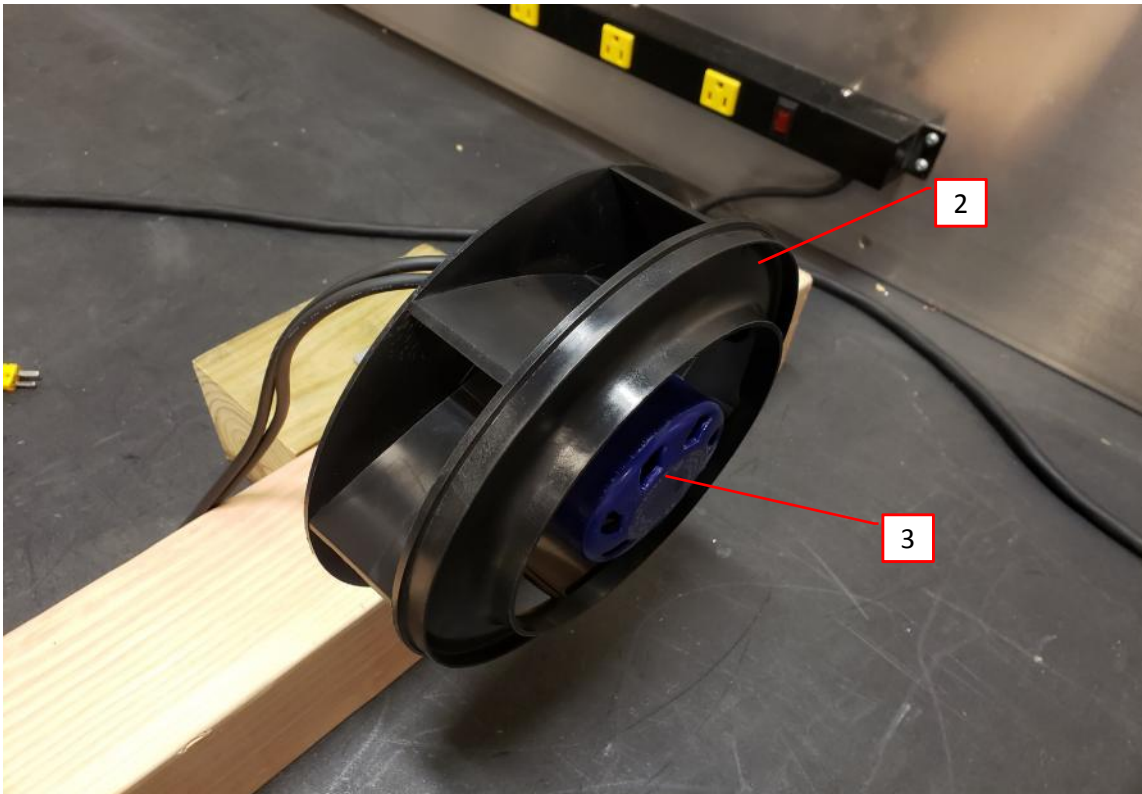


| 1.0 Reference and Address | | | |
|---------------------------|---------------------------------------------------------------------------------------------------|------------------------------|-------------------------------------------------------------------|
| Report Number | 103689283COL-002 | Original Issued: 13-Aug-2019 | Revised: None |
| Standard(s) | Electric Fans [UL 507:2017 Ed.10+R:22Feb2018] Fans And Ventilators [CSA C22.2#113:2018 Ed.11] | | |
| Applicant | <u>Bodor Vents, LLC</u> | Manufacturer | <u>Ventilation Systems PrJSC</u> |
| Address | 11013 Kenwood Rd. Cincinnati, OH 45242 | Address | vul. 40-Richchya Zhovtnya, 36, 08150 Boyarka, Kyivs'ka oblast' |
| Country | USA | Country | Ukraine |
| Contact | Mr. Zoltan Bodor | Contact | Mr. Yaroslav Babachenko |
| Phone | (513) 348-3853 | Phone | (38) 044 401 62 64 |
| FAX | 513-268-4597 | FAX | (38) 044 401 62 97 |
| Email | bodorvents@cinci.rr.com | Email | yaroslav@vents.kiev.ua; topmanagement@vents.kiev.ua |

| 2.0 Product Description | |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product | Component Fan Assembly |
| Brand name | Blauberg, or Blauberg Motoren |
| Description | Product is a component fan assembly. Intended for installation in a non-hazardous location |
| Models | MEC3C-72- followed by 27 to 95; followed by - ;followed by 01 to 99. MEC3C-72- followed by 95 to 174; followed by - ; followed by 01 to 99. |
| Model Similarity | All models are similar in constructions. Models may have different electrical ratings. |
| Ratings | MEC3C-72- followed by 27 to 95; followed by - ;followed by 01 to 99 are rated: 120V, 60Hz, 0.5A-1.5A, 27 W - 95 W. MEC3C-72- followed by 95 to 174; followed by - ; followed by 01 to 99 are rated: 120V, 60Hz, 1.5A-2.5A, 95 W - 180 W. |
| Other Ratings | NA |
| Conditions of Acceptability | <p>The products covered in this Report are incomplete in construction features or limited in performance capabilities and are intended for use and evaluation in other products. Consideration should be given to the following when the component is used in or with another product.</p> <ol style="list-style-type: none"> 1. Suitability of the enclosure should be evaluated when installed in the end product. 2. Temperature Testing should be performed on this component when installed in the end product. 3. Grounding bonding shall be evaluated in the end product standard. 4. Provision for connecting to power supply shall be evaluated in the end product standards. 5. Product was only evaluated for general ventilation. |

3.0 Product Photographs

Photo 1 - Overview of the Fan



| 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 | 1 | Marking (Not Shown) | Various | Various | laser engraved into the motor case. | UR, CSA |
| 1 | 2 | Impeller | Basf SE | B3ZG6 | UL recognized material. Flame rating is HB. Minimum 0.73 mm thick. HWI = 4 , HAI = 0 - RTI = 150 | UR |
| 1 | 3 | Motor | Blauberg | MEC3C-72-95-01 | 120V, 60Hz, 1.3A | See 5.0 |
| | | | Blauberg | MEC3C-72-174-03 | 120V, 60Hz, 2.2 A | See 5.0 |
| 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

INSULATED COIL

| Photo # | Item no. | Name | Manufacturer/Trademark | Type / model |
|--------------------------|----------|----------------------|------------------------|--------------------|
| 1 | 3 | Motor | Blauberg | MEC3C-72-95-01 |
| Electrical Rating: | | 120V, 60Hz, 1.3A | | Insulation class B |
| Component Standard used: | | UL 1004-1, UL60730-1 | | |

MATERIALS LIST : Refer to Illustration 2

| Component | Manufacturer | Type/model | Dimensions/thickness/assembly information |
|-----------------------------|-------------------------------------|------------|------------------------------------------------------------------------------|
| Core | Various | Various | Steel core |
| Motor magnet wires Coating. | Dong Quan Yida Industry Company LTD | QA-2 | Magnet wire coating rated for 155 degree C. Meet dielectric strenght 1240V. |
| Magnet wire | Various | Various | Coper wires dia. 0.27mm. - 280 turns. |
| Motor insulation system | Various | Various | Type PA66. insulation class B. Flame rating is V-0. 21KV dielectric strenght |
| Capacitor | Samyoung | NFC | 200V, 150uf. One is used. |
| Fuses | Various | Various | On board fuse, UL recognized. 15A, 250V. None time delay. |
| Capacitor | Dain | 224/275VX2 | 275V, rated 0.001uf - 1uF. |
| Capacitor | Dain | 334/275VX2 | 275V, rated 0.001uf - 1uF. |
| Varistor | EBV Electronic | 7D241K | 150VAC, 0.25 watt., 210pF. |
| Voltage regulator | Unisonic Technologies | 78L10 | Output 10V with built in overcurrent limit. Built in thermal overload. |
| Power module | Fair Child | FSB50550AS | 500V, 5A |
| | Infineon | IRSM505-65 | 500V, 2.6A. |
| Comparision Unit IC | STMicroelectronic s | LM339 | Low voltage electronic components. |
| Voltage regulator | Unisonic Technologies | 78L05 | Low voltage electronic components. |
| Power Switching | STMicroelectronic s | VIPER06S | 4-8 watts. |
| Optocoupler | Everlight | EL817 | Forward current 60mA reverse voltage 6V. Collector output 50mA. |
| Micro controller chip | Infineon | XMC1302 | Low voltage electronic components. |
| Amplifier | TI | TSV994A | Low voltage electronic components. |
| Motor cables | WOER | Type VW-1 | Appliance wiring material. 20AWG. UL recognized CSA certified. 105C, 300V. |

WINDING(S) RESISTANCE

| Winding Designation | Wire Size | Wire Type | Turns | Volts | Amps | DC resistance () +/- 10%: |
|---------------------|--------------|-----------|-----------|-------|------|------------------------------------------------------------------|
| Stator Winding | dia Ø0.27 mm | copper | 280 turns | N/A | N/A | 59 ohms at 21 degree C. Measured between left pin and right pin. |

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 | 60 s | |
| | Primary to secondary | | N/A | N/A | |
| | Secondary to core | | N/A | N/A | |

| 5.0 Critical Unlisted CEC Components | | | | | | | |
|--------------------------------------------|----------|-------------------------------------|------------------------|------------------------------------------------------------------------------|----------------------------|-----------|------------------------------------------------------------------|
| INSULATED COIL | | | | | | | |
| Photo # | Item no. | Name | Manufacturer/Trademark | Type / model | | | |
| 1 | 3 | Motor | Blauberg | MEC3C-72-174-03 | | | |
| Electrical Rating: | | 120V, 60Hz, 2.2 A | | | Insulation class | B | |
| Component Standard used: | | UL 1004-1, UL60730-1 | | | | | |
| MATERIALS LIST : Refer to Illustration 2 A | | | | | | | |
| Component | | Manufacturer | Type/model | Dimensions/thickness/assembly information | | | |
| Core | | Various | Various | Steel core | | | |
| Motor magnet wires Coating. | | Dong Quan Yida Industry Company LTD | QA-2 | Magnet wire coating rated for 155 degree C. Meet dielectric strenght 1240V. | | | |
| Magnet wire | | Various | Various | Coper wires dia. 0.38mm. - 130 turns. | | | |
| Motor insulation system | | Various | Various | Type PA66. insulation class B. Flame rating is V-0. 21KV dielectric strenght | | | |
| Capacitor | | Samyoung | NFC | 200V, 150uf. 3 are used. | | | |
| Fuses | | Various | Various | On board fuse, UL recognized. 15A, 250V. None time delay. | | | |
| Capacitor | | Dain | 310VAC-X2 | 310V, rated 0.001uf - 1uF. | | | |
| Capacitor | | Dain | 275V-X2 | 275V, rated 0.001uf - 1uF. | | | |
| Varistor | | EBV Electronic | Various | Low voltage electronic components. | | | |
| Voltage regulator | | Unisonic Technologies | 78L10 | Output 10V with built in overcurrent limit. Built in thermal overload. | | | |
| Power module | | Fair Child | FSB50550AS | 500V, 5A | | | |
| | | Infineon | IRSM505-65 | 500V, 2.6A. | | | |
| Comparision Unit IC | | STMicroelectronic s | LM339 | Low voltage electronic components. | | | |
| Voltage regulator | | Unisonic Technologies | 78L05 | Low voltage electronic components. | | | |
| Power Switching | | STMicroelectronic | VIPER06S | 4-8 watts. | | | |
| Optocoupler | | Everlight | EL817 | Forward current 60mA reverse voltage 6V. | | | |
| Micro controller chip | | Infineon | XMC1302 | Low voltage electronic components. | | | |
| Amplifier | | TI | TSV994A | Low voltage electronic components. | | | |
| Motor cables | | WOER | Type VW-1 | Appliance wiring material. 20AWG. UL recognized CSA certified. 105C, 300V. | | | |
| WINDING(S) RESISTANCE | | | | | | | |
| Winding Designation | | Wire Size | Wire Type | Turns | Volts | Amps | DC resistance () +/- 10%: |
| Stator Winding | | dia Ø0.38 mm | copper | 130 turns | N/A | N/A | 14 ohms at 21 degree C. Measured between left pin and right pin. |
| 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 | | 60 s | |
| | | Primary to secondary | | N/A | | N/A | |
| | | Secondary to core | | N/A | | N/A | |

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, minimum spacing are maintained through air and over surfaces of insulating material between current-carrying parts of opposite polarity and between such current-carrying parts and dead-metal parts or low voltage isolated circuits.

| Rating (Volts) | Through air | Over surface | To enclosure |
|----------------|-------------|--------------|--------------|
| 0-125V | 1/8 inch | 1/4 inch | 1/2 inch |

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 or non-metallic 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 equipment grounding terminal.
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 of 18 AWG, with a minimum rating of 300V, 90°C. Motor leads are 20AWG.

6.0 Critical Features

7. Markings - The product is marked per item 1 section 4 as followed:
 - a. Applicant name, trade mark, trade name
 - b. Catalog, style, model, or type designation
 - c. Voltage (120V)
 - d. Frequency
 - e. The number of phase,
 - f. Amperes
 - h. Direction of rotation of the impeller
 - i. Date of manufactured
8. Cautionary Markings - The following are required:
"EP" or "Electronic Protected".
"EP" or Électronique protégée
9. Installation, Operating and Safety Instructions - Instructions for installation and use of this product are provided by the manufacturer. Please see illustration 1.
Instruction shall include a warning statement
"WARNING: NOT SUITABLE FOR USE WITH SOLID-STATE SPEED CONTROLS" and "AVERTISSEMENT: NE CONVIENT PAS À DES RÉGULATEURS DE VITESSE À SEMI-CONDUCTEURS."

7.0 Illustrations

Illustration 1 - Safety Instructions



1.4 Electric voltage

The electric equipment of the fan requires regular periodic checks (see Chapter 6.2 "Safety procedure checklist").

- Any loose connections and faulty cables must be replaced immediately.



DANGER

Electrically charged unit

Electric shock hazard is possible:

- Always stand on a rubber mat while working on the energized unit.



WARNING

The unit terminals and connectors may remain energized even while the unit is off.

Electric shock hazard.

- After de-energizing all the power leads wait for 5 minutes before opening the unit.



CAUTION

In the event of an accident the rotor and the impeller are energized.

The rotor and the impeller have the basic insulation.

- Do not touch the rotor and the impeller during operation.



CAUTION

The motor restarts automatically after power drop or spike if the control signal remains applied or the rotation speed remains the same.

Risk of personal injury

- Keep away from the unit danger area.
- Before doing any work on the unit disconnect it from power mains and install a safety interlock to prevent accidental power-up.
- Wait till the unit comes to a full stop.
- On completing the work remove all the tools or other items used away from the unit.

1.5 Protection and safety functions



DANGER

No protective device is in service.

Failure to use proper protective equipment may result in severe injury if a hand gets trapped in an operating unit.

- Do not operate the unit without a stationary insulating protective device and a protecting grille.
- The stationary protective device must be capable of absorbing the kinetic energy of an impeller blade coming loose at maximum rotation speed.
- The unit is a built-in component. Being the operator, the customer shall be liable for ensuring safe operation of the unit.
- The unit must be stopped immediately in case of the protective equipment failure.



WARNING:

NOT SUITABLE FOR USE WITH SOLID-STATE CONTROLS.

AVERTISSEMENT:

NE CONVIENT PAS A DES REGULATEURS DE VITESSE A SEMI-CONDUCTEURS

1.6 Electromagnetic pulse

The unit may generate electromagnetic pulse - for example, when used in combination with control and monitoring devices. If an assembled unit generates emissions above the permissible level the operator must provide proper screening before commissioning.



NOTE

Upon integration with the customer's equipment the unit may become the source of electric or electromagnetic interference.

- Make sure to check the entire equipment suite for electromagnetic compatibility.

1.7 Mechanical movement



DANGER

Rotating equipment

Contact of the body parts with the rotor and impeller may result in injury.

- Make sure to provide adequate protection against accidental touch with the unit!
- Wait till all the rotating parts stop before proceeding with any operations.



WARNING

The unit contains rotating internal parts

Long hair, trailing parts of clothing or pieces of jewellery may get caught inside the fan assembly. This may result in an injury.

Do not wear clothing with trailing elements or jewellery while working with rotating machinery parts.

- Long hair should be tucked under suitable headwear.

1.8 Harmful factors



WARNING

The noise level may exceed 70 dBA, depending on the installation and operation conditions.

Noise risk of hearing loss!

- Use engineering safety systems.
- Provide operating staff with respective protection equipment, for instance, with protecting earphones.

1.9 Hot surface



CAUTION

The electronic module casing may get extremely hot

Burning risk!

- Make sure to provide adequate protection against accidental touch with the unit!

1.10 Transportation, storage and recycling



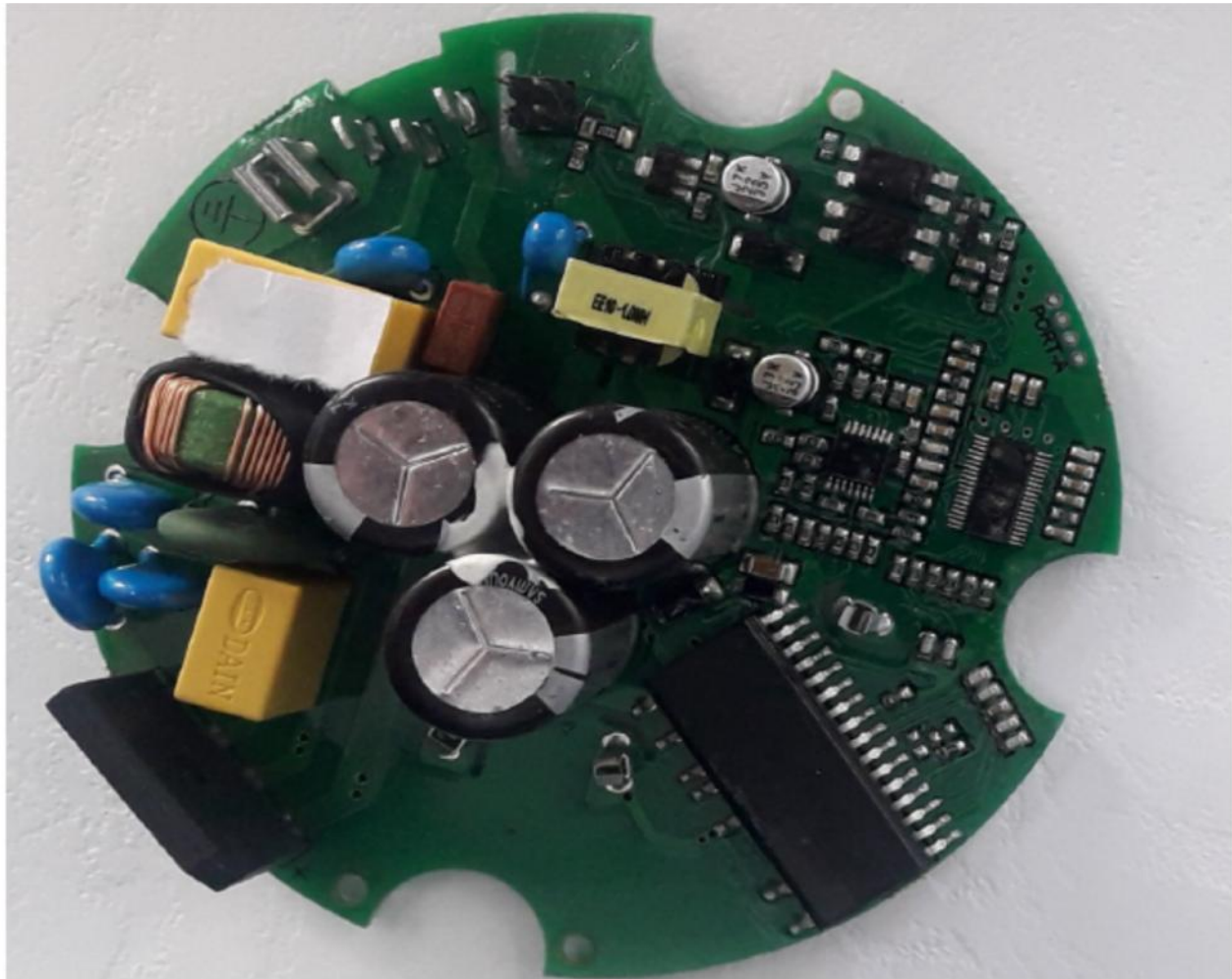
NOTE

Transportation of the unit.

The unit must be transported in the original packing only.

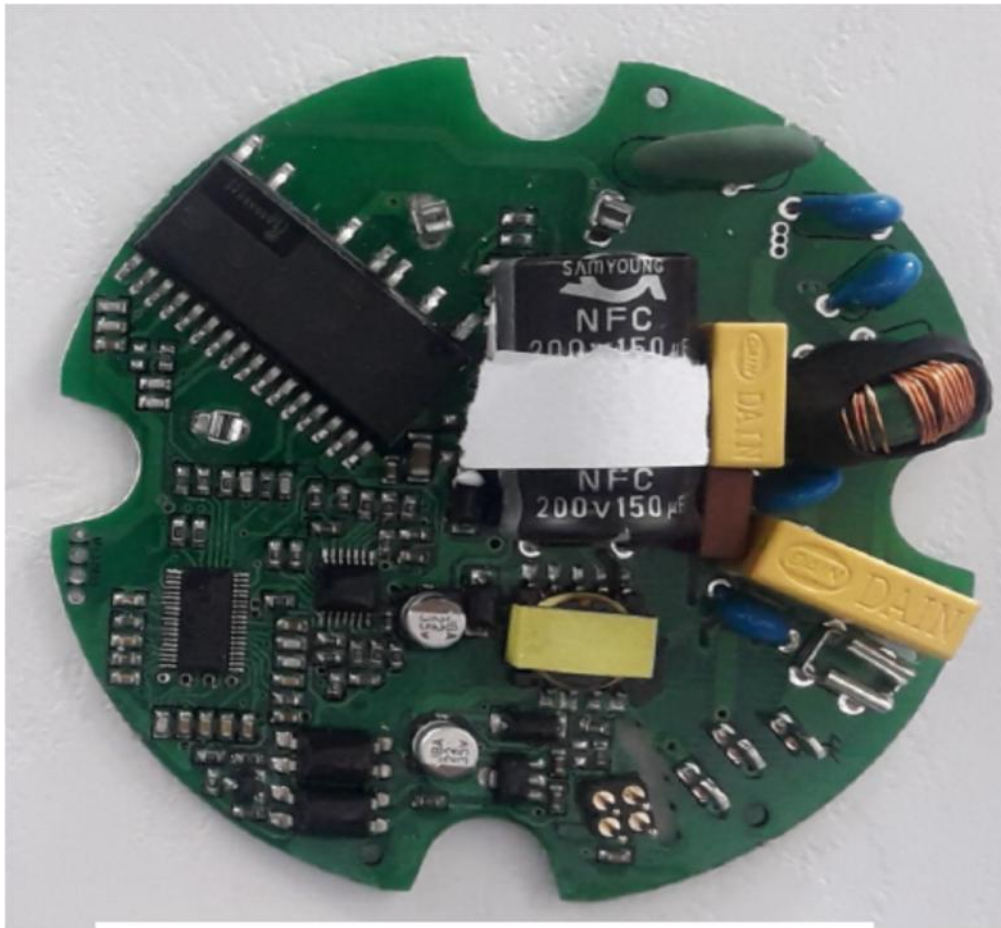
7.0 Illustrations


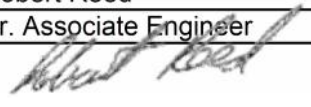
Illustration 2 - Control board and Motor overview.



7.0 Illustrations

Illustration 2A- Control board and Motor overview.



| 8.0 Test Summary | | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------|
| Evaluation Period | 04/29/2019 - 06/13/2019 | | Project No. G103689283 |
| Sample Rec. Date | 4/1/2019 | Condition Prototype | Sample ID. COL1712131613-006, -007 |
| Test Location | Intertek - 1717 Arlingate lane Columbus, Ohio 43228 | | |
| 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. | | | |
| The following tests were performed: | | | |
| Test Description | Electric Fans [UL 507:2017 Ed.10+R:22Feb2018] | Fans And Ventilators [CSA C22.2#113:2018 Ed.11] | |
| Input Test | 45 | 9.5.2 | |
| Temperature test | 46 | 9.5.3 | |
| Dielectric | 47 | 9.5.4 | |
| Humidity conditioning test | 53 | --- | |
| Test Description | UL 1004-1: Ed. 2. Revision Mar2017 | UL 1004-3. Ed. 2. : 2015. | |
| Locked rotor Temperature | -- | 8 | |
| Locked Rotor Endurance | -- | 9 | |
| Dielectric | 37 | -- | |
| Test Description | CSA C22.2 No. 77: 2014 | UL 60730-1: 2013 | |
| Locked rotor Temperature | 6.4 | 8 | |
| Locked Rotor Endurance | 6.6 | 9 | |
| Component Failure | --- | H.27 | |
| 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: | That Vo | Reviewed by: | Robert Reed |
| Title: | Sr. Project Engineer | Title: | Sr. Associate Engineer |
| Signature: |  | Signature: |  |

| 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 | Bodor Vents, LLC |
| Address | 11013 Kenwood Rd. Cincinnati, OH 45242 |
| Country | USA |
| Product | Component Fan Assembly |

| MULTIPLE LISTEE 1 | None | |
|--------------------------|------|---------------------|
| Address | | |
| Country | | |
| Brand Name | | |
| ASSOCIATED MANUFACTURER | | |
| Address | | |
| Country | | |
| MULTIPLE LISTEE 1 MODELS | | BASIC LISTEE MODELS |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| MULTIPLE LISTEE 2 | None | |
| Address | | |
| Country | | |
| Brand Name | | |
| ASSOCIATED MANUFACTURER | | |
| Address | | |
| Country | | |
| MULTIPLE LISTEE 2 MODELS | | BASIC LISTEE MODELS |
| | | |

| 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.

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.

Note to Intertek Follow Up Inspector: The Component Evaluation Center, CEC, will notify you in writing when these components must be selected and sent to the CEC for re-evaluation

Ship the samples to:

Intertek Testing Services NA Inc.

ETL Component Evaluation Center

45000 Helm Street, Suite 150

Plymouth Twp., MI 48170 USA

Attn: Component Evaluation Center

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

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, contractors, 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:

| <u>Product</u> | <u>Test Voltage</u> | <u>Test Time</u> |
|--------------------------------------|---------------------|------------------|
| All products covered by this Report. | 1240V or 1753VDC | 60 s 60 s |

12.0 Revision Summary

The following changes are in compliance with the declaration of Section 8.1:

[illegible]