Solar IP CCTV Surveillance
SLR-B Series Quick Install Guide

1. Pre-Install Information

Thank you for purchasing a SLR-B Series Solar Surveillance System.
This install guide covers basic setup, installation and use of your surveillance system.
For more information and warranty details, please visit:
www.vip-vision.com

1.1 Included Components

1x	120W or 180W Solar Panel Assembly *(w/ remote control device)*	
1x	4.0MP Mini PTZ Dome Camera *(default, camera may vary)*	
1x	Surveillance Camera Mount Assembly	

Pre-installed 128GB MicroSD Card in Surveillance Camera *(default, card size may vary)*	Ubiquiti 5.8GHz 120° Wireless Bridge (1x Access Point, 1x Station) *(WiFi system only)*	Huawei 4G Modem Router with WiFi *(4G system only)*

Pole, base plate & SIM card not included.

Required Install Tools: T40 torx key for junction box *(included)*, 4mm & 10mm Allen keys for solar panel *(not included)*, 8mm drill bit & battery drill, flat head screwdriver. Laptop with RJ45 network interface **strongly** recommended for camera setup.

1.2 Camera Information

Professional Series 4.0MP 4x Zoom Mini PTZ Dome

Note: Camera has been preinstalled with the supplied 128GB microSD card and has been preconfigured to record 4.0MP (2592 x 1520) at 25fps.

The username and password details for the camera can be found on the configuration sheet inside the junction box. The default username is **admin**.

To prevent unauthorised access, we reccomend you change the admin password before completing installation.

Default Camera Configuration

Main Stream

Stream Type	General
Encode Type	H.265
Resolution	4.0MP (2592 x 1520)
FPS	25
Encoding Method	Variable Bit Rate
Quality	6 (Best)
Ref Stream	1536-8192Kbps
I Frame Interval	50
Watermark	Yes

Sub Stream

Stream Type	General
Encode Type	H.265
Resolution	D1 (704 x 576)
FPS	10
Encoding Method	Constant Bit Rate
Bit Stream	512Kbps
Ref Stream	139-768Kbps
I Interval	20
SVC	1 (off)

120W/180W Solar Panel with Motion-Sensing Street Light

This solar panel system is fitted with undervoltage protection, which disconnects the load at approximately 10V (SLR-B120) or 20V (SLR-B180). If you are not receiving any voltage on the output wires, place the panel in direct sunlight for a minimum of one hour and re-test.

The output will be reconnected automatically when battery voltage reaches approximately 11.5V (SLR-B120) or 23.0V (SLR-B180). For more information on panel configuration, refer to Section 4.

This product must be installed in direct sunlight. Shade will negatively impact performance.

This solar panel includes a motion-activated LED light. For more information, refer to Section 4.

Solar Panel Specifications

	SLR-B120	SLR-B180
Panel Type	120W monocrystalline silicon panel	180W monocrystalline silicon panel
Battery	12.8V/500Wh Lithium Iron Phosphate (LiFePO4) w/ Low Voltage Cutoff	25.6V/500Wh Lithium Iron Phosphate (LiFePO4) w/ Low Voltage Cutoff
Panel Tilt Adjust	-60° ~ 60° with angle compass	
Ingress Protection	IP65	
Wind Tolerance	Up to 65m/s	
Dimensions (Panel)	1321 x 525 x 161mm	1496 x 685 x 161mm
Diameter (Spigot)	Ø50 ~ 60mm	

Solar Panel Dimensions

SLR-B120
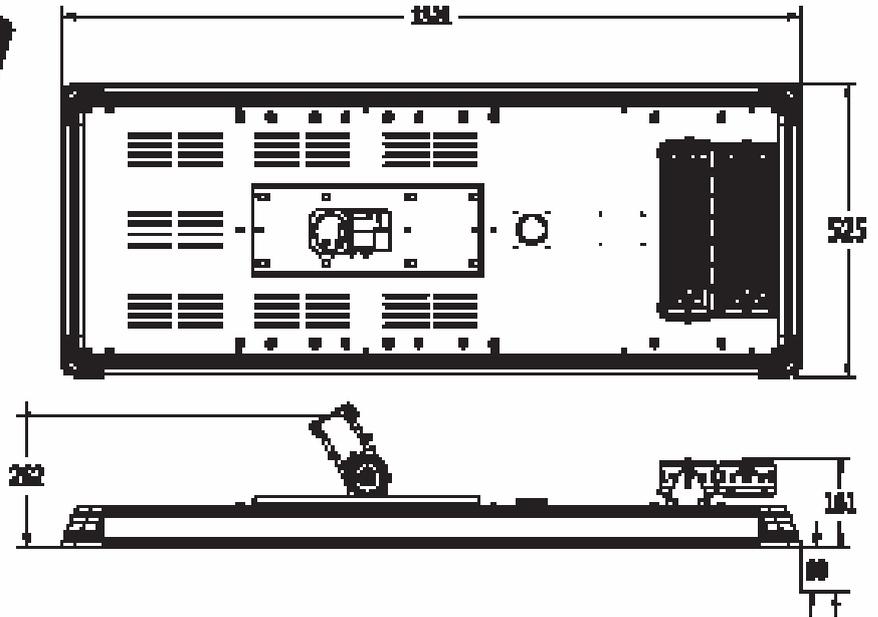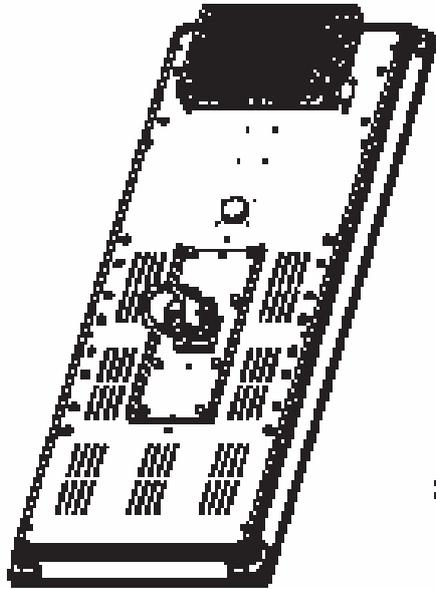
SLR-B180
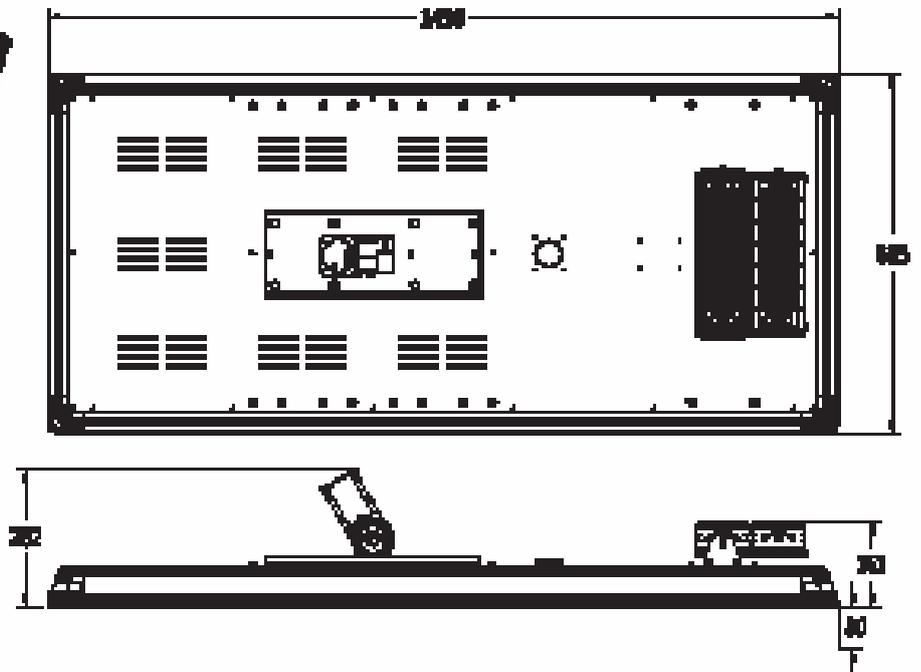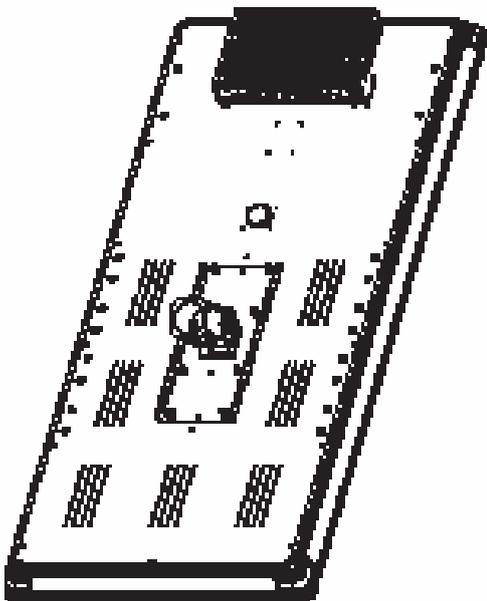
Solar Panel Assembly Diagram

Lamp Arm

Ø50~Ø60mm
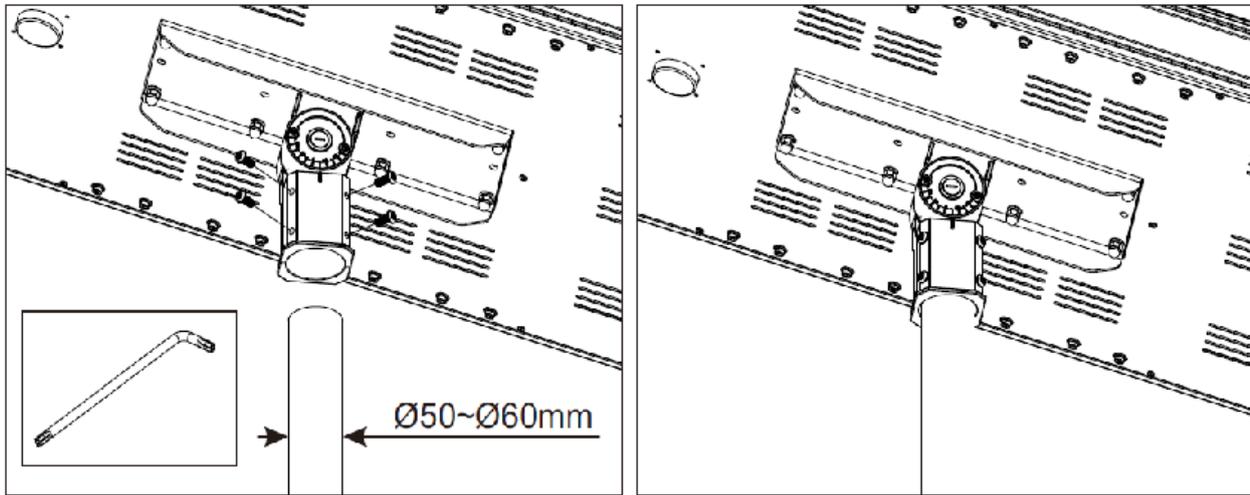
Optional Bird Spikes

PH1
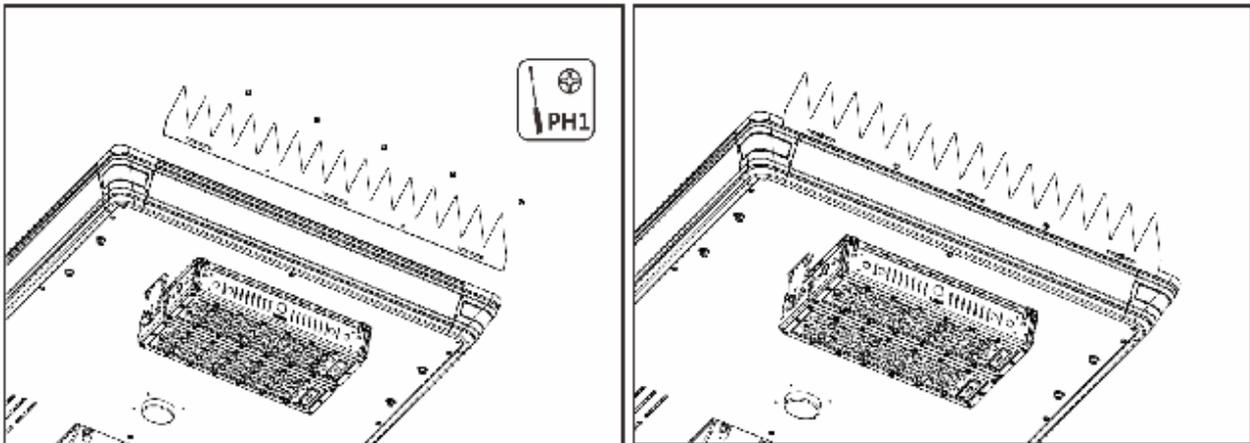
Accessories
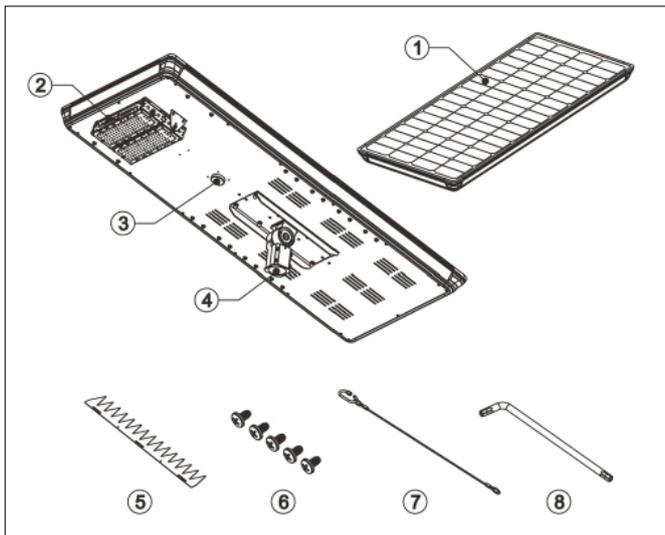
#	Component
1	Solar panel
2	LED light
3	Microwave sensor
4	Lamp arm
5	Bird spikes
6	Screws
7	Safety rope
8	T40 Torx

2. Installation

2.1 Mounting the Solar Panel to the Pole

> **Caution:** Solar panel **must** be placed so it is in **direct sunlight all day** - Any shading will greatly reduce the solar panel's performance.
>
> For poles greater than 4m in height, tapered poles are preferable for camera stability and pole strength - Contact VIP Vision if you require further information.

1. Drill an 8mm hole in the pole (minimum 15cm down from the top of the pole) on the same side that the camera will be mounted.

   This is for the solar panel power cable to run through. The position of the hole will vary depending on what position on the pole the camera is to be mounted.

2. Feed the figure-eight power cable connected to your solar panel through the hole created above

3. Lift the solar panel to the top of the pole, feeding the any loose cable down the pole. Slide the solar panel mounting bracket over the spigot.
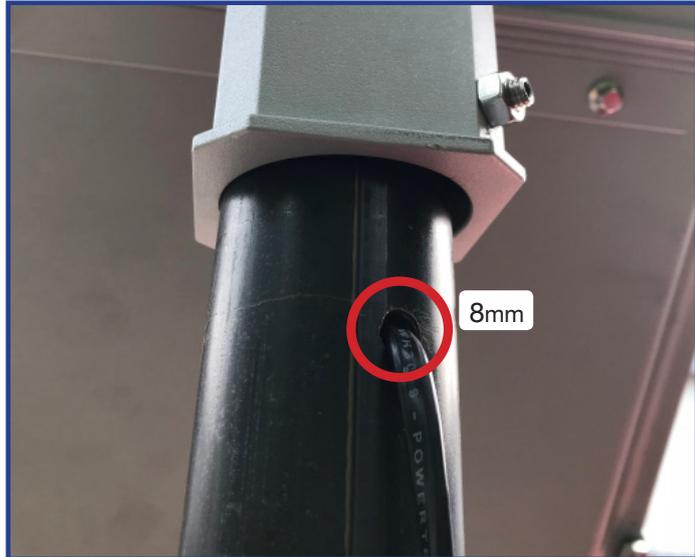

Fig. 2.1a
Solar panel power cable drill location

4. Align the panel in a north-south orientation, with the LED light end of the panel pointing south.

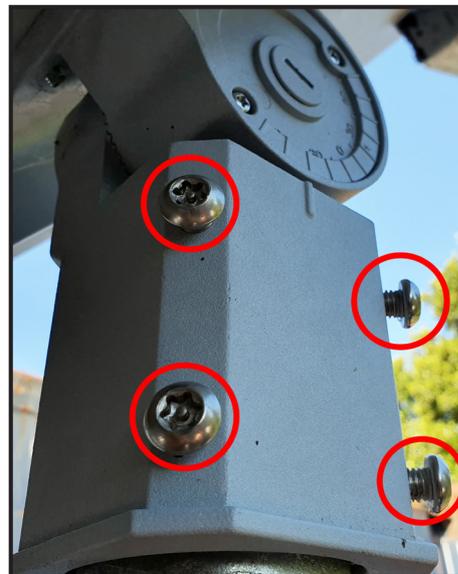5. Tightly fasten the included security screws to the bracket *(Fig. 2.1b)*

Fig. 2.1b
Installed grub screws

2.2 Adjusting the Solar Panel Angle

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

For Australia and all locations in the southern hemisphere, the lower edge of the solar panel must point north. Locations in the northern hemisphere must have the power edge of the panel pointing south.

The angle of tilt is determined by the installation location and is calculated as installation latitude + 15°
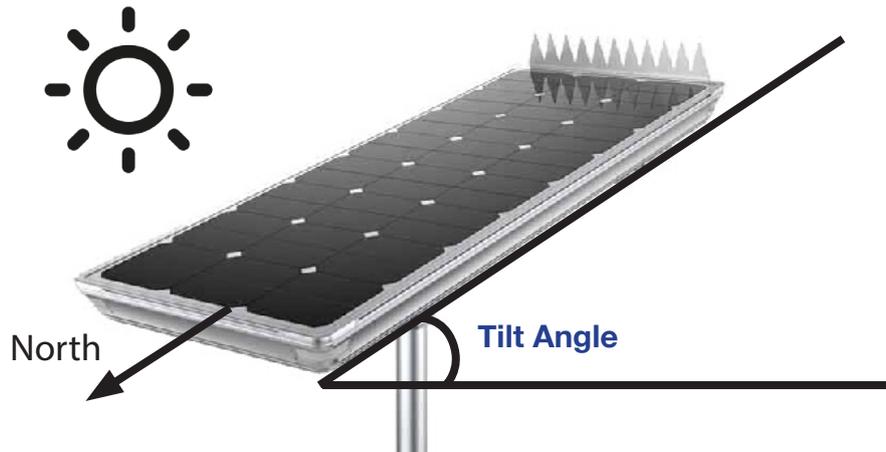
For example, Sydney has a latitude of 34°, therefore the solar panel should be tilted directly north with an angle of 34 + 15 = **49°**.

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°.

Ideal panel angles (H°) by Australian city

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

IMPORTANT: Failure to direct the panel correctly will cause system failure through insufficient power

How to adjust tilt angle:

1. Use a flat head screwdriver *to* remove the bracket cover *(Fig. 2.2a)*.

2. Once the cover is removed, use the supplied T40 torx loosen the panel adjustment screw and tilt the panel to the required angle with the LED light at the high side. *(Fig. 2.2b).*

3. Tighten the bolt after adjusting the angle to secure the solar panel in place.

4. Replace the cover.

2.2 Adjusting the Solar Panel Angle (continued)

*Fig. 2.2a
Solar panel angle
screw cover*
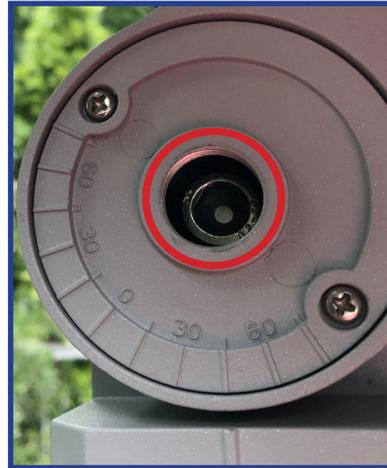
*Fig. 2.2b
Solar panel angle
adjustment screw*

2.3 Mounting the Camera to the Pole

The camera, camera adapter, right angle bracket and junction box are supplied preassembled (A, B, C & D).

• Mount the pole mount bracket to the pole first.

• After the pole mount is installed, mount the junction box to the pole mount.

• Open the junction box and tighten the screws inside to securely fasten it to the pole mount.

Included
Band Clamps

#	Part
A	Camera
B	Camera Adapter
C	Right Angle Bracket
D	Junction Box
E	Pole Mount Bracket
F	Pole

1. Mount the pole mount bracket onto the pole using 3 included band clamps *(Fig. 2.3b)*.

Note: There are two sets of included band clamps, 65-89mm and 80-150mm covering poles sizes from approximately 55-135mm in diameter - please choose the most appropriate clamps for your pole.

Fig. 2.3a
Mounted pole bracket (front)

Fig. 2.3b
Mounted pole bracket (back)

2. Open the junction box *(Fig. 2.3c)*.

Fig. 2.3c
Junction box interior (no 4G router)

Note: This image shows the inside of the junction box as seen with the WiFi kit. The 4G kit will also have the 4G router pre-installed inside the junction box.

Caution: **Do not allow the negative and positive power supply wires from the solar panel to touch (short circuit)** - this will cause the lithium battery to enter protection mode and output voltage will drop to 0V.

The only way to recover from this is to disconnect and then reconnect the battery inside the panel - Please contact VIP Vision™ for further details.

When running cables, insulation should be removed from each end and cut carefully, **ensuring each end does not touch the other.**

The supplied 4G router / Access point and camera are 12-VOLT DEVICES
When using the SLR-B180 system, please ensure power is connected via the provided step-down converter.

4. Run the power cable coming from the solar panel through one of the cable holes of the junction box.

5. **Carefully** connect the solar panel power cable to the terminal block, with the **red wire connecting to +** and the **black wire connecting to -**. *(Fig. 2.3f)*
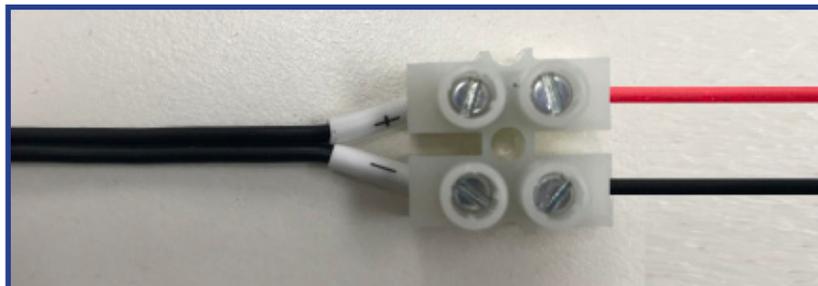

Fig. 2.3e
Terminal block

Fig. 2.3f
Solar battery cables connected to terminal block

3. Connections

3.1 Connect using WiFi [SLR-B120/180-4W]

This section covers how to set up the Wireless Network Bridge for your Solar Camera Kit.

The included wireless devices have been preconfigured as a bridged pair - Once devices are mounted and powered, they will function transparently, as if a CAT6 network cable was linking the solar camera to your network. For point-to-point applications it does not matter which device is connected at the camera or at the building.

These wireless bridges are **line-of-sight** devices - You MUST be able to see from the wireless bridge mounting point on the building to the mounting point on the camera pole without obstruction.

Note: The steps below assume you have followed the instuctions supplied with the wireless bridge and have already mounted the wireles bridge devices, one to your mains-powered building and the other to your solar-powered camera pole.

Please refer to the next page for a WiFi system map example and follow this during the steps below.

1. SOLAR SIDE - Connect the DC jack to the terminal block, then conect this to the included DC splitter cable. If using the SLR-B180, ensure you connect these via the supplied step-down converter.

2. SOLAR SIDE - Connect one plug from the DC splitter cable to the camera power connector and the other to the supplied passive PoE injector cable supplied.

3. SOLAR SIDE - Connect the Ethernet socket of the passive PoE injector cable to the supplied network patch cable and connect this to the Ethernet port of the the wireless bridge (station)

4. BUILDING SIDE - Run a CAT6 cable from the wireless bridge mounting point to the location of the router, switch or NVR and terminate it with RJ45 plugs.

5. BUILDING SIDE - Connect and power the building-side wireless bridge using the included PoE injector. Run a network patch cable from the LAN side of the injector to your router, switch or NVR.

6. Using a laptop or via the NVR, scan for the camera and change its IP address details to match those of your network. Please refer to the supplied programming sheet for the IP address, username and password preconfigured on your camera.

7. The camera should now be accessible via the web interface and can be added to SmartPSS or your NVR for viewing. If connected via a router for internet access, you should now also be able to add the camera to a smartphone for remote viewing.

Fig. 3.1a
Example WiFi Setup

3.2 Connect using 4G [SLR-B120/180-4G]

NOTE: 4G setup requires an active SIM card (not included).
For more information on how to configure the 4G router, refer to the 4G router manual (included).

The supplied 4G router is a 12V DEVICE - When using the SLR-B180 system, please ensure power is connected using the provided step-down converter.

1. Insert an active SIM card into the SIM slot.

2. Connect a DC jack from the terminal block to the 4G router.

3. Connect the other DC jack from the terminal block to the camera.

4. (Optional) Connect an antenna to the 4G router to improve signal strength (not included).
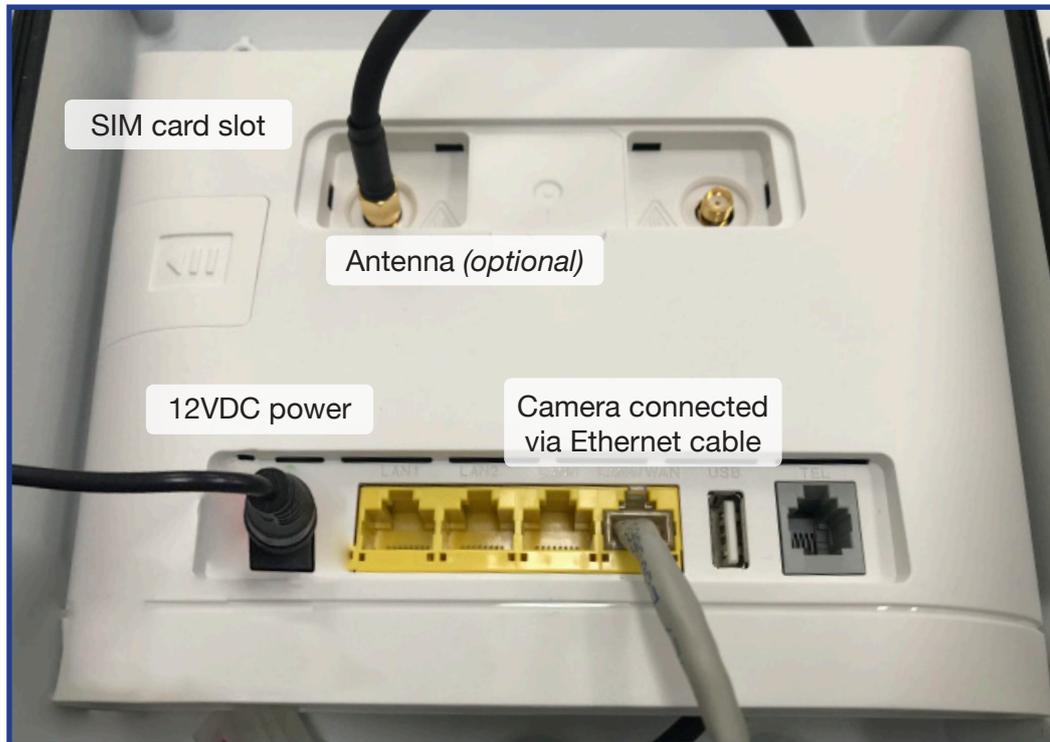
Fig. 3.2a
4G router overview

Camera & 4G router connected via RJ45

4G router powered via terminal block

Camera powered via terminal block

Battery/terminal block connection

NOTE: The supplied 4G router and PTZ cameras are 12-VOLT DEVICES - When using the SLR-B180 system, please ensure power is connected using the provided step-down converter (not shown in this diagram)
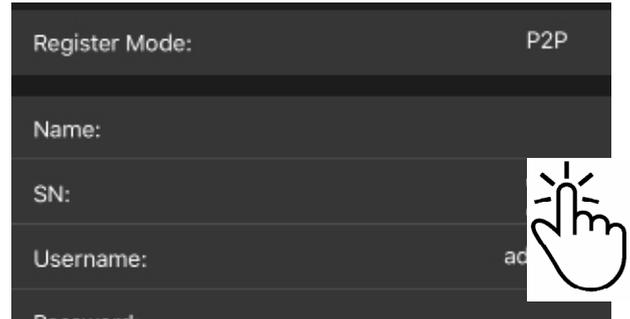
Fig. 3.2b
Connection overview

QR code remote access setup *(4G)*

Internet access is reuiqred for remote access setup.

1. Install the free app from the App Store for iOS (iDMSS Plus) or Play Store for Android (gDMSS Plus).

2. Open the iDMSS Plus/gDMSS Plus app you have installed on your device and select "Camera"

3. Select Menu, then select "Device Manager". *(Fig. 3.2c)*

4. Press the "Add" button and tap "OK" when prompted.

5. Select "Wired device"

6. Select "P2P" & enter a name for the camera. This name is for reference only and can be set to anything.

7. Enter the serial number of the camera into the "SN:" text box, **OR** select the image of the QR code *(pictured)* and use your phone to scan the QR code included with the kit. Make sure the app is permitted to access your phone's camera.

8. Enter the default username **admin** and password *(refer to configuration sheet inside junction box).* For extra security, be sure to change these details before completing installation.

9. In Live Preview, you can choose between using Main or Extra stream. *(Fig. 3.2e)* Main displays a higher quality stream but uses up more data and has a slower connection, while Extra consumes less data and bandwidth but has lower image quality.

10. When using Playback, ensure that Live Preview is set to Main. If set to Extra, the screen will be black. This is because the camera has been preset to only record the Main stream to the microSD card (you can change this setting).

11. Select "Start Live Preview". If the details were entered correctly, your phone should connect to your recorder and you will see the live camera display.

For more information on how to configure the camera, refer to the camera's Quick Start Guide.
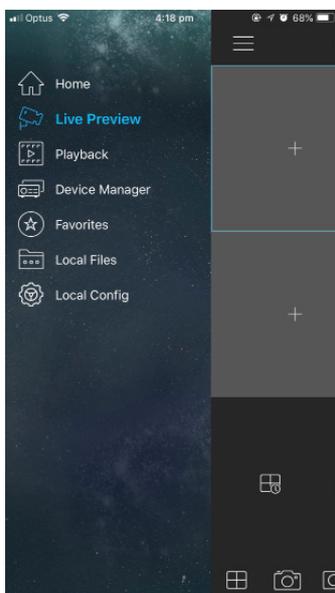
Fig. 3.2c
Main Menu
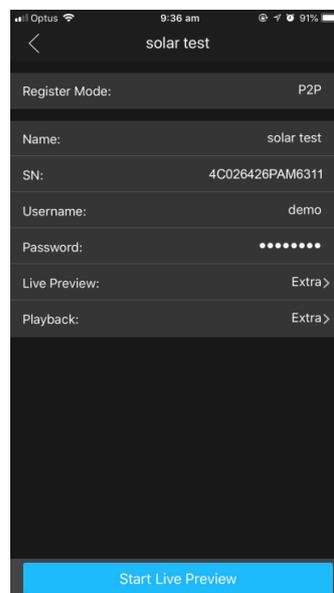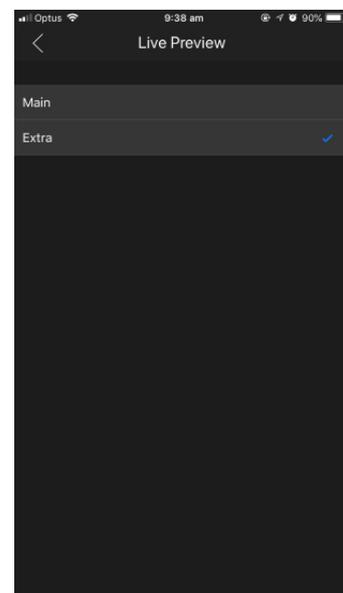
Fig. 3.2d
Camera details

Fig. 3.2e
Live Preview stream selection

3.3 Finish Camera Installation

Close the junction box and securely fasten the 4 attached bolts (*Fig. 3.3a*).

Fig. 3.3a
Complete solar surveillance system

4. Solar Panel, Sensor & Light Configuration

4.1 Solar Sensor Light Introduction

This section covers how to set up the motion-activated 50W (SLR-B120) or 60W (SLR-B180) LED light on the solar panel. Our example will show you how to configure your solar panel & light with the remote control, showing you how to configure the light to activate after motion is detected at night.

> **Note:** Modification to the LED light and sensor will increase power consumption and reduce battery power available for the system.
>
> **Incorrectly editing settings can permanently damage the solar panel, battery and/or LED light. Only edit power settings exactly as outlined in this guide. Please contact VIP Vision for more information.**

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, this is 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 menu to check performance of solar system including uptime, battery & panel statistics.
Alert	Not applicable.
SysConfig	Configuration interface where new settings are set & transmitted to the solar system.
Local	Language and device name settings. (**Recommended:** Do not change from defaults)

Remote Control Button Functions

Fig. 4.1a
Solar panel remote control & LCD

⏻	**Power**	Press to power on. Press and hold for 2 seconds, then release to power off the remote control.
⬆	**Scroll Up**	Press to scroll up.
⬇	**Scroll Down**	Press to scroll down.
ON	**Controller On**	Press and hold to enable the LED light control.
OFF	**Controller Off**	Press and hold to disable the LED light control.
▢	**Enter**	Press to select item or confirm changes.
↩	**Back**	Press to select item or confirm changes.
🛜	**Transmit**	Press to transmit parameters to the control board.
Test	**Test**	Press to test the LED light.

4.2 Default Light Settings & Period Settings

Each SLR-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.

> **Note:** Modification to the LED light and sensor will increase power consumption and reduce battery power available for the system.
>
> **Incorrectly editing settings can permanently damage the solar panel, battery and/or LED light. Only edit power settings exactly as outlined in this guide. Please contact VIP Vision for more information.**

Name	Remote Title	Description	Settings	Default Settings
Battery Type	Bat Type	Type of battery installed in the solar panel	Li_Po / Lead_acid	SLR-B Series must use **Li_Po** for LiFePO4 battery, **DO NOT change this parameter**
Boost Charge	BoostCharge	Battery overcharge voltage. To protect the battery from overcharging, the battery stops charging when it is above this voltage.	10.80V ~ 32.80V	**SLR-B120:** 14.4V **SLR-B180:** 28.8V **Warning: Changing this setting may damage the solar system.**
Voltage Low	Voltage Low	Battery cut-off voltage. When the battery voltage falls below this value, output will be disabled.	8.10V ~ 24.00V	**SLR-B120:** 10.5V **SLR-B180:** 21.0V **Warning: Changing this setting may damage the solar system.**
Recover Voltage	Recover Vol	Minimum voltage for the battery to start. Battery output is enabled or resumed from cut-off when battery voltage is above this value.	9.00V ~ 25.00V	**SLR-B120:** 12.0V **SLR-B180:** 24.0V **Warning: Changing this setting may damage the solar system.**
Power Saving	PowerSaving	When turned on, the battery will adjust power output automatically to save energy.	On / Off	**All Models:** Off
Turn-On Photovoltaic Voltage	TurnOnPVVol	The solar panel acts as an ambient light sensor. Once the solar panel voltage drops below the 'Turn-on PV Voltage', the light turns on.	4.0V ~ 12.0V	**All Models:** 5.0V
Output Current	Output Cur	Set the constant current output level.	150mA ~ 4000mA	**All Models:** 300mA
Drive Mode	DriveMode	**Time Control:** Set up to 5 periods of up to 9 hours each, controls light activation. Time intervals begin after **TurnOnPVVol** threshold is reached i.e: the sun has set. Light brightness in each period is set by **Light Ratio**. **Move Sensor:** Adds motion detection on top of 5 time periods. The light abides by **Time Control**, but dims to **Idle Ratio** and brightens to **Light Ratio** based on movement detection.	Time Ctrl / Move Sensor	**All Models: First Period:** 2 Hours **Second Period:** 3 Hours **Third Period:** 7 Hours **Fourth & Fifth Periods**: Not Set
Light Delay	LightDelay	Countdown timer after last detection motion where light output stays at **Light Ratio** setting before switching to **Idle Ratio** setting.	0s ~ 120s	**All Models:** 30 seconds.
First, Second, Third, Fourth, Fifth Time		User-programmable light on/off schedule. Maximum 9 hours for each setting.	0.00hrs ~ 9.00hrs	Sets time periods, see **Drive Mode** for default settings.
Light Ratio	LightRatio	Set light output (%) for **Time Control** or when movement is detected in **Move Sensor** mode.	0% ~ 100%	**All Models: First Period:** 100% **Second Period:** 60% **Third Period:** 30% **Fourth & Fifth Periods**: Not Set
Idle Ratio	Idle Ratio	Set light output (%) in **Move Sensor** mode after last detected movement and after **Light Delay** elapses.	0% ~ 100%	**All Models: First Period:** 30% **Second Period:** 20% **Third Period:** 10% **Fourth & Fifth Periods**: Not Set
Morning Light	MorningLight	Overrides **TurnOnPVVol**, making the light stay on during the day, as per the **Drive Mode Time Control** parameters.	On / Off	**All Models:** Off

4.3 Activate LED Light

Before activating the LED light system, the internal battery will require power. Place the solar panel outside and wait for it to charge in the sunlight for at least **one hour** before continuing.

1. Use the remote control and point it towards the black sensor at the back of the solar panel and press ⊙ **Power**. The remote control will be powered up. It will then try to connect the solar panel.

    •   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 - If you are having difficulty connecting with the panel, either position the remote closer to the panel IR receiver (black circle with flashing red light) or perform setting changes at night.

    Important: Do not change the device number otherwise it may not work properly.
    The device number for this system is: **PCC_G05**

4.4 Change LED Light Settings

1. Point the remote control at the solar panel's black sensor and scroll to the SysConfig (System Configure) and press ▣ (Enter) to enter the system configuration menu.

•   Use ⬆ and ⬇ to scroll.

•   Press ▣ **Enter** to begin editing values. The value will be shown in reverse colour.

•   Use ⬆ and ⬇ to change the value.

•   Press ▣ **Enter** again to confirm.

Note: The remote will power off automatically if no key is pressed for 3 minutes.

Five periods of time can be set to turn on the solar panel LED light. These periods can be set with a min. of 0 and max. of 9 hours. *(9 hours by default - refer to 3.2 Default Light Ratio & Period Settings)*
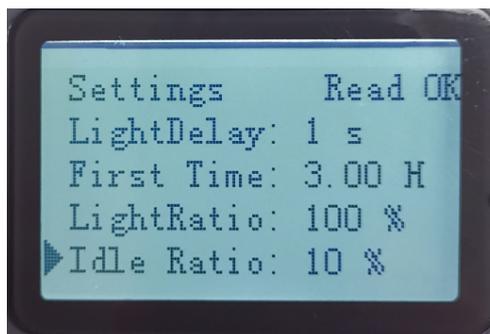
Fig. 4.4a
Motion activated light settings

2. Point the remote control at the solar panel's black sensor and press 📶 **Transmit** to update the solar panel with your new configuration. If you hear a long beep, the configuration settings are transmitted successfully.

4.5 Disable LED Light

To disable the LED light system again, simply change the **Drive Mode** from **Move Sensor** to **Time Ctrl.** This will skip every Interval after the sun sets, so editing other values after this point is unnecessary.

4.6 Check Solar Panel On/Off Duration

To check the solar panel's current settings configuration, scroll to the SysConfig menu and press ▣ **Enter**. This will show info such as photovoltaic voltage, battery voltage, output voltage, current and power, temperature and total operating time in minutes and more.

Fig. 4.6a / Fig. 4.6b
Solar panel power settings & information

4.7 Test LED Light

1. Point the remote control at the solar panel's black sensor and press Test.

2. Test the LED light by adjusting the light level on the remote screen with the Test button. This scrolls through different light percentages. (100%, 70%, 50%, 30% and 0%)

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 ⬚ **Test,** ▣ **Enter** and ↩ **Back** buttons together.

If you hear a single beep, the remote is now locked. If you hear three beeps, the remote is now unlocked.

Notes

Name	Remote Title	Description	Settings	Default Settings
Battery Type	Bat Type	Type of battery installed in the solar panel	Li_Po / Lead_acid	SLR-B Series must use **Li_Po** for LiFePO4 battery, **DO NOT change this parameter**
Boost Charge	BoostCharge	Battery overcharge voltage. To protect the battery from overcharging, the battery stops charging when it is above this voltage.	10.80V ~ 32.80V	**SLR-B120:** 14.4V **SLR-B180:** 28.8V **Warning: Changing this setting may damage the solar system.**
Voltage Low	Voltage Low	Battery cut-off voltage. When the battery voltage falls below this value, output will be disabled.	8.10V ~ 24.00V	**SLR-B120:** 10.5V **SLR-B180:** 21.0V **Warning: Changing this setting may damage the solar system.**
Recover Voltage	Recover Vol	Minimum voltage for the battery to start. Battery output is enabled or resumed from cut-off when battery voltage is above this value.	9.00V ~ 25.00V	**SLR-B120:** 12.0V **SLR-B180:** 24.0V **Warning: Changing this setting may damage the solar system.**
Power Saving	PowerSaving	When turned on, the battery will adjust power output automatically to save energy.	On / Off	**All Models:** Off
Turn-On Photovoltaic Voltage	TurnOnPVVol	The solar panel acts as an ambient light sensor. Once the solar panel voltage drops below the 'Turn-on PV Voltage', the light turns on.	4.0V ~ 12.0V	**All Models:** 5.0V
Output Current	Output Cur	Set the constant current output level.	150mA ~ 4000mA	**All Models:** 300mA
Drive Mode	DriveMode	**Time Control:** Set up to 5 periods of up to 9 hours each, controls light activation. Time intervals begin after **TurnOnPVVol** threshold is reached i.e: the sun has set. Light brightness in each period is set by **Light Ratio**. **Move Sensor:** Adds motion detection on top of 5 time periods. The light abides by **Time Control**, but dims to **Idle Ratio** and brightens to **Light Ratio** based on movement detection.	Time Ctrl / Move Sensor	**All Models:** **First Period:** 2 Hours **Second Period:** 3 Hours **Third Period:** 7 Hours **Fourth & Fifth Periods:** Not Set
Light Delay	LightDelay	Countdown timer after last detection motion where light output stays at **Light Ratio** setting before switching to **Idle Ratio** setting.	0s ~ 120s	**All Models:** 30 seconds.
First, Second, Third, Fourth, Fifth Time		User-programmable light on/off schedule. Maximum 9 hours for each setting.	0.00hrs ~ 9.00hrs	Sets time periods, see **Drive Mode** for default settings.
Light Ratio	LightRatio	Set light output (%) for **Time Control** or when movement is detected in **Move Sensor** mode.	0% ~ 100%	**All Models:** **First Period:** 100% **Second Period:** 60% **Third Period:** 30% **Fourth & Fifth Periods:** Not Set
Idle Ratio	Idle Ratio	Set light output (%) in **Move Sensor** mode after last detected movement and after **Light Delay** elapses.	0% ~ 100%	**All Models:** **First Period:** 30% **Second Period:** 20% **Third Period:** 10% **Fourth & Fifth Periods:** Not Set
Morning Light	MorningLight	Overrides **TurnOnPVVol**, making the light stay on during the day, as per the **Drive Mode Time Control** parameters.	On / Off	**All Models:** Off

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Note:

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