

INSTALLATION MANUAL FOR
LONGi PHOTOVOLTAIC MODULES OF DG

PV Module Installation Manual



LONGi





Safety Note

- This manual elaborates on installation and safety use information for PV power generating modules (hereinafter referred to as module) of LONGi Green Energy Technology Co., Ltd.(hereinafter referred to as LONGi). Please abide by all safety precautions in this guide and local regulations.
- Installation of modules requires professional skills and knowledge and is to be carried out by qualified personnel. Please read this manual carefully before installing and using this module. Installation personnel shall get familiar with mechanical and electrical requirements of this system. Please keep this manual readily available as reference for future maintenance or upkeep or for sales and testing or handing of modules.
- If you have any doubts, please contact LONGi customer service personnel for further interpretation

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INTRODUCTION

▶ 01. Introduction

Electrical and mechanical installation information will be introduced in this installation manual, so please read and understand the information before installing LONGi modules. In addition, this manual also contains important safety information that you should be familiar with. All contents in this manual are intellectual properties of LONGi which originates from long term of technical exploration and experience accumulation of LONGi.

This installation manual does not entail any explicit or implicit quality warranty and does not stipulate on compensation schemes for losses, module damages or other costs caused by or related to module installation, operation, utilization and maintenance process. LONGi will not take any responsibility if patent rights or the third party rights are infringed by use of modules. LONGi reserves the rights for modifying product manual or installation manual without advanced notice. It is recommended to visit our website regularly at www.longi.com for the latest version of this installation manual.

If customers fail to install modules as per requirements set forth in this manual, the limited warranty provided for customers will be invalid. In addition, suggestions in this manual are to improve safety of module installation, which are tested and proved through years of experience. Please provide this manual to PV system users for reference and inform the advises on operation, maintenance requirements etc.



LAWS AND REGULATION

▶ 02. Laws and Regulation

The mechanical and electrical installation of photovoltaic modules shall be in accordance with applicable regulations, including electrical law, construction law and electrical connection requirements. These regulations vary from sites to sites, for example, building roof installation, vehicle applications, etc. Requirements may also vary depending on the installed system voltage, DC or AC. Please contact local authorities for specific terms.



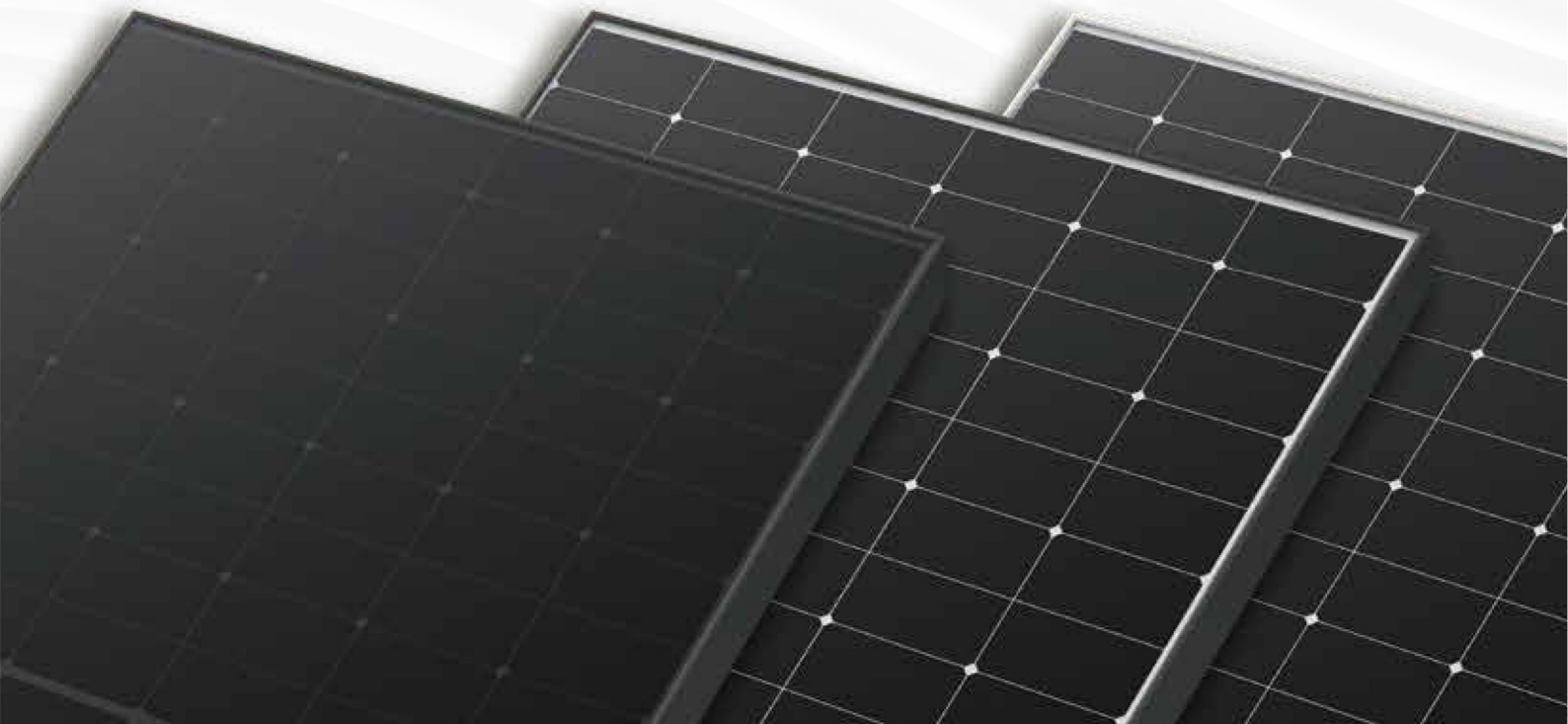
GENERAL INFORMATION

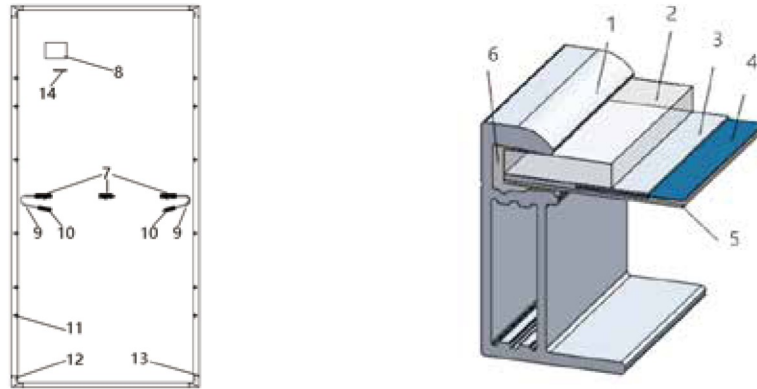
▶ 03. General Information

3.1 Modules Identification

Three labels on the module contain the information below:

1. Nameplate: product type, rated power, rated current, rated voltage, open circuit voltage, short circuit current under testing conditions, certification indicator, maximum system voltage, etc.
2. Current classification label: Rated working current. (H indicates High, M indicates Medium, L indicates Low)
3. Serial Number label: A unique serial number which is laminated inside the module permanently which can be found in the front of the module. There is another same serial number beside the module nameplate.

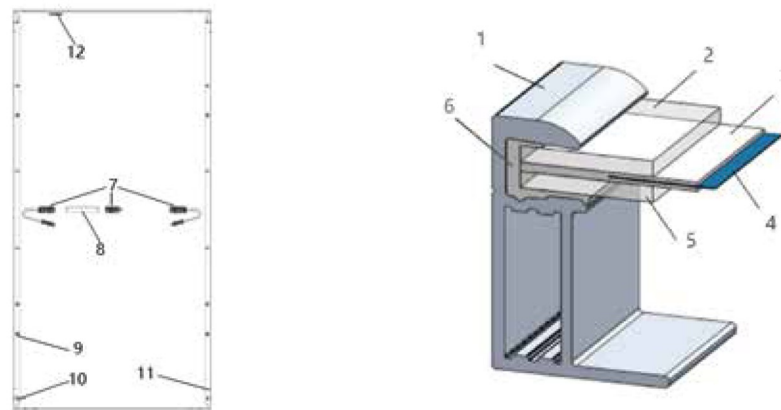




1	Frame	2	Glass	3	EVA	4	Solar Cell
5	Backsheet	6	Silica Gel	7	Junction Box	8	Name Plate
9	Cable	10	Connector	11	Mounting Hole	12	Grounding Hole
13	Drain Hole	14	Bar Code				

Figure 1 Typical Mechanical Drawing of Mono-facial Modules

(Please refer to section 3.2 for the location of the junction box. The specific version is subject to the corresponding specification.)



1	Frame	2	Front Glass	3	EVA/POE	4	Solar Cell
5	Back Glass	6	Sealant	7	Junction Box	8	Name Plate
9	Mounting Holes	10	Grounding Holes	11	Drain Holes	12	Bar Code

Figure 2 Typical Mechanical Drawing of Bifacial Modules

(Please refer to section 3.2 for the location of the junction box. The specific version is subject to the corresponding specification.)

3.2 Junction box style and wiring method

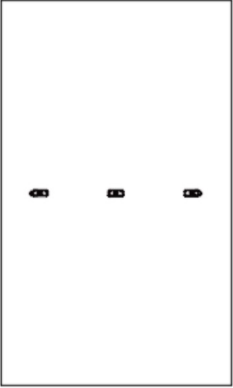
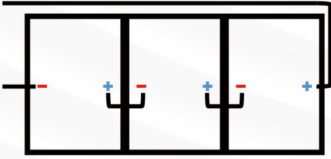
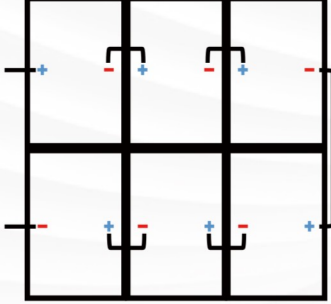
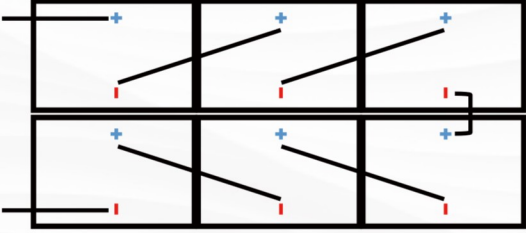
Junction Box Location	Recommended Wiring Method
	<p data-bbox="472 421 836 450">Vertical Installation: Standard Cable length</p> <div style="display: flex; justify-content: space-around;">   </div> <p data-bbox="472 775 1406 804">Note: The extra extended cable is required for connection at the turn-back corner of wiring as shown below.</p> <p data-bbox="472 826 1385 882">Horizontal Installation: 54/60 type PV module cable length $\geq 1.2\text{m}$, 72 type PV module cable length $\geq 1.4\text{m}$, 78 type PV module cable length $\geq 1.5\text{m}$</p> 

Figure3 Junction Box Style and Wiring Method

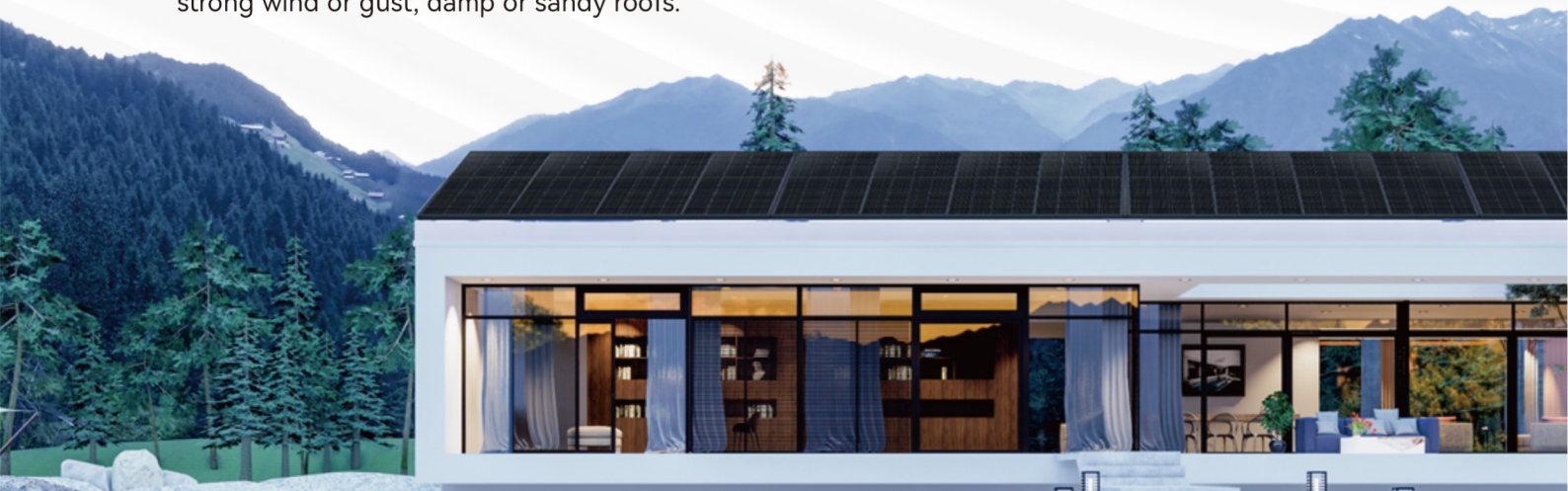
3.3 Regular Safety

The application level of LONGi Solar module is Class II, which can be used in systems operating at $> 50 \text{ V DC}$ or $>240 \text{ W}$, where general contact access is anticipated;

When the modules are for rooftop application, it is necessary to take the overall fire rating of the finished structure as well as operation and maintenance into account. The roofing PV system shall be installed after being evaluated by construction experts or engineers and with official analysis results for the entire structure. It shall be proved capable of supporting extra weight of system racking structures and PV modules.

For your safety, please do not work on the roof without required safety PPE(Personal Protective Equipment) which includes but not limited to fall protection, ladder or stair and personal protective measures.

For your safety, please do not install or handle modules in unsafe conditions including but not limited to strong wind or gust, damp or sandy roofs.



3.4 Electrical Performance Safety

PV modules can produce DC current under sunlight. Any contact of exposed metal at module's wiring parts may result in electrical shock or burn. Any contact of 30 V or larger DC Voltage can be fatal.

In case of no connected load or external circuits, modules can still produce voltage. Please use insulation tools and wear rubber gloves when operating modules in the sunlight.

No switch is on the PV modules. Operating of PV modules can only be stopped when they are kept from sunlight or covered by hard board or UV-proof materials.

To avoid electric arc or electric shock hazards, please do not break down electric connection in loaded conditions. Incorrect connections will also lead to electric arc or shock. Keep connectors dry and clean and make sure that they are in good operating condition. Do not Never insert other metals into the connectors or carry out electric connection by whatever means.

Snow, water or other reflective medium in surrounding environments that intensify light reflection will increase output current and power, and module voltage and power will increase under low temperature condition.

If module glass or other sealing materials are damaged, please wear PPE(personal protective equipment) and then isolate modules from the circuit.

Do not operate when modules are wet unless you wear PPE(personal protective equipment). Please follow the cleaning requirements in this manual when cleaning modules.

Do not contact connectors with the following chemicals: Gasoline, White Flower oil , woodlock oil, Mold temperature oil, Engine oil (such as KV46) , Grease (such as Molykote EM-50L) , Lubricating oil, Rust-proof oil, Stamping oil, Diesel, Cooking oil, Acetone, alcohol, essential balm, Bone-setting liquid, Banana oil, release agent (such as Pelicoat S-6) , adhesive and potting materials capable of generating oxime gas (such as KE200、CX-200、chemlok) , TBP, cleaning agent etc.



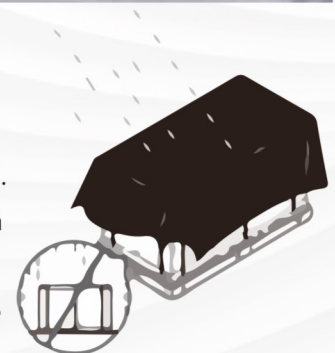
3.5 Operation Safety

Open modules outer package when installation.

Do not damage the package and do not drop packaged modules on the ground.

Do not exceed the indicated maximum layer limit on the packaging carton when piling stacking modules up.

Put packaging carton in the ventilated, water-proof and dry places before unpacking modules.



Follow unpacking instructions when opening packaging carton.

Carrying modules with the junction box or wires are strictly forbidden.

Do not stand or walk on modules.

To avoid glass damage, heavy objects are not allowed on modules.

Be careful when placing modules at corners in particular.

Do not try to dismantle the module or remove nameplate or parts of modules.

Do not paint or apply any other adhesive on modules.

Do not damage or scratch backsheet of modules.

Do not drill holes on the frame of module, which may reduce frame loading capacity and lead to frame corrosion and invalidation of the limited warranty provided for customers.

Do not scratch anodic coating of aluminum alloy frame except for grounding connection. Scratch may lead to frame corrosion and reduce frame loading capacity and long-term reliability.

Do not repair problematic modules on your own.



3.6 Fire Safety

Please refer to local laws and regulations before installing modules and abide by requirements on building fire protection. According to the corresponding certification standards, the fire rating of LONGi Mono-facial modules is UL Type 1 or 2 or IEC Class C, the fire rating of LONGi bifacial modules is UL Type 29 or IEC Class C.

The roof should be coated by a layer of fireproof materials with suitable fire protection rating for roofing installation and make sure that the back sheet and the mounting surface are fully ventilated.

Different roof structures and installation modes will affect fireproof performance of buildings. Improper installation may lead to the risk of fire.

To guarantee roof fire rating, the distance between module frame and roof surface must be ≥ 10 cm. (0.39 inch)

Adopt proper module accessories such as fuse, circuit breaker and grounding connector according to local regulations.

Please do not apply modules in where exposed inflammable gases are nearby.

