User Manual

Electric Vehicle Charger

Read the “Important Safety Instructions” before use to ensure safe operation.
After reading the user manual, store it in an accessible place for eas y reference.

EVA030SL-PN , 30kW

www.lge.com
Copyright © 2024 LG Electronics Inc. All Rights Reserved.

TABLE OF CONTENTS

page

PRE-CHECK INFORMATION ---------- **3**

SIGNS ON THE EVSE ---------- 3

IMPORTANT SAFETY INSTRUCTIONS ---------- **4**

INSTRUCTIONS PERTAINING TO A RISK OF FIRE OR ELECTRIC SHOCK ---------- **5**

MOVING AND STORAGE INSTRUCTIONS ---------- **7**

Storage ---------- 7

Transportation and Delivery ---------- 7

Accessories ---------- 7

CHARGER SPECIFICATIONS ---------- **8**

MECHANICAL CHARACTERISTICS ---------- **9**

Charger Size ---------- 9

Charger Appearance ---------- 10

INSTALLATION INSTRUCTIONS ---------- **11**

Wiring and Grounding(Ext.) ---------- 11

Installation Location ---------- 12

Installation Process_Charger ---------- 13

Wall mounted Back Panel Installation Guide ---------- 13.1

Wiring process ---------- 14

Grounding Process ---------- 14

Wiring and Grounding(inter.) ---------- 15

OPERATING INSTRUCTIONS ---------- **17**

Charging Precautions ---------- 17

Charging Operation Procedure ---------- 17

Information Guide when it charging ---------- 18

FAULT CODES ---------- **19**

PRE-CHARGING PROCESS ---------- **20**

SYSTEM USAGE GUIDE ---------- **23**

Open Source Software Notice Information

To obtain the source code under GPL, LGPL, MPL, and other open source licenses that have the obligations to disclose source code, that is contained in this product, and to access all referred license terms, copyright notices and other relevant documents please visit *https://opensource.lge.com*.

LG Electronics will also provide open source code to you on CD-ROM for a charge covering the cost of performing such distribu tion (such as the cost of media, shipping, and handling) upon email request to *opensource@lge.com*. This offer is valid to anyo ne in receipt of this information for a period of three years after our last shipment of this product.

LGE Internal Use Only

PRE-CHECK INFORMATION

- The information provided in this document includes general descriptions or technical characteristics of the included product.
- This document is not intended to be used or replaced for specific users who wish to determine the suitability or reliability of this product.
- Users or those responsible for this product need to know correct usage and perform risk assessment in advance, and evaluation and testing related to specific applications or use of the product are required.
- Please inform us if there are errors or modifications needed in this document.
- To install and use this product, safety regulations of the relevant country and region must be strictly complied with.
- For safety reasons and compliance with documented system data, only the manufacturer is obliged to repair parts. Proper training is necessary to use the product in accordance with technical safety requirements.
- Failure to use the software of our hardware products accurately can lead to injuries, damage or operational errors.

Warnings and Dangers

	This is a safety prevention symbol. **Caution: If these safety precautions are not followed, injuries or damage can occur.**
	Hazard signs relate to high voltage matters. **If the safety rules and instructions in this manual are not adhered to, death or serious injury could occur due to electric shock and burns.**

SIGNS ON THE EVSE

Symbols

	Ground for field wiring

IMPORTANT SAFETY INSTRUCTIONS

WARNING

This manual contains important instructions for Models EVA030SL-PN that shall be followed during installation, operation and maintenance of the unit.

1. Read all the instructions before using this product.
2. This device should be supervised when used around children.
3. Do not put fingers into the electric vehicle connector.
4. Do not use this product if the flexible power cord or EV cable is frayed, has broken insulation, or any other signs of damage
5. Do not use this product if the enclosure or the EV connector is broken, cracked, open, or shows any other indication of damage.
6. **First, read this**: This document includes important safety information. Before repairing or performing any maintenance in case of malfunction, read the entire manual first.
7. **Qualified personnel**: The charger must be installed, disassembled, or inspected by an electrician in accordance with the electrical regulations of the relevant area.
   The information in this manual does not alleviate the reader's responsibility for local safety regulations and standard regulations.
8. **Electric shock accident**: There can be a potential risk of fatal electric shock accidents. Inspection of the product's interior must be performed exclusively by a certified electrician.
9. **Do not modify**.: Do not arbitrarily modify the charger. Doing so will void the warranty period and could result in a fatal electric shock or fire.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE OR ELECTRIC SHOCK

- To prevent the risk of fire or electric shock accidents, please read and follow these safety precautions and operating procedures carefully.
- There is a risk of electric shock. Do not connect the electric vehicle and the charger before the inspection. Just turning off the charger does not reduce the risk.
- Do not touch the non-insulated parts of the output connector. There could be a serious risk of electric shock.
- Do not use a connector with exposed damaged wires or a damaged connector. Replace all damaged parts with new ones before operation.
- Do not disassemble the charger. Have it inspected by a certified technician. Incorrect assembly can cause an explosion, electric shock, or fire.
- Never use the charger if the vehicle's inlet or charger connector is wet.
- Do not install or operate with wet hands. There is a risk of electric shock.
- Disconnect the input power before opening the charger case. Contact with electrically live parts of the charger can lead to electric shock accidents, serious injuries, or even death.
- Perform grounding work according to national electrical safety standards and local electrical safety standards. Not grounding properly can lead to fatal electric shock accidents.

⚠CAUTION

- Ensure the charger connector is free from water, humidity, or foreign substances.
- Do not place the charger near flammable materials during use. Keep it away from carpets and cluttered workspaces.
- Educate children to prevent them from playing with the device.
- Users are responsible for adhering to national and local electrical safety standards in the area where the device is installed.
- Do not connect or disconnect the connector while charging. Doing so damages the connector, and may damage the charger or cause the battery to explode.
- Do not operate the charger with the panel removed or the door open.
- If the charger is dropped, suffered a severe shock or any other type of damage, do not operate it. Call a service manager.
- In dusty environments, more frequent maintenance is required for maximum device lifespan and optimal performance.
- Do not use the charger during heavy rain or lightning.
- **Electric shock accident**: There is a risk of electric shock. Hazardous electrical energy is stored in the capacitor. Even if the electric supply to the charger is cut off, do not open the charger case for at least 5 minutes after disconnection.
- Ensure that the power supply to the charger is off before proceeding with charger maintenance procedures.

WARNING

- GROUNDING INSTRUCTIONS : This product must be connected to a grounded, metal, permanent wiring system, or an equipment grounding conductor must be run with the circuit conductors and connected to the equipment grounding terminal or lead on the product

• SAVE THESE INSTRUCTIONS

MOVING AND STORAGE INSTRUCTIONS

EVA030SL-PN

For maximum performance, please read the following instructions.

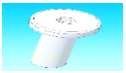
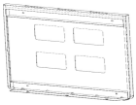
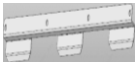
Storage

Before installing and powering the charger, ensure that the product is stored in a clean and dry environment at a temperature of -30 °C to 50 °C(-30 °F to 122 °F) . The charger must always be stored upright in a box during cargo loading. This protects the charger from dust and scratches. The charger must be stored in a protected location to avoid damage. Do not stack other items on top of it.

Transportation and Delivery

- Check the product box for any damage.
- After opening the box, confirm there are no damage or abnormalities in the product's appearance.
- When transporting the product, keep the cover locked. Causing shocks or dropping the product during transportation can result in product damage.
- The device is not to be lifted or carried by either the flexible cord or the EV cable.

ACCESSORIES

	External hexagonal expansion screw 4pcs, M8*60mm (Wall mounted back panel + Wall)	4 piece
	Flat head hexagonal male nail 7pcs, M6*16mm (SET+ Wall mounted back panel)	7 piece
	RJ45 waterproof connector	1 piece
	Wall mounted back panel	1 piece
	Charging pile back buckle component	1 piece
	Open Door Key	2 piece

CHARGER SPECIFICATIONS

Item		AC	DC
Model name		EVA030SL-PN	
Size (W x L x H) (mm)		650 x 750 x 237	
Weight		77 kg (± 2Kg)	
AC input	Voltage	3P 4W (384~528V)	-
	Frequency	60 Hz	-
	PF	≥0.98	-
DC output	Max. Voltage	-	1000 V
	Max. Current	-	80 A
	Max. Capacity	-	30kW
Efficiency (%)		≥94	
IP Level		IP55 (NEMA3R)	
Operating Temp.		-30 °C ~ 50 °C(-31 °F to 122 °F)	
Operating Humidity		<Rh95% (Non-Condensing)	
Storage Temp.		-40 °C ~ 70 °C (-40 °F to 158 °F)	
Storage Humidity		<Rh95% (Non-Condensing)	
Protection Features		Over current / Over Voltage / Over Temperature, Short circuit, Grounding Protection	
User Authentication / Payment		RFID, QR, NFC, Credit Card	
Indicator	8inch Touch screen	-	• Fault Details Charge Status(SoC)
	Charging Status LED Indicator	-	• Stand By : Green • Charging : Blue • Fully Charged : Green • Error : Red
Charge Type	Format	-	CCS1 (Combo1)
	Connector(1Ch)	-	Type CCS1 Meet IEC62196
Voice Guidance	Speaker	-	Audio output(5 W)
Recommended Mobile Monthly Data Usage		-	A minimum of 1GB or more[1)]

NOTE

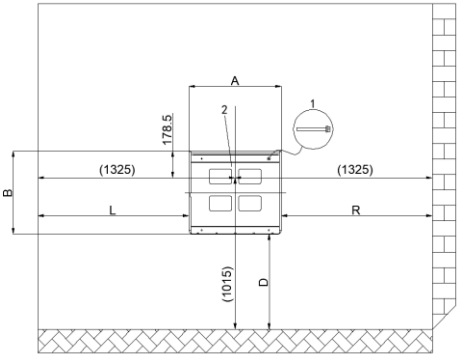
- [1)]Subject to changes depending on the operating company's environment and policy.

MECHANICAL CHARACTERISTICS

Charger Size [unit : mm]

Front View

Rear View



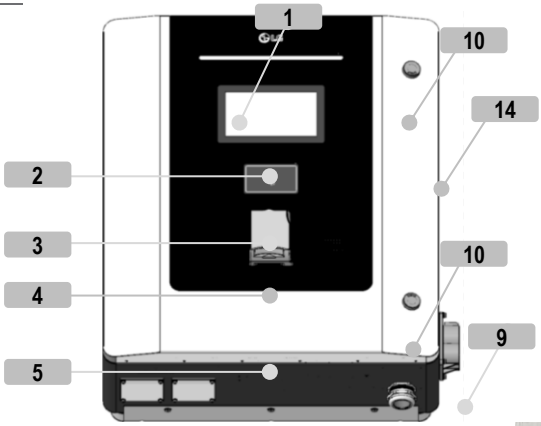
Parar	Recommended Size (mm)
D	640
L	1000
R	1000

NOTE

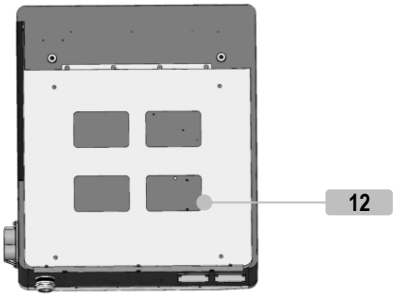
- Except for cases for the convenience of persons with disabilities(at least 1175mm)
- for the convenience of the disabled (at least 640mm) → refer to 12page

Charger Appearance

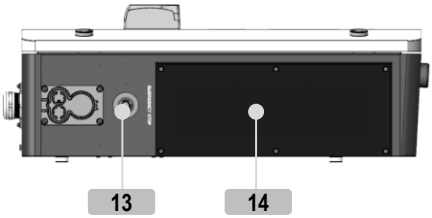
Front View

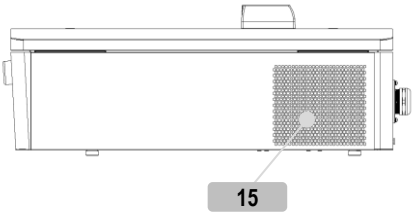


Rear View



Side View





No.	Description
1	LED lighting
2	8inch Touch Screen
3	RFID
4	Card Reader_VPOS
5	DC Meter_window
6	Network cable interface
7	3Phase AC input through hole of charging pile
8	DC output through hole of charging pile
9	Holster
10	Door Lock
11	CCS1 Coupler
12	Wall mounted back panel
13	Emergency Switch
14	Air inlet
15	Air outlet

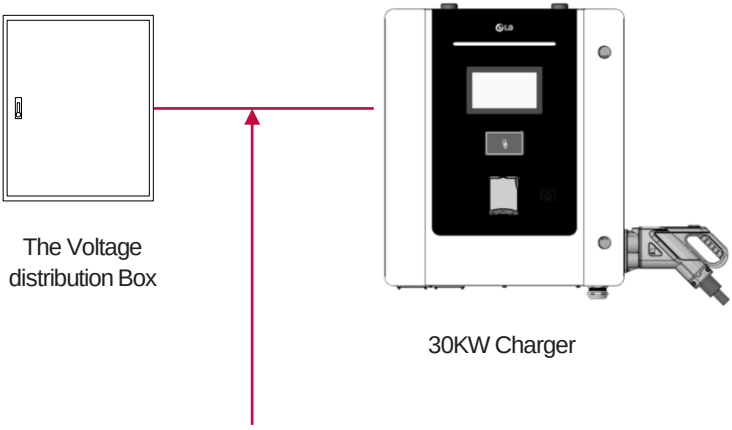
INSTALLATION INSTRUCTIONS

Wiring and Grounding

DC 30KW Connection

* 1) ~ 3)Requirement

1) AC input cable
2) Ground : Choose the right cable for capacity
3) LAN cable (Direct Type)



1) AC 480 V , 3P 4W , Y-connection
2) Ground(PE)

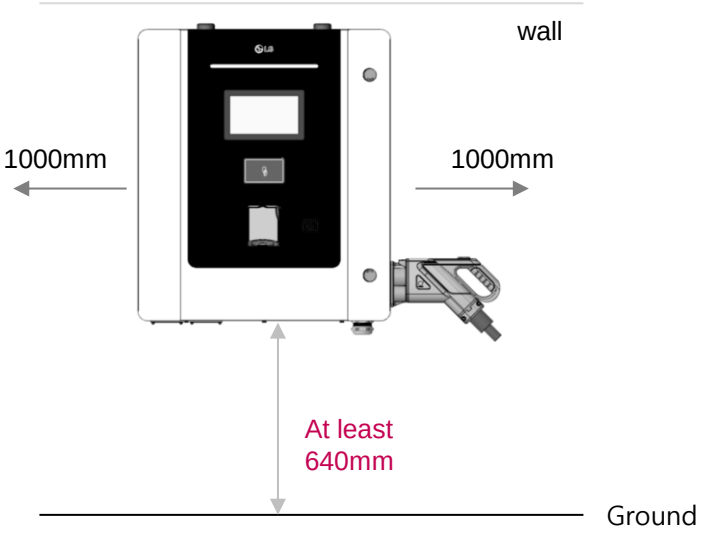
NOTE

- LAN cables are not intended for network communication and are intended for CAN communication and emergency stop signal transmission This is the connection cable.

Caution!	• Install the charger on a non-flammable pad (concrete, stone, brick, etc.) at least 640 mm (25.2 inches) above ground level. (See as below) • Do not expose the charger to rain, high temperatures, dust, corrosive gases, flammable substances or explosive gases. • When removing packaging wrap, take care not to damage the product with a knife (or sharp tool). • During installation, make sure to remove the simple manual attached inside.

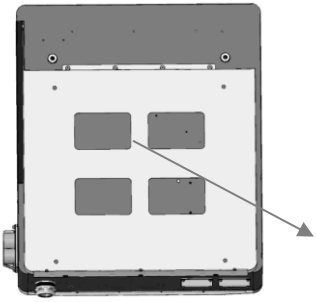
Installation Location

- For optimal performance and maximum lifespan, choose your installation location carefully. Operational lifespan and performance are affected by the location of the charger.
- Choose a dry area with good ventilation.
- Place the product approximately 30 cm (11.8 inches) away from the wall for adequate ventilation.
- To reduce the risk of fire, install the charger on a non-combustible surface made of concrete, stone, brick, or iron.
- Do not block the front of the charger.



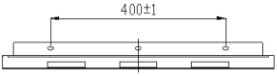
Installation Process_Charger

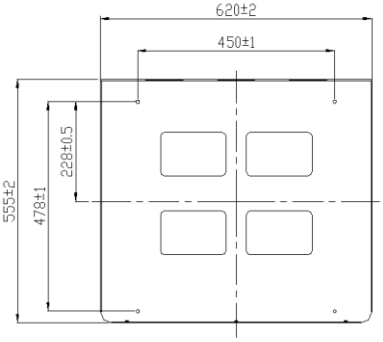
View)

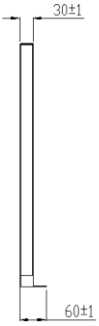


(Rear View)

Refer to 13.1-13.4 page of Drilling,Depth Installation and other Guides







Back component hole size

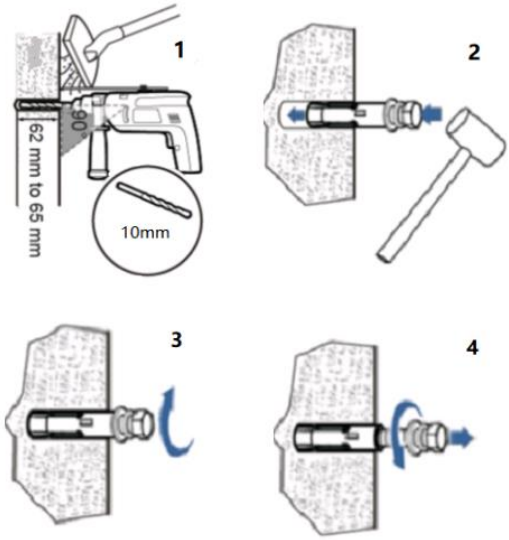
NOTE : The back component is installed and fixed using M6 expansion screws

NOTE

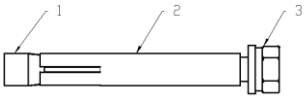
- Refer to Back-Plane and Wall Installation Guide

Installation Process_Wall mounted Back Panel

The operation flow of wall opening



1. Expanded Nut
2. Expansion Tube
3. M8*60 Combination Screw



Step 1, Drill holes to a depth of 62 mm to 65 mm using a hammer drill.

Step 2, Partially tighten each expansion bolt, place it vertically into the hole, and use a rubber mallet to pound it until the expansion sleeve completely enters the hole.

Step 3, Partially tighten the expansion bolts.

Step 4, Remove M8*60 screws.

Step 5, Install wall supports.

NOTE

- Refer to Back-Plane and Wall Installation Guide

Installation Process_Wall mounted Back Panel

Wall requirements

parameter	value
Wall thickness	Minimum 8~9 mm (3.5 inches)
Wall Strength	Walls must be suitable for the following: 1. The weight of the EV Charger is ≤77±2kg 2. Assembly screw torque 5Nm
Wall material	Must be flat and stable such as a brick or concrete wall.
The length of the upper screw extending beyond the wall 10mm	

Accessaries Materials

No.	Item	Specification	Q'ty	Torque
1	Expansion screw	M8*60	4 pcs	65~70kgf.cm
2	Back panel	620*555mm	1 pcs	

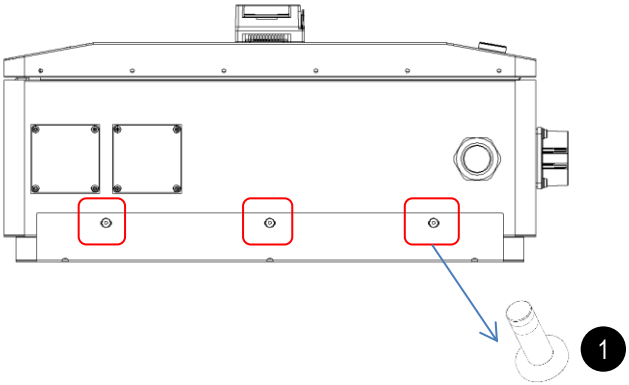
NOTE

- Refer to Back-Plane and Wall Installation Guide

Installation Process_Wall mounted Back Panel

Caution!	• Overall machine weight≤100kg • When lifting, it is necessary to evaluate the weight of the EV Charger and arrange personnel for operation appropriately

Bottom Screw

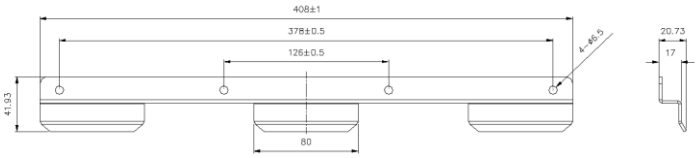


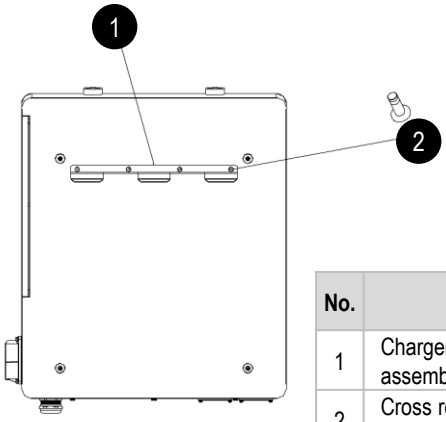
No.	Item	Specification	Q'ty	Torque
1	Flat head hexagonal nail	M6*16	3 pcs	25~30kgf.cm

NOTE

- Refer to Back-Plane and Wall Installation Guide

Installation Process_Wall mounted Back Panel





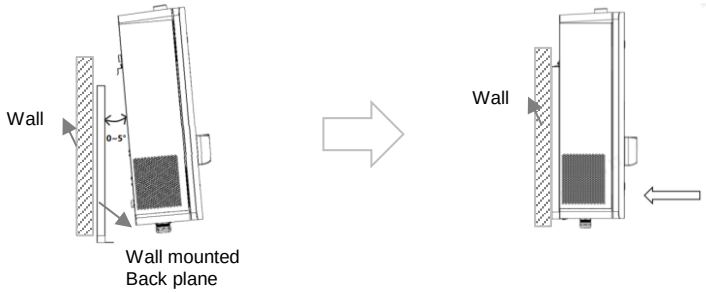
No.	Item	Specification	Q'ty	Torque
1	Charger back buckle assembly	408*41.93mm	1 pcs	
2	Cross recessed elastic flat washer combination screw	M6*16	4 pcs	25~30kgf.cm

Steps:
Install the back buckle component

- of the charging pile on the back face of the charging pile, and fix it with 4PCS flat head hexagonal nails
- with a torque of 3Nm. Once installed, it is ready

Product wall installation

Lift the charging pile and mount it on the wall mount at a vertical or < 5° Angle.



NOTE

- Refer to Back-Plane and Wall Installation Guide

Wiring Process

Use the following procedure to connect the wiring of the product.

1. Make sure the circuit breaker (MCCB or ELCB) on the AC power supply is turned off.
2. Make sure the AC input is 0V.
3. Remove the plastic cover on the power circuit breaker.
4. Connect the AC input wire conductor to the power circuit breaker.
5. Connect the ground conductor to the connection terminal.
6. Use a waterproof paste on the input wire entering the bottom of the charger to satisfy IP55.
7. Don't forget to put a plastic cover behind the circuit breaker.

NOTE

- When installing the charger, the cross-sectional area of the input line is L1, L2, L3, and N 4AWG or greater, PE shall be installed at 10AWG or greater.

Grounding Process

It must be grounded to a permanent wiring system or equipment ground conductor in compliance with local regulations and regulations of this product.

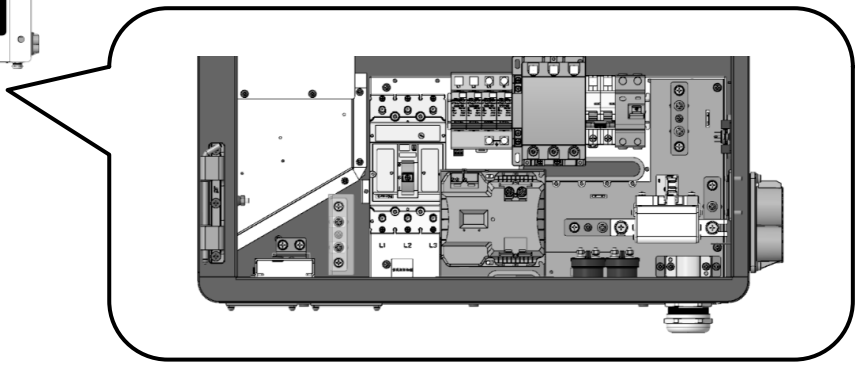
Caution!	**Inadequate connection of ground conductors may pose a risk of electric shock.**

NOTE

- The charger does not include an AC-input power cable.
- The specifications of the cable are determined based on the distance between the switchboard and the charger, depending on the installation construction conditions.
- The disconnect switch must be installed in the switchboard at the installation location.
- The ground wire cross-sectional area must be at least 10 mm2 when installing the charger.

Wiring and Grounding

❶ Open the Front Door



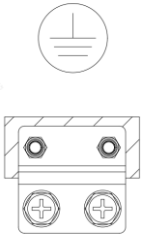
❷ insert to AC cable & PE cable

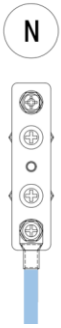
Parameter	specifications	Description
Incoming line method	3L + N +PE	Over than 600V
Cable Material	RHH / RHW -2	-
Retardant Torque	10Nm and 5Nm	-
Phase	Color	AWG / mm^2
L1	Brown	4AWG/25mm²
L2	Black	4AWG/25mm²
L3	Grey	4AWG/25mm²
N	Blue	4AWG/25mm²
PE	Yellow Green	10AWG/6mm²

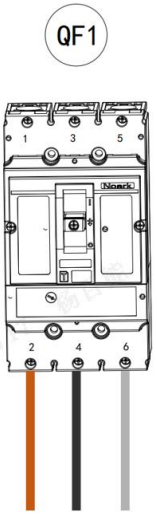
NOTE

- Cables must comply with relevant national standards and local standards

Wiring and Grounding







- Strip 3 phase wires, 1 neutral wire , and 1 ground wire from the cable, keeping them of sufficient length to be connected to the binding posts
- Use wire strippers to remove 20mm of insulation from the ends of these wires
- Crimp an M 6 Connect the OT terminals to these wires
- Open the insulation protective cover
- ~~Loosen the nut of the waterproof connector~~
- Connect the 3 phase wires to the L1~L3 terminals in sequence :
  From left to right : L1(brown) / L2(black) / L3(grey) / N(blue) Torque : 10 Nm
- Connect the ground wire PE to the ground copper bar Torque: 5 Nm
- ~~Tighten the waterproof connector nut~~
- Install the insulating protective cover

NOTE

- All cables must be punched through the holes before pressing the terminals after debugging, use a waterproof connector to block the three-phase cable entry holes to prevent water or insects from entering the EV Charger.

OPERATING INSTRUCTIONS

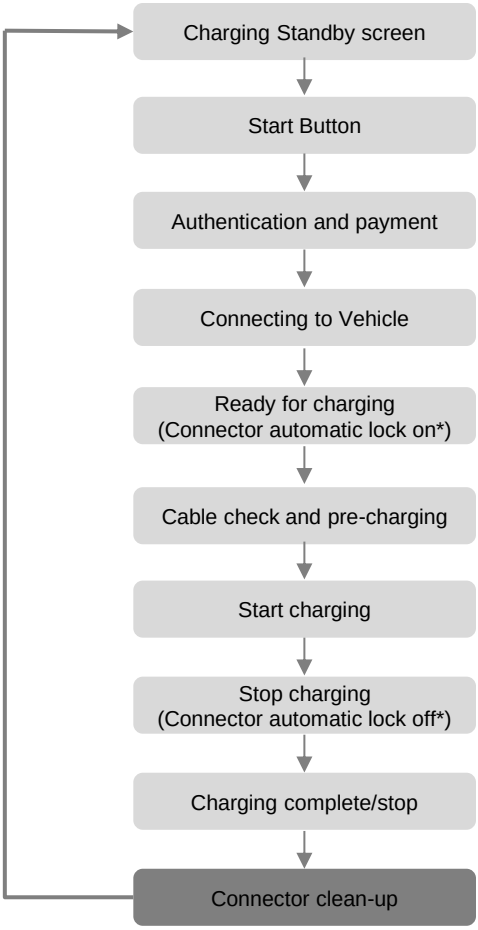
Caution!

- To prevent electric shock, do not touch uninsulated parts of the connector or the internal terminals of the charger.
- Do not use the connector if there are damaged or corroded parts.
- Using a damaged or defective connector can lead to overheating or the risk of electric shock.

Charging Precautions

Please check that installation has been completed in the order specified in this manual.
Failure to do so can result in personal injury or damage to the charger.

Charging Operation Procedure



LGE Internal Use Only

- *: The automatic lock/release of the connector is controlled by the vehicle (whether this is supported varies depending on the model of the vehicle)
- The charging speed may vary depending on the characteristics of the vehicle model and the condition of the battery.
- For safety, refer to “IMPORTANT SAFETY INSTRUCTIONS”.

Information Guide when it charging

Message	Solution
[Failure occurs]	• Displayed when failure occurs during charging, charging ready, or standby state. • Displays the contents of the failure and attempts an automatic recovery. (Refer to the fault code page for failure details.)
[Release Emergency stop]	• Please release the emergency stop by pressing the emergency stop button on the front of the charger. • Attempt automatic recovery after emergency stop is released.
[Operation Stop]	• This is a screen in case of temporary stop according to the operation policy. • Operation can be stopped and resumed through remote control of charging control.

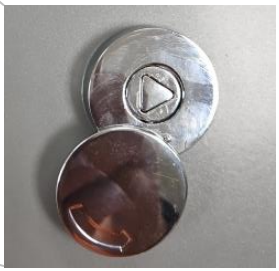
Fault Codes

FAULT CODE	DESCRIPTION	COURSE OF ACTION
2101	Output_Overvoltage_Detected	Check with your charger manufacturer
2201	Output_Overcurrent_Detected	Check with your charger manufacturer
2401/2402	Output_Relay_Fault	Check with your charger manufacturer
3601	Vehicle_Battery_Temperature_Error	Vehicle needs inspection
3602	CCS_Connector_Overtemperature	Check with your charger manufacturer
3801	Charging_System_Incompatibility	Check vehicle and charger specifications for compatibility
5104	PLC_Communication_Error	Reboot the charger and try charging again. If this continues, check with the charger manufacturer.
5105	PLC_Ground_Fault	Check with your charger manufacturer
5201	Power_Meter_Communication_Error	Check with your charger manufacturer
6201	Surge Protection Device test Error	Check with your charger manufacturer
6202	Reverse connection of battery	Vehicle needs inspection
6203	Fan Fault	Check with your charger manufacturer
6204	Input abnormal	Check with your charger manufacturer
6025	Output DC fuse error	Check with your charger manufacturer
6301	Dispenser_Insulation_Test_Error	Disconnect the connector, reconnect it, and try charging again. If the problem persists, check with the charger manufacture.
6601	MC_1_Error	Check with your charger manufacturer
6701	Dispenser_Impact_Detected	Check with your charger manufacturer
6702	Door_Open_Detected	Check with your charger manufacturer
6801	Power_Module_Error	Check with your charger manufacturer
6802	Power module communication error	Check with your charger manufacturer
8101	Dispenser_Sensor_1_Overtemperature	Check with your charger manufacturer
9101	Emergency_Button_Pressed	Check if the emergency switch is pressed
9201	Other_Error	-
10000	RFID_Communication_Error	Check with your charger manufacturer
10002	Control_Board_Communication_Error	Check with your charger manufacturer

Pre-Charging Process

1 Open the Front Door
- Unlock the lock using a dedicated key (2pcs)

Locked key

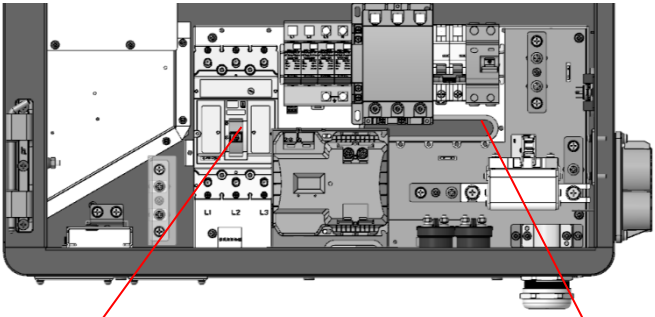


Key_Accessary

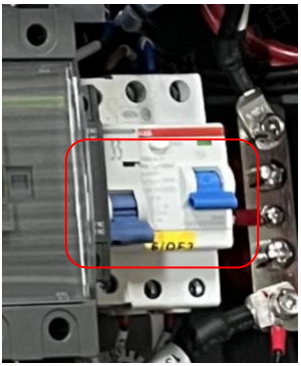
2 Fasten up with hook

3 Main Circuit Breaker Turn on

- Turn on the main power shut-off device in the lower left corner and circuit breaker in the lower right corner.



Put up the Switch



4 Closed Front Door

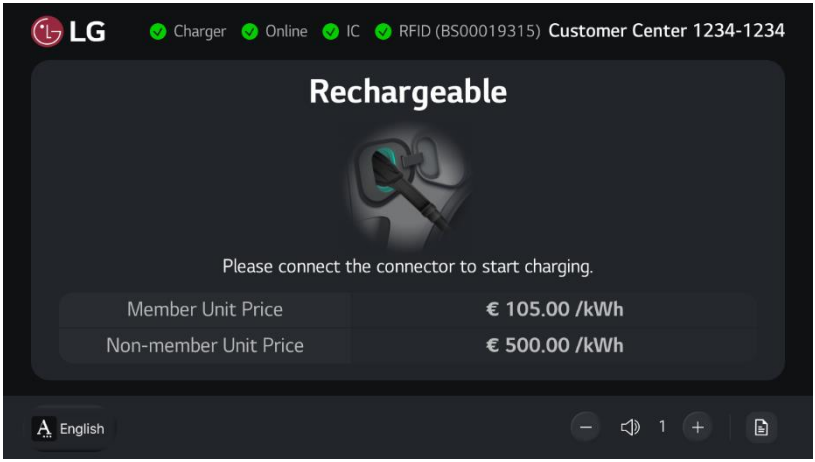
- If all of the above processes are complete, close the front door for safety before starting charging

LGE Internal Use Only

SYSTEM USAGE GUIDE

Common Screen Configuration

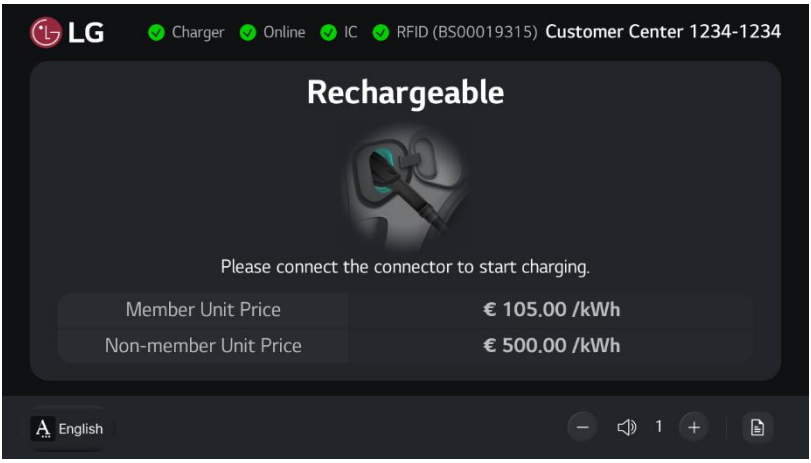
1 In the default standby state screen, the following information is displayed.

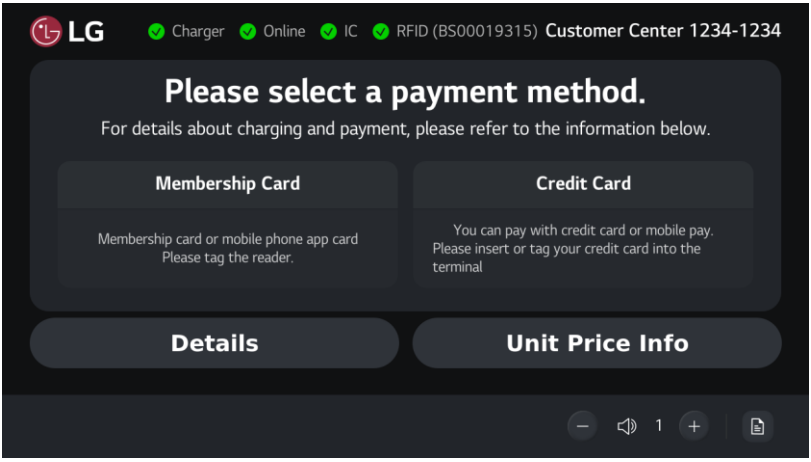


- The operating company's logo is displayed.
- The customer service number is displayed.
- The charger, internet connection status, credit card terminal status, and RFID card reader status
- are displayed. They are displayed in green (normal) and red (abnormal) colors.
- The charger number is displayed.

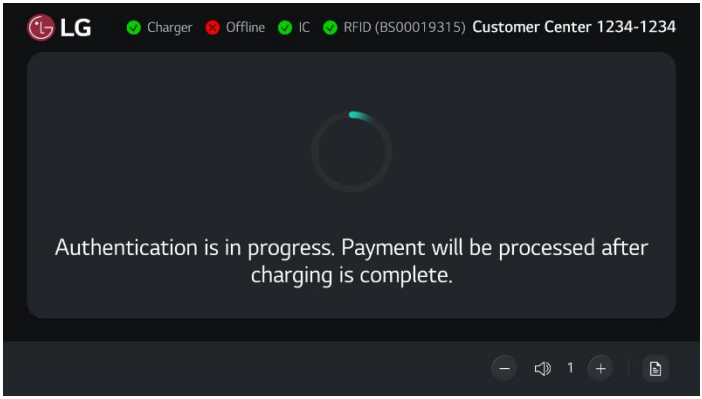
Charging Process

1 Connect the connector.

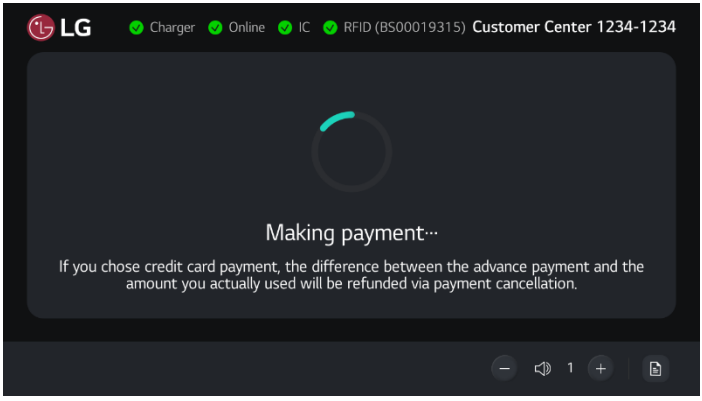




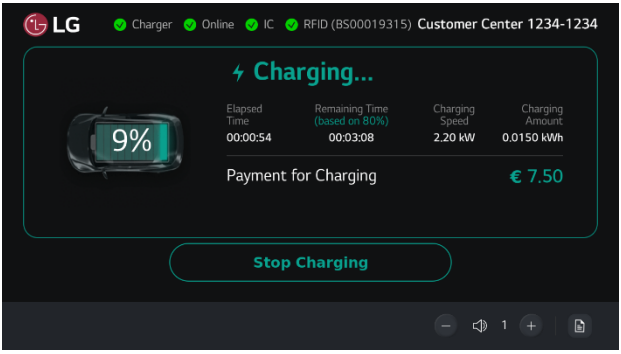
1) Membership card



2) Credit card

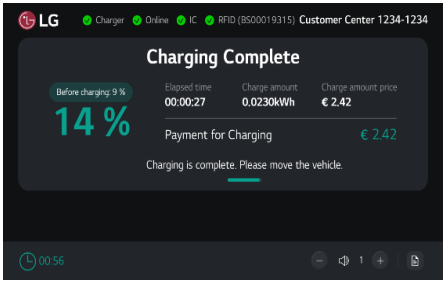


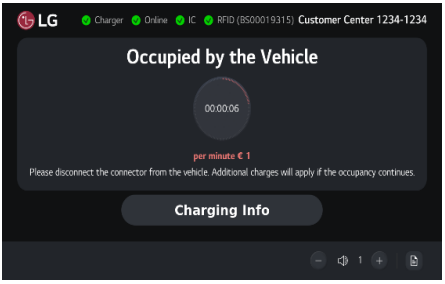
3 Proceed with charging. Displays elapsed time, remaining time, charging speed, charging amount, and charging fee.



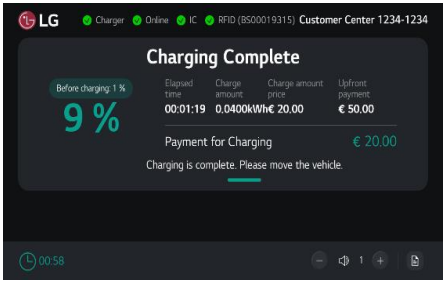
4 At the end of charging, displays the charging rate, elapsed time, charging amount, charging fee etc. Occupancy charges may apply if you do not move your vehicle after charging has ended.

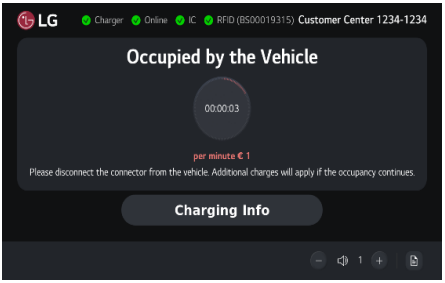
1) Membership card



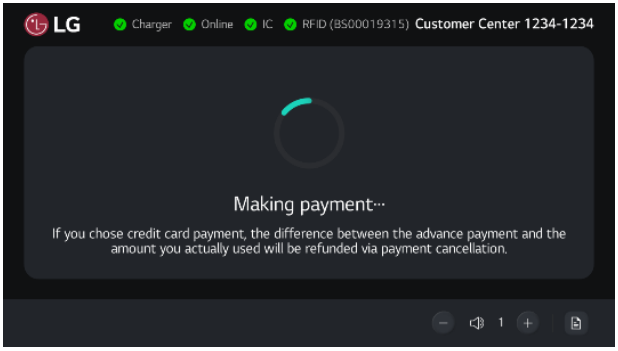


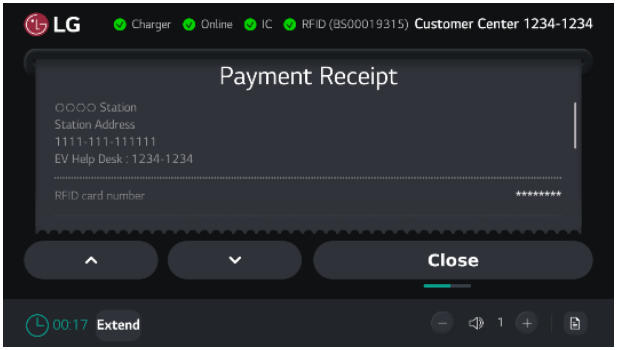
2) Credit card





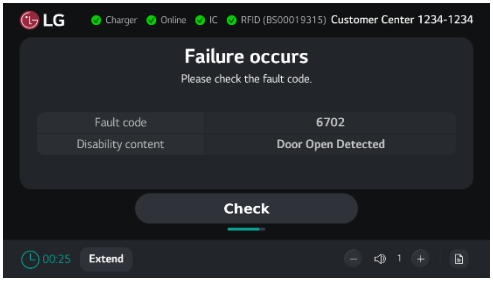
5 Displays a receipt after payment is processed.

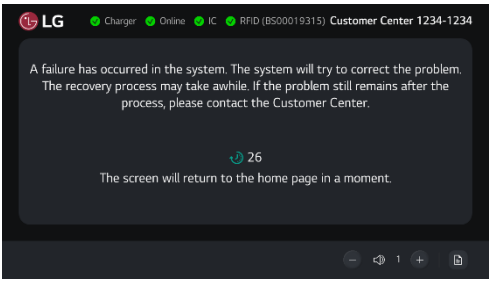




Error Screen

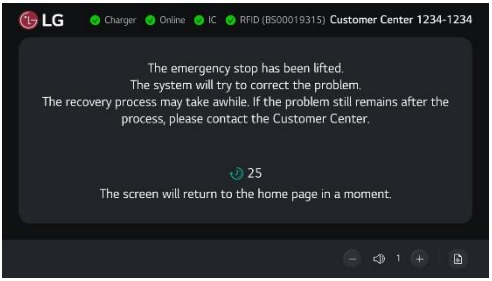
When a failure occurs, the details of the failure are displayed and the charger attempts to recover automatically.





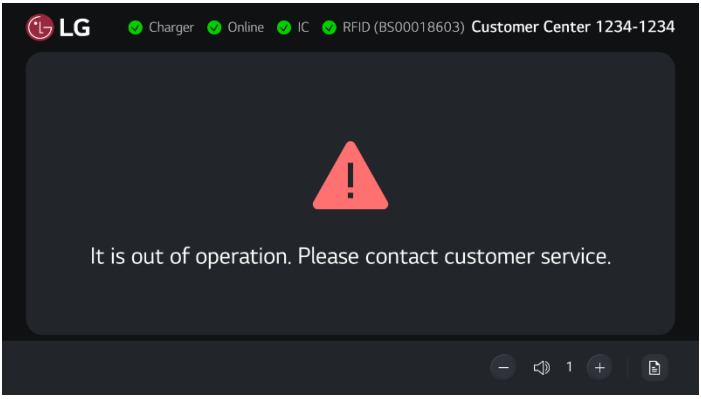
Emergency Stop Screen

When you press the emergency stop button on the front of the charger, displays the emergency stop screen. If the emergency stop is lifted, automatic recovery will be attempted.



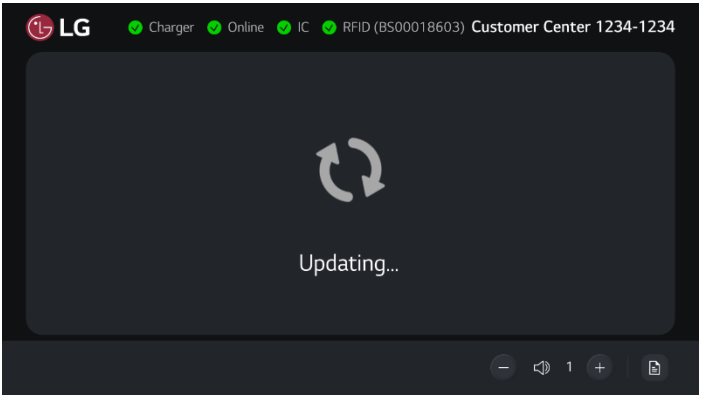
Operation Stop (Availability Change) Screen

This is the screen displayed during a temporary stop in operation due to operation policy. Operation stop and resumption are possible through remote control of the charging control.



System update screen

This is the screen when updating the system.



NOTE

- Never turn off the power while the system update is in progress.

FCC statement:
Changes or modifications not expressly approved by the party responsible for compliance could void the user's author ity to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residenti al installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used i n accordance with the instructions, may cause harmful interference to radio communications. However, there is no gu arantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

ISED statement:
This device contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic De velopment Canada's license-exempt RSS(s). Operation is subject to the following two conditions:
(1) This device may not cause interference.
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'appareil contient un émetteur / récepteur exempté de licence conforme au CNR exempté de licence d'innovation, sc iences et développement économique Canada. Les opérations sont soumises aux deux conditions suivantes:

(1) Cet appareil ne peut pas causer d'interférences.

(2) l'appareil doit accepter toute interférence, y compris celles qui peuvent entraîner un fonctionnement indésirable de l'appareil.

RF exposure for FCC/ISED:
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ouémetteur.Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre leradiateur et votre c orps.

Supplier's Declaration of Conformity	
Trade Name	LG
Responsible Party	LG Electronics USA, Inc.
Address	111 Sylvan Avenue, North Building, Englewood Cliffs, NJ 07632
E-mail	lg.environmental@lge.com

The model and serial number of the product are located on the back and on one side of the product. Record them below in case you ever need service.

MODEL _____

SERIAL NO. _____

Temporary noise is normal when powering ON or OFF this device.