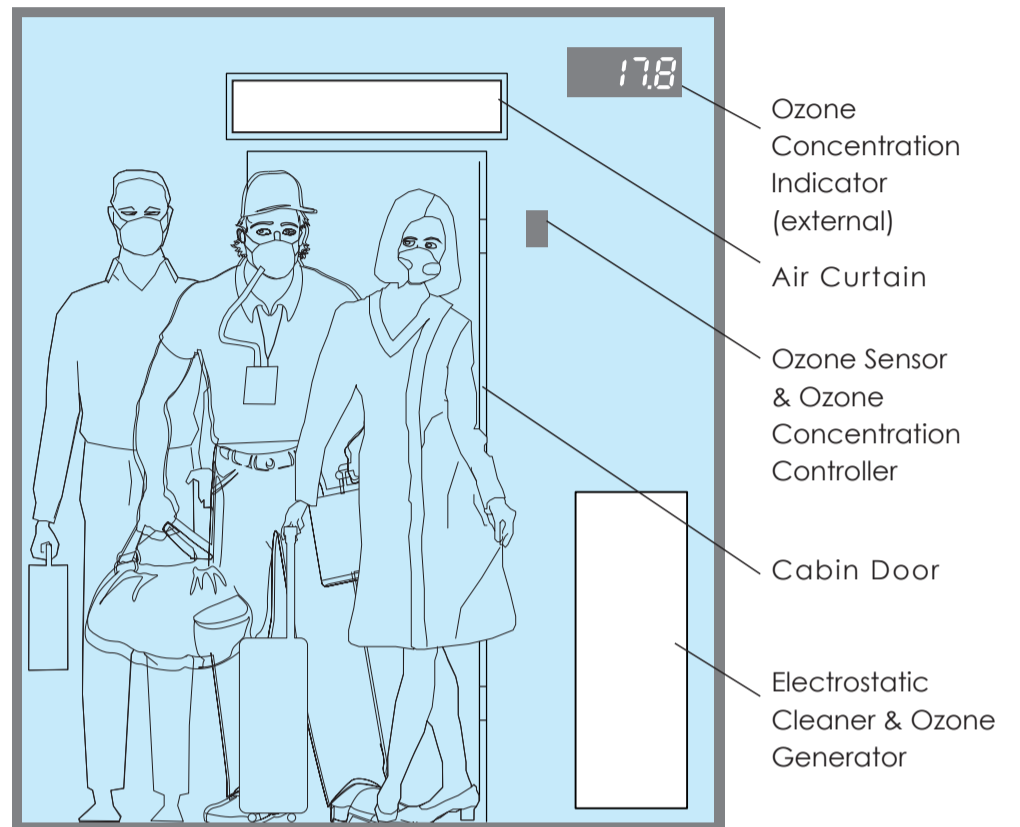


### Effectively Curbing the Spread of COVID-19



Main Function: rapidly kill germs and viruses

### Basic Applications

- Disinfection of people and belongings during an outbreak **0.5~2 minutes**
- Disinfection of medical clothing and equipment **10~30 minutes**
- Disinfection of medical wastes **5~15 minutes**

### Applicable Places

- Entrances of airports, train/bus stations, schools, hospitals, office buildings, etc.
- Entrances of pharmaceutical factories, food factories, breeding farms, seed farms, etc.
- Hospitals

### Rated Parameter Table

Model		XC1	XC2
Volume	m <sup>3</sup>	1.4	7
Ozone Released	g/h	10	20
Rated Ozone Conc.	ppm	20	20
Adjustable Concentration Range	ppm	1~50	1~50
Circulating Air Volume	m <sup>3</sup> /h	1000	2000
Power Demand	220V	160W	400W
Cabin Material		Stainless Steel	Stainless Steel
Overall Weight	kg	160	550
Dimensions	m	1x0.7x2	2x2x2.2
Installation Site		Indoor	Indoor/Outdoor

### About Ozone

Ozone molecules consist of 3 oxygen atoms (O<sub>3</sub>). About 95% of the ozone in the atmosphere comes from the photochemical reaction between the sun and plant volatiles, as well as the ionization between lightning and air. This product uses static electricity to simulate lightning to produce ozone.

Full coverage: When the disinfection function is activated, the ozone generator continuously generates ozone, which quickly penetrates into every corner and gap of the dwelling, overcoming the problem of ultraviolet sterilization which can only go straight up and down, leaving a dead zone of disinfection and the problem of eye injury.

High efficiency: A large number of scientific experiments have proved that the efficiency of ozone sterilization and antivirus is more than 200 times higher than that of chlorine.

Ultra-cleanliness: Ozone oxidizes microorganisms and organic matter in the air into carbon dioxide and water, and the excess is decomposed into oxygen without any residue. In contrast, chemical sanitizers such as 84 disinfectant (key component NaClO) are toxic to the human body and have secondary pollution of residues, damaging the ecosystem.

Low cost: Using only small amounts of electricity and no consumables, the cost is much lower than chemical disinfection.

Trustworthy: Since the invention of electrostatic duct cleaning technology in 2005, BROAD Clean Air has been devoted to researching the benefits and harms of ozone, and carefully exploring the rational application of ozone in different places and epidemic situations to find an effective way to prevent the global outbreak of infectious diseases, pioneering the utilization of ozone for the benefit of mankind.



## 1. Personnel Disinfection Time

Ozone Concentration	Time
10 ppm	2~4 minutes
20 ppm	1~2 minutes
30 ppm	0.5~1 minutes

## 2. Personnel Disinfection Operation

- 1) Pre-adjust the air volume of the electrostatic air purifiers :40~50Hz.
- 2) Turn on the air purifiers 3 minutes in advance, then turn on one ozone generator, and the other one if necessary.
- 3) The air purifiers and ozone generators can be off if the cabin is not to be used for over 10 minutes.

## 3. Safety Instructions for Personnel Disinfection

- 1) Do not use if the concentration is >30 ppm. For ozone concentration>20 ppm, the max time for disinfection is 2 minutes.
- 2) There should always be at least one person stationed outside the cabin to observe conditions in the cabin.
- 3) Do not touch the ozone generator with the hand or any other object.

## 4. Disinfection Time of Medical Supplies

( to kill most bacteria and viruses)

Ozone Concentration	Time
10 ppm	10~30 minutes
20 ppm	5~15 minutes
30 ppm	2~6 minutes

Note: the disinfection time of medical wastes can be halved.

## 5. Disinfection Operation of Medical Supplies

- 1) Put the medical supplies in the cabin, turn on the electrostatic purifiers and ozone generators.
- 2) Start timing when ozone concentration reaches the standard concentration (or use a timer).
- 3) The medical supplies must be scattered within the cabin, with ample space between the instruments to allow room for the ozone to reach every surface.
- 4) Turn off the air purifier before taking out the medical supplies.

## 6. Troubleshooting

Problem	Cause	Solution
The equipment is not powered	The power plug is loose or the voltage is insufficient	Check the power cord and power plug, and connect to a 220-volt outlet
The cover is charged	The ground wire is not connected properly	Check the ground wire
There is no ozone released	The ozone generator is not on or is damaged	Turn on or replace the ozone generator

This product was developed under tight schedule due to the severe epidemic situation of COVID-2019, and we apologize for any shortcomings. The control technology developed later on will be applied to the upgrading of this product.

## 7. Maintenance

- 1) Shut the power off after around 100 hours of use. Clean carbon deposits on the surface of the ozone generating sheet with alcohol pads. Pay attention not to leave a cotton thread.
- 2) Electrostatic cleaner washing period: 1~3 months (according to the dust thickness). Please refer to the Washing Procedures posted on the door of an electrostatic air purifier.
- 3) Check whether the electrical parts are damp, and whether the circuit insulation or the ground wire connection is good every half a year.

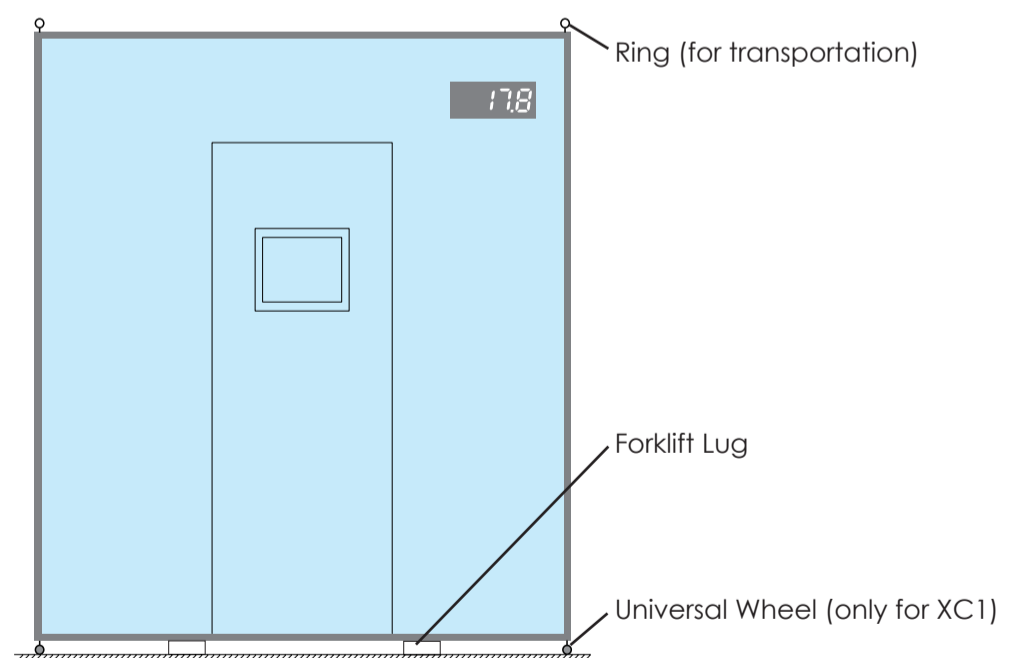
## 8. Warranty

2-year warranty from the date of purchase. For problems caused by design, manufacturing or factory transportation, free repair or replacement shall be provided. Repair work will be charged for other causes.

**Service: 400-883-9333**

## 9. Transportation & Installation

- Unitary transportation.
- XC1: Can be hoisted or manually handled.
- XC2: Forklift or crane must be used for loading and unloading
- Cabin tilt angle during transportation  $\leq 20^\circ$ .
- Lay the cabin on flat ground and place anti-vibration pads for the four corners.
- Power: 220 V, plug-and-play.



## Quality Certificate/ Warranty Card

Name: BROAD Ozone Disinfection Cabin

Model: XC

Batch Number:

Inspector:

Purchase Date:

(2-year warranty)



# Experimental Results of Ozone Sterilization and Disinfection

Ozone is a broad-spectrum and highly efficient bactericide. Ozone was first used for water disinfection, which is fast and reliable, and does not produce halogenated organic compounds with carcinogenic effects. With the development of disinfection technology, the scope of ozone disinfection application is expanding rapidly and drawing increased attention. Relevant articles, such as *Study on the Disinfection Effect of Ozone Disinfectors*, can be found in CNKI.NET, which is sponsored by Tsinghua University.

## Data on Experimental Results of Ozone Sterilization and Disinfection

Ozone Dosing Concentration(ppm)	Time (minutes)	Types of Viruses and Pathogens	Pathogen Killing Rate
4.67	20	Hepatitis B surface antigen (HbsAg)	99.99%
0.5	5	Influenza A viruses	99%
0.13	30	Poliovirus type I (PVI)	100%
0.04	20	Coliphage MS2	98%
0.25	1	rotavirusSA-H&Human rotavirus type 2	99.6%
4	3	HIV	100%
3.74	10	Pathogens such as Mycoplasma&Chlamydia	99.85%

## Comparisons of Ozone and Other Disinfectants

Compared with conventional disinfectants, ozone has a stronger ability to oxidize and kill bacteria. As a quantitative indicator to measure the effect of disinfection and sterilization, the concentration-time value (CT value) is defined as the product of the concentration of the disinfectant (C) and the time (T) necessary to kill a certain type of bacteria at a specified killing rate. It shows that the smaller the CT value, the stronger the effect of the disinfectant. Quantitative analysis data can be found in the table below. The efficiency of ozone disinfection is clear to see.

### Comparison Table (CT, mg/h×min)

Microorganism Species	Pathogen Killing Rate	Cl <sub>2</sub>	ClO <sub>2</sub>	O <sub>3</sub>
Spores	99.9%	1440	>120	>5
Trichomonad	99.9%	113	23	1.4
Escherichia Coli	99.99%	3~4	1.2	0.2
Influenza A viruses	99.9%	--	--	2.5

## Comprehensive Comparisons

	Ultraviolet	Chemical treatments	Ozone
Disinfection Method	Static	Static	Can be dynamic
Broad-Spectrum	Average	Average	Good
Disinfection Effect	Average	Average	Good
Residual Toxicity	No	Yes	No
Odor Eradication	No	No	Yes
Operation	Easy	Complex	Easy
Equipment Life Span	<1,000 hours	----	>1,000 hours

From Cnkikipedia, Tsinghua University, August 8th, 2018  
[http://www.sohu.com/a/245911397\\_99953242](http://www.sohu.com/a/245911397_99953242)

## Recommended Indoor Ozone

Concentration Levels: ppm

No.	Indoor spaces with many people	Public health emergency response level				
		I	II	III	IV	N/A
1	Single family residences, apartments, small offices, kindergartens and primary schools	0.08~0.12	0.04~0.08	0.02~0.05		No limit
2	Dormitories, hotel guest rooms, office areas, schools	0.12~0.24	0.08~0.12	0.04~0.08	0.02~0.05	
3	Shopping malls, restaurants, meeting rooms, lobbies, wards, delivery rooms	0.24~0.4	0.12~0.24	0.08~0.12	0.04~0.08	
4	Public transport (vehicles, ships, aircraft), express transit warehouses	0.24~0.4	0.12~0.24	0.08~0.12		
5	Disinfection cabins at the entrances of stations, airports, hospitals (1 minute)	25~30	15~20	8~12		
6	Infectious disease wards, operation rooms, burn wards, laminar flow ward	0.3~0.5				

BROAD Laboratory Mar 02, 2020