SABIK
MARINE

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
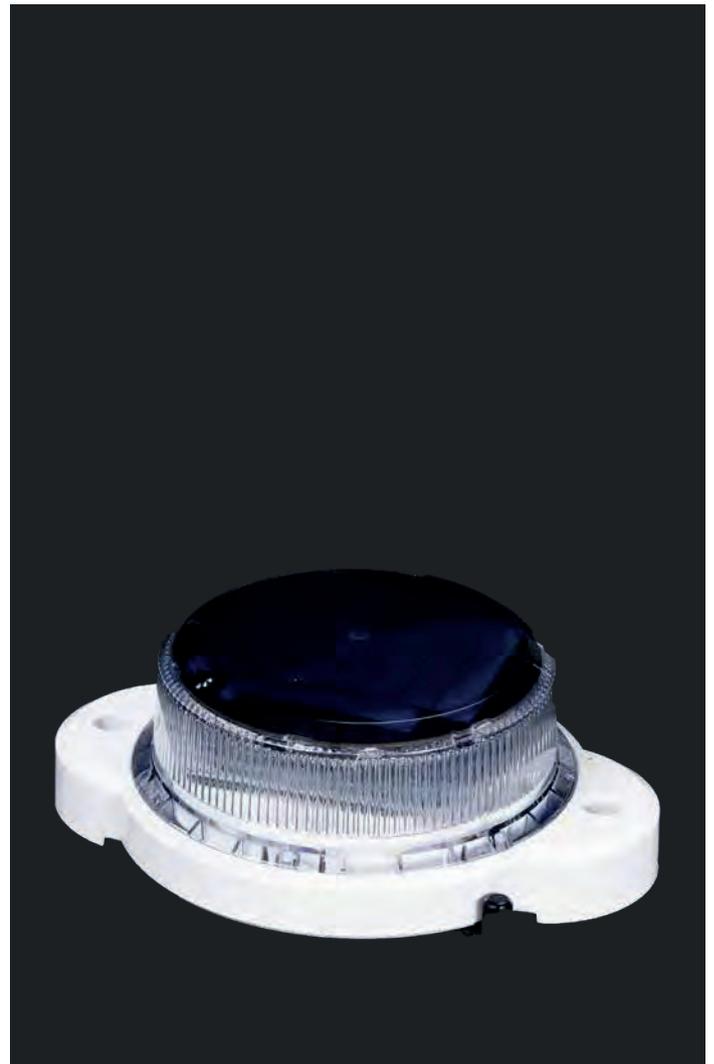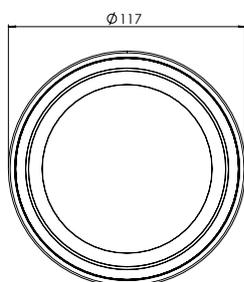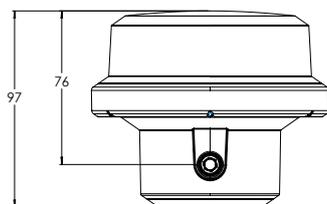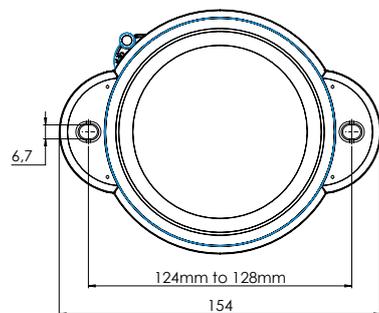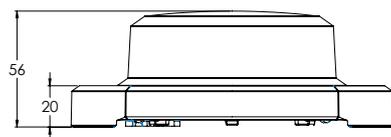
Optical performance

Maximum fixed intensity				
18 cd	23 cd	29 cd	25 cd	8 cd

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 × 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

69935	Pole Mount Replacement/Conversion Kit
70943	Flange Mount Replacement/Conversion Kit
70937	Switched Kit (compatible with Flange Mount only)
70955	Replacement NiMH batteries
69934	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

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.
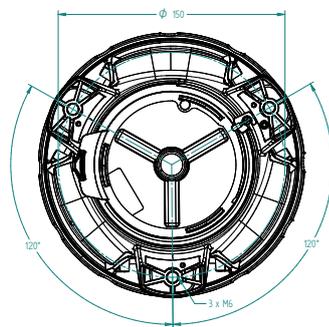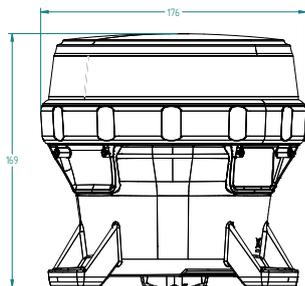
Order Overview M650H

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

SABIK
a **Carmanah** company

SC 110

Marine self-contained LED light for buoys, beacons, marinas and aquaculture farms

SC 110 is a durable short range LED lantern built from polycarbonate and including an integrated solar power system. This lantern is delivered with Nickel metal hydride battery.
It has more than 6 years lifetime. The lantern is available in 2 and 3 NM versions.

- **Range up to 4 NM (Tc = 0.74) 4,5 NM (Tc = 0.85)**

- **Standard IALA colours Red, Green, White, Yellow**

- **Produced of durable polycarbonate plastic**

- **Available with Lithium-ion or NiMH batteries**

- **Internal calendar, light can be switched off for winter**

- **Adjustable intensity and range**

- **Vertical divergence 8° @ 50% (±1°) of peak intensity**

- **Programmable with Sabik standard IR programming devices**

- **Integrated event log (Black box function) for 365 days**

- **The lantern is delivered in sleep mode. It automatically wakes up when unpacked and light is detected**

- **Optionally integrated GPS synchronization**

- **Optionally integrated GSM remote monitoring**

www.sabik-marine.com

Lens
Bird deterred top design.

Solar panels
Optionally 1 (2NM) or 4 (3NM) solar panels.

Battery
Optionally NiMH or LiFePO$_4$ batteries.

Sabik Easy Programmer
User friendly and compact wireless two-way programmer.

Programming with PC
Using Sabik USB interface.

Storage charging
With external charger.

Installation
The bottom plate of the SC 110 supports installation on structure using 3 or 4 x M12 on a 200 mm diameter or 3 x M8 on a 150 mm diameter.

PTFE breathing
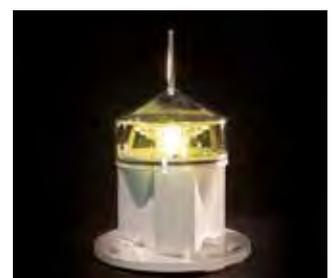Vent for pressure release in the bottom of the product.
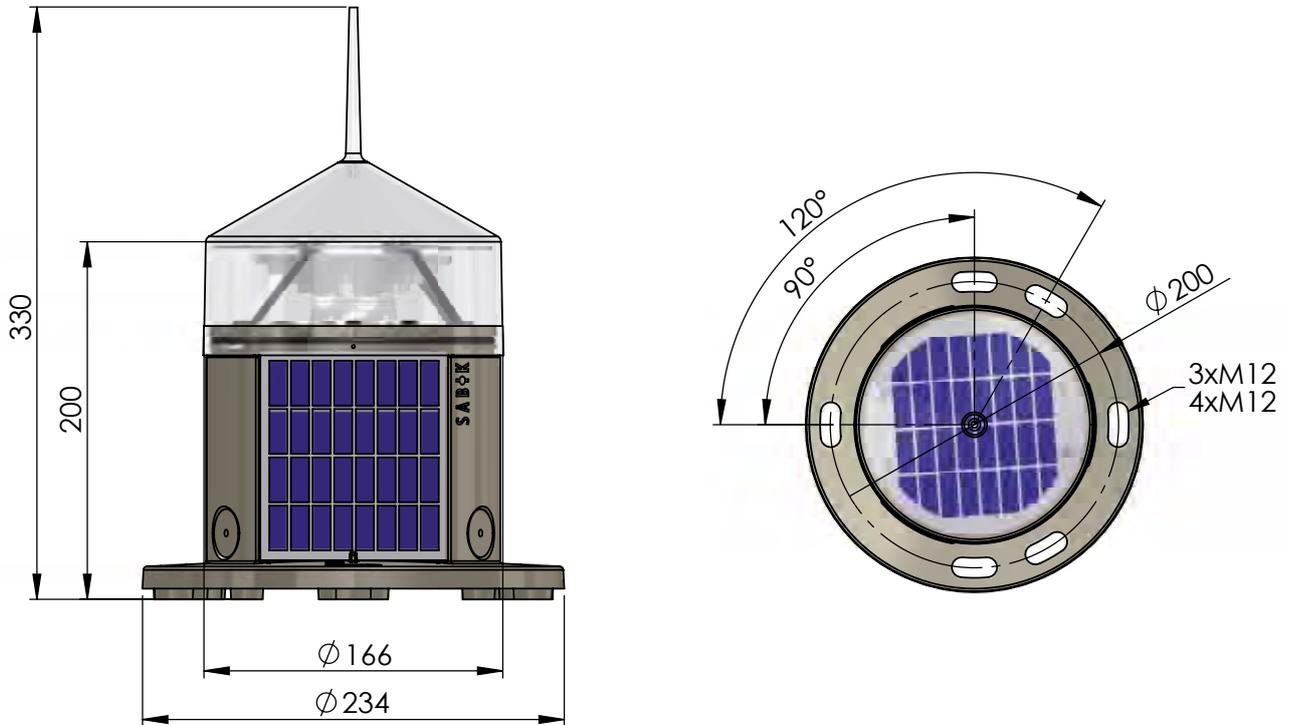
White

Red

Green

Yellow

Technical Specification SC 110

Optical performance

Maximum fixed intensity			
SC 110 max 4 NM **40 cd**	**40 cd**	50 cd	**45 cd**

Main Technical Specification

	up to 3 Nautical miles	up to 4 Nautical miles
Lens visual/Mechanical diameter	166 mm	
Lens material	UV stabilized Polycarbonate	
Light source	High Power Light Emitting Diode (LED)	
Vertical divergence	8° @ 50% (±1°) of peak intensity	
Unit lifetime	Up to 10 years	
Weight	2,5 kg	4,2 kg
Controller	Sabik SMC flasher	
Temperature range	-40°…+60°C	
Degree of protection	IP 67	
Battery Voltage NiMH	6,0 VDC	
Battery Voltage LiFePO$_4$	6,4 VDC	
Battery capacity NiMH	8,6 Ah	26 Ah
Solar power	1,5W	4,5W

# Order Overview SC 110

Option matrix

OPT 1S: Optical Feedback System	Integrated LED performance measurement
OPT 4S: GPS sync	Integrated GPS sync including GPS antenna
OPT 9S: LightGuard GSM + GPS	Integrated GSM based monitoring with GSM/GPS antennas

Product codes

SCN 110 up to 3 NM self-contained with NiMH battery	**Colour**
SCN 110.2 WW	white
SCN 110.2 WR	red
SCN 110.2 WG	green
SCN 110.2 WY	yellow

| **SCN 110 up to 4 NM self-contained with NiMH battery**	**SCL 110 up to 4 NM self-contained with LiFePO4 battery**	**Colour**
SCN 110.3 WW	SCL 110.3 WW	white
SCN 110.3 WR	SCL 110.3 WR	red
SCN 110.3 WG	SCL 110.3 WG	green
SCN 110.3 WY	SCL 110.3 WY	yellow
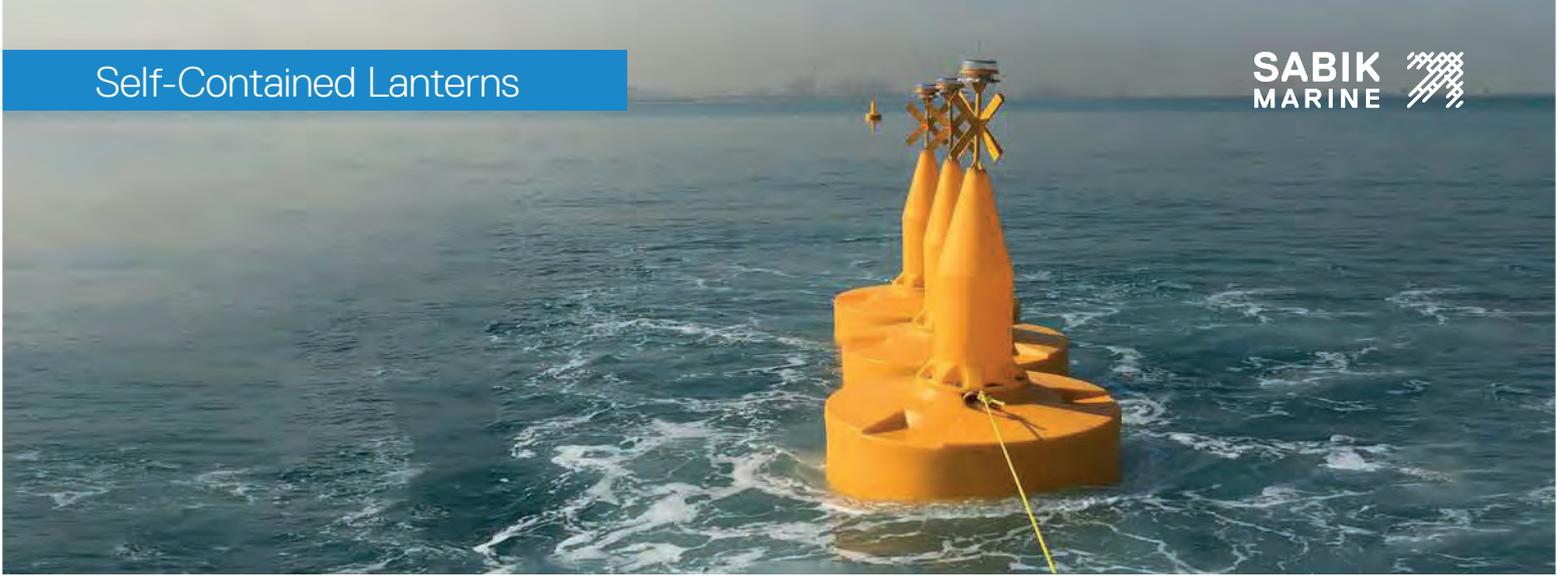
M660

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 > 8º (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**
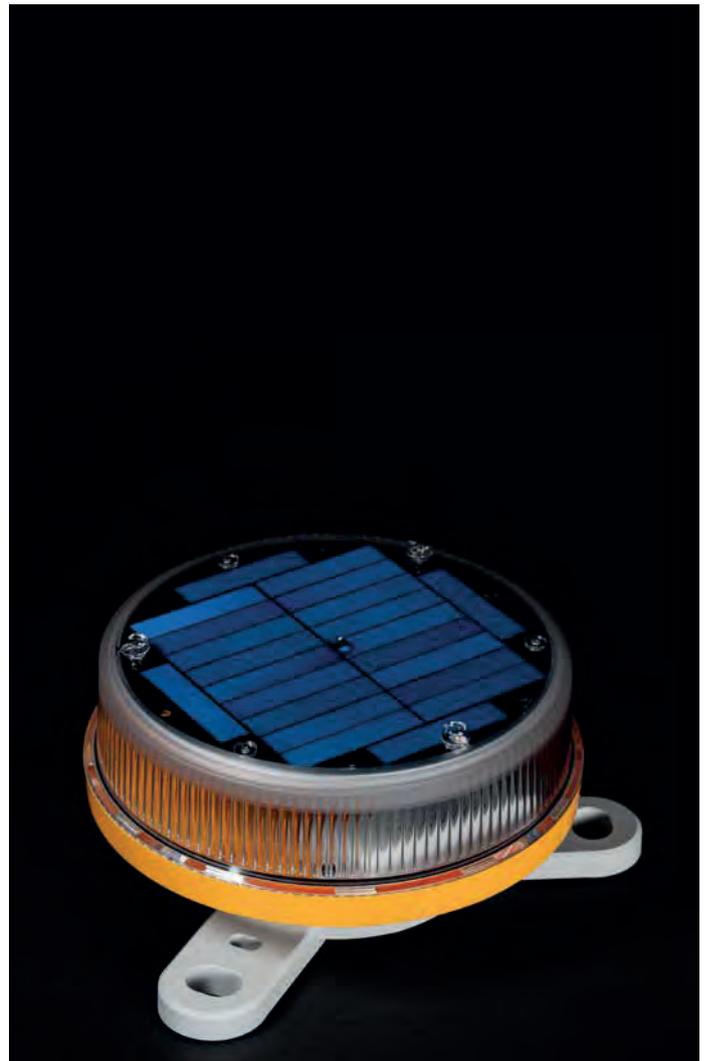
Optical performance

Maximum fixed intensity				
40 cd	42 cd	71 cd	52 cd	18 cd

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
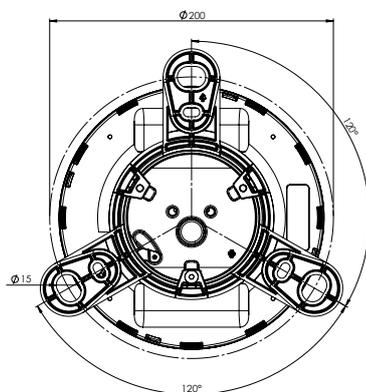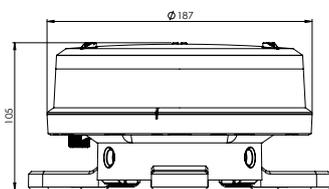
Order Overview M660

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

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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**

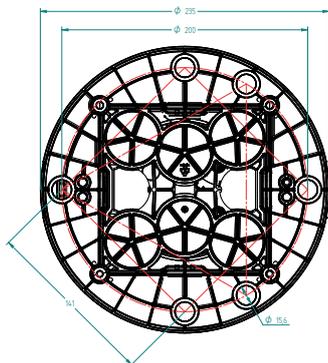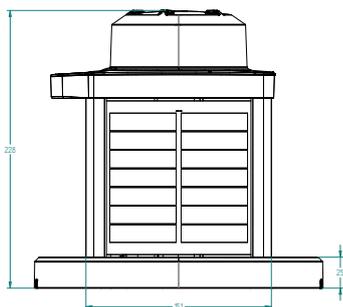- **GPS synchronized flash option**

- **Remote monitoring options available**

Optical performance

Maximum fixed intensity

M850	239 cd	290 cd	445 cd	320 cd

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**
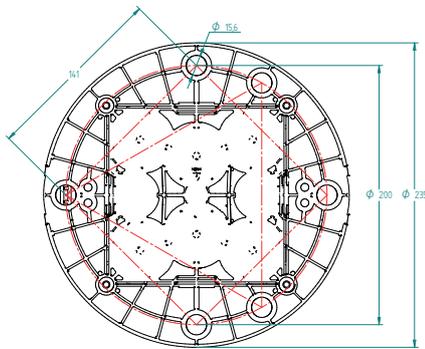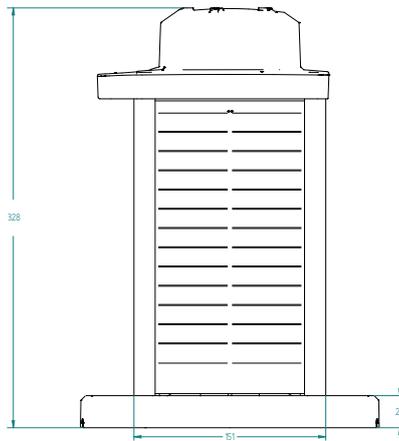
- **Remote monitoring options available**

Optical performance

Maximum fixed intensity				
M860	239 cd	290 cd	445 cd	320 cd

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)	8º (standard) or 10º (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)	M850 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)

SABIK MARINE

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**
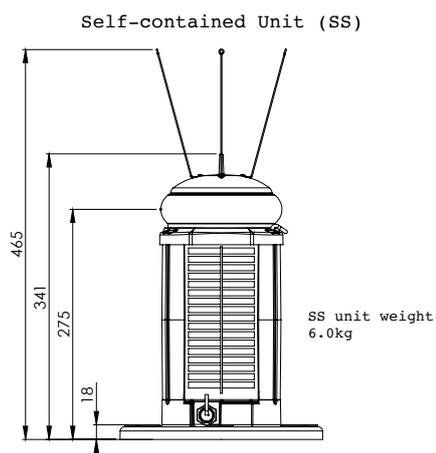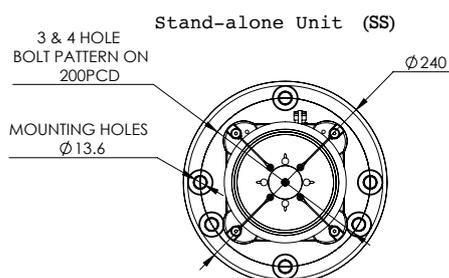
Optical Performance

Maximum peak intensity

7°		177cd	177cd	177cd	157cd

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

Stand-alone Unit (SS)

3 & 4 HOLE BOLT PATTERN ON 200PCD

Ø240

MOUNTING HOLES Ø13.6

Self-contained Unit (SS)

465
341
275
18

SS unit weight 6.0kg

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

VP LED

Buoy LED lantern

The VP LED is an LED lantern designed to be used in moderate ice conditions. It has a proven record of surviving the crushing pressure and dynamic forces of ice. VP LED is mainly used on plastic ice spars and buoys when a lightweight unit is important.

- **Marine grade aluminium housing**
- **Designed to be fully waterproof, can sustain extensive submersion**
- **Integrates firmly onto buoy top and presents a very low profile to lateral forces from ice**
- **Lantern can be removed for battery replacement**
- **Range up to 6 NM (Tc = 0,74)**
- **Standard IALA colours red, green, white and yellow**
- **Extremely low power consumption, ideal for primary battery operation**
- **Integrated flasher with day light switch**
- **Adjustable intensity and range**
- **Programmable with Sabik standard IR programming devices**
- **Integrated 365 day event log**
- **Optional integrated GPS synchronization**
- **Optional integrated GSM Remote monitoring**
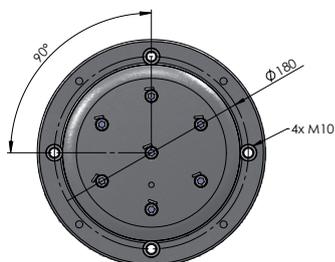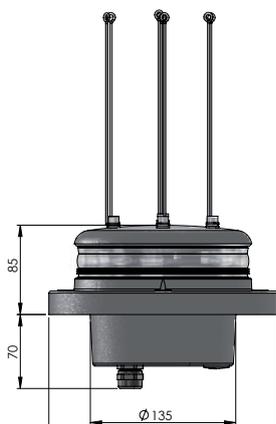- **Optional Bluetooth control**

Optical performance

Maximum fixed intensity

At full power 6 W	120 cd	160 cd	240 cd	120 cd

Main Technical Specification

Lens visual/Mechanical diameter	160 mm
Lens material	UV stabilized Polycarbonate
Light source	Light Emitting Diodes (LEDs)
Vertical divergence	10° @ 50 % (±1°) of peak intensity
Unit lifetime	Up to 10 years
Weight	3,2 kg
Temperature range	-40°...+60°C
Supply Voltage	10 – 32 VDC
Solar Panel Charger	16 ampere PWM charger
Power consumption	Max 6 watts
Degree of protection	IP 68
Cable length	2 m / 6 m

Order Overview VP LED

W = Wide (10° @ 50 % of peak intensity)

Red	VP-LED-WR
Yellow	VP-LED-WY
Green	VP-LED-WG
White	VP-LED-WW

Product code example: VP-LED-NW-13

- *VP-LED* is Sabik code for a buoy lantern

- *NW* is the code for a Narrow lens in white

- *13* is a selection of option 13 Aux card with RS485 and I/O

Order Overview VP LED B/Y

Wreck marking buoy lantern blue/yellow

Product codes

VP LED BLUE/YELLOW WRECK MARK	VP-LED-2-WBY

Option matrix

|	
OPT 4: GPS sync	Integrated GPS sync including GPS antenna
OPT 9: LightGuard GSM + GPS	Integrated GSM based monitoring including GSM/ GPS antennas
OPT 10: LightGuard GSM	Integrated GSM based monitoring including GSM antenna
OPT 11: Control card	Control card for secondary battery
OPT 12: Aux card with I/O	Aux card including I/O ports
OPT 13: Aux card with RS485 and I/O	Aux card including RS 485 and I/O port
OPT BT	Bluetooth control

SABIK
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LED 155

**Marine LED lantern for buoys
and minor beacons**

LED 155 is a general purpose LED lantern commonly used on both fixed and floating structures. The lantern is modular in design. It can be configured with two different vertical divergencies and 1-3 tiers depending on operational requirements.

+ **Range up to 8 NM at Tc = 0,74
  (12 NM at Tc = 0,85)**

+ **Standard IALA colours
  Red, Green, White, Yellow and Blue/Yellow**

+ **Rugged aluminium housing for installation in harsh marine environments**

+ **Extremely low power consumption, suitable for solar and battery operation**

+ **Integrated flasher with day-night switch**

+ **Integrated 16A solar panel charger using pulse width modulation**

+ **Adjustable intensity and range**

+ **Available with narrow (6°) or wide (10°) vertical divergence**

+ **Programmable with Sabik standard IR programming devices**

+ **Integrated event log for 365 days**

+ **Optional integrated GPS synchronization**

+ **Optional integrated GSM Remote monitoring**

+ **Optional Bluetooth control**

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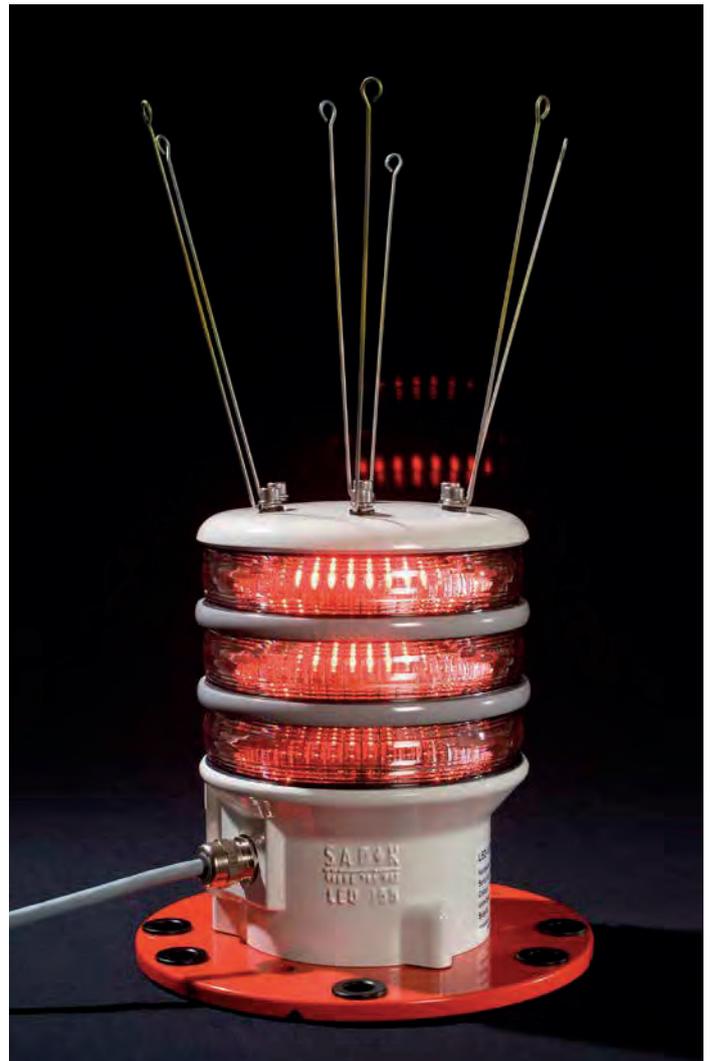
Optical performance LED 155

Maximum fixed intensity, narrow lens (fixed structures)

Simplex, 6 W	200 cd	240 cd	380 cd	200 cd
Duplex, 12 W	380 cd	450 cd	720 cd	380 cd
Triplex, 18 W	560 cd	660 cd	1060 cd	560 cd

Maximum fixed intensity, wide lens (floating structures)

Simplex, 6 W	120 cd	160 cd	240 cd	120 cd
Duplex, 12 W	230 cd	300 cd	450 cd	230 cd
Triplex, 18 W	340 cd	440 cd	670 cd	340 cd

Optical performance LED 155 B/Y

Maximum fixed intensity

Nominal 6 W	45 cd	45 cd

Main Technical Specification LED 155

Lens visual/Mechanical diameter	160 mm
Lens material	UV stabilized Polycarbonate
Light source	Light Emitting Diodes (LEDs)
Vertical divergence	6° or 10° @ 50% (±1°)
Unit lifetime	Up to 10 years
Weight	3,9 kg for single tier unit
Temperature range	-40°...+60°C
Supply Voltage	10– 32 VDC
Solar Panel Charger	16 ampere PWM charger
Power consumption	Max 6 watts / tier
Degree of protection	IP68

Main Technical Specification LED 155 Blue/ Yellow wreck mark

Lens visual/Mechanical diameter	160 mm
Lens material	UV stabilized Polycarbonate
Light source	Light Emitting Diodes (LEDs)
Vertical divergence	10° @ 50 % (± 1°) of peak intensity
Unit lifetime	Up to 10 years
Weight	4,2 kg
Temperature range	-40°...+60°C
Supply Voltage	10 – 32 VDC
Power consumption	Max 6 watts / tier
Cable length	2 m / 6 m

Order Overview LED 155

N = Narrow (6° @ 50 % of peak intensity) single tier (standard)		Two tiers (duplex)		Three tiers (triplex)	
Red	LED-155-1-NR	Red	LED-155-2-NR	Red	LED-155-3-NR
Yellow	LED-155-1-NY	Yellow	LED-155-2-NY	Yellow	LED-155-3-NY
Green	LED-155-1-NG	Green	LED-155-2-NG	Green	LED-155-3-NG
White	LED-155-1-NW	White	LED-155-2-NW	White	LED-155-3-NW

W = Wide (10° @ 50 % of peak intensity) single tier (standard)		Two tiers (duplex)		Three tiers (triplex)	
Red	LED-155-1-WR	Red	LED-155-2-WR	Red	LED-155-3-WR
Yellow	LED-155-1-WY	Yellow	LED-155-2-WY	Yellow	LED-155-3-WY
Green	LED-155-1-WG	Green	LED-155-2-WG	Green	LED-155-3-WG
White	LED-155-1-WW	White	LED-155-2-WW	White	LED-155-3-WW

Product code example: LED-155-3-NR-9

- **LED-155-3** is Sabik code for a three-tier LED 155
- **NR** is the code for a Narrow Red lens
- **9** is a selection of option 9 GSM monitoring together with GSM/GPS antennas

Option matrix

OPT 4: GPS sync	Integrated GPS sync including GPS antenna
OPT 9: LightGuard GSM + GPS	Integrated GSM based monitoring including GSM/ GPS antennas
OPT 10: LightGuard GSM	Integrated GSM based monitoring including GSM antenna
OPT 11: Control card	Control card for secondary battery
OPT 12: Aux card with I/O	Aux card including I/O ports
OPT 13: Aux card with RS485 and I/O	Aux card including RS 485 and I/O port
OPT BT	Bluetooth control
Shock & Tilt Sensor	Integrated 3-axis G sensor for tilt and shock sensing

Order Overview
LED-155-2-WBY

Wreck marking lantern blue/yellow

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LED 160

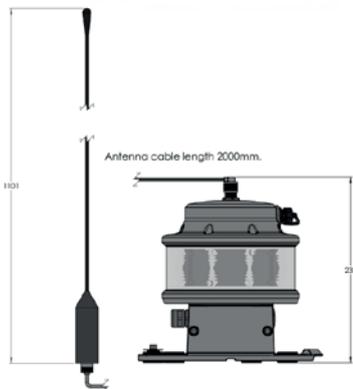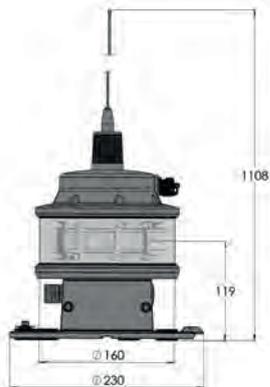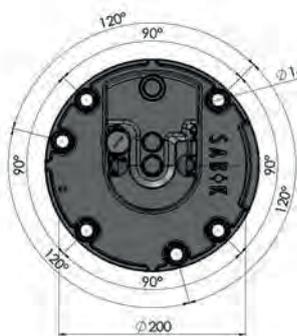## Full range lantern for fixed and floating installations

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 fiel 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

Optical performance

Maximum fixed intensity LED 160H

Max power 36 W	4300 cd

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

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

Antenna cable length 2000mm.

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LO 200M

Medium Intensity LED Range Light

The LO 200M signal is designed for applications requiring medium and long range directional light, such as range lights and port entry signals.

- Equipped with a high intensity power LED and especially designed optics

- Robust aluminium IP 66 housing

- Visual range up to 14NM
  (Tc = 0,74)

- Standard IALA colours red, green, white and yellow

- Extremely low power consumption, suitable for solar and battery operation

- Vertical divergence 8° @ 50% of peak intensity

- Integrated flasher with 16 A solar panel charger

- Adjustable intensity and range

- Programmable with Sabik standard IR programming devices

- Optional integrated GPS synchronization

- Optional integrated GSM remote monitoring

- Equipped with Bluetooth programming

Optical performance

Maximum fixed intensity

At full power	7000 cd	7000cd	7000cd	13000cd

Main Technical Specification

Lens visual/Mechanical diameter	203 mm (8")
Lens material	UV stabilized polycarbonate
Light source	Light Emitting Diode (LED)
Lens horizontal divergence	6° @ 50 % (± 1°) of peak intensity
Unit lifetime	Up to 10 years
Weight	11,7 kg
Temperature range	-40°...+60°C
Supply Voltage	9 – 32 VDC
Power consumption	4W at full intensity
Degree of protection	IP 67
Cable length	2 m / 6 m
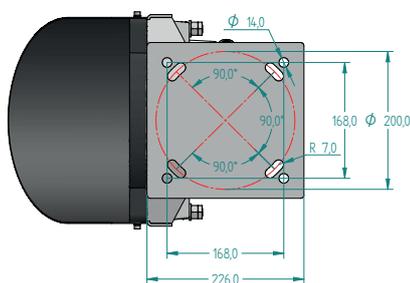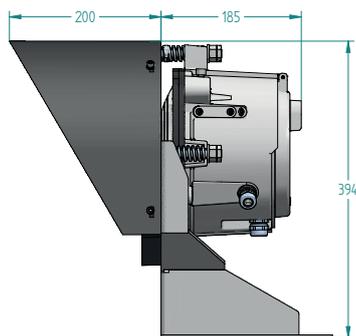
Order Overview LO 200M

Product codes

Product	Colour
LO-200-MW	white
LO-200-MR	red
LO-200-MG	green
LO-200-MY	yellow

Product code example: LO-200-MR-4

• *LO-200-MR* is Sabik code for LO 200M in red

• *4* is a selection of option 4

Option matrix

|	
OPT 4: GPS sync	Integrated GPS sync including GPS antenna
OPT 9: LightGuard GSM + GPS	Integrated GSM based monitoring including GSM/GPS antennas
OPT 10: LightGuard GSM	Integrated GSM based monitoring including GSM antenna
OPT 11: Control card	Control card for secondary battery
OPT 12: Aux card with I/O	Aux card including I/O ports
OPT 13: Aux card with RS485 and I/O	Aux card including RS 485 and I/O port

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M840

Component lantern 4 to 7 NM range, input 12/24VDC

GPS sync, Bluetooth control and Satellite monitoring options

The M840 is a premium and full featured standalone component lantern for ranges up to 7 NM. It can be used both in fixed and floating installations. The lantern is powered via external 12 or 24 VDC source. With low power consumption the M840 is well suited for off-grid installations. Programming can be done with IR programmer or with Sabik Bluetooth Control from up to 50 meters away. The Lantern supports satellite remote monitoring and GPS Synchronization. Well tested and field proven design requires no regular maintenance except for external cleaning and has 10+ years design life in harsh marine environment.

- **Trusted by competent authorities around the globe**

- **Consistent and reliable performance in compact, durable and lightweight package**

- **Highly reliable, tested and well-proven design**

- **Supports remote monitoring, BT programming and automatic off-season deactivation**

- **Conforms to IALA recommendations for lit AtoN-equipment**

- **Premium grade, UV resistant polycarbonate lens material**

- **Long lasting and highly durable IP68 rated powder-coated aluminum chassis**
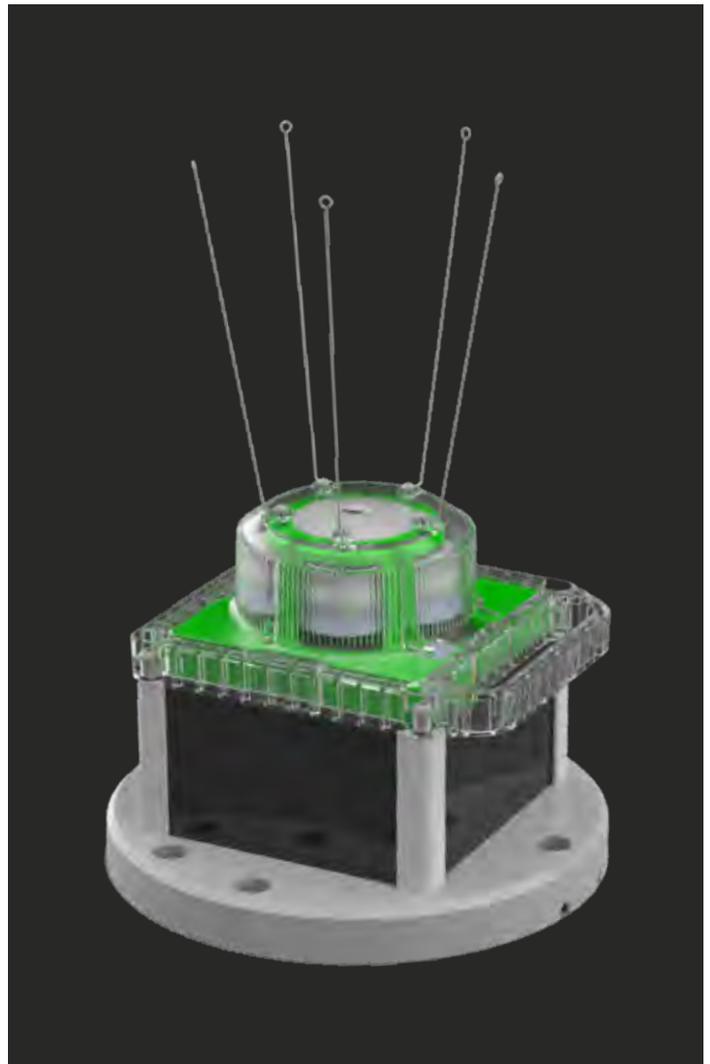
Optical performance

Maximum fixed intensity

M840	239 cd	290 cd	445 cd	320 cd

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)	8º (standard) or 10º (wide)
Nominal voltage / (range)	12 or 24 VDC, (9-32VDC)
Degree of ingress protection	IP 68 immersion
Weight	1,9 kg
Height (including bird spikes)	338 mm
Focal plane height (parallel to base)	145 mm
Overall width	235 mm dia.
Installation	3 or 4 x M12 on 200 mm dia.
GPS sync	Factory option
Remote monitoring	Optional satellite monitoring
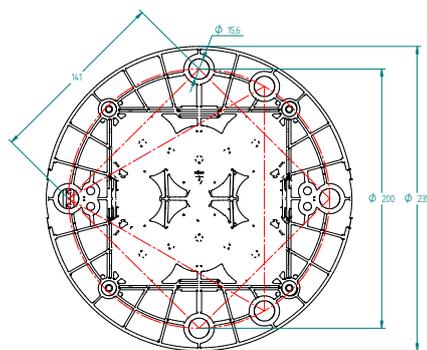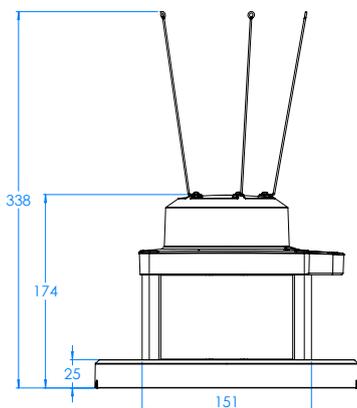
Order Overview M840

Product codes

Lens/Colour	M840 colour/lens (GPS sync.) (sat. monitoring) (BT programming)
8º red	M840-R08D(-GPS)(-SAT)(-BLE)
8º green	M840-G08D(-GPS)(-SAT)(-BLE)
8º white	M840-W08D(-GPS)(-SAT)(-BLE)
8º yellow	M840-Y08D(-GPS)(-SAT)(-BLE)
10º red	M840-R10D(-GPS)(-SAT)(-BLE)
10º green	M840-G10D(-GPS)(-SAT)(-BLE)
10º white	M840-W10D(-GPS)(-SAT)(-BLE)
10º yellow	M840-Y08D(-GPS)(-SAT)(-BLE)

MPV LED

Heavy duty ice buoy LED lantern

The MPV LED is an LED lantern designed to be used in most severe ice conditions, and is capable of surviving the crushing pressure and dynamic forces of ice in winter conditions.

- Rugged bronze alloy housing for installation in harsh marine environments

- Designed to be fully waterproof – can withstand submersion down to 100 meters

- Integrates firmly onto buoy top – presents a very low profile to lateral forces from ice

- Enables battery replacement through lantern without removing the lantern from buoy

- Visual range up to 6 NM (Tc = 0,74)

- Standard IALA colours
  Red, Green, White and Yellow

- Extremely low power consumption; ideal for primary battery operation

- Integrated flasher with day light switch

- Adjustable intensity and range

- Programmable with Sabik standard IR programming devices

- Integrated 365 day event log

- Optional integrated GPS synchronization

- Optional integrated GSM Remote monitoring

Optical performance

Maximum fixed intensity				
At full power 6 W	120 cd	160 cd	240 cd	120 cd

Main Technical Specification

Lens visual/Mechanical diameter	160 mm
Lens material	UV stabilized Polycarbonate
Light source	Light Emitting Diodes (LEDs)
Vertical divergence (wide lens)	10º @ 50% (±1º) of peak intensity
Unit lifetime	Up to 10 years
Weight	25 kg
Temperature range	-40º...+60ºC
Supply Voltage	10 – 32 VDC
Power consumption	max 6 watts
Degree of protection	IP 68
Cable length	2 m / 6 m
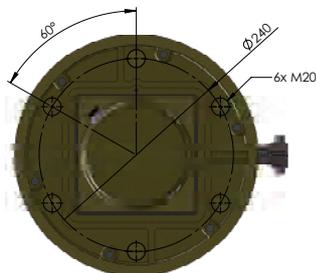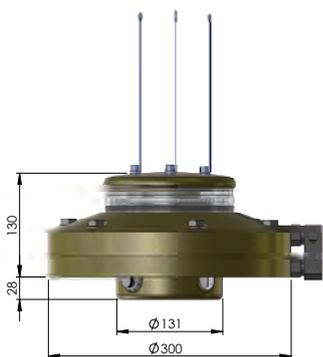
Order Overview MPV LED

W = Wide (10º @ 50 % of peak intensity)		
Red	MPV-LED-WR	H = with hinge
Yellow	MPV-LED-WY	J = without hinge
Green	MPV-LED-WG	
White	MPV-LED-WW	

Product code example: MPV-LED-WG-4

- *MPV-LED* is Sabik code for a MPV LED

- *WG* is the code for a wide lens in green

- *4* is a selection of option 4 GPS syncronization

Option matrix

|	
OPT 4: GPS sync	Integrated GPS sync including GPS antenna
OPT 9: LightGuard GSM + GPS	Integrated GSM based monitoring including GSM/GPS antennas
OPT 10: LightGuard GSM	Integrated GSM based monitoring including GSM antenna
OPT 11: Control card	Control card for secondary battery
OPT 12: Aux card with I/O	Aux card including I/O ports
OPT 13: Aux card with RS485 and I/O	Aux card including RS 485 and I/O port

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ODSL 200

Omnidirectional LED sector light

ODSL 200 omnidirectional sector light is an innovative, compact sector light with accurate sector borders. This light is equipped with a replaceable LED optical unit. The range of the light, depending on colour and flash character, is between 6 and 10 NM (Tc = 0,74).

- Sectors are verified at Sabik's photometric range prior to delivery

- Field installation is easy thanks to the adjustable base

- Precision alignment, at site, can be done with a gun sight (has to be ordered separately)

- After installation sector alignments remain unchanged even if the LED optical unit is replaced

- Light can be delivered with an external weather cover

- The standard sector light is available as a 3, 6 or 12 layer model

- Small area of uncertainty between the sectors, typically less than 0,5 °

- Integrated flasher with daylight switch and a 16 A solar panel charger

- Programmable with Sabik IR programming devices or Bluetooth Control

- This light can be equipped with remote monitoring and synchronization

- Patented omnidirectional LED sector light technology

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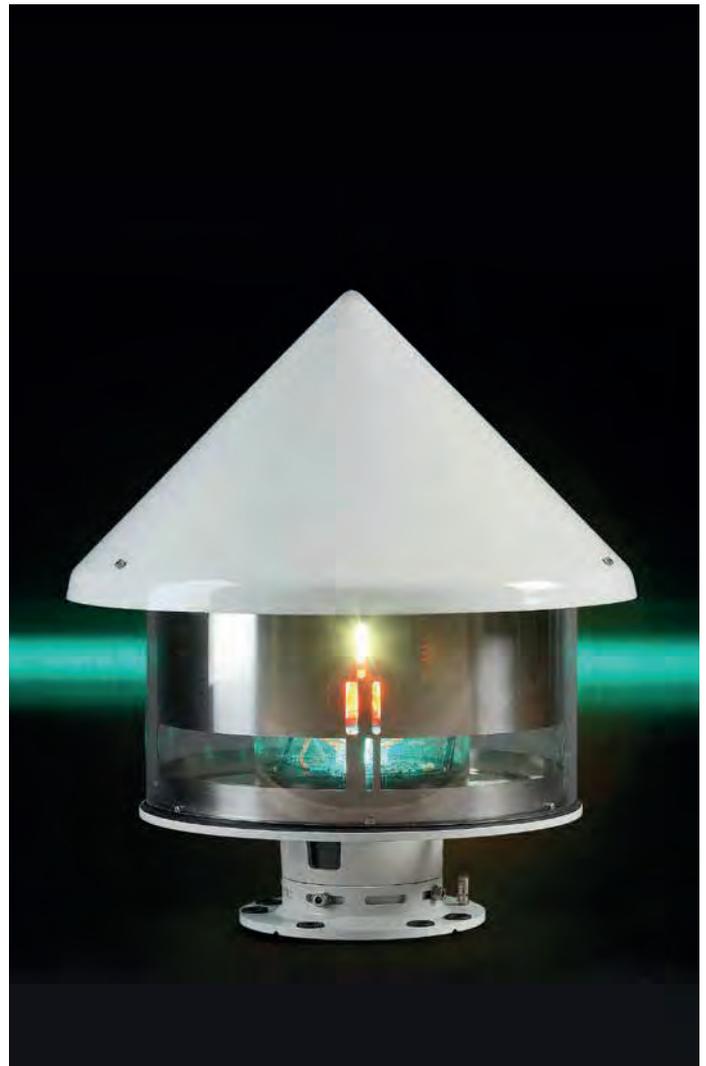
Optical performance

Maximum fixed intensity per tier and colour

Max power 3,5 W	250 cd	250 cd	600 cd

Main Technical Specification

Lens visual/Mechanical diameter	200 mm
Lens material	UV stabilized acrylic
Light source	High Power Light Emitting Diodes
Vertical divergence	2°@50% of peak intensity (FWHM)
Unit lifetime	Up to 10 years
Weight lantern	3-tier 10,5 kg, 6-tier 13,4 kg, 12-tier 22,4 kg
Weight including weather cover	3-tier 14 kg, 6-tier 17,4 kg, 12-tier 26,4 kg
Height	3-tier 577 mm, 6-tier 727 mm, 12-tier 1027 mm
Temperature range	-40° – +60°C
Supply Voltage	10 – 32 VDC
Solar panel charger	16 A PWM charger
Power consumption	3,5 watts/tier
Degree of protection	IP 67
Cable length	2 m / 6 m
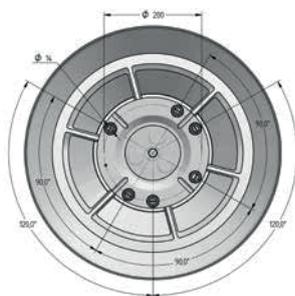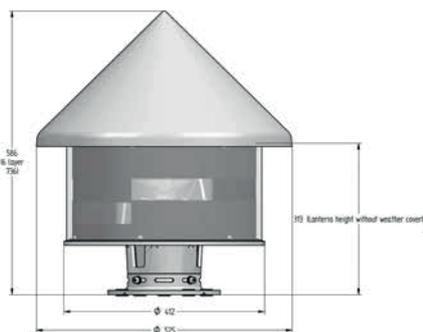
Order Overview ODSL 200

Product codes

ODSL 200

ODSL-200-3, 3 layer lantern
ODSL-200-6, 6 layer lantern
ODSL-200-12, 12 layer lantern

ODSL 200 WEATHER COVER

ODSL-200-3WC, 3 layer weather cover
ODSL-200-6WC, 6 layer weather cover
ODSL-200-12WC, 12 layer weather cover

Gun sight for exact alignment

821035

Option matrix

OPT 4: GPS sync	Integrated GPS sync with external GPS antenna
OPT 9: LightGuard GSM + GPS	Integrated GSM based monitoring with external antennas
OPT 10: LightGuard GSM	Integrated GSM based monitoring with external GSM antenna
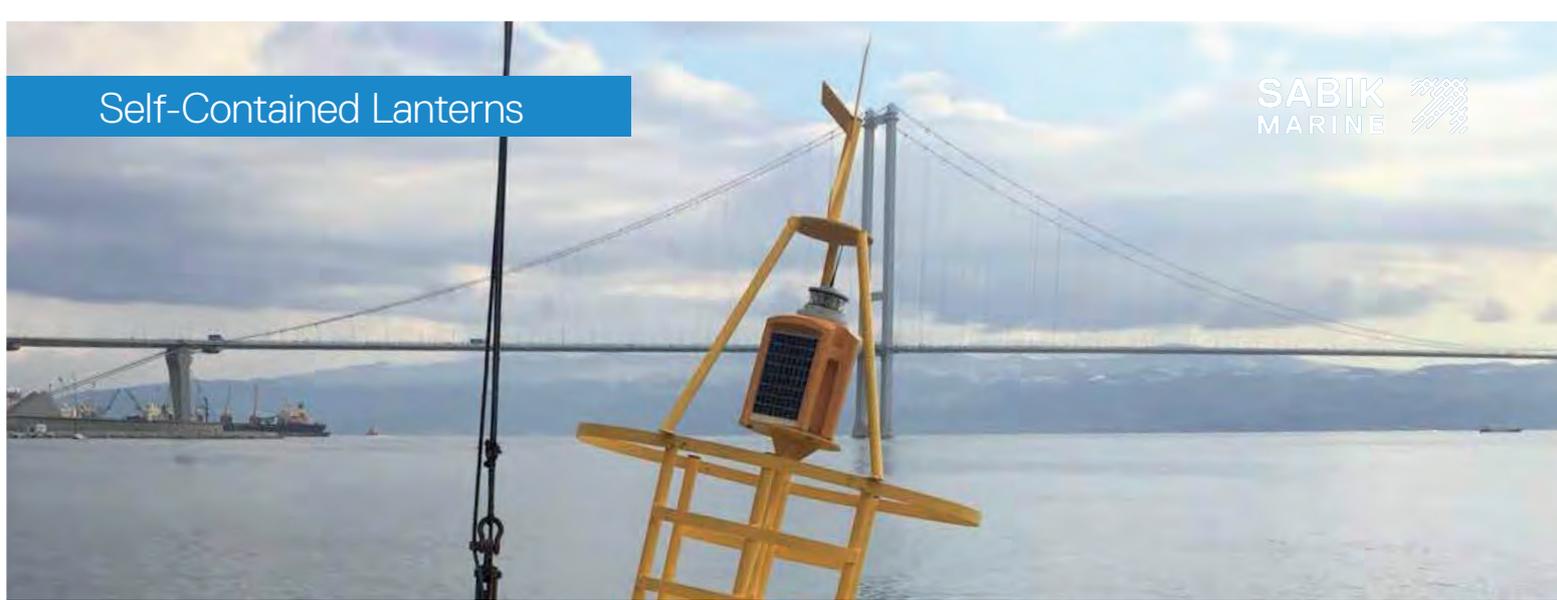
SC 160 I

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**
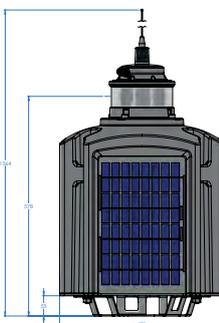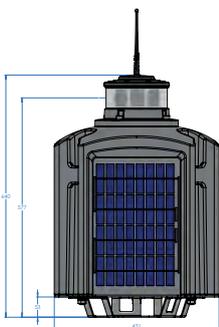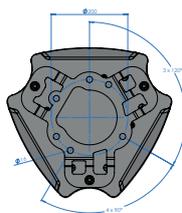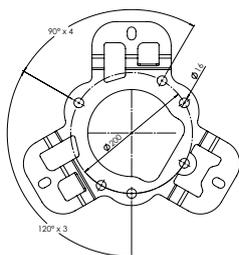
- **Supports up to 10 virtual Aton:s**

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.

Self-contained Lanterns

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

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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.
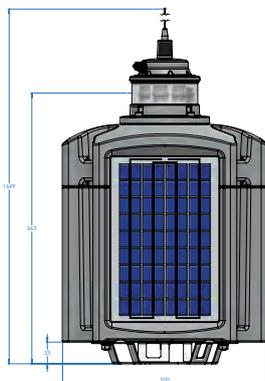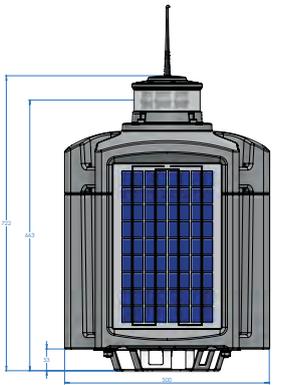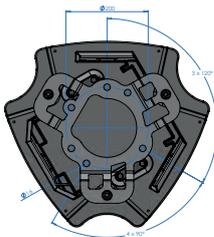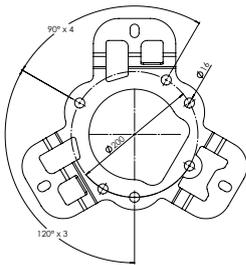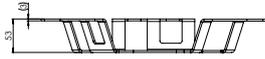
Order Overview SC 160 II

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

VLB-5X-SA

LED lantern for buoys and minor beacons up to 5,5 NM range

VLB-5X-SA is a compact and durable lantern with an excellent performance. Thanks to the small size and low weight it is a good choice for light fixed structures and buoys.

Benefits include:

- **Optical range – 5.5 NM**
- **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

Optical specification

Light source	High Power Light Emitting Diode (LED)
Vertical divergence	7 degrees @ 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
Designed service life	10 years
Weight	1.0 kg
Flash character	256 standard characters plus custom character
Temperature range	-40° to +50°C
Voltage	12 VDC (9-18 VDC)
Solar charger	Integrated 2 amp * (no output cable supplied without order request)
Degree of protection	IP 68
Cable length	2 m / 6 m

Stand-alone Unit (SA)

3 & 4 HOLE BOLT PATTERN ON 200PCD

MOUNTING HOLES Ø13.6

Ø240
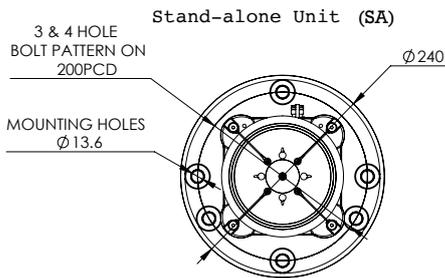
Order Overview VLB-5X-SA

Product code

Code	Note
VLB-5X-c07-SA(-GS)	
c	Color (R, G, W, Y)

Option matrix

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

SABIK
MARINE

VLB-36X

Medium range lantern 4-7 NM

This 7 nautical mile marine beacon uses highly efficient optics and electronics providing best in class energy efficiency.

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

- **2 different vertical divergences to cover fixed and floating applications: 10° (ideal for buoys), 7° (for land/pole use)**

- **Available as standalone or self-contained with 30 Watts solar power**

- **The available colours are red, green, white and yellow**

- **The unique optical system utilises an acrylic lens to maximise the light capture from the LED's**

- **The LED's are precisely graded and placed to produce a light beam with minimum varia tion in intensity**

- **A switch mode regulator maintains the light output of the LEDs independent of input of voltage and temperature**

- **Programming is done using IR programmer**

- **Integrated GPS-sync available as option**
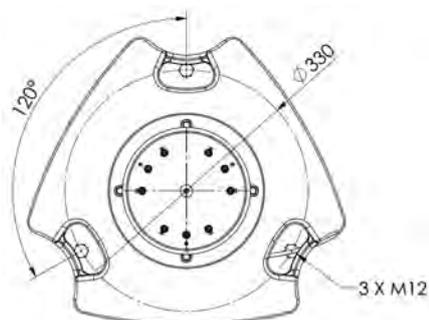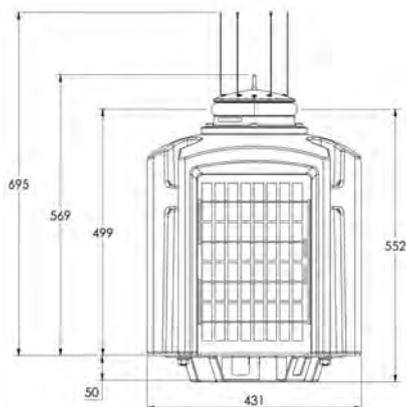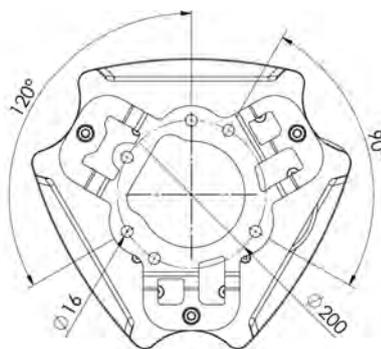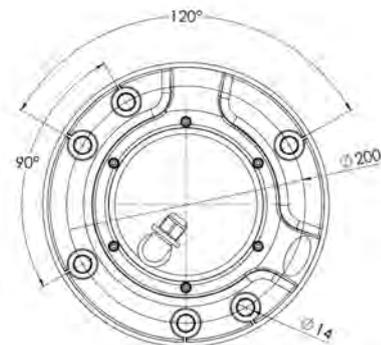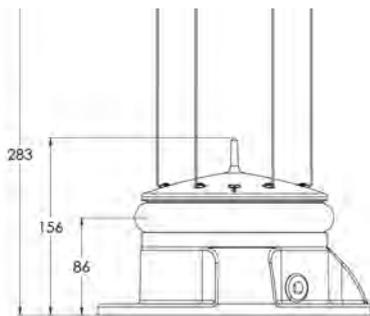
Optical Performance

Maximum peak intensity				
7°	380cd	403cd	348cd	534cd
10°	320cd	352cd	265cd	395cd

Optical specification

Light source	High-Intensity LEDs
Colours available	Red, Green, White and Yellow
Horizontal divergence	360°
Flash character	Fully programmable (including presets)
Vertical divergence	7° @ 50% peak 10° @ 50% peak
Temperature control	LEDs monitored for excess temperature

Main Technical Specification

Lens	Machined cast acrylic; UV-protected
Base	UV resistant ASA
Body	Marine grade aluminium
Weight	1.2 kg
Temperature range	-30° – +50°C
Voltage	12 VDC (10-18 VDC)
Solar Panel Charger	5 A
Degree of protection	IP 68

VLB-36X-SC

Solar panel output	30 W
Battery capacity	32 Ah
Weight	27 kg
Height	569 mm (695 mm incl. bird spikes)

Order Overview VLB-36X

Option matrix	
GS	GPS synchronization

Product code	
Code	Note
VLB-36X-cdd-xx	
c	Color (G, R, W, Y)
dd	Vertical divergence (**7°** or **10°**)
xx	SA = Standalone, SC = Self-contained

SABIK MARINE

VLB-44X
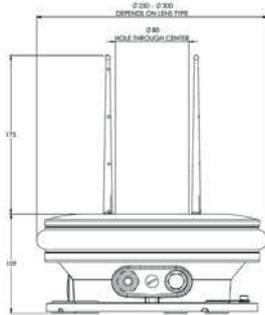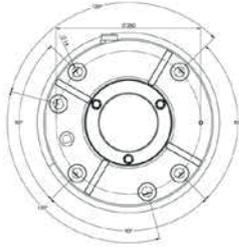
Long range lantern 6-14 NM (1-3 tiers)

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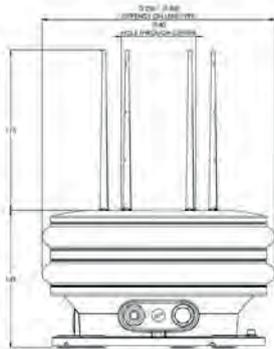
This level of efficiency significantly reduces the solar panel and battery requirements in standalone applications.

- 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

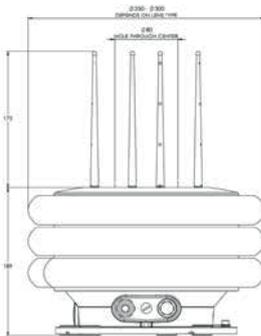- A switch mode regulator maintains the light output of the LEDs independent of input of voltage and temperature

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 VLB44X-xT-cddd(-GS)	Note
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

SIDE VIEW
Weight 4.5 kg

SIDE VIEW
Weight 7.2 kg

SIDE VIEW
Weight 9.9 kg

VP LED

Buoy LED lantern

The VP LED is an LED lantern designed to be used in moderate ice conditions. It has a proven record of surviving the crushing pressure and dynamic forces of ice. VP LED is mainly used on plastic ice spars and buoys when a lightweight unit is important.

- **Marine grade aluminium housing**
- **Designed to be fully waterproof, can sustain extensive submersion**
- **Integrates firmly onto buoy top and presents a very low profile to lateral forces from ice**
- **Lantern can be removed for battery replacement**
- **Range up to 6 NM (Tc = 0,74)**
- **Standard IALA colours red, green, white and yellow**
- **Extremely low power consumption, ideal for primary battery operation**
- **Integrated flasher with day light switch**
- **Adjustable intensity and range**
- **Programmable with Sabik standard IR programming devices**
- **Integrated 365 day event log**
- **Optional integrated GPS synchronization**
- **Optional integrated GSM Remote monitoring**
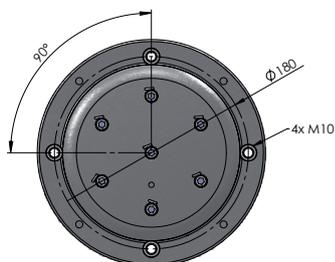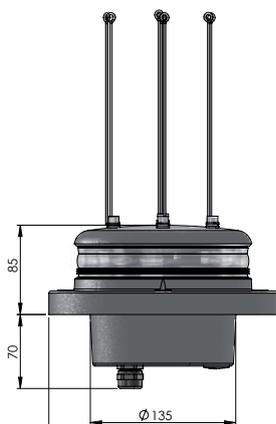- **Optional Bluetooth control**

Optical performance

Maximum fixed intensity				
At full power 6 W	120 cd	160 cd	240 cd	120 cd

Main Technical Specification

Lens visual/Mechanical diameter	160 mm
Lens material	UV stabilized Polycarbonate
Light source	Light Emitting Diodes (LEDs)
Vertical divergence	10° @ 50 % (±1°) of peak intensity
Unit lifetime	Up to 10 years
Weight	3,2 kg
Temperature range	-40°...+60°C
Supply Voltage	10 – 32 VDC
Solar Panel Charger	16 ampere PWM charger
Power consumption	Max 6 watts
Degree of protection	IP 68
Cable length	2 m / 6 m

Order Overview VP LED

W = Wide (10° @ 50 % of peak intensity)	
Red	VP-LED-WR
Yellow	VP-LED-WY
Green	VP-LED-WG
White	VP-LED-WW

Product code example: VP-LED-NW-13

- *VP-LED* is Sabik code for a buoy lantern
- *NW* is the code for a Narrow lens in white
- *13* is a selection of option 13 Aux card with RS485 and I/O

Order Overview VP LED B/Y

Wreck marking buoy lantern blue/yellow

Product codes

VP LED BLUE/YELLOW WRECK MARK	VP-LED-2-WBY

Option matrix

OPT 4: GPS sync	Integrated GPS sync including GPS antenna
OPT 9: LightGuard GSM + GPS	Integrated GSM based monitoring including GSM/ GPS antennas
OPT 10: LightGuard GSM	Integrated GSM based monitoring including GSM antenna
OPT 11: Control card	Control card for secondary battery
OPT 12: Aux card with I/O	Aux card including I/O ports
OPT 13: Aux card with RS485 and I/O	Aux card including RS 485 and I/O port
OPT BT	Bluetooth control

SABIK MARINE

VPL 110

Buoy lantern

VPL 110 is a robust lantern with an outer polycarbonate cover to be used integrated into buoy applications. This lantern has very low power consumption and is equipped with GPS synchronization. LightGuard remote monitoring can be added as an option and advanced Bluetooth® Control app is also available for android and iOS mobile phones.

- Adjustable intensity and range
- Integrated flasher with day and night switch
- Standard range: 4 NM at Tc = 0,74 (5 NM at Tc = 0,85)
- Available in standard IALA colours
- Vertical divergence 8° @ 50% (±1°) of peak intensity
- GPS synchronization as standard
- Remote monitoring with LightGuard Monitor
- Programmable with Sabik standard IR programming devices
- Advanced Bluetooth® Control up to 50m available for android and iOS smart phones

Optical Performance

Maximum fixed intensity

VPL 110				
	40cd	40cd	50cd	45cd

Optical specification

Light source	High Power Light Emitting Diode (LED)
Vertical divergence	8° @ 50% (±1°) of peak intensity

Main Technical Specification

Nominal Range	up to 4 NM
Lens	Uv stabilized polycarbonate
Designed service life	Up to 10 years
Weight	2,8 kg
Temperature range	-40° to +60°
Solar charger	1,5 W
Degree of protection	IP 67
Cable length	2 m / 6 m
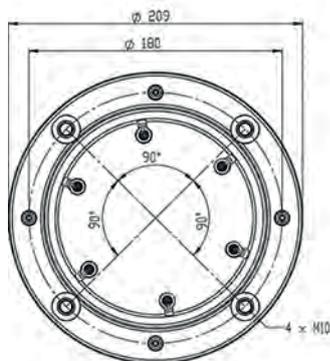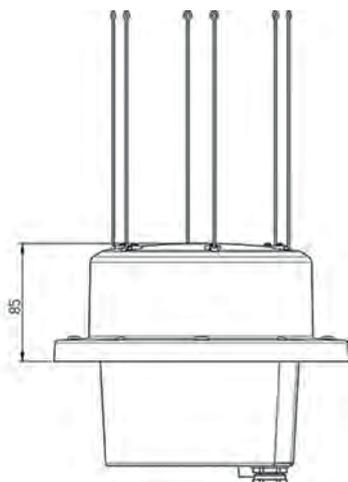
Order Overview VPL 110

VPL 110 (GPS sync as standard)	Colour
VPL-110-W4	white
VPL-110-R4	red
VPL-110-G4	green
VPL-110-Y4	yellow

Product code for Programmer

980332	Sabik Easy Programmer
	Bluetooth mobile app for android and IOS available

Option matrix

|	
LightGuard GSM + GPS OPT 9H	Integrated GSM based monitoring including GSM/GPS antennas
Optical Feedback System OPT 1H	Integrated LED performance measurement
Shock & Tilt Sensor	Integrated 3-axis G sensor for tilt and shock sensing
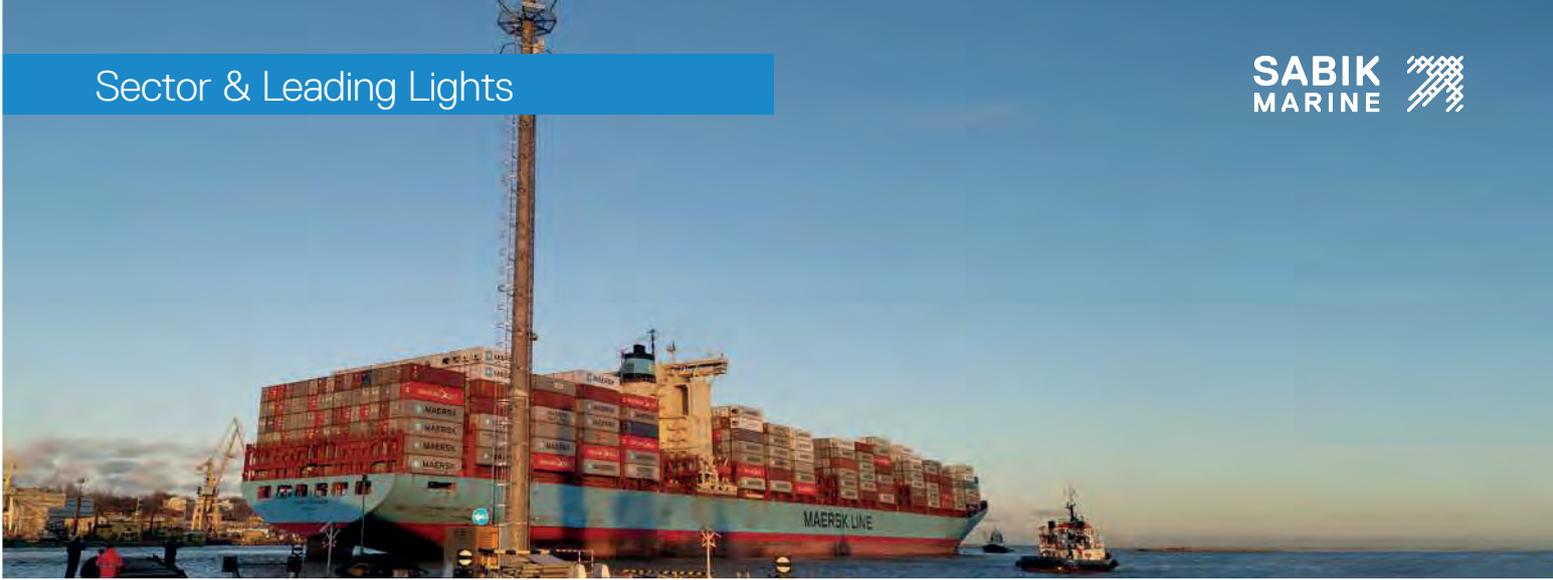
VRL-74

13NM - 22 NM@ 0.74T

The VRL-74 is a LED range light operating through an optical grade acrylic lens. The horizontal and vertical profiles can be widened with the use of spreader lenses.

The standard offering for the VRL-74 comes in 1-6 different lenses and any of 5 colours depending on your requirements.

- Multiple effective intensity settings for both day and night operation
- Day/night transition level settings
- Programmable flash characters
- Synchronisation control, master/slave options
- Low voltage cut out
- Optional security code
- Automatic Schmidt-Clausen intensity correction for short flashes
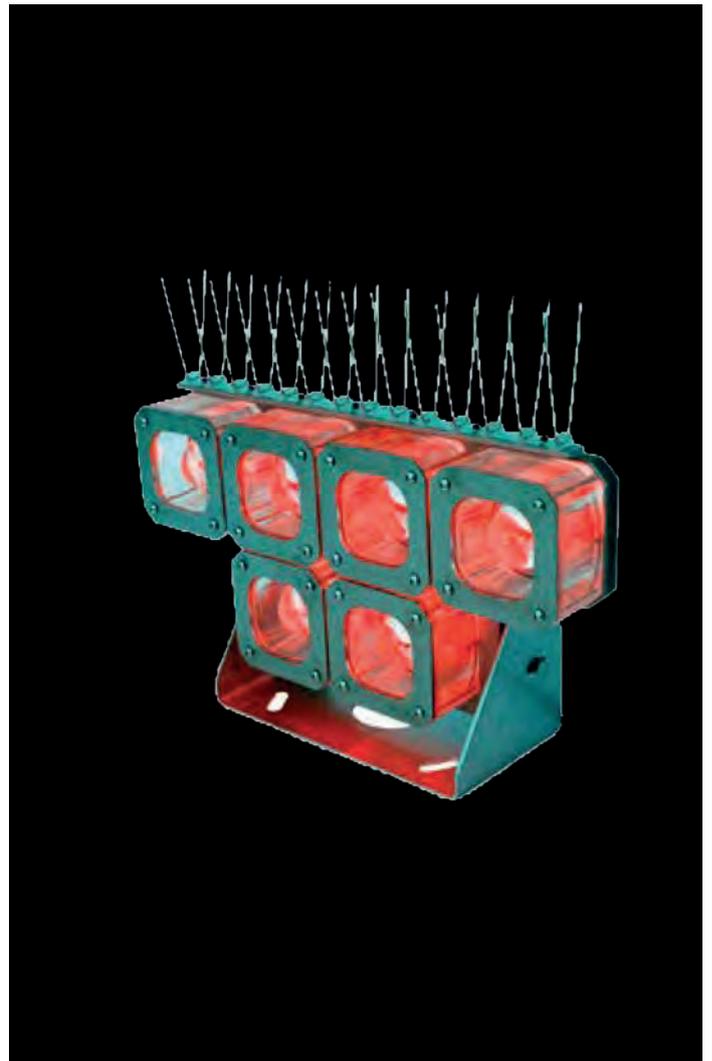
Optical Performance
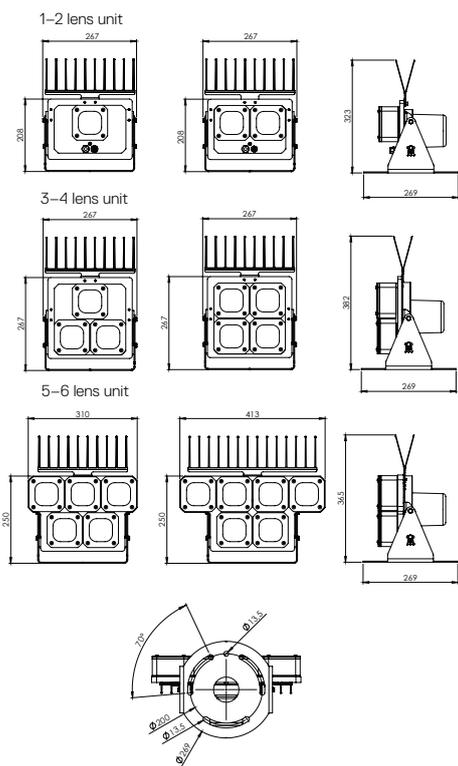
Maximum peak intensity per optic

±1.5°	33000cd	37700cd	96000cd	33000cd	13600cd

Optical specification

Light source	High Power Light Emitting Diode (LED)
Horizontal divergence	±1.5° (without spreader)
Vertical divergence	±1.5° (without spreader)

1–2 lens unit
3–4 lens unit
5–6 lens unit

Main Technical Specification

Nominal Range	Up to 24,2 NM
Lens	Machined cast acrylic
Base	304 SS
Body	Anodised marine grade aluminium
Weight	Single lens unit 4 kg Two lens unit 4.2 kg Three lens unit 5.2 kg Four lens unit 5.4 kg Five lens unit 6.1 kg Six lens unit 7.2 kg
Flash character	246 standars characters plus 1 custom character
Temperature range	-30° to +50°C
Voltage	12/24 VDC (10-30 VDC)
Solar charger	N/A
Degree of protection	IP 67
Cable length	2 m / 6 m

Order Overview VRL-74

Product code

| Code	Note
VRL-74-cnxy(-GS)	
c	Color (R, G, W, Y, B)
n	Number of lenses
x	Horizontal spreader information
y	Vertical spreader information

Option matrix

| GS	Internal GPS as factory option

VRL-91

5.4NM by day
23NM by night

The VRL-91 high power LED range light forms part of the Vega LED marine beacon family and is intended for applications requiring very high intensity.

A single white VRL-91 lens using a single LED produces an intensity of up to 403000 candela, which provides a range of 23 NM at 0.74T with no background light.

Programming features (with IR remote programmer):

- **Automatic Schmidt-Clausen intensity correction for short flashes**

- **Multiple effective intensity settings for both day and night operation**

- **Day/night transition level settings**

- **Fully programmable flash characters**

- **One programmable custom character**

- **Synchronisation control including master/slave options and sync delay (optional)**

- **Supply voltage monitoring**

- **Programmable low voltage cut out**

- **RS-232 data port compatible (optional)**

- **Optional security code**

312

267

378

70°

Ø200

Ø13.5
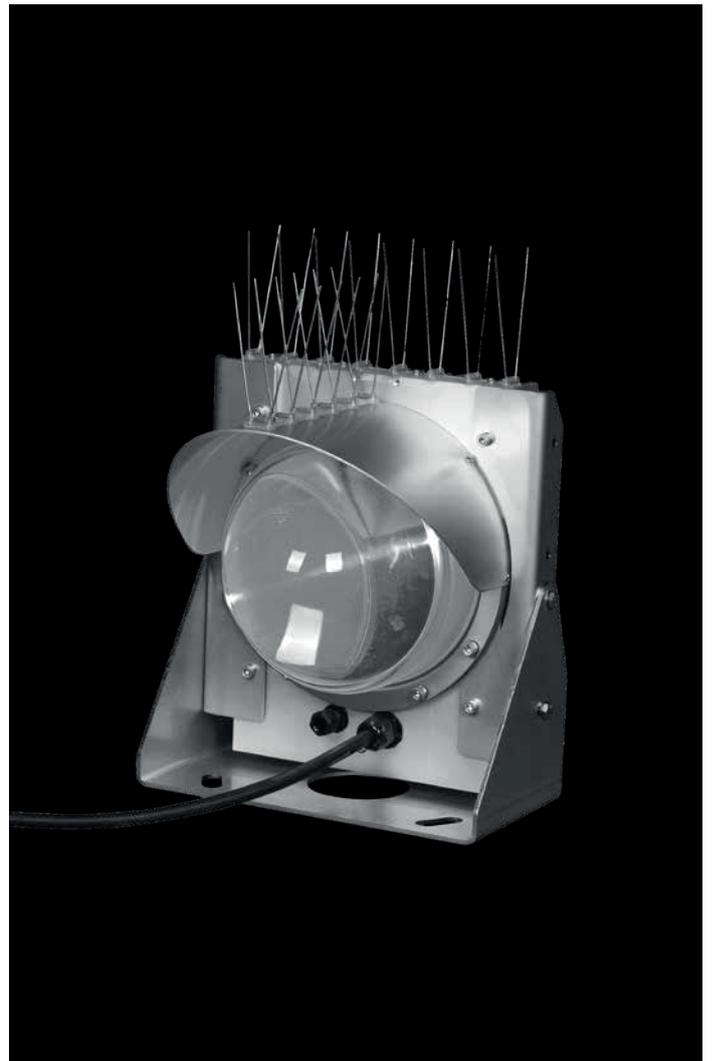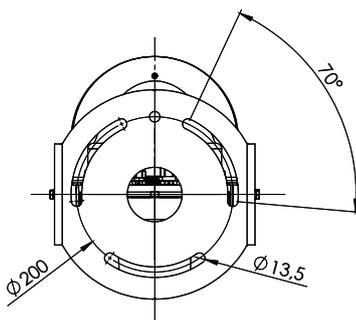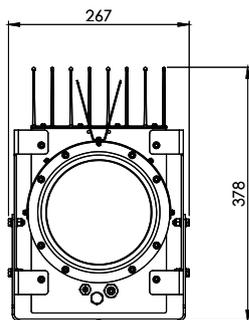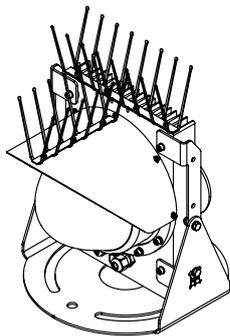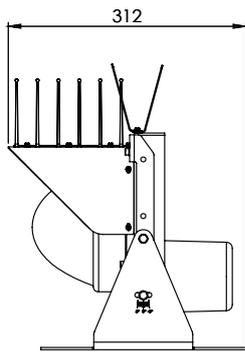
Optical Performance

Maximum peak intensity

±1.5°	136000cd	276000cd	500000cd

Optical specification

Light source	High Power Light Emitting Diode (LED)
Horizontal divergence	±1.5°
Vertical divergence	±1.5°

Main Technical Specification

Nominal Range	Up to 23 NM
Lens	Machined cast acrylic
Body	Anodised marine grade aluminium
Weight	7.5 kg
Flash character	246 standard characters plus 1 custom character
Temperature range	-30° to +50°C
Voltage	12/24 VDC (10-30 VDC)
Degree of protection	IP 67
Cable length	2 m / 6 m

Order Overview VRL-91

Product code

Code	Note
VRL-91-c(-GS)	
c	Color (R, G, W)

Option matrix

GS	Internal GPS as factory option

SABIK
a **Carmanah** company

LED 110

Marine LED lantern for buoys and small beacons

LED 110 is a maintenance free short range LED lantern. Using the latest in high power LED technology, Sabik's intelligent electronics and our especially designed efficient optics, we have been able to achieve an excellent performance for the lantern. LED 110 is made from polycarbonate for durability and low weight.

- **Range up to 4 NM at Tc = 0,74 (5 NM at Tc = 0,85)**
- **Standard IALA colours Red, Green, White and Yellow**
- **Produced of durable polycarbonate plastic**
- **Integrated flasher with day light switch and 2A solar charger**
- **Internal calendar; light can be switched off for winter**
- **Adjustable intensity and range**
- **Vertical divergence 8° @ 50 % (±1°) of peak intensity**
- **Programmable with Sabik standard IR programming devices**
- **Integrated event log (Black box function) for 365 days**
- **Optionally integrated GPS synchronization**
- **Optionally integrated GSM remote monitoring**

www.sabik-marine.com

Lens
Bird deterrent top design.

Optical lens
New efficient omnidirectional lens.

PTFE breathing
Vent for pressure release in the bottom of the lantern.

Programming with PC
Using Sabik USB interface.

Sabik Easy Programmer
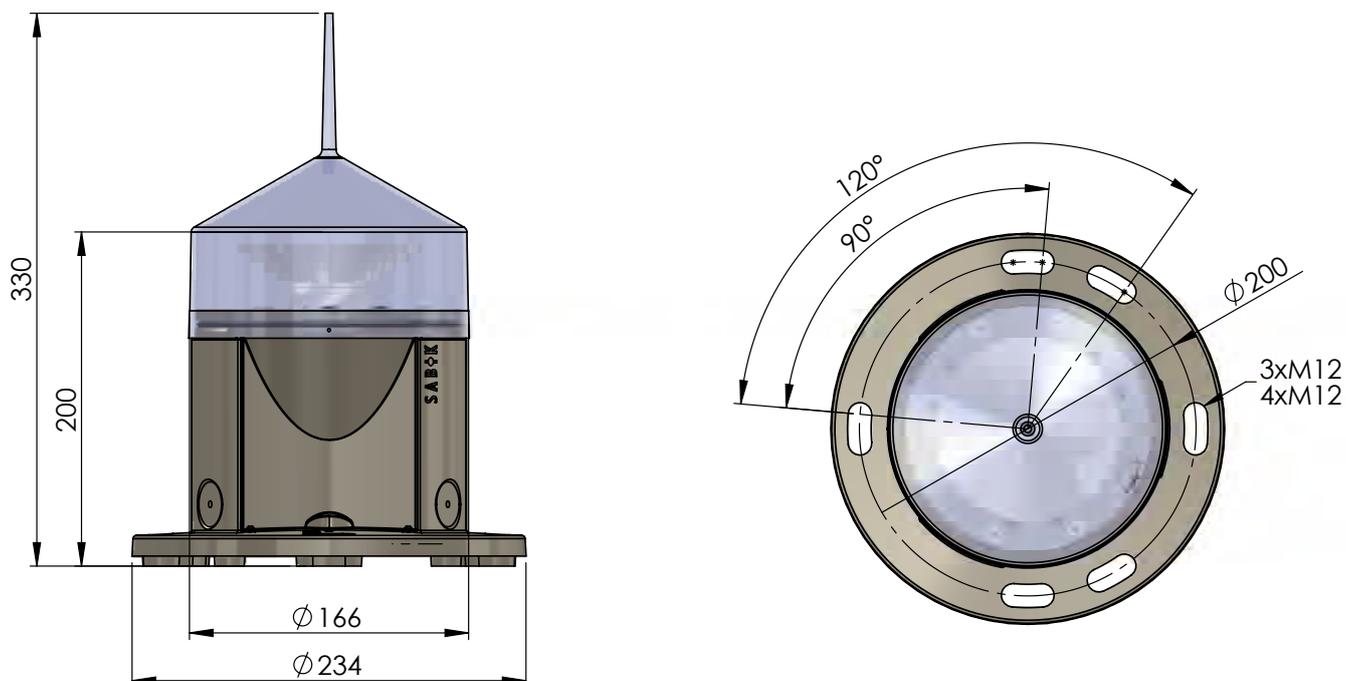User friendly and compact wireless two-way programmer.

Cable entry
From side or bottom of the lantern.

Installation
The bottom plate of the LED110 supports installation on structure using 3 or 4 x M12 on a 200 mm diameter or 3 x M8 on a 150 mm diameter.

Technical Specification LED 110

Optical performance

Maximum fixed intensity

LED 110	40 cd	40 cd	50 cd	45 cd

Main Technical Specification

Lens visual/Mechanical diameter	166 mm
Lens material	UV stabilized Polycarbonate
Body material	UV stabilized Polycarbonate
Light source	High Power Light Emitting Diode (LED)
Vertical divergence	8° @ 50% (±1°) of peak intensity
Unit lifetime	Up to 10 years
Weight	2 kg
Temperature range	-40°…+60°C
Degree of protection	IP 67
Supply Voltage	9 – 30 VDC
Power consumption	Max 1,3 watt

Order Overview LED 110

Option matrix

OPT 9S: LightGuard GSM + GPS	Integrated GSM based monitoring including GSM/GPS antennas
OPT 4S: GPS sync	Integrated GPS sync including GPS antenna
OPT 1S: Optical Feedback System	Integrated LED performance measurement
Shock & Tilt Sensor	Integrated 3-axis G sensor for tilt and shock sensing

Product codes

LED 110 wide lens	Colour
LED 110 WW	white
LED 110 WR	red
LED 110 WG	green
LED 110 WY	yellow

Product code example: LED 110WR.4S

• *LED 110WR* is Sabik code for LED 110 with wide lens in red
• *4S* is a selection of option 4 GPS syncronization

LED 155EX

Offshore lantern

LED 155EX is a LED lantern commonly used on offshore platforms. The lantern is maintenance free, compact and robust in design. LED 155EX is modular and can be delivered with up to 3 tiers.

LED 155EX is also available as a general purpose lantern for marking of obstacles. This version complies with ICAO Annex 14, Volume 1 and it can be configured with two different standard intensities depending on operational requirements.

- **Range up to 8 NM at Tc = 0.74 (12 NM at Tc = 0.85)**
- **ATEX category Zone 1 and Zone 2**
- **Standard IALA colours Red, Green, White and Yellow**
- **Rugged aluminium housing**
- **Extremely low power consumption, suitable for solar and battery operation**
- **Integrated flasher with a day light switch and an 8 Ampere solar panel charger**
- **Adjustable intensity and range**
- **Available with narrow (6°) or wide (10°) vertical divergence**
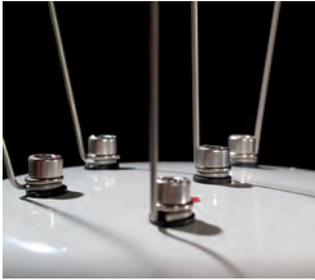- **Cable synchronization between light units**

Simplex   **Duplex**   **Triplex**

Optical performance

Maximum fixed intensity, wide lens			
Simplex, 6 W	120 cd	180 cd	250 cd	100 cd
Duplex, 12 W	228 cd	342 cd	450 cd	190 cd
Triplex, 18 W	336 cd	504 cd	675 cd	280 cd

Bird spikes
Stainless steel as standard. Easy to replace. Special spikes for protection against cormorants on request.

Additional cable entry
Equipped as standard with two cable entries. If the second entry is needed e.g. for cable sync or for a solar module a standard M20 cable gland can be fitted.

Grounding plug
The base plate has a grounding plug as standard to enable good protection for electromagnetic interference.
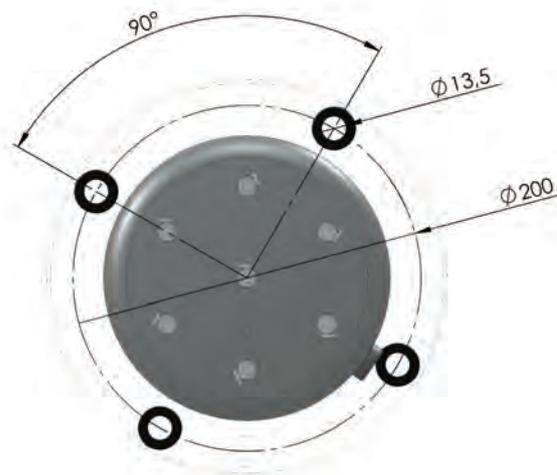
Main Technical Specification

Lens visual/Mechanical diameter	160 mm
Lens material	UV stabilized Polycarbonate
Light source	Light Emitting Diodes (LEDs)
Vertical divergence	6° @ 50% (±1°) or 10° @ 50% (± 1°) of peak intensity
Unit lifetime	Up to 10 years
Weight	3,9 kg for single tier unit
Controller	Sabik LED flasher
Degree of protection	IP 66
Temperature range	-40°…+60°C
Supply Voltage	9 – 28 VDC
Solar Panel Charger	8 ampere charger
Power consumption	6 watts / tier
Ex Zones	Zone 1 and Zone 2 indoor and outdoor
Ex approval	Eex emb op is II T4
Certificates	VTT 04 ATEX 016X

Product codes

LED 155EX wide lens	Colour	
LED 155EX WW	white	
LED 155EX WR	red	
LED 155EX WG	green	
LED 155EX WY	yellow	

| LED 155EX Aviation	Colour	Intensity
LEDA 155.10EX Type A	red	fixed 10 cd
LEDA 155.32EX Type B	red	fixed 32 cd

SABIK
MARINE

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**
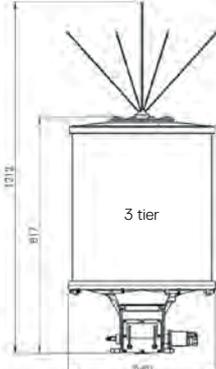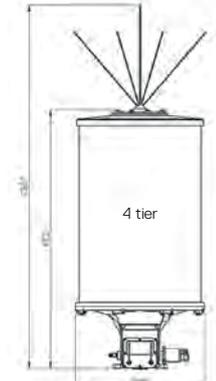- **Digital inputs/output**
- **RS232 port**

1 tier
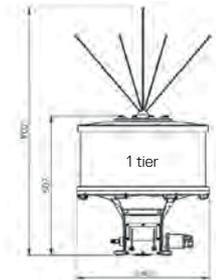
EST Weight: 43KG
Focal Height: 390mm

2 tier
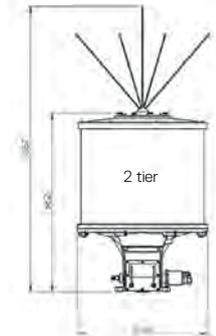
EST Weight 58KG
Focal Height: 467mm

3 tier

EST Weight: 73KG
Focal Height: 545mm

4 tier

EST Weight 87KG
Focal Height: 622mm

Optical Performance

Maximum peak intensity

1.5°	520000cd	520000cd	520000cd	520000cd

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

VLB-92

13NM - 22NM @ 0.74T

The VLB-92 is state-of-the-art long range LED beacon. It is intended for applications requiring very high intensity.

Depending on the configuration, the beacon is able to produce a range from 13-22NM at a transmissivity of 0.74T.

- **Effective intensity settings (5,800-240,000cd)**
- **Day/night transition level settings (40-250 lux range)**
- **Programmable flash characters, including IALA recommended characters**
- **Programmable custom character**
- **Synchronisation control including master/slave options and sync delay**
- **Synchronising delay can be set from 0 to 9.9 seconds**
- **Low voltage cut-out setting**
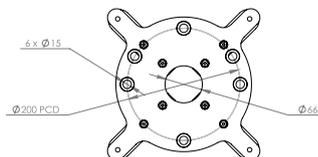- **Optional security code**
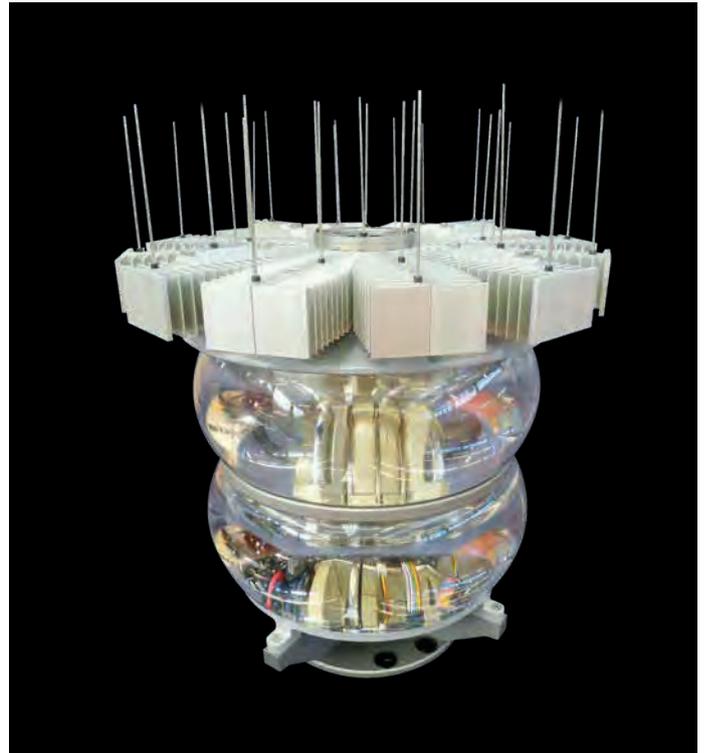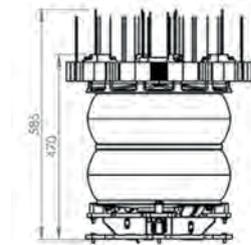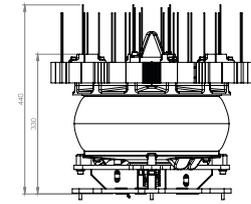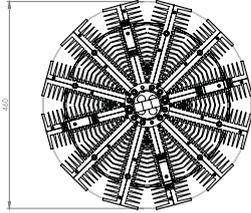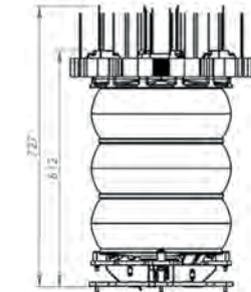
Optical Performance

Maximum intensity / layer	80000cd

Optical specification

Light source	High Power Light Emitting Diode (LED)
Vertical divergence	±1.6° @ 50% peak ±0.8° @ 10% peak
Temperature control	LEDs monitored for constant intensity control and over temperature protection

Main Technical Specification

Nominal Range	Up to 22 NM
Lens	Machined cast acrylic
Base	2 part painted cast marine grade aluminium
Body	Anodised marine grade aluminium
Designed service life	10 years
Weight	1-tier 31,8kg 2-tier 38kg 3-tier 47kg
Flash character	246 standard characters plus 1 custom character; 20 factory set custom characters
Temperature range	-30° – +50°C
Voltage	24 VDC (20-36 VDC)
Solar charger	N/A
Degree of protection	IP 67
Cable length	2 m / 6 m

Order Overview VLB-92

Product code

Code	Note
VLB-92-W-1.6-24-Y	
Y	Tiers (1 T, 2 T, 3 T)

Option matrix
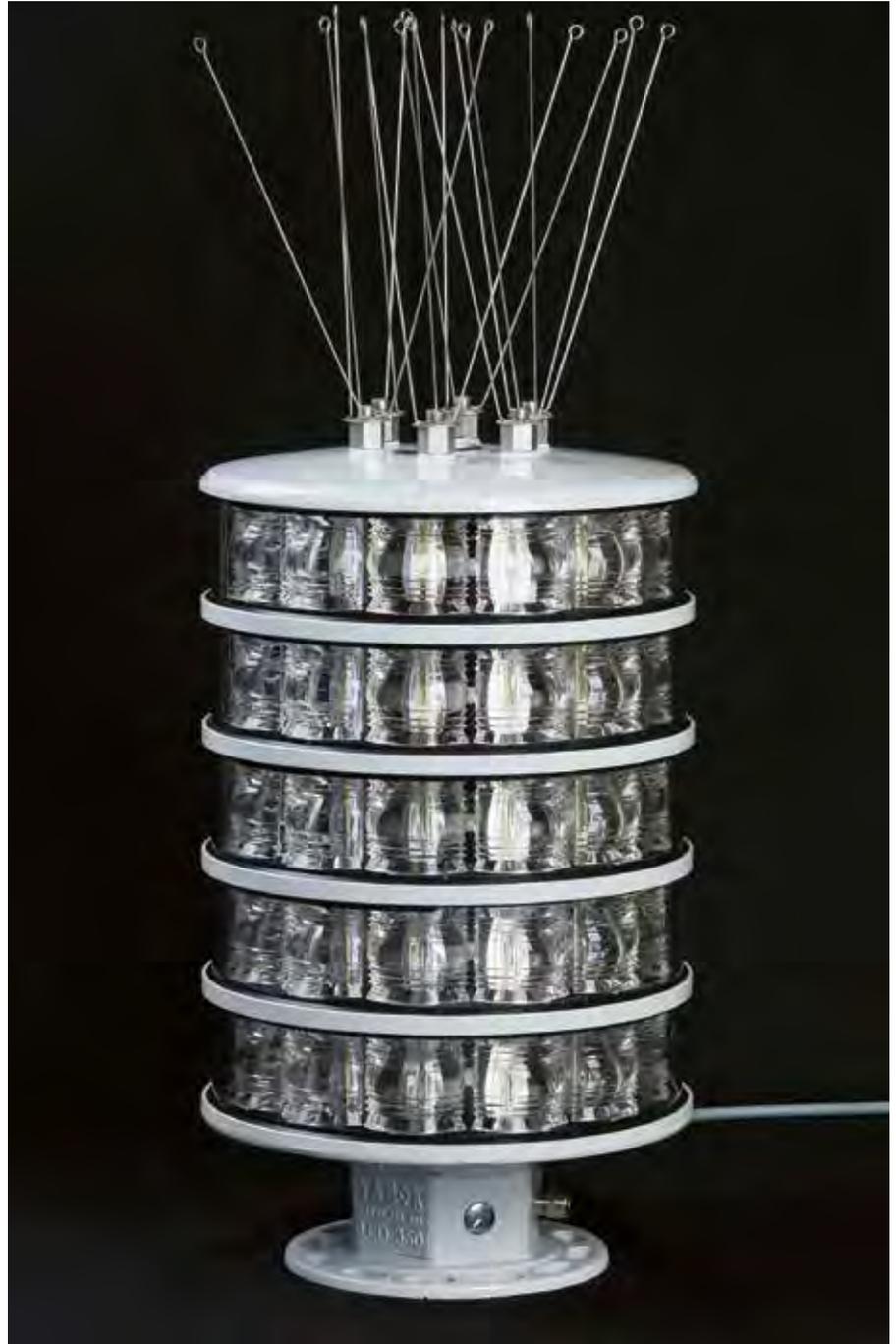
VSU-29	Optional integrated GPS synchronization using the VSU-29 GPS Sync Unit. VSU-29 requires 12 V operating voltage.
REMOTE-02	Infrared remote

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LED 350H

High Power LED lantern for fixed installations

A LED beacon capable of visual ranges up to 18 NM (Tc = 0,74) 30 NM (Tc = 0,85). LED 350H is designed to substitute rotating beacons with a considerably smaller power consumption.

- **Up to 15.000 cd luminous intensity per tier at only 100 watts**

- **Can be supplied with up to 5 tiers. Max luminous intensity an impressive 75.000 cd**

- **Rugged aluminium housing for installation in marine environments**

- **Low power consumption, suitable for solar and battery operation**

- **Integrated flasher with daylight switch and a 16 A solar panel charger**

- **Field adjustable intensity and range**

- **Programmable with Sabik standard IR programming devices**

- **Integrated 365 day event log**

- **Optionally integrated GPS synchronization**

- **Optionally integrated GSM Remote monitoring**

- **Equipped with Bluetooth programming**

www.sabik-marine.com

Bird spikes
Stainless steel bird deterrents as standard. Easy to replace. Offers great protection.

Level indicator
The lantern can easily be levelled in field using the integrated bubble level indicator.

IR port and photocell
Combined infrared communication port and photocell is located on the base of the lantern.

Grounding plug
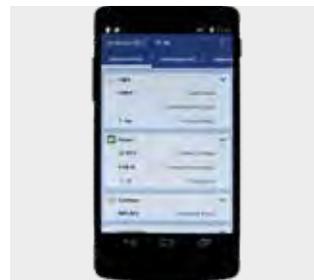The base plate has a grounding plug as standard to enable good protection against electromagnetic interference.

Additional cable entry
Equipped as standard with two cable entries. If the second entry is needed e.g. for a solar module standard M20 cable gland can be fitted.
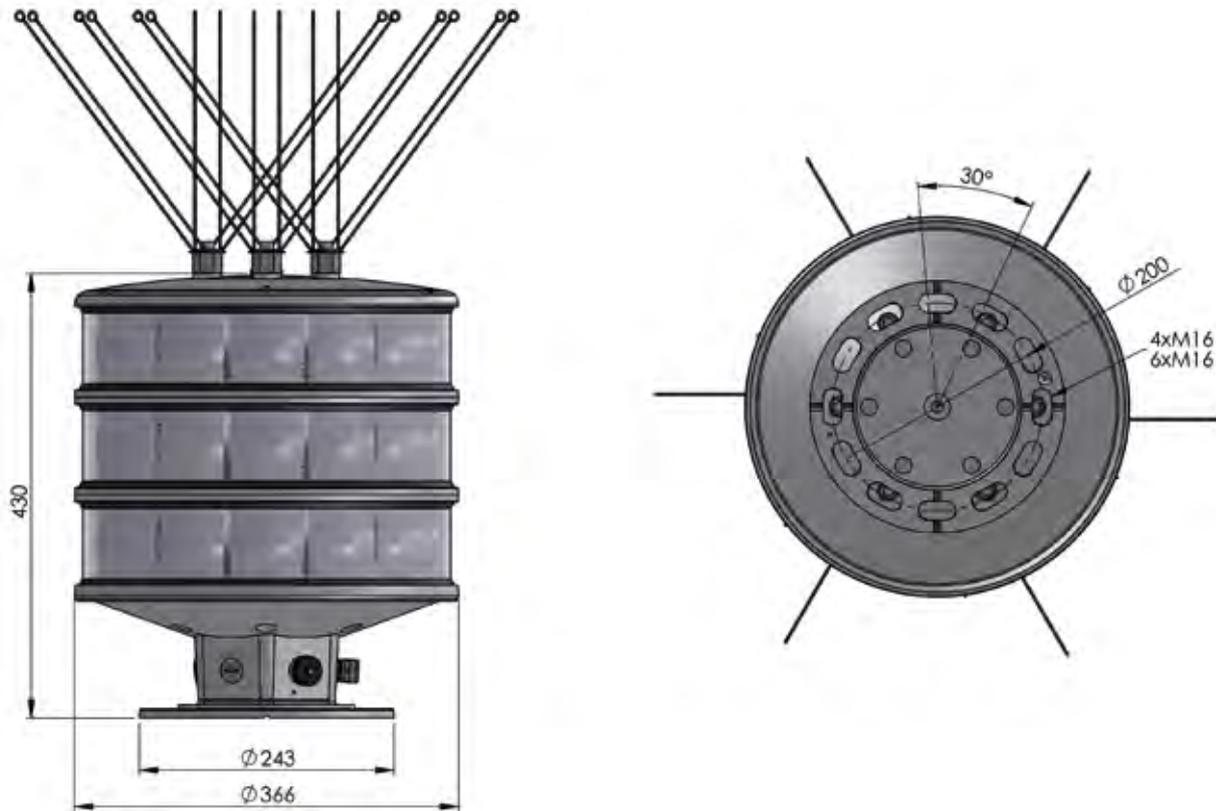

Sabik Easy Programmer
User friendly and compact wireless two-way programmer.

Bluetooth® Control
Lantern can be programmed and controlled up to 50 meters distance with standard android and iOS mobile phones.

SABIK
a **Carmanah** company

Technical Specification LED 350H

Optical performance

Maximum fixed luminous intensity

1-tier, 100 W	**4.500 cd**	**8.000 cd**	15.000 cd
2-tier, 200 W	**9.000 cd**	16.000 cd	30.000 cd
3-tier, 300 W	13.500 cd	24.000 cd	45.000 cd
4-tier, 400 W	18.000 cd	32.000 cd	60.000 cd
5-tier, 500 W	22.500 cd	40.000 cd	75.000 cd

Main Technical Specification

Lens visual/Mechanical diameter	350 mm
Lens material	UV stabilized Polycarbonate
Light source	High Power Light Emitting Diodes (LEDs)
Vertical divergence	1.5° @ 50 % (± 0.3°) and 3° @ 10 % (± 0.5°)of peak intensity
Unit lifetime	Up to 10 years
Weight	12 kg for single tier unit, add 4 kg for each tier
Temperature range	-40°…+60°C
Supply Voltage	20 – 32 VDC
Solar panel charger	16 ampere PWM charger. Solar panel production (Ah) is logged
Power consumption	100W/ tier
Degree of protection	IP 67

www.sabik-marine.com

Order Overview LED 350H

Option matrix

OPT 1: Optical Feedback System	Integrated LED performance measurement
OPT 4: GPS sync	Integrated GPS sync excluding GPS antenna
OPT 7: External GPS	External GPS antenna for OPT4 and OPT9
OPT 9: LightGuard GSM + GPS	Integrated GSM based monitoring including GSM antennas
OPT 10: LightGuard GSM	Integrated GSM based monitoring including GSM antenna
OPT 11: Control card	Control card for secondary battery
OPT 12: Aux card with I/O	Aux card including I/O ports
OPT 13: Aux card with RS485 and I/O	Aux card including RS 485 and I/O port
Shock & Tilt Sensor	Integrated 3-axis G sensor for tilt and shock sensing

Product codes

Colour	white	red	green
LED 350H 1 tier	LED 350H 1W	LED 350H 1R	LED 350H 1G
LED 350H 2-tier	LED 350H 2W	LED 350H 2R	LED 350H 2G
LED 350H 3-tier	LED 350H 3W	LED 350H 3R	LED 350H 3G
LED 350H 4-tier	LED 350H 4W	LED 350H 4R	LED 350H 4G
LED 350H 5-tier	LED 350H 5W	LED 350H 5R	LED 350H 5G

Product code example: LED 350H 3W.7-9

- *LED 350H 3W* is Sabik code for a three-tier LED 350H with lens in white
- *7-9* is a selection of OPT7 and OPT9

LED 350H 12V

LED350H is also available with supply voltage 10-18 VDC for one and two layer lanterns. There is no internal solar panel charger integrated in this 12V model lantern.

**Product codes for 12VDC white lantern**

1 LAYER	LED 350H 1W 12V
2 LAYERS	LED 350H 2W 12V

LED 350EX

High intensity LED lantern for offshore installations

LED 350EX is a high performance omni-directional LED beacon. The lantern is maintenance free, compact and robust in design. The lantern can be supplied with up to three tiers. A 1-tier LED 350EX has a range of 10 NM.

- **With 3 tiers range up to
  13 NM at Tc = 0,74
  19 NM at Tc = 0,85**

- **ATEX category Zone 1 and Zone 2**

- **Standard IALA colours Red, Green, White, Yellow**

- **Rugged aluminium housing**

- **Extremely low power consumption, suitable for solar and battery operation**

- **Integrated flasher with a day light switch and an 8 ampere solar panel charger**

- **Field adjustable intensity and range**

- **Cable synchronization between light units**
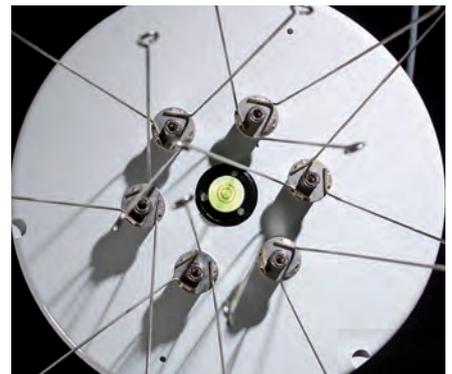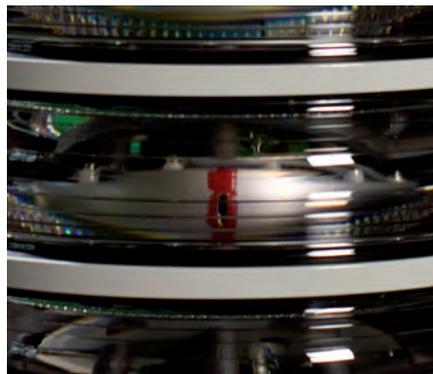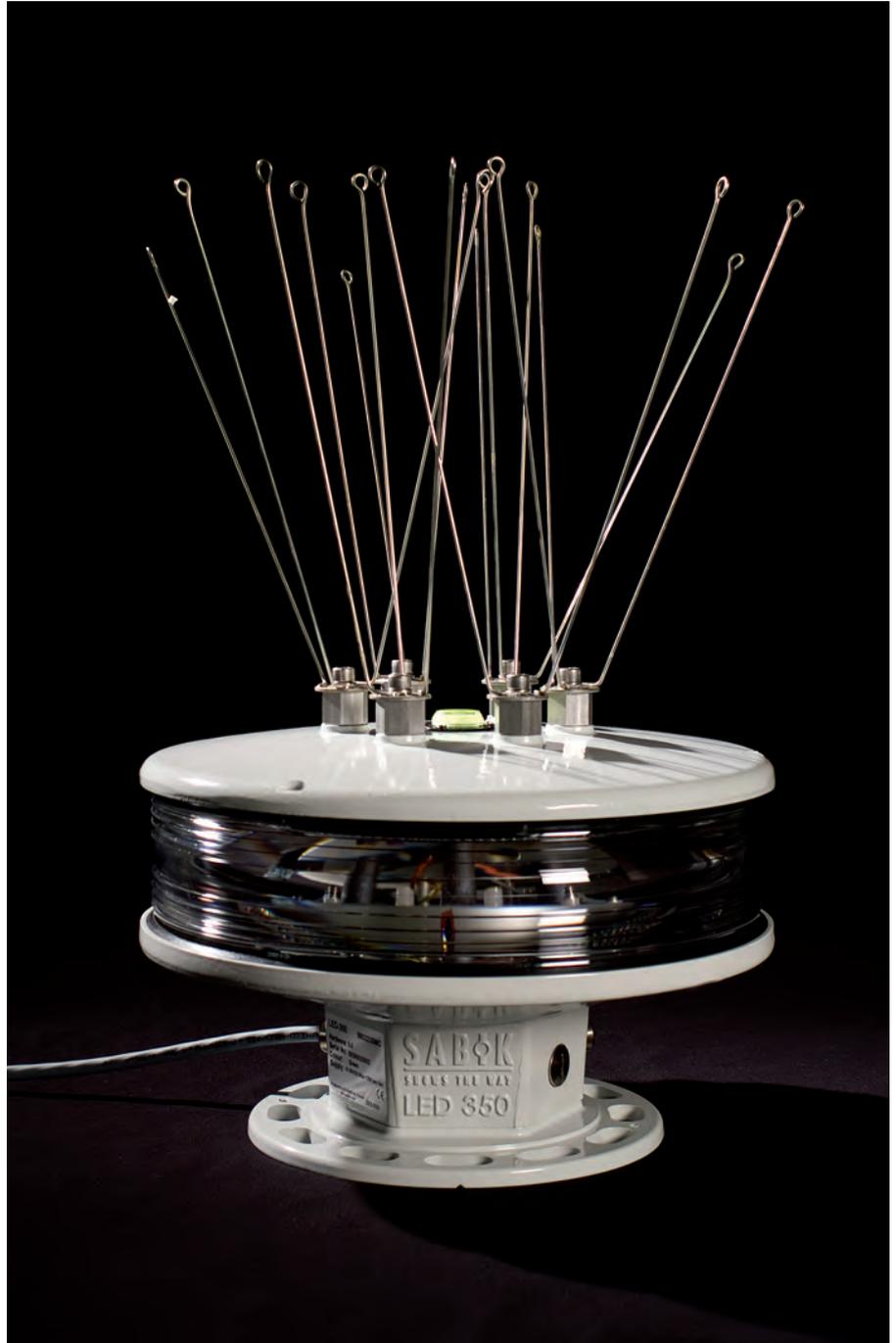
Bird spikes
Stainless steel bird deterrents as standard. Easy to replace. Offers great protection against large birds like cormorants. Spike design to prevent injury to service technicians.

Level indicator
The lantern can easily be levelled in field using the integrated bubble level indicator

Grounding plug
The base plate has a grounding plug as standard to enable good protection for electromagnetic interference.

Additional cable entry
Equipped as standard with two cable entries. If the second entry is needed e.g. for cable sync or for a solar module a standard M20 cable gland can be fitted.
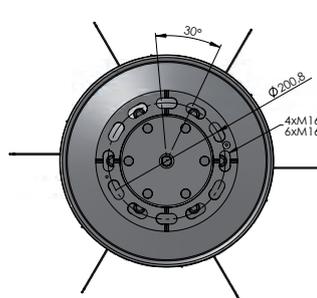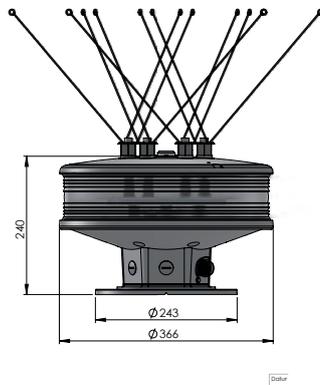
Installation
The bottom plate of the LED 350 supports installation on structure using 3 x M12 bolts or 4 x M12 bolts on a 200 mm radius. The mounting holes are galvanic isolated with plastic isolators. PTFE breathing vent for pressure release.

Main Technical Specification

Lens visual/Mechanical diameter	350 mm
Lens material	UV stabilized Polycarbonate
Light source	Light Emitting Diodes (LEDs)
Vertical divergence	1.5° @ 50 % (±0.3°) and 3° @ 10% (±0.5°) of peak intensity
Unit lifetime	Up to 10 years
Weight	8 kg for single tier unit, add 2 kg for each tier
Controller	Sabik LED flasher
Temperature range	-40°…+60°C
Degree of protection	IP 66
Supply Voltage	9 – 28 VDC
Power consumption	12 watts/tier
EX Zones	Zone 1 and Zone 2 indoor and outdoor
Ex approvals	Eex emb op is II T4
Certificates	VTT 06 ATEX 089X

Product codes, 1 tier model

LED 350EX narrow lens	Colour
LED 350EX NW	white
LED 350EX NR	red
LED 350EX NG	green
LED 350EX NY	yellow

Optical performance

Maximum fixed luminous intensity

1-tier, 12 W	1.400 cd	1.400 cd	2.700 cd	1.500 cd
2-tiers, 24 W	2.800 cd	2.800 cd	5.400 cd	3.000 cd
3-tiers, 36 W	4.200 cd	4.200 cd	8.100 cd	4.500 cd

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LED 350

High intensity LED lantern for fixed installations

LED 350 is a high performance omni-directional LED precision beacon with a range up to 15 NM (Tc = 0,74). 10 NM range with white achieved with less than 10 watts.

- **High light efficiency; 175 candela/watt**

- **Supplied with 1-7 tiers, max 14 700 cd luminous intensity white**

- **Standard IALA colours Red, Green, White, Yellow**

- **Rugged aluminium housing for installation in marine environment**

- **Extremely low power consumption, suitable for solar and battery operation**

- **Integrated flasher with day light switch and a 16A solar panel charger**

- **Field adjustable intensity and range**

- **Programmable with Sabik standard IR programming devices**

- **Integrated 365 day event log**

- **Optionally integrated GPS synchronization**

- **Optionally integrated GSM remote monitoring**

- **Optionally available with tamper proof serial number**

- **Equipped with Bluetooth programming**

Bird spikes
Stainless steel bird deterrents as standard. Easy to replace. Offers great protection against large birds like cormorants. Spike designed to prevent injury to service technicians.

Level indicator
The lantern can easily be levelled in field using the integrated bubble level indicator.

IR port and photocell
Combined infrared communication port and photocell is located on the base of the lantern.

Additional cable entry
Equipped as standard with two cable entries. If the secondary entry is needed e.g. for a solar module standard M20 cable gland can be fitted.

Sabik Easy Programmer
User friendly and compact wireless two-way programmer.

Triplex
Multiple tiers up to 7 tiers for high intensity.

Installation
The bottom plate of the LED 350 supports installation on structure using 3 x M12 bolts or 4 x M12 bolts on a 200 mm diameter.

Grounding plug
The base plate has a grounding plug as standard to enable good protection against electromagnetic interference.
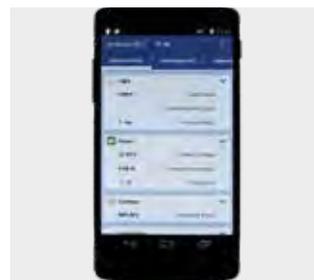
External baffles
The lantern can be optionally supplied with multiple colours using external radial baffles between the colours. This enables warning sectors to be integrated in the same lantern.
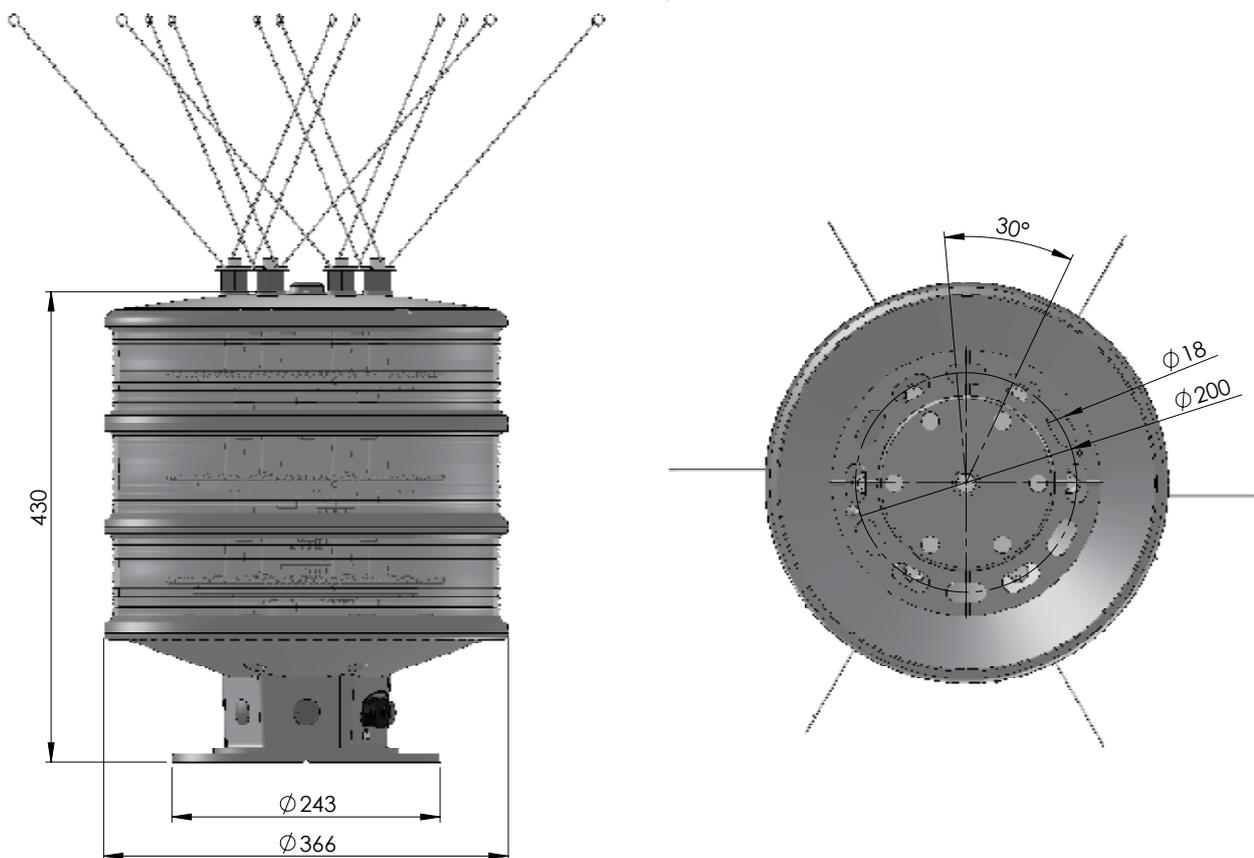
Simplex Combinations
The LED 350 lantern can also be combined with the LED 155 buoy lantern in order to increase short distance visibility.

Bluetooth® Control
Lantern can be programmed and controlled up to 50 meters distance with standard android and iOS mobile phones.

Technical Specification LED 350

Optical performance

Maximum fixed luminous intensity

1-tier, 12 W	1.400 cd	1.400 cd	2.100 cd	1.500 cd
2-tiers, 24 W	2.800 cd	2.800 cd	4.200 cd	3.000 cd
3-tiers, 36 W	4.200 cd	4.200 cd	6.300 cd	4.500 cd
4-tiers, 48 W	5.600 cd	5.600 cd	8.400 cd	6.000 cd
5-tiers, 60 W	7.000 cd	7.000 cd	10.500 cd	7.500 cd
6-tiers, 72 W	8.400 cd	8.400 cd	12.600 cd	9.000 cd
7-tiers, 84 W	9.800 cd	9.800 cd	14.700 cd	10.500 cd

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SABIK
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Main Technical Specification

Lens visual/Mechanical diameter	350 mm
Lens material	UV stabilized Polycarbonate
Light source	Light Emitting Diodes (LEDs)
Vertical divergence	1.5° @ 50% (±0.3°) and 3° @ 10% (±0.5°) of peak intensity
Unit lifetime	Up to 10 years
Weight	10 kg for single tier unit, add 2 kg for each tier
Temperature range	-40°…+60°C
Supply Voltage	10 – 32 VDC
Solar Panel Charger	16 ampere PWM charger. Solar production (Ah) is logged
Power consumption	12 watts / tier
Degree of protection	IP 67

Order Overview LED 350

Option matrix

OPT 1: Optical Feedback System	Integrated LED performance measurement
OPT 4: GPS sync	Integrated GPS sync excluding GPS antenna
OPT 7: External GPS	External GPS antenna for OPT 4
OPT 9: LightGuard GSM + GPS	Integrated GSM based monitoring including GSM antennas
OPT 10: LightGuard GSM	Integrated GSM based monitoring including GSM antenna
OPT 11: Control card	Control card for secondary battery
OPT 12: Aux card with I/O	Aux card including I/O ports
OPT 13: Aux card with RS485 and I/O	Aux card including RS 485 and I/O port
Shock & Tilt Sensor	Integrated 3-axis G sensor for tilt and shock sensing
External baffles	External baffles when unit is supplied with coloured sectors

single tier (standard)		Two tiers (duplex)		Three tiers (triplex)	
Red	LED 350 1R	Red	LED 350 2R	Red	LED 350 3R
Yellow	LED 350 1Y	Yellow	LED 350 2Y	Yellow	LED 350 3Y
Green	LED 350 1G	Green	LED 350 2G	Green	LED 350 3G
White	LED 350 1W	White	LED 350 2W	White	LED 350 3W

Product code example: LED 350 3W.10

- *LED 350 7* is Sabik code for a seven-tier LED 350
- *W* is the code for a lens in white
- *10* is a selection of option 10 integrated GSM antenna