

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, ect.)!
- 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 labortory. 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

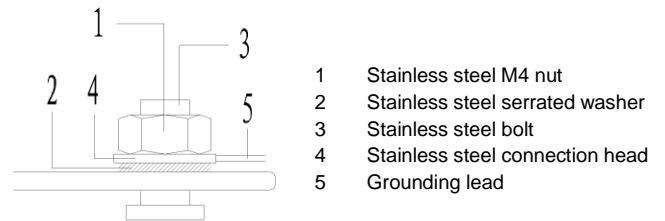
Even the slightest partial shading (e.g. from dirt deposits) will cause a reduction in yield. A module is considered “shadow-free” if it is unobscured across its entire surface for the whole year and even on the shortest day of the year unobstructed sunlight can reach the module.

• 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 (ϕ 4.5mm) 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 (ϕ 5mm). 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.

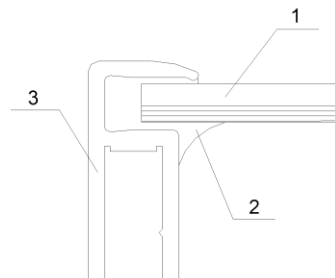
Recommended maximum series module configurations:
 $[V_{sys}/(1.25V_{oc})]/2$

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 40mm Clamp B 40mm;

Thickness: No less than 3mm;

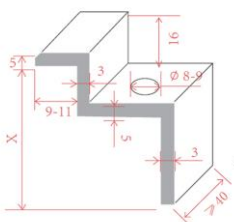
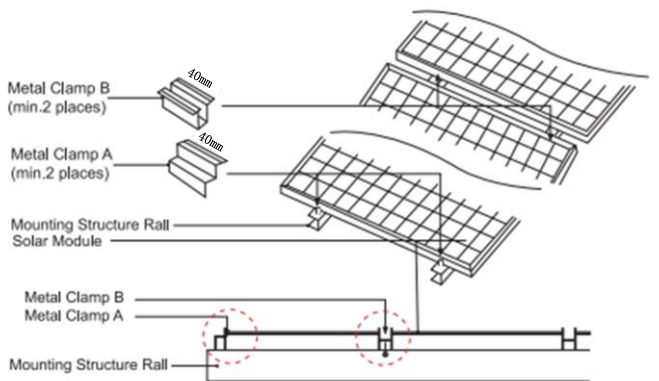
Material: Aluminum Alloy;

Bolt: M8;

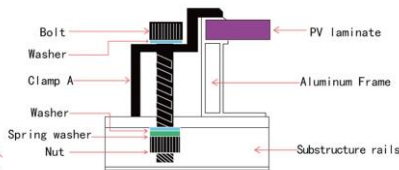
B. The torque range of screw tightening is between 18N.m to 24N.m

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.

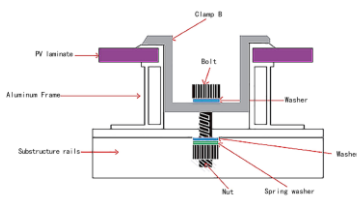
Avoid shading effects from the Modules clamps. Drainage holes on the Modules frame must not be closed or obscured by the clamps.



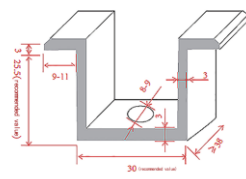
X= height of PV module



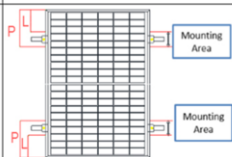
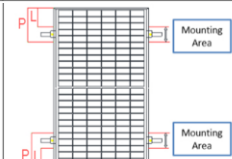
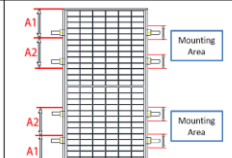
Clamp A



Clamp B



Fixture diagram (unit: mm)

Module 组件	Mechanical Load Pressure 载荷	Safety factor 安全系数	Mounting Direction 安装图
30/36/42/48/54- 60/108/120PC Backsheet-Glass 30/36/42/48- /54/60//108/1 20-	+3600 Pa /-1600Pa	1.5	
$L = (\text{Component length}/4 - 50)$ $P = (\text{Component length}/4 + 50)$ $A1 = A2 = 400\text{mm}$			
66/72/132/144/P CS Backsheet-Glass s	+3600 Pa /-1600 Pa	1.5	
78/156pcs Backsheet-Glass 78/156片单玻	+3600 Pa /-1600 Pa	1.5	

● 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 lightning 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 or PV-TS02 made by Tiansheng ,PV5 made by Friends, 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 maybe damage the module. Dirt must never be scraped or rubbed away when dry, as this will cause micro-scratched. 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.

Leapton Solar (Changshu) Co ., Ltd

No.55 Sunshine Avenue,Yushan High-tech Industrial Park, Changshu City,Jiangsu Province

Tel: 86- 512-88800068

Fax:86- 512-88800068

www.leaptonpv.com



Leapton Solar(Changshu) co.,Ltd

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 I _{sc}	P _{mpp} (W) ±3%	I _{mp} (A)	V _{mp} (V)	I _{sc} (A) ±5%	V _{oc} (V) ±5%	P _{mpp} (W) ±3%	I _{mp} (A)	V _{mp} (V)	I _{sc} (A) ±5%	V _{oc} (V) ±5%
LP156*156-M-72-380W	1960*990*40/35/30 1960*992/30*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	380	9.55	39.80	10.12	48.45	286	7.57	37.80	8.11	46.95
LP156*156-M-72-375W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	375	9.47	39.60	10.04	48.30	282	7.50	37.60	8.03	46.80
LP156*156-M-72-370W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	370	9.39	39.40	9.92	48.09	278	7.43	37.40	7.94	46.65
LP156*156-M-72-365W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	365	9.31	39.20	9.84	47.88	274	7.37	37.20	7.87	46.45
LP156*156-M-72-360W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	360	9.24	39.00	9.76	47.67	270	7.30	37.00	7.80	46.20
LP156*156-M-72-355W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	355	9.15	38.80	9.68	47.46	266	7.23	36.80	7.74	46.00
LP156*156-M-72-350W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	350	9.07	38.60	9.60	47.25	262	7.16	36.60	7.68	45.80
LP156*156-M-72-345W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	345	8.99	38.40	9.56	46.80	258	7.09	36.40	7.65	45.40
LP156*156-M-72-340W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	340	8.90	38.20	9.49	46.60	254	7.02	36.20	7.59	45.20
LP156*156-M-72-335W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	335	8.82	38.00	9.41	46.40	250	6.95	36.00	7.52	45.00
LP156*156-M-72-330W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	330	8.73	37.80	9.33	46.20	246	6.88	35.80	7.46	44.80
LP156*156-M-72-325W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	325	8.79	37.00	9.29	45.30	242	6.88	35.20	7.43	43.95
LP156*156-M-72-320W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	320	8.68	36.90	9.18	45.20	238	6.79	35.05	7.34	43.85
LP156*156-M-72-315W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	315	8.56	36.80	9.06	45.10	234	6.70	34.95	7.25	43.75
LP156*156-M-72-310W	1960*990*40/35/30 1960*992*40/35/30	21.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	310	8.45	36.69	8.95	44.99	230	6.60	34.85	7.16	43.65
LP156*156-M-60-320W	1640*990*35/30 1650*992*35/30	18 18.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	320	9.65	33.16	10.12	40.65	239	7.67	31.15	8.39	37.60
LP156*156-M-60-315W	1640*990*35/30 1650*992*35/30	18 18.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	315	9.56	32.96	10.03	40.45	235	7.59	30.96	8.32	37.35
LP156*156-M-60-310W	1640*990*35/30 1650*992*35/30	18 18.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	310	9.47	32.74	9.94	40.25	231	7.51	30.77	8.25	37.20
LP156*156-M-60-305W	1640*990*35/30 1650*992*35/30	18 18.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	305	9.38	32.51	9.85	40.05	227	7.43	30.55	8.18	37.05
LP156*156-M-60-300W	1640*990*35/30 1650*992*35/30	18 18.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	300	9.29	32.28	9.74	39.85	223	7.35	30.34	8.08	36.85
LP156*156-M-60-295W	1640*990*35/30 1650*992*35/30	18 18.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	295	9.20	32.05	9.65	39.65	219	7.27	30.12	8.01	36.65
LP156*156-M-60-290W	1640*990*35/30 1650*992*35/30	18 18.5	41°C (±3°C)	-0.40%/°C	-0.30%/°C	+0.06%/°C	290	9.06	32.00	9.63	39.10	215	7.15	30.08	7.99	36.15



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LP156*156-M-60-285W	1640*990*35/30 1650*992*35/30	18 18.5	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	285	8.96	31.80	9.54	38.90	211	7.06	29.89	7.92	36.00
LP156*156-M-60-280W	1640*990*35/30 1650*992*35/30	18 18.5	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	280	8.86	31.60	9.46	38.70	208	7.00	29.70	7.85	35.80
LP156*156-M-60-275W	1640*990*35/30 1650*992*35/30	18 18.5	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	275	8.76	31.40	9.38	38.50	204	6.92	29.50	7.79	35.60
LP156*156-M-60-270W	1640*990*35/30 1650*992*35/30	18 18.5	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	270	8.77	30.80	9.22	37.80	200	6.91	28.95	7.65	34.95
LP156*156-M-60-265W	1640*990*35/30 1650*992*35/30	18 18.5	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	265	8.63	30.70	9.08	37.70	196	6.79	28.85	7.53	34.90
LP156*156-M-60-260W	1640*990*35/30 1650*992*35/30	18 18.5	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	260	8.50	30.60	8.94	37.60	192	6.68	28.76	7.42	34.80
LP156*156-M-54-280W	1482*990*35/30	17	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	280	9.48	29.54	10.00	36.25	210	7.64	27.47	8.00	34.18
LP156*156-M-54-275W	1482*990*35/30	17	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	275	9.40	29.27	9.86	36.07	206	7.58	27.22	7.89	34.01
LP156*156-M-54-270W	1482*990*35/30	17	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	270	9.29	29.07	9.74	35.87	203	7.49	27.04	7.79	33.83
LP156*156-M-54-265W	1482*990*35/30	17	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	265	9.18	28.87	9.62	35.67	199	7.40	26.85	7.70	33.64
LP156*156-M-54-260W	1482*990*35/30	17	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	260	9.07	28.67	9.50	35.47	195	7.31	26.66	7.60	33.45
LP156*156-M-54-255W	1482*990*35/30	17	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	255	8.96	28.47	9.38	35.27	191	7.22	26.48	7.50	33.26
LP156*156-M-54-250W	1482*990*35/30	17	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	250	8.85	28.27	9.26	35.07	188	7.13	26.29	7.41	33.07
LP156*156-M-54-245W	1482*990*35/30	17	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	245	8.84	27.71	9.33	33.93	184	7.13	25.77	7.46	32.00
LP156*156-M-54-240W	1482*990*35/30	17	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	240	8.69	27.62	9.18	33.82	180	7.01	25.69	7.34	31.89
LP156*156-M-54-235W	1482*990*35/30	17	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	235	8.53	27.55	9.03	33.71	176	6.88	25.62	7.22	31.79
LP156*156-M-48-245W	1322*990*35/30	15	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	245	9.41	26.04	9.87	32.10	184	7.59	24.22	7.90	30.27
LP156*156-M-48-240W	1322*990*35/30	15	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	240	9.29	25.84	9.74	31.90	180	7.49	24.03	7.79	30.08
LP156*156-M-48-235W	1322*990*35/30	15	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	235	9.17	25.64	9.61	31.70	176	7.39	23.85	7.69	29.89
LP156*156-M-48-230W	1322*990*35/30	15	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	230	9.05	25.44	9.48	31.50	173	7.29	23.66	7.58	29.70
LP156*156-M-48-225W	1322*990*35/30	15	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	225	8.92	25.24	9.35	31.30	169	7.19	23.47	7.48	29.52
LP156*156-M-48-220W	1322*990*35/30	15	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	220	8.81	25.04	9.22	31.10	165	7.09	23.29	7.38	29.33
LP156*156-M-48-215W	1322*990*35/30	15	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	215	8.74	24.60	9.29	30.10	161	7.05	22.88	7.43	28.38
LP156*156-M-48-210W	1322*990*35/30	15	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	210	8.57	24.50	9.15	30.00	158	6.91	22.79	7.32	28.29
LP156*156-M-48-205W	1322*990*35/30	15	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	205	8.40	24.40	8.95	29.90	154	6.78	22.69	7.16	28.20
LP156*156-M-42-215W	1164*990*35/30	13	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	215	9.39	22.90	9.90	27.85	161	7.57	21.30	7.92	26.26
LP156*156-M-42-210W	1164*990*35/30	13	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	210	9.25	22.70	9.76	27.60	158	7.46	21.11	7.81	26.03
LP156*156-M-42-205W	1164*990*35/30	13	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	205	9.13	22.45	9.62	27.35	154	7.36	20.88	7.70	25.79
LP156*156-M-42-200W	1164*990*35/30	13	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	200	8.99	22.25	9.48	27.15	150	7.25	20.69	7.58	25.60
LP156*156-M-42-195W	1164*990*35/30	13	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	195	8.84	22.05	9.33	26.95	146	7.13	20.51	7.46	25.41
LP156*156-M-42-190W	1164*990*35/30	13	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	190	8.82	21.54	9.27	26.41	143	7.11	20.03	7.42	24.90
LP156*156-M-42-185W	1164*990*35/30	13	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	185	8.62	21.46	9.08	26.29	139	6.95	19.96	7.26	24.79
LP156*156-M-36-185W	1006*990*35/30	11.5	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	185	9.40	19.70	9.92	24.04	139	7.57	18.32	7.94	22.67
LP156*156-M-36-180W	1006*990*35/30	11.5	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	180	9.24	19.50	9.76	23.84	135	7.44	18.14	7.81	22.48
LP156*156-M-36-175W	1006*990*35/30	11.5	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	175	9.07	19.30	9.60	23.63	131	7.31	17.95	7.68	22.28
LP156*156-M-36-170W	1006*990*35/30	11.5	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	170	8.90	19.11	9.49	23.30	128	7.17	17.77	7.59	21.97
LP156*156-M-36-165W	1006*990*35/30	11.5	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	165	8.73	18.91	9.33	23.10	124	7.04	17.59	7.46	21.78
LP156*156-M-36-160W	1006*990*35/30	11.5	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	160	8.74	18.31	9.17	22.48	120	7.05	17.03	7.34	21.20
LP156*156-M-30-155W	848*990*35/30	9.8	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	155	9.47	16.37	9.94	20.13	116	7.64	15.22	7.95	18.98
LP156*156-M-30-150W	848*990*35/30	9.8	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	150	9.29	16.14	9.74	19.93	113	7.49	15.01	7.79	18.79
LP156*156-M-30-145W	848*990*35/30	9.8	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	145	9.06	16.00	9.63	19.55	109	7.31	14.88	7.70	18.44



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LP156*156-M-30-140W	848*990*35/30	9.8	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	140	8.86	15.80	9.46	19.35	105	7.15	14.69	7.57	18.25
LP156*156-M-30-135W	848*990*35/30	9.8	41℃ (±3℃)	-0.40%/℃	-0.30%/℃	+0.06%/℃	135	8.77	15.39	9.18	18.95	101	7.07	14.31	7.34	17.87
LP158*158-M-72-H-365W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	365	9.22	39.60	9.79	48.30	275	7.31	37.60	7.67	47.00
LP158*158-M-72-H-370W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	370	9.27	39.90	9.83	48.50	279	7.36	37.90	7.75	47.20
LP158*158-M-72-H-375W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	375	9.33	40.20	9.87	48.70	282	7.38	38.20	7.80	47.40
LP158*158-M-72-H-380W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	380	9.38	40.50	9.95	48.90	286	7.43	38.50	7.87	47.60
LP158*158-M-72-H-385W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	385	9.45	40.75	10.04	49.10	290	7.49	38.70	7.95	47.80
LP158*158-M-72-H-390W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	390	9.51	41.00	10.12	49.30	294	7.55	38.95	8.03	48.00
LP158*158-M-72-H-395W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	395	9.58	41.25	10.21	49.50	298	7.60	39.20	8.10	48.20
LP158*158-M-72-H-400W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	400	9.64	41.50	10.30	49.70	302	7.66	39.40	8.18	48.40
LP158*158-M-66-H-335W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	335	9.13	36.70	9.72	44.00	252	7.25	34.80	7.68	42.80
LP158*158-M-66-H-340W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	340	9.21	36.90	9.81	44.30	256	7.31	35.00	7.75	43.10
LP158*158-M-66-H-345W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	345	9.30	37.10	9.90	44.50	260	7.38	35.20	7.82	43.30
LP158*158-M-66-H-350W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	350	9.38	37.30	9.99	44.75	264	7.45	35.40	7.89	43.55
LP158*158-M-66-H-355W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	355	9.47	37.50	10.09	45.00	267	7.51	35.60	7.97	43.80
LP158*158-M-66-H-360W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	360	9.55	37.70	10.17	45.25	271	7.57	35.80	8.03	44.05
LP158*158-M-66-H-365W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	365	9.63	37.90	10.26	45.50	275	7.63	36.00	8.11	44.30
LP158*158-M-60-H-305W	1684*1002*35/30	19.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	305	9.30	32.80	9.85	40.30	227	7.37	30.80	8.10	37.20
LP158*158-M-60-H-310W	1684*1002*35/30	19.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	310	9.39	33.00	9.93	40.50	231	7.45	31.00	8.21	37.40
LP158*158-M-60-H-315W	1684*1002*35/30	19.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	315	9.49	33.20	10.02	40.70	234	7.50	31.20	8.32	37.60
LP158*158-M-60-H-320W	1684*1002*35/30	19.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	320	9.58	33.40	10.15	40.90	238	7.58	31.40	8.43	37.80
LP158*158-M-60-H-325W	1684*1002*35/30	19.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	325	9.68	33.60	10.20	41.10	242	7.66	31.60	8.54	38.00
LP158*158-M-60-H-330W	1684*1002*35/30	19.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	330	9.76	33.80	10.24	41.30	246	7.74	31.80	8.65	38.20
LP158*158-M-60-H-335W	1684*1002*35/30	19.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	335	9.94	34.00	10.36	41.50	252	7.82	32.00	8.76	38.40
LP158*158-M-72-395W	2008*1002*40/35/30 1979*1002*40/35/30	22.5 22.2	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	395	9.55	41.40	10.23	49.50	298	7.60	39.30	8.09	48.20
LP158*158-M-72-390W	2008*1002*40/35/30 1979*1002*40/35/30	22.5 22.2	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	390	9.49	41.10	10.12	49.30	294	7.54	39.10	8.02	48.00
LP158*158-M-72-385W	2008*1002*40/35/30 1979*1002*40/35/30	22.5 22.2	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	385	9.44	40.80	9.92	49.10	290	7.48	38.80	7.95	47.70
LP158*158-M-72-380W	2008*1002*40/35/30 1979*1002*40/35/30	22.5 22.2	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	380	9.39	40.50	9.75	48.90	286	7.42	38.60	7.88	47.50
LP158*158-M-60-330W	1684*1002*35/30 1665*1002*35/30	19.0 18.8	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	330	9.77	33.80	10.31	41.30	246	7.74	31.80	8.65	38.20
LP158*158-M-60-325W	1684*1002*35/30 1665*1002*35/30	19.0 18.8	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	325	9.68	33.60	10.20	41.10	242	7.66	31.60	8.54	38.00
LP158*158-M-60-320W	1684*1002*35/30 1665*1002*35/30	19.0 18.8	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	320	9.59	33.40	10.15	40.90	239	7.62	31.40	8.44	37.80
LP158*158-M-60-315W	1684*1002*35/30 1665*1002*35/30	19.0 18.8	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	315	9.49	33.20	10.04	40.70	235	7.56	31.20	8.33	37.60



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LP166*166-M-72-MH-460W	2108*1048*40/35/30	24.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	460	11.02	41.80	11.61	50.40	345	8.98	38.50	9.41	47.30
LP166*166-M-72-MH-455W	2108*1048*40/35/30	24.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	455	10.95	41.60	11.54	50.20	342	8.91	38.40	9.36	47.10
LP166*166-M-72-MH-450W	2108*1048*40/35/30	24.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	450	10.88	41.40	11.47	50.00	338	8.84	38.30	9.31	46.90
LP166*166-M-72-MH-445W	2108*1048*40/35/30	24.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	445	10.81	41.20	11.40	49.80	334	8.75	38.20	9.25	46.70
LP166*166-M-72-MH-440W	2108*1048*40/35/30	24.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	440	10.74	41.00	11.33	49.60	330	8.66	38.10	9.19	46.50
LP166*166-M-72-MH-435W	2108*1048*40/35/30	24.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	435	10.67	40.80	11.26	49.40	326	8.61	37.90	9.13	46.30
LP166*166-M-72-MH-430W	2108*1048*40/35/30	24.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	430	10.60	40.60	11.19	49.20	322	8.56	37.70	9.08	46.10
LP166*166-M-72-MH-425W	2108*1048*40/35/30	24.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	425	10.52	40.40	11.11	49.00	318	8.50	37.50	9.02	45.90
LP166*166-M-72-MH-420W	2108*1048*40/35/30	24.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	420	10.45	40.20	11.04	48.80	315	8.44	37.30	8.95	45.70
LP166*166-M-66-MH-420W	1936*1048*35/30	21.3	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	420	10.74	39.18	11.44	45.60	315	8.51	37.06	9.09	43.36
LP166*166-M-66-MH-415W	1936*1048*35/30	21.3	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	415	10.67	38.98	11.35	45.40	311	8.46	36.86	9.02	43.16
LP166*166-M-66-MH-410W	1936*1048*35/30	21.3	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	410	10.58	38.78	11.26	45.20	308	8.39	36.76	8.95	42.96
LP166*166-M-66-MH-405W	1936*1048*35/30	21.3	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	405	10.49	38.58	11.17	45.00	304	8.32	36.56	8.88	42.76
LP166*166-M-66-MH-400W	1936*1048*35/30	21.3	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	400	10.40	38.38	11.08	44.80	300	8.25	36.36	8.81	42.56
LP166*166-M-66-MH-395W	1936*1048*35/30	21.3	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	395	10.33	38.18	10.99	44.60	296	8.18	36.16	8.74	42.36
LP166*166-M-66-MH-390W	1936*1048*35/30	21.3	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	390	10.26	37.98	10.90	44.40	292	8.11	35.96	8.67	42.16
LP166*166-M-66-MH-385W	1936*1048*35/30	21.3	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	385	10.19	37.78	10.81	44.20	288	8.04	35.76	8.60	41.96
LP166*166-M-60-MH-385W	1765*1048*35/30	20.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	385	11.11	34.70	11.64	41.90	289	8.98	32.20	9.25	39.30
LP166*166-M-60-MH-380W	1765*1048*35/30	20.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	380	11.04	34.50	11.55	41.70	285	8.91	32.00	9.23	39.10
LP166*166-M-60-MH-375W	1765*1048*35/30	20.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	375	10.95	34.30	11.46	41.50	281	8.84	31.80	9.21	38.90
LP166*166-M-60-MH-370W	1765*1048*35/30	20.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	370	10.86	34.10	11.37	41.30	277	8.77	31.60	9.19	38.70
LP166*166-M-60-MH-365W	1765*1048*35/30	20.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	365	10.77	33.90	11.28	41.10	274	8.71	31.50	9.17	38.50
LP166*166-M-60-MH-360W	1765*1048*35/30	20.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	360	10.69	33.70	11.20	40.90	270	8.64	31.30	9.09	38.40
LP166*166-M-60-MH-355W	1765*1048*35/30	20.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	355	10.60	33.50	11.10	40.70	266	8.57	31.10	9.03	38.20
LP166*166-M-60-MH-350W	1765*1048*35/30	20.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	350	10.52	33.30	11.02	40.50	263	8.50	30.90	8.95	38.00
LP158*158-M-72-MH-420W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	420	10.10	41.58	10.68	49.55	316	7.77	40.80	8.35	48.10
LP158*158-M-72-MH-415W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	415	10.06	41.25	10.64	49.35	312	7.73	40.50	8.31	47.90
LP158*158-M-72-MH-410W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	410	10.02	40.92	10.60	49.15	309	7.69	40.20	8.27	47.70
LP158*158-M-72-MH-405W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	405	9.98	40.58	10.56	48.95	305	7.65	39.90	8.23	47.50
LP158*158-M-72-MH-400W	2008*1002*40/35/*30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	400	9.94	40.24	10.52	48.75	302	7.61	39.60	8.19	47.30
LP158*158-M-72-MH-395W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	395	9.90	39.90	10.48	48.55	298	7.57	39.30	8.16	47.10
LP158*158-M-72-MH-390W	2008*1002*40/35/30	22.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	390	9.86	39.55	10.44	48.35	294	7.53	39.10	8.13	46.90
LP158*158-M-66-MH-385W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	385	9.92	38.80	10.37	46.00	288	7.87	36.60	8.42	43.90
LP158*158-M-66-MH-380W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	380	9.86	38.55	10.33	45.80	285	7.84	36.35	8.37	43.70
LP158*158-M-66-MH-375W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	375	9.79	38.30	10.28	45.60	282	7.81	36.10	8.32	43.50
LP158*158-M-66-MH-370W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	370	9.73	38.05	10.22	45.40	279	7.77	35.90	8.27	43.30
LP158*158-M-66-MH-365W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	365	9.66	37.80	10.17	45.20	275	7.71	35.65	8.22	43.10
LP158*158-M-66-MH-360W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	360	9.59	37.55	10.13	45.00	271	7.66	35.40	8.17	42.90
LP158*158-M-66-MH-355W	1850*1002*40/35/30 1845*1002*40/35/30	21.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	355	9.52	37.30	10.08	44.80	267	7.59	35.20	8.12	42.70
LP158*158-M-60-MH-350W	1684*1002*35/30	19.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	350	10.12	34.60	10.70	41.50	265	8.23	32.20	8.69	39.10



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LP158*158-M-60-MH-345W	1684*1002*35/30	19.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	345	10.03	34.40	10.65	41.30	261	8.16	32.00	8.62	38.90
LP158*158-M-60-MH-340W	1684*1002*35/30	19.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	340	9.94	34.20	10.60	41.10	257	8.08	31.80	8.55	38.70
LP158*158-M-60-MH-335W	1684*1002*35/30	19.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	335	9.85	34.00	10.50	40.80	253	8.01	31.60	8.46	38.40
LP158*158-M-60-MH-330W	1684*1002*35/30	19.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	330	9.76	33.80	10.40	40.60	249	7.93	31.40	8.39	38.20
LP158*158-M-60-MH-325W	1684*1002*35/30	19.0	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	325	9.67	33.60	10.30	40.40	245	7.84	31.25	8.31	38.00
LP156*156-P-72-345W	1960*990*40/35/30 1960*992*40/35/30	21.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	345	8.98	38.40	9.52	46.80	256	7.11	36.00	7.61	43.30
LP156*156-P-72-340W	1960*990*40/35/30 1960*992*40/35/30	21.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	340	8.90	38.20	9.43	46.60	252	7.05	35.75	7.54	43.10
LP156*156-P-72-335W	1960*990*40/35/30 1960*992*40/35/30	21.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	335	8.82	38.00	9.34	46.40	248	6.99	35.50	7.47	42.90
LP156*156-P-72-330W	1960*990*40/35/30 1960*992*40/35/30	21.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	330	8.73	37.80	9.25	46.20	245	6.94	35.25	7.40	42.70
LP156*156-P-72-325W	1960*990*40/35/30 1960*992*40/35/30	21.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	325	8.64	37.60	9.16	46.00	241	6.88	35.00	7.33	42.50
LP156*156-P-72-320W	1960*990*40/35/30 1960*992*40/35/30	21.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	320	8.56	37.40	9.07	45.80	237	6.82	34.75	7.26	42.40
LP156*156-P-72-315W	1960*990*40/35/30 1960*992*40/35/30	21.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	315	8.47	37.20	8.99	45.60	233	6.78	34.45	7.19	42.20
LP156*156-P-72-310W	1960*990*40/35/30 1960*992*40/35/30	21.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	310	8.38	37.00	8.92	45.40	230	6.72	34.20	7.14	42.00
LP156*156-P-60-290W	1640*990*35/30 1650*992*35/30	18 18.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	290	9.07	31.95	9.52	40.00	216	7.22	29.90	7.60	35.70
LP156*156-P-60-285W	1640*990*35/30 1650*992*35/30	18 18.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	285	8.98	31.75	9.43	38.82	212	7.12	29.78	7.54	35.50
LP156*156-P-60-280W	1640*990*35/30 1650*992*35/30	18 18.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	280	8.87	31.55	9.34	38.62	208	7.05	29.50	7.47	35.30
LP156*156-P-60-275W	1640*990*35/30 1650*992*35/30	18 18.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	275	8.77	31.35	9.25	38.42	204	6.99	29.18	7.40	35.10
LP156*156-P-60-270W	1640*990*35/30 1650*992*35/30	18 18.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	270	8.67	31.15	9.16	38.22	201	6.92	29.00	7.33	34.90
LP156*156-P-60-265W	1640*990*35/30 1650*992*35/30	18 18.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	265	8.56	30.95	9.07	38.02	197	6.85	28.75	7.26	34.70
LP156*156-P-60-260W	1640*990*35/30 1650*992*35/30	18 18.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	260	8.46	30.75	8.98	37.82	193	6.77	28.55	7.18	34.60
LP156*156-P-54-255W	1482*990*35/30	17	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	255	8.90	28.65	9.43	34.95	189	7.06	26.80	7.54	32.00
LP156*156-P-54-250W	1482*990*35/30	17	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	250	8.79	28.45	9.31	34.75	186	6.97	26.60	7.45	31.80
LP156*156-P-54-245W	1482*990*35/30	17	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	245	8.68	28.25	9.19	34.55	182	6.90	26.35	7.35	31.60
LP156*156-P-54-240W	1482*990*35/30	17	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	240	8.56	28.05	9.07	34.35	178	6.82	26.10	7.26	31.40
LP156*156-P-54-235W	1482*990*35/30	17	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	235	8.45	27.85	8.95	34.15	174	6.75	25.85	7.16	31.20
LP156*156-P-48-225W	1322*990*35/30	15	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	225	8.86	25.40	9.38	31.00	167	7.01	23.80	7.50	28.40
LP156*156-P-48-220W	1322*990*35/30	15	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	220	8.73	25.20	9.25	30.80	163	6.93	23.55	7.40	28.20
LP156*156-P-48-215W	1322*990*35/30	15	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	215	8.60	25.00	9.12	30.60	160	6.85	23.30	7.30	28.00
LP156*156-P-48-210W	1322*990*35/30	15	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	210	8.47	24.80	8.99	30.40	156	6.76	23.05	7.19	27.80
LP156*156-P-48-205W	1322*990*35/30	15	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	205	8.34	24.60	8.86	30.20	152	6.66	22.85	7.09	27.60
LP156*156-P-42-195W	1164*990*35/30	13	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	195	8.81	22.15	9.33	27.07	145	6.97	20.75	7.46	24.80
LP156*156-P-42-190W	1164*990*35/30	13	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	190	8.66	21.94	9.17	26.84	141	6.88	20.50	7.34	24.60



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LP156*156-P-42-185W	1164*990*35/30	13	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	185	8.52	21.73	9.01	26.61	137	6.78	20.25	7.21	34.40
LP156*156-P-42-180W	1164*990*35/30	13	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	180	8.37	21.52	8.85	26.38	134	6.68	20.00	7.08	24.20
LP156*156-P-36-170W	1006*990*35/30	11.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	170	8.90	19.10	9.43	23.30	126	7.07	17.85	7.54	21.30
LP156*156-P-36-165W	1006*990*35/30	11.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	165	8.73	18.90	9.25	23.10	122	6.94	17.65	7.40	21.10
LP156*156-P-36-160W	1006*990*35/30	11.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	160	8.56	18.70	9.07	22.90	119	6.80	17.45	7.26	20.90
LP156*156-P-36-155W	1006*990*35/30	11.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	155	8.38	18.50	8.92	22.70	115	6.69	17.20	7.14	20.70
LP156*156-P-30-140W	848*990*35/30	9.8	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	140	8.87	15.78	9.34	19.31	104	7.02	14.80	7.47	17.80
LP156*156-P-30-135W	848*990*35/30	9.8	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	135	8.66	15.58	9.16	19.11	100	6.88	14.55	7.33	17.50
LP156*156-P-30-130W	848*990*35/30	9.8	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	130	8.45	15.38	8.98	18.91	96	6.72	14.35	7.18	17.30
LP156*156-P-72-H-335W	2008*1002*40/35/30 1988*992*40/35/30	22.5 22.0	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	335	8.75	38.30	9.32	46.45	251	6.98	36.00	7.46	43.00
LP156*156-P-72-H-340W	2008*1002*40/35/30 1988*992*40/35/30	22.5 22.0	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	340	8.81	38.60	9.41	46.70	255	7.04	36.25	7.53	43.20
LP156*156-P-72-H-345W	2008*1002*40/35/30 1988*992*40/35/30	22.5 22.0	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	345	8.88	38.85	9.50	46.90	259	7.09	36.50	7.60	43.40
LP156*156-P-72-H-350W	2008*1002*40/35/30 1988*992*40/35/30	22.5 22.0	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	350	8.95	39.10	9.58	47.10	263	7.14	36.75	7.66	43.60
LP156*156-P-72-H-355W	2008*1002*40/35/30 1988*992*40/35/30	22.5 22.0	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	355	9.01	39.40	9.67	47.30	266	7.20	37.00	7.74	43.80
LP156*156-P-72-H-360W	2008*1002*40/35/30 1988*992*40/35/30	22.5 22.0	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	360	9.07	39.70	9.76	47.50	270	7.25	37.25	7.81	44.00
LP156*156-P-72-H-365W	2008*1002*40/35/30 1988*992*40/35/30	22.5 22.0	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	365	9.14	39.95	9.84	47.70	274	7.30	37.50	7.87	44.20
LP156*156-P-72-H-370W	2008*1002*40/35/30 1988*992*40/35/30	22.5 22.0	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	370	9.21	40.20	9.93	47.90	278	7.35	37.75	7.94	44.40
LP156*156-P-60-H-280W	1684*1002*35/30 1670*992*35/30	19.0 18.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	280	8.78	31.90	9.45	38.60	210	7.00	30.00	7.56	35.70
LP156*156-P-60-H-285W	1684*1002*35/30 1670*992*35/30	19.0 18.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	285	8.81	32.35	9.55	38.80	214	7.05	30.30	7.64	35.90
LP156*156-P-60-H-290W	1684*1002*35/30 1670*992*35/30	19.0 18.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	290	8.84	32.80	9.65	39.00	218	7.11	30.60	7.72	36.10
LP156*156-P-60-H-295W	1684*1002*35/30 1670*992*35/30	19.0 18.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	295	8.87	33.25	9.75	39.20	221	7.16	30.90	7.80	36.30
LP156*156-P-60-H-300W	1684*1002*35/30 1670*992*35/30	19.0 18.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	300	8.91	33.66	9.85	39.40	225	7.21	31.20	7.88	36.50
LP156*156-P-60-H-305W	1684*1002*35/30 1670*992*35/30	19.0 18.5	41℃ (±3℃)	-0.42%/℃	-0.31%/℃	+0.04%/℃	305	8.97	34.00	9.95	39.60	229	7.26	31.50	7.96	36.70
LP182*182-M-78-MH-560W	2443*1134*35 2472*1134*35	31.0 31.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	560	12.86	43.60	13.57	52.50	412	10.12	40.70	10.96	49.00
LP182*182-M-78-MH-565W	2443*1134*35 2472*1134*35	31.0 31.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	565	12.91	43.80	13.63	52.70	416	10.17	40.90	11.00	49.20
LP182*182-M-78-MH-570W	2443*1134*35 2472*1134*35	31.0 31.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	570	12.96	44.00	13.69	52.90	420	10.22	41.10	11.04	49.40
LP182*182-M-78-MH-575W	2443*1134*35 2472*1134*35	31.0 31.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	575	13.01	44.20	13.75	53.10	424	10.27	41.30	11.08	49.60
LP182*182-M-78-MH-580W	2443*1134*35 2472*1134*35	31.0 31.5	41℃ (±3℃)	-0.36%/℃	-0.28%/℃	+0.05%/℃	580	13.07	44.40	13.81	53.30	428	10.32	41.40	11.13	49.80



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LP182*182-M-78-MH-585W	2443*1134*35 2472*1134*35	31.0 31.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	585	13.12	44.60	13.87	53.50	431	10.36	41.60	11.18	50.00
LP182*182-M-78-MH-590W	2443*1134*35 2472*1134*35	31.0 31.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	590	13.17	44.80	13.94	53.70	435	10.41	41.80	11.23	50.20
LP182*182-M-78-MH-595W	2443*1134*35 2472*1134*35	31.0 31.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	595	13.22	45.00	14.01	53.90	438	10.45	42.00	11.28	50.40
LP182*182-M-78-MH-600W	2443*1134*35 2472*1134*35	31.0 31.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	600	13.27	45.20	14.08	54.10	442	10.50	42.20	11.33	50.60
LP182*182-M-78-MH-605W	2443*1134*35 2472*1134*35	31.0 31.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	605	13.32	45.40	14.15	54.30	446	10.54	42.39	11.38	50.80
LP182*182-M-72-MH-515W	2256*1134*35 2279*1134*35	28.5 29.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	515	12.82	40.20	13.61	48.40	384	10.28	37.40	10.96	45.30
LP182*182-M-72-MH-520W	2256*1134*35 2279*1134*35	28.5 29.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	520	12.88	40.40	13.66	48.60	388	10.32	37.60	11.01	45.50
LP182*182-M-72-MH-525W	2256*1134*35 2279*1134*35	28.5 29.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	525	12.94	40.60	13.71	48.80	392	10.36	37.80	11.05	45.70
LP182*182-M-72-MH-530W	2256*1134*35 2279*1134*35	28.5 29.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	530	13.00	40.80	13.76	49.00	395	10.40	38.00	11.09	45.90
LP182*182-M-72-MH-535W	2256*1134*35 2279*1134*35	28.5 29.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	535	13.05	41.00	13.81	49.20	399	10.44	38.20	11.13	46.10
LP182*182-M-72-MH-540W	2256*1134*35 2279*1134*35	28.5 29.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	540	13.11	41.20	13.87	49.40	402	10.49	38.40	11.18	46.30
LP182*182-M-72-MH-545W	2256*1134*35 2279*1134*35	28.5 29.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	545	13.17	41.40	13.93	49.60	406	10.54	38.60	11.23	46.40
LP182*182-M-72-MH-550W	2256*1134*35 2279*1134*35	28.5 29.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	550	13.23	41.60	13.99	49.80	410	10.58	38.80	11.28	46.60
LP182*182-M-72-MH-555W	2256*1134*35 2279*1134*35	28.5 29.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	555	13.29	41.80	14.05	50.00	414	10.62	39.00	11.33	46.80
LP182*182-M-66-MH-475W	2073*1134*35/30 2094*1134*35/30	26.0/25.5 26.5/26.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	475	12.92	36.80	13.58	44.30	350	10.26	34.20	10.92	41.30
LP182*182-M-66-MH-480W	2073*1134*35/30 2094*1134*35/30	26.0/25.5 26.5/26.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	480	12.98	37.00	13.63	44.50	354	10.29	34.40	10.97	41.50
LP182*182-M-66-MH-485W	2073*1134*35/30 2094*1134*35/30	26.0/25.5 26.5/26.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	485	13.04	37.20	13.68	44.70	357	10.32	34.60	11.02	41.70
LP182*182-M-66-MH-490W	2073*1134*35/30 2094*1134*35/30	26.0/25.5 26.5/26.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	490	13.10	37.40	13.73	44.90	360	10.35	34.80	11.07	41.90
LP182*182-M-66-MH-495W	2073*1134*35/30 2094*1134*35/30	26.0/25.5 26.5/26.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	495	13.16	37.60	13.78	45.10	364	10.40	35.00	11.12	42.10
LP182*182-M-66-MH-500W	2073*1134*35/30 2094*1134*35/30	26.0/25.5 26.5/26.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	500	13.22	37.80	13.83	45.30	368	10.45	35.20	11.17	42.30
LP182*182-M-66-MH-505W	2073*1134*35/30 2094*1134*35/30	26.0/25.5 26.5/26.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	505	13.28	38.00	13.89	45.50	372	10.51	35.40	11.22	42.50
LP182*182-M-66-MH-510W	2073*1134*35/30 2094*1134*35/30	26.0/25.5 26.5/26.0	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	510	13.34	38.20	13.94	45.70	375	10.53	35.60	11.27	42.70
LP182*182-M-60-MH-430W	1890*1134*35/30 1909*1134*35/30	23.5/23.0 24.0/23.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	430	12.72	33.80	13.48	40.60	316	10.02	31.54	10.58	37.88
LP182*182-M-60-MH-435W	1890*1134*35/30 1909*1134*35/30	23.5/23.0 24.0/23.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	435	12.78	34.00	13.53	40.80	320	10.08	31.74	10.63	38.08



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LP182*182-M-60-MH-440W	1890*1134*35/30 1909*1134*35/30	23.5/23.0 24.0/23.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	440	12.84	34.20	13.58	41.00	324	10.14	31.94	10.68	38.28
LP182*182-M-60-MH-445W	1890*1134*35/30 1909*1134*35/30	23.5/23.0 24.0/23.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	445	12.90	34.50	13.63	41.20	328	10.21	32.14	10.73	38.48
LP182*182-M-60-MH-450W	1890*1134*35/30 1909*1134*35/30	23.5/23.0 24.0/23.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	450	12.96	34.70	13.68	41.40	331	10.24	32.34	10.78	38.68
LP182*182-M-60-MH-455W	1890*1134*35/30 1909*1134*35/30	23.5/23.0 24.0/23.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	455	13.02	34.90	13.73	41.60	335	10.30	32.54	10.83	38.88
LP182*182-M-60-MH-460W	1890*1134*35/30 1909*1134*35/30	23.5/23.0 24.0/23.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	460	13.08	35.20	13.78	41.80	339	10.35	32.74	10.88	39.08
LP182*182-M-60-MH-465W	1890*1134*35/30 1909*1134*35/30	23.5/23.0 24.0/23.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	465	13.14	35.40	13.83	42.00	343	10.40	32.94	10.93	39.28
LP182*182-M-54-MH-390W	1707*1134*35/30 1724*1134*35/30	21.5/21.0 22.0/21.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	390	12.82	30.42	13.50	36.54	287	10.11	28.38	10.60	34.09
LP182*182-M-54-MH-395W	1707*1134*35/30 1724*1134*35/30	21.5/21.0 22.0/21.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	395	12.88	30.62	13.55	36.74	291	10.18	28.58	10.65	34.29
LP182*182-M-54-MH-400W	1707*1134*35/30 1724*1134*35/30	21.5/21.0 22.0/21.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	400	12.94	30.92	13.60	36.94	295	10.25	28.78	10.70	34.49
LP182*182-M-54-MH-405W	1707*1134*35/30 1724*1134*35/30	21.5/21.0 22.0/21.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	405	13.00	31.12	13.65	37.14	298	10.28	28.98	10.75	34.69
LP182*182-M-54-MH-410W	1707*1134*35/30 1724*1134*35/30	21.5/21.0 22.0/21.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	410	13.06	31.32	13.70	37.34	302	10.35	29.18	10.80	34.89
LP182*182-M-54-MH-415W	1707*1134*35/30 1724*1134*35/30	21.5/21.0 22.0/21.5	41°C (±3°C)	-0.36%/°C	-0.28%/°C	+0.05%/°C	415	13.12	31.62	13.75	37.54	306	10.40	29.38	11.00	35.09
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): 15A /20A/25A
- 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.