



# Solar Indoor Lighting System



Solar Indoor Lighting system with innovative design really brings most light to your living, which enables your visionary indoor activities come true in evening, not only lit up your classroom when you are reading, writing, working, but also you could have more household enjoying with powering mobile phone, listening to radio, even watching TV and so on. In clinics, owing to the dedicated designed LED batten, the doctors can serve more patients' longer time. Philips Solar indoor lighting system is freely maintained and easily installed, which are mainly composed of standard PV panel, standard battery pack (difference in size) that accommodates various high quality gel battery to power lighting and electrical devices (USB output), charge controller hub is detachable and able to be mounted on the wall. LED E27 lamps and LED battens are optional in system, giving you more sufficient light during evening in comfort and simplicity.



# Solar Indoor Lighting System

## Target application

- Lighting and charging for mobile phone, DC 12V devices
- Schools, clinics, public rooms,
- Household, home
- Camping
- Indoor lighting
- Power DC TV max 15W, DC fan max.5W.

## Features and advantages

- Sufficient and consistent light output and quality.
- Long working hours up to 120 hours<sup>1</sup>.
- 3-year long designed life time and 2500 lifecycles of gel battery pack<sup>2</sup>.
- 5-year long application time of LED lamps and battens
- Plug-and-play for easy mounting anywhere indoor room.
- Robust design for convenient placing and carrying.
- Controllable and independent switch for each lamp/ output line.
- Loading master switch on hub for one-touch turning on/off.
- Power master switch on battery pack to stop<sup>3</sup> battery discharging in stock.
- Portable and removable battery pack for easy maintenance and upgrading.
- Detachable hub for mounting on the wall.
- LEDs on hub to indicate battery available capacity (3-phases Status of Capacity SOC).
- Buzzing alarm in intermittence to battery capacity 3 SOCs.
- Leading technology in efficiency of charging and discharging of charge controller.
- Full electric protection and over temperature protection in charge controller.
- Standard USB ports on battery pack for mobile phone, radio, MP3 charging.
- High quality diffused E27 lamps with broad light angle.
- High quality LED battens with creative glass film reflector to give a gradient and comfort light.
- 7.5m long cable for lamps and battens flexible connection.
- Full certified components

## Specification

- SIS Battery subsystem includes battery pack and charge controller hub

	Description	Battery pack-S	Battery pack-L
	Equipped battery capacity (Ah)		8/12/14/24/40
Battery output voltage		12V	
Battery Type		Gel	
Design life time(years)*		3 years (Ta=25°C)	
Life cycles (charge and discharge)		2500 cycles @ DoD 25%;	
Overloading protection		800 cycles @DoD 70%	
Number of USB port		1	2
USB output current		500mA	
USB protection(short circuit protection)		>2A	
USB protection(over current protection)		750mA	
Net Weight(Kg) –big battery pack		See preferred selection	
Installation		On the ground/table	
Dimension mm (L*W*H)		see preferred selection	460*210*290
Ingress protection		IP20	
Power master switch		Yes	
Handle for carry		on two sides of the battery box	
Housing of battery pack		PP Plastic and Extruded Aluminum	
Color & coating		PANTONE Black 6C and medium grey, PANTONE 430C, Matt plastic, and Anodized Aluminum	
Working temperature		0°C< Ta< 40°C	
Housing of battery pack, material		PP Plastic and Extruded Aluminum	
Panel cable		7.5m/2.5mm	
Battery cable		3m/2.5mm	
Package		Cartoon	
Package dimensions		See preferred selection	
Mounting instructions		Yes (English)	
Package quantity		1 set / carton	
Certificates		CE for battery	
Standards		EN 61427:2005, IEC 61427:2005,	

1. 3W LED lamp powered by 40Ah battery, real working hours depends on application.

2. Based on depth of discharge of battery in 25% per night.

3. Based on 8 working hours per night, 365 nights



## LED Batten



LED Batten	Voltage	DC 12V
	Wattage	3W, 4.5W, 8.5W, 10W, 11.5W
	Lumen output	200lm, 350lm, 650lm, 750lm, 850lm
	Length	0.3m, 0.3m, 0.6m, 0.9m, 1.0m
	Optics	Glass diffuser with film reflector
	Beam angle	180° downward
	CCT	Cool white, 6500K
	CRI	70
	Installation	Suspension
	Life time	15,000hrs @L70
	Net Weight (g)	170
	Ingress protection	IP20
	Safety	Class II
	working temp	-20°C< Ta< 40°C
Certificates	CE	
Housing	Plastic	
Package quantity	1 set / cartoon	
Standards	EN 62109, EN 61000-6-2:2005/AC: 2005, EN 61000-6-4:2007+A1:2011, EN 55015:2006+A1:2007+A2:2009, EN 61547:2009	

## Cable subsystem



Luminaire cable (CC hub to luminaire) specification	Length	7.5m
	Diameter	1.5mm <sup>2</sup>
	Lamps socket	E27
	Cable color (Lamp)	black
	Cable color (Batten)	White
	Material	RVV
	Package	Carton
	Accessories	Hook only for LED Batten
	Package quantity	TBD
	Standards	IEC 60227-3

Hub Extension cable	Length	3m
	Diameter	2.5mm <sup>2</sup>
	Cable color	Black
	Material	RVV
	Package	Carton
	Standards	IEC 60227-3

PV panel cable	Length	7.5m
	Diameter	2.5mm <sup>2</sup>
	Cable color	Black
	Material	RVV
	Package	Carton
	Standards	IEC 60227-3

# Solar Indoor Lighting System

Controller Hub subsystem	Current (charging/discharging)	10A DC
	Voltage	12V DC
	Output current for each port	1.5A
	Number of ports	6 ports to lightings
	Individual switch for each port	Yes
	One touch switch lightings	Yes
	Low voltage protection	11.5V-11.9V
	Over current protection	Yes
	Short circuit protection	Yes
	Reverse polarity protection	Yes
	Over temperature protection	50°C
	Installation	Attached with battery pack or wall mounted
	Dimension mm (L*W*H)	196*210*36
	Ingress protection	IP20
	Housing of battery pack, material	PP Plastic
	Housing of controller, surface treatment	PANTONE Black 6C , Matt plastic
	Battery capacity indication	LEDs indicating 3 phases
	Battery capacity alarm	SOC-1 high>12.44 remaining capacity 75-100% SOC-2 mid 12.14-12.44 remaining capacity 25-75% SOC-3 low 12.00-12.14 remaining capacity 10-25% SOC-4 very low 11.90-12.00V remaining capacity <10%
	Buzz alarm function triggered range(SOC)	SOC3 , 5 BEEP/S until reset
	Buzz alarm reset	Yes
	Working temperature	0°C< Ta< 40°C
	Package	Attached with battery sub-system
	Mounting instructions	Attached with battery sub-system
Package quantity	1 set / carton	
Certificates	CE	
Standards	EN 62109, EN 61000-6-2:2005/AC: 2005, EN 61000-6-4:2007+A1:2011, EN 55015:2006+A1:2007+A2:2009, EN 61547:2009	

## LED Lamp



LED Lamp	Voltage	DC 12V
	Wattage	3W,5W
	Lumen output	225lm,375lm
	Optics	PC diiffuser
	Beam angle	180° downward
	CCT	cool white, 6500K
	CRI	80
	Socket	E27
	Life time	15,000hrs @L70
	Housing	Plastic, PBT
	Net weight (g)	32g, 59g
	Ingress protection	IP20
	Working temperature	-20°C< Ta< 40°C
	Package quantity	1 set / cartoon
	Installation	Suspension
	Certificates	CE
Standards	EN 62560 EN 61547 EN 62471 EN 61000-3-2 EN 62493 EN 61000-3-3 EN 55015	



# Solar Indoor Lighting System



## Preferred selection

### SIS battery box

Description	12NC	Net Size(product)	Lum V	Net Weight(Kg)	Gross Size (package)/CM	Gross Weight(Kg)
SIS battery 12V 10A 8Ah	911401877801	30 x 21 x 25.4	12	6.378	34.6x25.2x29	7.078
SIS battery 12V 10A 12Ah	911401877501	30 x 21 x 25.4	12	7.902	34.6x25.2x29	8.602
SIS battery 12V 10A 14Ah	911401877601	30 x 21 x 25.4	12	8.102	34.6x25.2x29	8.802
SIS battery 12V 10A 24Ah	911401877701	30 x 21 x 25.4	12	12.292	34.6x25.2x29	12.992
SIS battery 12V 10A 40Ah	911401878301	30 x 21 x 25.4	12	16.142	34.6x25.2x29	16.842
SIS battery 12V 10A 50Ah	911401878201	45.6 x 21 x 29.3	12	25.82	50.6x25.2x31	26.72
SIS battery 12V 10A 65Ah	911401877901	45.6 x 21 x 29.3	12	27.82	50.6x25.2x31	28.72
SIS battery 12V 10A 80Ah	911401878101	45.6 x 21 x 29.3	12	31.846	50.6x25.2x31	32.746
SIS battery 12V 10A 100Ah	911401878001	45.6 x 21 x 29.3	12	34.846	50.6x25.2x31	35.746

### 12V lamp

Description	12NC	Net Size (product)/cm	Net Weight (kg)	Outer package size (package)/cm	Qty/Outer package (pcs)	Gross Weight(Kg)/ outer package
LED Bulb 3W E27 6500K 12V G45	911401875301	8.3*4.5*4.5	0.032	27 x 56.5 x 12.5	50	3
LED Bulb 5W E27 6500K 12V A55	911401875201	10*5.5*5.5	0.0595	32 x 67 x 14.5	50	4.5

### 12V batten

Description	12NC	Net Size (product)/cm	Net Weight (kg)	Carton Size /cm	Gross weight /kg	Qty/Outer package (pcs)
BN066C LED10/L1000 12V 6500K 11.5W	911401875501	99.95*2.2*3.6	0.285	112.5 x 18 x18	9.91	24
BN066C LED9/L900 12V 6500K 10W	911401875401	88.5*2.2*3.6	0.254	101 x 18 x18	8.85	24
BN066C LED6/L600 12V 6500K 8.5W	911401875601	58.5*2.2*3.6	0.178	71x 18 x18	6.15	24
BN066C LED3/L300 12V 6500K 4.5W	911401875701	32.5*2.2*3.6	0.113	45 x 18 x18	3.9	24
BN066C LED3/L300 12V 6500K 3W	911401875801	32.5*2.2*3.6	0.113	45 x 18 x18	3.9	24

### 12V Batten cable

Description	12NC	Net Size(product)/cm	Net Weight(kg)	Gross Size(package)/cm	Gross Weight(Kg)	Qty/ carton
DC LED Bulb cable 7.5m	911401879101	750 x 2 x 1.2	0.605	38.5x 28.5 x 20	6.55	10

### 12V Batten lamp cable

Description	12NC	Net Size(product)/cm	Net Weight(kg)	Gross Size(package)/cm	Gross Weight(Kg)	Qty/ carton
LED Batten cable 7.5m	911401878901	750 x 4 x 4	0.37	38.5x 28.5 x 20	7.9	20

### Controller Hub Extension cable 3m

Description	12NC	Net Size(product)/cm	Net Weight(kg)	Gross Size(package)/cm	Gross Weight(Kg)	Qty/ carton
Controller Hub Extension cable 3m	911401878801	300 x 2.2 x 1.5	0.201	38.5x 28.5 x 20	8.54	40

### PV panel cable 7.5m

Description	12NC	Net Size(product)/cm	Net Weight(kg)	Gross Size(package)/cm	Gross Weight(Kg)	Qty/ carton
PV panel cable 7.5m	911401879001	750 x 2.5 x 3.6	0.585	38.5x 28.5 x 20	6.35	10

## Application guide—typical configuration

Application	Solution	System configuration		autonomy hrs	autonomy hrs. with USB charging	working hrs./day*
Small house with 3 rooms pendant height 2m 5 autonomy nights	225lm@3W E27 LED lamps, 3 light points	Standard kit- L1		3pcs 3W	40	8
	45Wp Poly-C panel			2pcs 3W	60	12
	40Ah Gel battery			1pcs 3W	120	24
	1 USB port cables and accessories					
	item	quantity	spec			
	Panel	1	45Wp			
	Battery pack	1	SIS battery 12V 10A 40Ah			
	LED E27 lamps	3	LED Bulb 3W E27 6500K 12V G45			
Luminaire cable	3	DC LED Bulb cable 7.5m				
Hub cable (optional)	1	Hub extension cable 3m				

# Solar Indoor Lighting System

Application	Solution	System configuration			autonomy hrs	autonomy hrs. with USB charging	working hrs./day*							
Small house with 3 rooms pendant height 2m 3 autonomy nights	375lm@5W E27 LED lamps, 3 light points	Standard kit- L2		item	quantity	spec	3pcs 5W	24	19.5	8				
	45Wp Poly-C panel													
	40Ah Gel battery													
	1 USB port													
	cables and accessories													
	Battery pack	1	SIS battery 12V 10A 40Ah								2pcs 5W	36	27	12
	LED E27 lamps	3	LED Bulb 5W E27 6500K 12V A55								1pcs 5W	72	45	24
	Luminaire cable	3	DC LED Bulb cable 7.5m											
	Hub cable (optional)	1	Hub extension cable 3m											

Application	Solution	System configuration			autonomy hrs	autonomy hrs. with USB charging	working hrs./day*							
Big house with 5 rooms pendant height 2m 3 autonomy nights	225lm@3W E27 LED lamps, 5 light points	Standard kit- L3		item	quantity	spec	5pcs 3W	24	19.5	8				
	45Wp Poly-C panel													
	40Ah Gel battery													
	1 USB port													
	cables and accessories													
	Battery pack	1	SIS battery 12V 10A 40Ah								4pcs 3W	30	24	10
	LED E27 lamps	5	LED Bulb 3W E27 6500K 12V G45								3pcs 3W	40	30	13.3
	Luminaire cable	5	DC LED Bulb cable 7.5m								2pcs 3W	60	40	20
	Hub cable (optional)	1	Hub extension cable 3m								1pcs 3W	120	60	40

Application	Solution	System configuration			autonomy hrs	autonomy hrs. with USB charging	working hrs./day*							
Small class room 20m² pendant height 2m Eave= 40lux 3 autonomy nights	1300lm, 650lm@8.5W LED batten*2pcs	Standard kit- B1		item	quantity	spec	2pcs 8.5W	12	8	4				
	35Wp Poly-C panel													
	24Ah Gel battery													
	1 USB port													
	cables and accessories (hook)													
	Battery pack	1	SIS battery 12V 10A 24Ah								1pcs 8.5W	24	13.5	8
	LED batten	2	BN066C LED6/L600 12V 6500K 8.5W											
	Luminaire cable	2	LED Batten cable 7.5m											
	Hub cable (optional)	1	Hub extension cable 3m											

Application	Solution	System configuration			autonomy hrs	autonomy hrs. with USB charging	working hrs./day*							
Clinics 40m² pendant height 2m Eave= 40lux 3 autonomy nights	2600lm, 650lm@8.5W LED batten*4pcs	Standard kit- B2		item	quantity	spec	4pcs 8.5W	12	10	4				
	45Wp Poly-C panel													
	50Ah Gel battery													
	2 USB ports													
	cables and accessories (hook)													
	Battery pack	1	SIS battery 12V 10A 50Ah								3pcs 8.5W	16	12.5	5.3
	LED batten	4	BN066C LED6/L600 12V 6500K 8.5W								2pcs 8.5W	24	18	8
	Luminaire cable	4	LED Batten cable 7.5m								1pcs 8.5W	48	28	16
	Hub cable (optional)	1	Hub extension cable 3m											

Application	Solution	System configuration			autonomy hrs	autonomy hrs. with USB charging	working hrs./day*							
Big room 60m² pendant height 2m Eave= 40lux 3 autonomy nights	3900lm, 650lm@8.5W LED batten*6pcs	Standard kit- B3		item	quantity	spec	6pcs 8.5W	12	10.5	4				
	70Wp Poly-C panel													
	80Ah Gel battery													
	2 USB ports													
	cables and accessories (hook)													
	Battery pack	1	SIS battery 12V 10A 80Ah								5pcs 8.5W	14.4	12.5	4.8
	LED batten	6	BN066C LED6/L600 12V 6500K 8.5W								4pcs 8.5W	18	15	6
	Luminaire cable	6	LED Batten cable 7.5m								3pcs 8.5W	24	19.5	8
	Hub cable (optional)	1	Hub extension cable 3m								2pcs 8.5W	36	26.5	12
			1pcs 8.5W	72	42	24								



## Solar Indoor Lighting System Eco



Philips Solar Indoor Lighting system Eco is the newest portable lighting system integrating innovative lithium iron phosphate (LiFePO<sub>4</sub>) battery, which has the better performance than lead acid, smaller in size but more energy storage, much longer life cycles, deeper available depth of discharge to discharge.

Philips Solar indoor lighting system Eco also includes high quality certified LED lamps and charge controller. 2 standard USB ports are to power USB-based device. Accessorized cables and connectors will very simplify your quick installation. It is ideal solution for the indoor lighting where no grid access, such as residential, classroom, clinics. And even you can bring it with your camping and even as emergency lighting when needed.



# Solar Indoor Lighting System Eco

## Target application

- Lighting and charging for mobile phone, DC 12V devices
- Schools, clinics, public rooms,
- Household, home
- Camping
- Emergency lighting

## Features and advantages

- Sufficient and consistent light output and quality
- Long working hours up to 96 hours \*1
- Long designed life time and 4000 lifecycles (100% depth of discharge) of LiFePO4 battery pack \*2
- Long application time of LED lamps
- Plug-and-play for easy mounting anywhere indoor room.
- Robust design for convenient placing and carrying.
- LEDs to indicate battery available capacity (3-phases Status of Capacity SOC).
- Leading technology in efficiency of charging and discharging of chargecontroller.
- Full electric protection and over temperature protection in charge controller.
- Standard USB ports on battery pack for mobile phone, radio, MP3 charging.
- High quality diffused E27 lamps with broad light angle.
- 9m long cable for lamps
- Full certified components

## Specification

	Nominal	Min	Max
Working temp.(charging & discharging)	25 C	Charging -10 C/ Discharging -20 C	Charging 60 C/ Discharging 60 C
mounting type	on the ground/table		
Battery output voltage	12.8V	10.8V	14.2V
weight(Kg) –30AH	4	3.8	4.2
weight(Kg) with box –30AH	7.2	7	7.5
Battery Type	LiFePO4		
Length(mm)	320	318	322
Width(mm)	160	158	162
Height(mm)	160	158	162
Equipped battery capacity (Ah)	30	29	33
IP level	IP20		
Handle	Yes, one handle on top of the battery box		
Design life time(years)*	10	8	
Life cycles (charge and discharge)	4000 cycles @ DoD 100%; 6000 cycles @DoD 70%		
FUSE	15A		
Number of USB terminal	2		
USB output current capacity	Channel1:1A / Channel2:2A		
USB protection(short circuit protection)	Yes		
USB protection(over current protection) mA	3.5A in total for 2 channels		
USB charging for mobile phone, iPhone compatible	Yes		
battery capacity indication	LEDs indicating 4 phases		





# Solar Indoor Lighting System Eco



	Nominal	Min	Max
SOC.Stage-1	≥75%		
SOC.Stage-2	≥50%~<75%		
SOC.Stage-3	≥25%~<50%		
SOC.Stage-4	<25%		
charge controller current capability(charging/discharging)	10A		
charge controller recognition voltage	12V		
low voltage protection	10.8	10.7	10.9
over current protection delay time, when current> 100%	100mS		
nominal current			
over current protection recover time	1 min		
short circuit protection	Yes		
Over temp. protection	60degree		
Hub, Number of the light output ports	4		
Hub, current for output each port	2A		2A
Housing of battery pack, material	Galvanized steel	/	/
Housing of battery pack, colour, surface treatment	Black, stoving varnish	/	/
Package type	Cartoon		
Package dimensions	395x230x340mm (LxWxH)		
Gross weight	10Kg		
Logo	Philips		
Logo colour	RAL9006		
Logo height	6mm		
Mounting instructions	Yes (English)		
Package quantity	One set / cartoon		

\* working hrs./day indicate the proposed working hrs. per day supported by specified solar panel. As the generated power of solar panel is subject to solar irradiation as well. So the working hrs./day in these typical configurations is only appropriate when the locations are closed with the list as below: Jakarta, Indonesia for Typical configuration- L4 , Typical configuration- L5

## LED Lamp



LED Lamp	Voltage	DC 12V
	Wattage	3W,5W
	Lumen output	225lm,375lm
	Optics	PC diffuser
	Beam angle	180° downward
	CCT	cool white, 6500K
	CRI	80
	Socket	E27
	Life time	15,000hrs @L70
	Housing	Plastic, PBT
	Net weight (g)	32g, 59g
	Ingress protection	IP20
	Working temperature	-20°C< Ta< 40°C
	Package quantity	1 set / cartoon
	Installation	Suspension
	Certificates	CE
Standards	EN 62560 / EN 62471 / EN 62493 / EN 55015 / EN 61547 EN 61000-3-2 / EN 61000-3-3	

# Solar Indoor Lighting System Eco

Bulb cable specification		Nominal	Min	Max
	length	9.2m	9.15m	
	cable diameter (CC to bulb)	0.2mm <sup>2</sup>		
	Lamps socket	E27		
	With switch	Yes		
	cable color	black		
	cable material	RVV		
Mounting type	Suspension			

Panel cable specification		Nominal	Min	Max
	length (CC to lamp/Batten)	9.2m	9.15m	
	cable diameter (CC to lamp)	1.5mm <sup>2</sup>		
	The connector on the cable	MC4		
	cable color	black		
cable material	RVV			

Typical configuration L4	3 autonomy nights, 8 hours working per night		Typical configuration L5	3 autonomy nights, 5 hours working per night	
	3W E27 LED lamps, 225lm*4pcs			5W E27 LED lamps, 375lm*4pcs	
	35Wp Poly-C panel			35Wp Poly-C panel	
	30Ah Li-Fe battery			30Ah Li-Fe battery	
	2USB ports			2USB ports	
cables and accessories		cables and accessories			
	autonomy hrs.	working hrs./day*		autonomy hrs.	working hrs./day*
4pcs 3W	24	8	4pcs 5W	15	5
3pcs 3W	32	10.5	3pcs 5W	20	6.6
2pcs 3W	48	16	2pcs 5W	30	10
1pcs 3W	96	≥24	1pcs 5W	60	20

\* Autonomy hrs. indicate how many hrs. the battery could support whole system working properly under no charging condition.

## Preferred selection

12NC	SAP	Lum V	Product Size(mm)	Net Weight(Kg)	Package Size/cm	Gross Weight(Kg)
911401883101	SIS LiFe battery 10A 12V 30Ah 4cables	12	16x16x32	7.2	39.5x23x34	10

