Test Results and Certifications

Specifications of VIRUSKILLER

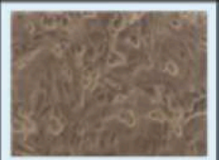
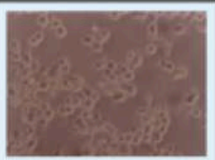
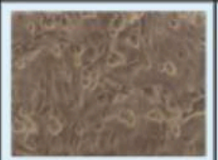
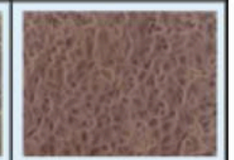
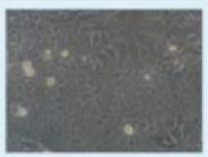
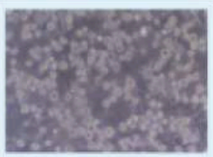
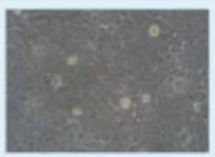
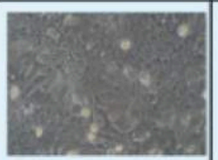
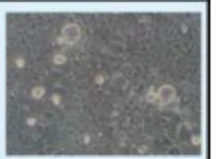
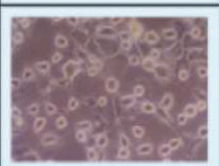
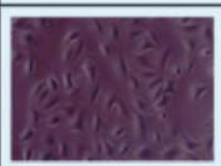
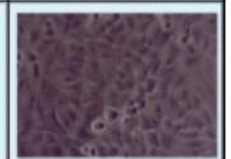
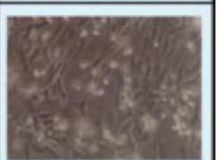
As of 28th of May, 2017

Description		VK-MEDI	VK-102	VK-002	VK-Blue	HEXTIO	Remarks
General	Elec. Power	AC 220V/120V	AC 220V/120V	AC 220V/120V	AC 220V/120V	DC 12V	
	Elec. Comsuption	Max 280 watt	Max 350 watt	Max 280 watt	Max 95 watt	Max 15 watt	
	Dimension (mm)	W510 x D400 x H1,590	W320 x D320 x H1,570	W320 x D320 x H1,220	W640 x D165 x H380	W124 x D105 x H330	
	Net Weight	54 Kg	40 Kg	34 Kg	7.5 Kg	1.2 Kg	
	Blower Type	Outrota Sirocco	Outrota Sirocco	Outrota Sirocco	Backward Tubo Fan	Sirocco	
	IAQ Sensor	Fine Dust, TVOC's, Temp.	Fine Dust, TVOC's, Temp.	Fine Dust, TVOC's, Temp.	□	Fine Dust, TVOC's	
Reactor	UVC lamp	16 watt, 8 ea	6 watt, 16 ea	6 watt, 8 ea	6 watt, 8 ea	7 watt, 1 ea	
	TiO2 nano Tube Filter	About 70 ea	About 135 ea	About 70 ea	About 40 ea	10 ea	
	Filter Reflector	Chrome Coat	Chrome Coat	Chrome Coat	Chrome Coat	Chrome Coat	
	Case Reflector	Galvanize Reflector	Aluminium Reflector	Aluminium Reflector	Chrome Coated Mirror	Sheet Mirror	
Filtration	HEPA Filter	150 mm, 99.97%	50 mm, 99.97%	50 mm, 99.97%	20 mm, 85%	□	
	Meduim Filter	75 mm, 85%	25 mm, 85%	25 mm, 85%	□	□	
	Actived Carbon Filter	Honeycomb, 20 mm	Honeycomb, 20 mm	Honeycomb, 20 mm	Activated Carbon 20mm	Urethane Carbon, 10 mm	
	Pre-Filter (Net Mesh)	5 mm	5 mm	5 mm	5 mm	□	
CADR	CADR (Q)	1,069 □/hr	653 □/hr	534 □/hr	204 □/hr	□	
	AIR FLOW RATE (V)	1,080 □/hr	660 □/hr	540 □/hr	240 □/hr	□	
	Collection Effieiency (Kŋ)	99%	99%	99%	85%	□	
	Noize	54.5 dB Max	47.7 dB Max	46.5 dB Max	46. 1dB Max	44 dB Max	
Noxious Gas Removl Rate	Formaldehyde, HCHO	0.70 □/min	95%	82%	71%	65%	
	Amonia, NH3	0.15 □/min	79%	81%	63%	53%	
	Toluene, C6H5CH	1.70 □/min	100%	100%	100%	96%	
	Nitrogen Dioxide, NO2	More than 99.5%	99.50%	99.5%	98.50%	81%	
	Acetaldehyde, CH3CHO	Not yet tested	100%	100%	88%	Not yet tested	
	Acetic Acid, CH3COOH	Not yet tested	100%	100%	100%	Not yet tested	
OzoneEmission Concentration		Below 0.005 μmol/mol	No Detection	No Detection	No Detection	□	
Inactivation of major airborne viruses	Polio Virus	More than 99.99%	More than 99.99%	More than 99.99%	More than 99.99%	□	
	Influenza Virus	More than 99.99%	More than 99.99%	More than 99.99%	More than 99.99%	□	
	Adeno Virus	More than 99.99%	More than 99.99%	More than 99.99%	More than 99.99%	□	
	Corona Virus	More than 99.99%	More than 99.99%	More than 99.99%	More than 99.99%	□	
Removing Ability for Various Bacilluses	Mycobacterium tuberculosis	More than 99.99%	More than 99.99%	More than 99.99%	More than 99.99%	□	
	Staphylococcus aureus	More than 99.99%	More than 99.99%	More than 99.99%	More than 99.99%	□	
	Streptococcus pneumoniae	More than 99.99%	More than 99.99%	More than 99.99%	More than 99.99%	□	
	Escherichia coli DH 5	More than 99.99%	More than 99.99%	More than 99.99%	More than 99.99%	□	
	Klebsiella pneumoniae	More than 99.99%	More than 99.99%	More than 99.99%	More than 99.99%	□	

Experiment for inactivation of major airborne viruses

Kinds of Virus		Quantity of Virus	Result of Experiment	Remarks
Polio Virus	Experiment 1	10^6 PFU/100㎖	None detection (99.9999%)	Test by Institute of Medical Science & Department of Microbiology (Virus Reference Laboratory Designated by Environment Research Center)
	Experiment 2	10^6 PFU/100㎖	None detection (99.9999%)	
	Experiment 3	10^6 PFU/100㎖	None detection (99.9999%)	
Influenza Virus	Experiment 1	10^6 $TCID_{50}$/100㎖	None detection (99.9999%)	
	Experiment 2	10^6 $TCID_{50}$/100㎖	None detection (99.9999%)	
	Experiment 3	10^6 $TCID_{50}$/100㎖	None detection (99.9999%)	
Adeno Virus	Experiment 1	10^6 $TCID_{50}$/100㎖	None detection (99.9999%)	
	Experiment 2	10^6 $TCID_{50}$/100㎖	None detection (99.9999%)	
	Experiment 3	10^6 $TCID_{50}$/100㎖	None detection (99.9999%)	
Corona Virus	Experiment 1	10^6 PFU/50㎖	None detection (99.9999%)	
	Experiment 2	10^6 PFU/50㎖	None detection (99.9999%)	
	Experiment 3	10^6 PFU/50㎖	None detection (99.9999%)	

Cell images and test results

Description	Cell line of negative	Cell line of positive	Experiment G.1	Experiment G.2	Experiment G.3
Polio Virus					
Influenza Virus					
Adeno Virus					
Corona Virus					

The Viruskiller technology has been extensively tested on various Bacteria, Viruses, Fungi, Mould, VOC's, Toxic Gas and Particulate Matter including Ultra Fine Dust.

Note: The test results on Airborne Pathogens are the same across the Viruskiller range as the core of the technology (the sterilisation chamber) was used during the tests – this is found in all of the Viruskiller models.
The test results for particulate matter and VOC's vary between units as airflow and filters used alter these results, so they have been individually tested.

Opposite you will find the test results for respiratory viruses, you will see that each of the four viruses tested belong to one of the four main respiratory virus group types: we therefore can claim 99.9999% efficiency on ALL respiratory viruses.

Testing for viruses and bacteria is unregulated and we therefore strongly advise people to look at the cross section of pathogens tested, check the testing methods used and the institutes who conducted the tests.

Our full test reports are available on request.

ALL OF OUR PRODUCTS ARE OZONE FREE

Removal ability of various Bacilluses and Fungus

Kind and Classification of Strain		Strain dosage	Detected amount of Strain (CFU)	Remarks
S. aureus subsp. aureus KCTC 1928	Experimental group 1	10^6/30ml	None detection (99.9999%)	University and medical research center test results
	Experimental group 2	10^6/30ml	None detection (99.9999%)	
	Experimental group 3	10^6/30ml	None detection (99.9999%)	
	Positive Control Group	10^6/30ml	256	
	Negative Control Group	0/30ml	None detection (99.9999%)	
S. pyogenes KCTC 3096	Experimental group 1	10^6/30ml	None detection (99.9999%)	
	Experimental group 2	10^6/30ml	None detection (99.9999%)	
	Experimental group 3	10^6/30ml	None detection (99.9999%)	
	Positive Control Group	10^6/30ml	290	
	Negative Control Group	0/30ml	None detection (99.9999%)	
S. pneumoniae KCTC 2241	Experimental group 1	10^6/30ml	None detection (99.9999%)	
	Experimental group 2	10^6/30ml	None detection (99.9999%)	
	Experimental group 3	10^6/30ml	None detection (99.9999%)	
	Positive Control Group	10^6/30ml	312	
	Negative Control Group	0/30ml	None detection (99.9999%)	
E. coli DH 5α	Experimental group 1	10^6/30ml	None detection (99.9999%)	
	Experimental group 2	10^6/30ml	None detection (99.9999%)	
	Experimental group 3	10^6/30ml	None detection (99.9999%)	
	Positive Control Group	10^6/30ml	275	
	Negative Control Group	0/30ml	None detection (99.9999%)	
K. pneumoniae KCTC 2241	Experimental group 1	10^6/30ml	None detection (99.9999%)	
	Experimental group 2	10^6/30ml	None detection (99.9999%)	
	Experimental group 3	10^6/30ml	None detection (99.9999%)	
	Positive Control Group	10^6/30ml	391	
	Negative Control Group	0/30ml	None detection (99.9999%)	
A. niger KCTC 6089	Experimental group 1	10^3/30ml	None detection (99.9999%)	
	Experimental group 2	10^3/30ml	None detection (99.9999%)	
	Experimental group 3	10^3/30ml	None detection (99.9999%)	
	Positive Control Group	10^3/30ml	much	
	Negative Control Group	0/30ml	None detection (99.9999%)	
R. oryzae KCTC 6062	Experimental group 1	10^3/30ml	None detection (99.9999%)	
	Experimental group 2	10^3/30ml	None detection (99.9999%)	
	Experimental group 3	10^3/30ml	None detection (99.9999%)	
	Positive Control Group	10^3/30ml	much	
	Negative Control Group	0/30ml	None detection (99.9999%)	

Removal ability of various harmful gas

Description	30 Minutes	60 Minutes	90 Minutes	120 Minutes	Remarks
Ammonia Gas	62%	71%	76%	79%	International laboratory test results
Acetaldehyde.	91%	97%	98%	100%	
Acetic acid	100%	100%	100%	100%	
Toluene	100%	100%	100%	100%	
Formaldehyde	84%	93%	95%	95%	

The results speak for themselves and that is why Viruskiller is unparalleled air purification technology.

IMPORTANT

These test results were obtained using only our Sterilisation module without filters**

If we say we can do it – we prove it!

The Viruskiller product range is the most tested air purification and sterilisation technology in the world.

Why is air purification AND air sterilisation important?

Air purification is important in order to catch larger particles, keeping the sterilisation chamber clear to work on the smaller pathogens such as viruses. We see air purification as the first half of the solution and air sterilisation as the second half of the solution.
NOTE: there are many claims about what filters can catch – there are no filters that can catch particles less than 0.13 micrometers in size, this means that there are no filters that can catch viruses.

What is the Viruskiller Difference?

A simple UV lamp on its own is classed as an air steriliser and when placed in a small enclosure and tested over time – it will give good test results. However in a clinical situation the air suspension time in close proximity to that UV lamp will not be enough to inactivate the majority of the airborne pathogens within the space it is covering.
The Viruskiller technology is based around the worlds most intelligent air sterilisation chamber, designed to have the highest possible kill rate with one air exchange in order to truly eradicate airborne pathogens within the space it is serving.

We welcome any technology comparisons and love to talk about our technology so please fell free to ask questions.

Electronic Document Version

6696-5225-6866-6758

TEST REPORT

Reissuance (R1)
Date : 2016.08.09

1. **No** : CT16-087283
2. **Client**
   - **Name** : INB air Co.,Ltd.
   - **Address** : 402, 15, Beotkkot-ro 12-gil, Geumcheon-gu, Seoul, Korea
3. **Date of Test** : 2016.07.29 ~ 2016.08.09
4. **Use of Report** :
5. **Test Sample** : VK-002
6. **Test Method**
   (1) SPS-KACA002-132:2016

7. **Test Results**

1) VK-002

Test Item(s)	Unit	Test method	Test Results	Remark
Noxious Gas Removal Ratio(Nitrogen Dioxide, NO_2	%	(1)	More than 99.5	(21 ± 1) ℃ (45 ± 5) % R.H.

※ Test Mode : FAN3(Rated Air Flow Rate)

---- End of Report ----

Affirmation	Tested By Name : Sang Kyun Park	Technical Manager Name : Jin Sung Park

Our report apply only to the standards or procedures identified and to the sample(s) tested unless otherwise specified. The test results are not indicative of representative of the qualities of the qualities of the lot from which the sample was taken or of apparently identical or similar products.

2016.08.09

Korea Conformity Laboratories President Kyung Sik Ki

Address : 08503 199, Gasan digital 1-ro, Geumcheon-gu, Seoul, Korea 82-2-2102-2500

Result Inquiry : Electric & Electronic Team 82-2-2102-2719

QP-20-01-07(4)

Please check the specification chart on the first page of this document for the individual test results such as the one opposite. If copies of these are required please be specific for which model and which test and we will provide them.

Please enquire about our conformity certification. All of our products are KCC and CE certified, we are also going through UL certification during 2017.

We adhere to the highest electrical safety standards and tailor units dependent on the geographical locations electricity requirements

CE

EC Declaration of Conformity
According to EC EMC Directive 2014/30/EU

Applicant's Name	:	INBair Co., Ltd
Applicant's Address	:	15 Beotkkot-ro 12-gil, Geumcheon-gu, Seoul, Korea
Manufacturer's Name	:	INBair Co., Ltd
Manufacturer's Address	:	15 Beotkkot-ro 12-gil, Geumcheon-gu, Seoul, Korea

Declares that the product:

Product Name	:	Air Purifier
Base Model	:	HEXTIO
Variant Model	:	-

To which this declaration relates is in conformity with the following standard(s) or other normative document(s);

EN 55014-1:2006/A2:2011	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission
EN 55014-2:2015	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity
EN 61000-3-2:2014	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current <= 16 A per phase)
EN 61000-3-3:2013	Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current <= 16 A per phase and not subject to conditional connection

following the provisions of Directive(s);

2014/30/EU	Council Directive on the approximation of laws of the Member States relating to electromagnetic compatibility (OJ L13923.5.89); amended by Directives, 92/31/EEC (OJ L126 12.5.92) and 93/68/EEC(OJ L220 30.8.93)

Korea / 05. 10. 2017

(Place and date of issue) (name and signature or equivalent making of authorized person)

European Contact (for regulatory topics only):

VIRUSKILLER Competitive Analysis

As of 28th of May, 2017

Product Specifications	RADIC8 VIRUSKILLER				Germinator	Airbiotix	Airinspace	Sanitaire
	VK-MEDI	VK-102	VK-002	VK-blue	G400	T1	T2006	RSCS 280
Cost	$5100	$2900	$2200	$1300	$3,750	$6,000	$11,000	$3150
Unit Dimensions	H62.6" W20" D15.7"	H62" W12.6" D12.6"	H48" W12.6" D12.6"	H15" W25.2" D6.5"	H37" W15" D12"	H72" W36" D24"	H76.8" W36" D12.8"	H46" W22" D9"
Weight	119 lbs	88 lbs	75 lbs	16.5 lbs	52 lbs	130 lbs	407 lbs	44 lbs
Medical Casters	4 Casters+2 Adjust	2 Casters+2 Adjust	2 Casters+2 Adjust	Wall Mounting	5 - Center Mount	4 - FlushMount	4 - FlushMount	Ceiling Mounting
Delivered Air Flow	300 ~ 635 CFM	220 ~ 388 CFM	150 ~ 317 CFM	70 ~ 141 CFM	220~407 CFM	450 CFM	600 CFM	210 CFM
20'x20'x10' Room Space	4000 cu. Ft	4000 cu. Ft	4000 cu. Ft	4000 cu. Ft	4000 cu. Ft	4000 cu. Ft	4000 cu. Ft	4000 cu. Ft
20'x20'x10' Room Air Exchange	6 Minutes	10 Minites	13 Minutes	28 Minutes	10 Minutes	13 Minutes	7 Minutes	19 Minutes
Noize Level	40~54.5dB	40~47.7dB	40~46.5dB	40~46.1dB	40~46dB	40~46dB	40~46dB	40~46dB
Voltage Supply	220/110 volts	220/110 volts	220/110 volts	220/110 volts	110 volts	110 volts	220 volts	110 volts
Power Rating	180 ~ 280 W	180 ~ 350 W	180 ~ 280 W	50 ~ 95 W	60~150 W	80 ~150 W	200 ~250 W	153 W
Pre Filter	HEPA+Meduim	HEPA+Meduim	HEPA+Meduim	HEPA	HEPA	Synthetic Substrate	N-Thermal Plasma	Electronic Filter
UV Fiiltration	8ea, 16 watt UV	16ea, 6 watt UV	8ea, 6 watt UV	8ea, 6 watt UV	3ea, 16 watt UV	4ea, 8 Watt UV(Crystals)	None	4ea, 11 Watt UV
Total UV Germical Wattage	128 Watts UV	96 Watts UV	48 Watts UV	48 Watts UV	48 Watts UV	32 Watts UV	None	44 Watt UV
UVC Reflector	Galvanize Reflector	Aluminium Reflector	Aluminium Reflector	Chrome Coated Mirror	None	Metal Reflection	N/A	Aluminium Reflector
Photocatalytic Filters	70	135	70	40	None	Quartz Filters	N/A	None
Post Filter (After UV)	Activated Carbon	Activated Carbon	Activated Carbon	Activated Carbon	Activated Carbon	HEPA	Electronic Charge	None
Air Quality Sensors and Display	Standard	Standard	Standard	None	None	None	None	None
Automatic / Intelligent air quality functions	Standard	Standard	Standard	None	None	None	None	None
Activated Carbon Filtration	Honeycomb	Honeycomb	Honeycomb	Standard	Standard	None	None	None

Note: This competitor analysis has been made to the best of our abilities using currently available marketing material

THE KEY to effective air sterilisation is to sterilize as much air in one air exchange as possible. The Viruskiller range is the most tested range of air sterilisers on the market and carries the highest test reports in comparison to competitors.