

IMPORTANT: IN THE INTEREST OF PRODUCT PERFORMANCE AND SAFETY PLEASE READ THESE INSTALLATION AND WARRANTY INSTRUCTIONS BEFORE INSTALLING THE PRODUCT.



SAL products are designed in accordance with all mandatory International and AS/NZS Standards, which require installation in accordance with AS/NZS3000 by a qualified installer and regular cleaning and maintenance of the equipment. Products are sold in accordance with the following instructions and SAL standard terms and conditions of sale, available via www.sal.net.au.

Due to continued product and information updates, product data sourced from sal.net.au shall not form part of any contract and or technical performance guarantee unless expressly confirmed in writing by SAL at the time of order.

SSPA/RC REMOTE CONTROL electrical and installation specification effective 30/6/2025.

Model No.	Colour	Carrier Frequency	Operation Distance(m)	Emission Angle(°)	Battery
SSPA/RC	White	2.4GHz	MAX.20	180	AA Battery x 2

Electrical class	N/A	Beam angle	N/A
Ra	N/A	Earth Leakage current	N/A
Operating ambient min/max (°C)	-20 to 40	Storage ambient limit (°C)	-20 to 50
Operating humidity	+10% to 85% RH, NC	Storage humidity	+10% to 85% RH, NC
Reported TM - 21, L ₉₀ @ 85 °C (hrs)	N/A	Reported TM-21, 85 °C, L ₉₀ (hrs)	N/A
Aiming restrictions (if any)	N/A	Product application	N/A
IK rating (if relevant)	N/A	Product installation orientation	N/A
CCT (K) switch control (TC)	N/A	Dimmable	N/A
Insulation cover rating (if any)	N/A	PIXIE connectivity	N/A
Replaceable LED	N/A	IP rating	N/A
User replaceable LED	N/A	Attachment type	N/A
IP rating for interior products: The designated IP rating is "from below the ceiling" unless otherwise specified.			
IP rating ALL products; Termination of the product must be made in accordance with the IP rating.			
Earth Leakage current: Is calculated in accordance with AS/NZ 60598.1.2017/Amdt 1:2017.			

General product application requirements (if applicable) :

- CCT or POWER selections (where supplied)** – IMPORTANT, where CCT colour temperature or POWER selection switching is provided, it is important to switch OFF the power before the selection is made, otherwise equipment damage may occur.
 - Recycling** – SAL encourages recycling, please consider the environment when disposing of packaging, batteries & components.
 - Switching or test intervals** – For optimum product performance, good design practice does not encourage 24/7 operation of lighting products without the provision of a routine switching or regulatory test cycle. As a guide for continual operation installations, a twelve (12) hour duration for Industrial and Commercial applications and a six (6) hour duration for Residential applications should be considered.
 - Product maintenance** – In line with the relevant design standards and to protect your investment, it is important to have in place a routine cleaning program that reflects the installation environment and maintains the product in a clean and functional condition.
- IMPORTANT** - The supply must be isolated before any product maintenance or cleaning is conducted. In addition, damage to ANY cable or cord supplied with the product must be addressed as follows; For attachment type X having a specially prepared cable, if the external flexible cable is damaged, it must be replaced by an equivalent cable exclusively available from the manufacturer or authorised installer. For attachment type Y, if the external flexible cable is damaged, it must be exclusively replaced by an equivalent cable by the manufacturer or authorised installer. For attachment type Z, if the external flexible cable is damaged, the cable cannot be replaced and the luminaire must be destroyed.
- Adverse, corrosive and coastal installation environments** – Unless the product is specifically designated for such applications in these installation instructions, which is supported by a professional maintenance program; installation of equipment in such environments is not recommended.
 - Dimming products** – Dimming circuits and product compatibility must be validated by the installer before installation; SAL cannot be responsible for third party changes in dimmer compatibility.
 - Suspended products** – For installation safety, any suspended products must NOT be installed in high air movement spaces or locations subject to impact.
 - Light source replacements** – (Non-replaceable light sources) - The light source of the product is deemed not replaceable, when the product reaches its end life, it must be replaced by a qualified installer. (Non-user replaceable light sources) - The light source of the product must only be replaced by the manufacturer or qualified installer.
 - Interior downlights and sensors with remote drivers and electrical accessories** – The mounting facilities provided for the transformer/driver (if any), need only be utilized if in the application of the product is required by AS3000. Drivers are not designed for installation environments that restrict conventional airflow.



10. **Ripple injection, induced flicker (QLD & NSW regions)** – Installations subject to off-peak ripple induced flicker, (which are beyond the manufactures control), should strongly consider the use of circuit filtering products, or for interior downlight installations, the use of products designed to block the signal interferences, such as the SAL SFI series.

11. **Floodlight products** – Unless nominated aiming restrictions or installation parameters apply, products are designed for installation environments between ground and 15 metres in height, subject to the desired optical performance being achieved. For floodlight installation environments that have restricted access (eg: columns and roof-lines) which are subject to unstable electrical supply or electrical surges (which void warranty), consideration of the installation of an independent surge protector is strongly recommended.

12. **Emergency enabled products** – In the interest of transport and safety, emergency products are supplied with the battery disconnected. In addition to specific emergency commissioning instructions, this battery MUST be connected at the time of installation. Continual use in emergency mode greater than 240 hours without recharge, will result in battery failure and void battery warranty.

13. **Specific installation procedures** (if any) - Refer to SSPA/RC instruction manual.

Solar Street Light Controller Remote Control User Manual (SSPA/RC)

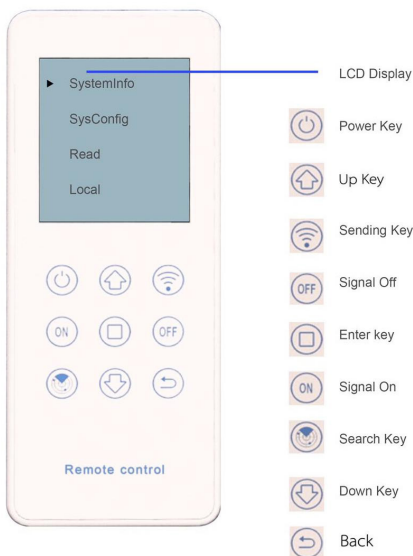
1. Product Overview

The SSPA/RC remote controller is capable of both reading parameters from the device and configuring parameters to the device. It is powered by two AA dry batteries and communicates with the controller via 2.4G wireless communication.

Note:

1. To prevent interference between multiple remote controllers, ensure that only one remote is active within the same area at a time.
2. To avoid accidental transmission of incorrect parameters due to mis operation, the Sending Button is only functional within the parameter setting interface.

2. Button Description



LCD Screen: Displays all data interfaces.

Power: Press once to turn on the power and display data on the LCD. Press and hold for 2 seconds to power off the remote.

Up: Press once to move the cursor up or increase a number. Press and hold to quickly increase the value.

Sending: After parameters are set, press this button to transmit the data wirelessly to the controller.

Signal Off: Puts the controller into sleep mode.

Enter: When modifying data, press this to enter edit mode (highlight appears). Press again to confirm and exit edit mode.

Signal On: Wakes up the controller and puts it into working mode.

Search: When on the main interface, press this in the data reading, transmission, or parameter reading search interface to search for the 2.4G controller ID.

Down: Press once to move the cursor down or decrease a number. Press and hold to decrease values quickly.

Back: Press once to return to the previous interface.

3. Operation Instructions

3.1 System Settings

In the main interface, move the cursor to "Local" and press the "□" key to enter.

1. Language: Display language. Option: English/Chinese.

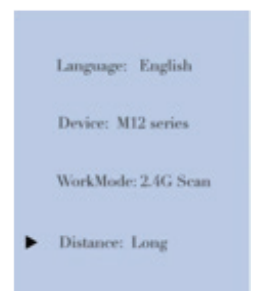
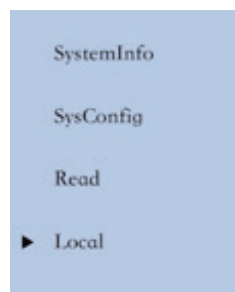
2. Device: Choose according to the controller model. Perform this operation first after powering on the remote.

Notes: Choose "M12series" for SSPA6000 and SSPA1200.

3. Work Mode: Choose between Infrared, 2.4G Scan and 2.4G Radio based on controller settings.

Notes: SSPA6000 and SSPA1200 support "2.4G Scan" and "2.4G Radio" only.

4. Distance: (For 2.4G modes only) Options: Ultra Long (48m), Long (33m), Normal (24m), Short (15m), Ultra short (3m). Actual range may vary.



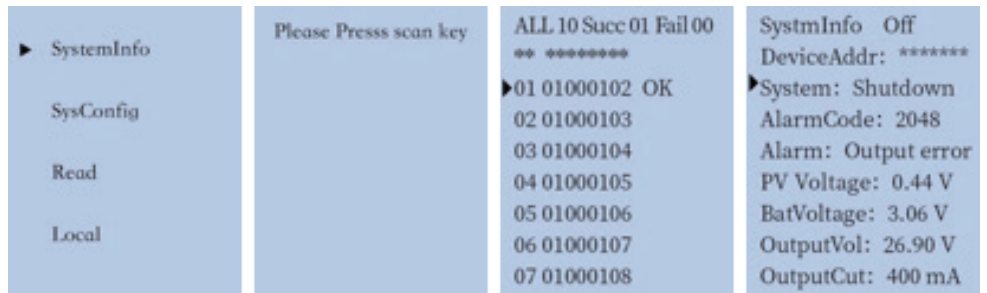
3.2 View Real-time Data

3.2.1 2.4G Scan

From the main interface, select "SystemInfo" and press "□" to enter the search interface. Follow the prompt to press the **Search Button**. After detecting controller IDs, select the desired one and press "□" to view data.

Notes:

- Invalid options will not be selected.
- Data must be viewed one controller at a time.
- "OK" next to the controller ID indicates data has been read.
- Top right corner displays "On" with ID details if connection is successful.



3.2.2 2.4G Radio

- If only one controller is within range, you may use broadcast mode to view data.
- If multiple controllers are in range, switch to 2.4G Scan mode.

3.2.3 Key Concepts

- DeviceAddr: device address
- System: system status
- AlarmCode: alarm code
- Alarm: alarm message
- PV Voltage: solar panel output voltage
- BatVoltage: battery voltage
- Charge Cur: charging current
- Charge Pow: charging power
- Output Vol: output voltage
- Output Cur: output current
- Output Pow: output power
- Inter Temp: internal temperature
- Day Dischg: historical discharge power of the light unit
- Power Cap: historical charge power of the light unit
- Running: operating running time
- LCD Version: remote controller firmware version
- DSP Version: controller firmware version
- Protocol: communication protocol version
- MechineNum: device serial number
- MFG: manufacturing date
- Machine: controller model

3.3.3 Key Concepts

- DeviceAddr: device address
- Bat Type: battery type
- BoostCharge: charge voltage
- Voltage Low: battery undervoltage threshold. Output is disabled if battery voltage drops below the threshold.
- Recover Vol: undervoltage recovery voltage. Output resumes only when battery voltage exceeds recovery level.
- PowerSaving: power saving mode. When power saving mode is turned on, the controller will adjust the output current according to the battery voltage
- TurnOnPVVol: light control voltage. Light turns on when PV voltage drops below this setting, off when above.
- Output Cur: output current
- Driver Mode: operation mode (time control mode / motion sensor mode)

<p>Time Control Mode: Up to 5 time segments can be set with different brightness levels.</p> <p>First Time: segment 1 time Light ratio: dimming ratio (segment 1)</p> <p>Second Time: segment 2 time Light ratio: dimming ratio (segment 2)</p> <p>Third time: segment 3 time Light ratio: dimming ratio (segment 3)</p> <p>Fourth Time: segment 4 time Light ratio: dimming ratio (segment 4)</p> <p>Fifth Time: segment 5 time Light ratio: dimming ratio (segment 5)</p>	<p>Sensing Mode: Lights brighten when motion is detected and dim afterward. Light Delay: hold time after motion detected</p> <p>First Time: segment 1 time Light ratio: dimming ratio when motion detected (segment 1) Idel ratio: dimming ratio after light delay time when no motion detected (segment 1)</p> <p>Second Time: segment 2 time Light ratio: dimming ratio when motion detected (segment 2) Idel ratio: dimming ratio after light delay time when no motion detected (segment 2)</p> <p>Third time: segment 3 time Light ratio: dimming ratio when motion detected (segment 3) Idel ratio: dimming ratio after light delay time when no motion detected (segment 3)</p> <p>Fourth Time: segment 4 time Light ratio: dimming ratio when motion detected (segment 4) Idel ratio: dimming ratio after light delay time when no motion detected (segment 4)</p> <p>Fifth Time: segment 5 time Light ratio: dimming ratio when motion detected (segment 5) Idel ratio: dimming ratio after light delay time when no motion detected (segment 5)</p>
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3.3 Parameter Transmission

3.3.1 2.4G Scan

Navigate to "SysConfig", press "□" and perform a search. After identifying controller IDs:

1. Broadcast to All:

- Select "00 Send to All", press "□" to enter.
- Modify values by selecting the parameter, press "□", adjust using "↑↓", and confirm.
- Press Sending Button to send to all controllers one by one.

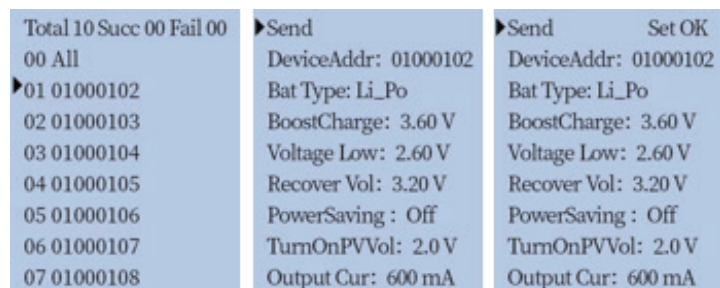
2. Single Controller:

- Select a specific ID, enter, edit and send parameters.
- Successful transmission is indicated by a long beep and LCD confirmation.

3.3.2 2.4G Radio

Set parameters and press **Send Button**. It will send to all in range. Broadcast mode is faster but does not display controller IDs.

- All indicator lights will flash simultaneously, and the light will turn off and then back on, indicating that the parameters have been successfully written.
- Shutdown and startup can be performed similarly.
- MorningLight: Lights operate before dawn.



3.4 Read Current Controller Parameters

3.4.1 2.4G Scan

Select "ReadData", press "□", perform search, select controller ID, and press "□" to read data.

3.4.2 2.4G Radio

- Use only if a single controller is in range. Otherwise, use 2.4G Scan.

3.4.3 Key Concepts

- DeviceAddr: device address
- Bat Type: battery type
- BoostCharge: charge voltage
- FloatChage: float charge voltage
- Voltage Low: battery undervoltage threshold. Output is disabled if battery voltage drops below the threshold.
- Recover Vol: undervoltage recovery voltage. Output resumes only when battery voltage exceeds recovery level.
- Temp Com: temperature compensation
- PowerSaving: power saving mode. When power saving mode is turned on, the controller will adjust the output current according to the battery voltage
- TurnOnPVPVol: light control voltage. Light turns on when PV voltage drops below this setting, off when above.
- Output Cur: output current
- Driver Mode: operation mode (time control mode / motion sensor mode)

1. Time Control Mode: Up to 5 time segments can be set with different brightness levels.

2. Sensing Mode: Lights brighten when motion is detected and dim afterward.

- First Time: segment 1 time
- Light ratio: dimming ratio (segment 1)
- Second Time: segment 2 time
- Light ratio: dimming ratio (segment 2)
- Third time: segment 3 time
- Light ratio: dimming ratio (segment 3)
- Fourth Time: segment 4 time
- Light ratio: dimming ratio (segment 4)
- Fifth Time: segment 5 time
- Light ratio: dimming ratio (segment 5)
- MorningLight: Lights operate before dawn.

5. Remote Lock Function

To prevent errors or misuse, it's recommended to assign one locked remote to a batch of controllers. Lock/unlock the remote as follows:

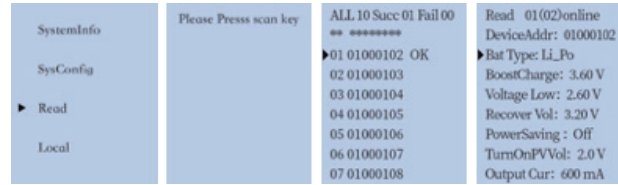
Operation:

Press the Search Button, "□", and Back Button simultaneously. A long beep indicates locking or unlocking.

While locked, the remote can read/write parameters, but cannot modify internal settings.

6. Controller Indicator Light Status Table

No.	Status	Yellow (RUN)	Green (CHG)	Red (DISCHG)
1	Initialization	Blinking	Blinking	Blinking
2	Normal Charging	On	On	Off
3	Normal Lighting	On	Off	On
4	Standby Mode	On	Off	Off
5	Parameter Error	Slow Blink	Slow Blink	Off
6	LED Open/Short Circuit	Off	Off	Fast Blink
7	Battery Reverse Connection	Off	Fast Blink	Off
8	Battery Waiting to Recover	Off	Slow Blink	Off
9	Light-Off Timeout	Off	Off	Slow Blink
10	Battery Overvoltage	Slow Blink	Off	Off
11	PV Overvoltage	Fast Blink	Off	Off
12	PV Reverse Connection	Fast Blink	Fast Blink	Off



Item	Setting range	Default Setting
DeviceAddr	Device address	
Bat Type	Lead_24V/ Lead_12V/ Li_12V/ Li_24V	Li_12V
BoostCharge	12~32.8	14.4V
Voltage Low	8.5~24	10.5
Recover Vol	10.2~25	11.5
PowerSaving	ON/OFF	43
StartSaving	8.5~28	12.8V
SuperSaving	8.5~28	12V
TurnOnPVPVol	4.0 12.0	%9
Output Cur	50 4000mA	SSPA6000: 900mA SSPA12000: 1800mA
Drive Mode	Sense/ Time	Sense
Light Delay	0~120S	30S
First Time	0~9H	0.5H
Light Ratio	0~100%	100%
Idle Ratio	0~100%	30%
Second Time	0~9H	1H
Light Ratio	0~100%	30%
Idle Ratio	0~100%	10%
Third Time	0~9H	1.5H
Light Ratio	0~100%	26%
Idle Ratio	0~100%	8%
Fourth Time	0~9H	1.5H
Light Ratio	0~100%	20%
Idle Ratio	0~100%	6%
Fifth Time	0~9H	7H
Light Ratio	0~100%	12%
Idle Ratio	0~100%	5%
MorningLight	off/On	1C
Morning Time	0~9H	1H
Light Ratio	0~100%	30%
Idle Ratio	0~100%	10%
Language	Simplified Chinese/ Traditional Chinese/ English	English
Device	M3series/ M12series/ P3series/ P12series	M12series
WorkMode	2.4GRadio/ 2.4GS can/ infrared	2.4GRadio
Distance	Ultrashort/ UltraLong/ Long/ normal/ Short	Ultralong



Solar Street Light – Troubleshooting Manual

1. No light, no indicator

Possible Cause: The switch may not conduct

Troubleshooting Method:

- Check whether the switch button is fully pressed. A clicking sound will indicate proper engagement.
- If the switch is damaged, strip the insulation from its two wires and use a multimeter to check for continuity in different states. If the switch is faulty, either replace it with a new one, or connect the two wires directly and insulate them with electrical tape (the switch function will be disabled).

Possible Cause: The connection terminals may be in poor contact, loose, or fall off

Troubleshooting Method:

- Visually inspect for loose wires.
- Use a multimeter to test whether the two ends of the terminal block are continuous. If continuity exists, it is normal. Otherwise, it may be due to poor wiring or a faulty terminal, which should be replaced.

Possible Cause: Out of battery

Troubleshooting Method:

- Make sure that other components are normal.
- Use a multimeter to check the battery voltage. If voltage is present, the battery is normal. If not, expose the luminaire to sunlight for more than 0.5 hours to activate charging. If activation fails, the battery may be faulty and should be replaced.

Possible Cause: The controller may be damaged

Troubleshooting Method:

- Ensure other components are functioning correctly. If so, the controller is likely damaged and needs to be replaced.

2. The light is off, the red indicator flashes quickly

Possible Cause: The load may be shorted or open

Troubleshooting Method:

- Visually inspect or use a multimeter to check for a short circuit or open circuit at the load terminals.
- If confirmed, replace with a new light source module.

Possible Cause: The battery or solar panel may be badly wired

Troubleshooting Method:

- Visually inspect for loose or disconnected wires.
- Use a multimeter to test continuity at the terminals. If not continuous, replace the terminal block or rewire properly.

Possible Cause: The battery may be overcharged, over discharged, or protected by the battery protection board

Troubleshooting Method:

- Use a multimeter to test the battery voltage. If voltage is absent, charge the battery. Batteries stored for more than 3 months without charging may need to be reactivated. If activation fails, replace the battery.

Possible Cause: Overtemperature protection

Troubleshooting Method:

- Check if the controller's temperature sensor is physically damaged.
- If undamaged, verify if the battery compartment temperature exceeds $65\pm 5^{\circ}\text{C}$. If so, this is a normal protection mechanism. Wait for the temperature to return to normal.

Possible Cause: Solar panel is damaged

Troubleshooting Method:

- In sunlight, test the solar panel's short-circuit current and open-circuit voltage using a multimeter. No voltage or no current indicates the panel is damaged.

Possible Cause: Controller is damaged

Troubleshooting Method:

- If all other components are normal, the controller may be faulty and should be replaced.

3. The light is off, controller red indicator flashes quickly

Possible Cause: The load may be shorted or open

Troubleshooting Method:

- Use a multimeter to check for short or open circuit at the load terminals.
- Replace with a new light source module if necessary.

4. The light is off, controller yellow-green indicator flashes slowly

Possible Cause: Parameter setting error

Troubleshooting Method:

- Use the remote controller to read the parameters from the controller. Analyze the settings to identify and correct configuration issues.

5. The battery life is significantly shorter

Possible Cause: The solar panel azimuth or tilt angle is incorrect, leading to poor charging

Troubleshooting Method:

- Verify that the solar panel is installed facing south in the northern hemisphere.
- Recommended tilt angle = local latitude + $5-20^{\circ}$.

Possible Cause: The solar panel is shaded

Troubleshooting Method:

- Ensure the solar panel receives direct sunlight during the day.
- Remove or avoid any obstructions causing shading.

Possible Cause: Dust accumulation on the solar panel

Troubleshooting Method:

- Clean the panel every 6 months or as needed based on dust buildup.
- Use neutral tap water for cleaning.

Possible Cause: The solar panel is damaged and cannot charge

Troubleshooting Method:

- In sunlight, use a multimeter to test the panel's short-circuit current and open-circuit voltage. Lack of voltage or current indicates damage.

Possible Cause: The battery capacity has significantly deteriorated

Troubleshooting Method:

- Use a professional lithium battery capacity tester to assess actual capacity.
- If capacity is below 80% during the warranty period, the battery should be replaced.



14. **Warranty** – In accordance with SAL's standard terms and conditions of sale, SAL warrant this product to be free from defects in materials and or workmanship for a period as stated below for goods not subject to incorrect installation, maintenance, operation, mishandling, environmental, unauthorised modifications or electrical operating conditions outside the nominated product specification as detailed in these installation instructions.

The benefits to you given by this warranty are in addition to other rights and remedies you have under law. Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Warranty term – Residential usage (N/A) months, Commercial usage (24) months, Replaceable Lamps (where supplied) (12) months and Lithium batteries where supplied (24) months from date of purchase. For New Zealand, please refer to www.sal.co.nz for warranty conditions and service.

How to make a claim?

Step # 1 – Within 30 days of the fault discovery, please contact the original place of the SAL product purchase during standard (local) business hours, with the following information **(a)** proof of purchase **(b)** description and quantity of the claimed fault **(c)** address of installation. **(d)** operating hours of the product.

Step # 2 – It is then the responsibility of the original place of product purchase to report the matter to SAL aftersales;

NSW ACT	- SAL National Pty Ltd, 40 Biloela Street Villawood NSW 2163	P # 02 9723 3099
QLD	- SAL National Pty Ltd, 36 Whitelaw Place Richlands QLD 4077	P # 07 3879 5999
VICT TAS	- SAL National Pty Ltd, 46-48 Keys Road Moorabbin Victoria 3189	P # 03 9532 3168
SA NT	- SAL National Pty Ltd, Unit 1, 9 Alfred Avenue, Beverley SA 5009	P # 08 7084 1958
WA	- SAL National Pty Ltd, 29 Beringarra Av Malaga WA 6090	P # 08 9248 7458
NZ	- Hamer, 130 Bush Road, Albany, Auckland, 0632	P # 0800 239 239

Step # 3 - Upon review of your claim and if the product is required to be returned to SAL for technical evaluation, then at the owners expense the product must be returned to SAL as per the above nominated locations.

Step # 4 - Pending the evaluation, the claim will be validated resulting in the product being repaired or replaced with the same or best equivalent product at the discretion of SAL, or rejected if the product fault was found to be caused by conditions beyond the responsibility of SAL warranty obligations. Consideration of installation, product removal, return freight and or testing fees are not the responsibility of SAL.

