ENSA[™]

SSL-B Series Quick Install Guide

Version: ENSASSLB-Q322

Thank you for purchasing a SSL-B Series Solar Street Light.

This install guide covers basic setup, installation and use of your light. For more information & warranty details, please visit: www.ensalife.com

1.1 System Overview



The ENSA[™] SSL-B Series is comprised of motion-powered, solar-charged LED street lights, designed to deliver lighting to any outdoor location. These pole-mounted lights provide superb coverage with a wide beam in a cool white colour. The light can be set to always be active from dusk to dawn, or only when motion is detected with the adjustable motion sensor.

These lights are fully self-sufficient, not requiring any external cabling. This makes them excellent for use in remote locations such as rural roads, power stations & construction sites, as well as general use in streets, parks, schools, farms and more.



1.2 Function Overview

SSL-B Series Solar Lights feature three main components that govern the function of the system. They are the solar panel assembly (includes battery & solar controllers), the sensor assembly (including infrared remote receiver & microwave motion detector), and the LED light assembly with adjustable bracket. These components are tightly integrated in the operation of the entire system. See below for further explanation.

1.2.1 Solar Light Components

Solar Panel Assembly: This includes all solar panel components including the panel itself, battery, controllers, chassis & mounting arm.

The solar panel acts an ambient light sensor, controlling dusk/dawn switch functions when it no longer generates an adequate voltage from the sun. This setting can be configured in Section 4.

The battery is Lithium Iron Phosphate (LiFePO4), which has superior expected lifetime and temperature tolerance compared to standard Lithium Polymer batteries. It is also immune from thermal runaway conditions to prevent fires like standard LiPo batteries.

The mount arm of the solar panel offers 120° of tilt on a Ø50~60mm pole, with an angle compass for precise adjustment. It also has a spiked bird guard for the panel & a safety wire rope.

Sensor Assembly: The dark circle on the underside of the panel, the sensor assembly houses the infrared receiver for the remote control for light configuration.

It also houses the microwave motion detector. This detects motion in a circular area under the Solar Light in a total diameter of \emptyset 15m when mounted at 10m above the ground.

Light Assembly: This comprises of a high efficiency LED array mounted on a 60° tilt-adjustable bracket to control light distribution. The array's mount position can be moved to better orient the light.





Fig. 1.2a Underside of panel with detail on solar panel mounting arm, sensor assembly and LED light assembly.

1.2.2 Operation Process

The SSL-B Series Solar Light is a highly customisable solar system, but how it operates is simple. The following details the operation process of the SSL-B Solar Light after mounting.

- 1. During the day, the solar panel charges the battery. The LED light is off.
- 2. The solar panel detects that the sun has set. The LED light turns on.
- 3. The light is configured:
 - To be at set brightness at different time periods during the night AND/OR
 - Use the motion sensor to control brightness before & after movement is detected
- 4. The solar panel detects that the sun has risen. The LED light turns off.
- 5. The cycle repeats.

1.3 Model Specifications

Model		SSL-B20M	SSL-B30M	SSL-B50M	SSL-B60M					
Product Image				•						
Series Nam	ne	0	SSL-B Series Motion Activa	ted Solar LED Street Light	S					
Light										
Light Outp	out (max)	3900lm	5500lm	9400lm	11100lm					
Luminous	Efficacy		>180lm/W							
Colour Tem	nperature		4000K natural white	e / 5700K cool white						
Beam Angl	le	145°	x 75°	145°	x 100°					
Rated LED	Lifespan		50,00	00hrs						
LED Testing	g		LM80 / TM21 (ava	ilable on request)						
LED Power Consumpti		20W	30W	50W	60W					
Internal Ba	attery	218Wh LiFePO4	320Wh LiFePO4	500Wh LiFePO4	1200Wh LiFePO4					
Operating	Voltage	12.8VDC	12.8VDC	12.8VDC	25.6VDC					
Operating (max)	Time	72~120 hours (intelligent mode, rainy weather) 120~168 hours (intelligen mode, rainy weather)								
Light Brack	ket	Adjustable bracket angle -30° ~ 30°								
Solar Pane	el 👘									
Panel Type	2		Monocrystalline silicon							
Panel Watt	age	56W	90W	120W	180W					
Panel Conv	ersion Rate	≥21%								
Panel Brac	ket		Adjustable bracket angle -60° ~ 60°							
Rec. Install	l Height	5 ~ 7m	5 ~ 7m	8 ~ 10m	8 ~ 10m					
Detection										
Motion De	tection	Microwave motion sensor								
Detection	Range	Ø8~15m (height: 5~10m)								
Light	Normal	Time period / Brightness								
Mode	Morning	Time period / Brightness								
Settings	Sensor	Time period / Brightness on motion / On-time delay / Brightness no motion								
General										
Ingress Pro	otection	IP65								
Pole Diame	eter	Ø50~60mm								
Product Dimensions		821 x 450 x 161mm	1015 x 525 x 161mm	1321 x 525 x 161mm	1496 x 685 x 161mm					

Solar Panel Dimensions

SSL-B20MC



SSL-B30MC



SSL-B50MC



SSL-B60MC



2. Solar Light Mounting & Installation

This section covers choosing an installation site, selecting a pole for the Solar Light, mounting the Solar Light to the pole and adjusting the Solar Light for optimal use.

- The Ingress Protection rating of this product is IP65, which is suitable for outdoor lighting, but cannot be soaked in water.
- The solar panel is fragile, do not scratch or strike the solar cells.
- Do not clean the solar panel with an abrasive sponge or soap. Use solar panel cleaning kits.
- The longest storage period of solar street lamps is 6 months after they are fully charged. If they are transported or stored for a long time, they need to be checked and recharged, otherwise the battery may be damaged.
- Charging temperature: 0~60°C. Discharge temperature: -20~60°C
- Do not store the product in a temperature exceeding 45°C.

2.1 Choosing an Installation Site

Follow these guidelines to ensure you get the best use out of your Solar Light.

- To maximise exposure to the sun, solar panels must be installed to tilt north in the southern hemisphere and south in the northern hemisphere.
- The Solar Light should not be installed in a location that blocks sun exposure by buildings or trees.
- See Section 2.4 for more detail.



2.2 Choosing a Pole & Foundation

When selecting a pole and foundation to install the solar panel on, there are several requirements to keep in mind:

- Using a **tapered pole** is recommended.
- The pole's height should be equal to or higher than the solar panel's recommended install height this is 5 ~ 7m for 20W/30W models & 8 ~ 10m for 50/60W models.
- The pole must have a spigot size of 60mm (adapters available).
- The pole must be strong enough to hold the weight of the solar panel this can range up to 39kg (60W model).
- The foundation and fasteners should be strong enough resist high wind speeds. A shallow concrete foundation is recommended.

ENSA[™] can supply two pole models that fit these install requirements. These galvanised poles include 4 x M20 foundation bolts (600 x 25mm), a bolt template ring and 60mm spigot adapter.

- SLR-POL4 (4.5m / 14.7ft)
- SLR-POL6 (6.0m / 19.7ft)

Consider frangible poles depending on requirements. Tilt poles may help with installation.



2.3 Mounting the Solar Panel to the Pole

Caution: Solar panel must be installed so it is in direct sunlight all day.

Any shading will greatly reduce the solar panel's performance.

- 1. Loosen the locking screws (pictured below).
- 2. Position the Solar Light assembly over the Ø50~60mm pole.
- 3. Slowly lower the Solar Light assembly onto the pole.
- 4. Securely fasten the included locking security screws to the bracket with the included torx wrench. (Fig. 2.2b).





Fig. 2.2b Installed security screws

Optional Bird Spikes



2.4 Adjusting the Solar Panel Tilt Angle

To ensure your solar panel absorbs as much light as possible, it's important to adjust the solar panel angle to an ideal angle, depending on your region (refer to table below).

For Australia and all locations in the southern hemisphere, the solar panel must be tilted directly north. Locations in the northern hemisphere must have the panel tilted directly south. The angle of tilt is determined by the installation location and is calculated as installation latitude + 15°.



Solar panel tilt angle

For example, Sydney has a latitude of 34°, therefore the solar panel should be tilted directly north with an angle of 34 $+ 15 = 49^{\circ}$.

If you are uncertain the of your area, Google makes it easy to find the latitude for any location: For example, searching for "latitude Newcastle NSW Australia" will return 32.9283° S, 151.7817° E. The latitude is the first number shown (32.9283) which rounds up to 33°.

Example tilt angles for Australian cities

Sydney	Melbourne	Canberra	Perth	Brisbane	Hobart	Adelaide	Darwin
49°	53°	50°	47°	42.5°	58°	50°	27.5°

IMPORTANT: If positioning of the pole makes it impractical to tilt the solar panel north, while still illuminating the desired area, set a tilt angle of 5° and rotate the unit to the best lighting position. Note that this will reduce charging performance, which may reduce operating time.

2.4 Adjusting the Solar Panel Tilt Angle (continued)

How to adjust the tilt angle:

- 1. Use a flat head screwdriver to remove the bracket cover.
- 2. Once the cover is removed, use a 10mm Allen / hex key to loosen the panel adjustment screw.
- 3. Tilt the panel to the required angle with the LED light at the high side.
- 4. Tighten the screw after adjusting the angle to secure the solar panel in place.
- 5. Replace the cover.



Fig. 2.3b Panel adjustment screw

2.4 Adjusting the Solar Panel Tilt Angle (continued)



Solar Panel Angle Adjustment

Light Angle Adjustment





Note: The solar panel and light have two separate angle adjustment points. More precise angle configurations can be made by adjusting both.

Fig. 2.3c Solar Panel & Light Angle Adjustment

2.4 Safety Rope Installation

Attach the safety rope between the solar light and the panel base, as pictured.



Fig. 2.4a Safety rope installation diagram

3. Quick Solar Light Configuration

This section shows how to activate and test the Solar Light using the included infrared remote. On first use, the solar light uses the default settings (outlined below) which work as an ideal set for most situations. For a detailed list of all configurable settings, follow Section 4 of this manual.

First Period	Second Period	Third Period	On-time Delay
6hrs duration	4hrs duration	8hrs duration	30 seconds
100% active brightness	60% active brightness	100% active brightness	
30% dimmed brightness	20% dimmed brightness	30% dimmed brightness	

All configuration of the solar panel & LED street light is performed with the included infrared remote. The remote interacts with the panel's infrared receiver to control settings (the dark circle on the underside of the panel). Any modification to settings is best performed at night, as infrared interference during the day may reduce remote range.

3.1 Reconnect Battery

The Solar Light is shipped with the battery disconnected from the system.

To activate the Solar Light, this battery must first be reconnected. To reconnect:

- 1. Remove the "Battery Disconnected" sticker.
- 2. Find the two cables labelled "Battery".
 - <image>
- 3. Taking note of the cable key, connect the two cables.
- 4. Twist the waterproof locking connector until tight.



Depending on the solar light model, a green LED will illuminate OR a red LED will flash slowly inside the black sensor. If the battery is connected correctly and this does not occur, this likely indicates low battery voltage - place the system in direct sunlight for at least 1 hour to charge before continuing.

4. Advanced Solar Light Configuration

4.1 Overview

This section covers how to fully configure the motion-activated 20W/30W/50W/60W LED light on the Solar Light. This is recommended only for advanced users.

Warning: Modification to the LED light and sensor default values may increase power consumption, affect light uptime and more.

Incorrectly editing settings can permanently damage the solar panel, battery and/or LED light. Performing changes to contrary to those in this guide may cause damage to the panel not covered under warranty.

All configuration of the solar panel & LED street light is performed with the included infrared remote. The remote interacts with the panel's infrared receiver to control settings (the dark circle on the underside of the panel). Any modification to settings is best performed at night, as infrared interference during the day may reduce remote range.

The remote control allows you to adjust solar panel, battery & sensor settings and then transmit them to apply all configurations the solar system. See initial menu options and button functions below:

Startup Menu Options

SystemInfo	Diagnostic tool to check performance of solar system including uptime, battery & panel statistics.				
SysConfig	Configuration interface where new settings are set & transmitted to the solar system.				
ReadData	Current settings applied to the solar system.				
Local	Language and device name settings.				

Sy	stemInfo sConfig adData cal	
\bigcirc		(i)
ON		OFF
~	~	\frown

Fig. 4.1a Solar panel remote control & LCD

	Remote Control Button Functions					
\bigcirc	Power	Press to power on. Press and hold for 2 seconds, ther release to power off the remote control.				
	Scroll Up	Press to scroll up.				
	Sending Key	Press to transmit parameters to the control board.				
ON	Signal On	Press and hold to enable the LED light control.				
	Enter Key	Press to select item or confirm changes.				
OFF	Signal Off	Press and hold to disable the LED light control.				
	Search Key	Not used.				
\bigcirc	Down Key	Press to scroll down.				
5	Back	Press to select item or confirm changes.				

4.2 Settings Detail

Each SSL-B Series Solar Light has default factory settings for light configuration and battery configuration. Below are the functions of each setting in the **SysConfig** menu and the solar system default settings. Before adjusting solar panel and light settings, familiarise yourself with the setting definitions below.

Warning: Changing settings without proper understanding of their function can permanently damage the solar panel, battery and/or LED light. Use Section 4.2 as a reference only. Follow instructions in Section 4.3 before modifying any settings on your SSL-B Series model. Contact ENSA for more information.

Name	Remote Title	Description	Settings
Battery Type	Bat Type	Type of battery installed in the solar panel.	Li_Po / Lead_acid
Charge-Stop Voltage	BoostCharge	Set maximum level for battery charge voltage. The solar regulator stops charging the battery once this voltage is reached.	10.80V ~ 32.80V
Low Voltage Cut-Off	Voltage Low	Set minimum battery cut-off voltage. When the battery voltage falls below this value, the light will be disabled.	8.10V ~ 24.00V
Recover Voltage	Recover Vol	Set minimum voltage for the battery to activate light after Low Voltage Cut-Off . Battery must be recharged to this level before the light reactivates.	9.00V ~ 25.00V
Power Saving	PowerSaving	When turned on, the LED driver will reduce the light output to extend run time of the light. Light output reduction ramps down between two set voltages, beginning at StartDerate setting and bottoming out at SuperSaving setting. Both StartDerate & SuperSaving voltages must be set higher than Low Voltage Cut-Off .	On / Off
		StartSaving: Start voltage level, when light output is first reduced by Power Saving.	8.5V ~ 28.0V
		SuperSaving: Lowest voltage level, light output remains here until Low Voltage Cut-Off.	8.5V ~ 28.0V
Turn-On Photovoltaic Voltage	TurnOnPVVol	The solar panel acts as an ambient light sensor. Once the solar panel voltage drops below the set Turn-On Photovoltaic Voltage , the light activates according to the Drive Mode parameters.	4.0V ~ 12.0V
Output Current	Output Cur	Sets the constant current output level driving the LED light.	150mA ~ 4000mA
Drive Mode	DriveMode	 Time (Time Control): Set up to 5 periods of up to 9 hours each; controls light activation. Time intervals begin after Turn-On Photovoltaic Voltage threshold is reached i.e: the sun has set. Light brightness in each period is set by Main Brightness Level. Sense (Movement Sensor): Adds motion detection on top of 5 time periods. The light abides by Time (Time Control), but dims to Dimmed Brightness Level and brightens to Main Brightness Level based on movement detection. 	Time (Time Control) or Sense (Movement Sensor)
On-time Delay	LightDelay	Countdown timer after last detection motion where light output stays at Main Brightness Level setting before switching to Dimmed Brightness Level setting.	0s ~ 120s
Time Periods	First, Second, Third, Fourth, Fifth Time	User-programmable light on/off schedule. Maximum 9 hours for each setting.	0.00hrs ~ 9.00hrs
Main Brightness Level	LightRatio	Set light output (%) for Time (Time Control) Drive Mode or when movement is detected in Move Sensor Drive Mode mode.	0% ~ 100%
Dimmed Brightness Level	Idle Ratio	Set light output (%) in Move Sensor Drive Mode mode after last detected movement and after the On-Time Delay elapses.	0% ~ 100%
Daytime Mode	MorningLight	Overrides Turn-On Photovoltaic Voltage , making the light stay on after sunrise as per the Drive Mode parameters.	On / Off

4.3 Default Configuration & Warnings

Your SSL-B Series Solar Light has been pre-configured with the following settings. Do not change settings without reading the information below.

Name	Remote Title	Settings	Default Value SSL-B20 SSL-B30 Default Value SSL-B50 SSL-B60			Notes & Warnings		
Battery Type	Bat Type	Li_Po / Lead_acid	Li_Po		Li_Po		DO NOT change this setting: SSL-B Series must use Li_Po for LiFePO4 battery	
Charge Voltage	BoostCharge	10.80V ~ 32.80V	14.4V		28.8V		DO NOT change this setting: Changing this setting may damage the solar system or make it less effective.	
Low Voltage Cut-Off	Voltage Low	8.10V ~ 24.00V	10.5V		21.0V		DO NOT change this setting: Changing this setting may damage the solar system or make it less effective.	
Recover Voltage	Recover Vol	9.00V ~ 25.00V	12.0V 2		24.	.0V	DO NOT change this setting: Changing this setting may damage the solar system or make it less effective.	
	PowerSaving	On / Off	0	'n	0	'n	Power Saving and other related settings are off by default.	
Power Saving	StartSaving	8.5V ~ 28.0V	12.	4V*	24.	8V*	* Figure shown left are recommended.	
-	SuperSaving	8.5V ~ 28.0V	12	V*	24	V*	StartDerate at approx 50% charge remaining SuperSaving at approx 10% charge remaining	
Turn-On Photovoltaic Voltage	TurnOnPVVol	4.0V ~ 12.0V	5.0V		6.0	OV	Raising this setting will increase the sensitivity of the ambient light sensor, i.e: the light will activate earlier in the evening. Recommend using values shown.	
Output Current	Output Cur	150mA ~ 4000mA	20W: 1200mA 30W: TBD 50W: 1550mA		1800mA		DO NOT change this setting: Changing this setting may damage the LED light or make it less effective.	
Drive Mode	DriveMode	Time Ctrl or Move Sensor	Move \$	Sensor	Move S	Sensor	Motion detection (Move Sensor) is on by default to increase the uptime time of the system.	
On-time Delay	LightDelay	0s ~ 120s	30s		30)s	Increase or decrease this setting to change the time between Main Brightness & Dimmed Brightness Levels after last detected motion.	
Time Periods	First, Second, Third, Fourth, Fifth Time	0.00hrs ~ 9.00hrs	First Second Third Fourth Fifth	6Hrs 4Hrs 8Hrs N/A N/A	First Second Third Fourth Fifth	6Hrs 4Hrs 8Hrs N/A N/A	12 hours across three Time Periods are set by default. Each have different Main Brightness and Dimmed Brightness Level settings.	
Main Brightness Level	LightRatio	0% ~ 100%	First Second Third Fourth Fifth	100% 60% 100% N/A N/A	First Second Third Fourth Fifth	100% 60% 100% N/A N/A	Main Brightness Level is configured for active use for 5 time periods after sunset. By default, levels are reduced for late night until morning.	
Dimmed Brightness Level	Idle Ratio	0% ~ 100%	First Second Third Fourth Fifth	30% 20% 30% N/A N/A	First Second Third Fourth Fifth	30% 20% 30% N/A N/A	Dimmed Brightness Level is configured for active use for 5 time periods after sunset. By default, levels are reduced for late night until morning.	
Daytime Mode	MorningLight	On / Off	0	ff	Off		Daytime Mode is off by default. The light will turn off at sunrise, once Turn-On Photovoltaic Voltage is reached.	

4.4 Reconnect Battery

The Solar Light is shipped with the battery disconnected from the system.

To activate the Solar Light, this battery must first be reconnected. To reconnect:

- 1. Remove the "Battery Disconnected" sticker.
- 3. Taking note of the cable key, connect the two cables.
- 2. Find the two cables labelled "Battery".
- 4. Twist the waterproof locking connector until tight.

Depending on the solar light model, a green LED will illuminate OR a red LED will flash slowly inside the black sensor. If the battery is connected correctly and this does not occur, this likely indicates low battery voltage - place the system in direct sunlight for at least 1 hour to charge before continuing.

4.5 Applying Settings Using the Remote

After learning the configuration settings, defaults and risks associated, this section will guide you through applying a custom configuration to your SSL-B Series Solar Light using the infrared remote control.

Note: Any modification to settings is best performed at night as infrared interference during the day may reduce range of the remote control. The remote control turns off after 3 minutes of inactivity.



Fig. 4.5a Infrared receiver on the panel underside & remote display

- 1. Point the remote control towards the black sensor on the underside of the solar panel and press in **Power**.
 - The panel must be operational for infrared remote interaction. The red light on the underside of the panel indicates this by solid-on or flashing. Follow Section 4.4 if the panel is not operational.
 - If connection is successful, the LCD will show Read OK.
 - If connection fails, the LCD will show **Disconnect** Note: Direct sunlight can interfere with the transmission. The sensitivity of the transmitter is higher when in dark environment.
- 2. Using the remote buttons, navigate to the SysConfig menu and press D Enter.
 - The SysConfig menu will have the settings detailed Section 4.3 filled in by default.

4.5 Applying Settings Using the Remote (continued)

- 3. Using Section 4.3 as a guide, navigate through the SysConfig menu to build your configuration.
 - Ensure you do not change critical settings mentioned in Section 4.3
 - Use 🕢 Up and 🕓 Down to scroll.
 - Press D Enter to begin editing values. The value will be shown in reverse colour.
 - Use
 O
 Up and
 O
 Down to change the value.
 - Press
 Enter again to confirm.
- 4. Once complete, transmit your new configuration to the solar panel.
 - Point the remote control at the solar panel's black sensor
 - Press 🛜 **Sending Key** to update the solar panel with your new configuration.
 - If you hear a long beep, the configuration settings are transmitted successfully.
 - Three short beeps indicate unsuccessful transmission.
 - To confirm successful configuration, follow Section 4.6 Checking Current Settings Using the Remote

4.6 Checking Current Settings Using the Remote

You can view Current Solar Light settings using the infrared remote control. This is useful when checking existing Solar Light parameters before a configuration change, copying configurations between Solar Lights or simply confirming that a configuration transmission was successful.

While you can view current settings on a Solar Light, it is not possible to import settings from a Solar Light to the remote. Settings must be configured on the remote and transmitted to the Solar Light.

- 1. Point the remote control towards the black sensor on the underside of the solar panel and press o Power.
- 2. Using the remote buttons, navigate to the **ReadData** menu and press D Enter.
 - Present details the current settings of the Solar Light.
 - These details can be recorded manually to copy them to the remote control.
 - Follow Section 4.5 to configure the remote with these recorded settings.

4.7 Check Solar Panel Status

Using the infrared remote, you can check important statistics to evaluate the performance of your Solar Light. This can be useful for troubleshooting the location or tilt of the panel at different times of day or determining settings to optimise to get the best possible results from the Solar Light.

Below are the **SystemInfo** statistics displayed on the remote control & the procedure to check Solar Light health.

Name Remote Title		Description
		On connecting to the panel, the Solar Panel Status can be in 3 states.
Solar Panel Status		CurrentDrive: when the Solar Light is on
Solar Panel Status	System	PWM Charge: when the Solar Panel is charging
		Shutdown: when the remote hasn't connected or the system is below Low Voltage Cut-Off.
Photovoltaic Voltage	PV Voltage	Solar panel voltage as measured by the charge controller input.
Battery Voltage	Bat Voltage	Battery voltage as measured by the charge controller output.
Output Voltage	Output Vol	Voltage being supplied to the LED light.
Output Current	Output Cur	Current being supplied to the LED light.
Output Power	Output Pow	Power being supplied to the LED light.
Internal Temperature	Inter Temp	Temperature inside the Solar Light.
Full Charge Count	FullChargeCnt	Count of how many times the panel has reached the Charge-Stop Voltage (fully charged).
Voltage Low Count	VoltageLowCnt	Count of how many times the panel has reached the Low Voltage Cut-Off (fully discharged).
Total Uptime	Runing	Total running uptime of the Solar Light, measured in hours & minutes.

1. Point the remote control towards the black sensor on the underside of the solar panel and press on **Power**.

2. Using the remote buttons, navigate to the **SystemInfo** menu and press () **Enter**.

- When in **SystemInfo** menu, the top field should read **System: PWM Charge** or **System: CurrentDrive** if the connection to the Solar Light from the infrared remote was successful.
- If this menu first reads **System: Shutdown**, retry step 1 again to connect the panel to the infrared remote.

4.8 Lock/Unlock the Remote Control

After setup has been completed, you can lock the remote control to prevent settings from being accidentally changed, or changed by somebody else.

To Lock/Unlock the remote control, press the 🕙 Search, 回 Enter and 😑 Back buttons together.

When you hear a long single beep, the remote is now locked. Repeat these steps to unlock the remote.



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Note:

All products, designs and software here are subject to change without prior written notice.