



Descriptive Report

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PROJECT: 80159940

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PRODUCTS

CLASS 2811 02 – HEATERS Air – Portable Type
CLASS 2811 82 – HEATERS Air – Portable Type – Certified to US Standards

Electric Fireplaces, portable, cord-connected, household indoor use.

Model ND-180SB, ND-180S, ND-180SL, rated 120 V, 60 Hz, 1000 W.

Model ND-180MB, ND-180M, ND-180ML, rated 120 V, 60 Hz, 1500 W.

APPLICABLE REQUIREMENTS

CSA C22.2 No 46-13 (R2018) - Electric Air-Heaters
UL 1278 4th Edition (Feb. 21, 2022) - Movable and Wall - or Ceiling-Hung Electric Room Heaters

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MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

The following markings appear on self-adhesive nameplate on each unit:

- Submitter's identification and/or CSA Master Contract number "216946";
- CSA Mark with "C" and "US" indicators;
- Model designation;
- Complete electrical rating in Volts, Hz, Watts;
- Date code or equivalent;
- "Caution – High temperature, keep electric cords, drapery, and other furnishings at least 3 feet (0.9 m) from the front of the heater and away from the side and rear. WARNING – Risk of Hyperthermia.", and “Attention - haute température, garder les cordons électriques, draperies, et d'autres meubles d'au moins 3 pieds (0.9 m) à L'avant de l'appareil et loin du CÔTÉ et de L'arrière. Attention - risque d'hyperthermie.” or other equivalent wording. (the marking shall be in letters not less than 3.2 mm in height and shall be of a permanent type and in a color that contrasts with that of the enclosure or background);
- "WARNING – Always disconnect the unit from the power supply before performing any cleaning, light bulb replacement, maintenance and relocating the electric fireplace", and ‘Avertissement : Débranchez toujours l'ALIMENTATION DE L'appareil avant toute opération de nettoyage, remplacement de l'ampoule, l'entretien et de déplacement du foyer électrique’;
- A heater shall bear the following marking or other equivalent wording:



**CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
NO USER-SERVICEABLE PARTS INSIDE**



And

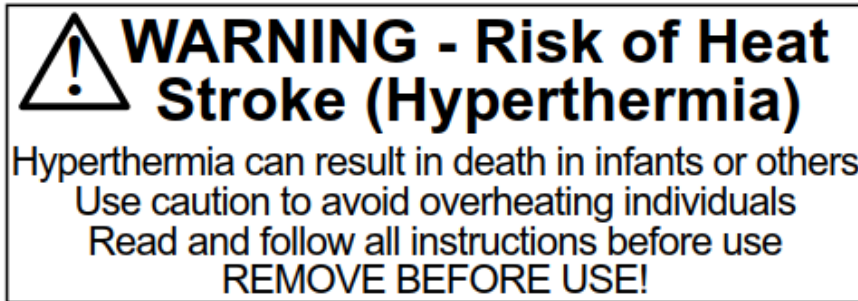
**ATTENTION
RISQUE DE CHOC ÉLECTRIQUE
NE PAS OUVRIR
AUCUNE PIÈCE RÉPARABLE PAR L'UTILIZATEUR À L'INTERIEUR**

If the heater wattage is greater than or equal to 850 watts, the markings specified in this section shall be temporarily affixed and be readily visible on the heater and shall allow easy removal of the label, hangtag, or similar means to display the markings. The label or hangtag shall be of a size that facilitates legibility of the required markings. The removable warning label shall provide the warning illustrated in Figure 67.2 or the equivalent in English and French. The illustration shall consist of a contrasting color background. The height and width of the warning symbol shall be no less than 0.50 inch (12.7 mm). The information on the label shall to be legibly printed and shall contrast with the background. The heading “WARNING – Risk of Heat Stroke (Hyperthermia)” shall at least 1/4 inch (9.53 mm) in height. The remaining text, “Hyperthermia can result in death

in infants or others Use caution to avoid overheating individuals Read and follow all instructions before use REMOVE BEFORE USE!" shall be no less than 1/8 inch (3.175 mm) in height. The "WARNING" and "REMOVE BEFORE USE!" lettering shall be in upper case letters.

Figure 67.2

Hyperthermia Warning Illustration



- Cord-connected heaters that have power-supply cords terminating in a two-pole polarized parallel blade attachment plug of configuration 1-15P shall be marked with the following or equivalent:
CAUTION: TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT AND FULLY INSERT and ATTENTION : POUR ÉVITER LES CHOCS ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.
The words CAUTION and ATTENTION shall be in capital letters at least 2.8 mm high, with the balance of the lettering in capital letters at least 1.6 mm high.
This marking (or its equivalent) shall be provided in one of the following ways:
 - (a) on a tag attached to the cord adjacent to the attachment plug;
 - (b) on a hand tag; or
 - (c) on instructions that accompany the heater at the time of sale.
- A Cord Tag Shall be permanently affixed to the power-supply cord and marked with following statements or other equivalent wording:
"WARNING – TO REDUCE THE RISK OF FIRE:
 - 1) Always plug heaters directly into a wall outlet/receptacle. Never use with an extension cord or relocatable power tap (outlet/power strip).
 - 2) Check your heater cord and plug connections. A loose fitting outlet can cause the plug to overheat or cause a fire. Be sure plug fits tight in the outlet. Check frequently during use to make sure plug and outlet are not hot. If so, discontinue using heater and have outlet replaced by a qualified electrician.
Note: Heaters draw more current than small appliances, overheating of the outlet may occur even if it has not occurred with the other appliances.
 - 3) Always unplug heater when not in use.
 - 4) Do not operate heater with a damaged cord or plug or after the heater malfunctions, has been dropped or damaged in any manner, Discard heater or return to an authorized service facility for examination and/or repair.
 - 5) Do not run cord under carpeting. Do not cover cord with throw rugs, runners, or similar coverings. Do not route furniture or appliances. Arrange cord away from traffic area and where it will not be tripped over.
 - 6) Hyperthermia can result in death. Use caution when operating the heater to avoid overheating

that can occur in infants or individuals with reduced physical, sensory, or mental capabilities.

DO NOT REMOVE THIS TAG!"

And

“Avertissement – Pour Réduire Les Risques D'incendie:

- 1) Toujours branché l'appareil de chauffage à une prise de courant murale Ne Jamais ntiliser avec une rallonge électrique ou un dispositif à prises multiples (sortie/multiprise)
- 2) Vérifier votre cordon d'alimentation aimso que le branchement de la fiche. Une prise de courant défectueuse ou une fiche de branchement électnque mal branchée peuvent causer une surchauffe de la prise de courant ou de la fiche de branchement. Assurez-vous que la fiche de branchement soit bien insérée dans la prise de courant. Le fonctionnement d'un appareil de chauffage utilise plus de courant électrique qu'un petit électroménager, une surchauffe de la prise de courant pourrait survenir même si cela n'est jamais survenu auparavant avec d'autres électroménagers. Pendant l'utilisation, veuillez vérifier fréquemment si la fiche de branchement ou la plaque de la prise de courant devient CHAUDE. Si ceci survient, cesser d'utiliser, l' appareil de chauffage et contacter un électricien quelifié pour vérifier et réparer la (les) prise (s) défectueuse (s).
- 3) Éteignez toujours l'appareil de chauffage lorsque vous n'utilisez pas celui-ci.
- 4) Ne pas faire fonctionner l' appareil de chauffage lorsque le cordon d'alimentation ou la fiche de branchement électrique sont endommagés et lors d'un mauvais fonctionnement de l'appareil de chauffage, s'il a été échappé ou endommagés accidentellement. Veuillez mettre l'appareil à l' écart ou le retourner dans un centre de service technique autorisé pour l'inspection et la réparation.
- 5) Ne pas in staller le cordon d'alimentation sur une moquette. NO pas recouvrir le cordon d'alimentation avec des tapis, carpepe ou autre recouvrement de plancher similaire. Ne pas installer le cordon d'alimentation sous des menbles ou des appareils électroménagers. Installer le cordon d'alimentation loin de la zone de circulation afin de ne pas trébrcher sur celui-ci.
- 6) L'hyperthermie peut entraîner la mort. Soyez prudent lorsque vous utilisez le radiateur pour éviter la surchauffe des nourrissons ou des personnes ayant des capacités physiques, sensorielles ou mentales réduites.

NE PAS ENLEVER CETTE ÉTIQUETTE!"

Note: The statements “WARNING – TO REDUCE THE RISK OF FIRE” and “DO NOT REMOVE THIS TAG!” shall be in letters at least 3/16 inch (4.8 mm) in height. The remaining text shall be in letters of at least 1/16 inch (1.6 mm) in height.

Note: Jurisdictions in Canada may require these markings to be also in French. It is the responsibility of the customer to provide bilingual marking, where applicable, in accordance with the requirements of the Provincial Regulatory Authorities. It is the responsibility of the customer to determine this requirement and have bilingual wording added to the "Markings".

Instructions for Use and Care

An instruction manual or the equivalent, shall be provided with each heater. The manual shall specifically warn the user against potential risk of fire, electric shock, and injury to persons and state the precaution that should be taken to guard against each such risk. The instructions relating to the risk of fire, electric shock, and injury to persons shall be a permanent part of the manual, but separated in format from the other instructions and shall appear before the operating instructions in the manual. The upper case letters in the instructions relating to the risk of fire, electric shock, and injury to persons shall be not less

than 1/12 inch (2.1 mm) high and the lower case letters shall not be less than 1/16 inch (1.6 mm) high.

The instruction manual shall incorporate all required cautionary markings for the heater specified in the Marking Details, and shall also include at least the following general instructions, as appropriate.

IMPORTANT INSTRUCTIONS

When using electrical appliances, basic precautions should always be followed to reduce the risk of fire, electric shock, injury to persons, and hyperthermia, including the following:

1. Read all instructions before using this heater.
2. This heater is hot when in use. To avoid burns, do not let bare skin touch hot surfaces. If provided, use handles when moving this heater. Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, and curtains at least 0.9 m from the front of the heater and keep them away from the sides and rear.
3. Extreme caution is necessary when any heater is used by or near children or invalids and whenever the heater is left operating and unattended.
4. Always unplug heater when not in use.
5. Do not operate any heater with a damaged cord or plug or after the heater malfunctions, has been dropped or damaged in any manner. Discard heater, or return to authorized service facility for examination and/or repair.
6. Do not use outdoors.
7. This heater is not intended for use in bathrooms, laundry areas and similar indoor locations. Never locate heater where it may fall into a bathtub or other water container.
8. Do not run cord under carpeting. Do not cover cord with throw rugs, runners, or similar coverings. Do not route cord under furniture or appliances. Arrange cord away from traffic area and where it will not be tripped over.
9. To disconnect heater, turn controls to off, then remove plug from outlet.
10. Connect to properly grounded outlets only.
11. Do not insert or allow foreign objects to enter any ventilation or exhaust opening as this may cause an electric shock or fire, or damage the heater.
12. To prevent a possible fire, do not block air intakes or exhaust in any manner. Do not use on soft surfaces, like a bed, where openings may become blocked.
13. A heater has hot and arcing or sparking parts inside. Do not use it in areas where gasoline, paint, or flammable liquids are used or stored.
14. Use this heater only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.
15. Always plug heaters directly into a wall outlet/receptacle. Never use with an extension cord or relocatable power tap (outlet/power strip).

16. This heater may include an audible (a visual) alarm to warn that parts of the heater are getting excessively hot. If the alarm sounds (flashes), immediately turn the heater off and inspect for any objects on or adjacent to the heater that may cause high temperatures. **DO NOT OPERATE THE HEATER WITH THE ALARM SOUNDING (FLASHING).** (Omitted if an alarm is not required per Alarms, Section 30.)
17. Hyperthermia can result in death. Symptoms of hyperthermia include high body temperature, headache, nausea, vomiting, tiredness, dizziness, fainting, and rapid pulse. If you begin to experience symptoms related to hyperthermia, turn off the heater and seek medical attention.
18. To avoid excessive room temperatures which can cause hyperthermia: **DO NOT** leave product running unattended in a confined space around infants, or individuals with reduced physical, sensory, or mental capabilities.
19. **SAVE THESE INSTRUCTIONS.**

User instructions

The instruction manual shall also include the following in a separate section or sections:

- a) Instructions and cautionary statements for usage cleaning, user-maintenance, operations recommended by the manufacturer, such as lubrication or nonlubrication, and a warning to the user that any other servicing should be performed by an authorized service representative.
- b) The function of indicator lights and symbols used for switches or manually operated controls shall be explained.
- c) Any heater employing a manually reset control shall be provided with instructions to the user regarding its operation.
- d) Specific instructions for the proper method of cord storage, total heater storage, and the like when the heater is not in use.

Heater Carton Information

The following information pertaining to the heater features and its use conditions shall be included on the external surface of the packaging of a heater. All information shall be grouped together and appear on one side, except the bottom, of the packaging.

- a) Complete electrical rating in Volts, Hertz, Watts;
- b) Portable type electric fireplace.
- c) This heater is hot when in use. To avoid burns, do not let bare skin touch hot surface. Keep combustible materials, such as furniture, pillows, bedding, papers, clothes, and curtains at least 3 feet (0.9 m) from the front of the heater and keep them away from the sides and rear.
- d) Do not use this heater in wet or moist locations.

Nameplate adhesive label material approval information:

Manufactured by DONGGUAN WARTON PRINTING CO LTD (MH46651) Cat. No. WT-08 or equivalent. Any cULus Recognized or cCSAus certified Pressure-sensitive label that comply with CSA C22.2 No. 0.15 and UL969 is acceptable.

ALTERATIONS

- (a) Marking as noted above.

FACTORY TESTS

Dielectric Voltage Withstand Test

The equipment at the conclusion of manufacture, before shipment, shall withstand for one min, without breakdown, the application of 1000 V ac between live parts and exposed non-current-carrying metal parts. The factory test may be made at existing room temp.

As an alternative a potential 20% higher may be applied for one second.

WARNING: The factory test(s) specified may present a hazard of injury to personnel and/or property and should only be performed by persons knowledgeable of such hazards and under conditions designed to minimize the possibility of injury.

SPECIAL INSTRUCTIONS FOR FIELD SERVICES

1. Component descriptions marked with either the “(INT)” or “(INT*)” identifiers may be substituted with other components providing the requirements specified under the notes in the “Description” are complied with.

COMPONENT SPECIAL PICKUP

1. Component descriptions marked with the identifier "(CT)" are subject to annual pickup and Conformity Testing.

DESCRIPTION

Notes:

1. Component Substitution
 - a) Critical components (those identified by mfr name, cat no), which are NOT identified with either "INT" or "INT*" are not eligible for substitution without evaluation and report updating
 - b) The term "INT" means a "Certified" and/or "Listed" (or a "Recognized" and/or "Accepted") component may be replaced by one "Certified" and/or "Listed" by another certification organization accredited by the appropriate accreditation body or scheme requirements to the correct standard, for the same application; providing the applicable country identifiers are included and requirements in item "d" below are complied with.
 - c) The Term "(INT*)" means a "Recognized" and/or "Accepted" component may be replaced by a component that is CSA Certified. The applicable country identifiers shall be included, the requirements in item "d" below as well as any "conditions of suitability" for the component (as recorded in this descriptive report) shall be complied with;
 - d) Components which have been substituted, must be of an equivalent rating, configuration (size, orientation, mounting) and the applicable minimum creepage and clearance distances are to be maintained from live parts to bonded metal parts and secondary parts.
 - e) Substitution of a "Certified" and/or "Listed" component with a component that is "Recognized" or "Accepted" is not permitted without evaluation and report updating.
 - f) Substitution of a "Recognized" and/or "Accepted" component by one that is not CSA Certified is not permitted without a proper evaluation as well as a report update because the Conditions of Acceptance of the original component may be different than the Conditions of Acceptance of the substitute component.
 - g) Component description marked with "UR Recognized" or "cUR Recognized" or "cURus Recognized" indicates that a component is UL Recognized and accepted for use in the end product described in this report based on UL Conditions of Acceptability. Conditions of Acceptability of UR Recognized components are based mainly on flammability ratings, electrical ratings, temperature, and number of cycles.
2. Approval codes:

Certified = CSA Certified and suitable for the application.
Accepted = CSA Component Acceptance and suitable for the application.
UL Listed = UL Listed and suitable for the application.
UR/cUR Recognized = UR/cUR and suitable for the application.

General: The subject models are portable electric fireplaces for household indoor use, detailed technical data and construction are described in the following items and otherwise specified in Att1, 2 and 3. They are similar in construction except the Heater Compartment Assembly described in Item 3 and 8, the Dimmer Assembly described in Item 10 and Lighting Assembly described in Item 11.

1. Top Cover:

Material: Painted sheet steel.
Dimensions: Overall approx. 388 mm long by 270 mm wide by 22 mm high, min 0.7 mm thick.
Mounting: Secured to Main Frame by screws.
2. Main Frame:

Material: Painted sheet steel.
Dimensions: Overall approx. 361 mm long by 232 mm wide by 425 mm high, min 0.7 mm thick.
Openings: Provided with 32 louver type openings in the rear cover, each opening is 40 mm by 3.8 mm.

- 3A. Bottom Heater Compartment Enclosure: For models ND-180S, ND-180SL and ND-180SB.
Material: Painted sheet steel
Dimensions: Min 0.8 mm thick, overall approx. 271 mm long by 228 mm wide by 75 mm high.
Openings: Provided with 22 slot type openings in the front as air outlet, each openings is measured 42 mm high by 4.8 mm wide.
Note: See Att1 Fig 24 for details.
- 3B. Bottom Heater Compartment Enclosure: For models ND-180M, ND-180ML and ND-180MB.
Material: Painted sheet steel
Dimensions: Min 0.8 mm thick, overall approx. 304 mm long by 187 mm wide by 62 mm high.
Openings: Provided with 26 slot type openings in the front as air outlet, each opening is measured 42 mm high by 4.8 mm wide. Provided with 12 slot openings in the rear as air inlet, each opening is Measured 39 mm long by 4.8 mm high. Provided with 22 openings in the bottom, each is approx. 15 mm to 64 mm long by 5 mm high.
Note: No opening is located directly below live parts. See Att1 Fig 3 for details.
4. Supporting Feet: Four provided.
Material: ABS.
Flame rating: UL94 HB at 1.5 mm thick.
Dimensions: Each is 100 mm high by 6 mm thick
Mounting: Each is secured to Main Frame with screws.
5. Door: Decorative part. See Att1 Photos.
Material: ABS and tempered glass.
Dimensions: Shaped as shown. The plastic frame is approx. 300 mm long by 260 mm high. The glass panel is approx. 252 mm by 220 mm by 5 mm thick.
Flame Rating: UL 94 HB at 1.5 mm thick, all colours, RTI (Elec) 60°C.
Note: Not function as fire and electrical enclosure.
6. (INT) Power Supply Cord: Certified or UL Listed.
Rating: HPN-R, 105°C, 300 V, No 16/2 AWG.
Plug Cap Configuration: NEMA 1-15P, polarized, moulded. Rated 125 V, 15A.
Length: 1.8m~2.4m from the face of attachment plug to the point of entry into the heater
7. Strain Relief Bushing: Certified or UR Recognized.
Designation: 4N-4.
Manufacturer: Heavy power Co., Ltd (E107293)
Remarks: Suitable for No 16/2 AWG, HPN-R cord.
- 8A. Heater Compartment Assembly: For Models ND-180SB, ND-180S and ND-180SL.
Manufacturer: Ningbo Gengxin Appliance Industry Co., Ltd.
Designation: ND-18D1-148.
Rating: 120 V, 475 W *2.
Note: Refer to Att1 Photos Fig 17, 22, Att2 Illustration 26
- (a) Heater Element: consists of sheet steel enclosure and quartz tube.
- i. Enclosure: Consists of four pieces of sheet steel.
Material: Galvanized sheet steel.
Dimensions: Overall 187 mm long by 85 mm wide by 48mm high, min 0.7 mm thick.
Mounting: Formed and secured to blower motor wheel housing with screws.

- ii. Quartz Tube: Two provided.
Material: Quartz.
Dimensions: Each is 12mm dia by 180 mm long.
Mounting: Secured to Quartz Tube Holder by trap fit.
Note: Winded with heat sink fins, 20 turns, stainless steel, min 0.3 mm thick.
- iii. Quartz Tube Holder: Four provided.
Material: ceramic.
Dimensions: Each is 18 mm dia by 10 mm long.
Mounting: Secured to Heater Element Compartment Enclosure by trap fit.
- iv. Heating Elements:
Winding: Nichrome type, two elements are connected in parallel, each element is made of 0.65 mm diameter wire, helically wound in the Quartz Tube, each resistance is 20 Ohms at 25°C.
- v. Temperature Limiting Control: cURus Recognized.
Manufacturer: CHUNG SHUN INDUSTRIAL CO (E221650)
Designation: CH-005-H.
Rating: 125 V ac, 16 A, 6,000 operations, 85 C temperature rating, self-holding type.
Mounting: Riveted to the Heater Top Plate.
Remarks: Min 6.4 mm clearance and 12.7 mm creepage are maintained between temperature-limiting control body and the Blower Wheel Housing.
Note: Acting as manual reset type temperature limiting control.

- (b) Blower Motor: Accepted by test. Previously evaluated in report 216946-1938633.
Manufacturer: CIXI DEYING Motor MFR Co Ltd.
Designation: YJ48A1
Rating: 120 V, 60 Hz, 14 W
Enclosure: Open.
Insulation: Class A.
Protection: Impedance protected
Type: Shaded pole induction motor.
Mounting: Secured to the Blower Wheel Housing by trap fit with screws.

- i. Stator:
Material: Laminated stack steel
Dimensions: Shaped as shown, made of two parts, 61 mm by 61 mm, 11 mm stack
Windings: Enamelled copper wire.
Bobbin: Min 1.3 mm thick, overall 35.6 mm by 30.5 mm by 40 mm. Two layers of polyester adhesive tape is wrapped around winding.
Connection: Provided two male quick connect tabs, each one is 0.8 mm thick, 6.35 mm wide, with solder hole.
- ii. Rotor: Laminated steel, stacked 10.6 mm high, cast in aluminum, overall by 12.5 mm high and 29.6 mm diameter. Secured between endbells.
- iii. Insulation System: Class A.

Item	Description
Coil	UR Recognized material, Enameled copper wire, Cat No MW75, 0.19 mm

	dia by 1970 turns.
Bobbin	UR Recognized material, Cat No 101L, made by 'DUPONT', flame rating V-2 at 1.3 mm thick, all colors.
Tape	UR Recognized material, Polyester tape, 0.05 mm thick each layer, two layers..

iv. Endbells: Cast aluminum, provided with press-fit bearing, secured by through bolts to stator.

(c) Blower Wheel:

i. Blower Wheel Housing: Formed steel, mounted to the Heater Compartment with four sheet metal screws.

ii. Blower Wheel Fan:

Material: Steel sheet.

Dimensions: Overall 58 mm OD by 180 mm long, comprising of 22 blades spaced equally, each blade is 180 mm by 9.0 mm by 0.6 mm thick.

Mounting: Secured to the shaft of the motor by press fits.

8B. Heater Compartment Assembly: Models ND-180MB, ND-180M and ND-180ML.

Manufacturer: Ningbo Gengxin Appliance Industry Co., Ltd.

Designation: ND-18D2S-155.

Rating: 120 V, 725 W *2.

Note: Refer to Att1 Photos Fig 8, 9, Att2 Illustration 25

(a) Heater Element:

i. Heater Top and Bottom Plates: Two pieces.

Material: Mica

Dimensions: 0.65 mm thick, each is 198 mm by 36 mm.

Mounting: Secured to heater end plate by staple.

ii. Heater End Plate: Two provided. cURus Recognized material.

Manufacturer: NINGBO SUZHIHUA PLASTICATION CO LTD (E481946).

Material: ABS.

Designation: SZH-001.

Flame Rating: UL 94V-0 at 1.6 mm thick, RTI 60°C, BK.

Dimensions: Min 2 mm thick, each is 44.0 mm by 34.5 mm by 8.2 mm.

Mounting: Secured to heater top and bottom plates by trap fit.

iii. Heating Coil Support: Four provided.

Material: Mica.

Dimensions: Overall 196 mm by 14.0 mm by 0.7 mm thick.

Mounting: Secured to Heater End Plate by trap fit.

iv. Heating Elements:

Winding: Nichrome type, two elements are connected in parallel, each element is made of 0.65 mm diameter wire, helically wound onto the Heating Coil Support, resistance each is 20 Ohms at 25°C.

Connection: Provided three male quick connect tabs, each one is 0.8 mm thick, 6.35 mm wide, 25 mm long, with solder hole.

- v. Temperature-limiting Control (Manual Type): cURus Recognized.
Manufacturer: AUONE ELECTRONIC MFG LTD (E179137)
Designation: AUT-85-P.
Rating: 125 V ac, 16 A, 6,000 operations, 85C temperature rating, self-holding type.
Mounting: Riveted to the Heater Top Plate.
NOTE: This is a self-holding type and it will stay opened until the power is disconnected from the heater. This control is NOT automatic reset type.
 - vi (INT) Quick Connect: Certified or UR Recognized.
Type: Crimp type, female, insulated with PVC tubing.
- (b) Blower Motor: Same as described in Item 8A (b).
- (c) Blower Wheel: Same as described in Item 8A (c)
9. Switch Compartment:
- a. Power Switch: cURus Recognized.
Manufacturer: Ningbo Master Soken Electrical Co., Ltd. (E218957)
Designation: RK1-11
Rating: 125Vac, 16A
Type: Rocker type, SPST
Terminals: Quick connect tabs with 6.35 mm width.
Mounting: Secured to Heater Element Enclosure/Guard by snap fit.
 - b. Heater Element Switch: Same as above item a.
 - c. Temperature Regulating Control: cURus Recognized. Only for Models ND-180S, ND-180SL, ND-180M and ND-180ML.
Manufacturer: Au One Electrical FIY (E179137)
Designation: 901B
Rating: 125Vac, 15A, 100°C with 30,000 operations
Mounting: Secured to supporting surface by two screws.
Remarks: Series in circuit of one heating element for temperature regulating.

Alternate Temperature-Regulating Control: cURus Recognized.
Manufacturer: Cixi City Xinyi Temperature Controller Co., Ltd (E227238)
Designation: QX201
Rating: 125Vac, 16A, 100°C with 50,000 operations
Mounting: Secured to supporting surface by two screws.
Remarks: Series in circuit of one heating element for temperature regulating.

Alternate Temperature-Regulating Control: cURus Recognized.
Manufacturer: CIXI CITY KADA THERMOSTAT CO LTD (E346969)
Designation: KDT-200
Rating: 125Vac, 15A, 250°C with 100,000 operations
Mounting: Secured to supporting surface by two screws.
Remarks: Series in circuit of one heating element for temperature regulating.
 - d. Temperature-Regulating Control and Dimmer Knob:
Material: ABS, Cat. No. HI-121H, made by 'Ningbo LG Yongxing Chemical Co., Ltd.'

Rating: HB, RTI 60°C.

10A. Dimmer Assembly: For Models ND-180S and ND-180M.

i. Printing Wiring Board

Flame rating: 94V-1 or better in flame rating

Mounting: Screwed to L-shaped sheet steel plate mounted to steel shelf.

Components: The following components are secured to PWB by soldering.

Resistor (R1): rated 220Kohms, 1W

Resistor (R2): rated 3.3Kohms, 1/4W

Resistor (R3): rated 680Kohms, 1/4W

Resistor (R4): rated 47Kohms, 1W

Capacitor (C1): X-capacitor, rated 0.1uF, 275 Vac, 105C

Capacitor (C2): X-capacitor, rated 0.15uF, 275 Vac, 105C

Triac (Q1): P/N BT136, rated 1.5A

Inductor: UR Recognized bobbin and winding material, min 105 C.

- ii. Potentiometer (VR) (Optional): Secured on the switch compartment by screw nut, connected to PWB by wire. P/N WH118-I, rated 1Mohms, 1 W.

10B. Dimmer Assembly: For Models ND-180SL and ND-180ML.

i) Printed Wiring Board:

Flaming Rating: 94V-1 or better in flame rating.

Dimensions: Min 1.5 mm thick, overall 65 mm by 66 mm.

Mounting: Secured to metal bracket with four screws.

Components: The following components are secured to PWB by soldering.

Connection: Provided with four male quick connect tabs and soldered to PWB, each is 6.35 mm wide by 0.8 mm thick.

- (1) Class 2 Transformer: Accepted by test, previously evaluated in report 216946-1938633.

Manufacturer: Ningbo City Gengxin Appliance Industry Co., Ltd.

Type: Open coil and core.

Cat/Model No: DB-2-03.

Rating: 120 V, 60 Hz input, 14V, 60 Hz, 2W output

Insulation Class: Class A.

Impregnation: Varnish.

Core: Silicon sheet steel, 0.55 mm thick each, 35 mm by 30 mm by 15 mm stack.

Mounting: Soldered to Printing Wiring Board.

Bobbin: Made of Polystyrene (PS), split type.

Primary Winding Enamel: Polyurethane

Leads: N/A, coil extensions are soldered to terminals stacked in the Bobbin.

Enclosure of Primary Windings: Made of Polystyrene totally enclosed the primary windings.

Primary Winding: 2500 turns of 0.1 mm dia enameled copper wire, 286 ohms cold resistance at 25°C.

Secondary Winding: 335 turns of 0.3 mm dia enameled copper wire, 1.0 ohms cold resistance at 25°C.

INSULATION SYSTEM:

Primary Connection Spacing: 12.7 mm minimum.

Primary Solder Connections to Primary Winding:

Solder connections located on bobbin integral pins, located outside of windings.

Solder connections min 5.5 mm to primary winding.

CROSSOVER INSULATION:

Primary Over Primary: N/A, accepted by Induced Potential test.

WINDING INSULATION:

Primary Winding To Secondary Winding:

<u>Layers</u>	<u>mm</u>	<u>Material</u>	<u>Total mm</u>
1	0.8	Bobbin	0.8

Primary Winding to Core:

Under Winding:

<u>Layers</u>	<u>mm</u>	<u>Material</u>	<u>Total mm</u>
1	0.7	Bobbin	0.7

Side (Flange):

<u>Layers</u>	<u>mm</u>	<u>Material</u>	<u>Total mm</u>
1	0.9	Bobbin	0.9

Outside (Core Window):

<u>Layers</u>	<u>mm</u>	<u>Material</u>	<u>Total mm</u>
2	0.05	Polyester tape	0.1
1	0.5	Enclosure of Primary Winding	0.5

PROTECTOR INSULATION:

Protector Solder Connection to Primary Winding:

<u>Layers</u>	<u>mm</u>	<u>Material</u>	<u>Total mm</u>
2	0.05	Polyester tape	0.1

Protector Body to Primary Winding:

<u>Layers</u>	<u>mm</u>	<u>Material</u>	<u>Total mm</u>
1	0.05	Polyester tape	0.05

Protector Crossover Lead to Windings: Insulation not provided. Induced

potential test performed with acceptable results.

Thermal Protector: cURus Recognized.

Manufacturer: XIAMEN SET ELECTRONICS CO LTD (E345932)

Cat No: K1.

Type: One shot.

Ratings: 250 V, 2 A, 102C Tf, 76C Th, 180C Tm.

Connection: Protector leads are mechanically secured and soldered to the primary winding.

Electrical Location: Primary.

Mounting/Location: Underneath primary outerwrap.

(2) Diodes (D1, D2, D3, D4): Accepted in application.

Designation: 1N4007.

Rating: 1000 V, 1 A.

Purpose: Rectifier.

(3) Capacitor (C1): Accepted in application.

Type: Electrolytic.

Rating: 470 μ F, 35 V, 105C max.

Electrical Location: Secondary.

(4) 3-Terminal Positive Regulator: Accepted in application.

Model: 78L05.

Rating: Vin: 30 V, Vout: 5 V, Ipk: 110 mA, IQ: 100 mA.

Electrical Location: Secondary.

ii. Potentiometer (VR) (Optional): Secured on the switch compartment by screw nut, connected to PWB by wire. P/N WH118I, rated 3Kohms, 1 W.

11A. Lighting Assembly: For Models ND-180MB, ND-180M, ND-180SB and ND-180S.

i) Lamp holder: cULus Listed. Two provided.

Manufacturer: ZHONGSHAN HENGLAN RUICHENG ELECTRICAL FACTORY. (E304097)

Designation: E12-105.

Type: Candelabra base.

Rating: 125 V, 75 W

Internal Lead Wire: Certified, AWM, I/A, 20 AWG, 150°C, 300 V. Further sleeved with certified fibreglass tubing.

External Lead Wire: Certified, SPT-2, 20 AWG, 105°C, 600V. A rubber bushing is provided on the steel sheet enclosure for leads passing.

Mounting: Secured to steel bracket by screw type strain relief.

Remarks: Lamp holder screwshell is connected to the neutral conductor.

Alternative Lamp holder: cULus Listed

Manufacturer: RUN KUN LIGHTING ELECTRICAL FACTORY. (E301421)

Designation: RK-109.

Type: G9 base.

Rating: 250V, 250W or 500W.

Alternative Lamp holder: cULus Listed.

Manufacturer: YA LI ELECTRIC CO LTD. (E344649)
 Designation: YL-304.
 Type: G9 base.
 Rating: 250 V, 250 W.
 External Lead Wire: Certified, AWM, I/A, 20 AWG, 150 °C, 300V.
 Further sleeved with certified fibreglass tubing.
 Mounting: Secured to steel bracket by screw type strain relief.
 Remark: Lampholder screwshell is connected to the neutral conductor.

- ii) Lamp: Two provided.
 Type: Candelabra type
 Rating: 120 V, 25 W.

11B. Lighting Assembly: For Models ND-180ML, ND-180SL.
 LED (LED1~LED3): Each is rated 2V, 30mA. Soldered on Aluminum board.
 Electrical location: Secondary of the Transformer.

12. Faux Fire Motor: Accepted with tests. Previously evaluated in submittor’s report 216946-2056349 and 2426184.
 Manufacturer: Ningbo City Gengxin Appliance Industry Co., Ltd.
 Designation: GX-EF450A or 42TYJ.
 Rating: 120 V, 60 Hz, 3 W.
 Enclosure: Open.
 Insulation: Class A.
 Protection: Impedance protected.
 Type: Synchronous, induction motor, shaded pole type.
 Mounting: Secured to the metal plate and then mounted to metal enclosure with screws.

- i. Enclosure:
 Material: Steel sheet.
 Construction: Consists of two pieces, secured together by press and trap fit.
 Dimensions: Min 0.8 mm thick, overall 42 mm dia by 25 mm high.
 Ventilation Openings: Six provided on opposite shaft end, maximum 6.5 mm by 4 mm, shaped as shown.
 Mounting: Secured to the metal plate by screws.
- ii. Stator Leads: Certified or UR Recognized.
 Type: TEW/AWM, I/A, 105C, 300 V, min 24 AWG.
 Connection to Coil ends: Mechanically secured and soldered.
- iii. Rotor:
 Material: Magnet.
 Dimensions: Overall 18 mm OD by 12 mm thick.
 Method of securing to shaft: Press fitted to shaft.
- iv. Insulation System: Class A.

Item	Description
Coil	UR Recognized material, two coils provided, Enameled copper wire, 0.053 mm dia by 5000 turns.
Bobbin	UR Recognized material, Polyamide 66 (PA66), E I DUPONT DE NEMOURS & CO INC, designated FE19015, flame rating: UL 94 V-0,

	rated 130 C, min 0.8 mm thick, overall 40 mm dia by 6 mm high.
Tape	UR Recognized material, PET film tape, JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD, designated JY25-A#, rated 130 C, 0.06 mm thick each layer, two layers.

- v. Shading Bar Plate:
 Material: Steel sheet.
 Dimensions: Min 0.8 mm thick, overall 41 mm dia by 10 mm high.
 Mounting: Secured between enclosures.

- 13. Faux Fire Logs: Decorative part.
 Material: Polycarbonate (PC).
 Manufacturer: NINGBO LG YONGXING CHEMICAL CO LTD (E203955)
 Designation: LUPOY GP-1000(m) (#)
 Flame Rating: UL 94 HB at 3.0 mm thick, all colours, RTI 130°C.
 Mounting: Secured inside Main Frame by screws.
- 14. Faux Flame Screen: UR Recognized material. Decorative part.
 Material: PP
 Flame Rating: UL 94 HB at 2 mm thick, all colours, RTI 60°C.
 Mounting: Secured to inside metal bracket by screws.
- 15. Internal Wiring: Certified or UR Recognized.
 - a) Temperature limiting Control leads: AWM 1015, 105°C, 600V; or AWM 3122, 200°C, 300V; or AWM 3135, 200°C, 600V, min 18 AWG.
 - b) Heating element leads: AWM 1015, 105°C, 600V; AWM 3122, 200°C, 300V; or AWM 3135, 200°C, 600V; 16 AWG or 18AWG;
 - c) Blower Motor leads: AWM 1015, 105°C, 600V; or AWM 3122, 200°C, 300V; or AWM 3135, 200°C, 600V, 22 AWG min;
 - d) Faux Fire Motor: AWM 1015, 105°C, 600 V, 24 AWG min.
- 16. Quick Connect: Certified or UR Recognized.
 Type: Crimp type, female, insulated with PVC tubing.
- 17. Wire Connector: Certified or UR Recognized.
 Rating: 105°C, 300 V
 Type: Closed and crimp splices, nylon insulated.

TEST HISTORY

Edition: 1 (project 70052275)

General: The tests were conducted on Model ND-180M, ND-180S, ND-180SL and ND-180ML. The tests summarized below were conducted with satisfactory results. Detailed test results are on file at CSA Group Documentum project 70052275 testdata folder.

Clause	Description	Verdict (P=Pass, F=Fail, N=Not Applicable, W=waived)	Comments
CSA C22.2 No 46-13			
7.2	Rating	P	
7.4	Temperature (Normal)	P	
7.5	Dielectric Strength	P	
7.6	Temperature (Abnormal)		
7.6.4.2	(a) Two layers cheesecloth drape (b) White duck lining two layers cheesecloth	N	Portable type
7.6.4.3	Overturn test	P	
7.6.4.4	In-car heaters overturn	N	Not in-car heater
7.6.4.5	Vertical wall	P	
7.6.4.6	Stall fan	P	
7.6.4.7	Floor-insert heaters air exhaust restriction	N	Not floor-insert type
7.6.4.8	Six layers cheesecloth drape	P	
7.6.4.9	Air filter block test	N	No air filter provided
7.6.5.3	Drape test: (a) Two layers cheesecloth drape (b) White duck lining two layers cheesecloth	N	Not baseboard heater or wall-mounted heater
7.6.5.4	Drape test for portable baseboard heaters	N	Not portable baseboard heater
7.6.5.5	Furniture restriction test	N	Not baseboard heater or wall-mounted heater
7.6.5.6	Furniture restriction test for portable baseboard heaters	N	Not portable baseboard heater
7.6.5.7	Shredded paper test	N	Not baseboard heater
7.6.6	Abnormal temperature tests for in-car heaters	N	Not in-car heater
7.6.7	Abnormal input for heaters with PTC elements	N	No PTC
7.6.8	Cold ambient start-up	N	No PTC
7.6.9	Starting	N	No PTC

Clause	Description	Verdict (P=Pass, F=Fail, N=Not Applicable, W=waived)	Comments
CSA C22.2 No 46-13			
7.6.10	Ruptured element test for forced-air cord-connected heaters with sheath-type heating elements	N	Not this type heater
7.7	Extreme operating voltage (maximum) test	P	
7.8	Strain relief	P	
7.9	Overload and endurance — Manually operated switches	N	Certified or UR Recognized switch
7.10	Performance of fusible links	N	No fusible link
7.11	Physical abuse tests	P	
7.12	Leakage current	P	
7.13	Performance of thermally operated controls	N	Certified or UR Recognized thermal controls
7.14	Performance of heaters having PTC heater elements	N	No PTC
7.15	Hydrostatic test	N	No pressure components
7.16	Dropping melted particles test	N	Not baseboard heater
7.17	Stability	P	
8.6.1 to 8.6.3	Tests for double-insulated electric air heaters	N	Not double insulated

Clause	Description	Verdict (P=Pass, F=Fail, N=Not Applicable, W=waived)	Comments
UL 1278 (4th Edition)			
38	Power Input Test	P	
39	Leakage Current Test	P	
40	Normal Temperature Tests	P	
41	Alarm Device Endurance Test	N	No alarm provided.
42	Abnormal Operation Test	P	
42.2	Overvoltage Test	P	
42.3	Stalled Fan	P	
42.4	Tip Over	P	

Clause	Description	Verdict (P=Pass, F=Fail, N=Not Applicable, W=waived)	Comments
UL 1278 (4 th Edition)			
42.5	Vertical Wall	P	
42.6	Terry Cloth Drape	P	
42.7	Terry cloth band drape test	N	Not for elevated use location
42.8	Wall-hung heaters	N	Portable type
42.9	Abnormal Ambient Test	N	No automatic temperature limiting control
42.10	Motor overload and stalled motor	N	Not this type motor
42.11	Impedance-protected motors	W	cURus Recognized motors, conducted in 42.3.
42.12	Motor connected across heating element	N	Not this type
43	Endurance Test	N	No auto control
44	Short Circuit Test	N	Not this type
45	Overload Test – High-Voltage Transformers	N	No High-Voltage Transformers
46	Burnout Test – High-Voltage Transformers	N	No High-Voltage Transformers
47	Component Failure Test	N	
48	Dielectric Voltage-Withstand Test	P	
49	Insulation Resistance Test	N	No thermal insulation material
50	Water Spray Test	N	Not for outdoor use
51	Stability of Movable Heaters	P	
52	Element Support Impact Tests	P	
53	Drop Test	N	Not for elevated location use
54	Test for Permanence of Cord Tag	P	
55	Protection Against Injury to Persons Test	P	
56	Knob Securement Test	N	No removable knob provided
57	Strength of Adjustment Stop Test	P	
58	Hydrostatic Test	N	No Pressure components
59	Strain Relief Test	P	
18	Static Load Test For Hanging Means	N	Portable type

Edition 2: Project 80078545

Update report to add alternate decorative door for Model ND-180MB. No additional tests were deemed necessary.

Construction Review:

Construction review not applicable. Only added decorative door, no construction changed.

Edition 3: Project 80159940

Update Report 70052275 to the Certification Notice of Electric Air Heaters No. 18. No additional tests were deemed necessary.

Major Revisions: Notice- Appliances 18 for Standard UL 1278 (4th Edition)

Clauses	Changes	Comments	Compliance
4.3.4.1, 26.4	Withdrawal and replacement of UL 508C with UL 61800-5-1.	No such component	N/A
67.13, 67.14	New permanent marking requirements relating to hyperthermia.	Provided hyperthermia marking	Comply
67.25, Figure 67.2	New temporary marking requirements relating to hyperthermia.	Provided hyperthermia marking	Comply
68.2.1	New instruction requirements relating to hyperthermia.	Instruction manual added hyperthermia information	Comply
69.1, 69.2, 69.3	New cord tag requirements relating to hyperthermia.	Cord tag added hyperthermia information	Comply

Construction Review:

Construction review not applicable. No construction changes.

This Edition supersedes all previous editions.

---End of Report---