

Carefully read through these installation instructions before installing, operating or servicing PV system. Failure to follow these instructions may result in bodily injury or damage to property. Keep these instructions!

Working on a PV system (installation, setup, maintenance, repairs) must be carried out by qualified and authorized persons.

This installation instruction is for mono and poly modules:

Electrical Characteristics

Under standard conditions (irradiance 1000mW/cm², AM 1.5 spectrum, cell temperature 25 °C (77 °F)), power tolerance is ±3%, open circuit voltage and short circuit current tolerance is ±5%.

Warning:

Danger of death from electric shock!

- Solar modules generate electricity as soon as they are exposed to light. One module on its own is below the safety extra low volt level, but multiple modules connected in series (summing the voltage) or in parallel (summing the current) represent a danger. The following points must be observed when handling the solar modules to avoid the risk of fire, sparking and fatal electric shock.

- Do not insert electrically conducting parts into the plugs or sockets! Do not fit solar modules and wiring with wet plugs and sockets!
- Exercise utmost caution when carrying out work on wiring and safety equipment (use insulated tools, insulated gloves, etc.)!
- Do not use damaged modules! Do not dismantle modules! Do not mark on the rear of the module using sharp objects!
- Exercise utmost caution when working on wiring and the inverter. Be sure carefully to follow manufacture's installation instructions!

Artificially concentrated sunlight shall not be directed on the module or panel.



Danger of death from arcing

Modules generate direct current when light shines on them. An arc may be produced when connections are separated. We therefore recommended covering modules with a lightproof cloth during installation. When breaking a connected string of modules (e.g. when disconnecting the DC line from the inverter under load), a lethally strong arc can occur:

- Never disconnect the solar generator from the inverter while the inverter is connected to the mains grid—remove the fuse from the AC side on the inverter first!
- Ensure cable connections in perfect condition (no splitting, soiling or other contamination)!

Unpacking the modules and storage

The utmost care is required when handling the modules. Be careful when unpacking, transporting, and storing the modules:

- Transport modules in an upright position.
- Carry modules with both hands. Do not use the connection socket as a handle.
- Ensure modules do not bow under their own weight.
- Do not place modules on top of each other.
- Do not subject to load, do not stand on them.
- Do not mark using sharp implements.
- Do not stand on the panel.
- Keep all electrical contacts clean and dry.

If it is necessary to store the modules temporarily, a dry, ventilated room should be used.

General safety information

Ensure that the module is used only in applications for which it is suitable (see "Installing the modules"). All work on a PV system (installation, setup, maintenance, repairs) must be carried out only by appropriately qualified and authorized persons.

The appropriate DIN standards, construction rules and safety instructions are to be followed for installation.

Installing the modules

When installing the modules, please pay attention to: the assembly is to be mounted over a fire resistant roof covering rated for the application.

• Keeping within the maximum permitted load

Keeping within the maximum permitted load The maximum mechanical load on the module must not exceed 5400pa. 2400pa mechanical load has been past in third laboratory. To avoid exceeding the maximum mechanical load, site-specific live loads such as wind and snow should be taken into account.

• Environmental conditions

The module is intended for use in temperate climatic conditions. The module is “non-explosion-protected equipment”. Hence it must not be installed in the proximity of highly inflammable gases and vapors (e.g. filling stations, gas containers, paint equipment).

The module must not be installed near to naked flames or flammable materials.

Do not expose modules to concentrated light sources.

It must not be immersed in water or constantly exposed to water (e.g. from fountains).

If there is exposure to salt (it is recommended that modules are installed at least 500m from the sea) and sulfur (sulfur sources, volcanoes), there is a risk of corrosion.

Maximum altitude for module installation can be no more than 2000m.

• Requirements of installation

Make sure the modules’ electrical performances in a system are the same. When connected in series, modules must all have the same amperage. When connected in parallel, the modules must all have the same voltage. Connect the quantity of modules that match the voltage specifications of the devices used in the system. The modules must not be connected together to create a voltage higher than the permitted system voltage.

To minimize risk in the event of an indirect lightning strike avoid forming loops when designing the system. Artificially concentrated sunlight shall not be directed on the module or panel.

Modules must not be fitted as overhead glazing. Ensure that the mounting system can also withstand the anticipated wind and snow loads.

Precipitation can run off through small openings on the back side of the module. Make sure that these openings are not masked after mounting.

• Optimum orientation and tilt

To achieve the maximum annual yield figure out what the optimum orientation and tilt of the PV modules is. If sunlight shines vertical onto the PV modules you have the best conditions to generate maximum power.

• Avoid overshadowing

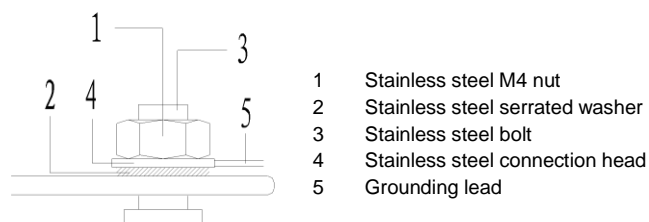
Even the slightest partial shading (e.g. from dirt deposits) will cause a reduction in yield. A module is considered “shadow-free” if it is unobscured across its entire surface for the whole year and even on the shortest day of the year unobstructed sunlight can reach the module.

• Reliable ventilation

Functioning ventilation prevents the build-up of heat, which would reduce performance.

• Earthing

Although the modules are certified to safety class II, we still recommend earthing them. The earth connection must be made by a qualified electrician. Connect module frames to each other using cables with cable lugs. Use the hole ($\phi 4.5\text{mm}$) attached with a green label that are provided for this purpose. To create the conductive connection (frame is anodized), use a serrated washer or a self-tapping screw ($\phi 5\text{mm}$). The earth connection should be made by a qualified electrician.



All the junctions on the conductive connection must be fixed. The fastness does not depend on soldering.

The metal containing iron in the conductive connection should be handled by some way, such as anodization, spray-painting, galvanization. Stainless steel does not need to be handled.

• Maximum number of modules in parallel and in series

When designing the system, we recommend that the maximum number of modules in parallel should be no more than one while the maximum number of modules in series no more than eighteen.

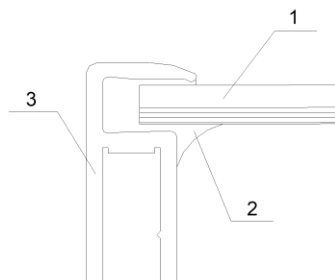
Recommended maximum series/parallel module configurations:
 $[V_{sys}/(1.25V_{oc})]/2$

Bypass diodes

The junction box contains bypass diodes and is connected in parallel to the battery string in the module. When the hot spot occurs in the module, the diode will work, so that the main current will no longer flow through the hot spot cell, thus limiting the module heating and performance loss. Note that the bypass diode is not an over-current protection device.

Mounting

• Installation of Frame and Module



The depth is no less than 3mm when installing the module into the frame.

● Modules installed with clamp

Modules should be mounted using specialized clamps as shown in Figure 3.

A. Modules should be attached on a supporting structure rail by metal clamps. It is recommended to use the clamps under the following condition or approved by system installation:

Width: Clamp A 50mm Clamp B 50mm;

Thickness: No less than 3mm;

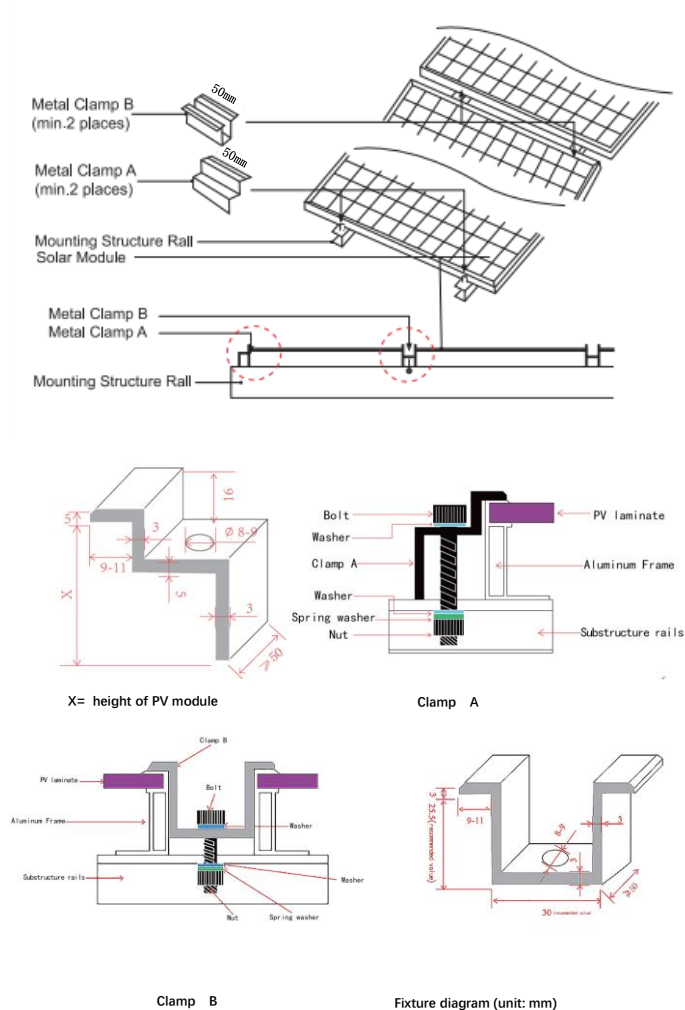
Material: Aluminum Alloy;

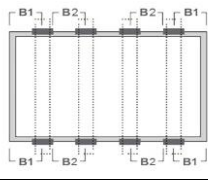
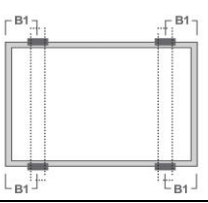
Bolt: M8;

B. The torque range of screw tightening is between 16N.m to 24N.m

C. The Modules clamps must not contact the front glass or deform the frame in any way, the contact area of clamp with the front of frame must be smooth, otherwise maybe damage the frame bring about the modules broken.

Avoid shading effects from the Modules clamps. Drainage holes on the Modules frame must not be closed or obscured by the clamps.



Module 组件	Mechanical Load Pressure 载荷	Safety factor 安全系数	Mounting Direction 安装图
66/PCS 210 Backsheet-Glass 66/片 210 组件单玻	+3600 pa/-1600 pa	1.5	
B1=390mm, B2=400mm			
40/42/45/48/50/54/ 55/60/PCS 210 Backsheet-Glass 40/42/45/48/50/54/ 55/60/片 210 组件单玻	+3600 pa/-1600 pa	1.5	
B1= (350mm~450mm)			

● Description of the installation position

The low/normal level of load condition is applicable to the installation in most of environmental conditions: the maximum static load on the back of the modules is 2400 Pa (i.e. wind load), and the maximum static load on the front of modules is 2400 Pa (i.e. wind and snow load).

The high level of load condition is applicable to be the installation in harsher environmental conditions such as storm, heavy snow, etc: the maximum static load on the back of modules is 2400 Pa (i.e. wind load), and the maximum static load on the front of modules is 5400 Pa (i.e. wind and snow load), depending on the pressure level that it would endure according to IEC standard.

For the dynamic loads, such as wind, the safety factor needs to be increased by 3 times. It means that the maximum dynamic load is 800 Pa when the wind speed is less than 130 km/h.



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Wiring

For the wiring, pay attention to:

• Correct wiring scheme

When designing the system, avoid forming loops (to minimize risk in the event of an indirect lighting strike). Check that wiring is correct before starting up the generator. If the measured open circuit voltage (Voc) and short-circuit current (Isc) differ from the specifications, then there is a wiring fault.

• Correct connection of connectors

The connector is PV-GZX1500 made by GZX, Suggestion: Connectors with different models mustn't connect together.. The area of the cable mating with the connector recommended to be 4~6 mm². The plug connector has its own polarity. Make sure that the connection is safe and tight. The plug connector should not receive outer stress. The connector should only be used to connect the circuit, but never be used to turn the circuit on and off..

• Use of suitable materials

Use cable extensions and plugs that are designed for outdoor applications. Ensure that they are in perfect electrical and mechanical condition. Use only cables having one conductor. Select the appropriate cable diameter to minimize voltage drop (to calculate the minimum cable diameter, the fuse, and to calculate controls, multiply the Isc and Uoc by a factor of 1.25). Under normal conditions, a photovoltaic module is likely to experience conditions that produce more current and/or voltage than reported at standard test conditions. Accordingly, the values of Isc and Voc marked on this module should be multiplied by a factor of 1.25 when determining component voltage ratings, conductor ampacities, fuse sizes, and size of controls connected to the PV output.

Maintenance and cleaning

Do not change the PV components optionally (diode, junction box, plug connectors).

Given a sufficient tilt (at least 15°), it is not generally necessary to clean the modules (rainfall will have a self-cleaning effect). In case of heavy soiling (which will result in output reductions), we recommend cleaning the modules using plenty of water (from a hose) with mild detergent and using a gentle cleaning implement (a sponge). **CAUTION: DON'T USE DETERGENTS CONSISTING OF ABRASIVE, ACETONE OR OTHER CORROSIVE ELEMENTS.** Do not clean the modules with cold water during the warmer hours of the day in order to avoid creating any thermal shock that may damage the module. Dirt must never be scraped or rubbed away when dry, as this will cause micro-scratches. We recommend the system is inspected at regular intervals.

Checklists:

- All fastenings are tight and secure and free of corrosion.
- All cable connections are secure, tight, clean and free of corrosion.
- Cables are not damaged in any way.
- Checking the earthing resistivity of metals.

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MECHANICAL DATA			TEMPERATURE RATINGS				ELECTRICAL DATA (STC)					ELECTRICAL DATA (NMOT)				
Parameter Type	Dimension (mm)	Weight (KG)	NMOT	Temp Coefficient of P _{MAX}	Temp Coefficient of Voc	Temp Coefficient of Isc	P _{mp} (W) ±3%	I _{mp} (A)	V _{mp} (V)	I _{sc} (A) ±5%	V _{oc} (V) ±5%	P _{mp} (W) ±3%	I _{mp} (A)	V _{mp} (V)	I _{sc} (A) ±5%	V _{oc} (V) ±5%
LP210*210-M-66-MH-630W	2384*1303*35 2408*1303*35	34.0 34.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	630	17.11	36.81	17.96	44.78	476	13.96	34.12	14.73	41.56
LP210*210-M-66-MH-635W	2384*1303*35 2408*1303*35	34.0 34.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	635	17.16	37.01	18.01	44.98	480	13.99	34.31	14.77	41.74
LP210*210-M-66-MH-640W	2384*1303*35 2408*1303*35	34.0 34.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	640	17.20	37.21	18.06	45.18	484	14.03	34.49	14.81	41.93
LP210*210-M-66-MH-645W	2384*1303*35 2408*1303*35	34.0 34.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	645	17.24	37.41	18.11	45.38	488	14.06	34.68	14.85	42.11
LP210*210-M-66-MH-650W	2384*1303*35 2408*1303*35	34.0 34.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	650	17.28	37.61	18.16	45.58	491	14.09	34.86	14.89	42.30
LP210*210-M-66-MH-655W	2384*1303*35 2408*1303*35	34.0 34.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	655	17.32	37.81	18.21	45.78	495	14.13	35.05	14.93	42.48
LP210*210-M-66-MH-660W	2384*1303*35 2408*1303*35	34.0 34.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	660	17.36	38.01	18.26	45.98	499	14.16	35.24	14.97	42.67
LP210*210-M-66-MH-665W	2384*1303*35 2408*1303*35	34.0 34.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	665	17.40	38.21	18.31	46.18	503	14.19	35.42	15.01	42.86
LP210*210-M-66-MH-670W	2384*1303*35 2408*1303*35	34.0 34.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	670	17.44	38.41	18.36	46.38	507	14.23	35.61	15.06	43.04
LP210*210-M-60-MH-570W	2172*1303*35 2195*1303*35	31.0 31.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	570	17.17	33.20	18.22	40.30	436	14.17	30.78	14.94	37.40
LP210*210-M-60-MH-575W	2172*1303*35 2195*1303*35	31.0 31.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	575	17.22	33.40	18.27	40.50	440	14.21	30.96	14.98	37.58
LP210*210-M-60-MH-580W	2172*1303*35 2195*1303*35	31.0 31.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	580	17.26	33.60	18.32	40.70	444	14.25	31.15	15.02	37.77
LP210*210-M-60-MH-585W	2172*1303*35 2195*1303*35	31.0 31.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	585	17.30	33.80	18.37	40.90	448	14.28	31.33	15.06	37.96
LP210*210-M-60-MH-590W	2172*1303*35 2195*1303*35	31.0 31.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	590	17.35	34.00	18.42	41.10	451	14.32	31.52	15.10	38.14
LP210*210-M-60-MH-595W	2172*1303*35 2195*1303*35	31.0 31.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	595	17.40	34.20	18.47	41.30	455	14.36	31.70	15.15	38.33
LP210*210-M-60-MH-600W	2172*1303*35 2195*1303*35	31.0 31.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	600	17.44	34.40	18.52	41.50	459	14.39	31.89	15.19	38.51
LP210*210-M-60-MH-605W	2172*1303*35 2195*1303*35	31.0 31.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	605	17.49	34.60	18.57	41.70	463	14.43	32.07	15.23	38.70
LP210*210-M-60-MH-610W	2172*1303*35 2195*1303*35	31.0 31.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	610	17.53	34.80	18.62	41.90	467	14.47	32.26	15.27	38.88
LP210*210-M-54-MH-515W	1962*1303*35 1980*1303*35	28.0 28.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	515	17.16	30.02	17.91	36.40	394	14.16	27.83	14.69	33.78
LP210*210-M-54-MH-520W	1962*1303*35 1980*1303*35	28.0 28.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	520	17.21	30.22	17.96	36.60	398	14.20	28.01	14.73	33.96
LP210*210-M-54-MH-525W	1962*1303*35 1980*1303*35	28.0 28.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	525	17.26	30.42	18.01	36.80	402	14.24	28.20	14.77	34.15
LP210*210-M-54-MH-530W	1962*1303*35 1980*1303*35	28.0 28.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	530	17.31	30.62	18.06	37.00	405	14.28	28.40	14.81	34.35



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LP210*210-M-54-MH-535W	1962*1303*35 1980*1303*35	28.0 28.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	535	17.36	30.82	18.11	37.20	409	14.31	28.60	14.85	34.55
LP210*210-M-54-MH-540W	1962*1303*35 1980*1303*35	28.0 28.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	540	17.41	31.02	18.16	37.40	413	14.34	28.80	14.89	34.75
LP210*210-M-54-MH-545W	1962*1303*35 1980*1303*35	28.0 28.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	545	17.46	31.22	18.21	37.60	417	14.38	29.00	14.93	34.95
LP210*210-M-54-MH-550W	1962*1303*35 1980*1303*35	28.0 28.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	550	17.50	31.42	18.26	37.80	421	14.41	29.20	14.97	35.15
LP210*210-M-48-MH-460W	1754*1303*35 1767*1303*35	25.0 25.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	460	17.14	26.84	17.97	32.52	352	14.14	24.88	14.74	30.18
LP210*210-M-48-MH-465W	1754*1303*35 1767*1303*35	25.0 25.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	465	17.20	27.04	18.02	32.72	356	14.19	25.07	14.78	30.36
LP210*210-M-48-MH-470W	1754*1303*35 1767*1303*35	25.0 25.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	470	17.25	27.24	18.07	32.92	360	14.23	25.27	14.82	30.56
LP210*210-M-48-MH-475W	1754*1303*35 1767*1303*35	25.0 25.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	475	17.31	27.44	18.12	33.12	363	14.27	25.47	14.86	30.76
LP210*210-M-48-MH-480W	1754*1303*35 1767*1303*35	25.0 25.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	480	17.37	27.64	18.17	33.32	367	14.31	25.67	14.90	30.96
LP210*210-M-48-MH-485W	1754*1303*35 1767*1303*35	25.0 25.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	485	17.42	27.84	18.22	33.52	371	14.34	25.87	14.94	31.16
LP210*210-M-48-MH-490W	1754*1303*35 1767*1303*35	25.0 25.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	490	17.48	28.04	18.27	33.72	375	14.38	26.07	14.98	31.36
LP210*210-M-42-MH-400W	1540*1303*35 1554*1303*35	22.0 22.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	400	17.05	23.46	17.81	28.50	306	14.08	21.73	14.60	26.43
LP210*210-M-42-MH-405W	1540*1303*35 1554*1303*35	22.0 22.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	405	17.12	23.66	17.86	28.70	310	14.13	21.93	14.65	26.63
LP210*210-M-42-MH-410W	1540*1303*35 1554*1303*35	22.0 22.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	410	17.18	23.86	17.91	28.90	314	14.17	22.13	14.69	26.83
LP210*210-M-42-MH-415W	1540*1303*35 1554*1303*35	22.0 22.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	415	17.25	24.06	17.96	29.10	317	14.22	22.33	14.73	27.03
LP210*210-M-42-MH-420W	1540*1303*35 1554*1303*35	22.0 22.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	420	17.31	24.26	18.01	29.30	321	14.26	22.53	14.77	27.23
LP210*210-M-42-MH-425W	1540*1303*35 1554*1303*35	22.0 22.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	425	17.38	24.46	18.06	29.50	325	14.30	22.73	14.81	27.43
LP210*210-M-55-MH-520W	2384*1096*35 2408*1096*35	29.5 30.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	520	16.91	30.76	17.92	37.06	390	13.68	28.51	14.69	34.39
LP210*210-M-55-MH-525W	2384*1096*35 2408*1096*35	29.5 30.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	525	16.96	30.96	17.97	37.26	394	13.73	28.70	14.74	34.58
LP210*210-M-55-MH-530W	2384*1096*35 2408*1096*35	29.5 30.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	530	17.01	31.16	18.02	37.46	400	13.85	28.89	14.78	34.76
LP210*210-M-55-MH-535W	2384*1096*35 2408*1096*35	29.5 30.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	535	17.07	31.36	18.07	37.66	405	13.93	29.07	14.82	34.95
LP210*210-M-55-MH-540W	2384*1096*35 2408*1096*35	29.5 30.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	540	17.11	31.56	18.12	37.86	409	13.98	29.26	14.86	35.13
LP210*210-M-55-MH-545W	2384*1096*35 2408*1096*35	29.5 30.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	545	17.16	31.76	18.17	38.06	413	14.03	29.44	14.90	35.32
LP210*210-M-55-MH-550W	2384*1096*35 2408*1096*35	29.5 30.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	550	17.21	31.96	18.22	38.26	417	14.08	29.63	14.94	35.51



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LP210*210-M-55-MH-555W	2384*1096*35 2408*1096*35	29.5 30.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	555	17.26	32.16	18.27	38.46	420	14.07	29.81	14.98	35.69
LP210*210-M-55-MH-560W	2384*1096*35 2408*1096*35	29.5 30.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	560	17.31	32.36	18.32	38.66	423	14.11	30.00	15.02	35.88
LP210*210-M-50-MH-470W	2172*1096*30 2195*1096*30	26.0 26.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	470	16.88	27.84	17.92	33.64	355	13.77	25.81	14.69	31.22
LP210*210-M-50-MH-475W	2172*1096*30 2195*1096*30	26.0 26.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	475	16.94	28.04	17.97	33.84	359	13.82	25.99	14.74	31.40
LP210*210-M-50-MH-480W	2172*1096*30 2195*1096*30	26.0 26.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	480	17.00	28.24	18.02	34.04	363	13.86	26.18	14.78	31.59
LP210*210-M-50-MH-485W	2172*1096*30 2195*1096*30	26.0 26.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	485	17.05	28.44	18.07	34.24	367	13.91	26.36	14.82	31.77
LP210*210-M-50-MH-490W	2172*1096*30 2195*1096*30	26.0 26.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	490	17.11	28.64	18.12	34.44	370	13.95	26.55	14.86	31.96
LP210*210-M-50-MH-495W	2172*1096*30 2195*1096*30	26.0 26.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	495	17.16	28.84	18.17	34.64	374	14.00	26.73	14.90	32.15
LP210*210-M-50-MH-500W	2172*1096*30 2195*1096*30	26.0 26.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	500	17.22	29.04	18.22	34.84	378	14.04	26.92	14.94	32.33
LP210*210-M-50-MH-505W	2172*1096*30 2195*1096*30	26.0 26.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	505	17.27	29.24	18.27	35.04	382	14.08	27.11	14.98	32.52
LP210*210-M-50-MH-510W	2172*1096*30 2195*1096*30	26.0 26.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	510	17.32	29.44	18.32	35.24	386	14.13	27.29	15.02	32.70
LP210*210-M-45-MH-425W	1962*1096*30 1980*1096*30	23.5 24.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	425	16.85	25.22	17.73	30.44	321	13.74	23.38	14.54	28.25
LP210*210-M-45-MH-430W	1962*1096*30 1980*1096*30	23.5 24.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	430	16.92	25.42	17.78	30.64	325	13.80	23.56	14.58	28.43
LP210*210-M-45-MH-435W	1962*1096*30 1980*1096*30	23.5 24.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	435	16.98	25.62	17.83	30.84	329	13.85	23.75	14.62	28.62
LP210*210-M-45-MH-440W	1962*1096*30 1980*1096*30	23.5 24.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	440	17.04	25.82	17.88	31.04	333	13.90	23.94	14.66	28.81
LP210*210-M-45-MH-445W	1962*1096*30 1980*1096*30	23.5 24.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	445	17.10	26.02	17.93	31.24	336	13.95	24.12	14.70	28.99
LP210*210-M-45-MH-450W	1962*1096*30 1980*1096*30	23.5 24.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	450	17.16	26.22	17.98	31.44	340	14.00	24.31	14.74	29.18
LP210*210-M-45-MH-455W	1962*1096*30 1980*1096*30	23.5 24.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	455	17.22	26.42	18.03	31.64	344	14.04	24.49	14.78	29.36
LP210*210-M-45-MH-460W	1962*1096*30 1980*1096*30	23.5 24.0	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	460	17.28	26.62	18.08	31.84	348	14.09	24.68	14.83	29.55
LP210*210-M-40-MH-380W	1754*1096*30 1767*1096*30	21.0 21.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	380	16.82	22.59	18.01	27.03	287	13.72	20.94	14.77	25.08
LP210*210-M-40-MH-385W	1754*1096*30 1767*1096*30	21.0 21.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	385	16.89	22.79	18.06	27.23	291	13.78	21.13	14.81	25.27
LP210*210-M-40-MH-390W	1754*1096*30 1767*1096*30	21.0 21.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	390	16.96	22.99	18.11	27.43	295	13.83	21.31	14.85	25.46
LP210*210-M-40-MH-395W	1754*1096*30 1767*1096*30	21.0 21.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	395	17.03	23.19	18.16	27.63	299	13.89	21.50	14.89	25.64
LP210*210-M-40-MH-400W	1754*1096*30 1767*1096*30	21.0 21.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	400	17.10	23.39	18.21	27.83	302	13.95	21.68	14.93	25.83



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LP210*210-M-40-MH-405W	1754*1096*30 1767*1096*30	21.0 21.5	41℃ (±3℃)	-0.34%/℃	-0.25%/℃	+0.04%/℃	405	17.17	23.59	18.26	28.03	306	14.00	21.87	14.97	26.01
STC: Irradiance 1000W/m ² , Cell Temperature 25° C, Air Mass AM1.5.							NMOT: Irradiance at 800W/m ² , Ambient Temperature 20° C, Wind Speed 1m/s.									

- Max.over-current protection rating(A): 30A
- Fire safety class : Class C
- Application Class A: General access, hazardous voltage, hazardous power applications

Modules qualified for safety through IEC61730-1 and this part of IEC61730 within this application class are considered to meet the requirement for safety class II. Whenever necessary to comply with local codes, use a listed fuse or circuit breaker, rated for the maximum series fuse rating of the module and the system voltage.