

SL-75 SealitePro™ Bluetooth Guide

Version 1.1



SL-75

SealitePro™ Bluetooth Guide

The SealitePro™ application is used to communicate with Sealite lighting products that have Bluetooth technology fitted. The Bluetooth control offers the following main functionality:

- Lantern identification
- Lantern monitoring
- Security access PIN
- Flash code configuration
- Operating mode settings
- Lantern intensity adjustment
- Sync offset
- Hibernation mode
- Solar calculation
- Battery health check

The SealitePro™ Application is available on both Android and iOS devices. The majority of functions between platforms are identical and the majority of the screenshots in this manual were taken showing an Android device screen. Where the iOS device differs, an iOS screenshot has been provided.

Version No.	Description	Date	Author	Approved
1.2	Launch	May 2017	C.Bernardo	M.Nicholson

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Bluetooth® Controller Functions

The Sealite SL-75 Bluetooth® Control System accessible via the SealitePro™ is divided into five simple sections, as outlined below and displayed on the App home screen;

Lantern Information

Lantern identification
Lantern name
Security pin
Colour
Maximum peak intensity

Lantern Status

Battery health status
Geolocation
Effective intensity
Winter autonomy

Programming Options

Operating mode (Dusk till Dawn, Always on or Standby mode)
Flash code
Intensity
Sync offset
GPS mode
Hibernation mode

Manufacturing Data

The following manufacturing Data can be checked from the drop-down menu:
Hardware (Printed Circuit Board (PCB) version)
Lantern serial number.
Board serial number
Software version

Power Monitoring

Battery charge
Load Current

Accessing the SealitePro App for the first time

Opening the SealitePro App on an Android or iOS Device

Download the SealitePro App from Google Play (search for “Sealite” store) on an Android Tablet or Smartphone or via the App store on an iOS tablet or phone.

Open the App to prompt the Sealite Bluetooth control program.



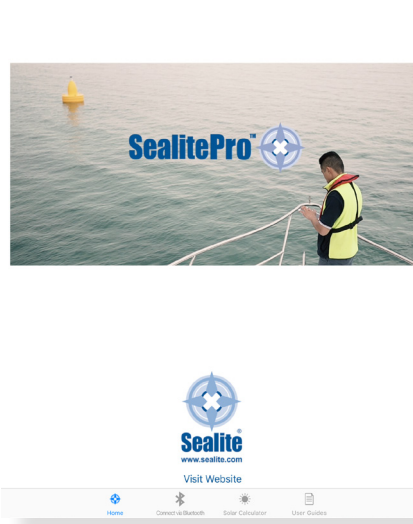
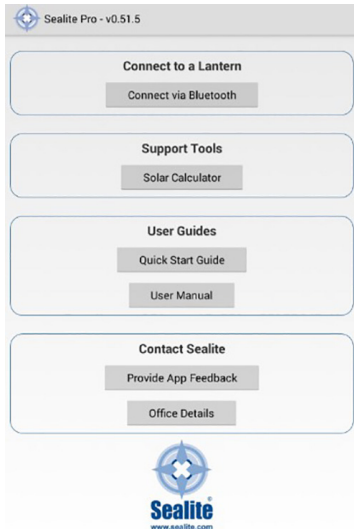
Start Menu

Connect via Bluetooth - connect to a lantern.

Support Tools - Solar Calculator to conduct simulations based on lantern settings and locations. NOTE – This feature provides lantern simulations only in regards to battery autonomy on solar radiation. Changes may be applied through “Connect via Bluetooth” option only.

User Guides – Quick Start Guide and User Manual

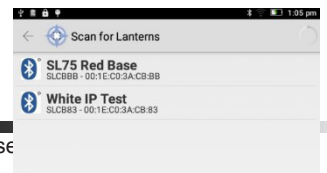
Contact Sealite / Us – Provide product feedback and contact Sealite



Scan for Lanterns

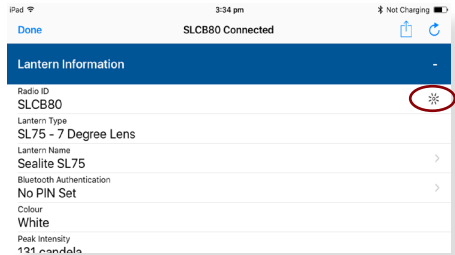
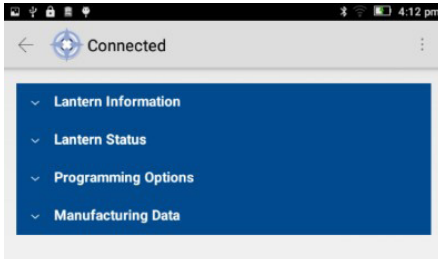
When the “Connect via Bluetooth” option is selected, the app will automatically scan for lanterns equipped with Bluetooth within range.

Select the lantern which requires setting or verification.



Lantern Information

Expand the “Lantern Information” section if collapsed.



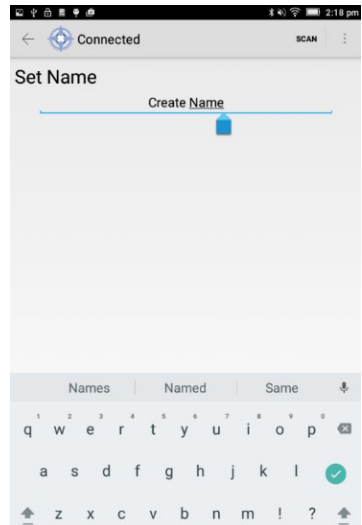
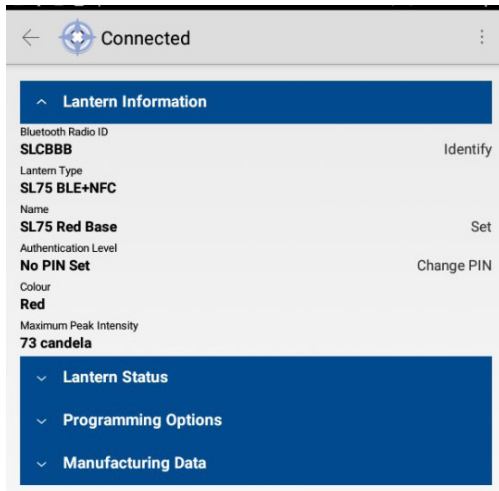
Identify Bluetooth Radio ID

When “Identify” on the Tablet or phone is selected, the connected lantern will flash quickly (10 times). For iOS, Identify is represented by a flash / burst icon.

Set the Lantern Name

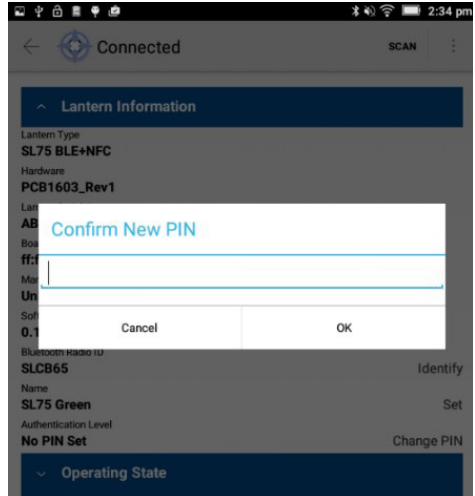
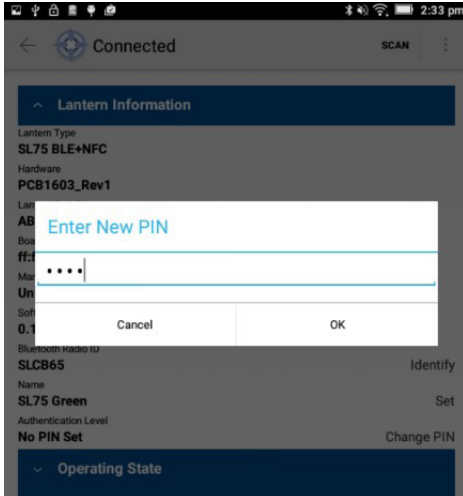
Press “Name” to change the lantern name. A user defined name, comprising up to 16 alphanumeric characters (and -, \$, #,@) can be typed into the dialogue box. It is recommended that the lantern be programmed with a unique name.

Press ✓ and then Set to confirm.



Create security access PIN

The factory default does not set the lantern with a security PIN. In order to set a PIN, select “Authentication Level” (“Bluetooth Authentication for iOS”) then enter a New PIN and press “OK”. A confirmation of the PIN will be prompted. Reenter the same PIN and press “OK”.



Modify current security access PIN

To set a new security access PIN select “Authentication Level” (“Bluetooth Authentication for iOS”) and type the current security PIN. After validation the app will request for the current PIN to be re-entered. After confirmation enter the new security PIN then confirm the new PIN.

Note - If the Security PIN is lost, go to Pg 8 for Password Reset Procedure.

Note - that the PIN ‘0000’ is reserved and will result in the lantern having no PIN.

SealitePro™ Password Reset Procedure

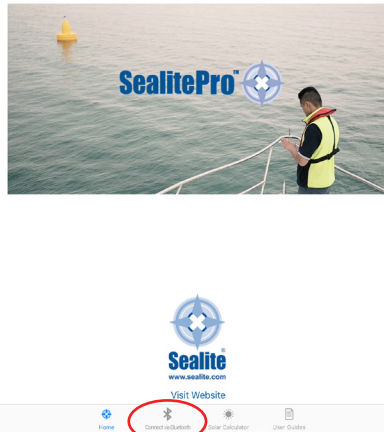
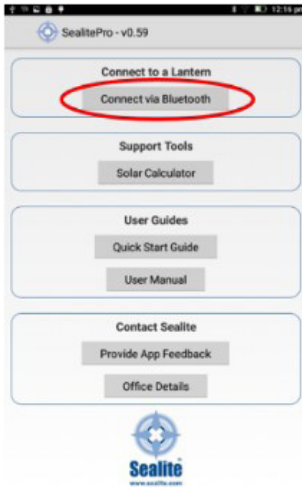
Step 1 - SL-75 ON/OFF toggle switch:

1. Use the Switch key provided in the product box to remove the SL-75 bung to access the SL-75 ON/OFF toggle switch;
2. Use the Switch key to activate the Lantern ON/OFF toggle switch. First switch Off the lantern then immediately Switch On the lantern again;

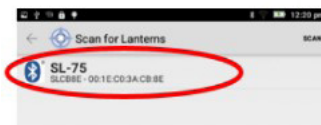
Step 2 – Connect to the Lantern using the SealitePro™:

Once the toggle switch was activated (OFF then ON) ensure the following procedure is conducted within one minute. Otherwise it will require to perform the Step 1 once again:

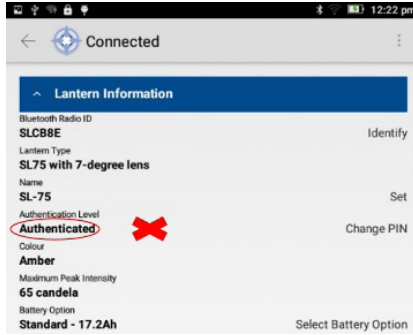
1. Connect to a Lantern, by pressing “Connect via Bluetooth®”;



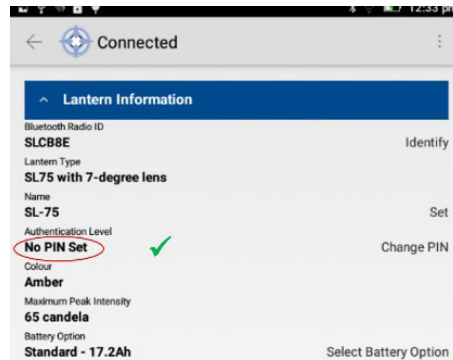
2. Select a Lantern displayed on the “Scan for Lanterns”;



- Expand the “Lantern Information” drop down menu then press select “Authentication Level” (“Bluetooth Authentication for iOS”). NOTE – If Appears “Authenticated” under “Authentication Level”, the limited time that allows to modify the PIN has expired. Therefore, it will require to perform the Step 1 again;



- If under “Authentication Level” appears “No PIN Set“, Please press Change PIN;



- Enter a New PIN and press “OK”. A confirmation of the PIN will prompted. Reenter the same PIN and press “OK”;
- One the procedure is completed, ensure to place the SL-75 bung back on the base.
- END OF PROCEDURE**

Lantern Information

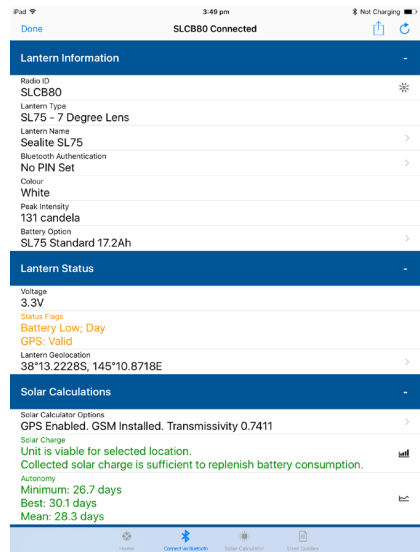
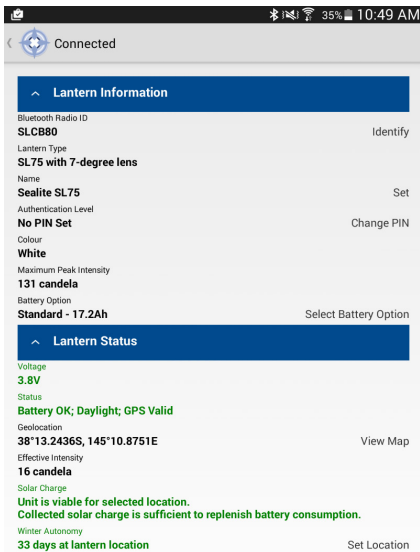
Colour

Displays the lantern colour (White, Red, Green or Amber)

Maximum Peak Intensity

Displays the Lantern Maximum intensity based on the LED colour

From the “Lantern Status” section the user can verify the current lantern status



Voltage

The battery health status

Status

Displays the battery health status, the current light sensor state and if the GPS is enabled, synchronised or offset. Any warning states will cause the status to be shown in amber or red.

Geolocation

Displays the lantern coordinates and allows the location to be plotted on a map

Effective Intensity

Displays the effective intensity of the lantern based on its flash code and intensity settings.

Solar Charge

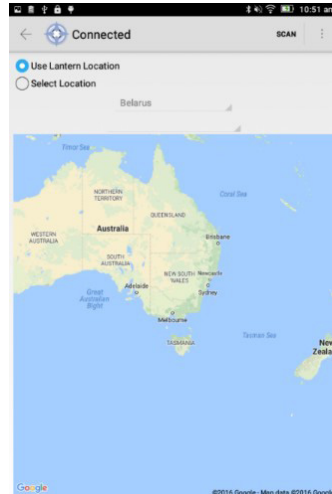
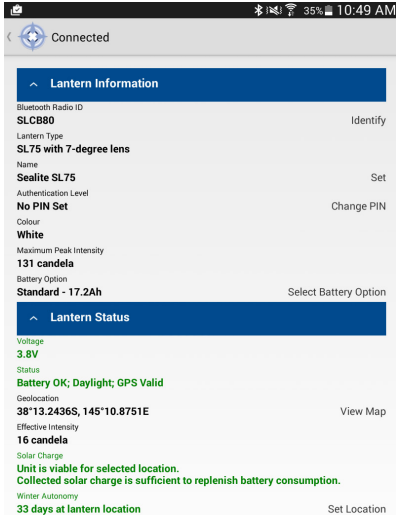
This function estimates whether the collected solar charge is sufficient to replenish battery consumption and will indicate if the unit is viable for the selected location.

Autonomy

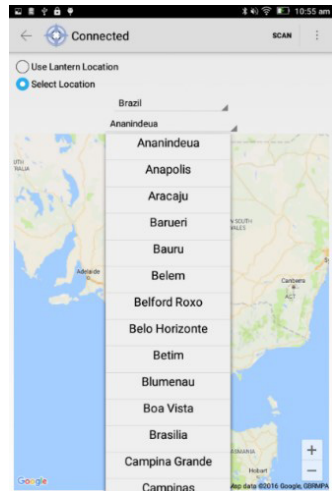
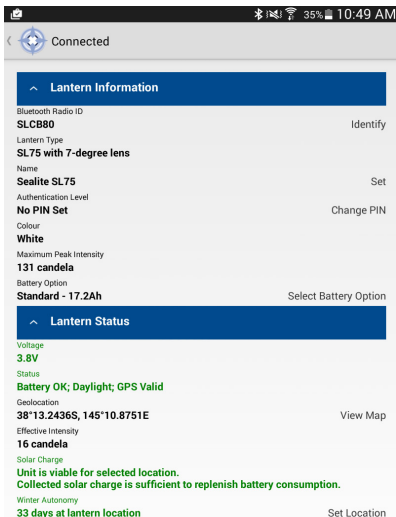
This function estimates the lantern autonomy based on the lantern settings and geolocation.

To estimate the lantern autonomy press “Set Location”, then select one of the two options:

Lantern Location - Use the current GPS location to establish the lantern autonomy.



Select Location* Note Android only. - Select a location globally to estimate the lantern autonomy if installed at that location.

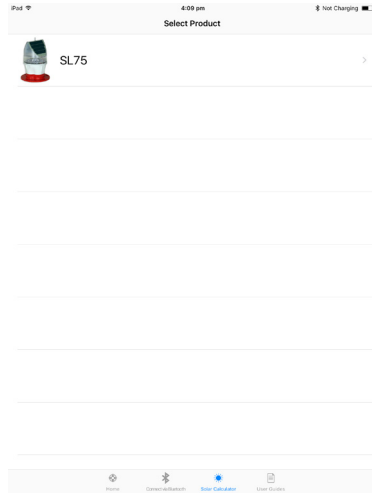
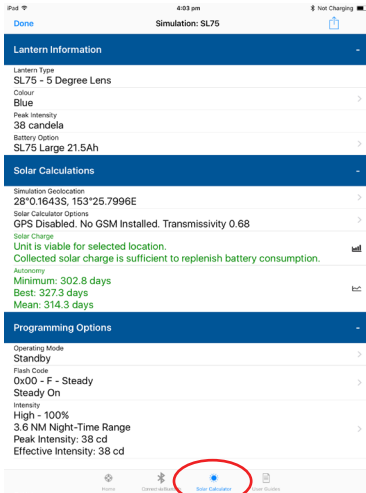


The autonomy will be shown in amber or red if the configuration is not recommended.

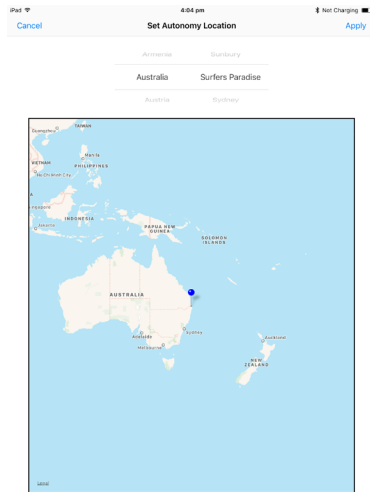
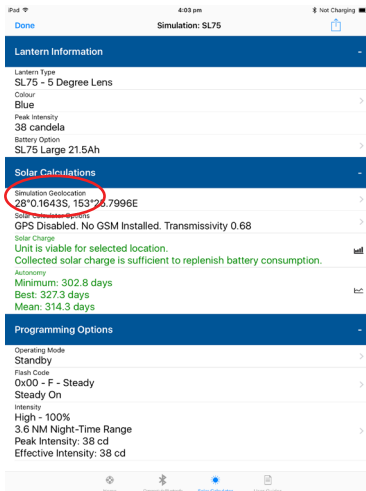
Solar Calculator

This function estimates the lantern autonomy based on the lantern settings and geolocation.

To estimate the lanterns autonomy press “Solar calculator”, select your product from the option(s) available, then select “Simulation Geolocation”.



Set Autonomy Location - Select a location globally to estimate the lantern autonomy if installed at that location.



The autonomy will be shown in amber or red if the configuration is not recommended.

Programming Options

Operating Mode:

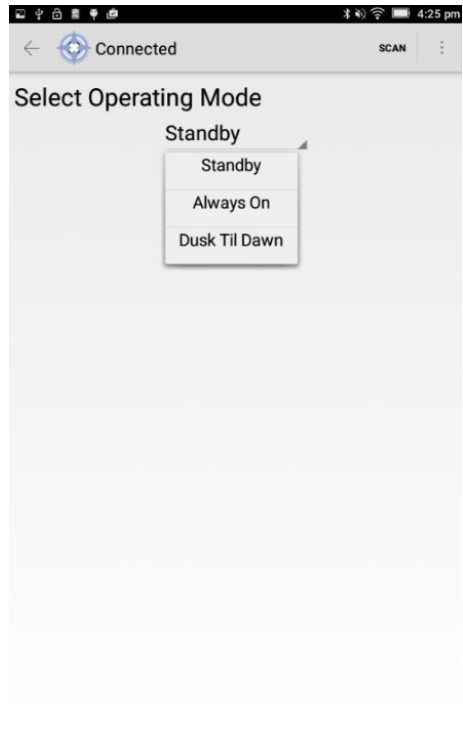
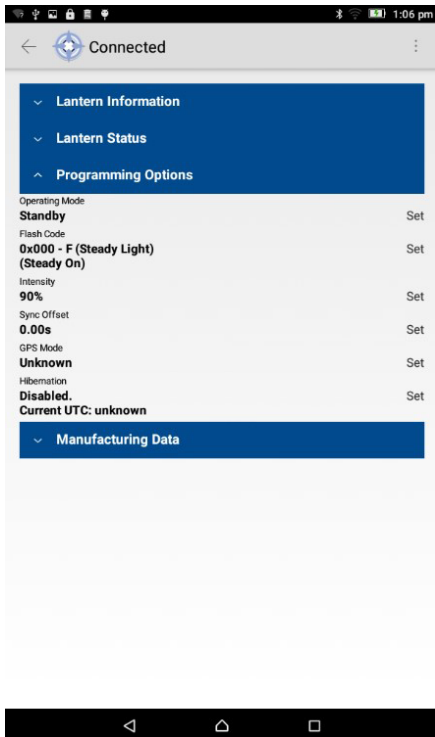
To change the Operating Mode press the Operating Mode field and then select one of three available options:

Standby - The lantern is configured in a minimum current state in which the LEDs are always off and the internal GPS (if installed) is disabled.

Always on – The daylight sensor is disabled and the lantern operates according to the set flash character and intensity levels.

Dusk till Dawn – The daylight sensor is monitored and the lantern will only operate at night time.

Once the Operating Mode is selected press “Set / Apply” to confirm the change. As factory default the lantern is always set to Dusk Till Dawn mode.



Flash Code

Sealite marine lanterns may be set to any of the 256 IALA recommended flash characters which are user-adjustable onsite without the need for external devices.

SEALITE® code reference is listed by the number of flashes

For the latest version of this document visit www.sealite.com or email info@sealite.com

Symbols

- FL Flash followed by number Eg. FL 1 S, one flash every second
- F Fixed
- Q Quick flash
- VQ Very quick flash
- OC Occulting; greater period on than off
- ISO Isophase; equal period on and off
- LFL Long flash long
- MO Morse code () contains letter

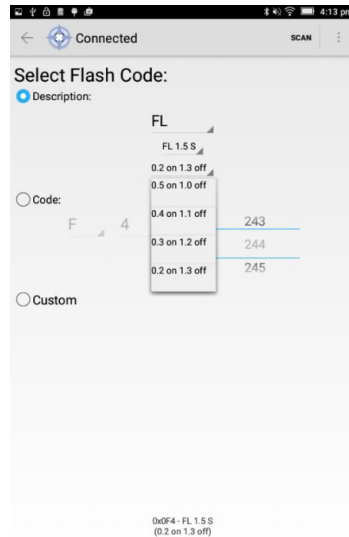
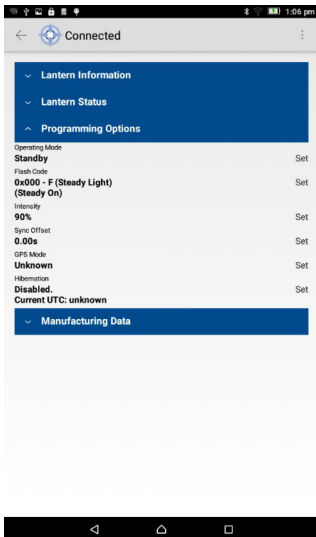
To start the Flash Code settings press on the flash code field.

There are three ways to modify the lantern Flash Code:

Description – Modify the Flash Code by selecting the type and length (on/off) of the flash.

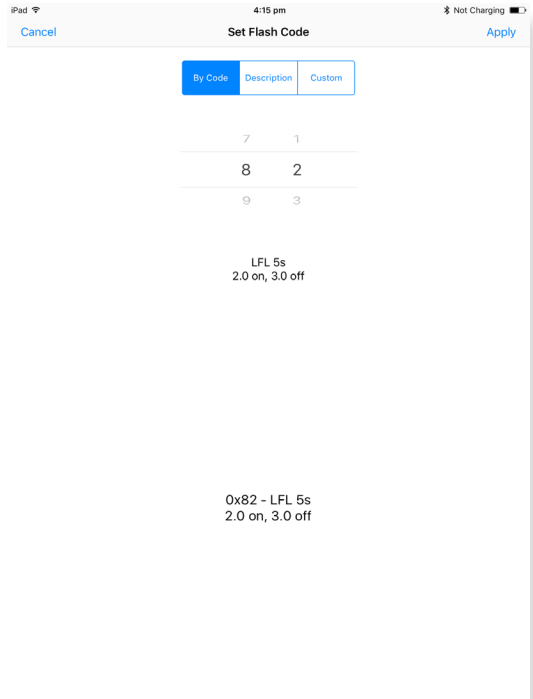
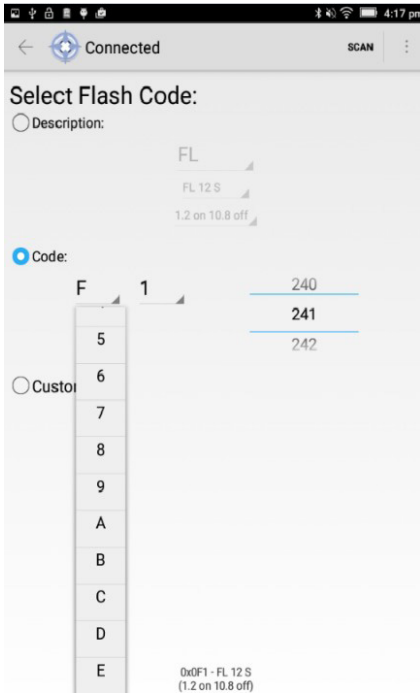
Once the Flash Code is established press “Set / Apply” to confirm the change.

Please Note – The number of flashing combinations are limited, for more information please check the Sealite Flash Code table provided in the appendix on page 21.

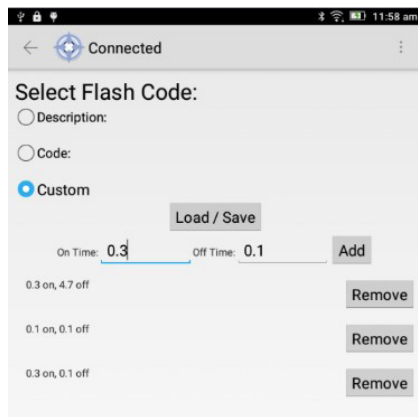
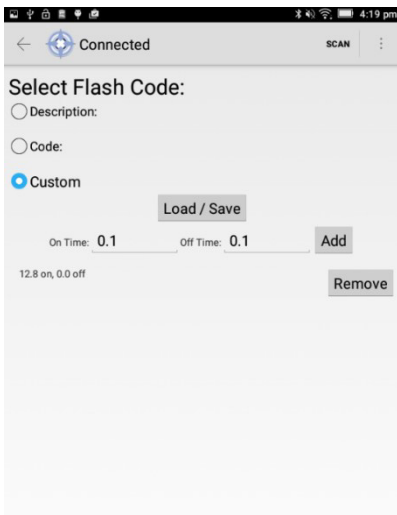


Code – Select the flash code based on the same way as the internal switches (HEX decimal values). Once the Flash Code is established press “Set / Apply” to confirm the change.

Please Note – The number of flashing combinations are limited. For more information please check the Sealite Flash Code table;



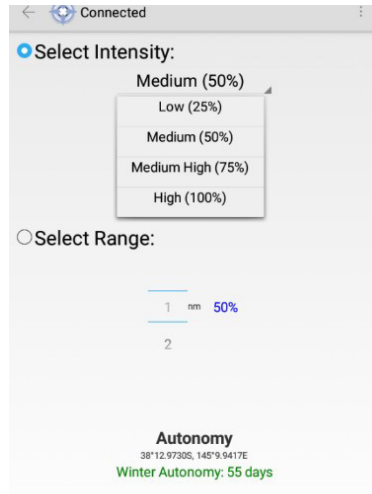
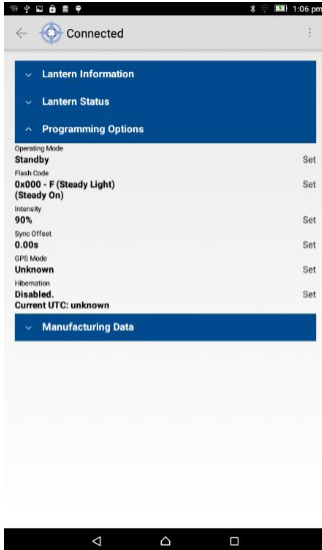
Custom – Create sequences of custom Flash Codes by nominating the on/off times. Once the Flash Code is established press “Set / Apply” to confirm the ch ange. To add multiple flashing configuration, press “add” for each configuration.



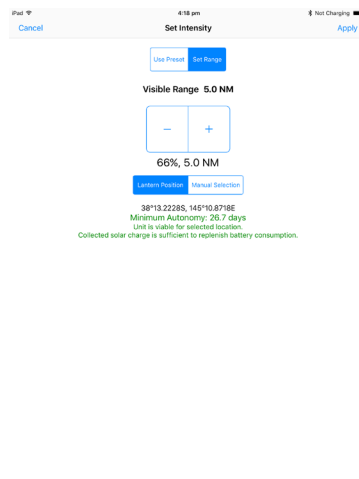
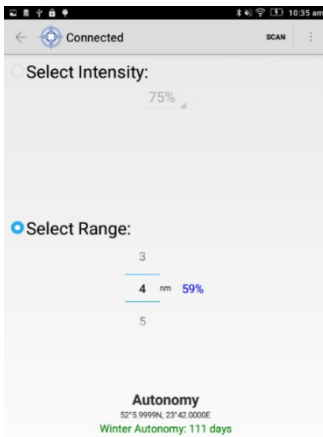
Intensity

The lantern intensity level can be set by either defining the operating range of the lantern (in nautical miles) or by entering the available percentage intensity level. When Schmidt Clausen is applied, the lantern will automatically adjust the intensity level based on the entered range and flash code setting. The intensity level is automatically adjusted each time a new range is set. Not true for changing flash code – user must come back through the Set Intensity screen

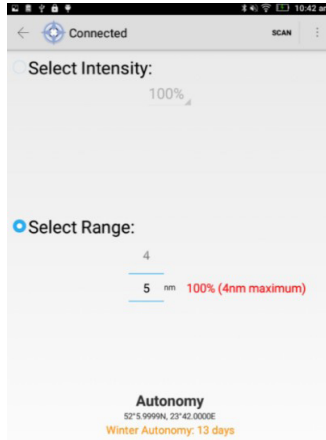
Select Intensity – Choose one of four intensity values - **25%, 50%, 75% or 100%**.



Select Range - Choose one of Nautical Miles ranges available.



NOTE – If an intensity level is selected that is beyond the specification of the lantern, the entered figure will be displayed in red, with the lantern automatically configuring to the maximum possible of 100%.

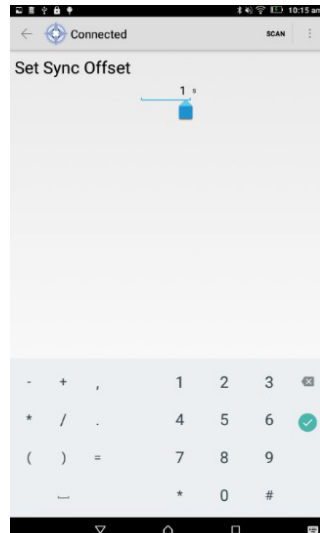
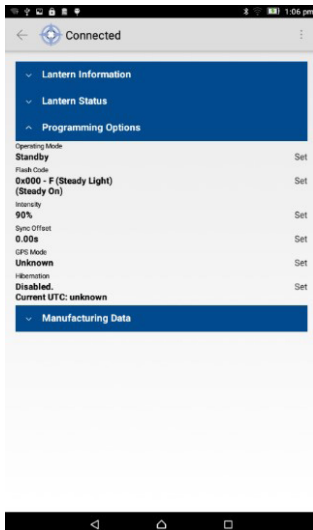


In addition, once the intensity is selected the winter autonomy will be recalculated.

Sync Offset

This panel is used to set a flash code delay. The built-in GPS receiver and advanced software of the Sealite synchronised lanterns allow for the adoption of Sync offset channel marking – a unique system that cascades the flash synchronisation of channel lanterns in a uni- or bi-directional flash pattern. By default this figure is set to zero.

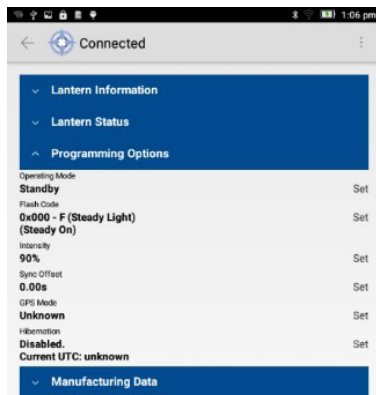
Press Sync Offset, type a value in seconds and then press “Set / Apply” to confirm the change.



GPS Mode

The lanterns can be fitted with an optional GPS module, and provide the user with the ability to install independently operating lanterns that all flash in synchronisation. No additional power supplies, aerials or control systems are required, and with its microprocessor based system, the GPS option is specifically designed to provide maximum reliability and performance over a wide range of environmental conditions.

On the SealitePro™ app the user has the option modify the GPS mode by selecting enable or disable the GPS operation.



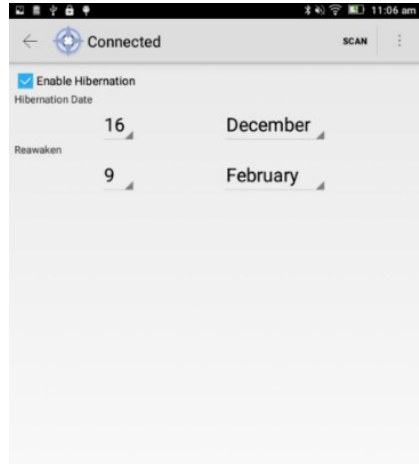
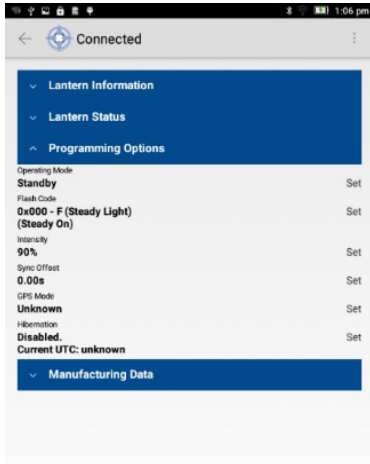
Question	Answer
How do I verify if the lantern is equipped with GPS?	The GPS Synchronisation is optional feature that can be fitted when purchasing a Sealite lantern. To verify if the lantern is fitted with GPS simply tap on 'Lantern Status' then verify under 'Status'. If a GPS module is included a message 'GPS valid. Synchronisation will appear'.
I purchased a Lantern fitted with a GPS for synchronisation. However, it appears to not working.	If the GPS are not functioning ensure the GPS is enabled. Select 'Programming Options' then check under GPS mode. If appears 'off' the GPS is disabled. Tap on 'Set' then select 'Normal' to enable the GPS.
Can use the Solar Calculator under 'Support Tool' to verify a Lantern Autonomy when set the lantern configuration from the app?	No. The actual lantern settings can be only performed through 'Connect via Bluetooth', any solar calculations estimation performed under support tools, can be reflected on the actual lantern settings.
I failed to create a PIN when I first start using the Lantern?	No. The lantern will operate without setting a security PIN. However, it is highly recommended by Sealite to the customer to set a unique PIN from the moment the lantern starts to operate.
How do I know the lantern will have sufficient battery autonomy in my location using the settings?	The SealitePro™ app will automatically recalculate any changes on the lantern settings and display under 'Lantern Status'.
When I try to download SealitePro™ from Google Play, I see the message 'Device not compatible'.	SealitePro™ may not be installed on an Android device running Ice Cream Sandwich (version 4.0.4) or lower. The Google Play store will stop you from attempting to install SealitePro™ if your device is incompatible. SealitePro™ requires a device running Android KitKat (version 4.4) to communicate with Sealite Bluetooth lanterns. SealitePro™ may be installed on devices running Android Jelly Bean (version 4.1 to 4.3) however, the 'Connect via Bluetooth' option will not be available.
I have installed SealitePro™ but the 'Connect via Bluetooth' option is disabled.	SealitePro™ requires a device equipped with Bluetooth 4.0 or above. If no Bluetooth is detected, the 'Connect via Bluetooth' option will be disabled. SealitePro™ also requires a device running Android KitKat (version 4.4) to communicate with Sealite Bluetooth lanterns. If SealitePro™ is installed on a device running Android Jelly Bean (version 4.1 to 4.3) then the 'Connect via Bluetooth' option will not be available.
When I start SealitePro™, I see the message 'Bluetooth Permissions Denied. Please enable at permissions. Go to Settings?'	SealitePro™ requires permission from Android to access various features of the mobile device, such as use of the Bluetooth module. Some versions of Android enforce these permissions to be granted when SealitePro™ is installed, later versions require the user to manually grant these permissions. If the message above is shown then the latter scenario has occurred. Please answer 'Yes' to the prompt and SealitePro™ will attempt to open the 'Settings' page. A list of installed apps should appear. Find SealitePro™ in the list and press it. At the bottom of the screen should be an 'App permissions' section. Click on this and enable all permissions presented. Then press the 'Back' button until 'Settings?' disappears.
When I press 'Connect via Bluetooth', I see the message 'An app SealitePro™ wants to turn on Bluetooth. Only when connections will be cancelled.'	If the above process does not open the 'Permissions' settings correctly, this will have to be performed manually. Return to the device home screen, then open the 'Settings' app and select 'Installed Apps'. Select SealitePro™ from the list and follow the instructions above. Please consult your device user guide for full on how to access and grant app permissions. If the settings cannot be found:
When I select 'Connect via Bluetooth', the device performs a scan but the message 'No lanterns were found'.	Several conditions may occur that will prevent lanterns from being discovered: <ol style="list-style-type: none"> 1. Verify that all Bluetooth-enabled Sealite lanterns is enabled and connected on. 2. Verify that no other mobile devices is connected to the lantern via Bluetooth. Bluetooth supports only one connection at a time, therefore if another device is connected it must be disconnected before the lantern appears in a scan result. 3. Turn the Bluetooth feature of the mobile device off and on again. This may be performed through the Android notification bar of some devices or through the Settings app. See your device user manual for full instructions. 4. Some Android devices require Location Services to be enabled before they will see Bluetooth lanterns. Location Services may be enabled through the Android Notification Bar of some devices or through the Settings app. See your device user manual for full instructions. 5. Turn the lantern off and then on again. 6. Ensure your device is within Bluetooth range. If the problem persists please contact Sealite for assistance.
I have connected to a lantern via Bluetooth, but the message 'Lantern Current Failure. Recharging...' keeps appearing.	Try disconnecting from the lantern, then recharging and connecting. It is possible that the lantern is at the edge of the Bluetooth range, or maybe the data connection is unreliable. If the problem persists please contact Sealite for assistance.

Hibernation

This feature is only available for lanterns equipped with GPS.

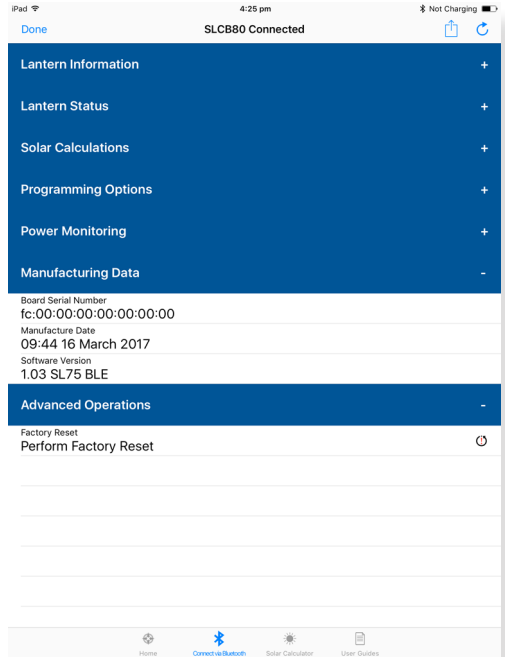
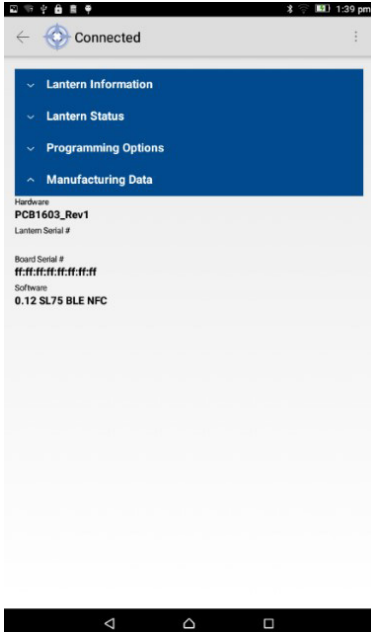
Hibernation Mode maximises conservation of the battery power by disabling the light (will not activate at night) and shutting off the GPS receiver to rely on the internal clock for date checking.

Hibernation Mode can be set by programming a start date and end date via the SealitePro™. To enable the Hibernation Mode, tick (✓) on the top left box then select the Hibernation start date and Reawaken date. Press “Set / Apply” to confirm the settings.



Manufacturing Data

If Bluetooth connection is established, data about the lantern hardware will appear on the “Manufacturing Data” tab. From this drop down tab the user will be able to verify the information that identifies the Lantern’s internal electronic hardware and firmware versions. Moreover, the Lantern Printed Circuit Board Serial are identified.



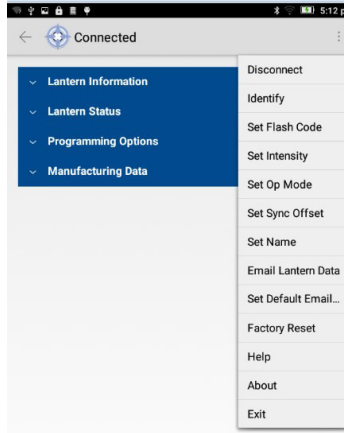
Power Monitoring

If Bluetooth connection is established, data about the lantern battery charge and load current will appear on the “Power Monitoring” tab. From this drop down tab the user will be able to verify the amount of battery charge that the Lantern was able to capture in the previous 24 hours. In addition, the information of load current through the system can be monitored.

Quick Access Tab

The SealitePro™ app also allows a quick access tab offering the user access to the main setting functions of the lantern.* Android devices only

By touching the menu button a drop down menu will pop showing the setting functions available.



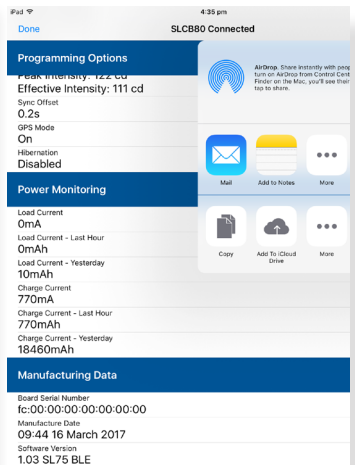
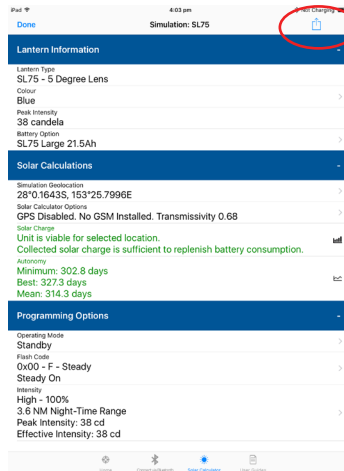
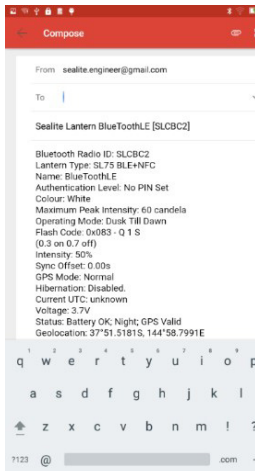
In addition, the quick access tab offers other additional functions:

Disconnect:

By touching “Disconnect” it will automatically disconnect the control device from the lantern.

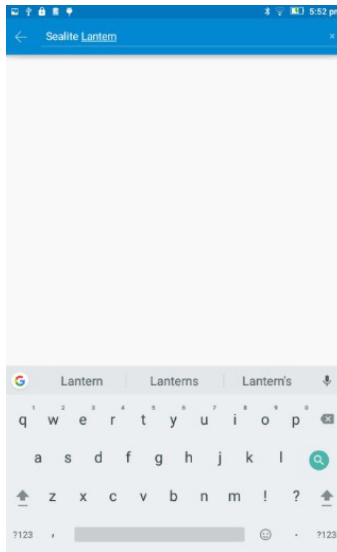
Email Lantern Data:

This function allows to send the lantern configuration and status via email.



Set Default Email* Note Android only

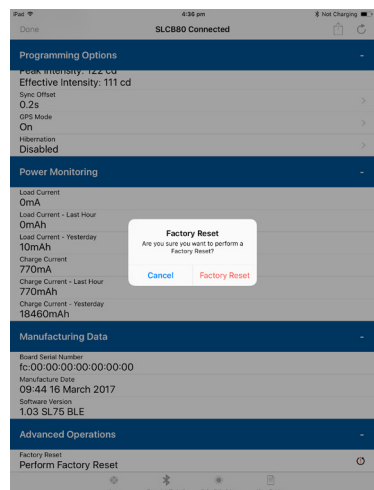
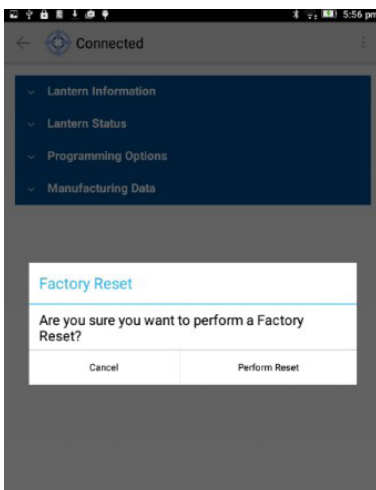
This option allows to search for an existent contact on the device to use as the default recipient of configuration and status emails.



Factory Reset:

This feature will reset automatically all previously lantern settings to a Factory Reset. If the option is select a confirmation message will display to confirm. Select “Perform Reset” in order to confirm the reset.

Please NOTE – Applying the Factory Reset it will also reset the lantern current PIN.



SealitePro™ Troubleshooting

Question	Answer
How to verify if the lantern is equipped with GPS Synchronization or not?	The GPS Synchronization is optional feature that can be fitted when purchase a Sealite lantern. To verify if the lantern is fitted with GPS simply tap on "Lantern Status" then verify under "Status". If a GPS module is included a message "GPS valid, Synchronized" will appear.
I purchased a Lantern fitted with a GPS for synchronization. However, it appears to not working.	If the GPS are not functioning ensure the GPS is enable. Select "Programming Options" then check under GPS mode, if appears "off" the GPS is disable. Tap on "Set" then select "Normal" to enable the GPS.
Can use the Solar Calculator under "Support Tool" to verify a Lantern Autonomy then set the lantern configuration from there?	No. The actual lantern settings can be only performed through "Connect via Bluetooth", any solar calculations simulation performed under support tools, can be reflected on the actual lantern settings.
Do I need to create a PIN when I first start using the Lantern?	No. The lantern will operate without setting a security PIN. However, it is highly recommended by Sealite to the customer to set a unique PIN from the moment the lantern starts to operate.
How do I know the lantern will have sufficient battery autonomy in my location using the setting I established?	The SealitePro™ app will automatically recalculate any changes on the lantern settings and display under "Lantern Status"
When I try to download SealitePro™ from Google Play, I see the message "Device not compatible".	SealitePro™ may not be installed on an Android device running Ice Cream Sandwich (version 4.0.4) or lower. The Google Play store will stop you from attempting to install SealitePro™ if your device is incompatible. SealitePro™ requires a device running Android KitKat (version 4.4) to communicate with Sealite Bluetooth lanterns. SealitePro™ may be installed on devices running Android Jelly Bean (version 4.1-4.3) however, the 'Connect via Bluetooth' option will not be available.
I have installed SealitePro™, but the 'Connect via Bluetooth' option is disabled.	SealitePro™ requires a device equipped with Bluetooth 4.0 or above. If no Bluetooth device is detected, the 'Connect via Bluetooth' option will be disabled. SealitePro™ also requires a device running Android KitKat (version 4.4) to communicate with Sealite Bluetooth lanterns. If SealitePro™ is installed on a device running Android Jelly Bean (version 4.1-4.3) then the 'Connect via Bluetooth' option will not be available.
When I start SealitePro™, I see the message "Bluetooth Permissions Denied. Please enable all permissions. Go to Settings?"	SealitePro™ requires permission from Android to access various features of the mobile device, such as use of the Bluetooth module. Some versions of Android enforce these permissions to be granted when SealitePro™ is installed; later versions require the user to manually grant these permissions. If the message above is shown then the latter scenario has occurred. Please answer 'Yes' to the prompt and SealitePro™ will attempt to open the 'Settings' page. A list of installed apps should appear. Find SealitePro™ in the list and press it. At the bottom of the screen should be an 'App permissions' section. Click on this and enable all permissions presented. Then press the 'Back' button until SealitePro™ reappears. If the above process does not open the 'Permissions' settings correctly, this will have to be performed manually. Return to the device home screen, then open the 'Settings' app and select 'Installed Apps'. Select SealitePro™ from the list and follow the instructions above. Please consult your device user guide to find out how to access and grant app permissions if the settings cannot be found.
When I press 'Connect via Bluetooth', I see the message 'An app/ SealitePro™ wants to turn on Bluetooth'.	Connecting to a lantern via Bluetooth requires that the mobile device has Bluetooth turned on. If this message appears it is because the device's Bluetooth module is turned off. Press 'Allow' and SealitePro™ will attempt to turn the Bluetooth device on. If required, you may turn Bluetooth off when finished through the device's 'Settings' app. If you press 'Deny' then connection will be cancelled.
When I select 'Connect via Bluetooth', the device performs a scan but tells me that no lanterns were found.	Several conditions may occur that will prevent lanterns from being discovered. <ol style="list-style-type: none"> 1. Verify that a Bluetooth-equipped Sealite lantern is nearby and powered on. 2. Verify that no other mobile device is connected to the lantern via Bluetooth. Bluetooth supports only one connection at a time, therefore if another device is connected it must be disconnected before the lantern appears in a scan result. 3. Turn the Bluetooth feature of the mobile device off and on again. This may be performed through the Android Notification Bar of some devices or through the Settings app. See your device user manual for full instructions. 4. Some Android devices require Location Services to be enabled before they will 'see' Bluetooth lanterns. Location Services may be enabled through the Android Notification Bar of some devices or through the Settings app. See your device user manual for full instructions. 5. Turn the lantern off and then on again. 6. Ensure your device is within its bluetooth range. <p>If the problem persists please contact Sealite for assistance.</p>
I have connected to a lantern via Bluetooth, but the message "Lantern Comms Failure. Retrying..." keeps appearing.	Try disconnecting from the lantern, then rescanning and connecting. It is possible that the lantern is at the edge of the Bluetooth range, or maybe the data connection is unreliable. If the problem persists please contact Sealite for assistance.

Appendix

Flash Codes

The Sealite SL-75 may be set to any of 256 IALA recommended flash settings which are user-adjustable onsite without the need for external devices.

SEALITE® code reference is listed by number of flashes

**For the latest version of this document visit www.sealite.com,
or email info@sealite.com**

Symbols

FL	Flash followed by number Eg. FL 1 S, one flash every second
F	Fixed
Q	Quick flash
VQ	Very quick flash
OC	Occulting; greater period on than off
ISO	Isophase; equal period on and off
LFL	Long flash long
MO	Morse code () contains letter

For example, VQ (6) + LFL 10 S means 6 very quick flashes followed by a long flash, during a 10-second interval.

The amount of power your lantern draws through the night depends on the duty cycle, i.e. the amount of time on as a proportion to the timing cycle. For example, 0.5 seconds on and 4.5 seconds off equals a 10% duty cycle.

It is best to operate at the lowest duty cycle appropriate to the actual needs of the application.

Recommended Rhythm for Flashing Light - IALA Regions A and B

MARK DESCRIPTION	RHYTHM
Port Hand & Starboard Marks:	Any, other than Composite Group Flashing (2+1)
Preferred Channel Starboard:	Composite Group Flashing (2+1)
Preferred Channel Port:	Composite Group Flashing (2+1)
North Cardinal Mark:	Very quick or quick
East Cardinal Mark:	Very quick (3) every 5 seconds or quick (3) every 10 seconds
South Cardinal Mark:	Very quick (6) + long flash every 10 seconds or quick (6) + long flash every 15 seconds
West Cardinal Mark:	Very quick (9) every 10 seconds or quick (9) every 15 seconds
Isolated Danger Mark:	Group flashing (2)
Safe Water Mark:	Isophase, occulting, one long flash every 10 seconds or Morse Code "A"
Special Marks:	Any, other than those described for Cardinal, Isolated Danger or Safe Water Marks

SWITCH		IR Controller		FLASH CODE	ON	OFF
A	B					
0	0	000	F (Steady light)			
D	3	211	VQ 0.5 S	0.2	0.3	
-	-	274	VQ 0.5 S	0.25	0.25	
E	3	227	VQ 0.6 S	0.2	0.4	
F	3	243	VQ 0.6 S	0.3	0.3	
7	3	115	Q 1 S	0.2	0.8	
8	3	131	Q 1 S	0.3	0.7	
9	3	147	Q 1 S	0.4	0.6	
A	3	163	Q 1 S	0.5	0.5	
8	4	132	Q 1 S	0.8	0.2	
B	3	179	Q 1.2 S	0.3	0.9	
-	-	293	FL 1.2 S	0.4	0.8	
9	4	148	Q 1.2 S	0.5	0.7	
C	3	195	Q 1.2 S	0.6	0.6	
F	4	244	FL 1.5 S	0.2	1.3	
1	0	16	FL 1.5 S	0.3	1.2	
0	5	5	FL 1.5 S	0.4	1.1	
0	4	4	FL 1.5 S	0.5	1.0	
2	0	32	FL 2 S	0.2	1.8	
3	0	48	FL 2 S	0.3	1.7	
4	0	64	FL 2 S	0.4	1.6	
5	0	80	FL 2 S	0.5	1.5	
6	0	96	FL 2 S	0.7	1.3	
7	0	112	FL 2 S	0.8	1.2	
1	2	18	ISO 2 S	1.0	1.0	
8	0	128	FL 2.5 S	0.3	2.2	
9	0	144	FL 2.5 S	0.5	2.0	
D	6	214	FL 2.5 S	1.0	1.5	
1	5	21	FL 3 S	0.2	2.8	
A	0	160	FL 3 S	0.3	2.7	
2	5	37	FL 3 S	0.4	2.6	
B	0	176	FL 3 S	0.5	2.5	
3	5	53	FL 3 S	0.6	2.4	
C	0	192	FL 3 S	0.7	2.3	
D	0	208	FL 3 S	1.0	2.0	
2	2	34	ISO 3 S	1.5	1.5	
5	4	84	OC 3 S	2.0	1.0	
E	2	226	OC 3 S	2.5	0.5	
4	6	70	OC 3.5 S	2.5	1.0	
4	5	69	FL 4 S	0.2	3.8	
5	5	85	FL 4 S	0.3	3.7	
E	0	224	FL 4 S	0.4	3.6	
F	0	240	FL 4 S	0.5	3.5	
6	5	101	FL 4 S	0.6	3.4	
0	1	1	FL 4 S	0.8	3.2	
1	1	17	FL 4 S	1.0	3.0	
2	1	33	FL 4 S	1.5	2.5	
3	2	50	ISO 4 S	2.0	2.0	
3	6	54	OC 4 S	2.5	1.5	
F	2	242	OC 4 S	3.0	1.0	
3	1	49	FL 4.3 S	1.3	3.0	
8	5	133	FL 5 S	0.2	4.8	
4	1	65	FL 5 S	0.3	4.7	
-	-	279	FL 5 S	0.4	4.6	
5	1	81	FL 5 S	0.5	4.5	
9	5	149	FL 5 S	0.9	4.1	
6	1	97	FL 5 S	1.0	4.0	
7	1	113	FL 5 S	1.5	3.5	

SWITCH		IR Controller		FLASH CODE	ON	OFF
A	B					
4	2	66	ISO 5 S		2.5	2.5
8	2	130	LFL 5 S		2.0	3.0
0	3	3	OC 5 S		3.0	2.0
1	3	19	OC 5 S		4.0	1.0
2	3	35	OC 5 S		4.5	0.5
C	6	198	FL 6 S		0.2	5.8
B	5	181	FL 6 S		0.3	5.7
C	5	197	FL 6 S		0.4	5.6
8	1	129	FL 6 S		0.5	5.5
9	1	145	FL 6 S		0.6	5.4
A	1	161	FL 6 S		1.0	5.0
7	5	117	FL 6 S		1.2	4.8
B	1	177	FL 6 S		1.5	4.5
5	2	82	ISO 6 S		3.0	3.0
9	2	146	LFL 6 S		2.0	4.0
6	4	100	OC 6 S		4.0	2.0
3	3	51	OC 6 S		4.5	1.5
4	3	67	OC 6 S		5.0	1.0
-	-	280	FL 7 S		0.4	6.6
A	4	164	FL 7 S		1.0	6.0
9	6	150	FL 7 S		2.0	5.0
5	6	86	OC 7 S		4.5	2.5
D	5	213	FL 7.5 S		0.5	7.0
C	1	193	FL 7.5 S		0.8	6.7
E	5	229	FL 8 S		0.5	7.5
B	4	180	FL 8 S		1.0	7.0
6	2	98	ISO 8 S		4.0	4.0
A	2	162	LFL 8 S		2.0	6.0
6	6	102	OC 8 S		5.0	3.0
-	-	294	OC 8 S		6.0	2.0
B	2	178	LFL 8 S		3.0	5.0
F	5	245	FL 9 S		0.9	8.1
C	4	196	FL 9 S		1.0	8.0
7	6	118	OC 9 S		6.0	3.0
0	6	6	FL 10 S		0.2	9.8
1	6	22	FL 10 S		0.3	9.7
-	-	281	FL 10 S		0.4	9.6
D	1	209	FL 10 S		0.5	9.5
2	6	38	FL 10 S		0.8	9.2
E	1	225	FL 10 S		1.0	9.0
1	4	20	FL 10 S		1.5	8.5
C	2	194	LFL 10 S		2.0	8.0
D	2	210	LFL 10 S		3.0	7.0
7	2	114	ISO 10 S		5.0	5.0
2	4	36	LFL 10 S		4.0	6.0
8	6	134	OC 10 S		6.0	4.0
5	3	83	OC 10 S		7.0	3.0
6	3	99	OC 10 S		7.5	2.5
-	-	303	FL 11 S		1.0	10.0
-	-	302	FL 12 S		1.0	11.0
F	1	241	FL 12 S		1.2	10.8
D	4	212	FL 12 S		2.5	9.5
3	4	52	LFL 12 S		2.0	10.0
0	2	2	FL 15 S		1.0	14.0
4	4	68	LFL 15 S		4.0	11.0
7	4	116	OC 15 S		10	5.0
A	6	166	LFL 20 S		2.0	18.0
E	4	228	FL 26 S		1.0	25.0

SWITCH		IR		FLASH CODE	ON	OFF	ON	OFF
A	B	Controller						
0	A	10		FL (2) 4 S	0.5	1.0	0.5	2.0
E	B	235		VQ (2) 4 S	0.2	1.0	0.2	2.6
1	A	26		FL (2) 4.5 S	0.3	1.0	0.3	2.9
2	A	42		FL (2) 4.5 S	0.4	1.0	0.4	2.7
3	A	58		FL (2) 4.5 S	0.5	1.0	0.5	2.5
-	-	277		FL (2) 4.6 S	0.3	0.3	0.3	3.7
F	9	249		FL (2) 5 S	0.2	0.8	0.2	3.8
2	C	44		FL (2) 5 S	0.2	1.2	0.2	3.4
4	A	74		FL (2) 5 S	0.4	0.6	0.4	3.6
-	-	282		FL (2) 5 S	0.4	1.1	0.4	3.1
0	7	7		FL (2) 5 S	0.5	1.0	0.5	3.0
1	7	23		FL (2) 5 S	1.0	1.0	1.0	2.0
-	-	257		FL (2) 5 S	0.3	1.0	0.3	3.4
9	B	155		Q (2) 5 S	0.3	0.7	0.3	3.7
2	9	41		Q (2) 5 S	0.5	0.5	0.5	3.5
-	-	305		FL (2) 5 S	0.5	0.7	0.5	3.3
5	A	90		FL (2) 5.5 S	0.4	1.4	0.4	3.3
7	8	120		FL (2) 6 S	0.3	0.6	1.0	4.1
A	A	170		FL (2) 6 S	0.3	0.9	0.3	4.5
6	A	106		FL (2) 6 S	0.3	1.0	0.3	4.4
7	A	122		FL (2) 6 S	0.4	1.0	0.4	4.2
-	-	283		FL (2) 6 S	0.4	1.2	0.4	4.0
9	9	153		FL (2) 6 S	0.5	1.0	0.5	4.0
2	8	40		FL (2) 6 S	0.8	1.2	0.8	3.2
-	-	256		FL (2) 6 S	0.8	0.8	0.8	3.6
3	7	55		FL (2) 6 S	1.0	1.0	1.0	3.0
3	9	57		Q (2) 6 S	0.3	0.7	0.3	4.7
-	-	295		LFL + FL 6 S	3.0	1.0	1.0	1.0
-	-	273		FL (2) 6.5 S	0.5	1.0	0.5	4.5
-	-	283		FL (2) 7 S	0.4	1.2	0.4	5.0
-	-	311		FL (2) 7 S	0.5	1.5	0.5	4.5
A	9	169		FL (2) 7 S	1.0	1.0	1.0	4.0
7	B	123		FL (2) 8 S	0.4	0.6	2.0	5.0
8	A	138		FL (2) 8 S	0.4	1.0	0.4	6.2
-	-	285		FL (2) 8 S	0.4	1.7	0.4	5.5
4	7	71		FL (2) 8 S	0.5	1.0	0.5	6.0
-	-	297		FL (2) 8 S	0.5	0.5	1.5	5.5
8	8	136		FL (2) 8 S	0.8	1.2	2.4	3.6
5	7	87		FL (2) 8 S	1.0	1.0	1.0	5.0
4	C	76		OC (2) 8 S	3.0	2.0	1.0	2.0
5	C	92		OC (2) 8 S	5.0	1.0	1.0	1.0
F	B	251		VQ (2) 8 S	0.2	1.0	0.2	6.6
-	-	286		FL (2) 9 S	0.4	1.7	0.4	6.5
9	A	154		FL (2) 10 S	0.4	1.6	0.4	7.6
-	-	287		FL (2) 10 S	0.4	2.2	0.4	7.0
6	7	103		FL (2) 10 S	0.5	1.0	0.5	8.0
7	7	119		FL (2) 10 S	0.5	1.5	0.5	7.5
6	9	105		FL (2) 10 S	0.5	2.0	0.5	7.0
-	-	298		FL (2) 10 S	0.5	0.5	1.5	7.5
8	7	135		FL (2) 10 S	0.8	1.2	0.8	7.2
B	9	185		FL (2) 10 S	1.0	1.0	1.0	7.0
9	7	151		FL (2) 10 S	1.0	1.5	1.0	6.5
4	9	73		Q (2) 10 S	0.6	0.4	0.6	8.4
B	A	186		FL (2) 12 S	0.4	1.0	0.4	10.2
C	9	201		FL (2) 12 S	0.5	1.0	0.5	10.0
D	9	217		FL (2) 12 S	1.5	2.0	1.5	7.0
A	8	168		FL (2) 15 S	0.5	1.5	2.0	11.0
A	7	167		FL (2) 15 S	1.0	2.0	1.0	11.0
8	B	139		Q (2) 15 S	0.2	0.8	0.2	13.8
C	A	202		FL (2) 20 S	1.0	3.0	1.0	15.0
D	A	218		FL (2) 25 S	1.0	1.0	1.0	22.0

SWITCH		IR Controller		FLASH CODE	ON	OFF	ON	OFF	ON	OFF
A	B									
7	9	121	Q (3) 5 S	0.5	0.5	0.5	0.5	0.5	0.5	2.5
5	9	89	VQ (3) 5 S	0.2	0.3	0.2	0.3	0.2	0.3	3.8
0	C	12	VQ (3) 5 S	0.3	0.2	0.3	0.2	0.3	0.3	3.7
E	9	233	VQ (3) 5 S	0.3	0.3	0.3	0.3	0.3	0.3	3.5
-	-	308	FL (3) 5 S	0.3	0.7	0.3	0.7	0.3	0.3	3.7
0.3	3.7	60	FL (3) 6 S	0.5	1.0	0.5	1.0	0.5	0.5	2.5
2	B	43	FL (2+1) 6 S	0.3	0.4	0.3	1.2	0.3	0.3	3.5

SWITCH		IR Controller		FLASH CODE	ON	OFF	ON	OFF	ON	OFF
A	B									
A	B	171	Q (3) 6 S	0.3	0.7	0.3	0.7	0.3	0.3	3.7
F	A	250	FL (3) 8 S	0.5	1.0	0.5	1.0	0.5	0.5	4.5
-	-	301	FL (3) 8 S	1.5	0.5	0.5	0.5	0.5	0.5	4.5
-	-	266	Q (3) 9 S	0.5	0.5	0.5	1.0	0.5	0.5	6.0
0	B	11	FL (3) 9 S	0.3	1.0	0.3	1.0	0.3	0.3	6.1
-	-	306	FL (3) 9 S	0.5	1.5	0.5	1.5	0.5	0.5	4.5
B	7	183	FL (3) 9 S	0.8	1.2	0.8	1.2	0.8	0.8	4.2
B	8	184	FL (3) 10 S	0.3	0.7	0.3	0.7	0.9	0.9	7.1
C	8	200	FL (3) 10 S	0.4	0.6	0.4	0.6	1.2	0.6	6.8
-	-	290	FL (3) 10 S	0.4	0.8	0.4	0.8	0.4	0.4	7.2
C	B	203	FL (3) 10 S	0.5	0.5	0.5	0.5	0.5	0.5	7.5
C	7	199	FL (3) 10 S	0.5	1.5	0.5	1.5	0.5	0.5	5.5
D	B	219	FL (3) 10 S	0.6	0.6	0.6	0.6	0.6	0.6	7.0
-	-	278	FL (3) 10 S	0.9	1.1	0.9	1.1	0.9	0.9	5.1
D	7	215	FL (3) 10 S	1.0	1.0	1.0	1.0	1.0	1.0	5.0
-	-	261	FL (3) 10 S	0.35	0.65	0.35	0.65	0.35	0.35	7.65
3	8	56	FL (2+1) 10 S	0.5	0.7	0.5	2.1	0.5	0.5	5.7
8	9	137	OC (3) 10 S	5.0	1.0	1.0	1.0	1.0	1.0	1.0
B	B	187	Q (3) 10 S	0.3	0.7	0.3	0.7	0.3	0.3	7.7
D	8	216	FL (2 + 1) 10 S	0.5	0.5	0.5	0.5	1.5	0.5	6.5
-	-	288	FL (3) 12 S	0.4	2.1	0.4	2.1	0.4	0.4	6.6
1	B	27	FL (3) 12 S	0.5	1.5	0.5	1.5	0.5	0.5	7.5
E	A	234	FL (3) 12 S	0.5	2.0	0.5	2.0	0.5	0.5	6.5
E	7	231	FL (3) 12 S	0.8	1.2	0.8	1.2	0.8	0.8	7.2
B	6	182	FL (3) 12 S	1.0	1.0	1.0	3.0	1.0	1.0	5.0
4	8	72	FL (2+1) 12 S	0.8	1.2	0.8	2.4	0.8	0.8	6.0
5	8	88	FL (2+1) 12 S	1.0	1.0	1.0	4.0	1.0	1.0	4.0
-	-	272	FL (3) 12.5 S	0.5	1.0	0.5	1.0	0.5	0.5	9.0
-	-	289	FL (3) 13 S	0.4	2.1	0.4	2.1	0.4	0.4	7.6
-	-	296	LFL + FL(2) 13 S	6.0	1.0	2.0	1.0	2.0	1.0	1.0
1	8	24	FL (2+1) 13.5 S	1.0	1.0	1.0	4.0	1.0	1.0	5.5
-	-	307	FL (3) 14.5 S	0.5	1.0	1.5	3.0	0.5	0.5	9.0
F	7	247	FL (3) 15 S	0.3	1.7	0.3	1.7	0.3	0.3	10.7
9	D	157	FL (3) 15 S	0.4	1.0	0.4	1.0	0.4	0.4	11.8
0	8	8	FL (3) 15 S	0.5	1.5	0.5	1.5	0.5	0.5	10.5
-	-	259	FL (3) 15 S	0.5	2.0	0.5	2.0	0.5	0.5	9.5
-	-	260	FL (3) 15 S	1.0	1.0	1.30	1.0	1.0	1.0	10.0
F	8	248	FL (2+1) 15 S	0.6	0.3	0.6	0.3	1.4	1.4	11.8
0	9	9	FL (2+1) 15 S	0.7	0.5	0.7	0.5	1.9	1.9	10.7
1	9	25	FL (2+1) 15 S	0.7	0.7	0.7	0.7	2.1	2.1	10.1
6	8	104	FL (2+1) 15 S	1.0	2.0	1.0	5.0	1.0	1.0	5.0
-	-	265	FL (2+1) 15 S	1.3	0.7	1.3	0.7	3.3	3.3	7.7
-	-	264	FL (2+1) 15.75 S	0.55	0.35	0.55	0.35	1.45	1.45	12.5
1	C	28	VQ (3) 15 S	0.1	0.5	0.1	0.5	0.1	0.1	13.7
-	-	313	FL (2) + LFL 16 S	2.0	2.0	2.0	2.0	6.0	2.0	2.0
4	B	75	FL (3) 20 S	0.5	3.0	0.5	3.0	0.5	0.5	12.5
3	B	59	FL (3) 20 S	0.5	1.5	0.5	1.5	0.5	0.5	15.5
-	-	263	FL (3) 20 S	0.5	2.0	0.5	2.0	0.5	0.5	12.0
5	B	91	FL (3) 20 S	0.8	1.2	0.8	1.2	0.8	0.8	15.2
6	B	107	FL (3) 20 S	1.0	1.0	1.0	1.0	1.0	1.0	15.0

SWITCH		IR		FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF
A	B	Controller										
-	-	271	VQ (4) 2 S	0.10	0.13	0.10	0.13	0.10	0.13	0.10	0.13	1.21
B	F	191	VQ (4) 4 S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	2.3
B	D	189	Q (4) 6 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	2.7
8	D	141	Q (4) 6 S	0.4	0.6	0.4	0.6	0.4	0.6	0.4	0.6	2.6
-	-	299	FL (1+3) 8 S	1.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	3.5
-	-	309	FL (4) 7 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	3.7
1	D	29	FL (4) 10 S	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	5.0
2	D	45	FL (4) 10 S	0.8	1.2	0.8	1.2	0.8	1.2	0.8	1.2	3.2
F	E	254	Q (4) 10 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	6.7
-	-	300	FL (4) 10 S	1.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	4.5
-	-	312	FL (4) 11 S	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	4.5
B	E	190	FL (4) 12 S	0.3	1.7	0.3	1.7	0.3	1.7	0.3	1.7	5.7
4	F	79	FL (4) 12 S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	8.5
C	E	206	FL (4) 12 S	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	5.5
3	D	61	FL (4) 12 S	0.8	1.2	0.8	1.2	0.8	1.2	0.8	1.2	5.2
A	D	173	Q (4) 12 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	8.7
4	D	77	FL (4) 15 S	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	8.5
8	E	142	FL (4) 15 S	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	8.0
7	D	125	FL (4) 15 S	1.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	10.5
D	E	222	FL (4) 16 S	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	9.5
-	-	314	FL (3+1) 18 S	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	4.5
-	-	304	FL (4) 19 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	15.7
C	D	205	FL (4) 20 S	0.3	3.0	0.3	3.0	0.3	3.0	0.3	3.0	9.8
5	D	93	FL (4) 20 S	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	13.5
0	D	13	FL (4) 20 S	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	10.5
3	F	63	FL (4) 20 S	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	9.5
0	F	15	Q (4) 20 S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	16.5
-	-	263	FL (4) 20 S	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0	12.0
E	E	238	Q (4) 28 S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	24.5
6	F	111	FL (4) 30 S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	26.5

SWITCH		IR		FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
A	B	Controller												
D	D	221	Q (5) 7 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	2.7
-	-	310	Q (5) 9 S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	4.5
E	D	237	Q (5) 10 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	5.7
E	8	232	FL (5) 12 S	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	3.5
-	-	276	FL (5) 16 S	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	0.5	1.5	7.5
5	F	95	FL (5) 20 S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	15.5
9	F	159	FL (5) 20 S	0.8	1.2	0.8	1.2	0.8	1.2	0.8	1.2	0.8	1.2	11.2
9	E	158	FL (5) 20 S	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	11.0

SWITCH		IR		FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
A	B	Controller												
F	D	253	Q (6) 10 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	4.7
A	F	175	FL (6) 15 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	9.7
7	F	127	FL (6) 15 S	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	0.5	1.0	7.0

SWITCH		IR Controller	FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
A	B																
6	E	110	VQ (6) + LFL 10 S	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	2.0	5.0
7	E	126	VQ (6) + LFL 10 S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	2.0	4.4
2	F	47	Q (6) + LFL 15 S	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	2.0	7.0
2	E	46	Q (6) + LFL 15 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	2.0	7.0
3	E	62	Q (6) + LFL 15 S	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	2.0	5.8
-	-	258	FL (6 + 1) 15 S	0.35	0.65	0.35	0.65	0.35	0.65	0.35	0.65	0.35	0.65	0.35	0.65	1.05	7.95
-	-	292	FL (6) + LFL 15 S	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	2.0	5.8
-	-	262	FL (6) + LFL 15 S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2.0	7.0
8	F	143	VQ (6) + LFL 15 S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	2.0	9.4

SWITCH		IR Controller	FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
A	B																		
-	-	275	FL (3+5) 12.2 S	0.9	0.3	0.9	1.0	0.9	0.3	0.3	0.3	1.0	0.3	0.3	0.3	0.3	4.5	-	-
4	E	78	VQ (9) 10 S	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	0.3	0.2	5.8
5	E	94	VQ (9) 10 S	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	4.9
1	F	31	Q (9) 15 S	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	0.8	0.2	6.8
0	E	14	Q (9) 15 S	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	0.7	0.3	6.7
-	-	267	Q (9) 15 S	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	6.5
1	E	30	Q (9) 15 S	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	4.8
-	-	291	FL (9) 32.92 S	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	0.4	0.8	0.4	

SWITCH		IR Controller	FLASH CODE	ON	OFF	ON	OFF	ON	OFF	ON	OFF
A	B										
MORSE CODE () INDICATES LETTER											
7	8	120	MO (A) 6 S	0.3	0.6	1.0	4.1				
7	B	123	MO (A) 8 S	0.4	0.6	2.0	5.0				
8	8	136	MO (A) 8 S	0.8	1.2	2.4	3.6				
B	8	184	MO (U) 10 S	0.3	0.7	0.3	0.7	0.9	7.1		
C	8	200	MO (U) 10 S	0.4	0.6	0.4	0.6	1.2	6.8		
D	8	216	MO (U) 10 S	0.5	0.5	0.5	0.5	1.5	6.5		
9	8	152	MO (A) 10 S	0.5	0.5	1.5	7.5				
8	9	137	MO (D) 10 S	5.0	1.0	1.0	1.0	1.0	1.0		
A	8	168	MO (A) 15 S	0.5	1.5	2.0	11.0				
F	8	248	MO (U) 15 S	0.6	0.3	0.6	0.3	1.4	11.8		
0	9	9	MO (U) 15 S	0.7	0.5	0.7	0.5	1.9	10.7		
1	9	25	MO (U) 15 S	0.7	0.7	0.7	0.7	2.1	10.1		
7	D	125	MO (B) 15 S	1.5	0.5	0.5	0.5	0.5	0.5	0.5	10.5



Notes

Other Sealite Products Available



**Marine Lanterns
(1–19NM)**



**Monitoring
& Control Systems**



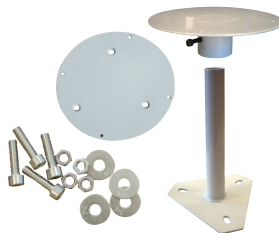
Bridge & Barge Lights



**Marine Buoys
(up to 3m in diameter)**



Area Lighting



**Mooring Systems
& Accessories**