

SOLAR OUTDOOR LIGHTING SYSTEMS



X-SERIES LED



Key Features

- Power range: 25W~120W.
- Special circuit design with single LED's doesn't effect the rest of the lamp fixture if one fails.
- Tool-less open for easy installation, replacement and maintenance.
- Power-off protection turns the power off automatically when fixture is opened.
- Smooth body design and finish greatly diminishes dust accumulation.
- High Lumen output up to 150lm/ w with high quality LED chips.
- Multiple lighting control options are available.
- Designed to last at least 100, 000 hours at L70.
- Multiple lighting distributions are available.

LED power supply

+ NON-DIMMABLE

High-end MeanWell HLG Series LED driver for optimal stability, performance and lifespan.

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 MIDDLE 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						



LUMINAIRE OPEN VIEW DESIGN

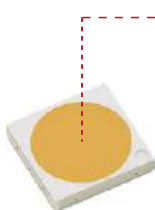
LED POWER SUPPLY

High-end programmable
Inventronics LED driver,
integrated dimming options.
Provides excellent performance
and extended lifespan.



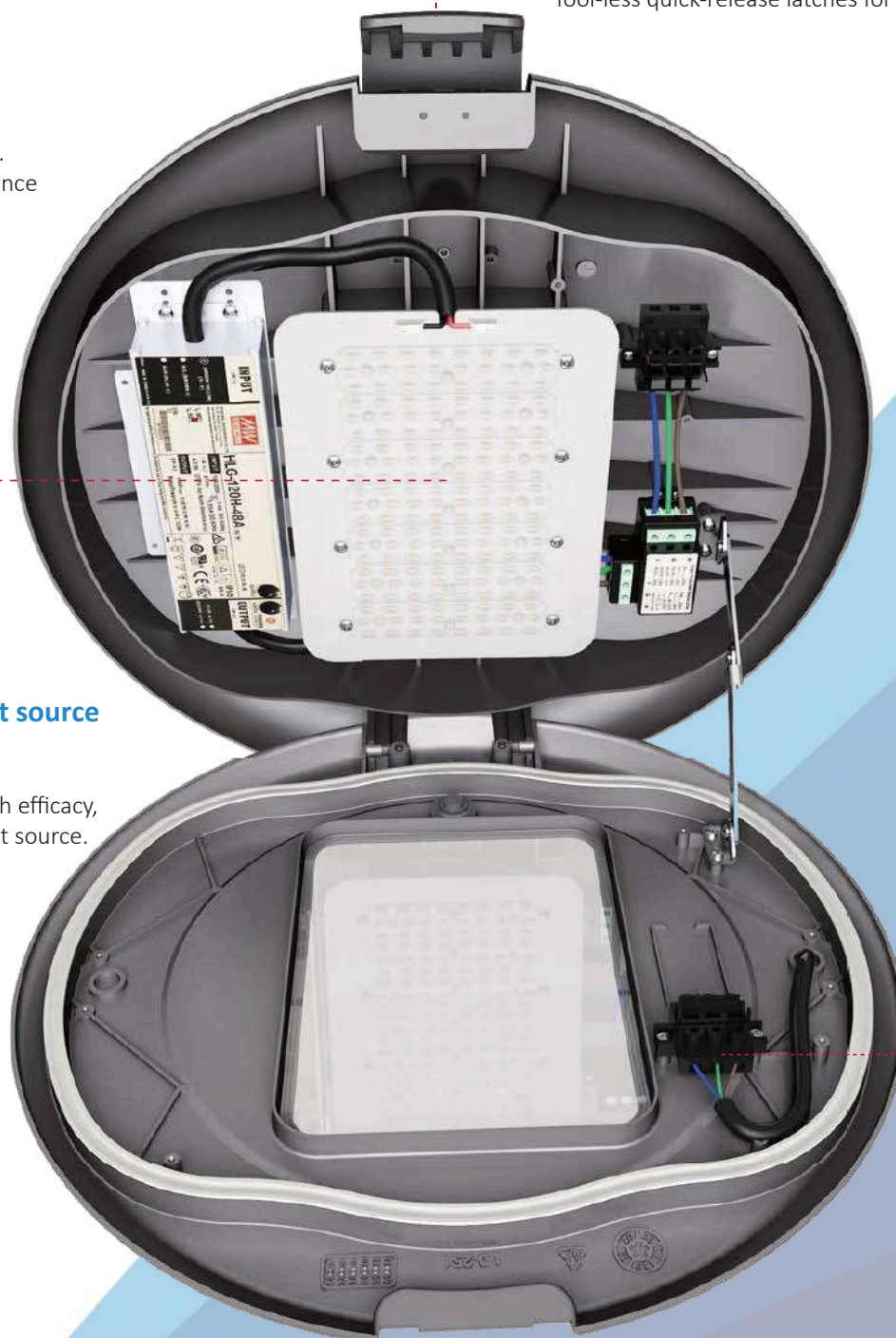
Easy Maintenance

Tool-less quick-release latches for speedy access.



High-efficacy LED light source

Philips Lumileds 5050
Greater than 185lm/W high efficacy,
illumina. on grade LED light source.



Power turn off protector

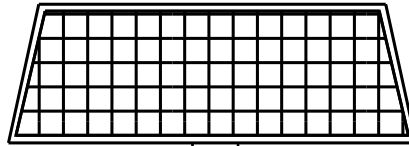
Under maintenance, when the fixtures are
opened, the power will be cut off to protect
personal safety.



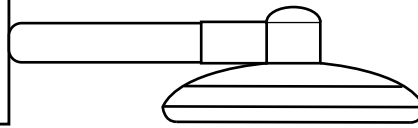
SOLAR DUTY POLE



JOB NAME:



2 3/8X6" TENON



POLE SPECIFICATIONS

FILAMENT WOUND SECTIONAL COMPOSITE SHAFT
CONSISTING OF CONTINUOUS FIBERGLASS ROVING
COMBINED WITH THERMOSETTING POLYESTER RESIN
WOUND IN LOW ANGLE HELICALS AND HIGH ANGLE
HOOPS PROVIDING FOR MAXIMUM RESISTANCE TO
DEFLECTION AND SHEAR. POLE FINISH IS A 10 TO 15
MIL THICK POLYESTER FINISHING RESIN

DIRECT BURIAL POLE ASTM 4923 CLASS 2 (POLE TOP
DEFLECTION SHALL NOT EXCEED 15% OF THE ABOVE
HEIGHT @ MAX WIND LOADING AND MAX FIXTURE
WEIGHT) DESIGN CRITERIA PER AASHTO LTS-5-S-2013
AND ANSI C136.20-2012

BATTERY ENCLOSURE

15'
MOUNTING HEIGHT

20'
SHAFT LENGTH

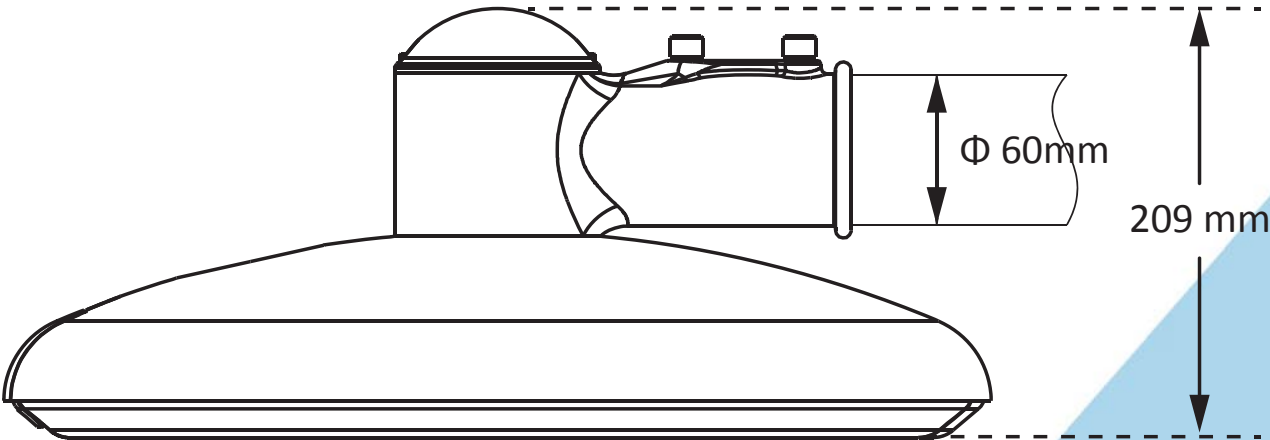
5'
EMBEDMENT

SUBMITTAL DRAWING

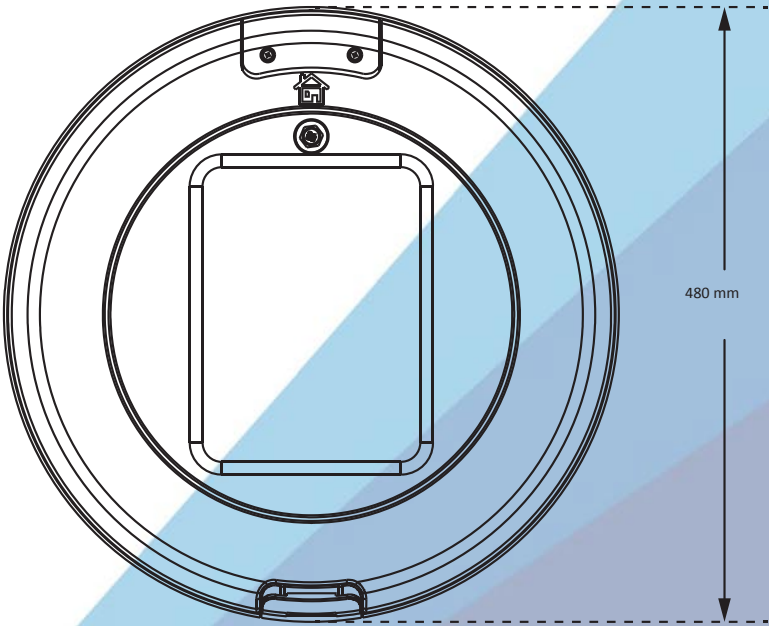
- | | |
|--|----------------------------------|
| ☐ APPROVED AS NOTED | ☐ NATURAL |
| ☐ APPROVED | ☐ BLACK |
| ☐ DISAPPROVED | |

CATALOG NUMBER : DXX20AXXD2-SOL2

- | |
|--|
| ☐ MAXIMUM FIXTURE EPA = 16 |
| ☐ MAXIMUM WIND VELOCITY = 140 MPH |



Side Entry Mounted



Packing Details

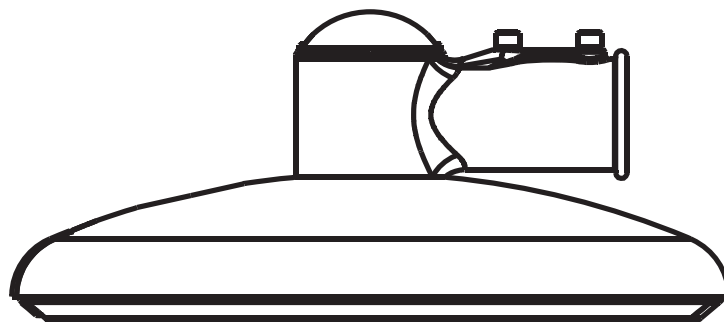
★ Luminaire [Side Entry Mounted]

Model	Carton Size (mm)	N.W (kg)	G.W (kg)
SLI-LD37LM	495*495*170	7.5	8.8 / 19.4 lbs
SLI-LD56LM	495*495*170	7.5	8.8 / 19.4 lbs

Note: Above data of weight are all typical values.

Electrical & Photometric

Side Entry Mounted



Series	Model	LED Qty/ Current	Power	Luminaire efficacy (+/- 5%)	Lumen Output (+/- 5%)	Input Voltage	LED Brand	Driver Brand	Light Distributions	CCT (K)	Surge Protection Device	Lifetime (h)
SLI	SLI-LD37LM 	48units/ 29mA	37W	150 lm /w* ¹	5550 lm	12/24 VDC	Philips Lumileds 5050	Meanwell/Custom Inventronics	2M, 3M, 5S* ²	3000* ³	10KV	>100,000 (L70)
	SLI-LD56LM 	60units/ 35mA	56W	150 lm /w* ¹	8400 lm					4000 5000 5700		

*¹ Luminous Efficacy of post top mounted is 10% lower than other installation methods.

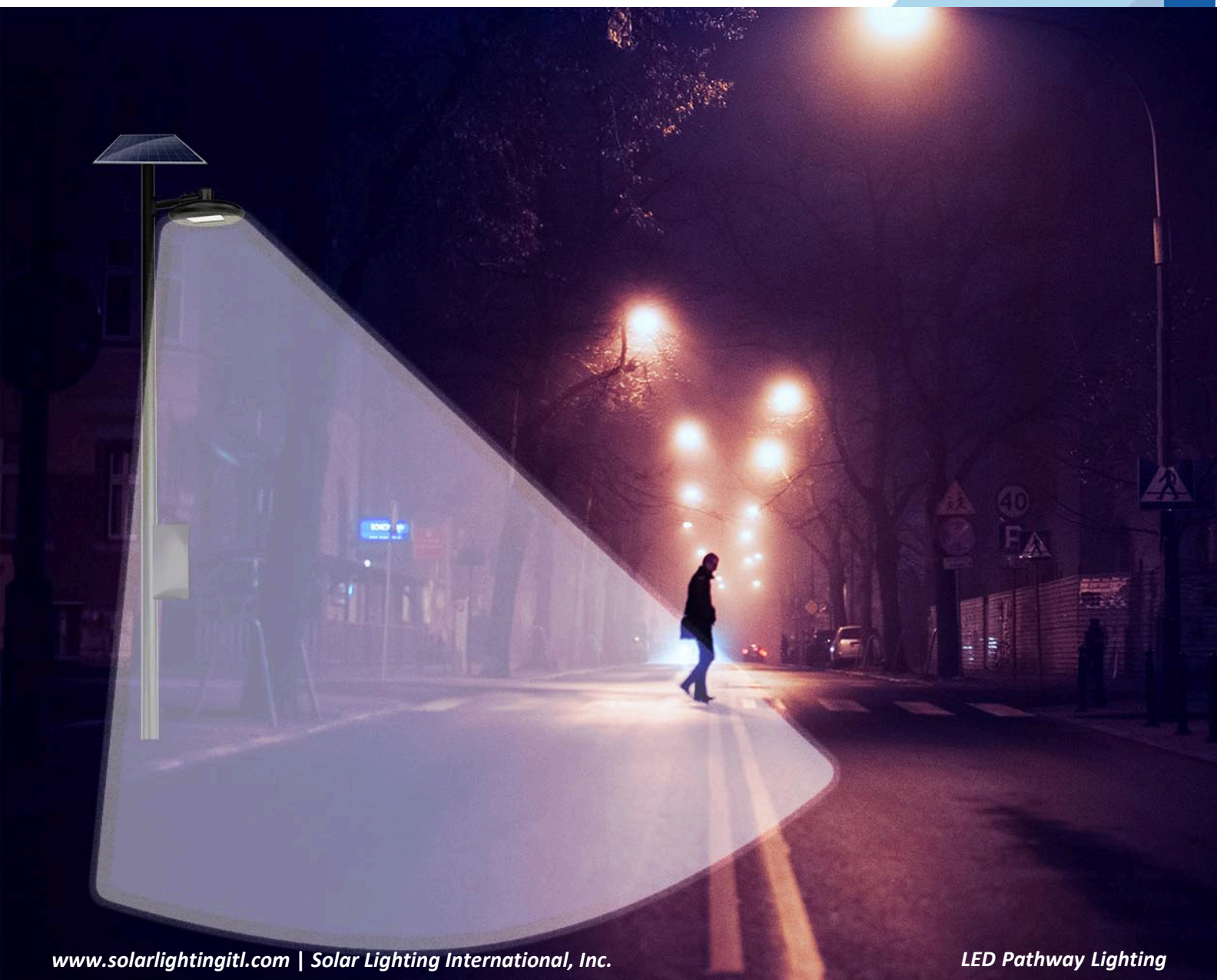
*² Luminous Efficacy of 5S is 15% higher than other Light Distributions.

*³ Luminous Efficacy of 3000K is 5% lower than other CCTs.

Mechanical

Model	Working Environment	Storage Temperature	Rating	CRI	Power Factor	Power Efficiency	Material	Pole/ Rope Diameter (mm)
SLI-LD37LM	40 °C ~ +50 °C 10% ~ 90% RH	-40 °C ~ +50 °C	Class I IP66 IK08	>70	>0.95	>90%	Housing: Die-cast aluminum Lens: Tempered glass and PC	Side Entry Mounted: Φ 60mm(External diameter of the pole)
SLI-LD56LM								Post Top Mounted: Φ 60mm(External diameter of the pole)
								Pendant Mounted: Φ 60mm(Internal diameter of the pole)

Note: Above data of weight are all typical values.

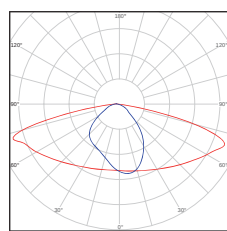
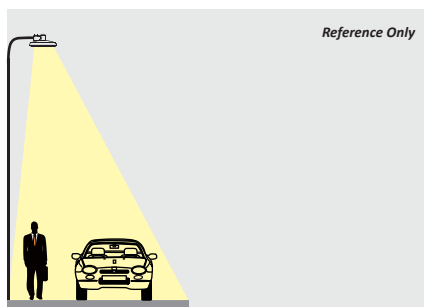


SLI SERIES

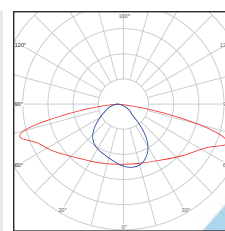
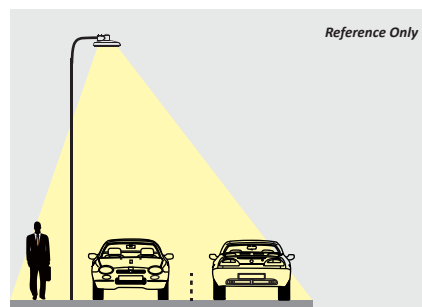
LED PATHWAY LIGHT

Light Distributions

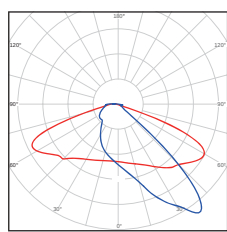
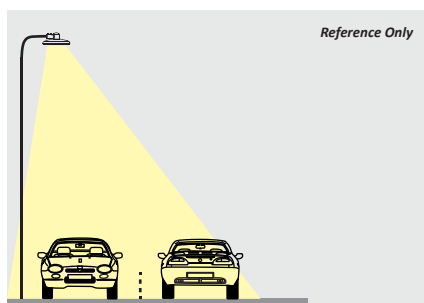
★ Pendant Mounted | Side Entry Mounted



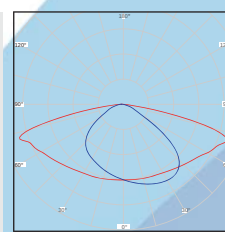
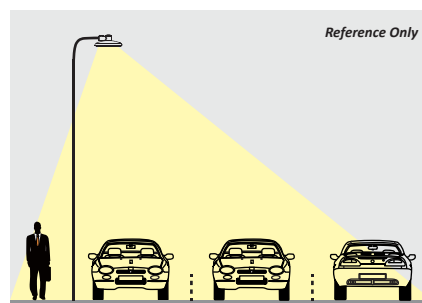
1M



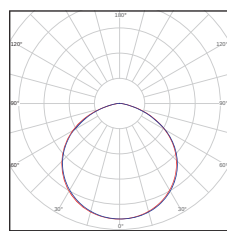
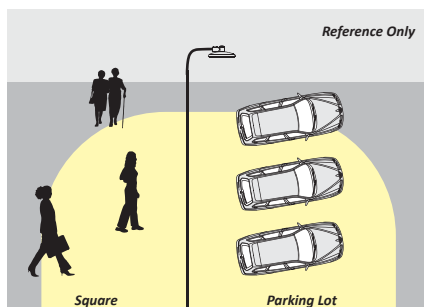
2M



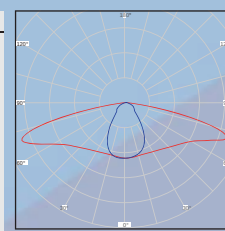
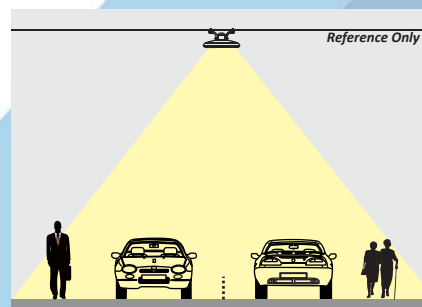
2M BLS



3M



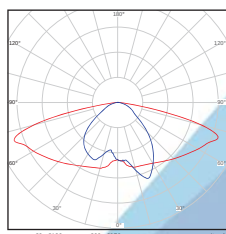
5S



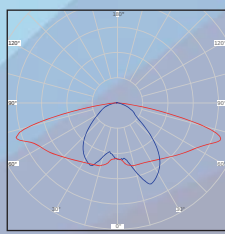
1M Symmetry

Certification

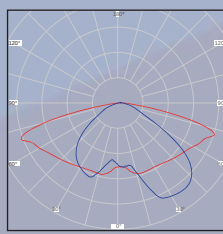
Manufacturer
ISO9001, ISO14001
· Series [SLI-LD27LM, SLI-LD37LM, SLI-LD56LM, SLI-LD70LM]
CE, CB, ROHS, ENEC, LM80



1M



2M



3M

Based on same mounting height, the lengthwise illumination area: 3M > 2M > 1M.



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.

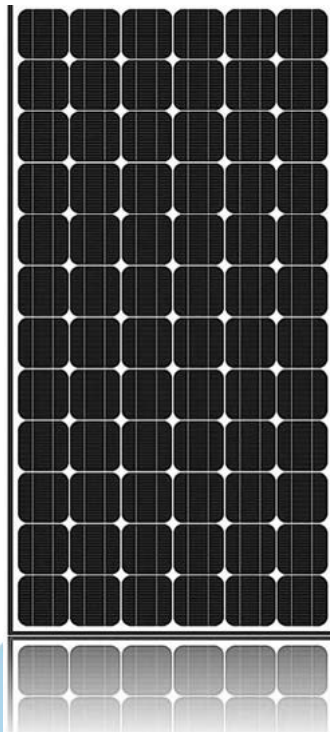
Materiales certificados, cristal templado y un robusto marco anodizado el cual permite al módulo operar sin problema alguno y en múltiples configuraciones de montaje.



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 al 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 Operacion

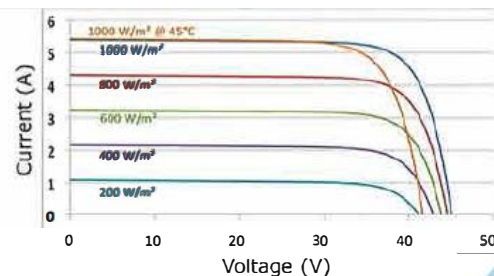
Temperature / Temperatura	-40°C to +90°C (-40°F to + 194°F)
Max load / Carga máxima	50psf (2400 pascals) front and back
Impact Resistance / Resistencia al Impacto	Hail Ø-25mm (1 in.) at 23 m/s (52mph)
Complies with / Normado con	IEC 61215 / IEC 61730

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

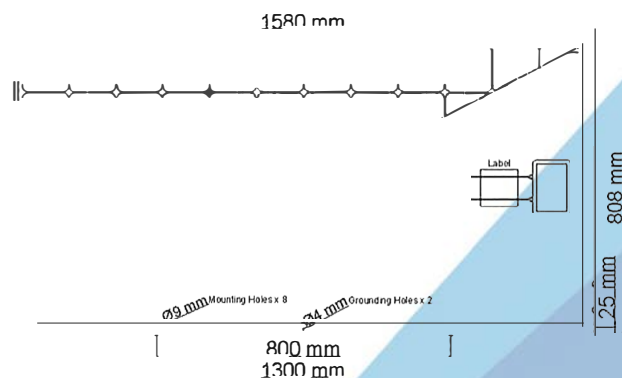
125mm Monocrystalline Silicon Cells Solar Module / Panel Solar con Celdas de 125mm de Silicio Monocristalino

Model / Modelo	S72MC-190		S72MC-195		S72MC-200		S72MC-205		S72MC-210	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Test Conditions / Condiciones de Medición										
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 %	

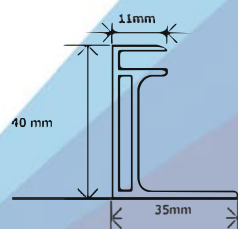
Temperature Coefficients / Coeficientes de Temperatura

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

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

Distributed by / Distribuido por

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).

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.



1X-TPM Series:

- Available for 2", 3", 4" and 6" SCH 40 pipe

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

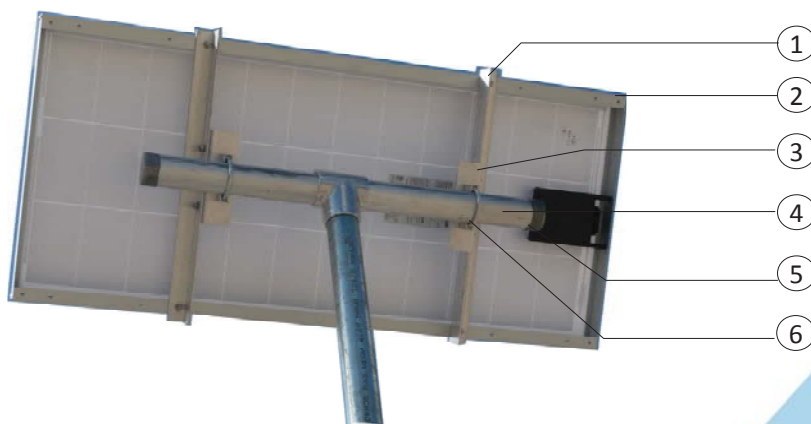
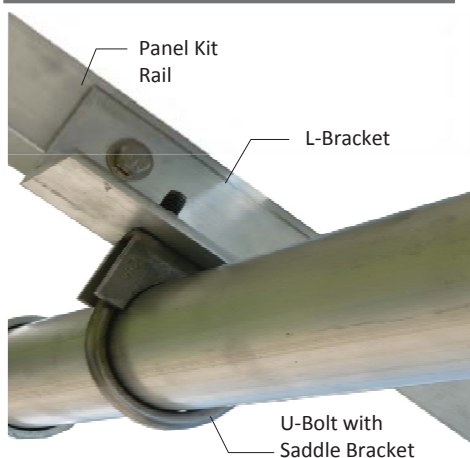
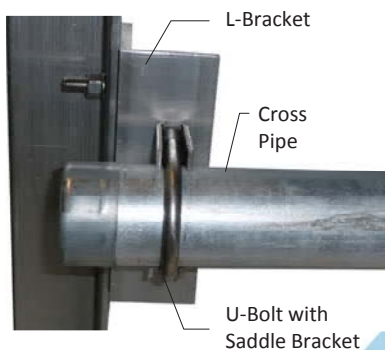


Figure 1. Mounting kit components

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.

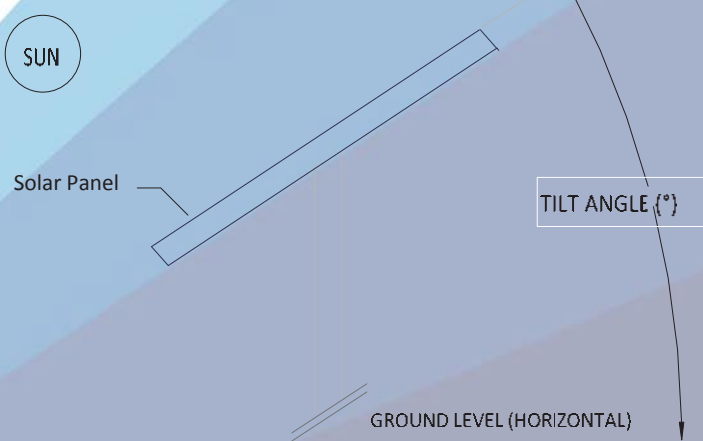
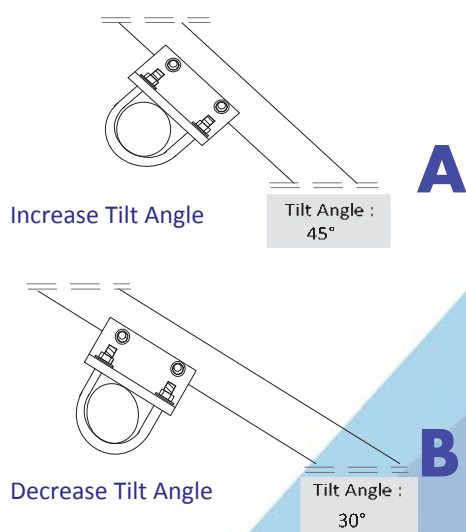


Figure 3. Tilt Angle Adjustments: Adjust PV Array Tilt Angle by rotating U-bolts to desired angle.

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.

Bluetooth SmartSolar Charge Controllers with load output

MPPT 75/10, 75/15, 100/15, 100/20, 100/20-48V



Bluetooth Smart built-in:

The wireless solution to set-up, monitor and update the controller using Apple and Android smartphones, tablets or other devices.

SLI.Direct

For a wired data connection to a Color Control panel, PC or other devices

Ultra-fast Maximum Power Point Tracking (MPPT)

Especially in case of a clouded sky, when light intensity is changing continuously, an ultra-fast MPPT controller will improve energy harvest by up to 30% compared to PWM charge controllers and by up to 10% compared to slower MPPT controllers.

Load output

Over-discharge of the battery can be prevented by connecting all loads to the load output. The load output will disconnect the load when the battery has been discharged to a pre-set voltage (48V model: interface with a relay).

Alternatively, an intelligent battery management algorithm can be chosen: see Battery Life.

The load output is short circuit proof.

Battery Life: Intelligent battery management

When a solar charge controller is not able to recharge the battery to its full capacity within one day, the result is often that the battery will continually be cycled between a 'partially charged' state and the 'end of discharge' state. This mode of operation (no regular full recharge) will destroy a lead-acid battery within weeks or months.

The Battery Life algorithm will monitor the state of charge of the battery and, if needed, day by day slightly increase the load disconnect level (i.e. disconnect the load earlier) until the harvested solar energy is sufficient to recharge the battery to nearly the full 100%. From that point onwards the load disconnect level will be modulated so that a nearly 100% recharge is achieved about once every week.

Programmable battery charge algorithm

See the software section on our website for details

Day/night timing and light dimming option

See the software section on our website for details

Programming, real-time data and history display options

- Modern Apple and Android smartphones, tablets, macbooks and other devices: see the SLI.Direct Bluetooth Smart dongle and the MPPT app discovery sheet for screenshots.
- ColorControl panel

SmartSolar Charge Controller	MPPT 75/10	MPPT 75/15	MPPT 100/15	MPPT 100/20	MPPT 100/20 48V
Battery voltage	12/24V Auto Select				48V
Rated charge current	10A	15A	15A	20A	20A
Nominal PV power, 12V 1a,b)	145W	220W	220W	290W	n. a.
Nominal PV power, 24V 1a,b)	290W	440W	440W	580W	n. a.
Nominal PV power, 48V 1a,b)	n. a.	n. a.	n. a.	n. a.	1160W
Max. PV short circuit current 2)	13A	15A	15A	20A	20A
Automatic load disconnect	Yes				
Maximum PV open circuit voltage	75V		100V		
Peak efficiency	98%				
Self-consumption	12V: 25 mA 24V: 15 mA				15mA
Charge voltage 'absorption'	14,4V / 28,8V (adjustable)				57,6V (adj.)
Charge voltage 'float'	13,8V / 27,6V (adjustable)				55,2V (adj.)
Charge algorithm	multi-stage adaptive				
Temperature compensation	-16 mV / °C resp. -32 mV / °C				
Max. continuous load current	15A			20A	1A
Low voltage load disconnect	11,1V / 22,2V/44,4V or 11,8V / 23,6V/47,2V or Battery Life algorithm				
Low voltage load reconnect	13,1V / 26,2V/52,4V or 14V / 28V/56V or Battery Life algorithm				
Protection	Battery reverse polarity (fuse) / Output short circuit / Over temperature				
Operating temperature	-30 to +60°C (full rated output up to 40°C)				
Humidity	95%, non-condensing				
Data communication port	SLI.Direct (see the data communication white paper on our website)				
ENCLOSURE					
Colour	Blue (RAL 5012)				
Power terminals	6 mm ² / AWG10				
Protection category	IP43 (electronic components), IP22 (connection area)				
Weight	0,5 kg		0,6 kg	0,65 kg	
Dimensions (h x w x d)	100 x 113 x 40 mm		100 x 113 x 50 mm	100 x 113 x 60 mm	
STANDARDS					
Safety	EN/IEC 62109-1, UL 1741, CSA C22.2				
1a) If more PV power is connected, the controller will limit input power. 1b) The PV voltage must exceed Vbat + 5V for the controller to start. Thereafter the minimum PV voltage is Vbat + 1V 2) A PV array with a higher short circuit current may damage the controller.					

8G5SHP-DEKA

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

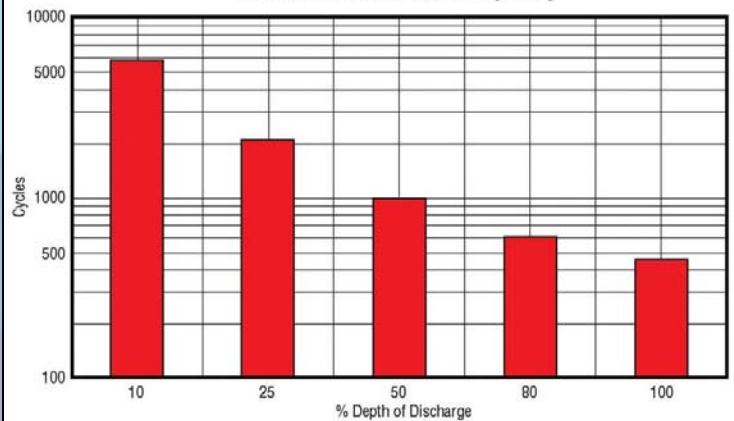


DIMENSIONS

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



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



MINIATURE CIRCUIT BREAKER

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.

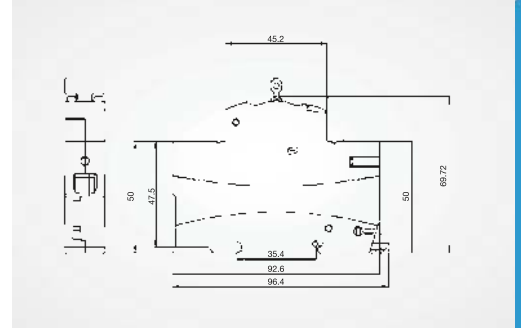
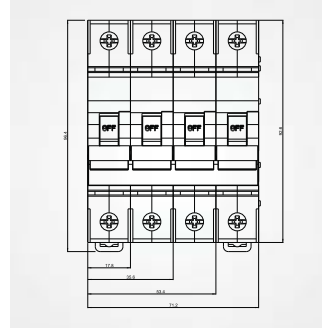
The table gives the max. operating current referring to the different temperatures.

Temperature

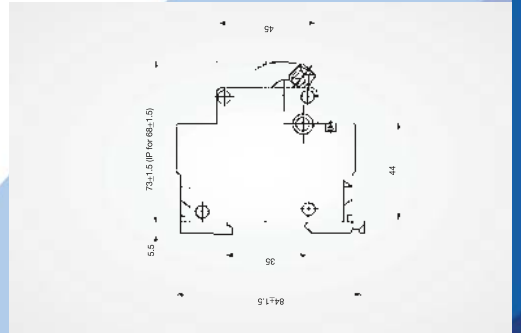
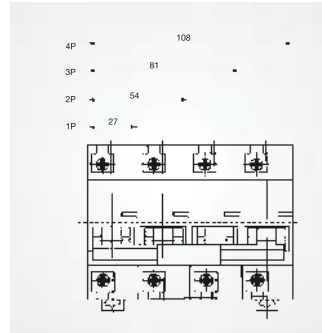
In(A)	25°C	30°C	35°C	40°C	45°C	50°C
2	2.04	2	1.96	1.9	1.86	1.82
6	6.24	6	5.82	5.52	5.28	4.98
10	10.40	10	9.7	9.2	8.8	8.3
16	16.5	16	15.5	15	14.4	14.1
20	20.6	20	19.4	18.8	18	17.6
25	25.8	25	24.3	23.5	22.5	22
32	33	32	31.04	30.1	28.8	28.2
40	41.2	40	38.8	37.6	36	35.2
63	64.89	63	61.79	60	58	56.07

INSTALLATION

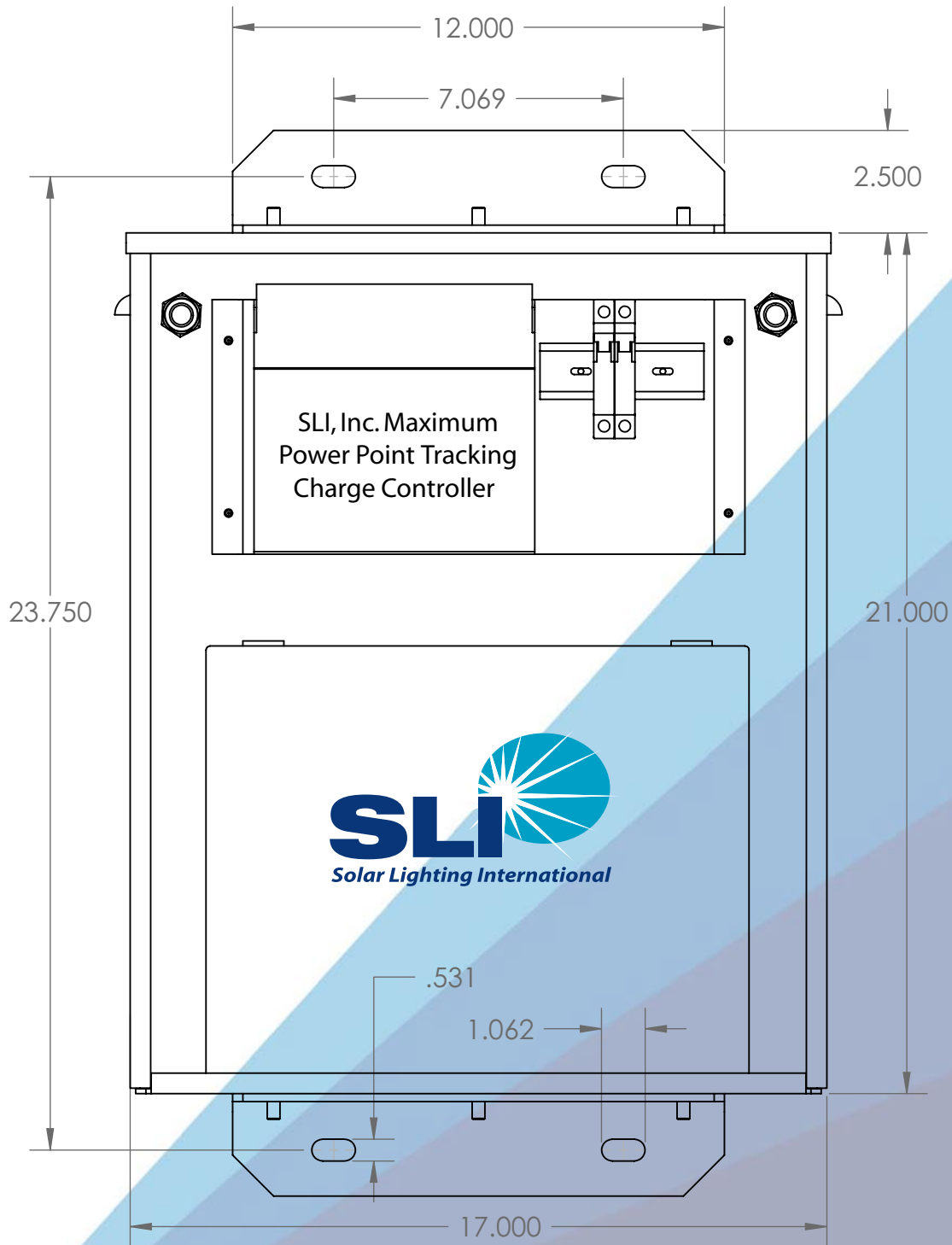
Installation Dimensions MCB (0.5 to 63A) / Isolator (25 to 125A)



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 MOUTABLE	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.