

**solar outdoor
lighting systems**



X-SERIES LED



**AMERICAN MADE X SERIES LED SOLAR LIGHTING SYSTEM:
X-35-16000-400**

SYSTEM OUTPUT	16000+ LUMENS PER FIXTURE
SYSTEM VOLTAGE	INPUT 12/24 VDC – OUTPUT 12/24 VDC
SYSTEM CERTIFICATION	<ul style="list-style-type: none"> - ETL Listed complete system to – UL 1598 - Certified to CAN/CSA C22.2 No. 250.0 - Dark Sky Compliant
OPERATIONAL TEMPERATURES	System is operational from -60° Celsius (with un-frozen batteries) to maximum temperature range of 60° Celsius with 90% humidity
SOLAR MODULES	<ul style="list-style-type: none"> - High efficiency UL, CUL, and CE listed 2 x 200 watt panel Mono Crystalline - 20 year warranty - Salt water spray and corrosion resistant tested
BATTERY ENCLOSURE	<ul style="list-style-type: none"> - Aluminum battery enclosure - Pre-wired and tested - Designed for a harsh or marine environment - Thermal resistant powder coated to resist salt water spray and sand - Raised ridge rubber battery mat for thermal battery protection
ELECTRONICS	<ul style="list-style-type: none"> - Pre-wired and mounted in battery enclosure box - Complete triple circuit breaker protected (no fuse replacement) - Maximum Power Point Tracking (MPPT) charge controller is reverse polarity protected and cannot be damaged by wiring incorrectly - Instant light test switch – no need to wait for sunset to confirm correct installation - Programmable to any time required
LED LIGHT FIXTURE	<ul style="list-style-type: none"> - Dark Sky Compliant - Glass cut off optics <p>Phillips Illumiled 5050 LED Chips 160-170 lumens per watt</p> <p>Color Temperature Options: <input type="checkbox"/> 4300k (standard option)</p>
TOP OF POLE SOLAR MOUNT	Aluminum solar array mounting system to provide multiple degrees of adjustments for more precise alignment with the sun
GEL PACK BATTERY	<ul style="list-style-type: none"> - Zero maintenance gel pack battery - High capacity deep cycle - 3+ days back up power - Automatic low-voltage shutdown to protect battery - Battery operating temperature: -60° Celsius to 60° Celsius

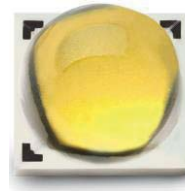
Product Benefits

PHILIPS LUMILEDS LED LUMINOUS SOURCE

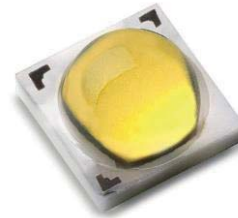
The new SLI Series LED street light is utilizing PHILIPS LUXEON® T LED luminous source, providing excellent lumen output, long-lasting stability and splendid sight.

Each PHILIPS LUXEON® T chip owns electrostatic protection component, maximally avoid the damage of electrostatic.

More information about the PHILIPS LUXEON® Rebel ES and solid-state lighting technologies can be found at www.philipslumileds.com.



- Superior efficacy
- Leading lumen output
- Ultimate design flexibility



MW MEAN WELL LED DRIVER

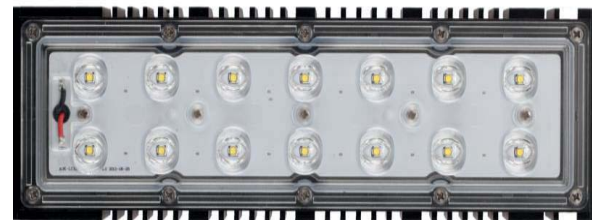


Full range SLI Series LED street light utilizing MeanWell HLG Series high-end driver. Providing great luminaire stability, lifespan and optimal performance status.

More information about the MeanWell HLG Series and LED driver technologies, please visit www.meanwell.com

BRAND-NEW LED MODULE DESIGN

Exquisite design with powerful thermal output, with more reliable waterproof performance.



With over 15 years experience in street and parking lot lighting, Solar Lighting International's SLI Series Street & Parking lighting continues. SLI's street and parking lot lighting reflects reliability and performance. Each design has been independently verified and tested by third party professional laboratories.

Equipped with exceptional 5th generation LED module design, the brand new SLI Series LED Street Light will provide superior luminous output, stability, and longevity, providing the most cost-effective LED Street Light on the market today.

0-90° Bracket Adjustment

The angles of the bracket of iL street light can be adjusted from 0 to 90 degrees to fit with different styles of poles.

Easy to assemble and disassemble for installation and maintenance, our light provides 160-170 lm per watt output, IP67 rated, 90% + driver efficiency, and a 5 year warranty for the entire system. *

*Battery warranty is prorated from the manufacturer



SLI-100W



New



Black / white / silver / bronze color housing optional
1-10V / PWM / Resistance dimming optional

Specifications

Electrical Specifications

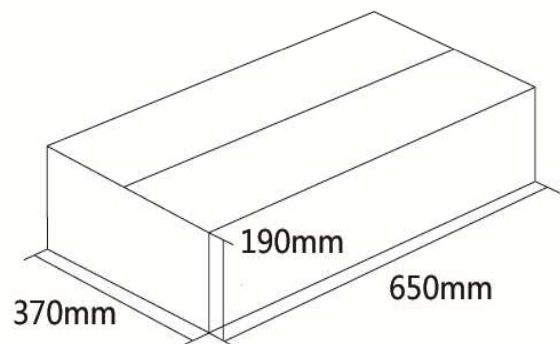
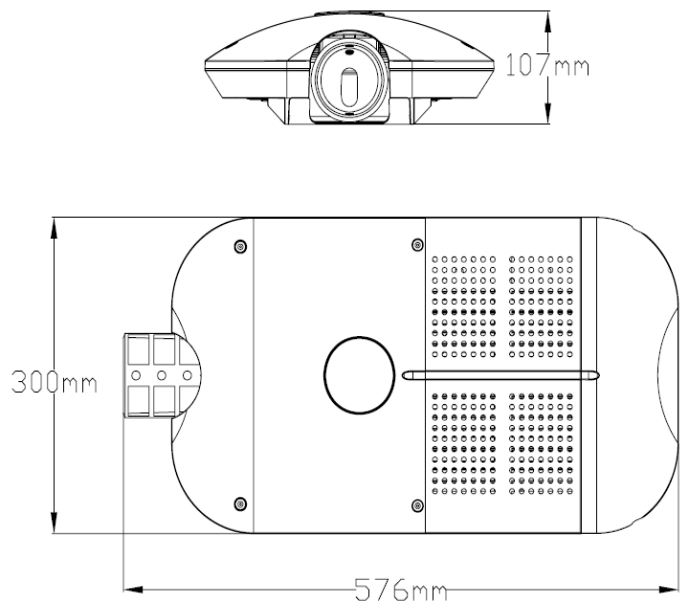
Model No.	SLI-100W
Nominal Wattage	100W
Nominal Voltage	100-277VAC, 50/60Hz 24VDC
Maximum Current	AC 0.9A (max) DC 0.3A (max)
Power Factor (PF)	>0.95
Driver Efficiency	>92%

Photometric Specifications

Luminous Flux	+Lumen tolerance +/- 5% 16,000lm
CRI	Ra>70/80
CCT	3000-6500K
Optional Beam Angle	60*150° / 70*160°

Mechanical Specifications

IP&IK Rating	IP66 & IK10
Lifetime	50000 hours - L70, @25°C
Heat Radiator	Anodized Aluminum
Lens	PC
Fixture Dimension	576*300*107mm 22.7*11.8*4.2 inches
Net Weight	7.5kg
Carton Dimension	650*370*190mm
Gross Weight	8.3kg



BENEFITS / BENEFICIOS

High Efficiency / Alta Eficiencia

High cell efficiency of up to 17.25%.

Líder en la industria empleando celdas monocristalinas con eficiencias de hasta 17.25%.

More Power / Mayor Potencia

Delivers up to 50% more power per unit area than conventional solar panels and 100% more than thin film solar panels.

Ofrece hasta un 50% más de potencia por unidad de área a comparación de los paneles solares convencionales y un 100% más que los paneles solares de película delgada.

Reduces Installation Cost / Reducción en Costos de Instalación

More power per panel means fewer modules per installation. This saves both time and money.

Más potencia por panel representa menos módulos por instalación. Esto ahorra tanto tiempo como dinero.

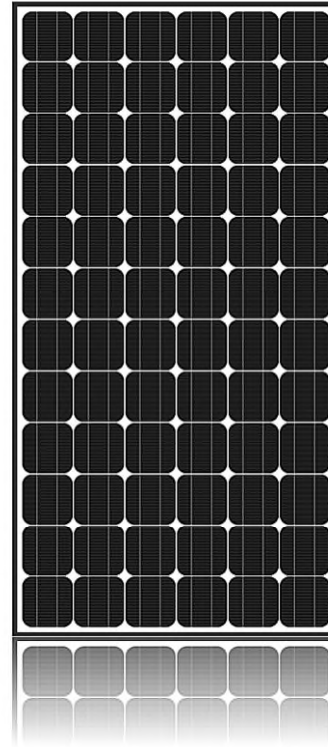
Reliable and Robust Design / Diseño Robusto y Confiable

Certified materials, tempered front glass, and a sturdy anodized frame allows the module to operate reliably in multiple mounting configurations.

Materiales certificados, cristal templado y un robusto marco anodizado el cual permite al módulo operar sin problema alguno y en múltiples configuraciones de montaje.

**S72MC**

72 Cells

S72MC-190, S72MC-195, S72MC-200,
S72MC-205, S72MC-210**Solartec 190 - 210W solar modules provide industry leading efficiency and performance.**

Utilizing 72 next generation solar cells and an optimized module design, Solartec S72MC solar module delivers an unprecedented total conversion efficiency. Solartec 190 - 210W modules reduced voltage - temperature coefficient, and exceptional low - light performance attributes, provide far higher energy delivery at peak power than conventional modules.

Los módulos solares Solartec de 190 - 210W proveen un liderazgo incomparable en la industria gracias a su eficiencia y desempeño.

El módulo solar Solartec S72MC utiliza 72 celdas solares de última generación, aunado al óptimo diseño del módulo, permitiéndole ofrecer una eficiencia superior. El reducido valor del coeficiente de voltaje-temperatura, y su desempeño excepcional en condiciones de baja iluminación permiten a los módulos de 190 - 210W entregar mucha mayor energía en condiciones de potencia máxima, en comparación con los módulos convencionales.

Tested Operating Conditions / Condiciones de Operación

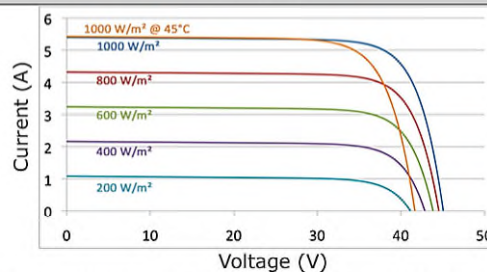
Temperature / Temperatura	-40°C to +90°C (-40°F to + 194°F)
Max load / Carga máxima	50psf (2400 pascals) front and back
Impact Resistance / Resistencia al Impacto	Hail Ø-25mm (1 in.) at 23 m/s (52mph)
Complies with / Normado con	IEC 61215 / IEC 61730

S72MC

Specifications / Especificaciones

Number of cells / Numero de celdas	72 (6 x 12)
Module dimensions/ Dimensiones del módulo	1580mm x 808mm
Weight / Peso	15.5 kg
Cable / Cable	90 cm long double XLPE layer, TÜV Certified, 4.0mm ²
Connection / Conexión	IP65 Type IV Junction box with 3 bypass diodes, MC4 Type Plug, TÜV Certified.
Back Sheet / Hoja Trasera	White/Black/Blue TPT or Glass
Frame / Marco	Aluminium (40 mm) or Without frame
Fire Rating / Clasificación de flama	Class C

I-V Curve



Current / voltage characteristics with dependence on irradiance and module temperature

Maximum system voltage/ Voltaje máximo del sistema	600 V	Maximum series fuse/ Valor máximo del fusible en serie	10 A
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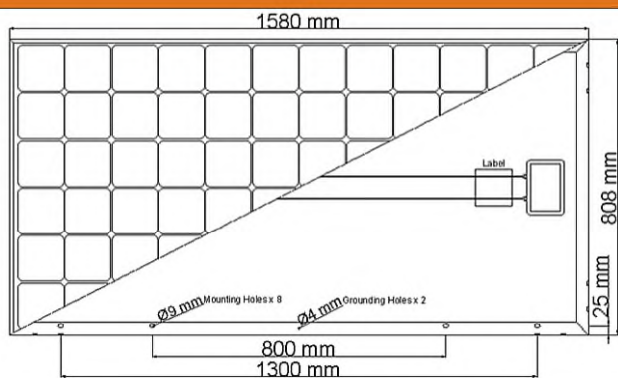
125mm Monocrystalline Silicon Cells Solar Module / Panel Solar con Celdas de 125mm de Silicio Monocristalino

Model / Modelo	S72MC-190		S72MC-195		S72MC-200		S72MC-205		S72MC-210	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Open circuit voltage (V _{oc}) / Voltaje de circuito abierto	45.07 V	41.10 V	45.36 V	42.00 V	45.62 V	42.20 V	45.74 V	42.40 V	45.9 V	42.60 V
Optimum operating voltage (V _{mpp}) / Voltaje en el punto de máxima potencia	37.73 V	33.93 V	38.16 V	35.20 V	37.26 V	34.70 V	37.56 V	35.40 V	37.86 V	36.00 V
Short circuit current (I _{sc}) / Corriente de cortocircuito	5.40 A	4.34 A	5.40 A	4.35 A	5.66 A	4.55 A	5.69 A	4.57 A	5.73 A	4.60 A
Optimum operating current (I _{mpp}) / Corriente en el punto de máxima potencia	5.03 A	3.99 A	5.10 A	4.03 A	5.37 A	4.19 A	5.46 A	4.25 A	5.55 A	4.31 A
Maximum power (P _{max}) / Potencia máxima	190 W	135.4 W	195 W	141.8 W	200 W	145.6 W	205 W	150.3 W	210 W	155.1 W
Module efficiency / Eficiencia del módulo	14.9 %		15.29 %		15.74%		16.18%		16.64%	

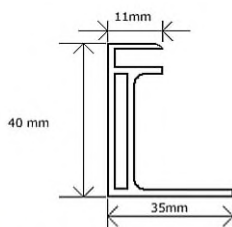
Temperature Coefficients / Coeficientes de Temperatura

of I _{sc} / de I _{sc} (α)	+0.024% / °C	of V _{oc} / de V _{oc} (β)	-0.356% / °C	of P _{max} / de P _{max} (γ)	-0.46% / °C
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Dimensions / Dimensiones



Aluminium Frame / Marco de Aluminio



Guarantees / Garantías

Materials comprising photovoltaic modules and any possible defects due to the manufacturing process for 10 years.
Los materiales que componen los módulos fotovoltaicos y los posibles defectos que se deban al proceso de fabricación por un periodo de 10 años.

At least 90% output power provided by the photovoltaic module over 10 years.
Generación mínima del 90% de la potencia de salida nominal del módulo a los 10 años.

At least 80% output power provided by the photovoltaic module over 20 years.
Generación mínima del 80% de la potencia de salida nominal del módulo a los 20 años.

Measured under standard test conditions and normal operating cell temperature (STC:1000W/m², 25°C, AM 1.5. NOCT:800W/m², 45±2°C, AM 1.5.)
Medido bajo condiciones de prueba estándar y bajo condiciones de temperatura de operación nominal de la celda (CPS:1000W/m², 25°C, AM 1.5. TONC:800W/m², 45±2°C, AM 1.5.)

The electric characteristics of each photovoltaic module are individually monitored leaving the results available to the customer. Warranted Tolerance ±3%.
Las características eléctricas de cada módulo fotovoltaico son monitoreadas individualmente dejando los resultados a disposición del cliente. Tolerancia Garantizada ±3%.

Applications / Aplicaciones

- Building Integration
Integración estructural
- Solar Power kits and Plants
Plantas de energía solar
- Solar Pumping Systems
Sistemas de bombeo solar
- Energy Bill Savings
Reducción de costos en energía

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Contact / Contacto
Solartec S.A. de C.V.
info@solartec.mx

Carretera Libramiento Norte Km 4.6
Lote No. 9, Parque Industrial Apolo
Irapuato, Gto. México CP 36826
Phone Number: +52 (462) 635 9828





MOUNTS: SLI-TX-2 series



TOP-OF-POLE MOUNTING (TPM) :

SLI, Inc. manufactures and distributes a complete line of mounting kits to accommodate a wide range of off-grid applications. From single module top-of-pole mounts to complex multi-panel arrays, our mounting line has the flexibility to meet your mounting needs.

Our Top-of-Pole Mounts Feature:

Rugged Materials and Construction,
Precision Engineering and Expert Support

Pole Selection:

- Determine solar panel or solar array area (SQ. FT)
- Select pole size based on selection guidelines in Table 1.
(Solar Lighting International, Inc. does not supply poles with our mounting kits).



SLI-TX-2Series:
- Available in 2",3",4" and 6" SCH 40 pipe

Top-of-Pole : Guidelines For Pole Selection				
Module Area	Pole Size	Depth In Ground	Height Above Ground	Hole Diameter
15 SQ. FT.	2" SCH40 (2-3/8" OD)	30"-36"	48"-72"	8"-12"
28 SQ. FT.	3" SCH40 (3-1/2" OD)	36"-42"	48"-72"	12"-16"
35 SQ. FT.	3" SCH40 (3-1/2" OD)	38"-44"	60"-72"	12"-16"
60 SQ. FT.	4" SCH40 (4-1/2" OD)	42"-48"	60"-72"	16"-24"
90 SQ. FT.	6" SCH40 (6-5/8" OD)	48"-60"	60"-84"	24"-30"
120 SQ. FT.	6" SCH40 (6-5/8" OD)	48"-72"	72"-84"	24"-30"

Table 1

* Module Area (SQ. FT) = W (Panel Width in FT) x L (Panel Length in FT)

* Solar Array Area (SQ. FT) = W (Panel Width in FT) x L (Panel Length in FT) x Number of Panels per Array

Photographs are intended to portray typical enclosure appearance, actual appearance may vary.

- ① Panel Kit Rail
- ② Solar Panel
- ③ L-Bracket (Foot)
- ④ Cross Pipe
- ⑤ Pipe End Cap
- ⑥ U-Bolt with Saddle Bracket

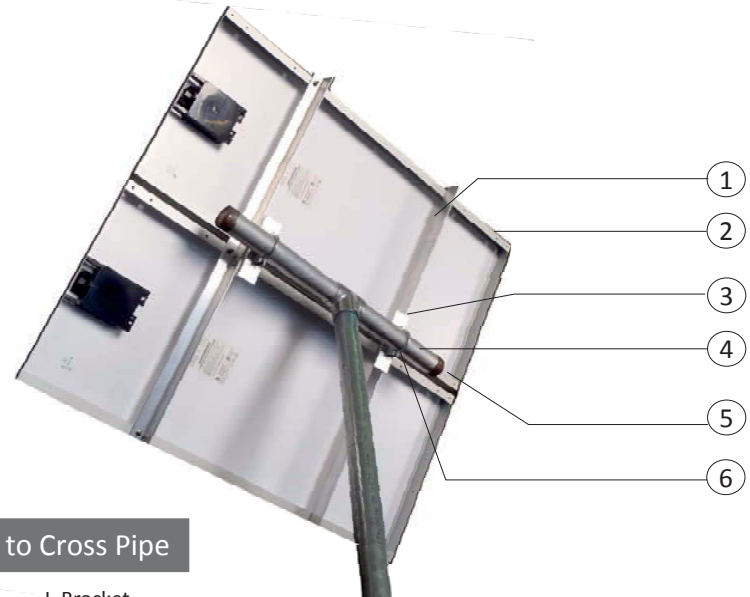
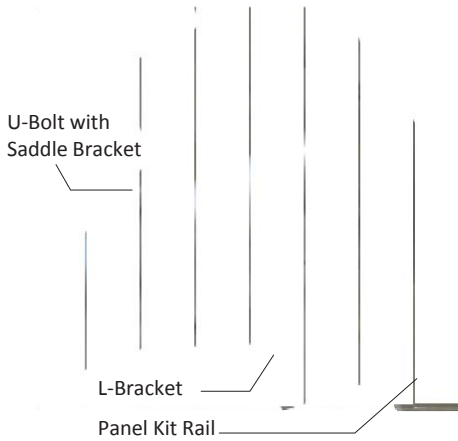
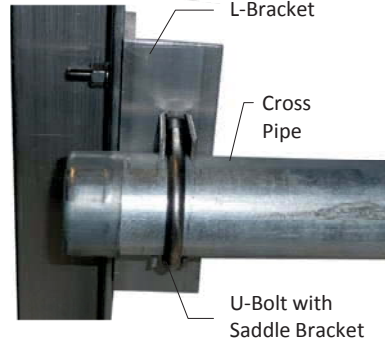


Figure 1. Mounting kit components

Attachment to Panel Kit Rail



Attachment to Cross Pipe



Array Tilt Angle Selection:

SITE LATITUDE: (In Degrees)	FIXED TILT ANGLE
0° TO 15°	15°
15° TO 25°	SAME AS LATITUDE
25° TO 30°	SAME AS LATITUDE +5°
30° TO 35°	SAME AS LATITUDE +10°
35° TO 40°	SAME AS LATITUDE +15°
40° +	SAME AS LATITUDE +20°

Table 2.

Figure 2. Use L-brackets to attach to the panel kit rails and to cross pipe.

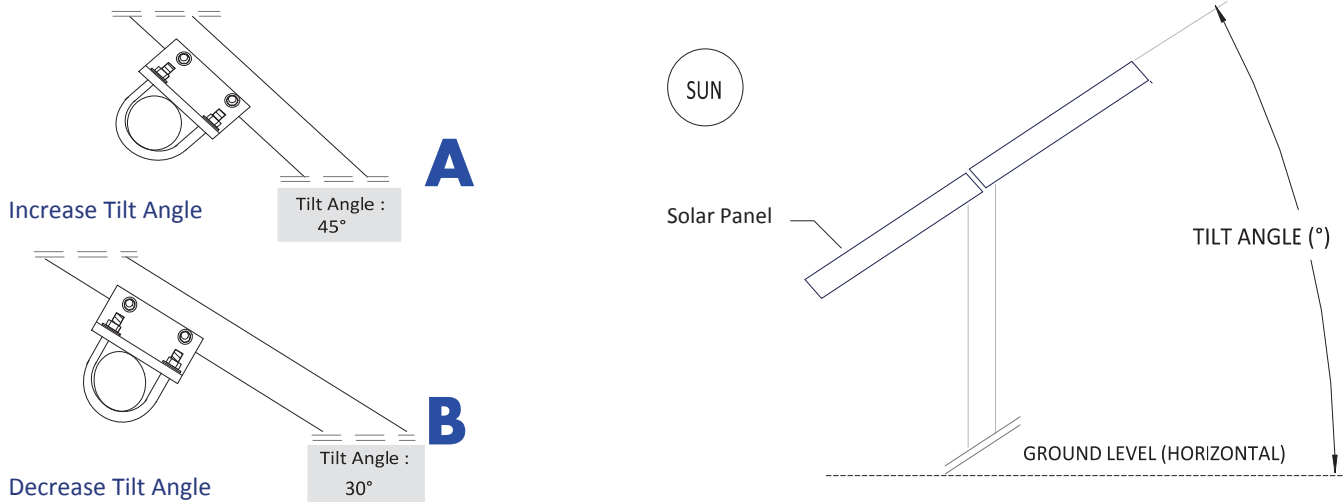


Figure 3. Tilt Angle Adjustments: Adjust PV Array Tilt Angle by rotating U-bolts to desired angle.

Locate array in an unshaded area facing equator and tilted from the horizontal at desired tilt angle (See Table 1).

Solar arrays in the Northern Hemisphere face South for optimum energy production. Solar Arrays in the Southern hemisphere face North.

When choosing a site, avoid trees, buildings or obstructions which could cast shadows on the solar modules. This is especially true during the winter months when the arc of the sun is lowest to the horizon.

SLI-3724

20A/15A, @12V/@24V, MPPT



Off-Grid | PV Street Lighting | Solar Traffic Signal

Flexible, reliable, and ready to work! The **SLI-3724**, featuring our patented MPPT technology, with a second battery output and IPN connector for remote display, is ideal for RVs and Marine applications. The **SLI-3724** can manage a 20A at 12V (or 15A at 24V) load output for small off-grid electrification applications. When programmed with an IPN Pro Remote or UCM, it is also ideal for PV street lighting with its dusk-to-dawn load control. It can also charge Lithium batteries when programmed with the IPN Pro Remote or UCM. Its IPN Network interface can communicate with other **Solar Lighting International** charge controllers as a single charging system, allowing increased flexibility and optimization in system design.



97% peak efficiency •

Fast MPP Tracking •

Excellent performance •

IPN Network compatible •

Great for PV Street Lighting •

Product Features

- Patented MPPT technology charges batteries faster
- Hassle-free auto-detection for 12V or 24V systems
- Networks with other **SLI, Inc.** controllers for higher power
- Fuller charges and longer battery life with advanced multistage charging (FLA,AGM,GEL)
- Equalize batteries automatically or manually
- Charge a second battery or control a DC load output
- Program for Dusk-to-Dawn Lighting Control with the IPN ProRemote
- Battery Temperature Compensation (with external battery temp. sensor)
- Protects battery from deep discharge (via load output)
- Automatically reconnects load when power is available

Display

- LEDs for charge and load status
- Remote Display optional (IPN ProRemote, IPN Remote)

Protection

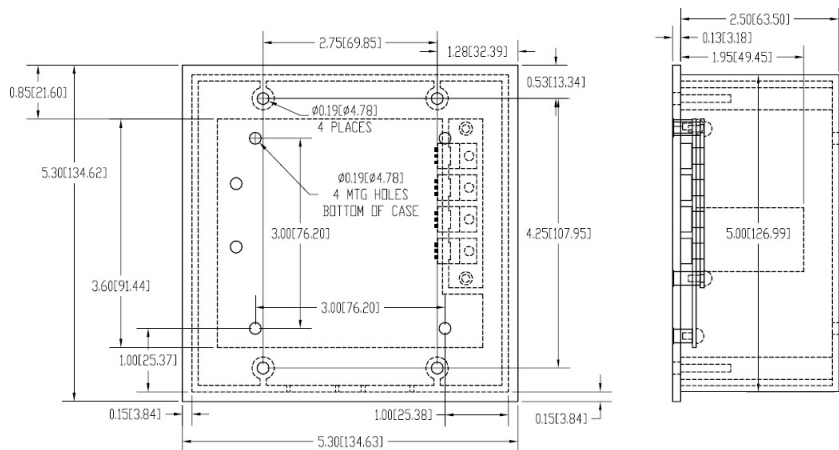
- PV array overload
- PV array reverse polarity
- Battery reverse polarity

Accessories

- IPN Remote - remote display for monitoring one or more controllers
- IPN ProRemote - remote display w/ programming and battery monitoring
- UCM - monitor and program controllers online
- External battery temperature sensor

Specifications:	SLI-3724 @12V	SLI-3724 @24V
Maximum PV Power:	270W with 36-cell PV panel ^(*) 200W with 60/72-cell PV panel ^(*)	400W with 72-cell PV panel ^(*)
Rated Battery (Output) Current:	20A with 36-cell PV panel ^(*) 15A with 60/72-cell PV panel ^(*)	15A with 72-cell PV panel ^(*)
Conversion Efficiency:	97% (typical @28V / 12A output)	
Power Consumption:	0.20W (typical standby)	
Recommended Max Panel Voc at STC:	45.6V (Max Panel Input 57V)	
Charge Profile:	Multi-Stage plus Manual or Automatic Equalization	
Absorption Voltage:	14.2V ⁽¹⁾	28.4V ⁽¹⁾
Float Voltage:	13.2V ⁽¹⁾	26.4V ⁽¹⁾
Equalization Voltage (if enabled):	15.2V ⁽¹⁾	30.4V ⁽¹⁾
Auxiliary Output (option A, B, or C):	A) Auxiliary Battery Charge 2A (2nd battery) B) Load Control C) Dusk-to-Dawn (by IPN ProRemote)	
Load (LVD) Disconnect/Reconnect Voltage:	11.5V/12.6V ⁽¹⁾	23.0V/25.2V ⁽¹⁾
Maximum Auxiliary Output current (option B or C):	20A	15A
Display LCD:	optional IPN ProRemote or IPN Remote	
Temperature Compensation (by optional Battery Temperature Sensor):	-5.00mV/°C/cell correct factor (Range 0.00 to -8.00mV/°C/cell) ⁽¹⁾	
Operating Temperature:	-40°C - 50°C	
Maximum Full Power Ambient:	50°C	
Environmental Protection:	IP20	
Connection:	Battery and PV terminals #20-10 AWG (tightened 9 in-lb, 1 nm) Auxiliary Output terminals #20-10 AWG (tightened 9 in-lb, 1 nm) IPN Network terminals #24-14 AWG wire (tightened 2.1 in-lb, 0.24 nm)	
Weight:	1.15 lb. (525 g)	
Dimensions:	5.3 x 5.3 x 2.5" (13.5 x 13.5 x 6.35 cm)	
Warranty:	5 years	
Certifications:		

^(*) 36-cell panels are typically referred to as "12V panels" providing Vmp/Voc of -18V/22V at STC, 60-cell panels refers to "20V panels" (Vmp/Voc -30V/37V), 72-cell panels refers to "24V panels" (Vmp/Voc -36V/44V). ⁽¹⁾ Factory default voltages unless programmed with an IPN ProRemote display or UCM.





DC-145 (12V145Ah)

DC (Deep Cycle) series is specially designed for frequent cyclic discharge. By using strong grids and specially designed active material, the DC series battery offers 30% more cyclic life than the standby series. It is suitable for solar energy systems, marine and RV etc.



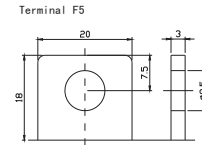
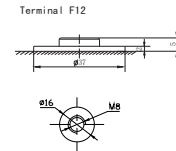
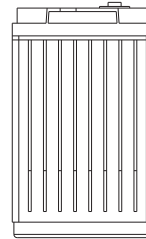
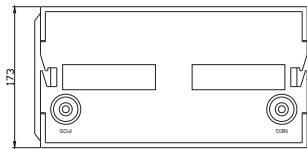
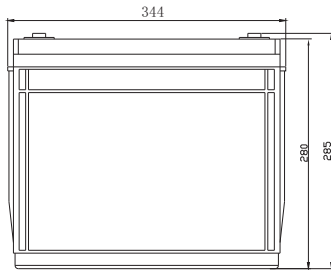
Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	145h@10hr-rate, 165h@100hr to 1.80V per cell @25 C
Weight	Approx. 44.0 Kg (Tolerance $\pm 1.5\%$)
Max. Discharge Current	160 A (5 sec)
Internal Resistance	Approx. 4 m Ω
Operating Temperature Range	Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C
Normal Operating Temperature Range	25°C \pm 5°C
Float charging Voltage	13.6 to 13.8 VDC/unit Average at 25°C
Recommended Maximum Charging Current	43.5 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25°C
Self Discharge	SLI Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using.
Terminal	Terminal F5/F12
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.



Dimensions

Unit: mm Dimension: 344(L) \times 173(W) \times 285(H)



Constant Current Discharge Characteristics: A (25°C)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	447.0	333.4	263.1	145.7	90.51	55.88	37.97	30.62	25.42	16.74	15.09	7.99
10.0V	434.1	317.3	257.7	143.8	89.30	54.75	37.27	30.18	25.19	16.68	14.94	7.84
10.2V	421.2	306.1	253.6	141.6	88.45	54.17	36.94	29.88	25.03	16.53	14.79	7.69
10.5V	378.2	282.4	241.5	137.7	87.37	53.46	36.61	29.44	24.82	16.38	14.65	7.54
10.8V	341.4	257.5	222.6	133.2	86.15	53.03	36.18	28.43	24.70	16.31	14.51	7.46
11.1V	291.5	230.2	199.6	128.1	84.11	50.89	35.48	28.02	24.52	16.18	14.34	7.16

Constant Power Discharge Characteristics: W (25°C)

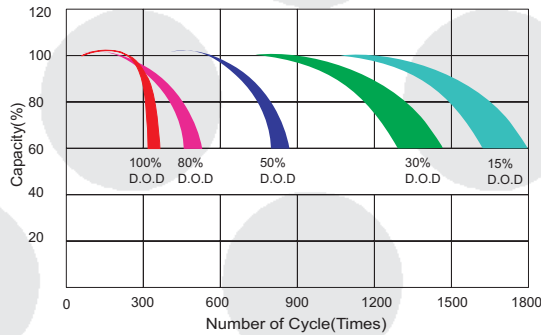
F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
9.60V	4623	3551	2894	1668	1049	654.8	447.1	366.5	304.5	200.5	180.9	96.22
10.0V	4532	3442	2847	1650	1039	646.8	440.4	361.3	301.8	199.7	179.5	94.55
10.2V	4481	3351	2815	1636	1033	642.2	438.5	358.0	299.9	198.2	177.9	92.80
10.5V	4079	3121	2685	1603	1026	634.1	434.9	353.1	297.5	196.5	176.2	91.05
10.8V	3715	2877	2482	1565	1013	629.4	430.0	341.2	296.2	195.7	174.4	90.17
11.1V	3263	2601	2234	1522	998.1	605.8	422.8	336.3	295.1	194.3	172.5	86.95

All mentioned values are average values (Tolerance $\pm 2\%$).

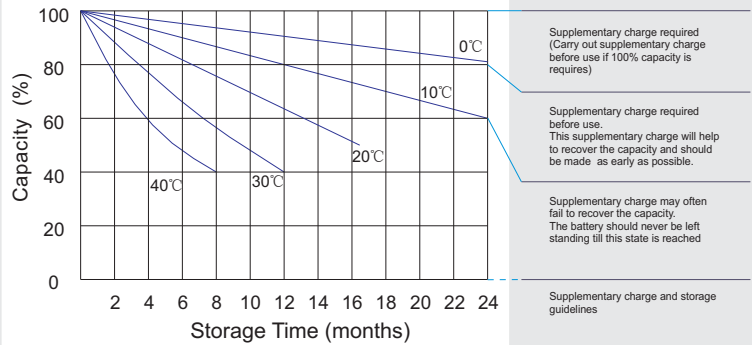
DC-145

12V160Ah

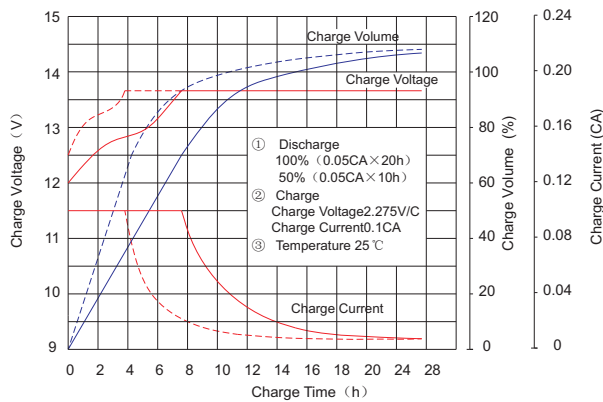
Life characteristics of cyclic use



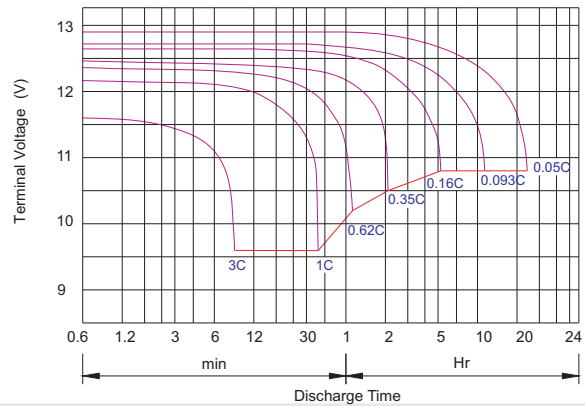
Storage characteristic



Charge characteristic Curve for standby use



Discharge characteristic Curve



Capacity Factors With Different Temperature

Battery Type		-20°C	-10°C	0°C	5°C	10°C	20°C	25°C	30°C	40°C	45°C
GEL Battery	6V&12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
	2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM Battery	6V&12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
	2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

Discharge Current VS. Discharge Voltage

Final Discharge Voltage V/cell	1.75V	1.70V	1.60V
Discharge Current (A)	(A) ≤ 0.2C	0.2C < (A) < 1.0C	(A) ≥ 1.0C

Charge the batteries at least once every six months, if they are stored at 25°C.

Charging Method:

Constant Voltage	-0.2Cx2h+14.4-14.7Vx24h, Max. Current 0.3C
Constant Current	-0.2Cx2h+0.1Cx7h+0.05Cx4h
Fast	-0.2Cx2h+0.3Cx3h

Bolt	M5	M6	M8
Terminal	F3 F4 F13 F18 T25 T26	F8 F11 F12-1 F15	F5 F9 F10 F12 F14 F16
Torque	6~7N·m	8~10N·m	10~12N·m

Maintenance & Cautions

Cycle service

- ※ Avoid battery over discharge, especially battery series connection use.
- ※ Charged with recommend voltage, ensure battery can be full recharged.
- In general, recharge capacity should be 1.1-1.15 times discharge capacity.
- ※ Effect of temperature on cycle charge voltage: -4mV/°C/Cell.
- ※ There are a number of factors that will affect the length of cyclic service.
- The most significant are depth of discharge, ambient temperature, discharge rate, and the manner in which the battery is recharged.
- Generally speaking, the most important factors is depth of discharge.

QY Frame - Miniature Circuit Breakers

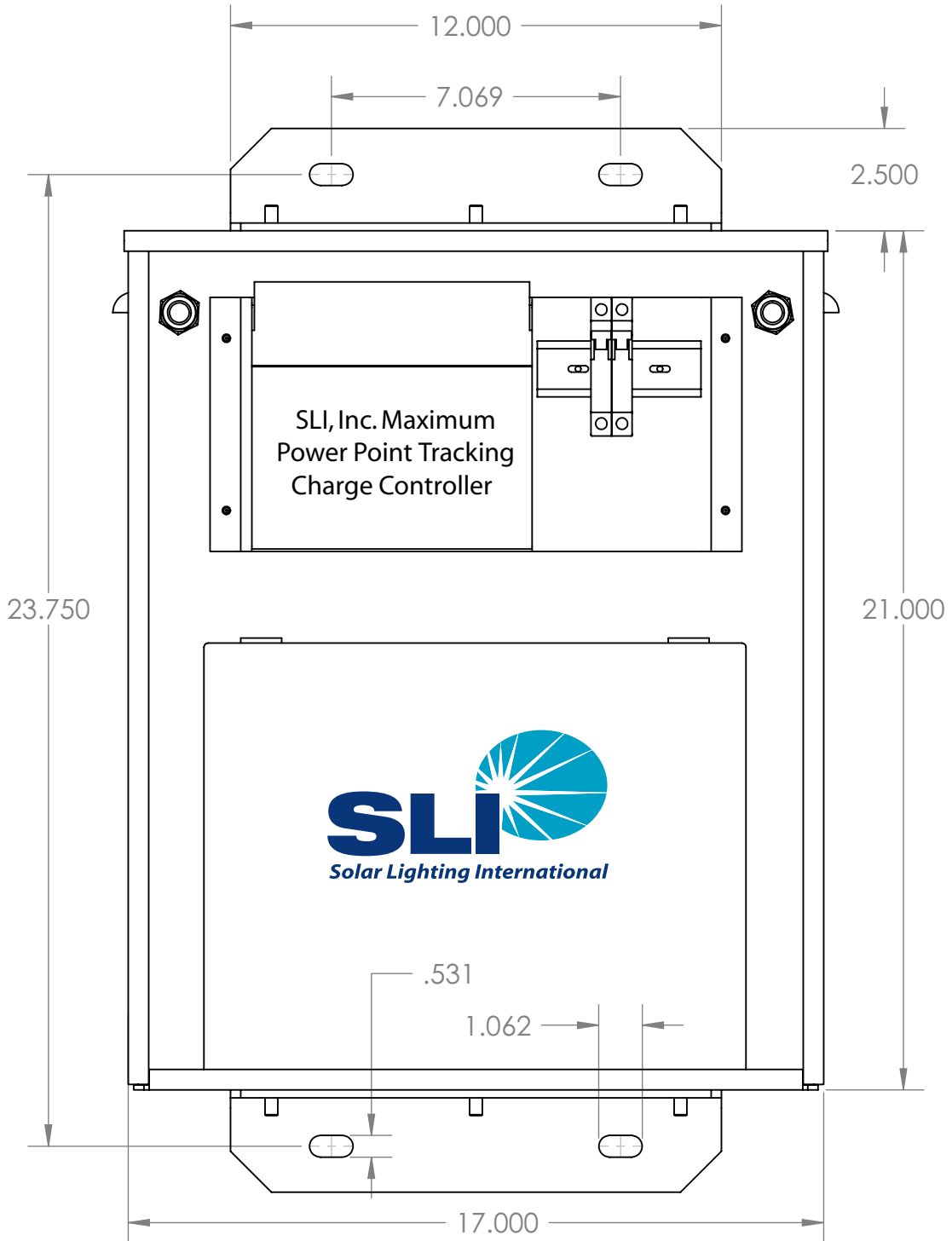


Features:

- Hydraulic-magnetic technology ensures reduced nuisance tripping with temperature variance
- Always hold 100% rated current
- Wide range of time delays & operating currents
- Current limiting capabilities
- Ultra compact - 13 mm width module
- Din, Mini-rail or Dual mountable

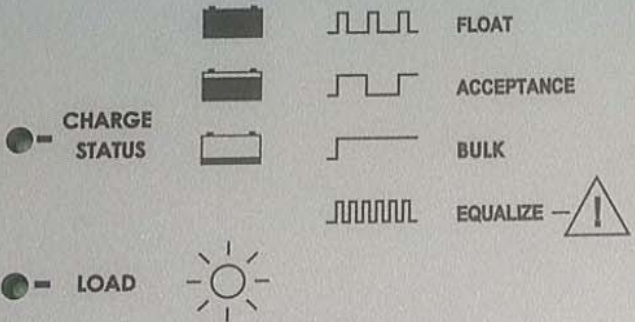
Poles:	1, 2
Max. Voltage:	80 VDC
Max. Interrupting Capacity:	10 kA
Current Rating:	1 A to 100 A
Agency recognition of Approvals:	IEC 60947-2 UL 489A SANS VC8036





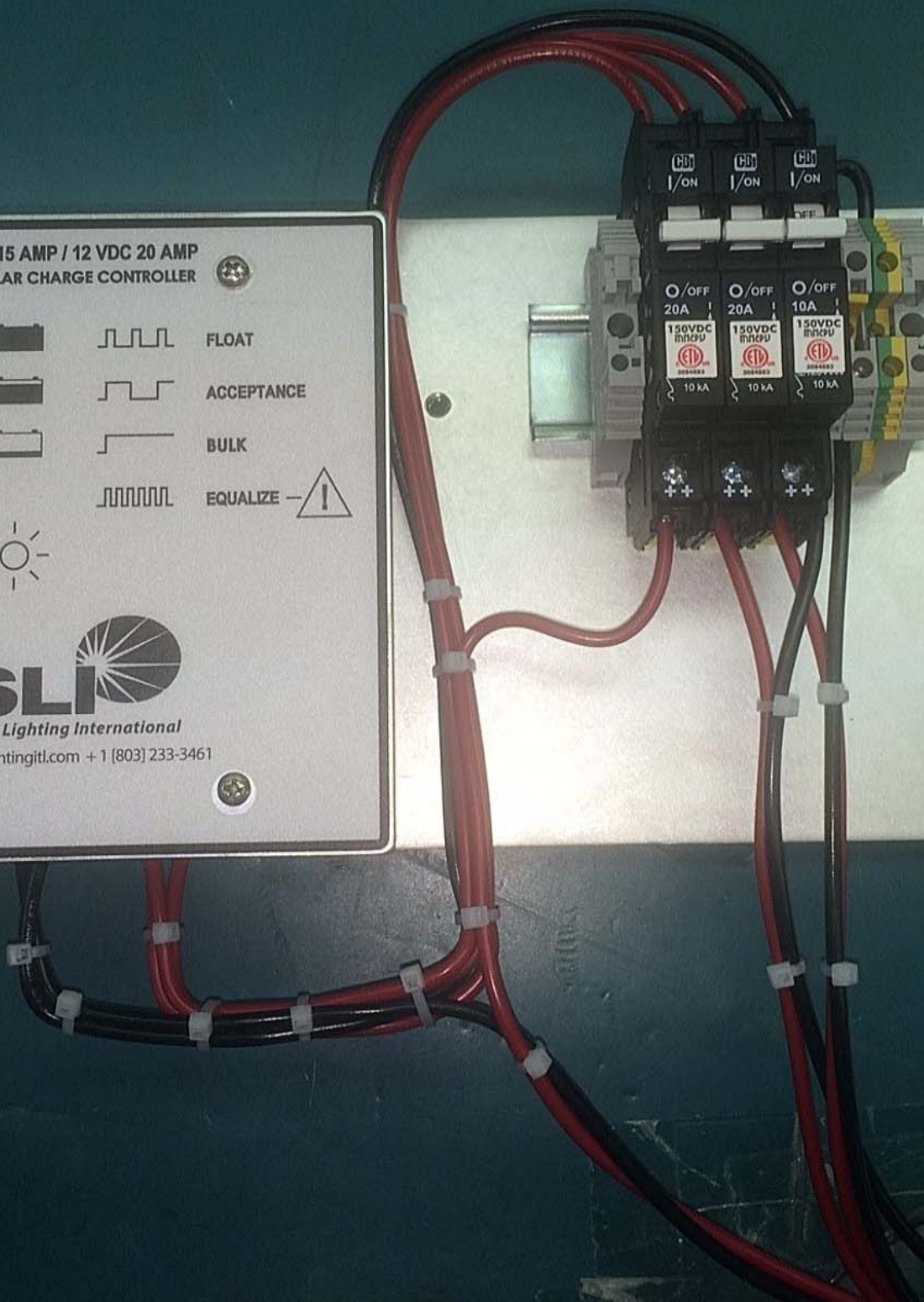
Solar Lighting International, Inc. Lancaster, SC 29720
 Phone +1 803-233-3461 Fax +1 803-233-2096 www.solarlightingitl.com

24 VDC 15 AMP / 12 VDC 20 AMP
MPPT SOLAR CHARGE CONTROLLER



www.solarlightingintl.com +1 [803] 233-3461

Terminal block with three relays. Each relay is labeled "150VDC 10kA" and "O/OFF". The top row of switches is labeled "I/ON" and "OFF". The bottom row of switches is labeled "20A", "20A", and "10A".





CERTIFICATE



This is to certify that

Custom Manufacturing Services, Inc.

142 Brick Street
Princeton, WV 24740
United States of America

with the organizational units/sites as listed in the annex

has implemented and maintains a **Quality Management System**.

Scope:

The provision of custom metal fabrication and systems level integration of electro-mechanical assembly.

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 9001 : 2008

Certificate registration no.	10000410 QM08
Date of original certification	1995-02-27
Date of certification	2015-07-17
Valid until	2018-07-16

UL DQS Inc.

Ganesh Rao
Managing Director





**Annex to Certificate
Registration No. 10000410 QM08**

Custom Manufacturing Services, Inc.

142 Brick Street
Princeton, WV 24740
United States of America



Extended Location

Scope

**10002998
Custom Manufacturing Services, Inc.
400 Rogers Street
Princeton, WV 24740
United States of America**

The off-site at 400 Rogers Street, Princeton, WV performs the following primary functions: metal fabrication and assembly.



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