



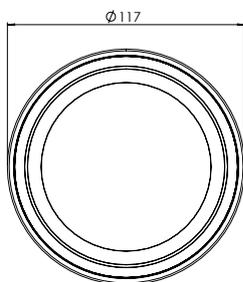
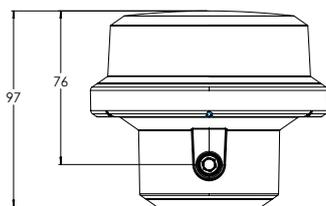
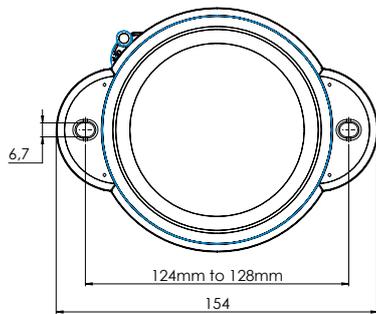
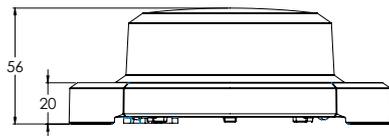
M550

Self-contained LED lantern, 1 to 2 NM range

This miniature solar LED marine lantern offers leveraging custom optics, high-efficiency solar panels and premium materials. Now with replaceable, recyclable batteries this lantern provides excellent value and reliable operation over the long term. Battery life expectancy is five years with product life up to 10 years and a three-year warranty. Ideal for marine aids-to-navigation, marina lighting, dock lighting, and port lighting. To view performance in your installation location, visit www.sabik-marine.com ->Marine Selector Tool

- 40 user-adjustable flash patterns and programmable intensities
- Replaceable, recyclable, high-temperature-rated NiMH AA batteries
- Automatic Light Control (ALC) 2.0; achieve optimal intensities throughout the year
- Premium grade, UV resistant polycarbonate body and lens material
- IP 68 rated
- Ventilated battery compartment





Optical performance

Maximum fixed intensity

18 cd	23 cd	29 cd	25 cd	8 cd
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Main Technical Specification

Construction	Premium grade, UV resistant polycarbonate lens/head and polycarbonate/polysiloxane co-polymer base.
Lens visual/Mechanical diameter	102 mm
Lens material	UV stabilized polycarbonate
Light source	High Flux Surface Mount LED
Solar module	High efficiency cells ; 0,6 W
Battery	3 NiMH AA cells; 3.6 V / 1.1 Ah capacity
Degree of ingress protection	IP 68
Weight	Flange Mount: 0.37 kg (0.8 lbs) Pole Mount: 0.40 kg (0.9 lbs)
Overall height	56 mm (flange mount), 97 mm (pole mount)
Overall width	155 mm dia.
Installation	2 x M6 on 128 mm dia.

Order Overview M550

Product codes

Colour	M550 Flange	M550 Flange switched	M550 Pole
red	M550RF	M550RF-S	M550RP
green	M550GF	M550GF-S	M550GP
white	M550WF	M550WF-S	M550WP
yellow	M550YF	M550YF-S	M550YP
blue	M550BF	M550BF-S	M550BP

Option matrix

M550 Flange Mount - Switched	2-bolt mount with ON/OFF switch
M550 Flange Mount	2-bolt mount
M550 Pole Mount	Pole mount

Accessories

59935	Pole Mount Replacement/Conversion Kit
70943	Flange Mount Replacement/Conversion Kit
70937	Switched Kit (compatible with Flange Mount only)
70955	Replacement NiMH batteries
59934	Bird Deterrent (single)



M650H

Self-contained LED lantern for buoys and minor beacons, 2 to 4 NM Range

The M650H is a cost-effective, self-contained, high-performance, low-maintenance and easy-to-install solar LED marine lantern. The M650H features a replaceable battery pack that extends the service life beyond five years, reducing the total cost of ownership. Applications include: marine aids-to-navigation marking, marina lighting, dock lighting, and port lighting. To view performance in your installation location, visit www.sabik-marine.com ->Marine Selector Tool

- **Standard IALA colours**
red, green, white, yellow, blue
- **High-efficiency solar cells with bypass and blocking diode function. Maximum power point tracking (MPPT) for optimal energy collection**
- **Premium grade UV resistant, polycarbonate/ polysiloxane co-polymer body and lens material**
- **Colour-specific temperature corrected LED drivers provide consistent intensity under all operating conditions**
- **IP 68 rated. Double O-ring sealing with waterproof vent**
- **SLA battery**
- **Ventilated battery compartment**
- **Adjustable intensity and range**
- **Vertical divergence > 8° (FWHM)**
- **Programmable with On-Board User Interface, USB port, or optional wireless IR-Programmer**
- **Integrated event-log**
- **Optional ON/OFF switch**
- **Optional external charger**
- **Optional integrated GPS synchronization**



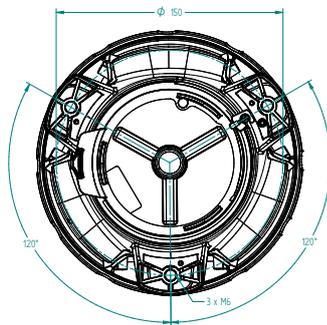
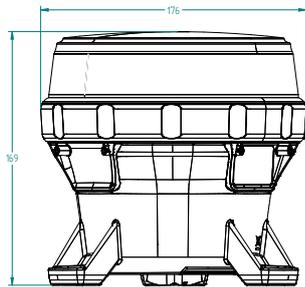
Optical performance

Maximum fixed intensity

31 cd	45 cd	60 cd	52 cd	15 cd
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Main Technical Specification

Lens visual/Mechanical diameter	165 mm
Lens material	UV stabilized Polycarbonate
Light source	High Power Light Emitting Diode (LED)
Vertical divergence	>8° (FWHM)
Solar module	High efficiency cells; bypass and blocking diodes; MPPT; 1.5 W
Battery	AGM sealed lead acid; 4.2 V / 5 Ah capacity
Degree of ingress protection	IP 68
Weight	1.58 kg
Overall height	169 mm
Overall width	176 mm dia.
Installation	3 x M6 on 150 mm dia.



Order Overview M650H

Product codes

Colour	M650H	M650H switched	M650H GPS	M650H switched GPS
red	M650HR	M650HR-S	M650HR-GPS	M650HR-SGPS
green	M650HG	M650HG-S	M650HG-GPS	M650HG-SGPS
white	M650HW	M650HW-S	M650HW-GPS	M650HW-SGPS
yellow	M650HY	M650HY-S	M650HY-GPS	M650HY-SGPS
blue	M650HB	M650HB-S	M650HB-GPS	M650HB-SGPS

Option matrix

M650H	
M650H Switched	ON/OFF switch
M650H Switched GPS	Includes GPS synchronization & ON/OFF switch
M650H GPS	Includes GPS synchronization

Accessories

57003	650 Bird Deterrent – Additional (1 ships with each lantern)
57392	650 Bottom Cover Replacement Pack Switched
57393	650 Bottom Cover Replacement Pack
59198	650 Bottom Cover Tool
72835	650 Battery Replacement Pack
59188	650 International Wall Charger Assembly
57394	650 USB Cable
69899	IR (Infrared) Programmer

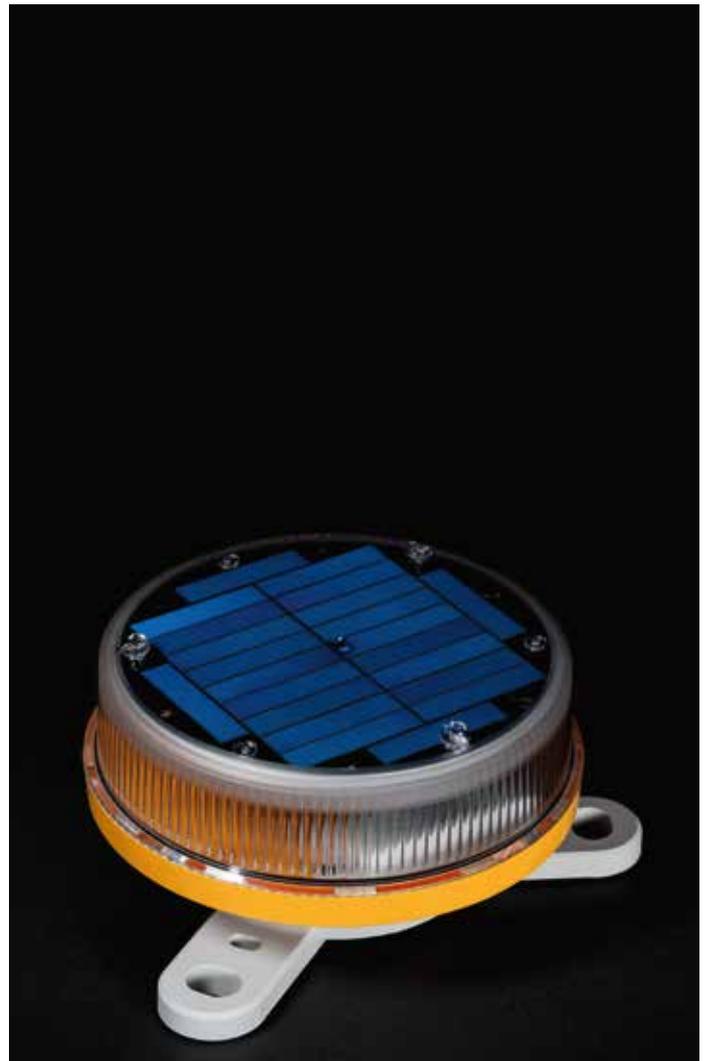


M660

Self-contained LED lantern for buoys and minor beacons, up to 4 NM Range

The M660 is a high-performance, longlife, easy-to-use and cost-effective self-contained solar LED marine lantern. The M660 features a Li-ion battery pack that extends the service life of the lantern up to eight years. M660 has four different mounting options and can be controlled with Bluetooth® Control. To view performance in your installation location, visit Marine Selector Tool in www.sabik-marine.com ->Marine Selector Tool

- **Standard IALA colours**
red, green, white, yellow, blue
- **Ventilated battery compartment**
- **Adjustable intensity and range**
- **Vertical divergence > 8° (FWHM)**
- **High-efficiency solar cells. Maximum Power Point Tracking (MPPT) for optimal energy collection**
- **Premium grade UV resistant, polycarbonate/poly siloxane co-polymer body and lens material**
- **IP 68 rated. O-ring sealing with waterproof vent**
- **Li-ion battery, optional dual pack**
- **Programmable with Bluetooth® Control and IR-Programmer**
- **Optional ON/OFF switch, external charger and charging port**
- **Built-in calendar function for automatic deactivation during off-season months**



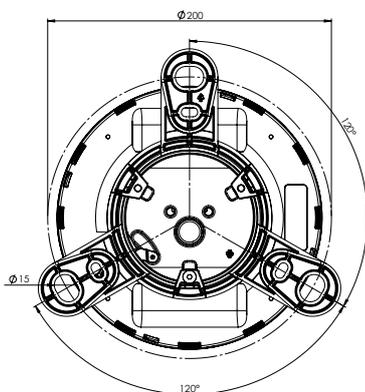
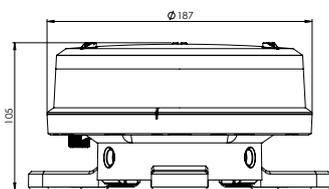
Optical performance

Maximum fixed intensity

40 cd	42 cd	71 cd	52 cd	18 cd
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Main Technical Specification

Lens visual/Mechanical diameter	177 mm
Lens material	UV stabilized Polycarbonate
Light source	High Power Light Emitting Diode (LED)
Vertical divergence	>8° (FWHM)
Solar module	High efficiency cells; MPPT; 2.5 W
Battery	Li-ion; 3.6 W / 6 Ah capacity; can be ordered with 1 or 2 battery packs
Degree of ingress protection	IP 68
Weight	0.8 kg
Overall height (excl. bird deterrents)	105 mm
Installation (adapter)	3 x M6 on 150mm and 3 x M12 on 200mm
Installation (pole mount)	70 or 72 diameter



Order Overview M660

Product codes

Colour	M660	M660 switched	M660 dual battery	M660 charge port
red	M660R	M660R-S	M660R-2B	M660R-C
green	M660G	M660G-S	M660G-2B	M660G-C
white	M660W	M660W-S	M660W-2B	M660W-C
yellow	M660Y	M660Y-S	M660Y-2B	M660Y-C
blue	M660B	M660B-S	M660B-2B	M660B-C

Option matrix

M660	
M660 Switched	ON/OFF switch
M660 Dual Battery	Dual Battery Pack
M660 Charge Port	With Charge Port

Accessories

69934	660 Bird Deterrent – Single
79848	Spare adapter (incl. screws)
79273	Optional switch
69885	660 International Wall Charger Assembly
69899	IR (Infrared) Programmer
38334	660 Standard Bolt Kit

Product code example: M660RSC2B

- **M660R** is Sabik/Carmanah code for M660 in red
- with a selection of switched with charge port and dual battery



M850

**Self-contained LED lantern,
3 to 6+ NM Range**

The M850 combines a compact, high-efficiency solar engine with premium components and a rugged design for best-in-class performance at an optimal price. This lantern is suitable for use in most solar locations. To view performance in your installation location, visit www.sabik-marine.com ->Marine Selector Tool

- Option for standard or wide divergences (for fixed or floating applications)
- Multiple cost-effective battery pack options suitable for a wide variety of installation locations
- Built-in calendar function for automatic deactivation during off-season months
- Top-mounted 4-character LED display with simple »tap to activate« functionality
- Premium grade, UV resistant polycarbonate lens material
- Environmentally friendly, super durable powder-coated aluminium chassis
- Adjustable intensity and range
- IP 68 rated
- GPS synchronized flash option
- Remote monitoring options available



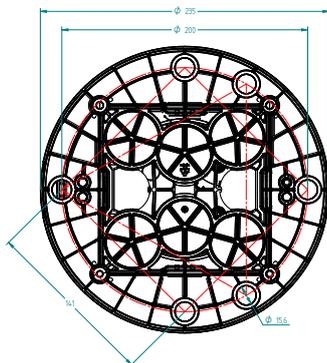
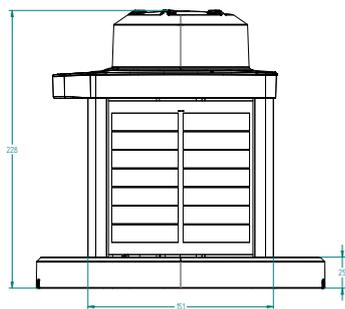
Optical performance

Maximum fixed intensity

M850	239 cd	290 cd	445 cd	320 cd
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Main Technical Specification

Lens visual/Mechanical diameter	111 mm
Construction	Premium grade, UV resistant polycarbonate lens/head and polycarbonate/polysiloxane co-polymer base
Light source	High Flux Surface Mount LEDs with colour-specific temperature-corrected LED driver
Vertical Divergence (FWHM)	8° (standard) or 10° (wide)
Solar modules	High-efficiency cells; MPPT; 4 x 1,7 W
Battery	Two replaceable, recyclable battery options, AMG sealed lead acid; 60 Wh / 6.3 V / 10 Ah capacity and 96 Wh / 6.3 V / 16 Ah capacity
Degree of ingress protection	IP 68 immersion
Weight	4.5 kg M850 60X 5.3 kg M850 96E
Overall height	226 mm
Overall width	235 mm dia.
Installation	3, 4 or 5 x M12 on 200 mm dia.
Charge port	Factory option
GPS sync	Factory option
Remote monitoring	Optional satellite monitoring



Order Overview M850

Product codes

Colour	M850 60X (GPS) (Sat. monitoring)	M850 96E (GPS) (Sat. monitoring)
red	M850R-60X (-GPS)(-MON)	M850R-96E (-GPS)(-MON)
green	M850G-60X (-GPS)(-MON)	M850G-96E (-GPS)(-MON)
white	M850W-60X (-GPS)(-MON)	M850W-96E (-GPS)(-MON)
yellow	M850Y-60X (-GPS)(-MON)	M850Y-96E (-GPS)(-MON)



M860

**Self-contained LED lantern,
4 to 7+ NM Range**

With a durable, large-format solar engine, the M860 is engineered for consistent, reliable performance at remote installations and in challenging insolation locations. This is a premium and full-featured lantern that is suitable for achieving longer ranges in challenging insolation locations. To view performance in your installation location, visit

www.sabik-marine.com ->Marine Selector Tool

- Option for standard or wide divergences (for fixed or floating applications)
- Multiple cost-effective battery pack options suitable for a wide variety of installation locations
- Built-in calendar function for automatic de-activation during off-season months
- Top-mounted 4-character LED display with simple »tap to activate« functionality
- Premium grade, UV resistant polycarbonate lens material
- Environmentally friendly, super durable powder-coated aluminium chassis
- Adjustable intensity and range
- IP 68 rated
- GPS synchronized flash option
- Remote monitoring options available



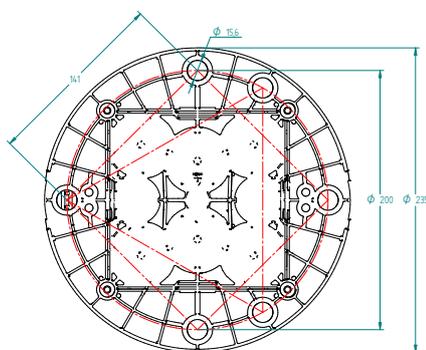
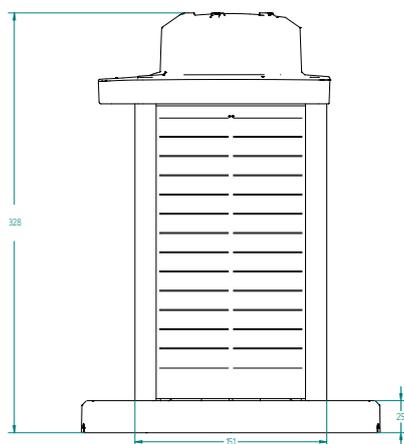
Optical performance

Maximum fixed intensity

M860	239 cd	290 cd	445 cd	320 cd
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Main Technical Specification

Lens visual/Mechanical diameter	111 mm
Construction	Premium grade, UV resistant polycarbonate lens/head and polycarbonate/polysiloxane co-polymer base
Light source	High Flux Surface Mount LEDs with colour-specific temperature-corrected LED driver
Vertical divergence (FWHM)	8° (standard) or 10° (wide)
Solar modules	High-efficiency cells; MPPT ; 4 x 3,8 W
Battery	Two replaceable, recyclable battery options, AGM sealed lead acid; 96 Wh / 6.3 V / 16 Ah capacity and 200 Wh / 8.4 V / 25 Ah capacity
Degree of ingress protection	IP 68 immersion
Weight	6.4 kg M860 96E 10.2 kg M860 200BC
Overall height	328 mm
Overall width	235 mm dia.
Installation	3, 4 or 5 x M12 on 200 mm dia.
Charge port	Factory option
GPS sync	Factory option
Remote monitoring	Optional satellite monitoring



Order Overview M860

Product codes

Colour	M860 96E (GPS) (Sat. monitoring) (with 96Wh battery)	M860 200BC (GPS) (Sat. monitoring) (with 200Wh battery)
red	M860R-96E (-GPS)(-MON)	M860R-200BC (-GPS)(-MON)
green	M860G-96E (-GPS)(-MON)	M860G-200BC (-GPS)(-MON)
white	M860W-96E (-GPS)(-MON)	M860W-200BC (-GPS)(-MON)
yellow	M860Y-96E (-GPS)(-MON)	M860Y-200BC (-GPS)(-MON)



VLB-5X-SS

Self-contained LED lantern for buoys and beacons up to 5,5 NM range

The VLB-5X-SS includes the latest LED technology, new battery technology, and an advanced charging algorithm, which supports the battery to perform well in extreme weather conditions.

Benefits include:

- Optical range – 5.5 NM
- Battery technology and advanced charging algorithm
- Excellent battery life in hot climates
- Excellent battery capacity in cold climates
- The 5X battery will continue to charge between -40°C and 65°C
- Five colours meeting IALA chromaticity requirements
- Light intensity automatically adjusts with flash character setting (Schmidt-Clausen)
- 12 options for day to night transition light levels
- More than 256 flash characters
- Calendar control of beacon operation
- Alarm output (system notification)
- Available with GPS synchronization



Optical Performance

Maximum peak intensity

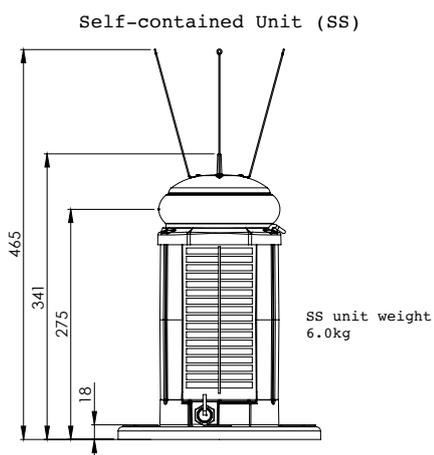
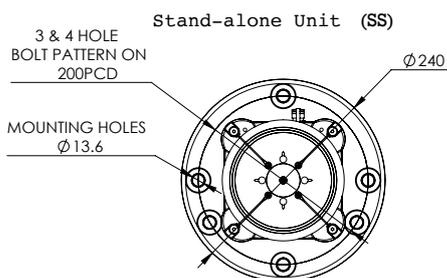
7°	177cd	177cd	177cd	157cd
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Optical specification

Light source	High Power Light Emitting Diode (LED)
Vertical divergence	7° @ 50% peak
Temperature control	LEDs monitored for constant intensity control and over temperature protection

Main Technical Specification

Nominal Range	Up to 5.5 NM
Lens	Moulded acrylic (PMMA)
Base	Injection Moulded UV Stabilized Nylon 6/6 with 30% glass fill
Body	Injection Moulded UV Stabilized Nylon 6/6 with 30% glass fill
Designed service life	10 years (excluding battery)
Weight	6 kg
Flash character	256 standard characters plus custom character
Temperature range	-40° – +50°C
Battery capacity	12 Ah
Voltage	12 VDC (9-18 VDC)
Degree of protection	IP 68



Order Overview VLB-5X-SS

Option matrix

DP-AL-SW	Dataport, alarm/monitor & wire synch factory option
GS	Internal GPS sync module as factory option



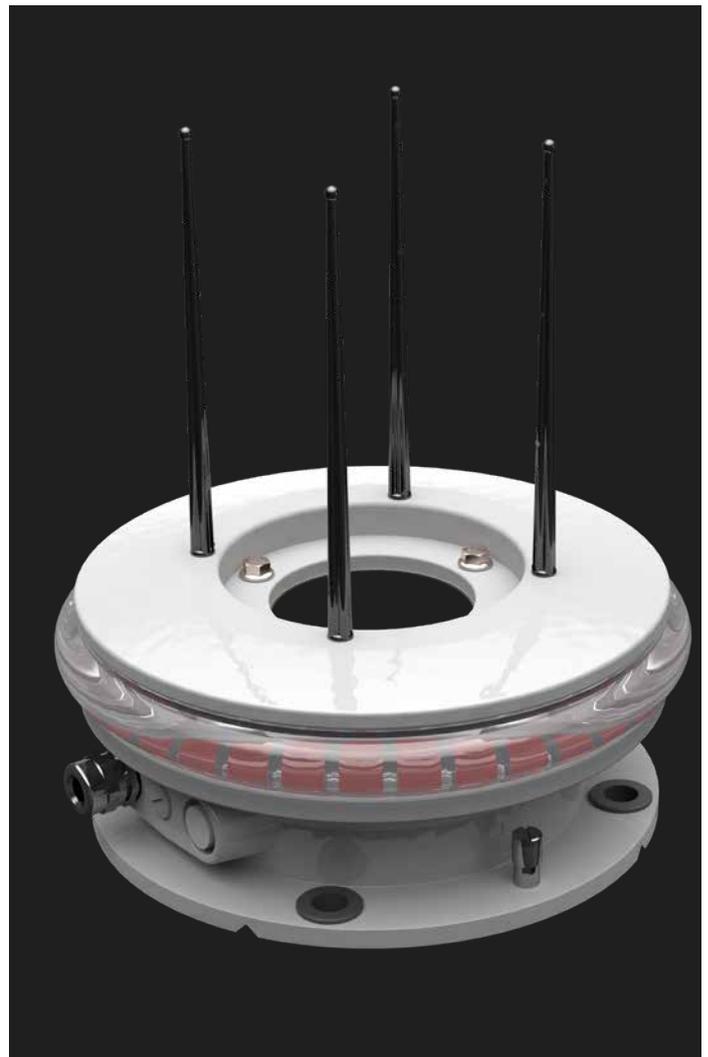
VLB-44X

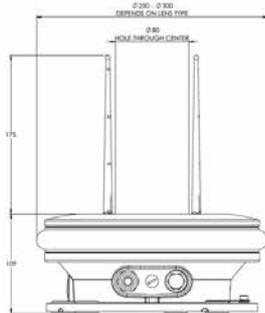
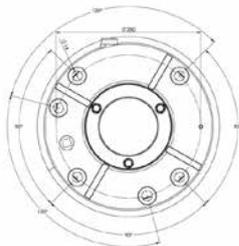
Long range lantern 6-14 NM (1-3 tiers)

The VLB-44X lantern forms part of the LED marine lantern family. The use of highly efficient optics and electronics has resulted in state-of-the-art energy efficiency.

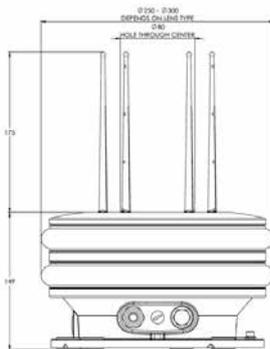
This level of efficiency significantly reduces the solar panel and battery requirements in standalone applications.

- Comes in 3 different vertical divergences to cover both fixed and floating applications: 10° (ideal for buoys), 5° (for land/pole use), 2.5° (for lighthouses)
- With 1 to 3 tiers, can be sized to match the range requirement of a particular application. Multiple units can be used to extend the range to 16 NM
- Available colours are red, green, white and yellow
- The unique optical system utilises an acrylic lens to maximise the light captured from the LED's
- The LED's are precisely graded and placed to produce a light beam with minimum variation in intensity
- A switch mode regulator maintains the light output of the LEDs independent of input of voltage and temperature

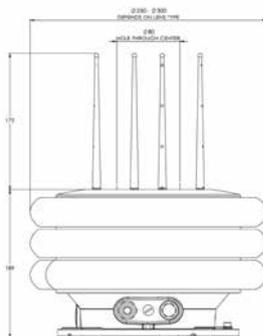




SIDE VIEW
Weight 4.5 kg



SIDE VIEW
Weight 7.2 kg



SIDE VIEW
Weight 9.9 kg

Optical Performance

Maximum intensity (Single tier)

10°	920 cd	1300 cd	1050 cd	1650 cd
5°	1400 cd	1800 cd	1500 cd	2610 cd
2.5°	2060 cd	2610 cd	2190 cd	3730 cd

Maximum intensity (Two tier)

10°	1840 cd	2600 cd	2100 cd	3300 cd
5°	2800 cd	3600 cd	4260 cd	5220 cd
2.5°	4120 cd	5220 cd	4380 cd	7460 cd

Maximum intensity (Three tier)

10°	2760 cd	3900 cd	3150 cd	4950 cd
5°	4200 cd	5400 cd	4500 cd	7830 cd
2.5°	6180 cd	7830 cd	6570 cd	11190 cd

Main Technical Specification

Light source	High-Intensity LEDs
Colours available	Red, Green, White, Yellow
Vertical divergence	2.5°@50% of peak 5°@50% of peak 10°@50% of peak
Weight	4.5 kg + 2.7 kg each additional tier
Temperature	-30° – +50°C
Voltage	12 VDC (10-18 VDC)
Intrusion protection	MIL-STD-202G Method 104A, Cond A P68, 1.5m for 60 minutes
Lens	Machined cast acrylic; UV-protected
Base	Marine grade aluminium
Degree of protection	IP 67
Cable length	2 m / 6 m

Order Overview VLB-44X

Product code

Code	Note
VLB44X-xT-cddd(-GS)	
c	Colour (R, G, Y, W)
ddd	Vertical divergence (2D5, 05D, 10D)
x	Tiers (1 to 3)

Option matrix

GS	GPS synchronization
VLB-44XE	Extended I/O



LED 160

Full range lantern for fixed and floating installations

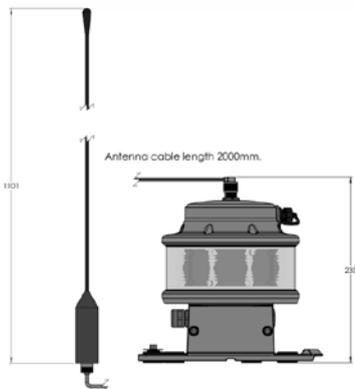
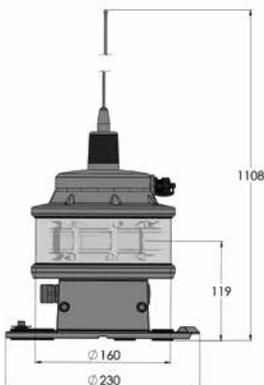
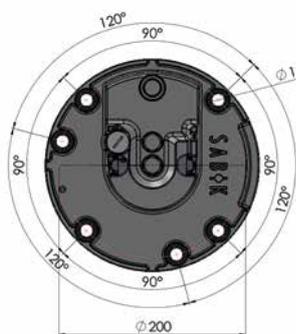
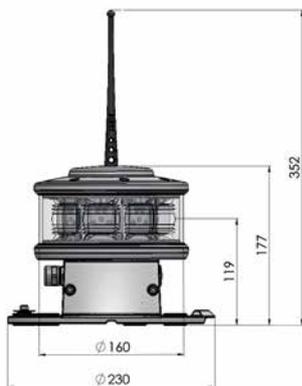
This all-round LED 160 lantern has world-class optical performance with options for buoys and fixed installations. Three different lens options available covering a range from 3 NM up to 12NM (Tc = 0,74)

- Standard IALA colours
red, green, white, yellow and blue
- Best in class optical performance
- New designed rugged injection moulded aluminium housing
- Easy field installation thanks to the integrated junction box with 3 cable entries
- Extremely low power consumption, suitable for solar and battery operation
- Integrated 16A solar panel charger
- Adjustable intensity and range
- The lantern is available in three different versions. LED 160 with Narrow 5° and with Wide 10° vertical divergence, and the LED 160H with a 2,5° vertical divergence
- Programmable with Sabik IR programmer or with Bluetooth® control from up to 50m distance
- Optionally integrated GPS synchronization
- Optionally integrated GSM/GPS remote monitoring
- Available with integrated AIS



Integrated AIS

- Available in two models: Type 1 (FATDMA) and Type 3 (RATDMA)
- AIS transponder integrated in the top part of the lantern
- Integrated GPS antenna and external VHF antenna included in the delivery
- Extremely low power consumption when used as Type 1 <45mW with 1 message/ 3 minutes (about 0,09 Ah/day)
- Support messages: 6 and 21
- Supports up to 10 virtual Aton:s



Product code example: LED-160-NG-9L

- **LED-160-NG** is Sabik code for LED 160 with narrow lens in green
- **9L** is a selection of option 9 integrated GSM/GPS monitoring

Optical performance

Maximum fixed intensity LED 160H

Max power 36 W	4300 cd
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Maximum fixed intensity LED 160N

	1150 cd	1200 cd	1000 cd	1850 cd
Power consumption	13 W	16 W	16 W	16 W

Maximum fixed intensity LED 160W

	550 cd	850 cd	550 cd	1100 cd
Power consumption	12 W	16 W	16 W	16 W

Main Technical Specification

Lens visual/Mechanical diameter	160 mm
Lens material	UV stabilized Acrylic
Light source	High Power Light Emitting Diodes
Vertical divergence	2,5°@50% of peak intensity (FWHM) 5°@50% of peak intensity (FWHM) 10°@50% of peak intensity (FWHM)
Weight	3,3 kg
Temperature range	-40° – +60°C
Supply Voltage	10 – 32 VDC
Solar Panel Charger	16 ampere PWM charger
Power consumption	13W – 16W
Power consumption LED 160H	36 W
Degree of protection	IP 67
Cable length	2 m / 6 m

Order Overview LED 160

Product codes

LED 160H High intensity lantern	LED 160N Lantern with narrow lens designed for fixed structures	LED 160W Lantern with wide lens designed for buoys	Colour
LED-160-HW	LED-160-NW	LED-160-WW	white
	LED-160-NR	LED-160-WR	red
	LED-160-NG	LED-160-WG	green
	LED-160-NY	LED-160-WY	yellow
	LED-160-NB	LED-160-WB	blue

Option matrix

GPS sync	Integrated GPS sync including GPS antenna
OPT 4L	
LightGuard GSM + GPS	Integrated GSM/GPS based monitoring including GSM/GPS antennas
OPT 9L	
Battery control card	Control card for secondary (emergency) battery
OPT 11L	
Automatic Identification System	OPT AIS 1: Lantern with integrated AIS type 1 OPT AIS 3: Lantern with integrated AIS type 3
OPT AIS	



SC 160 I

Self-contained LED lantern for buoys and beacons

SC 160 I is a self-contained medium range LED lantern with best-in-class optical performance for fixed and floating structures. The lantern includes solar panels, battery and charge controller. This lantern is designed for harsh marine environments and for long uninterrupted operation.

- Range up to 8 NM (Tc=0,74) 11 NM (Tc=0,85) depending on geographical location
- Standard IALA colours red, green, white, yellow
- Lantern made of rugged injection moulded aluminium housing and UV resistant polyethylene body
- Integrated flasher with day-light switch and solar charger
- Standard VRLA battery and ventilated battery compartment , Li-ion battery optional
- Solar modules covered with tempered glass
- Adjustable intensity and range
- Available with narrow (5°) or wide (10°) vertical divergence
- Programmable with Bluetooth® Control mobile app up to 50 m radius
- Other wireless programming options available such as Sabik Easy Programmer or PC/USB interface
- Integrated event log for 365 days
- Optional integrated GPS synchronization and GSM Remote monitoring
- Available with AIS
- External charge port or external solar module



Integrated AIS

- Available in two models: Type 1 (FATDMA) and Type 3 (RATDMA)
- AIS transponder integrated in the top part of the lantern
- Integrated GPS antenna and external VHF antenna included in the delivery
- Extremely low power consumption when used as Type 1 <45mW with 1 message/3 minutes (about 0,09 Ah/day)
- Support messages: 6 and 21
- Supports up to 10 virtual Aton:s

Optical Performance

Maximum fixed intensity SC 160 IN (5° @ 50% peak intensity FWHM)

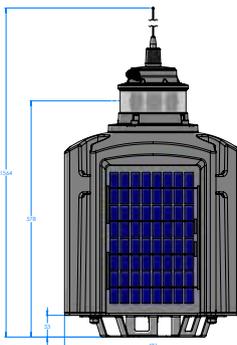
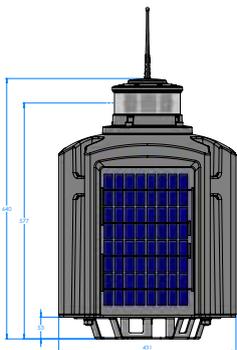
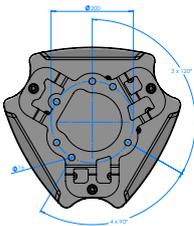
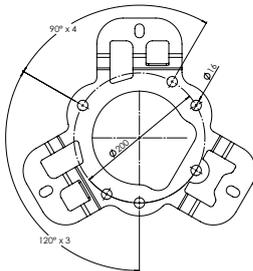
	1150 cd	1200 cd	1000 cd	1850 cd
Power consumption	13 W	16 W	16 W	16 W

Maximum fixed intensity SC 160 IW (10° @ 50% peak intensity FWHM)

	620 cd	720 cd	620 cd	1100 cd
Power consumption	13 W	16 W	16 W	16 W

Main Technical Specification

Lens visual/Mechanical diameter	160 mm
Lens material	UV stabilized acrylic
Light source	High Power Light Emitting Diodes (LEDs)
Vertical divergence options	5°@50% of peak intensity (FWHM) 10°@50% of peak intensity (FWHM)
Solar modules	3 x 10 W
Battery	VRLA GEL-Type, 32Ah/12V; Li-ion 35Ah/12V
Weight	27 Kg
Overall height	583 mm
Overall width	431 mm dia.
Power consumption	13W - 16W
Installation	3 x M12 on 330 mm dia.



Order Overview SC 160 I

SC160 I with VRLA Battery

N = Narrow (5° @ 50 % peak intensity)		W = Wide (10° @ 50 % peak intensity)	
Red	SC-160-1-NVR	Red	SC-160-1-WVR
Yellow	SC-160-1-NVY	Yellow	SC-160-1-WVY
Green	SC-160-1-NVG	Green	SC-160-1-WVG
White	SC-160-1-NVW	White	SC-160-1-WVW

Example: SC160-1-WVW-4L

- **SC-160-1-WVW** is the code for SC160 I with VRLA battery and wide lens in white
- **4L** is a selection for option 4L Integrated GPS sync including GPS antenna

Option matrix

GPS sync	Integrated GPS sync including GPS antenna
OPT 4L	
LightGuard GSM + GPS	Integrated GSM/GPS based monitoring including GSM/GPS antennas
OPT 9L	
OPT 11L	Control card for secondary (emergency) battery
Automatic Identification System	OPT AIS 1: Lantern with integrated AIS type 1 OPT AIS 3: Lantern with integrated AIS type 3
OPT AIS	



SC 160 II

Self-contained LED lantern for buoys and beacons

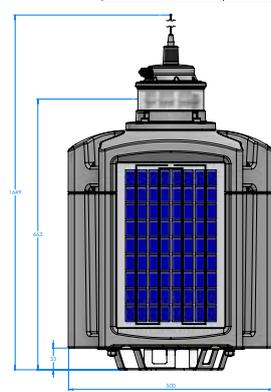
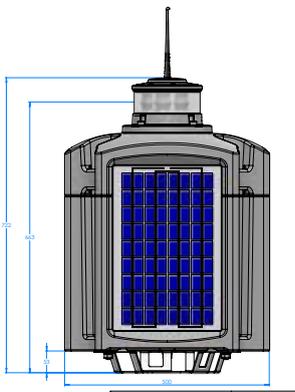
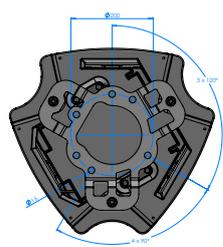
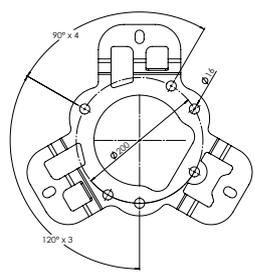
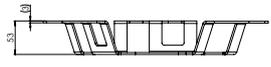
SC 160 II is a self-contained LED lantern with best in class optical performance for fixed and floating structures with longer range. The lantern includes solar panels, battery and charge controller. This lantern is designed for harsh marine environments and for long uninterrupted operation.

- Range up to 10 NM (Tc=0,74) 14 NM (Tc=0,85) depending on geographical location
- Standard IALA colours red, green, white, yellow
- Lantern made of rugged injection moulded aluminium housing and body of UV resistant polyethylene
- Integrated flasher with day-light switch and solar charger
- Standard VRLA battery and ventilated battery compartment
- Adjustable intensity and range
- Available with narrow (5°) or wide (10°) vertical divergence
- Programmable with Bluetooth Control mobile app up to 50 m radius
- Other wireless programming options available such as Sabik Easy Programmer or PC/USB interface
- Integrated event log for 365 days
- Optionally integrated GPS synchronization and GSM Remote monitoring
- External charge port or external solar module
- Available with AIS option



Integrated AIS

- Available in two models: Type 1 (FATDMA) and Type 3 (RATDMA)
- AIS transponder integrated in the top part of the lantern
- Integrated GPS antenna and external VHF antenna included in the delivery
- Extremely low power consumption when used as Type 1 <45mW with 1 message/3 minutes (about 0,09 Ah/day)
- Support messages: 6 and 21
- Supports up to 10 virtual Aton:s



Optical Performance

Maximum fixed intensity SC 160 IIN (5° @ 50% peak intensity)

	1150 cd	1200 cd	1000 cd	1850 cd
Maximum power consumption	13 W	16 W	16 W	16 W

Maximum fixed intensity SC 160 IIW (10° @ 50% peak intensity)

	620 cd	720 cd	620 cd	1100 cd
Maximum power consumption	13 W	16 W	16 W	16 W

Main Technical Specification

Lens visual/Mechanical diameter	160 mm
Lens material	UV stabilized acrylic
Light source	High Power Light Emitting Diodes (LEDs)
Vertical divergence options	5°@50% of peak intensity (FWHM) 10°@50% of peak intensity (FWHM)
Solar modules	3 x 11 W
Battery	VRLA GEL-Type, 60Ah/12V
Weight	35 Kg
Overall height	669 mm
Overall width	500 mm dia.
Power consumption	13W - 16W
Installation	3 x M12 on 330 mm dia.

Order Overview SC 160 II

SC160 II with VRLA Battery

N = Narrow (5° @ 50 % peak intensity)		W = Wide (10° @ 50 % peak intensity)	
Red	SC-160-2-NVR	Red	SC-160-2-WVR
Yellow	SC-160-2-NVY	Yellow	SC-160-2-WVY
Green	SC-160-2-NVG	Green	SC-160-2-WVG
White	SC-160-2-NVW	White	SC-160-2-WVW

Example: SC-160-2-WVR-4

- SC-160-2-WVR is the code for SC160 II with VRLA battery and wide lens in red
- 4 is a selection of option 4L GPS sync including GPS antenna

Option matrix

GPS sync	Integrated GPS sync including GPS antenna
OPT 4L	
LightGuard GSM + GPS	Integrated GSM/GPS based monitoring including GSM/GPS antennas
OPT 9L	
Automatic Identification System	OPT AIS 1: Lantern with integrated AIS type 1 OPT AIS 3: Lantern with integrated AIS type 3 Refer page 140



VRB-25 LED

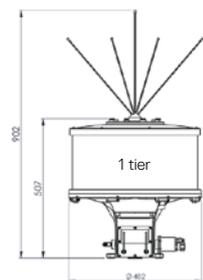
25NM @ 0.74T

The VRB-25 LED is a high intensity rotating beacon suitable for ranges up to 25 nautical miles. Being an LED beacon, it is extremely energy efficient and can be monitored digitally.

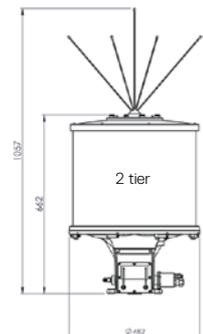
It is an ideal replacement for beacons with Fresnel lenses in historic lighthouses, or locations requiring intensities greater than what can be achieved with typical stationary beacons.

- Weatherproof enclosure suitable for external mounting
- Maintenance-free LED
- Constant-current LED drivers
- Direct-drive brushless motor
- 0.6 to 15.9RPM rotation speed with 240 increments
- Day and night intensity is adjustable from 0 to 100%
- Automatic day/night detection
- Optional security code
- Programmable low-voltage cut-out
- Selectable master/back-up operation mode
- Digital inputs/output
- RS232 port

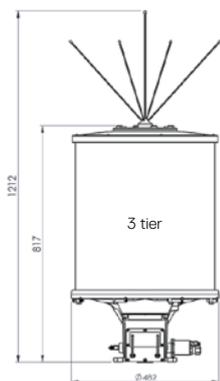




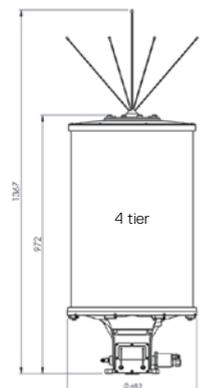
EST Weight: 43KG
Focal Height: 390mm



EST Weight 58KG
Focal Height: 467mm



EST Weight: 73KG
Focal Height: 545mm



EST Weight 87KG
Focal Height: 622mm

Optical Performance

Maximum peak intensity

1.5°	520000cd	520000cd	520000cd	520000cd
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Optical specification

Light source	High Power Light Emitting Diode (LED)
Horizontal divergence	1.5° @ 5% of specified intensity
Vertical divergence	1.5° @ 5% of specified intensity
Temperature control	LEDs monitored for constant intensity control and over temperature protection

Main Technical Specification

Nominal Range	Up to 25 NM
Lens	Machined cast acrylic
Base	Cast marine grade aluminium, anodised and painted
Body	Anodised marine grade aluminium
Designed service life	10 years
Weight	1 tier: 43 kg 2 tier: 58 kg 3 tier: 73 kg 4 tier: 87 kg
Flash character	Dependent on configuration
Temperature range	-35° – +50°C
Voltage	12 VDC
Solar charger	N/A
Degree of protection	IP 65
RPM range	0.66-15.9
Cable length	2 m / 6 m

Order Overview VRB-25 LED

Product code

Code	Note
VRB25-xP-nT-LED	
x	Number of panels (6 or 8)
n	Number of tiers (1, 2, 3, 4)

Option matrix

LPD-02	Lightening protection device factory option
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