



Solar Outdoor Lighting Systems



X-SERIES LED

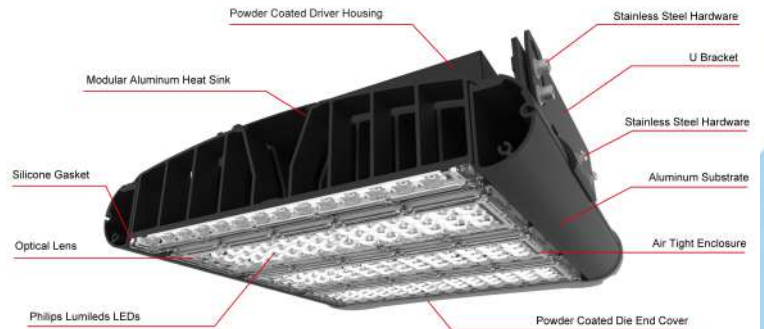
TECHNICAL SPECS FOR X-35 SOLAR STREET LIGHTING AND SOLAR PATHWAY LIGHTING

LUMINAIRE							
MODEL / LUMEN	6600	9750	13300	14300	16000	PL5550	PL8400
IES LIGHT DISTRIBUTIONS	TYPE 2	TYPE 3	TYPE 5		TYPE 2M	TYPE 3M	TYPE 5S
COLOR TEMPERATURE OPTIONS	3,000K	4,000K	5,000 K	5,700K			
COLOR RENDITIONING INDEX (CRI)	>85 CRI						
MOUNTING	SLIP FITTER		STRAIGHT SQUARE STEEL		CUSTOM		
LED CHIP TYPE	PHILLIPS ILLUMLED 5050 CHIPS						
CLASS RATINGS	CLASS 1 IP66, IK08						
SYSTEM VOLTAGE	INPUT 12/24 VDC - OUTPUT 12/24 VDC						
LUMINAIRE HOUSING	POWDER COATED ALUMINUM, DARK SKY COMPLIANT						
MODULE. **EXACT MODULE WATTAGE MAY VARY DEPENDING ON AVAILABILITY							
CELL TYPE	MONOCRYSTALLINE, UL, CUL, CE LISTED, 25 YEAR PERFORMANCE WARRANTY						
POWER OUTPUT	190-210 W	300-340W	360-390W	400W+			
DIMENSIONS	1580 MM X 808 MM	1960 MM X 990 MM	1987 X 999 MM	1500MM X 1616MM			
BATTERY ENCLOSURE							
	ALUMINUM NEMA 3R						
	ANTI-THEFT SECURITY SCREWS						
	PREWIRED AND TESTED						
	POWDER COATED FOR HARSH MARINE ENVIRONMENT						
	RAISED RIDGED RUBBER BATTERY MAT FOR THERMAL PROTECTION						
ELECTRONICS \ CONTROLLER							
CONTROLLER	PRE-WIRED AND MOUNTED IN BATTERY ENCLOSURE						
	DUAL CIRCUIT BREAKER PROTECTED, NO FUSE REPLACEMENT						
	MAXIMUM POWER POINT TRACKING (MPPT) CHARGE CONTROLLER						
	REVERSE POLARITY PROTECTED						
	* BLUETOOTH PROGRAMMING AND MONITORING SYSTEM AND PHONE APP CONTROL FOR ANDROID AND IPHONE						
	EN/IEC 62109-1, UL 1741 CSA C22.2						
CIRCUIT BREAKERS	DC RATED, UL LISTED, DIN RAIL MOUNTABLE						
SOLAR PANEL MOUNTING							
	TOP OF POLE ALUMINUM MOUNT			SIDE OF POLE ALUMINUM MOUNT			
	COMPLETELY ADJUSTIBLE, NON FIXED			ADJUSTABLE			
BATTERY MADE IN USA							
	MAINTENANCE FREE GEL BATTERY						
OPERATING TEMP	-76F - 140F						
RATING	3,000 CYCLES @ 25% DOD						
BACKUP	3 DAY			5 DAY			
POLE DATA							
EPA	16		26		32		
TENON	2" / 60 MM SCHED 40		3" / 89MM SCHED 40		4" / 114MM SCHED 40		
SYSTEM COLORS	SILVER GREY		BLACK				
TYPE	DIRECT BURIAL		CONCRETE PIER				
ARM	8"		CUSTOM				
COMPOSITION	COMP. FIBERGLASS		HDG		CUSTOM		
WIND LOAD RATING	100 MPH		120 MPH		130 MPH		
	150 MPH		170 MPH				
POLE HEIGHT - ABOVE GRADE	CUSTOMER SPECIFIED						



SLI-40

LED Street & Parking Lot Light, 200W HID Replacement



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

Specifications

Electrical Specifications

Model No.	SLI-40W
Nominal Wattage	40W
Nominal Voltage	90-305/277-480VAC, 50/60Hz 12/24VDC
Maximum Current	AC 0.45A (max) DC 3.34A (max)
Power Factor (PF)	>0.95
Driver Efficiency	>90%

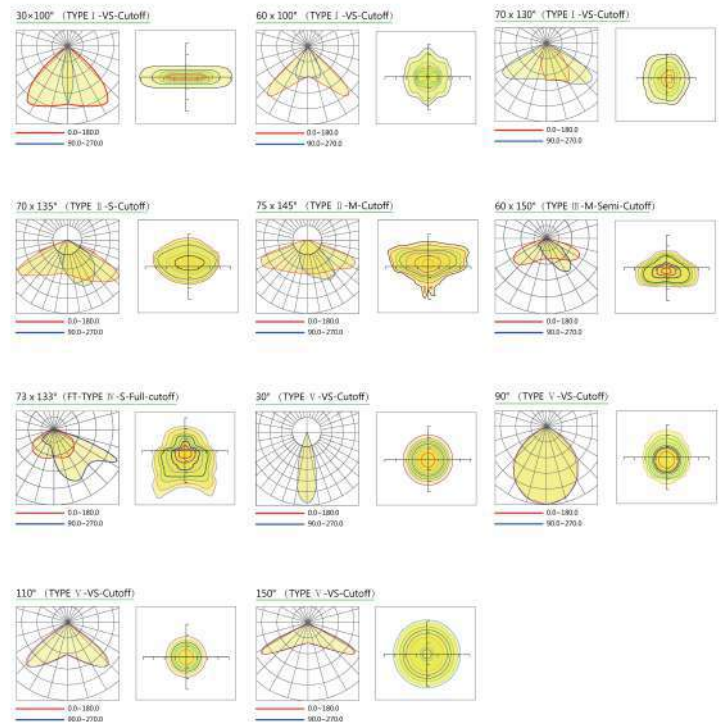
Photometric Specifications

Luminous Flux	+Lumen tolerance +/- 5% 6,600lm
CRI	Ra>75
CCT	3000-6500K
Optional Beam Angle	60*150° / 70*150° / 80*150° / 90*100° / 60° / 120°

Mechanical Specifications

IP&IK Rating	IP66 & IK10
Lifetime	62000 hours - L70, @25°C
Heat Radiator	Anodized Aluminum
Lens	PC
Fixture Dimension	495*300*107mm 19.5*11.8*4.2 inches
Net Weight	5.5kg
Carton Dimension	570*370*190mm
Gross Weight	6.7kg

Photometrics



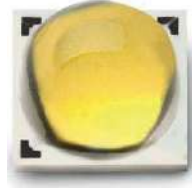
Product Benefits

PHILIPS LUMILEDS LED LUMINOUS SOURCE

The new SLI Series LED street light utilizes a PHILIPS LUXEON® 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.



● 200 – 210 W SOLAR PANEL

BENEFITS

-  -Resistant to hail impacts with speeds up to 23 m/s or 75.46 ft/s.
-  -Wide range of operating temperatures from (-40° C up to +90°C).
-  -Supports higher mechanical loads, snow at 5,400 Pa and 2,400 Pa above in wind.
-  -Potential Induced Degradation (PID) Free.
-  -Electrical grounding isolation of up to 3,600 V per second.
-  -Micro Crack free cells.
-  -Resistant to grounding larger than 100MΩ.
-  -High resistance to corrosion by salt mist and ammonia.
-  -Light Induced Degradation (LID) less than 5%.
-  -Positive performance tolerance.

S48PC

48 Cell Modules

S48PC- 200, S48PC-205, S48PC-210,

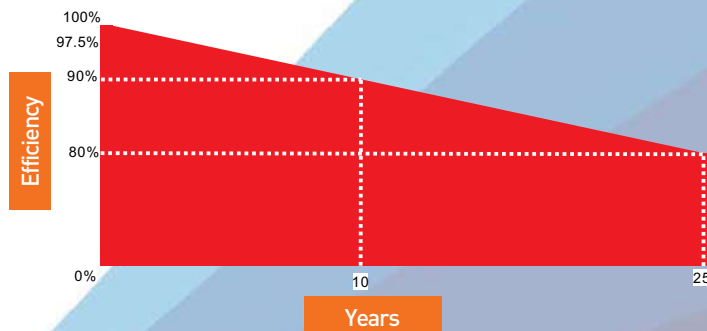


The S48PC module is manufactured using 48 solar polycrystalline cells, with optimal design, incorporating a robust and automated manufacturing to quality testing on the BOM and 3 ELT tests before boarding. All Solartec modules are designed and tested under the following standards:

- IEC 61215 / Design qualification and type approval.
- IEC 61730 / Module safety qualification.
- IEC 61701 / Salt mist corrosion testing of photovoltaic
- IEC 62804/ Test methods for the detection of potential-induced degradation
- IEC 62716 / Ammonia corrosion testing of photovoltaic
- UL1703 / Safety for flat-plate photovoltaic modules and panels.

QUALITY WARRANTY

We guarantee the first 10 years for all manufacturing and material defects as specified by the codes referred by IEC that make up the solar module.



LINEAL WARRANTY PERFORMANCE

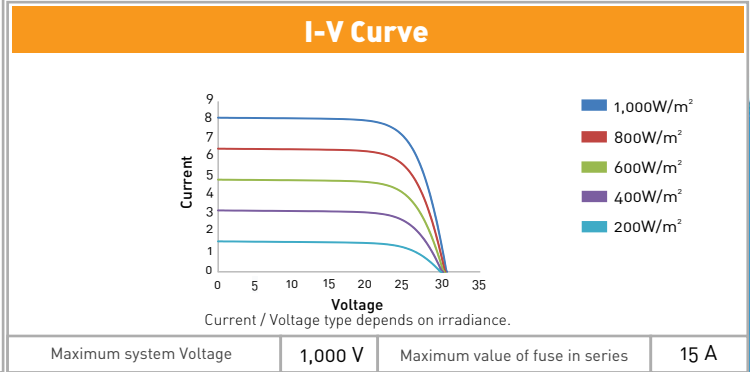
- During the first year of use we guarantee a nominal power output no lower than 97.5%
- From year 2 to year 10 we guarantee a nominal power output no lower than 90%.
- From year 11 to 25 we guarantee a nominal power output no lower than 80% maintain a lineal degradation of 0.72% annually.

Operating Conditions

Temperature	-40°C to +90°C
Maximum Wind Load	2,400 Pa
Maximum Snow Load	5,400 Pa
Resistance to Impact	Hail with speeds of 23 m/s or 75.46 ft/s
Earth Grounding	≤ .1 Ω.
Resistance to Isolation	≥ 100 MΩ.
Relative Humidity	85% / 85° C

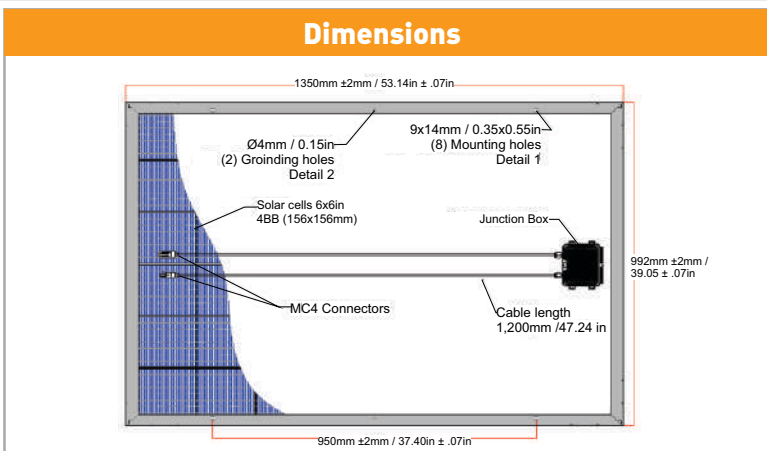
● 200 – 210 W SOLAR PANEL

Specifications	
Type of Cell	Polycrystalline
Cell Dimensions	156x156 mm / 6in x 6 in
Number of Cells	48 (6 x 8)
Weight	15.8 Kg / 34.83 lb
Module Dimensions	1,350mm x 992mm x 40mm, ±2mm/53.14in x 39.05in x 1.57in, ±.07in
Cable Length	1,200 mm / 47.24 in, Type THWN , 1,000V 4mm ²
Junction Box IP	IP65 / IP67
Number of Diodes	3 / 6
Connectors	MC4 Compatible / IP65
Backsheet Color	White
Glass	3.2mm, ARC, Tempered and low iron.
Frame	Anodized Aluminium (15 µm / 0.0006 in), Type 6063
Module Fire Performance	Type 1 (UL1703) or Class C (IEC 61730)
Application According to IEC	Class A
Packaging Configuration	30 pieces per pallet
Weight the Pallet	474 Kg / 1,044.99 lb
Pieces per Container	52 ft ² - 924 pieces



Solar panel with solar cells 156 mm Polycrystalline silicone						
Model	S48PC-200		S48PC-205		S48PC-210	
Testing conditions	STC	NOCT	STC	NOCT	STC	NOCT
Open circuit voltage (Voc)	30.24 V	30.18 V	30.72 V	30.66 V	31.24 V	31.18 V
Voltage in maximum power point (Vmpp)	24.50 V	24.44 V	24.90 V	24.84 V	25.10 V	25.04 V
Shortcircuit current (Isc)	8.61 A	6.96 A	8.81 A	7.12 A	8.91 A	7.20 A
Current at maximum power point (Impp)	8.16 A	6.59 A	8.23 A	6.65 A	8.36 A	6.75 A
Maximum power (Pmax)	200 W	161 W	205 W	165 W	210 W	169 W
Module efficiency* <small>*STC Efficiency conditions</small>	14.93%		15.31%		15.68%	

Temperature coefficient					
de Isc (α)	+0.065% / °C	de Voc (β)	- 0.35% / °C	de Pmax (γ)	- 0.50% / °C



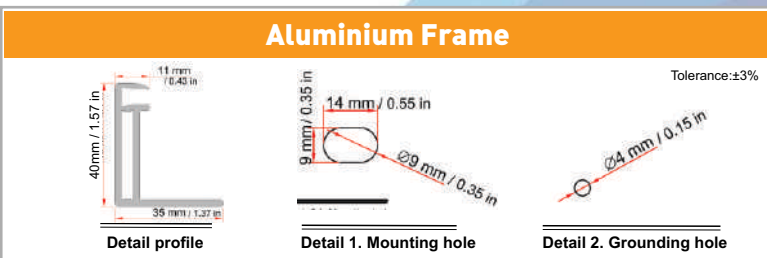
Warranties

During the first year of use we guarantee a nominal power output no lower than 97.5%

From year 2 to year 10 we guarantee a nominal power output no lower than 90% and from year 11 to 25 we guarantee a nominal power output no lower than 80% maintain a lineal degradation of 0.72% annually

Tested under standard operating conditions and under nominal cell temperature conditions (STC: 1,000W/m², 25°C, AM 1.5. NOCT: 800W/m², 45 ±2°C, AM 1.5.)

Electrical conditions of each PV module are monitored individually and available to our clients. Guaranteed tolerance 0 W to 5W.



- Applications**
- Structural integration
 - PV Solar Farms
 - PV Solar Pumping systems
 - Energy Reduction Cost Projects

Specifications are subject to changes without any notice. CAUTION: Read the installation manual before using the product

MOUNTS: 1X-TPM-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).



1X-TPM Series:
 - Available for 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 mount 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

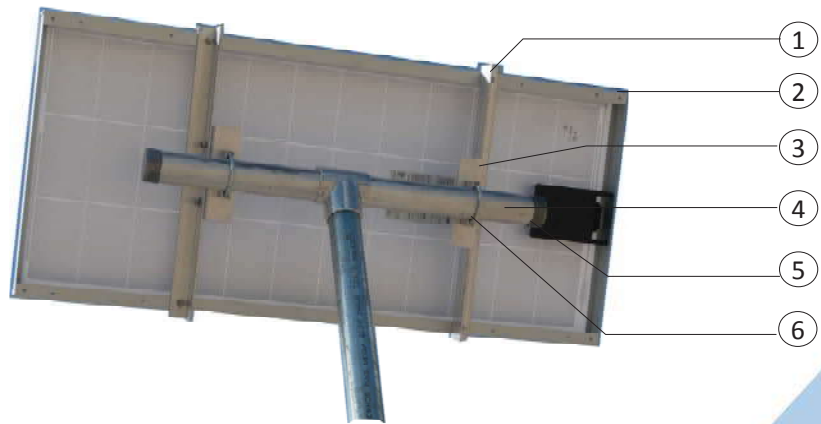


Figure 1. Mounting kit components

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.

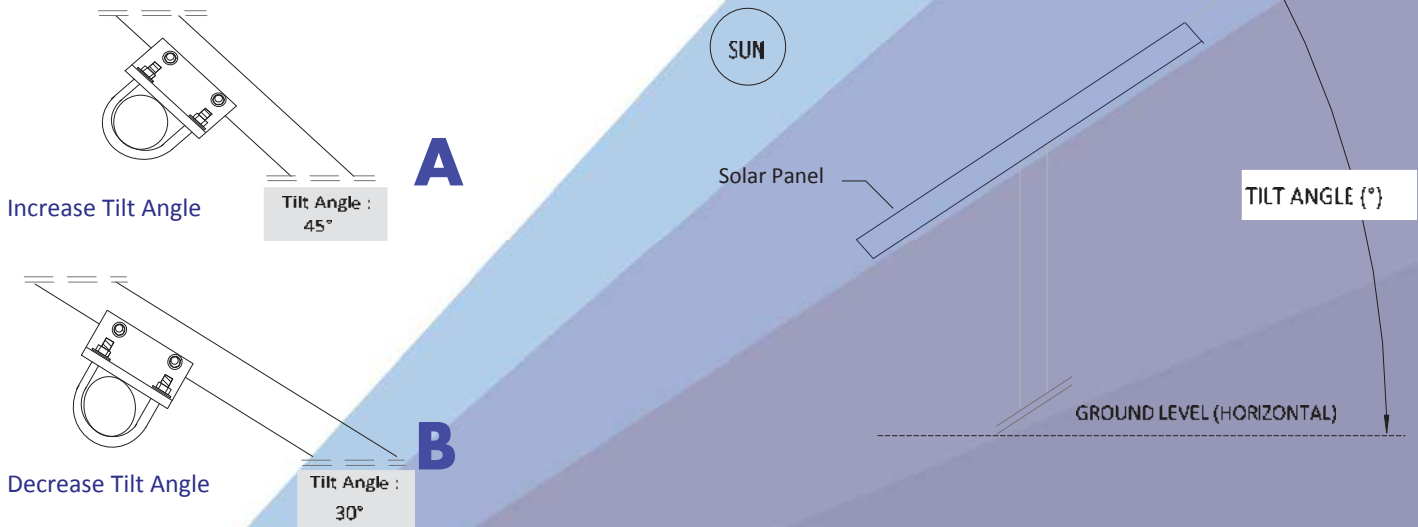


Figure 3. Tilt Angle Adjustments: Adjust PV Array Tilt Angle by rotating U-bolts to desired angle.

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, overhead power lines, 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

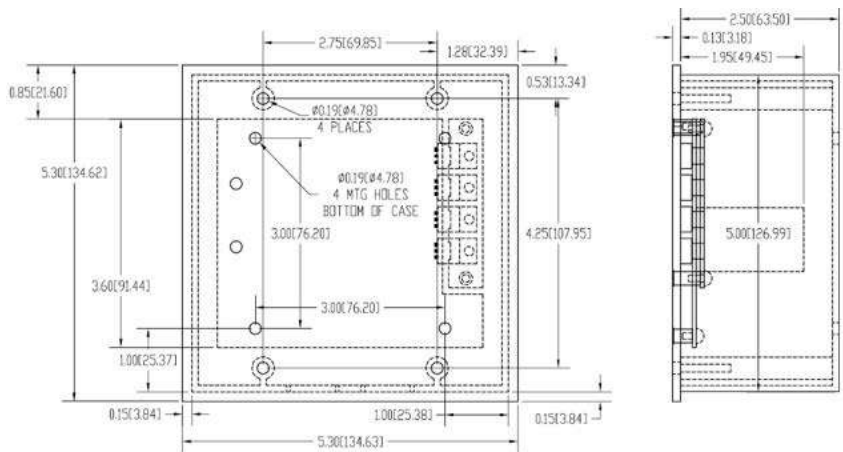
- PV array overload
- PV array reverse polarity
- Battery reverse polarity

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.



SPECIFICATIONS

Nominal Voltage (V)	12V
*Capacity at C/100	137 Ah
*Capacity at C/20	125 Ah
*Capacity at C/5	110 Ah
Weight	85 lbs. (38.6 kg)
Plate Alloy	Lead Calcium
Posts	Forged Terminals & Bushings
Container/Cover	Polypropylene
Operating Temperature Range	-76°F (-60°C) - 140°F (60°C)

For Charging Parameters please refer to www.mkbattery.com
Click on Technical Data, then on Photovoltaic Charging Parameters in the PV/Solar section

Vent	Self-sealing
Electrolyte	Sulfuric acid thixotropic gel
Terminal	(B) T876



Rated UN2794, wet filled with acid

Made in the U.S.A. by East Penn Manufacturing Co, Inc.

* Capacities are based on peak performance.

Valve-Regulated, Gelled-Electrolyte Battery

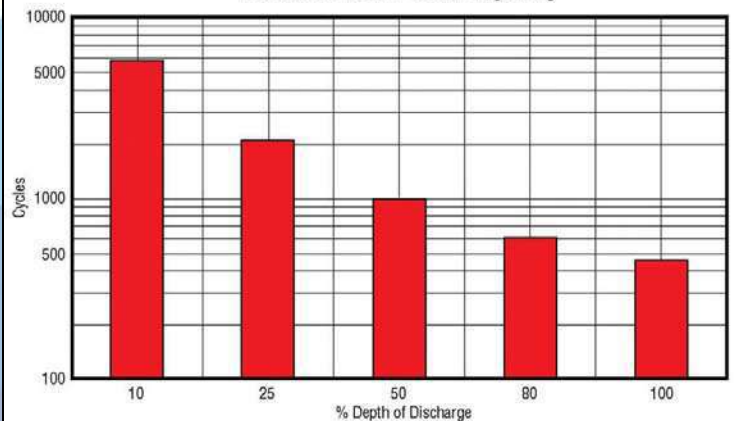


DIMENSIONS

Inches (mm)

Length	13.58 (345 mm)
Width	6.77 (172 mm)
Height	11.42 (290 mm)

**Gel Cycle Life vs Depth of Discharge at +25°C (77°F)
Based on BCI 2-hour Capacity**



MK Battery

1631 South Sinclair Street • Anaheim, California 92806

Toll Free: 800-372-9253 • Fax: 714-937-0818 • E-mail: sales@mkbattery.com



MINIATURE CIRCUIT BREAKER

Technical Data (MCB-AC/MCB-DC)

MCB

ISOLATOR

MCB-AC

Type	'B'	'C'	'D'	
Standard Conformity	IS/IEC60898-1-2002	CML-88858716		IS/IEC60947-3
Rated Current (In)	6-63A	0.5-125A	0.5-63A	25-125A
Rated Voltage AC (Ue)		240/415V		240/415V
Utilization Category				AC22A
Rated Frequency Hz		50Hz		50Hz
No. of Poles (Execution)	1P, 1P+N, 2P, 3P 3P+N & 4P	1P, 2P, 3p & 4P		
Rated Short Circuit Breaking Capacity	10kA	10kA	10kA	
Rated Insulation Voltage (Ui)		660V		660V
Magnetic Release Setting	(3-5)In	(5-10)In	(10-20)In	
Rated Impulse Voltage (Uimp)		6kV		6kV
Electrical/Mechanical Life <32A		30,000		30,000
>32A		10,000		10,000
Ambient Temperature		-5°C to +55°C		-5°C to +55°C
Energy Limiting Class		ELC 3		
Mounting		Clip on Din rail (35x7.5 mm)		Clip on Din rail (35x7.5 mm)
Line Terminal Capacity		35 mm ²		35 mm ²
Degree of Protection		IP 20		IP 20
Resistance to Shock		40mm free fall		40mm free fall

MCB-DC

Circuit Breakers for DC application are engineered to fulfill tough arc quenching conditions. DC MCB incorporates built in magnet to direct the arc into the arc quenching chamber.

Standard Conformity	IS/IEC60898-2-2002
Current Rating	0.5-63A
No. of Poles	1P & 2P
Voltage Rating	220V (max.)
Short Circuit Breaking Capacity	4kA



TEMPERATURES

Temperature deration

MCBs are calibrated at an ambient temperature of 30°C. In an industrial environment where ambient temperature is higher than the regulatory reference temperature of 30°C, the circuit breakers may be subjected to untimely tripping (nuisance tripping). At a temperature above 30°C the thermal release trips faster, behaving like a relay with a lower nominal current. It is therefore imperative to take into account nominal current derating if the circuit breaker is installed at a higher ambient.

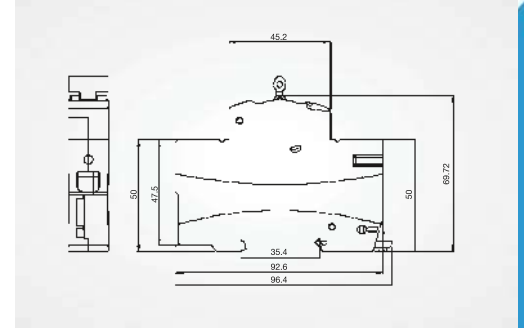
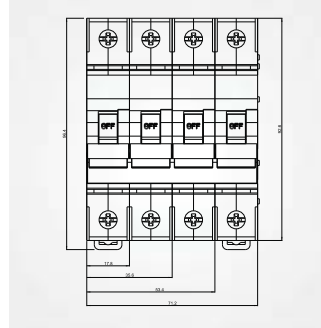
The table gives the max. operating current referring to the different temperatures.

Temperature

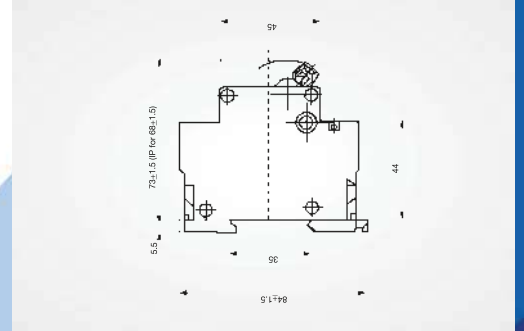
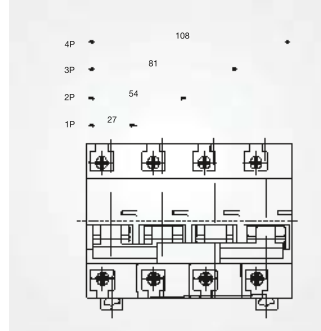
In(A)	25°C	30°C	35°C	40°C	45°C	50°C
2	2.04	2	1.96	1.9	1.86	1.82
6	6.24	6	5.82	5.52	5.28	4.98
10	10.40	10	9.7	9.2	8.8	8.3
16	16.5	16	15.5	15	14.4	14.1
20	20.6	20	19.4	18.8	18	17.6
25	25.8	25	24.3	23.5	22.5	22
32	33	32	31.04	30.1	28.8	28.2
40	41.2	40	38.8	37.6	36	35.2
63	64.89	63	61.79	60	58	56.07

INSTALLATION

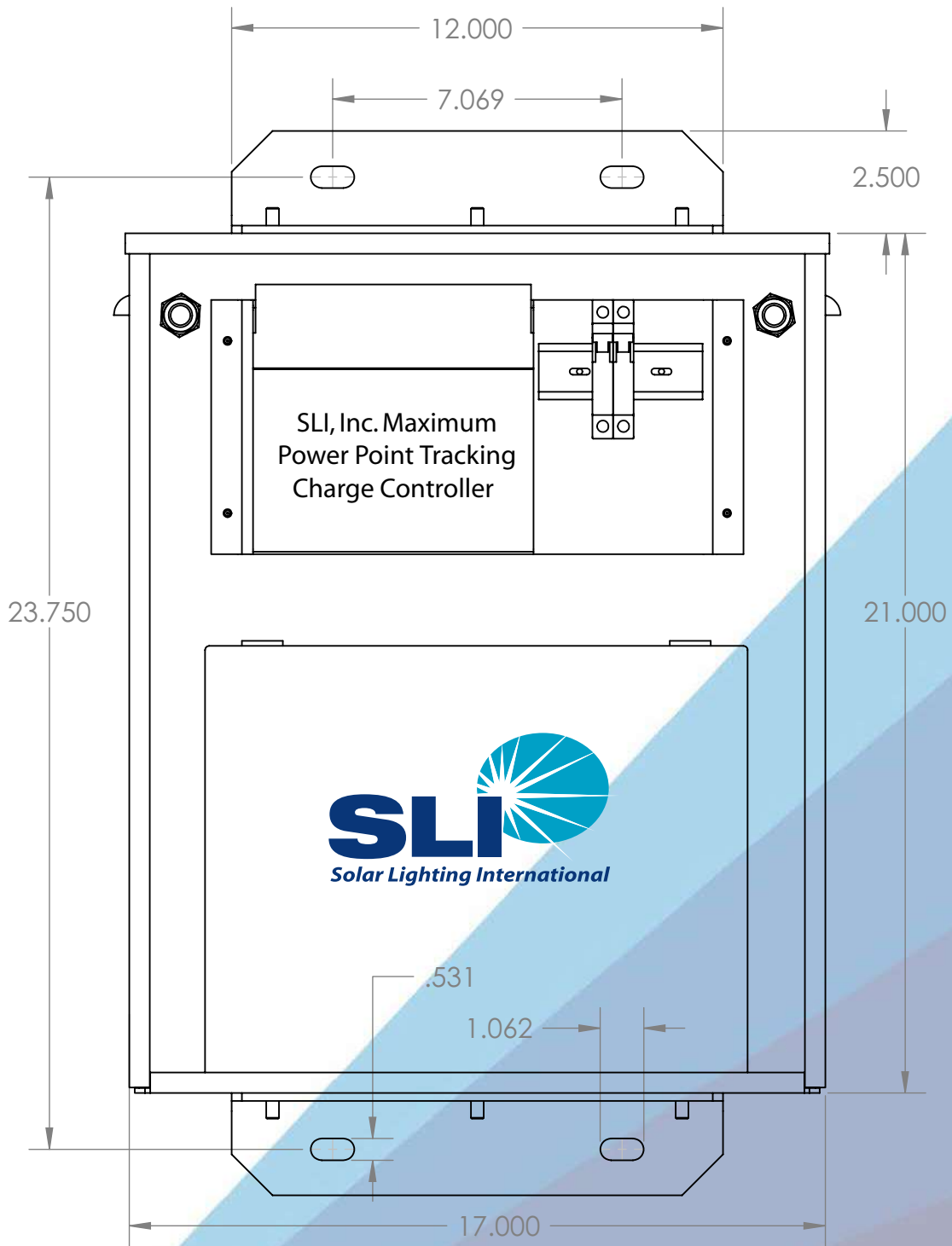
Installation Dimensions MCB (0.5 to 63A) / Isolator (25 to 125A)



Installation Dimensions MCB (80 to 125A)



PART#	IMS STOCK CODE	BRAND	DESCRIPTION	AMPS / # POLES / MOUNTING OPTIONS	DIM (L)	DIM (W)	DIM (H)	WEIGHT
MCSMB1C0.5	0300-9324	MCG	MINI CIRCUIT BREAKER	0.5 AMP 1 POLE MCB DIN MOUNT	1p	0.5	DIN	0.26
MCSMB1C1	0298-9221	MCG	MINI CIRCUIT BREAKER	1 AMP 1 POLE MCB DIN MOUNTABLE	1p	1	DIN	0.269
MCSMB1C10	0300-9345	MCG	MINI CIRCUIT BREAKER	10 AMP 1 POLE MCB DIN MOUNTABLE	1p	10	DIN	0.26
MCSMB1C16	0305-3142	MCG	MINI CIRCUIT BREAKER	16AMP 1POLE MCB DIN MOUNTABLE	1p	16	DIN	0.267
MCSMB1C2	0300-9333	MCG	MINI CIRCUIT BREAKER	2 AMP 1 POLE MCB DIN MOUNTABLE	1p	2	DIN	0.267
MCSMB1C20	0300-9357	MCG	MINI CIRCUIT BREAKER	20 AMP 1 POLE MCB DIN MOUNTABLE	1p	20	DIN	0.269
MCSMB1C25	0300-9360	MCG	MINI CIRCUIT BREAKER	25 AMP 1 POLE MCB DIN MOUNTABLE	1p	25	DIN	0.271
MCSMB1C3	0300-9336	MCG	MINI CIRCUIT BREAKER	3 AMP 1 POLE MCB DIN MOUNTABLE	1p	3	DIN	0.262
MCSMB1C32	0300-9363	MCG	MINI CIRCUIT BREAKER	32 AMP 1 POLE MCB DIN MOUNTABLE	1p	32	DIN	0.269
MCSMB1C40	0300-9366	MCG	MINI CIRCUIT BREAKER	40 AMP 1 POLE MCB DIN MOUNTABLE	1p	40	DIN	0.282
MCSMB1C5	0300-9339	MCG	MINI CIRCUIT BREAKER	5 AMP 1 POLE MCB DIN MOUNTABLE	1p	5	DIN	0.262
MCSMB1C6	0300-9342	MCG	MINI CIRCUIT BREAKER	6 AMP 1 POLE MCB DIN MOUNTABLE	1p	6	DIN	0.258
MCSMB2C1	0300-9408	MCG	MINI CIRCUIT BREAKER	1 AMP 2 POLE MCB DIN MOUNTABLE	2p	1	DIN	0.518
MCSMB2C10	0300-9420	MCG	MINI CIRCUIT BREAKER	10 AMP 2 POLE MCB DIN MOUNTABLE	2p	10	DIN	0.509
MCSMB2C16	0305-3145	MCG	MINI CIRCUIT BREAKER	16AMP 2POLE MCB DIN MOUNTABLE	2p	16	DIN	0.522
MCSMB2C20	0300-9423	MCG	MINI CIRCUIT BREAKER	20 AMP 2 POLE MCB DIN MOUNTABLE	2p	20	DIN	0.525
MCSMB2C25	0300-9426	MCG	MINI CIRCUIT BREAKER	25 AMP 2 POLE MCB DIN MOUNTABLE	2p	25	DIN	0.538
MCSMB2C3	0300-9411	MCG	MINI CIRCUIT BREAKER	3 AMP 2 POLE MCB DIN MOUNTABLE	2p	3	DIN	0.509
MCSMB2C32	0300-9429	MCG	MINI CIRCUIT BREAKER	32 AMP 2 POLE MCB DIN MOUNTABLE	2p	32	DIN	0.531
MCSMB2C40	0300-9432	MCG	MINI CIRCUIT BREAKER	40 AMP 2 POLE MCB DIN MOUNTABLE	2p	40	DIN	0.566
MCSMB2C5	0300-9414	MCG	MINI CIRCUIT BREAKER	5 AMP 2 POLE MCB DIN MOUNTABLE	2p	5	DIN	0.518
MCSMB2C6	0300-9417	MCG	MINI CIRCUIT BREAKER	6 AMP 2 POLE MCB DIN MOUNTABLE	2p	6	DIN	0.507
MCSMB3C1	0300-9435	MCG	MINI CIRCUIT BREAKER	1 AMP 3 POLE MCB DIN MOUNTABLE	3p	1	DIN	0.765
MCSMB3C10	0300-9450	MCG	MINI CIRCUIT BREAKER	10 AMP 3 POLE MCB DIN MOUNTABLE	3p	10	DIN	0.76
MCSMB3C16	0305-3148	MCG	MINI CIRCUIT BREAKER	16AMP 3POLE DIN MOUNTABLE	3p	16	DIN	0.776
MCSMB3C20	0300-9453	MCG	MINI CIRCUIT BREAKER	20 AMP 3 POLE MCB DIN MOUNTABLE	3p	20	DIN	0.778
MCSMB3C25	0300-9456	MCG	MINI CIRCUIT BREAKER	25 AMP 3 POLE MCB DIN MOUNTABLE	3p	25	DIN	0.796
MCSMB3C3	0300-9438	MCG	MINI CIRCUIT BREAKER	3 AMP 3 POLE MCB DIN MOUNTABLE	3p	3	DIN	0.763
MCSMB3C32	0300-9459	MCG	MINI CIRCUIT BREAKER	32 AMP 3 POLE MCB DIN MOUNTABLE	3p	32	DIN	0.793
MCSMB3C40	0300-9462	MCG	MINI CIRCUIT BREAKER	40 AMP 3 POLE MCB DIN MOUNTABLE	3p	40	DIN	0.809
MCSMB3C5	0300-9441	MCG	MINI CIRCUIT BREAKER	5 AMP 3 POLE MCB DIN MOUNTABLE	3p	5	DIN	0.76
MCSMB3C6	0300-9447	MCG	MINI CIRCUIT BREAKER	6 AMP 3 POLE MCB DIN MOUNTABLE	3p	6	DIN	0.754





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 : 2015

Certificate registration no.	10000410 QM15
Date of certification	2018-08-14
Valid until	2021-08-13



DQS Inc.

Brad McGuire
Managing Director





**Annex to certificate
Registration No. 10000410 QM15**

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.