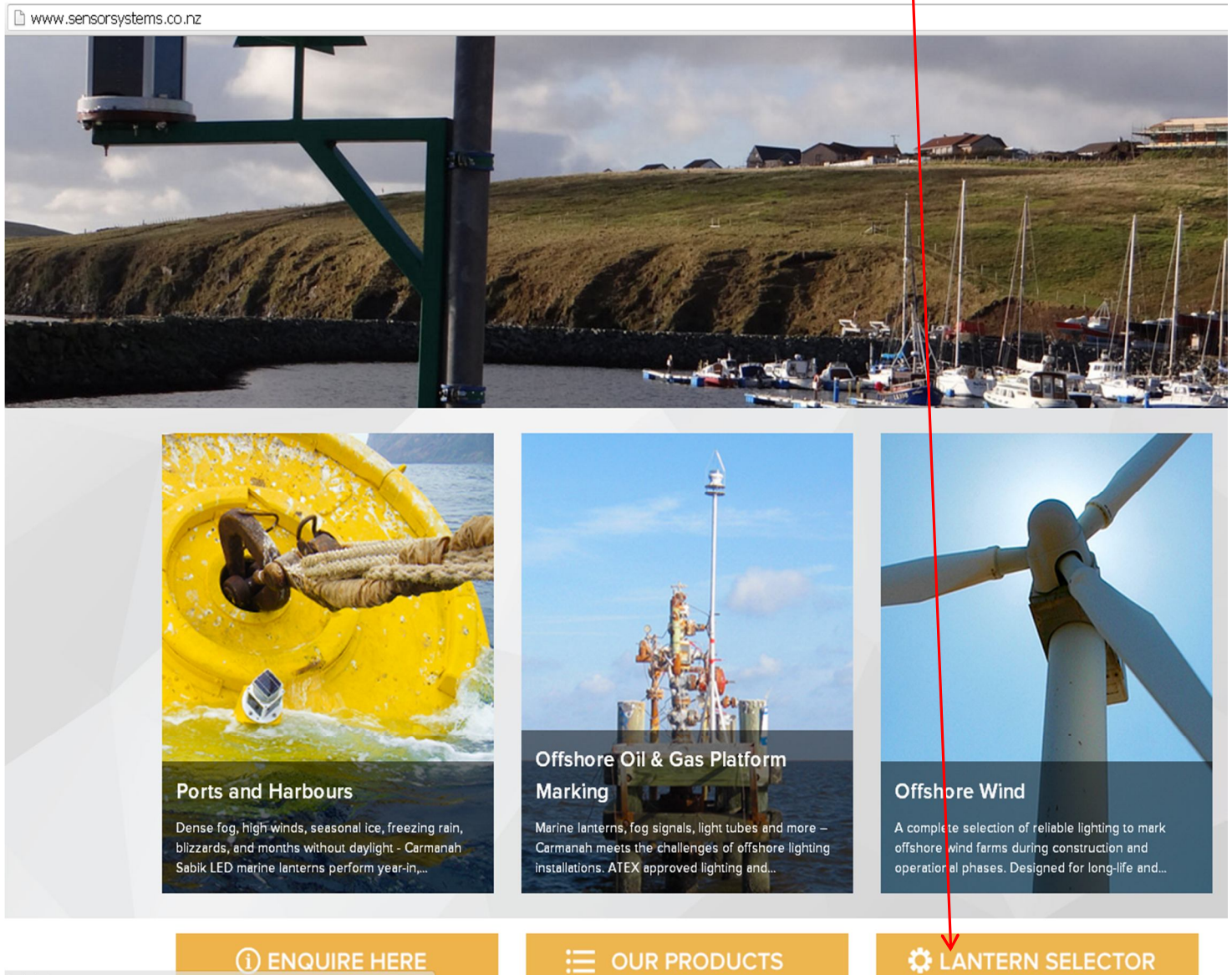


Guide for using the On-Line Tool to select the correct Carmanah Self Contained Marine Lantern for your Application.

1. Log on to www.sensorsystems.co.nz
2. On the Home Page , Scroll down and Click on the **Lantern Selector Icon**



This screen will come up. Click on **change location** to enter your location.

Marine Solar Lanterns

https://tools.carmanah.com/src/web/MarineSelector.htm

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Marine Lantern Selector Tool

Welcome to the Carmanah / Sabik Marine Lantern Selector. Select a location for your lanterns and try different product configurations. Carmanah / Sabik Marine offers the most complete range of marine signaling products, in the world. Read more about this tool by scrolling down to the [about section](#).

Change Location

Address: Latitude: Longitude

Flash Character ☐ Explain

☒ Categories Common 064 : Fl 4s, 12.5%

☐ Codes 064 : Fl 4s, 12.5%

☐ GPS Flash Synchronization

☒ Seek best performance, or

☐ Select a target intensity or range

☒ Range (NM) 1 nm 1 cd

☐ Eff. Intensity (cd)

LED Colour: Red

Transmissivity: 0.74

Run Simulation

☒ Include 500 Series

Model Valid Sustain Intensity Config. ainable

M550

☒ Include 600 Series

Model Valid Sustain Intensity Config. ainable

M650H

☒ Include 800 Series

Model Valid Sustain Intensity Config. ainable

M850 60X Standard

M850 60X Wide

M850 96E Standard

M850 96E Wide

M550
Please set the location for your project.

M650H
Please set the location for your project.

M850 60X Standard
Please set the location for your project.

M850 60X Wide
Please set the location for your project.

[product page](#)

- 8° Divergence
- Up to 3NM @ Tc=0.74
- Up to 26 cd (white LED)
- Simple two bolt installation or optional pole-mount accessory
- 0.37 kg (0.8 lbs)
- 40 flash patterns
- 3 replaceable, high-temperature NiMH AA batteries
- Life expectancy is 15 years

[product page](#)

- Up to 60 candela IALA peak intensity
- over 4-nautical miles
- Greater than 8° vertical divergence
- 169 mm ht. 176 mm dia.
- 1.58 kg
- GPS flash synchronization

[product page](#)

- 8° Divergence
- Up to 7.5NM @ Tc=0.74
- Up to 387 cd
- 226 mm ht. 235 mm dia
- 4.5 kg
- Optional GPS Flash Synchronization
- Optional External Charge Port

[product page](#)

- 10° Divergence
- Up to 7.5NM @ Tc=0.74
- Up to 387 cd
- 226 mm ht. 235 mm dia
- 4.5 kg
- Optional GPS Flash Synchronization
- Optional External Char Port

Type your location in the “**Search Address**” field, and then click on “**Search**”

e.g. Suva, Fiji

The screenshot shows the 'Marine Lantern Selector Tool' web application. At the top, the Carmanah logo and tagline 'we put solar to work' are visible. The main heading is 'Marine Lantern Selector Tool'. Below this, a 'Location' section contains instructions: 'Click and drag the map marker to the location for your solar product. Or search for an address or postal code. When the marker is where you want it press Continue to return to the selector tool.' A search bar labeled 'Search Address:' contains the text 'suva, fiji'. To the right of the search bar are 'Search' and 'Center Marker' buttons. Below the search bar is a map of New Zealand with a red location pin on the North Island. To the right of the map, the 'Project Location' section displays the following information: Latitude: -36.87, Longitude: 174.77, and Address: Auckland 1024, New Zealand. Below this information is an orange 'Continue' button. At the bottom of the page, there is a footer with contact information and a 'Tools' link. Red arrows from the text above point to the search bar, the map, and the 'Continue' button.

Location

Click and drag the map marker to the location for your solar product. Or search for an address or postal code. When the marker is where you want it press Continue to return to the selector tool.

Search Address:

Project Location

Latitude: -36.87
Longitude: 174.77
Address: Auckland 1024, New Zealand

www.carmanah.com
Click here to find where to buy Carmanah products.
sales@carmanah.com Toll-free: 1-877-722-8877
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Carmanah products are [Buy American Compliant](#).
If you are a U.S. Government employee you can purchase our products under GSA. Please [email](#), or call and ask for our GSA representative.

[Tools](#)

Once this done, click on “**Continue**”

You should **now** see **your location** on the screen

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Marine Lantern Selector Tool

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[Change Location](#)

Address: Suva, Fiji
Latitude: -18.14 Longitude: 178.44

Flash Character ☐ Explain
☒ Categories: Common
 064 : Fl 4s, 12.5%
☐ Codes: 064 : Fl 4s, 12.5%

☐ GPS Flash Synchronization

☒ Seek best performance, or
☐ Select a target intensity or range
☒ Range (NM): 1 nm 1 cd
☐ Eff. Intensity (cd):

LED Colour: Red
 Transmissivity: 0.74

☒ Include 500 Series

Model	Valid Config.	Sust-ainable	Intensity
M550	✓	✓	10.6
M502			

☒ Include 600 Series


Model	Valid Config.	Sust-ainable	Intensity
M650	✓	✓	17.9
M650H	✓	✓	21.9

☒ Include 800 Series

Model	Valid Config.	Sust-ainable	Intensity
M850 60V Standard			19.0

M550

Setting "NA"
 Duty Cycle Limit 100%
 Effective Intensity 10.6
 Range (T=0.74) 2.6
 Days of Autonomy 5.4
 Minimum ALR 2.5
[print view](#)




[product page](#)

- 8° Divergence
- Up to 3NM @ Tc=0.74
- Up to 26 cd (white LED)
- Simple two bolt installation or optional pole-mount accessory
- 0.37 kg (0.8 lbs)
- 40 flash patterns
- 3 replaceable, high-temperature NiMH AA batteries
- Life expectancy is 15

M502

The M502 is suitable for up to 1 nautical mile.




[product page](#)

- Up to 1-nautical mile
- 112 mm ht. 156 mm dia.
- 1.1 kg

M650

Setting "NA"
 Duty Cycle Limit 100%
 Effective Intensity 17.9
 Range (T=0.74) 3.2
 Days of Autonomy 8.9
 Minimum ALR 2.0
[print view](#)




[product page](#)

- Up to 44 candela IALA peak intensity
- up to 4-nautical miles
- Greater than 8° vertical divergence
- 169 mm ht. 176 mm dia.
- 1.58 kg
- GPS flash synchronization

M650H

Setting "NA"
 Duty Cycle Limit 100%
 Effective Intensity 21.9
 Range (T=0.74) 3.4
 Days of Autonomy 13.2
 Minimum ALR 3.1
[print view](#)



[product page](#)

- Up to 60 candela IALA peak intensity
- over 4-nautical miles
- Greater than 8° vertical divergence
- 169 mm ht. 176 mm dia.
- 1.58 kg
- GPS flash synchronization

We now need to enter the following inputs for your particular application:

- The **Flash Code** that the Lantern will be using
- The **Colour** of the Lantern
- The **TC factor** to be used (use 0.74 or 0.80 and not 0.85)

So, for example, Code 066, Tc =0.80, Colour is White

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[Change Location](#)

Address: Suva, Fiji
Latitude: -18.14 Longitude 178.44

Flash Character ☐ Explain

☐ Categories

☒ Codes

☐ GPS Flash Synchronization

☒ Seek best performance, or

☐ Select a target intensity or range

☒ Range (NM) nm cd

☐ Eff. Intensity (cd)

LED Colour:

Transmissivity:

☐ Include 500 Series

Model	Valid Config.	Sust-ainable	Intensity
M550	✓	✓	16.6
M502			

☒ Include 600 Series

Model	Valid Config.	Sust-ainable	Intensity
M650	✓	✓	34.3
M650H	✓	✓	50.0

☒ Include 800 Series

Model	Valid Config.	Sust-ainable	Intensity
M850 60X Standard	✓	✓	149.1
M850 60X Wide	✓	✓	128.2
M850 96E Standard	✓	✓	152.1
M850 96E Wide			120.8

M650	M650H	M850 60X Standard	M850 60X Wide
Setting "NA"	Setting "NA"	Setting "NA"	Setting "NA"
Duty Cycle Limit 100%	Duty Cycle Limit 100%	Duty Cycle Limit 100%	Duty Cycle Limit 100%
Effective Intensity 34.3	Effective Intensity 50.0	Effective Intensity 149.1	Effective Intensity 128.2
Range (T=0.80) 4.4	Range (T=0.80) 4.9	Range (T=0.80) 6.9	Range (T=0.80) 6.6
Days of Autonomy 4.1	Days of Autonomy 4.9	Days of Autonomy 6.0	Days of Autonomy 6.0
Minimum ALR 1.3	Minimum ALR 1.6	Minimum ALR 1.0	Minimum ALR 1.0
print view	print view	print view	print view
product page	product page	product page	product page
<ul style="list-style-type: none"> Up to 44 candela IALA peak intensity up to 4-nautical miles Greater than 8° vertical divergence 169 mm ht. 176 mm dia. 1.58 kg GPS flash synchronization 	<ul style="list-style-type: none"> Up to 60 candela IALA peak intensity over 4-nautical miles Greater than 8° vertical divergence 169 mm ht. 176 mm dia. 1.58 kg GPS flash synchronization 	<ul style="list-style-type: none"> 8° Divergence Up to 7.5NM @ Tc=0.74 Up to 387 cd 226 mm ht. 235 mm dia 4.5 kg Optional GPS Flash Synchronization Optional External Charge Port Optional External Gland (For an external PV connection) 	<ul style="list-style-type: none"> 10° Divergence Up to 7.5NM @ Tc=0.74 Up to 387 cd 226 mm ht. 235 mm dia 4.5 kg Optional GPS Flash Synchronization Optional External Charge Port Optional External Gland (For an external PV connection)

Once this has been entered, the software will calculate the options and display the suitable lantern/s and their specific information including Intensity, Range and Autonomy. There will usually be multiple options shown.

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[Change Location](#)

Address: Suva, Fiji
Latitude: -18.14 Longitude: 178.44

Flash Character ☐ Explain
☐ Categories: Common
☒ Codes: 064 : Fl 4s, 12.5%

☐ GPS Flash Synchronization

☒ Seek best performance, or
☐ Select a target intensity or range
☒ Range (NM): 1 nm 1 cd
☐ Eff. Intensity (cd):

LED Colour: White
Transmissivity: 0.80

☐ Include 500 Series
Model: Valid Sust- Intensity
Config. ainable
M550
M502

☒ Include 600 Series
Model: Valid Sust- Intensity
Config. ainable
M650 ✓ ✓ 29.6
M650H ✓ ✓ 43.1

☒ Include 800 Series
Model: Valid Sust- Intensity
Config. ainable
M850 60X Standard 244.9

Model	Setting	"NA"
M650	Duty Cycle Limit	100%
M650	Effective Intensity	29.6
M650	Range (T=0.80)	4.1
M650	Days of Autonomy	8.2
M650	Minimum ALR	1.9
M650H	Duty Cycle Limit	100%
M650H	Effective Intensity	43.1
M650H	Range (T=0.80)	4.7
M650H	Days of Autonomy	9.7
M650H	Minimum ALR	2.2
M850 60X Standard	Duty Cycle Limit	100%
M850 60X Standard	Effective Intensity	244.9
M850 60X Standard	Range (T=0.80)	7.9
M850 60X Standard	Days of Autonomy	6.0
M850 60X Standard	Minimum ALR	1.0
M850 60X Wide	Duty Cycle Limit	100%
M850 60X Wide	Effective Intensity	210.6
M850 60X Wide	Range (T=0.80)	7.6
M850 60X Wide	Days of Autonomy	6.0
M850 60X Wide	Minimum ALR	1.0

[product page](#) [product page](#) [product page](#) [product page](#)

- Up to 44 candela IALA peak intensity
- up to 4-nautical miles
- Greater than 8° vertical divergence
- 169 mm ht. 176 mm dia.
- 1.58 kg
- GPS flash synchronization

- Up to 60 candela IALA peak intensity
- over 4-nautical miles
- Greater than 8° vertical divergence
- 169 mm ht. 176 mm dia.
- 1.58 kg
- GPS flash synchronization

- 8° Divergence
- Up to 7.5NM @ Tc=0.74
- Up to 387 cd
- 226 mm ht. 235 mm dia
- 4.5 kg
- Optional GPS Flash Synchronization
- Optional External Charge Port
- Optional External Gland (For an external PV connection)

- 10° Divergence
- Up to 7.5NM @ Tc=0.74
- Up to 387 cd
- 226 mm ht. 235 mm dia
- 4.5 kg
- Optional GPS Flash Synchronization
- Optional External Charge Port
- Optional External Gland (For an external PV connection)

Click arrows to move to next screens to display more options

See below for further options **for same input data:**

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Change Location

Address: Suva, Fiji
Latitude: -18.14 Longitude 178.44

Flash Character ☐ Explain

☐ Categories Common

☒ Codes 064 : Fl 4s, 12.5%

☐ GPS Flash Synchronization

☒ Seek best performance, or

☐ Select a target intensity or range

☒ Range (NM) 1 nm 1 cd

☐ Eff. Intensity (cd)

LED Colour: White

Transmissivity: 0.80

☐ Include 500 Series

Model	Valid Config.	Sust-ainable	Intensity
M550			
M502			

☒ Include 600 Series

Model	Valid Config.	Sust-ainable	Intensity
M650	✓	✓	29.6
M650H	✓	✓	43.1

☒ Include 800 Series

Model	Valid Config.	Sust-ainable	Intensity
M850 96E Standard			244.9

M850 96E Standard

Setting "NA"

Duty Cycle Limit 100%


Effective Intensity 244.9

Range (T=0.80) 7.9

Days of Autonomy 9.5

Minimum ALR 1.0

[print view](#)



[product page](#)

- 8° Divergence
- Up to 7.5NM @ Tc=0.74
- Up to 387 cd
- 226 mm ht. 235 mm dia
- 5.3 kg
- Optional GPS Flash Synchronization
- Optional External Charge Port
- Optional External Gland (For an external PV connection)

M850 96E Wide

Setting "NA"

Duty Cycle Limit 100%


Effective Intensity 210.6

Range (T=0.80) 7.6

Days of Autonomy 9.5

Minimum ALR 1.0

[print view](#)



[product page](#)

- 10° Divergence
- Up to 7.5NM @ Tc=0.74
- Up to 387 cd
- 226 mm ht. 235 mm dia
- 5.3 kg
- Optional GPS Flash Synchronization
- Optional External Charge Port
- Optional External Gland (For an external PV connection)

M860 96E Standard

Setting "NA"

Duty Cycle Limit 100%


Effective Intensity 321.5

Range (T=0.80) 8.5

Days of Autonomy 4.9

Minimum ALR 1.0

[print view](#)



[product page](#)

- 8° Divergence
- Up to 7.8NM @ Tc=0.74
- Up to 475 cd
- 328 mm ht. 235 mm dia
- 6.4 kg
- Optional GPS Flash Synchronization
- Optional External Charge Port
- Optional External Gland (For an external PV connection)

M860 96E Wide

Setting "NA"

Duty Cycle Limit 100%


Effective Intensity 274.7

Range (T=0.80) 8.1

Days of Autonomy 4.9

Minimum ALR 1.0

[print view](#)

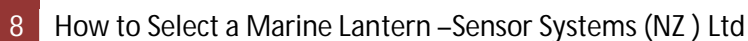


[product page](#)

- 10° Divergence
- Up to 7.8NM @ Tc=0.74
- Up to 475 cd
- 328 mm ht. 235 mm dia
- 6.4 kg
- Optional GPS Flash Synchronization
- Optional External Charge Port
- Optional External Gland (For an external PV connection)

Note changed information – higher level options

Note changed information:



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Address: Suva, Fiji
Latitude: -18.14 Longitude: 178.44

Flash Character ☐ Explain
☐ Categories: Common
 064 : Fl 4s, 12.5%
☐ Codes: 064 : Fl 4s, 12.5%





☐ GPS Flash Synchronization
☒ Seek best performance, or
☐ Select a target intensity or range
☒ Range (NM): 1 nm 1 cd
☐ Eff. Intensity (cd):

LED Colour: Red
Transmissivity: 0.80

☐ Include 500 Series
 Model Valid Sust- Intensity
 Config. ainable
 M550
 M502

☒ Include 600 Series
 Model Valid Sust- Intensity
 Config. ainable
 M650 17.9
 M650H 21.9

☒ Include 800 Series
 Model Valid Sust- Intensity
 Config. ainable
 M850 184.9

M850 96E Standard	M850 96E Wide	M860 96E Standard	M860 96E Wide
Setting "NA"	Setting "NA"	Setting "NA"	Setting "NA"
Duty Cycle Limit 100%	Duty Cycle Limit 100%	Duty Cycle Limit 100%	Duty Cycle Limit 100%
Effective Intensity 184.9	Effective Intensity 156.6	Effective Intensity 184.9	Effective Intensity 156.6
Range (T=0.80) 7.3	Range (T=0.80) 7.0	Range (T=0.80) 7.3	Range (T=0.80) 7.0
Days of Autonomy 7.4	Days of Autonomy 7.4	Days of Autonomy 4.9	Days of Autonomy 4.9
Minimum ALR 1.0	Minimum ALR 1.0	Minimum ALR 1.0	Minimum ALR 1.0
print view	print view	print view	print view
			
product page	product page	product page	product page
<ul style="list-style-type: none"> 8° Divergence Up to 7.5NM @ Tc=0.74 Up to 387 cd 226 mm ht. 235 mm dia 5.3 kg Optional GPS Flash Synchronization Optional External Charge Port Optional External Gland (For an external PV connection) 	<ul style="list-style-type: none"> 10° Divergence Up to 7.5NM @ Tc=0.74 Up to 387 cd 226 mm ht. 235 mm dia 5.3 kg Optional GPS Flash Synchronization Optional External Charge Port Optional External Gland (For an external PV connection) 	<ul style="list-style-type: none"> 8° Divergence Up to 7.8NM @ Tc=0.74 Up to 475 cd 328 mm ht. 235 mm dia 6.4 kg Optional GPS Flash Synchronization Optional External Charge Port Optional External Gland (For an external PV connection) 	<ul style="list-style-type: none"> 10° Divergence Up to 7.8NM @ Tc=0.74 Up to 475 cd 328 mm ht. 235 mm dia 6.4 kg Optional GPS Flash Synchronization Optional External Charge Port Optional External Gland (For an external PV connection)

Red Colour gives a lower range than White.

You can alter the information and see the results that this gives.

However, we strongly recommend that you consult with us BEFORE you purchase any lantern to confirm your requirements for your application.

So how do you decide which Lantern to select?

As there are often range of options, it is sometimes unclear as to which is the best.

However, some factors to consider are:

1. What application will the lantern be used for – Buoy, fixed structure etc
2. Autonomy factor – the greater the autonomy the longer the battery will provide power in low light conditions
3. Will the lantern be re-deployed at a later stage
4. Power supply – Self Contained or require external power – AC or Solar
5. Cost of lanterns

To help you decide these factors, please contact Sensor Systems (NZ) Ltd and we will be happy to help

Please Contact us on:

Phone: (09) 275-4578

Email: info@sensorsystems.co.nz

Web: www.sensorsystems.co.nz

