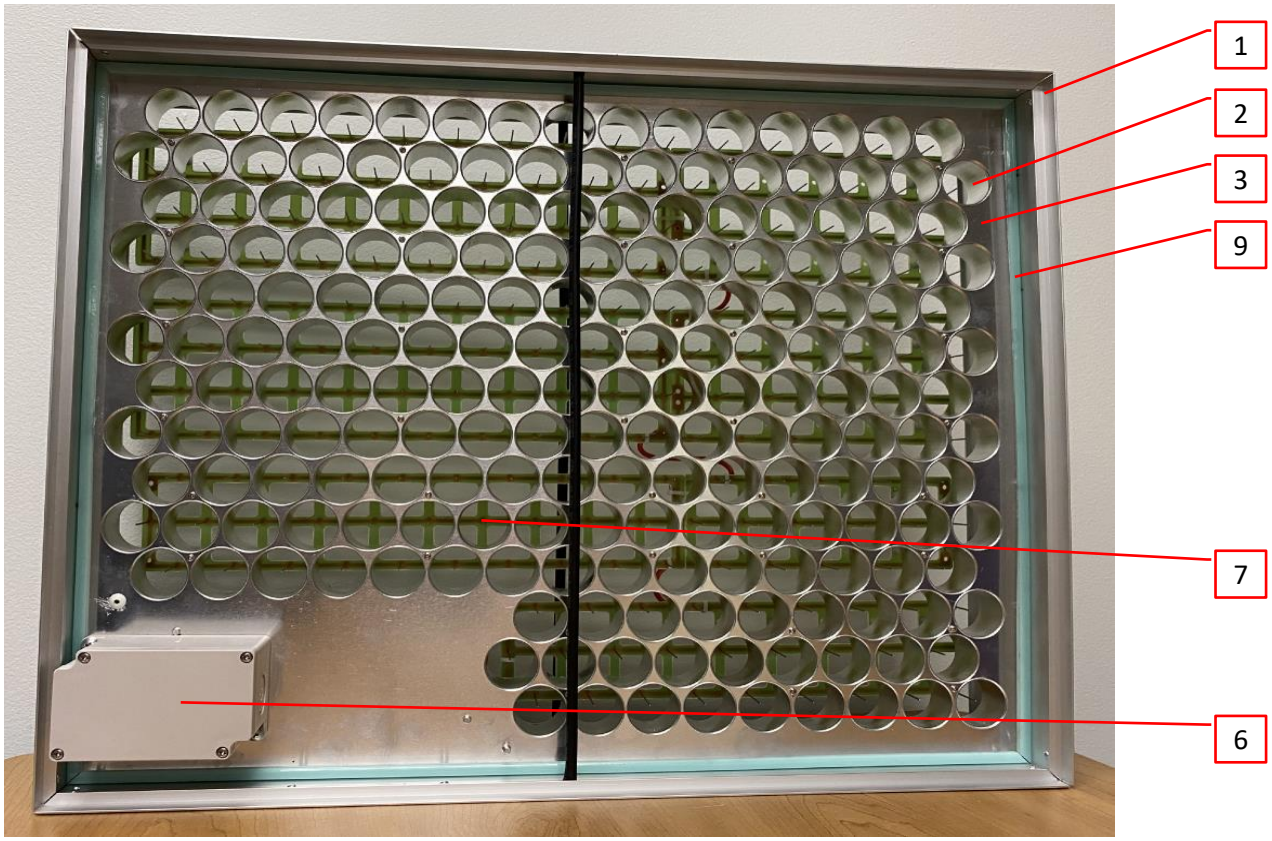
1.0 Reference and Address			
Report Number	104626851CRT-001	Original Issued: 2-Aug-2021	Revised: 1-Feb-2022
Standard(s)	Electrostatic Air Cleaners [UL 867:2011 Ed.5+R:07Aug2018] Electrostatic Air Cleaners [CSA C22.2#187:2020 Ed.5]		

Applicant	Shanghai Emperor of Cleaning Hi-Tech Co., LTD	Manufacturer 1	**Shanghai Emperor of Cleaning Hi-Tech Co., LTD**
Address	6 Building No. 138 Boxeu Road Jiading Area, Shanghai City	Address	6 Building No. 138 Boxue Road, JIADING AREA, Shanghai 201801
Country	China	Country	China
Contact	Andrew Lee Yangyang Pan	Contact	Yangyang Pan
Phone	954 907 2005 86 13764318544	Phone	86 13764318544
FAX	954 680 5588	FAX	NA
Email	alkingsleyusa@gmail.com pyyang@china-xiba.com	Email	pyyang@china-xiba.com
Legal Name	SHANGHAI EMPEROR OF CLEANING INTERNATIONAL TRADE CO., LTD		

2.0 Product Description	
Product	Electrostatic Air Cleaner
Brand name	ECH, WeAirHealth, ESCAir
Description	The product covered by this report is an indoor use, duct mounded, permanently connected electrostatic air cleaner.
Models	ECH-KJX-Z
Model Similarity	NA
Ratings	110-220V, 60Hz, 20W max.
Other Ratings	NA

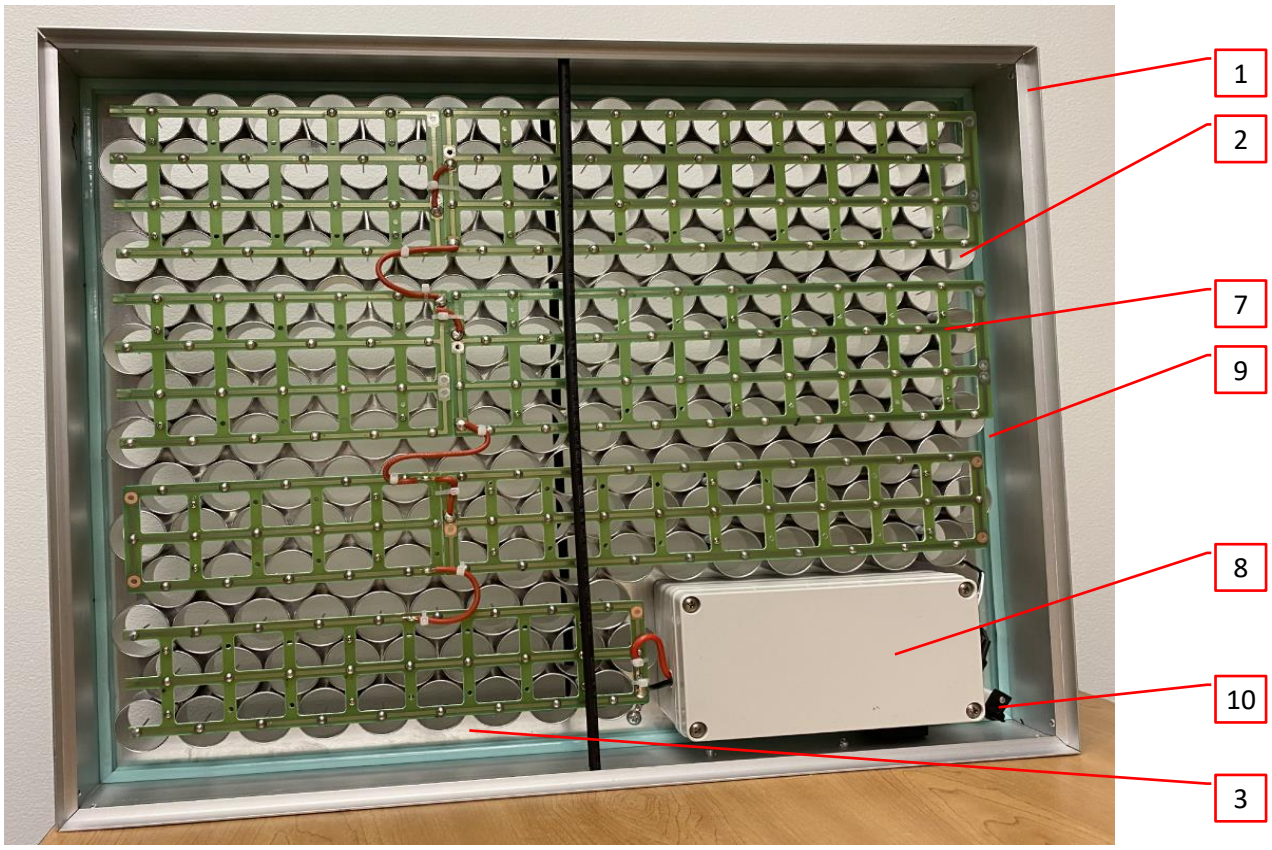
3.0 Product Photographs

Photo 1 - Input side with covers on



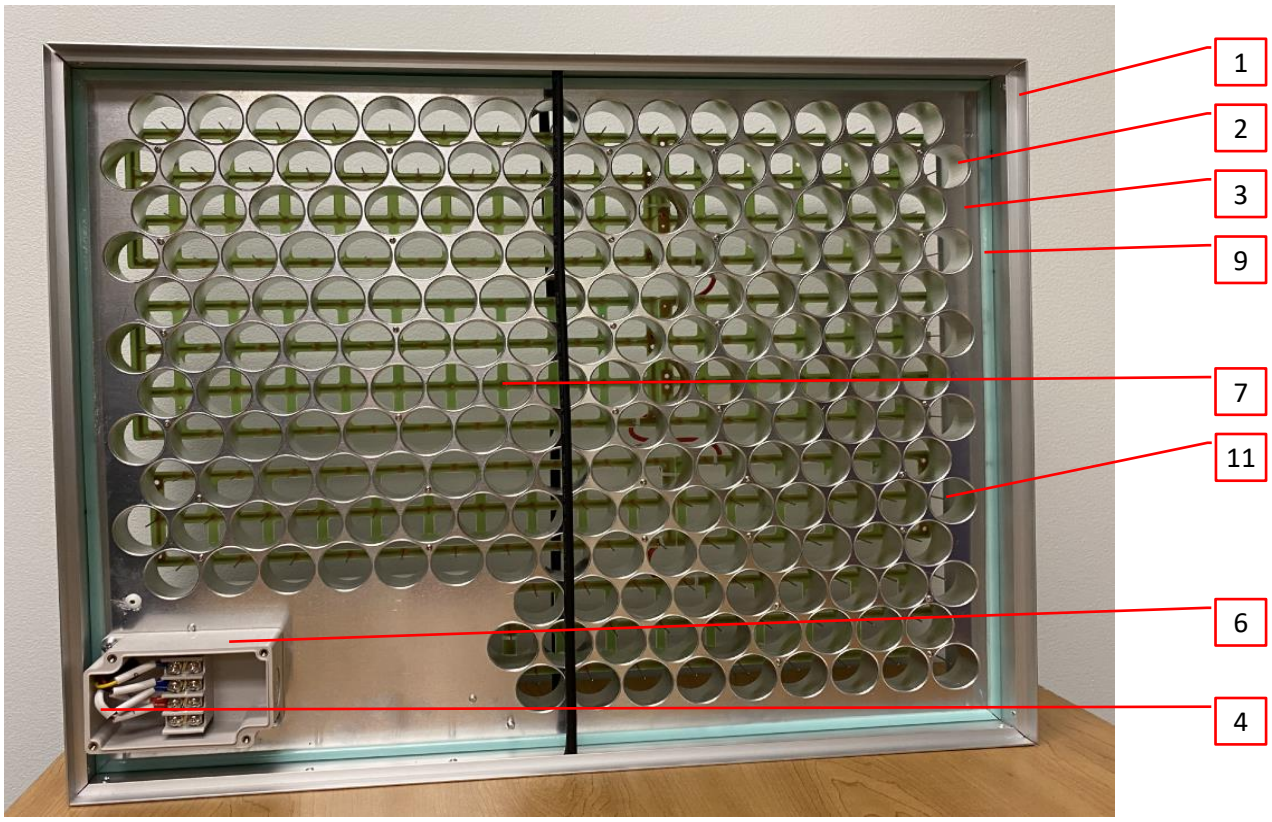
3.0 Product Photographs

Photo 2 - HVPS side with cover on



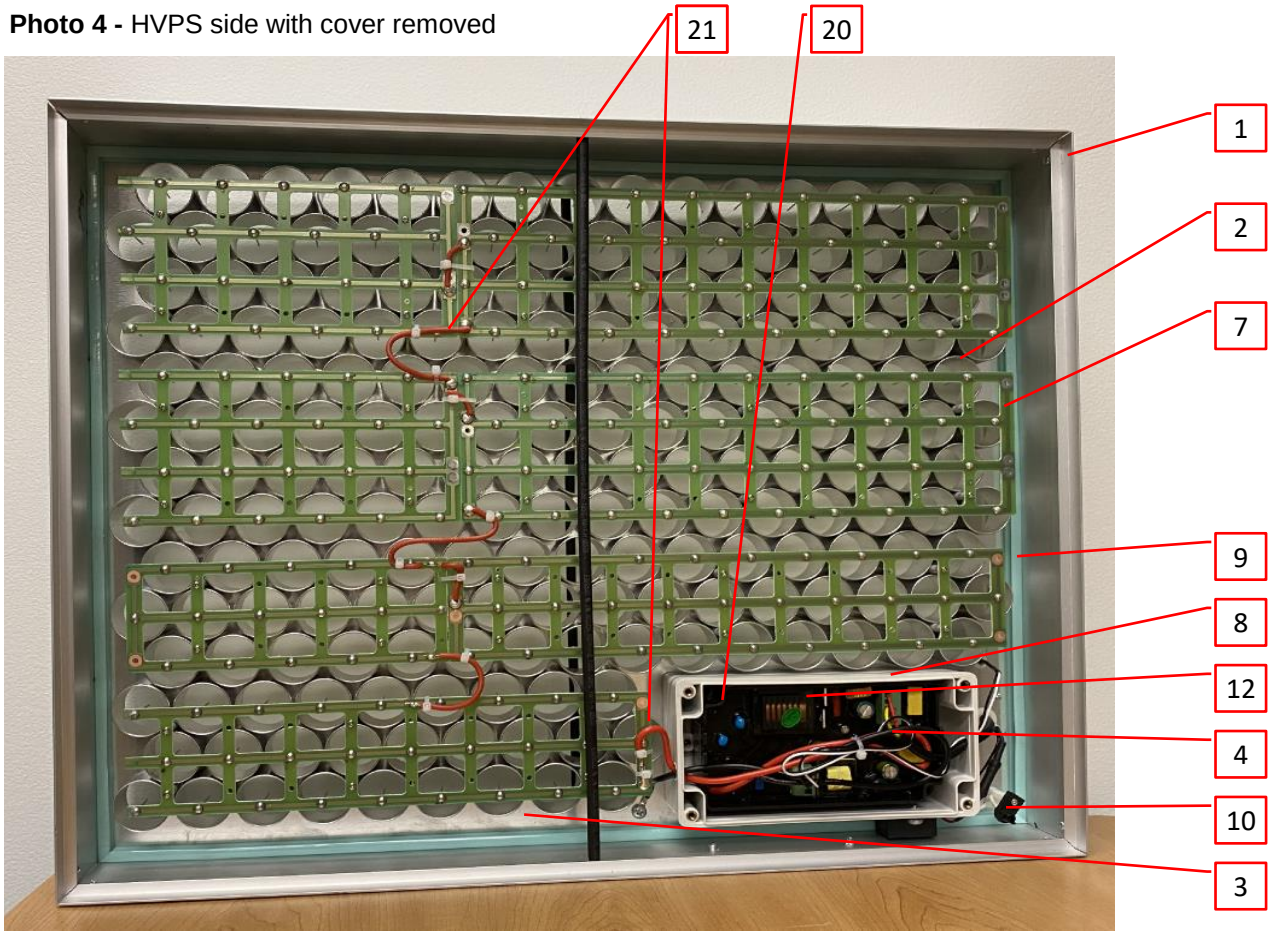
3.0 Product Photographs

Photo 3 - Input side with cover removed



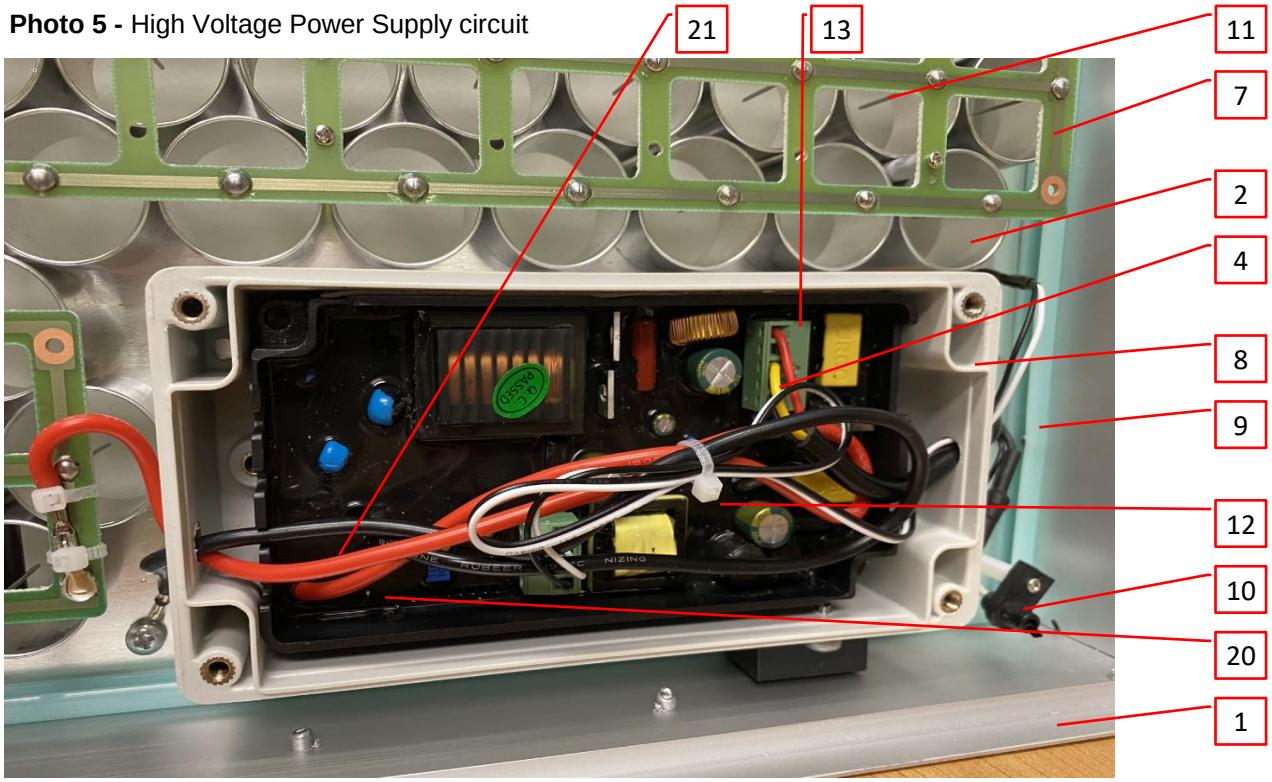
3.0 Product Photographs

Photo 4 - HVPS side with cover removed



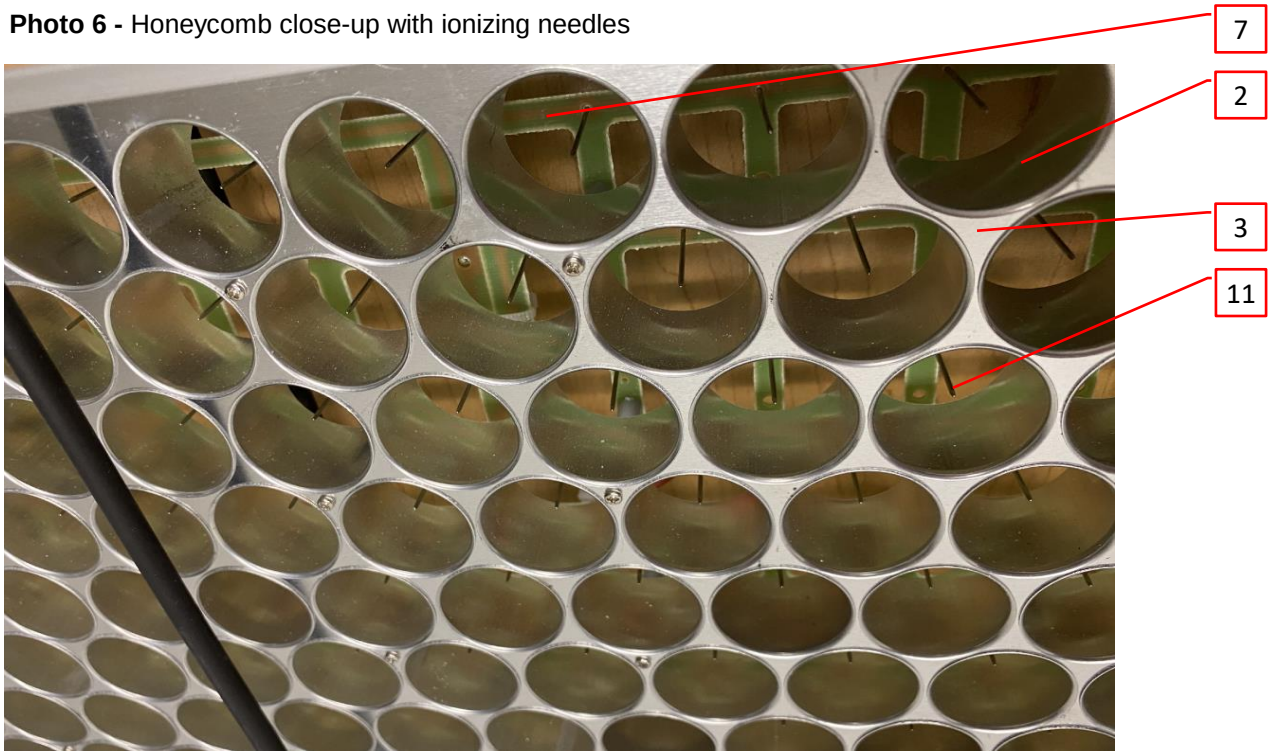
3.0 Product Photographs

Photo 5 - High Voltage Power Supply circuit



3.0 Product Photographs

Photo 6 - Honeycomb close-up with ionizing needles



3.0 Product Photographs

Photo 7 - Alternate design using polymeric enclosure and alternate HVPS box design.

4.0 Critical Components						
Photo #	Item no.[1]	Name	Manufacturer/ trademark[2]	Type / model[2]	Technical data and securement means	Mark(s) of conformity [3]
1, 2, 3, 4, 5, 7	1	Frame/Enclosure	Shanghai Cangqiong	Aluminum	Aluminum alloy, 1mm min thickness.	NR
			CHI MEI CORPORATION	PA-765A(+)	2.5mm min thickness, Rated V-0, 5VA, 80°C RTI Imp, 85°C RTI Elec, 85°C RTI Str.	cURus
			CHI MEI CORPORATION	PA-765B(+)	3mm min thickness, Rated V-0, 5VA, 65°C RTI Imp, 80°C RTI Elec, 80°C RTI Str.	cURus
1, 2, 3, 4, 5, 6	2	Metal Tubes	Shanghai Cangqiong	Aluminum	Aluminum alloy, 28mm diameter.	NR
1, 2, 3, 4, 6	3	Electrical Field Plate	Shanghai Cangqiong	Aluminum	241mm - 622mm length, 241 - 495mm width, 1.3mm min thickness.	NR
3, 4, 5	4	Internal Wire	SHENZHEN DINGYU ELECTRICAL TECHNOLOGY CO LTD	2464	Rated 300V, 18AWG, 80°C.	cURus
3	5	Fuse for Ionizer (Not Shown)	LITTLEFUSE INC	0216.500MXEP	Rated 500mA, 250V.	cURus
1, 3	6	Field Wiring Enclosure	LG CHEM LTD	GN-2101F(m)	PC, Rated 5VA, HWI 2, HAI 0, RTI Str 120, RTI Imp 90, RTI Elec 105. Min 3mm thickness.	cURus
1, 2, 3, 4, 5, 6	7	Electrode PWB	Guangde Shengyi Electronics Co., Ltd.	SY-03	Rated V-0.	cURus
2, 4, 5	8	HVPS Enclosure	LG CHEM LTD	GN-2101F(m)	PC, Rated 5VA, HWI 2, HAI 0, RTI Str 120, RTI Imp 90, RTI Elec 105. 3mm min thickness.	cURus
1, 2, 3, 4, 5	9	Insulation Frame	LOTTE CHEMICAL CORPERATION	PC-1000	PC, rated V-2, 1.6mm min thickness.	cURus
2, 4, 5	10	Ionizer	TIANGCHANG TRUMP ELECTRONIC FACTORY	TFB-YA149	Input: 110VAC Output: -4.5±0.5 kV	cURus
3, 5, 6	11	Electrode Needle	Shanghai Cangqiong	Stainless Steel	1mm diameter, located 12.5mm from metal tube walls.	NR

4.0 Critical Components						
Photo #	Item no.[1]	Name	Manufacturer/ trademark[2]	Type / model[2]	Technical data and securement means	Mark(s) of conformity [3]
4, 5	12	High Voltage Power Supply	Shenzhen Huachenyuan Technology Co. Ltd	HL84-1M2B	Assembly of components: 13-23 Input: 110VAC Output: 20kVdc Max	See 5.0
5	13	Quick Connector	DONGGUAN DIERAN ELECTRONICS SCIENCE AND TECHNOLOGY CO LTD	DA2EDG-4 DA2EDG-5 DA2EDGR/V-4 DA2EDGR/V-5	300V, 10A, 105°C.	cURus
5	14	Fuse (Not Shown)	GUANGDONG KOPPLEN ELECTRONICS LIMITED	KRT2A250V	Rated 2A, 250V.	cULus
5	15	Varistor (Not Shown)	BESTBRIGHT ELECTRONICS CO LTD	10D471K	Rated 300V, 105°C.	UR
5	16	X2 Capacitor (Not Shown)	GUANGDONG JURCC ELECTRONICS CO LTD	JT JK	334K	cURus
5	17	Y Capacitor (Not Shown)	DONG GUAN CITY JIANKUN ELECTRONICS TECHNOLOGY CO LTD	JT	Rated 400V, 222M, 85°C.	cURus
5	18	Optical Isolator (Not Shown)	SHENZHEN ORIENT COMPONENTS CO LTD	ORPC-817C	Rated 5000V.	cURus
5	19	PWB (Not Shown)	Meizhou Rujiexin Electronic Co Ltd	RJX-D	Rated V-0, 130°C, 0.102mm min thickness.	UR
4, 5	20	Epoxy potting Compound	CHONGQING JIANGCHUAN CHEMICAL (GROUP) CO LTD	9100A/B(f1)	Rated V-0. (f1) - suitable for outdoor use or exposure to UV light.	UR
4, 5	21	HV Wire	NIZING ELECTRONIC CO LTD	3239	22AWG, 20kVdc, 150°C, VW-1.	UR
4	22	Switching Transformer (Not Shown)	Huizhou Zhide Industrial Co., Ltd	EF20	Max input: 300VAC Max Output 500Vdc	See 5.0
4	23	HV Transformer (Not Shown)	Zhongshan Fugui Electronics Factory	EEL25	Input: 220VAC Output: 10±1.5kVdc	See 5.0
4	24	Marking Plate (Not Shown)	Shanghai Cangqiong	Aluminum	Attached via rivets to enclosure.	NR

4.0 Critical Components

Photo #	Item no.[1]	Name	Manufacturer/ trademark[2]	Type / model[2]	Technical data and securement means	Mark(s) of conformity [3]
7	25	Terminal Box and HVPS Enclosure	CHI MEI CORPORATION	PA-765A(+)	2.5mm min thickness, Rated V-0, 5VA, 80°C RTI Imp, 85°C RTI Elec, 85°C RTI Str.	cURus
			CHI MEI CORPORATION	PA-765B(+)	3mm min thickness, Rated V-0, 5VA, 65°C RTI Imp, 80°C RTI Elec, 80°C RTI Str.	
7	26	Needle Plate	Various	Aluminum	Aluminum alloy, 1mm min thickness.	NR

NOTES:

1) Not all item numbers are indicated (called out) in the photos, as their location is obvious.

2) “Various“ means any type, from any manufacturer that complies with the "Technical data and securement means" and meets the "Mark(s) of conformity" can be used.

3) Indicates specific marks to be verified, which assures the agreed level of surveillance for the component. "NR" - indicates Unlisted and only visual examination is necessary. "See 5.0" indicates Unlisted components or assemblies to be evaluated periodically refer to section 5.0 for details.

5.0 Critical Unlisted CEC Components

SUBASSEMBLY				
Photo #	Item no.	Name	Manufacturer/Trademark	Type / model
4, 5	12	High Voltage Power Supply	Shenzhen Huachenyuan Technology Co. Ltd	HL84-1M2B
Electrical Rating:		Input: 110VAC Output: 20kVdc Max		Insulation class NA
Component Standard used:		UL 867, CSA C22.2 #187		

COMPONENTS LIST (refer to illustration 3 for electric schematic)

Photo #	Item no.	Photo #	Item no.	Photo #	Item no.	Photo #	Item no.	Photo #	Item no.
5	13	5	16	5	19	4	22	--	--
5	14	5	17	4, 5	20	4	23	--	--
5	15	5	18	4, 5	21	--	--	--	--

VERIFICATION PROCESS					
Frequency:	**Annual**	Test Site:	**CEC**	Number of samples to test:	**1**

Test Name	Test Parameters
Verify Construction	Per the component descriptions noted above

INSULATED COIL				
Photo #	Item no.	Name	Manufacturer/Trademark	Type / model
4	22	Switching Transformer (Not Shown)	Huizhou Zhide Industrial Co., Ltd	EF20
Electrical Rating:		Max input: 300VAC Max Output 500Vdc		Insulation class A
Component Standard used:		UL 867		

MATERIALS LIST (refer to illustration 4 for assembly drawing)

Component	Manufacturer	Type/model	Dimensions/thickness/assembly information
Winding	DONG GUAN YIDA INDUSTRIAL CO LTD	2UEWF	MW 82-C, Rated 180°C.
Bobbin	CHANG CHUN PLASTICS CO LTD	T375J	Rated V-0, 150°C.
Insulating Tape	SHENZHEN XINHUAHUI ADHESIVE TECHNOLOGY CO LTD	HMT803	Rated 130°C.

WINDING(S) RESISTANCE

Winding Designation	Wire Size (mm^2)	Wire Type	Turns	Volts	Amps	DC resistance (Ω) +/- 10%:
MW 82-C	0.4	Copper	16	60V	0.5A	0.1
MW 82-C	0.4	Copper	2	20V	0.1A	0.05
MW 82-C	0.08	Copper	2400	8000V	0.6nA	320

5.0 Critical Unlisted CEC Components			
VERIFICATION PROCESS			
Frequency: **Annual**	Test Site: **CEC**	Number of samples to test: **1**	
Test Name	Test Parameters		
Winding resistance	See resistance per winding above.		
Dielectric Strength	Apply voltage Between	Test Voltage	Test Time
	Primary to core	1240V	60s
	Primary to secondary	2500V	60s
	Secondary to core	1000V	60s

5.0 Critical Unlisted CEC Components

INSULATED COIL				
Photo #	Item no.	Name	Manufacturer/Trademark	Type / model
4	23	HV Transformer (Not Shown)	Zhongshan Fugui Electronics Factory	EEL25
Electrical Rating:		Input: 220VAC Output: 10±1.5kVdc		Insulation class A
Component Standard used:		UL 867		

MATERIALS LIST (refer to illustration 5 for assembly drawing)

Component	Manufacturer	Type/model	Dimensions/thickness/assembly information
Winding	SHANGHAI ASIA PACIFIC ELECTRIC CO LTD	MW 75	Rated 130°C.
Bobbin	SHANGHAI TWIN-TREE PLASTICS FACTORY	PF2C3-631	PA66, V-0.
Insulating Tape	SHENZHEN XINHUAHUI ADHESIVE TECHNOLOGY CO LTD	HMT803	Rated 130°C.
Varnish, potting compound, etc.	CHONGQING JIANGCHUAN CHEMICAL (GROUP) CO LTD	9100A/B(f1)	Rated V-0.

WINDING(S) RESISTANCE

Winding Designation	Wire Size (AWG or mm^2)	Wire Type	Turns	Volts	Amps	DC resistance (Ω) +/- 10%:
MW 75	0.4	Copper	16	60V	0.5A	0.1
MW 75	0.4	Copper	2	20V	0.1A	0.05
MW 75	0.08	Copper	2400	8000V	0.6nA	320

VERIFICATION PROCESS

Frequency: **Annual**	Test Site: **CEC**	Number of samples to test: **1**

Test Name	Test Parameters		
Winding resistance	See resistance per winding above.		
Dielectric Strength	Apply voltage Between	Test Voltage	Test Time
	Primary to core	1240V	60s
	Primary to secondary	2500V	60s
	Secondary to core	1000V	60s

6.0 Critical Features

Recognized Component - A component part, which has been previously evaluated by an accredited certification body with restrictions and must be evaluated as part of the basic product considering the restrictions as specified by the Conditions of Acceptability.

Listed Component - A component part, which has been previously Listed or Certified by an accredited Certification Organization with no restrictions and is used in the intended application within its ratings.

Unlisted Component - A part that has not been previously evaluated to the appropriate designated component standard. It may also be a Listed or Recognized component that is being used outside of its evaluated Listing or component recognition.

Critical Features/Components - An essential part, material, subassembly, system, software, or accessory of a product that has a direct bearing on the product's conformance to applicable requirements of the product standard.

Construction Details - For specific construction details, reference should be made to the photographs and descriptions. All dimensions are approximate unless specified as exact or within a tolerance. In addition to the specific construction details described in this Report, the following general requirements also apply.

1. Spacing - In primary circuits, 3.2 mm minimum spacing are maintained through air and over surfaces of insulating material between current-carrying parts of opposite polarity and 12.7 mm minimum between such current-carrying parts and dead-metal parts or low voltage isolated circuits.
2. Mechanical Assembly - Components such as switches, fuseholders, connectors, wiring terminals and display lamps are mounted and prevented from shifting or rotating by the use of lockwashers, starwashers, or other mounting format that prevents turning of the component.
3. Corrosion Protection - All ferrous metal parts are protected against corrosion by painting, plating or the equivalent.
4. Accessibility of Live Parts - All uninsulated live parts in primary circuitry are housed within a metal enclosure constructed with no openings other than those specifically described in Sections 4 and 5.
5. Grounding - All exposed dead-metal parts and all dead-metal parts within the enclosure that are exposed are connected to the grounding lead of the equipment grounding terminal. Ground is connected via lead and wire binding screw to the dead metal of the enclosure.
6. Internal Wiring - Internal wiring is routed away from sharp or moving parts. Internal wiring leads terminating in soldered connections are made mechanically secure prior to soldering. Recognized Component separable (quick disconnect) connectors of the positive detent type, closed loop connectors, or other types specifically described in the text of this report are also acceptable as internal wiring terminals. At points where internal wiring passes through metal walls or partitions, the wiring insulation is protected against abrasion or damage by plastic bushings or grommets. All wiring is minimum 22 AWG, with a minimum rating of 300V, 80°C.
7. Schematics - Refer to Illustration No(s). 3 for schematics requiring verification during Field Representative Inspection Audits. Verify ground connection at U1.

6.0 Critical Features

8. Markings - The product is marked on a labeling system as described in item no. 24 of Section 4.0 or by molding into polymeric enclosure as follows: applicant's name or brand name, model number, date of manufacture, electrical ratings.

   “The 8-hr TWA Ozone for this product is 0.000935 ppmv when tested in a 30 m3 chamber”; and “Refer to safety instructions in manual for more information.”

9. Cautionary Markings - The following are required:

   ″This equipment should be inspected frequently and collected dirt removed from it regularly to prevent excessive accumulation that may result in flashover or a risk of fire.″

   "CAUTION: HIGH LEVELS OF OZONE CAN BE INJURIOUS TO HEALTH. USE AS DIRECTED IN A LOCATION NO SMALLER THAN INDICATED IN THE INSTALLATION INSTRUCTIONS"

   "CERTIFIED FOR SHOCK AND ELECTRICAL FIRE HAZARD ONLY"

   "CAUTION: THIS EQUIPMENT SHOULD BE INSPECTED AND COLLECTOR CELLS SHOULD BE CLEANED IN ACCORDANCE WITH THE MANUFACTURER’S INSTRUCTIONS ON A REGULAR BASIS TO PREVENT EXCESSIVE ACCUMULATION OF DUST PARTICLES THAT CAN RESULT IN FLASHOVER OR A RISK OF FIRE"

   "CAUTION — THE AIR CLEANER SHALL NOT BE INSTALLED IN A SYSTEM WITH AIR FLOW LESS THAN 211 CFM, TO ENSURE OZONE LEVELS ARE NOT EXCEEDED."

   The following markings in French are required:
   "ATTENTION : DES NIVEAUX ÉLEVÉS D’OZONE PEUVENT ÊTRE NOCIFS. RESPECTER LES CONSIGNES ET UTILISER DANS UN ENDROIT QUI N’EST PAS INFÉRIEUR QU’INDIQUÉ DANS LES INSTRUCTIONS D’INSTALLATION"

   "CERTIFIÉ UNIQUEMENT DU POINT DE VUE DE LA PROTECTION CONTRE LES CHOCS ET LES INCENDIES D’ORIGINE ÉLECTRIQUE."

   "ATTENTION : CET APPAREIL DEVRAIT FAIRE L’OBJET D’UNE INSPECTION ET LES FILTRES DEVRAIENT ÊTRE NETTOYÉS CONFORMÉMENT AUX INSTRUCTIONS DU FABRICANT, DE FAÇON RÉGULIÈRE, AFIN D'EMPÊCHER UNE ACCUMULATION EXCESSIVE DE POUSSIÈRE POUVANT PROVOQUER UN EMBRASEMENT ÉCLAIR OU CAUSER UN RISQUE D’INCENDIE."

   "ATTENTION — LE PURIFICATEUR D’AIR NE DOIT PAS ÊTRE INSTALLÉ DANS UN SYSTÈME OÙ LA CIRCULATION DE L’AIR EST INFÉRIEURE À 211 pi3/MIN POUR ASSURER QUE LES NIVEAUX D’OZONE LIMITES NE SOIENT PAS DÉPASSÉS."

10 Installation, Operating and Safety Instructions - Instructions for installation and use of this product are provided by the manufacturer. Refer to Illustration No(s). 1-2 for details.

7.0 Illustrations

Illustration 1 - Safety Intsructions

Important instructions

1. WARNING! RISK OF ELECTRIC SHOCK – These servicing instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

2. The connection to the source of electrical supply shall be made without the use of an extension cord.

3. Keep the air conditioner working and doors and windows closed when the product is working.

4. The green indicator light is on when the unit is working. If not, check the power supply is connected properly. Contact the factory or local service center for repair.

5. Cleaning is required after the unit works one year. Cleaning method as follows: Open the shutter of the air inlet/outlet. Wrap the metal tubes and needles with specific cleaning tool to remove the dust. If it is not convenient to clean on site, the sterilizer can be cleaned after removed. Before using the sterilizer, make sure that it must be dry.

6. This product complies with the maximum allowable concentration of ozone of 0.050 parts per million by volume (ppmv) in a 24-h period.

⚠ Notice: Disconnect the unit from the power supply before maintenance.

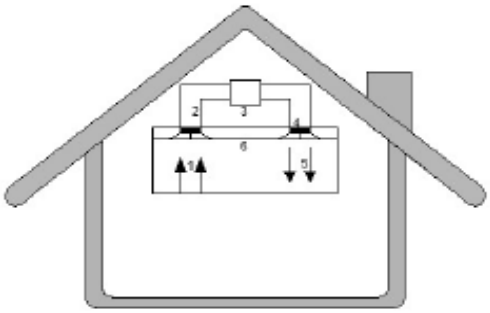
THIS AIR CLEANER SHALL NOT BE INSTALLED ON THE HOT-AIR SIDE OF DUCT-TYPE SYSTEMS and NE PAS INSTALLER CE FILTRE ÉLECTROSTATIQUE DANS LE COURANT D'AIR CHAUD D'UN APPAREIL DE CHAUFFAGE.

7.0 Illustrations

Illustration 2 - Operation Intsructions

Operation

Respectively install one unit in the air inlet and outlet with HVAC system (shown in Figure 1). The unit is connected to the power supply of the air conditioner. It works synchronously with the air conditioner. In minority condition, additional wiring and separate switch is required. The germicidal effect will be achieved after the unit works for 2 hours.

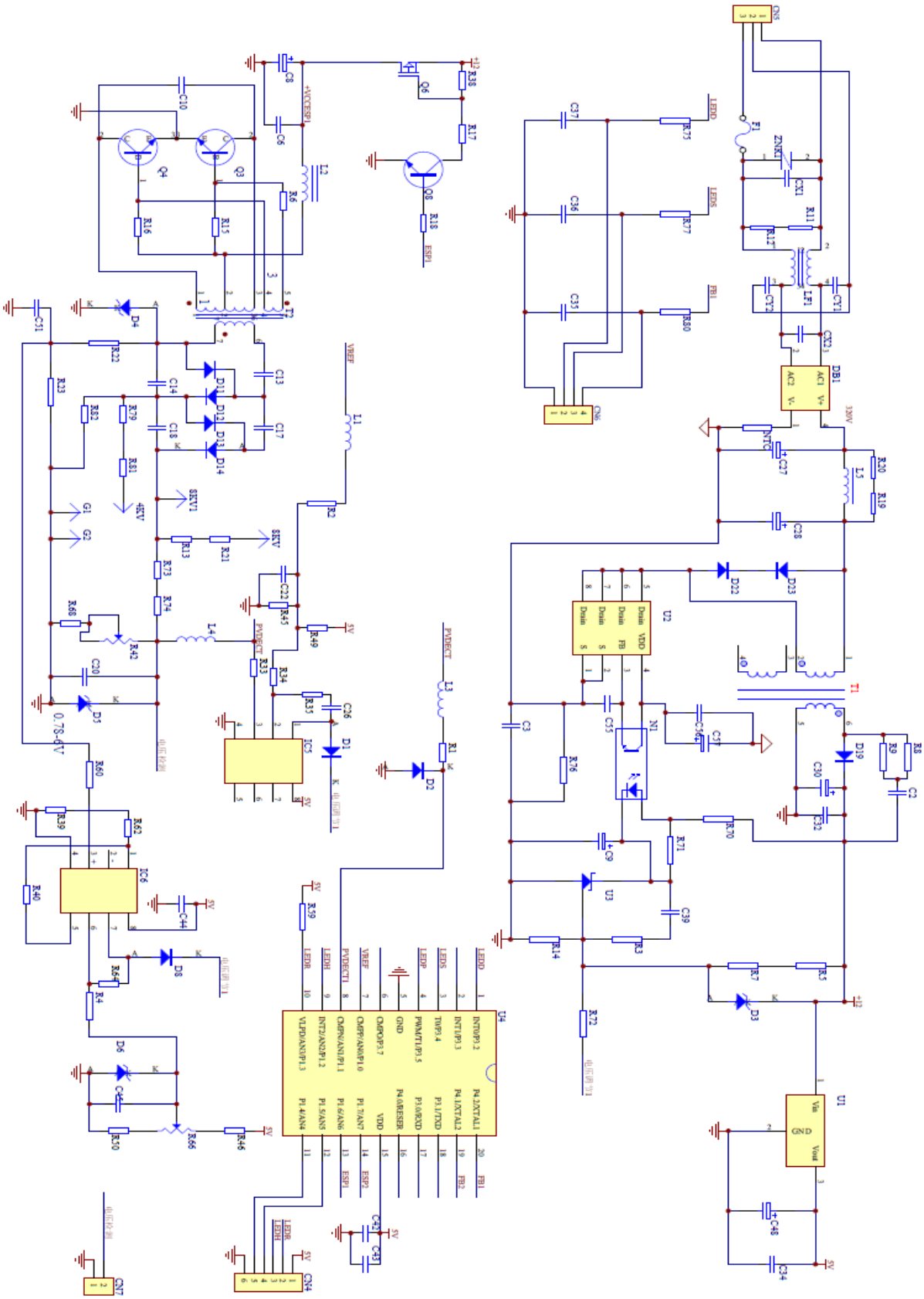


1. Return Air inlet;
2. Electrostatic sterilizer;
3. Fan coil;
4. Electrostatic sterilizer;
5. Air outlet

Figure 1: ECH-KJX-Z type electrostatic sterilizer installation

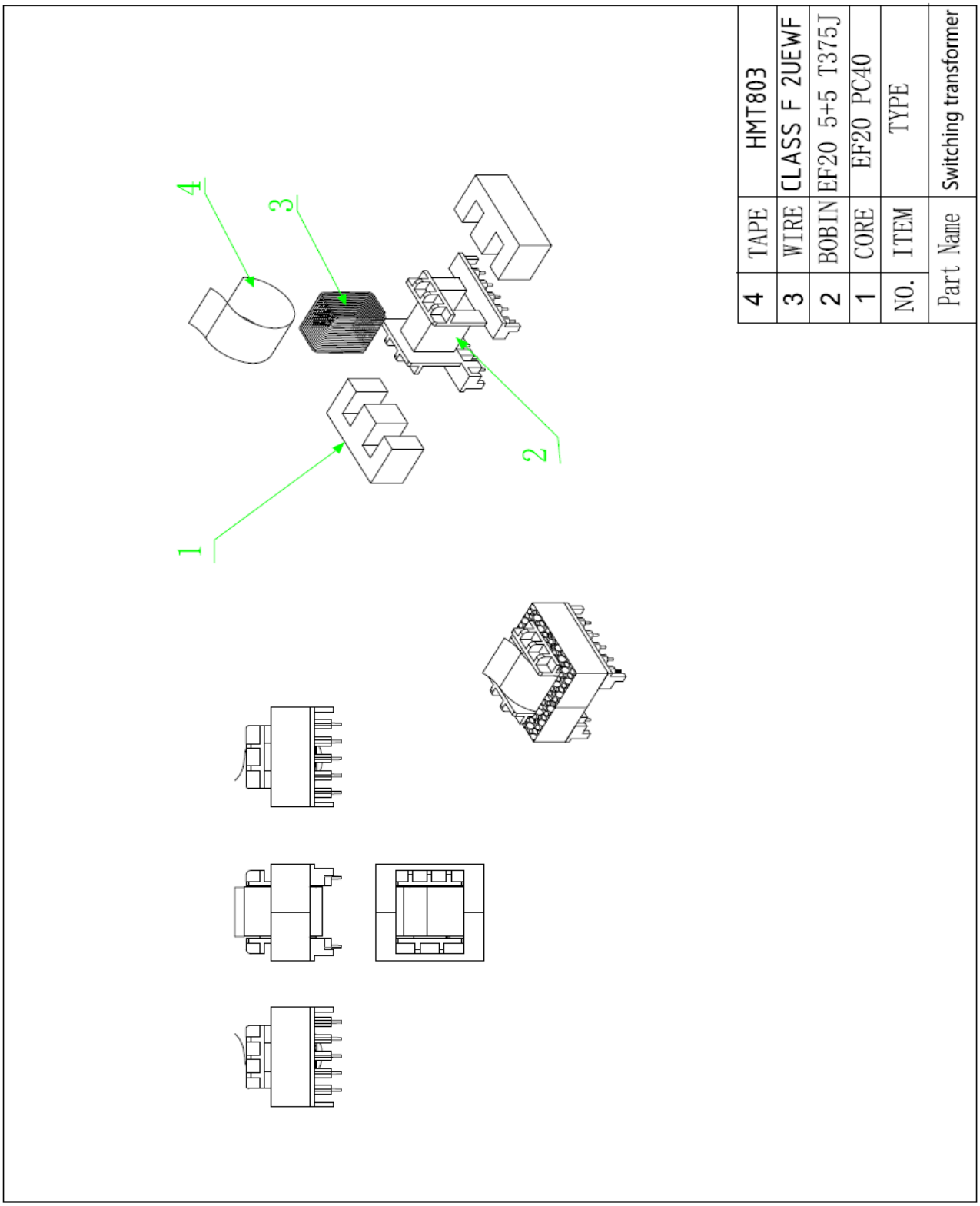
7.0 Illustrations

Illustration 3 - Wiring Diagram of High Voltage Power Supply



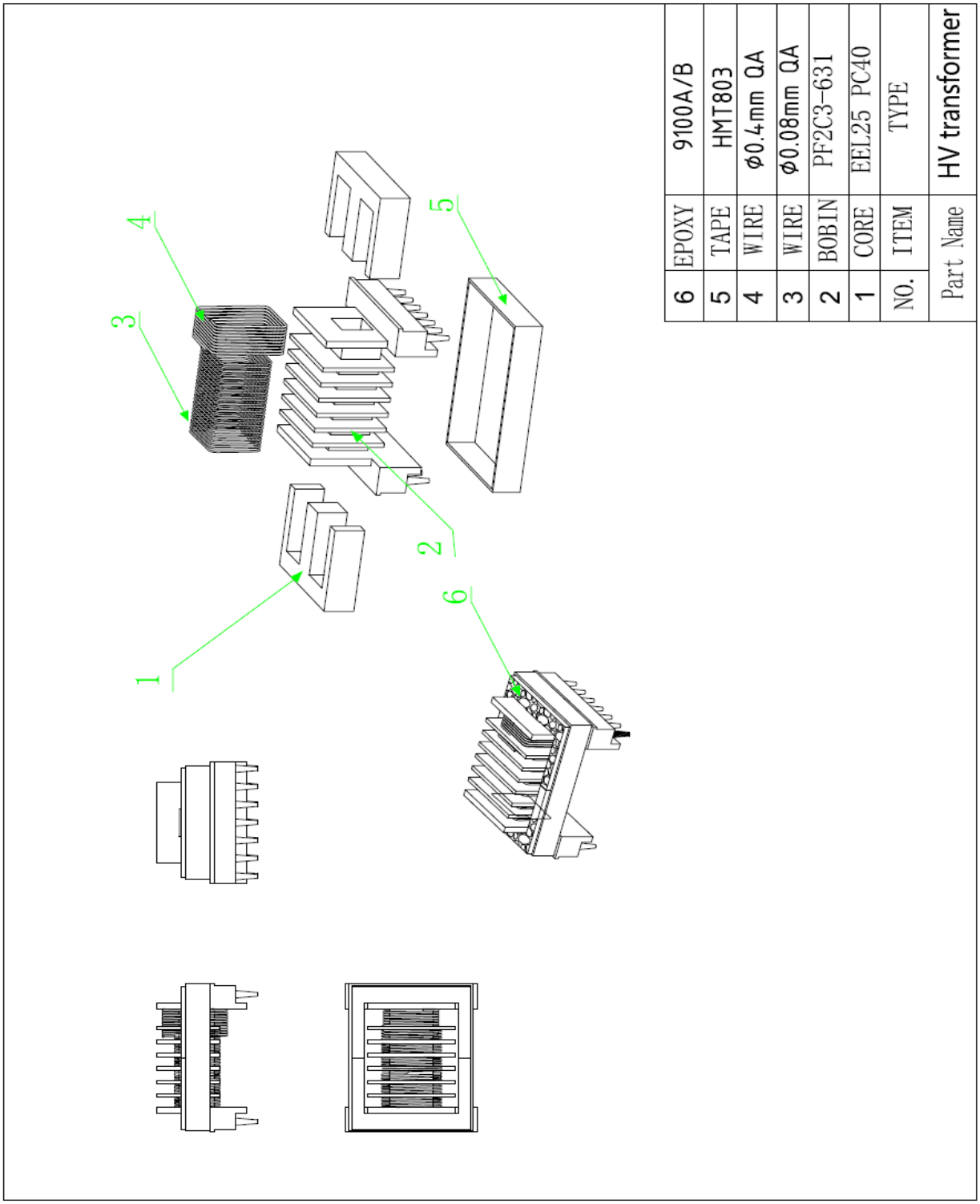
7.0 Illustrations

Illustration 4 - Exploded Diagram of Switching Transformer



7.0 Illustrations

Illustration 5 - Exploded Diagram of HV Transformer



8.0 Test Summary					
Evaluation Period	5/13/21 through 7/9/21			Project No.	G104626851
Sample Rec. Date	23-Apr-2021	Condition	Production	Sample ID.	CRT2104231506-001
Test Location	Intertek 3933 US Route 11, Cortland, NY USA				
Test Procedure	Testing Lab				

Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria.

Due to the previous testing performed under Intertek Report 104626851CRT-002 only the following testing was performed:

Test Description	UL 867 Clause:	CSA C22.2 #187 Clause:	CSA C22.2 #0.4 Clause:
Input Test	38	6.1	--
Output Test	39	6.4	--
Grounding Resistance Test	44	--	--
Temeprature Test	45	6.2	--
Dielectric Voltage Withstand Test	46	6.5	--
Abnormal Tests	49	6.3	--
High Voltage Insulating Materials	--	6.10	--
Strength of Enclosures and Grills	--	6.11	--
Grounding and Bonding - Impedance Test	--	--	5.1

Evaluation Period	12/1/21 through 12/29/21			Project No.	G104868899
Sample Rec. Date	2-Nov-2021	Condition	Production	Sample ID.	CRT2111021105-001
Test Location	Intertek 3933 US Route 11, Cortland, NY USA				
Test Procedure	Testing Lab				

Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria.

Test Description	UL 867 Clause:	CSA C22.2 #187 Clause:
Temeprature Test	45	6.2
Dielectric Voltage Withstand Test	46	6.5
Strength of Enclosures and Grills	--	6.11

Evaluation Period	1/24/22 though 1/26/22			Project No.	G104868899
Sample Rec. Date	2-Nov-2021	Condition	Production	Sample ID.	CRT2111021105-001
Test Location	Intertek 3933 US Route 11, Cortland, NY USA				
Test Procedure	Testing Lab				

Determination of the result includes consideration of measurement uncertainty from the test equipment and methods. The product was tested as indicated below with results in conformance to the relevant test criteria.

Test Description	UL 867 Clause:	CSA C22.2 #187 Clause:
Input Test	38	6.1
Temeprature Test	45	6.2
Dielectric Voltage Withstand Test	46	6.5

8.1 Signatures			
A representative sample of the product covered by this report has been evaluated and found to comply with the applicable requirements of the standards indicated in Section 1.0.			
Completed by:	William Beveridge	Reviewed by:	Russell Ransom
Title:	Engineer	Title:	Reviewer
Signature:	*Signature on file*	Signature:	*Signature on file*

9.0 Correlation Page For Multiple Listings

The following products, which are identical to those identified in this report except for model number and Listee name, are authorized to bear the ETL label under provisions of the Intertek Multiple Listing Program.

BASIC LISTEE	Shanghai Emperor of Cleaning Hi-Tech Co., LTD
Address	6 Building No. 138 Boxeu Road Jiading Area, Shanghai City
Country	China
Product	Electrostatic Air Cleaner

MULTIPLE LISTEE 1	ESCAIRUSA, INC
Address	816 Dover Street, Boca Raton, Florida 33487
Country	USA
Brand Name	ESCAir
ASSOCIATED MANUFACTURER	SHANGHAI CANGQIONG ENVIRONMENT TECHNOLOGY CO.LTD
Address	3F, No.301 Jiangchangsan Road, Jingan District, Shanghai
Country	China

MULTIPLE LISTEE 1 MODELS	BASIC LISTEE MODELS
ECH-KJX-Z	ECH-KJX-Z

MULTIPLE LISTEE 2	WeAirHealth (Shanghai) Health Technology Co., Ltd
Address	5F, Building B No 1230, North Zhongshan No. 1 Road, Shanghai City, 200437
Country	China
Brand Name	WeAirHealth
ASSOCIATED MANUFACTURER	SHANGHAI CANGQIONG ENVIRONMENT TECHNOLOGY CO.LTD
Address	3F, No.301 Jiangchangsan Road, Jingan District, Shanghai
Country	China

MULTIPLE LISTEE 2 MODELS	BASIC LISTEE MODELS
WAH-KJX-Z	ECH-KJX-Z

MULTIPLE LISTEE 3	None
Address	
Country	
Brand Name	
ASSOCIATED MANUFACTURER	
Address	
Country	

MULTIPLE LISTEE 3 MODELS	BASIC LISTEE MODELS

10.0 General Information

The Applicant and Manufacturer have agreed to produce, test and label ETL Listed products in accordance with the requirements of this Report. The Manufacturer has also agreed to notify Intertek and to request authorization prior to using alternate parts, components or materials.

COMPONENTS

Components used shall be those itemized in this Intertek report covering the product, including any amendments and/or revisions.

LISTING MARK

The ETL Listing mark applied to the products shall either be separable in form, such as labels purchased from Intertek, or on a product nameplate or other media only as specifically authorized by Intertek. Use of the mark is subject to the control of Intertek.

The mark must include the following four items:

1) applicable country identifiers "US" and/or "C" or "US", "C" and "EU"
2) the word "Listed" or "Classified" or "Recognized Component" (whichever is appropriate)
3) a control number issued by Intertek
4) a product descriptor that identifies the standards used for certification. Example:

For US standards, the words, “Conforms to” shall appear with the standard number along with the word, “Standard” or “Std.” Example: “Conforms to ANSI/UL Std. XX.”

For Canadian standards, the words “Certified to CAN/CSA Standard CXX No. XX.” shall be used, or abbreviated, “Cert. to CAN/CSA Std. CXX No. XX.”

Can be used together when both standards are used.

If all standards on the ATM have the same standard title, the shared title or its abbreviation may be used in place of the examples above. Example: "Medical Electrical Equipment" or "MEE"; "Information Technology Equipment" or "ITE"; "Audio/Video Information And Communication Technology Equipment" or "A/V ICTE".

Note: A facsimile must be submitted to Intertek, Attn: Follow-up Services for approval prior to use. The facsimile need not have a control number. A control number will be issued **after signed Certification Agreements** have been received by the Follow-up Services office, approval of the facsimile of your proposed Listing Mark, satisfactory completion of the Listing Report, and scheduling of a factory assessment in your facility.

MANUFACTURING AND PRODUCTION TESTS

Manufacturing and Production Tests shall be performed as required in this Report.

FOLLOW-UP SERVICE

Periodic unannounced audits of the manufacturing facility (and any locations authorized to apply the mark) shall be scheduled by Intertek. An audit report shall be issued after each visit. Special attention will be given to the following:

1. Conformance of the manufactured product to the descriptions in this Report.
2. Conformance of the use of the ETL mark with the requirements of this Report and the Certification Agreement.
3. Manufacturing changes.
4. Performance of specified Manufacturing and Production Tests.

In the event that the Intertek representative identifies non-conformance(s) to any provision of this Report, the Applicant shall take one or more of the following actions:

1. Correct the non-conformance.
2. Remove the ETL Mark from non-conforming product.
3. Contact the issuing product safety evaluation center for instructions.

10.1 Evaluation of Unlisted Components

Because Unlisted Components are uncontrolled, and they do not fall under a third party follow up program, Intertek may require these components to be tested and/or evaluated at least once annually, more often for certain components, as part of the independent certification process. The Unlisted Components in Section 5.0 require testing and/or evaluation as indicated.

The Applicant will be notified, in writing, via the applicable contact methods, as defined in Section 1.0, when these components must be selected and sent to Component Evaluation Center (CEC) for re-evaluation.

Due to particular testing requirements, some components may be requested to be shipped to specific labs. Thus, specific shipment destination(s) for each sample will be provided in the written notification.

Managing CEC Location:
Intertek Testing Services NA Inc.
ETL Component Evaluation Center
1717 Arlingate Ln.
Columbus, Ohio 43228 USA
Attn: CEC Safety
Sample Disposition: Due to the destructive nature of the testing, all samples will be discarded at the conclusion of testing unless, the manufacturer specifically requests the return of the samples. The request for return must accompany the initial component shipment.

11.0 Manufacturing and Production Tests

The manufacturer agrees to conduct the following Manufacturing and Production Tests as specified:

Required Tests

Dielectric Voltage Withstand Test
Grounding Continuity Test

11.1 Dielectric Voltage Withstand Test

Method

One hundred percent of production of the products covered by this Report shall be subjected to a routine production line dielectric withstand test.

The test shall be conducted on products, which are fully assembled. Prior to applying the test potential, all switches, contactors, relays, etc., should be closed so that all primary circuits are energized by the test potential. If all primary circuits cannot be tested at one time, then separate applications of the test potential shall be made.

The test voltage specified below shall be applied between primary circuits and accessible dead-metal parts. The test voltage may be gradually increased to the specified value but must be maintained at the specified value for one second or one minute as required.

Test Equipment

The test equipment shall incorporate a transformer with an essentially sinusoidal output, a means to indicate the applied test potential, and an audible and/or visual indicator of dielectric breakdown.
The test equipment shall incorporate a voltmeter in the output circuit to indicate directly the applied test potential if the rated output of the test equipment is less than 500VA.
If the rated output of the test equipment is 500VA or more, the applied test potential may be indicated by either:
1 - a voltmeter in the primary circuit;
2 - a selector switch marked to indicate the test potential; or
3 - a marking in a readily visible location to indicate the test potential for test equipment having a single test potential output.
In cases 2 and 3, the test equipment shall include a lamp or other visual means to indicate that the test potential is present at the test equipment output. All test equipment shall be maintained in current calibration.

Products Requiring Dielectric Voltage Withstand Test:

Product	Test Voltage	Test Time
All products covered by this Report.	1000VAC	60 s
	or	
	1200VAC	1 s

11.2 Grounding Continuity Test
Method Each product listed below shall be subjected to a test to determine that there is continuity between accessible dead-metal parts of the product and the grounding pin or blade of the attachment plug. If all accessible dead metal is connected, only a single test need be performed. A visual or audible device (ohmmeter, buzzer, etc.) may be used to indicate grounding continuity.
Products Requiring Grounding Continuity Test:
All products covered by this Report.

12.0 Revision Summary				
The following changes are in compliance with the declaration of Section 8.1:				
Date/ Proj # Site ID	Project Handler/ Reviewer	Section	Item	Description of Change
29-Dec-2021	W. Beveridge	1	--	Revised manufacturer 1 address from: "3F, No. 301, Jiangchangsan Road, Jingan District, Shanghai 200436" to: "6 Building No. 138 Boxeu Road, JIADING AREA, Shanghai 201801".
G104868899CRT	R. Ransom	3	7	Added Photo 7 - Alternate design using polymeric enclosure and alternate HVPS box design.
		4	1	Added alternate frame/enclosure materials by CHI MEI CORPORATION, PA-765A(+) & PA-765B(+)
		4	25	Added component "Terminal Box and HVPS Enclosure"
		8	--	Added test block.
		8	1	Replaced signatures from: "William Beveridge" and "Russell Ransom" to: "William Beveridge" and "Russell Ransom".
26-Jan-2022	W. Beveridge	1	--	Added alternate contact to applicant.
G104868899CRT	R. Ransom	1	--	Added alternate contact phone number to applicant.
		1	--	Added alternate contact email to applicant.
		1	--	Revised manufacturer 1 name from: "SHANGHAI CANGQIONG ENVIRONMENT TECHNOLOGY CO. LTD" to: "Shanghai Emperor of Cleaning Hi-Tech Co., LTD".
		1	--	Corrected manufacturer 1 address from: "6 Building No. 138 Boxeu Road, JIADING AREA, Shanghai 201801" to: "6 Building No. 138 Boxue Road, JIADING AREA, Shanghai 201801"
		1	--	Revised manufacturer 1 contact from: "JingQiu" to: "Yangyang Pan".
		1	--	Revised manufacturer 1 phone from: "86 18616828191" to: "86 13764318544".
		1	--	Revised manufacturer 1 email from: "530548963@qq.com" to: "pyyang@china-xiba.com".
		2	--	Revised ratings from: "110V, 60Hz, 20W max." to: "110-220V, 60Hz, 20W max."
		3	7	Added callout 26 for "Needle Plate".
		4	26	Added component "Needle Plate".
		8	--	Added Test Block for 220V testing.
		8	1	Replaced signatures from: "William Beveridge" and "Russell Ransom" to: "William Beveridge" and "Russell Ransom".
1-Feb-2022	W. Beveridge WB	12	--	Corrected previous '26-Jan-2021' revision date to '26-Jan-2022'
G104868899CRT	D. Root DR			