



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



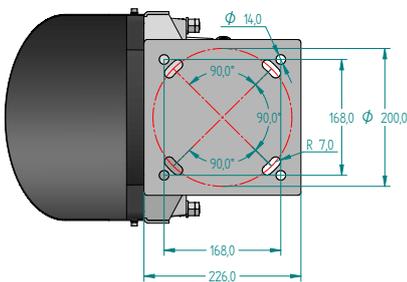
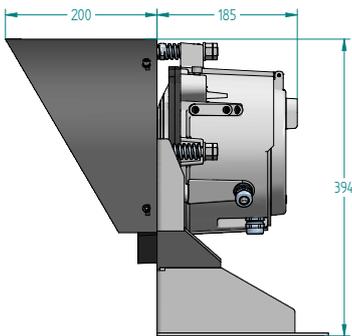
Optical performance

Maximum fixed intensity

At full power	7000 cd	7000cd	7000cd	13000cd
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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



SCLO 200M

Self-contained range light with
14 NM Range

- Range up to 14 NM (Tc=0,74)
22 NM (Tc=0,85)
- Standard IALA colours
red, green, white and yellow
- Light module of rugged aluminium
housing and body of UV resistant polyethylene
- Light horizontally and vertically
adjustable in the field
- Integrated flasher with day-light
switch and solar charger
- Ventilated battery compartment
- Durable solar panels with tempered glass
- Adjustable intensity and range
- Programmable with Sabik standard IR
programming devices
- Light can be programmed and controlled up to 50
meter distance with a smart phone using Sabik
Bluetooth Control
- Optional integrated GPS synchronization
- Optional integrated GSM/GPS remote monitoring



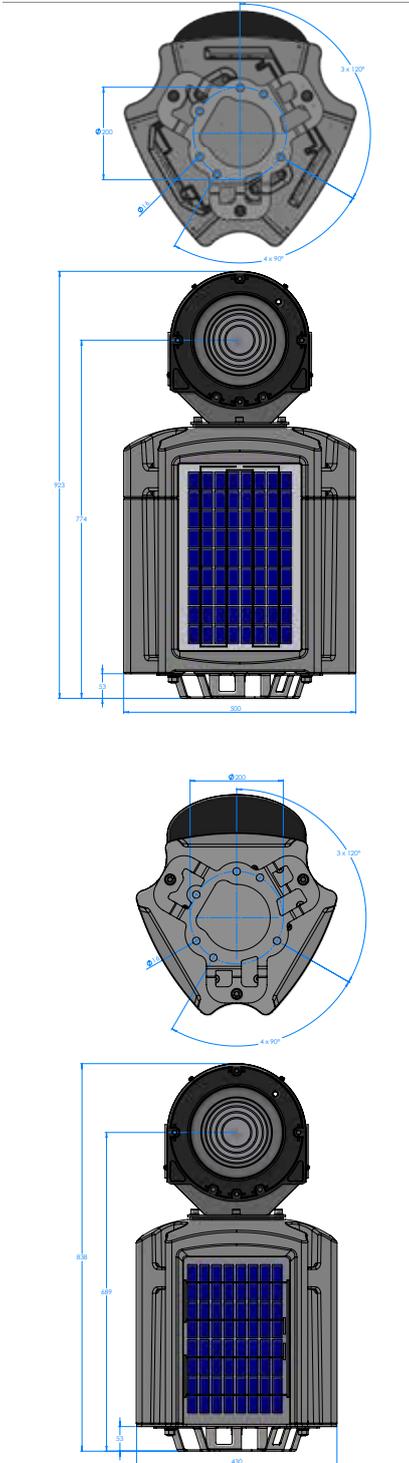
Optical performance

Maximum fixed intensity

At full power	7000 cd	7000 cd	7000 cd	13000 cd
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Main Technical Specification

	up to 3 Nautical miles	up to 4 Nautical miles
Lens visual/Mechanical diameter	203 mm	
Lens material	UV stabilized Polycarbonate	
Light source	Light Emitting Diodes (LEDs)	
Horizontal divergence	8° @ 50% (±1°) of peak intensity	
Unit lifetime	Up to 10 years	
Weight	39 kg	
Overall height	870 mm	
Overall width	500 mm dia	
Power consumption	max 4 W	
Light unit degree of protection	IP 66	
Solar Modules	3 x 11W	
Battery	VRLA GEL-Type, 60Ah/12V	
Installation	3 x M10 on 330 mm dia	



Order Overview SCLO 200M

Product codes

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

Product code example: SCLO-200-MR-7-9

- **SCLO-200-MR** is Sabik code for SCLO 200M in red
- **7-9** is a selection of option 7 with external GPS antenna and option 9 with GSM/GPS monitoring

Option matrix

OPT 4: GPS sync	GPS sync including external 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 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



VRL-91

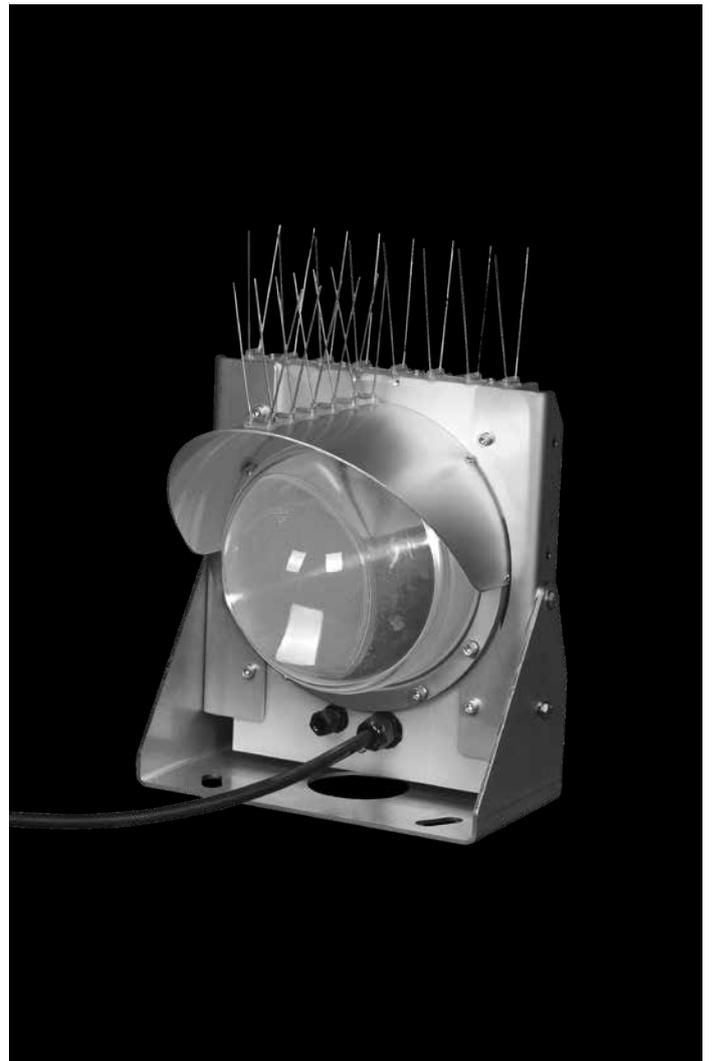
5.4NM by day
23NM by night

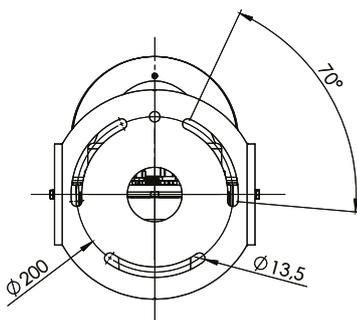
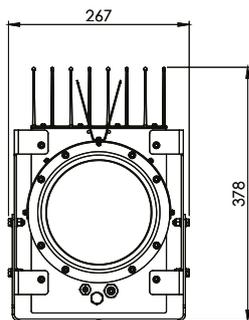
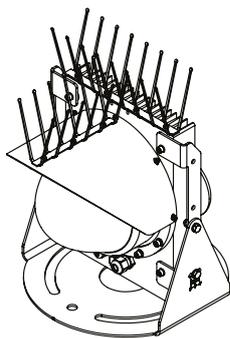
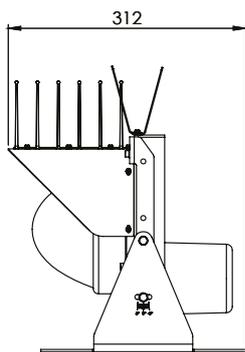
The VRL-91 high power LED range light forms part of the Vega LED marine beacon family and is intended for applications requiring very high intensity.

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**





Optical Performance

Maximum peak intensity

±1.5°	136000cd	276000cd	500000cd
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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
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VLL-43

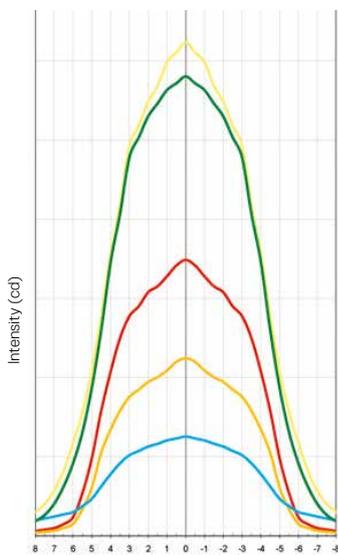
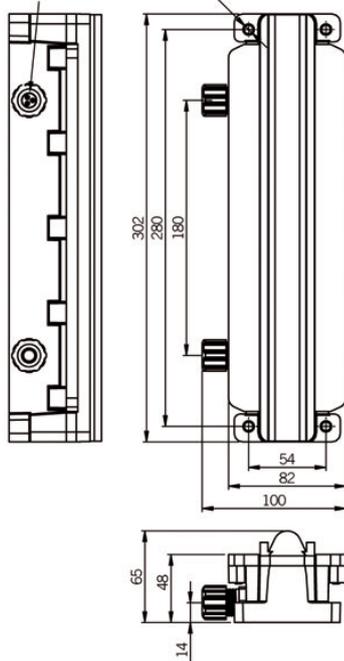
13NM to 22 NM @ 0.74T

The VLL-43 Linear Lead Light is powerful unidirectional light ideal for marking short ranges and obstacles. The optical system utilises an acrylic lens to capture and project the light from the high-powered LEDs. The LEDs are precisely graded and placed to produce a light beam with minimum variation in intensity. Any number of these lights can be used to achieve the desired range. Each unit has its own control board and can be operated individually.

- Separate intensity settings for day
- Nine night/day transition settings
- Up to 246 standard flash characters
- One programmable custom character
- Wired synchronisation with options of master/slave
- Synch delay from 0.1 to 9.9 seconds
- Battery low voltage cut off
- Optional PIN code for programming
- External GPS synchronisation using the VSU-29 unit
- Automatic Schmidt-Clausen correction for intensity



REPLACED WITH 3 PIN SOCKET FOR PLUG AS SOCKET OPTION.
2 CABLE GLANDS SUIT $\varnothing 6$ TO $\varnothing 10$ CABLE.
4 MOUNTING HOLES $\varnothing 6$



■ Yellow ■ Blue ■ White
■ Green ■ Red

Optical Performance

Maximum peak intensity

8.5°	1740cd	2900cd	1120cd	3120cd	630cd
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Optical specification

Light source	High Power Light Emitting Diode (LED)
Horizontal divergence	8.5° @ 50%
Vertical divergence	±20° at 50% peak intensity
	±15° at 50% peak intensity
	±20° at 50% peak intensity
	±7.5° at 50% peak intensity
Temperature control	LEDs monitored for constant intensity control and over temperature protection

Main Technical Specification

Nominal Range	Up to 16 NM
Lens	Machined cast acrylic
Base	Injection moulded UV stable plastic
Body	Marine grade aluminium anodises
Weight	1,4 kg
Flash character	246 standard characters
Temperature range	-30° to +60°C
Voltage	12 VDC (9-18 VDC)
Solar charger	N/A
Degree of protection	IP 68
Cable length	2 m / 6 m

Order Overview VLL-43

Product code

Code	Note
VLL43-c(-GS)	
c	Color (R, G, Y, W, B)

Option matrix

GS	External GPS synchronization using the VSU-29 unit
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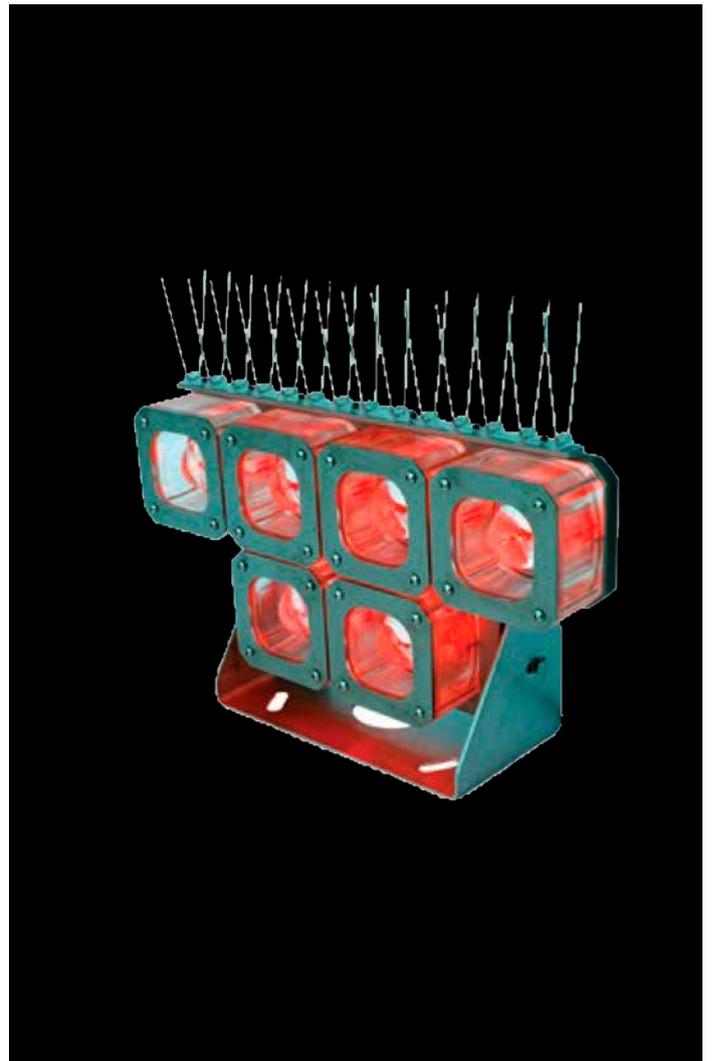
VRL-74

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

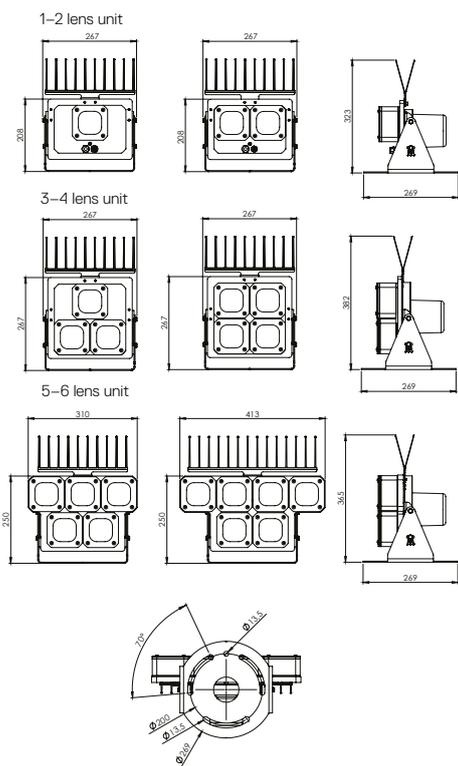
±1.5°	33000cd	37700cd	96000cd	33000cd	13600cd
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Optical specification

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

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
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VLS-46

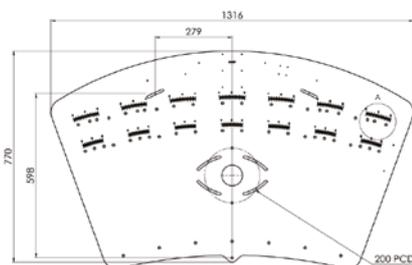
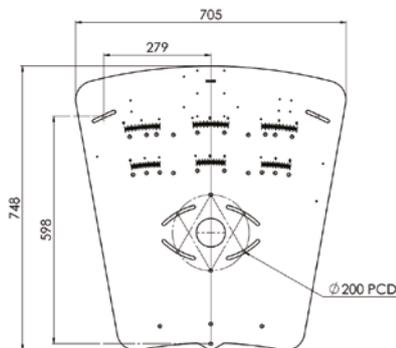
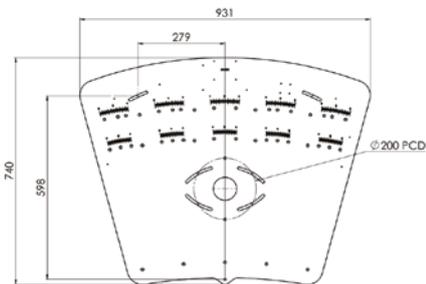
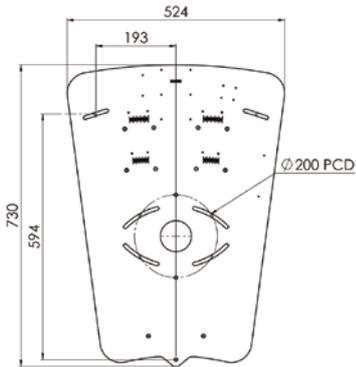
Adjustable LED sector light
15 -19 NM by night
1.6 - 3.0 NM by day

The VLS-46 is ideal for harbours with narrow or difficult approaches. The modular design allows up to seven projectors to be placed side by side. This can be used to create unique sector angles, flash patterns and intensities.

The VLS-46 has been designed to take advantage of the latest LED technology. The key features include:

- **Peak intensity up to 14,800cd**
- **Large vertical divergence for visibility by all types of vessels**
- **Only one tower is required, compared with range lights. This reduces the installation and maintenance cost by half**
- **Each projector can be individually adjusted to the width required for the application, within the limits defined in this brochure and product manual**
- **Energy-efficient LED technology is ideal for solar-powered sites**
- **Maintenance free design (no moving parts) will save money and time**
- **Lightweight marine-grade aluminium construction makes the unit light and easy to handle**





Optical Performance

Maximum peak intensity				
5°	9000cd	8300cd	14800cd	12300cd
10°	2300cd	2140cd	3480cd	3030cd

Optical specification

Light source	High Power Light Emitting Diode (LED)
Horizontal divergence	5°, adjustable from 0.5 – 5° (linear adjustment) 10°, adjustable from 1.0° (linear adjustment)
Vertical divergence	±1.8° @ 50% intensity & ±1.9° @ 10% intensity ±3.6° @ 50% intensity & ±3.7° @ 10% intensity
Temperature control	LEDs monitored for constant intensity control and over temp protection

Main Technical Specification

Nominal Range	5 degrees, up to 15 NM 10 degrees, up to 12 NM
Lens	Acrylic and glass
Base	Marine grade aluminium
Body	Marine grade aluminium and injection moulded UV stable plastic
Designed service life	10 years
Weight	2.4 - 19.1 kg
Temperature range	-30° – +50°C
Voltage	10-30 VDC
Solar charger	N/A
Degree of protection	IP 67
Cable length	2 m / 6 m

Order Overview VLS-46

Product code

Code	Note
VLS-46-D-Cc(-Cc)(-Cc)(-Cc)(-GS)-BPY	
D	Divergence
C	Color (R, G, W, Y)
c	Quantity of projectors in that colour (1-7)
BP	Base plate ((BP2, BP3, BP5, BP7)

Option matrix

GS	Internal GPS sync module as factory option
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VLS-46 Ultra

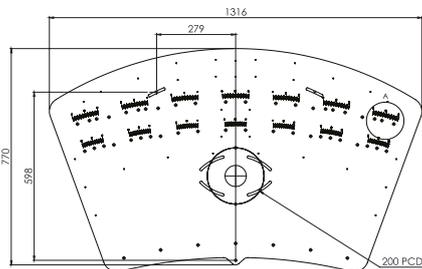
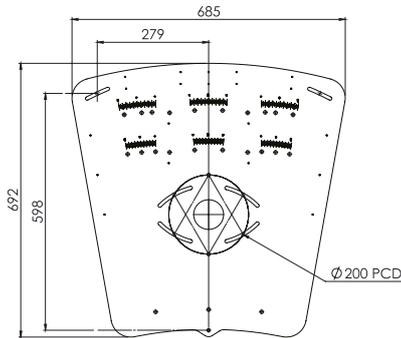
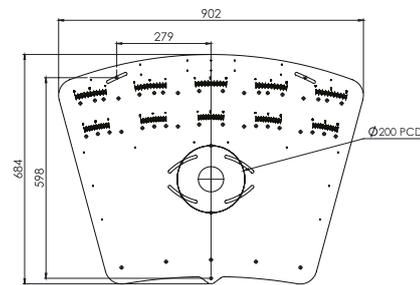
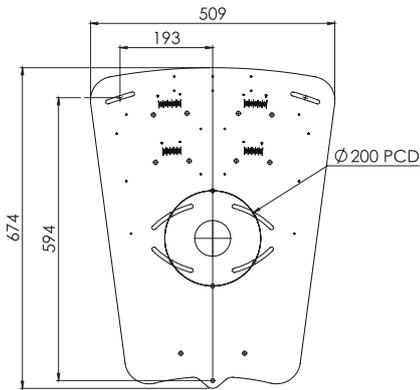
21 - 25NM by night @ 0.74T
3.9 - 6.2NM by day @ 0.74T

The VLS-46 Ultra is ideal for harbours with narrow or difficult approaches. The modular design allows up to seven projectors to be placed side by side. This can be used to create unique sector angles, flash patterns and intensities.

The VLS-46 Ultra has been designed to take advantage of the latest LED technology. The key features include:

- Peak intensity up to 169000cd
- 1 minute of arc boundary precision when viewed from 5,000 metres
- Large vertical divergence for visibility by all types of vessels
- Only one tower is required, compared with range lights. This reduces the installation and maintenance cost by half
- Sectors are adjustable. Each projector can be individually adjusted to the width required for the application, within the limits defined in this brochure and product manual
- Energy-efficient LED technology is ideal for solar-powered sites
- Maintenance-free design (no moving parts) will save money and time
- Lightweight marine-grade aluminium construction makes the unit light and easy to handle. For example, three 5° projectors including mounting plate weigh approximately 21.8kg





Optical Performance

Maximum peak intensity			
5°	40000cd	169000cd	167000cd
10°	10780cd	47000cd	45500cd

Optical specification

Light source	High Power Light Emitting Diode (LED)
Horizontal divergence	5°, adjustable from 0.5° – 5° (linear adjustment) 1°, adjustable from 1.0° (linear adjustment)
Vertical divergence	±1.8° @ 50% intensity ±1.9° @ 10% intensity ±3.6° @ 50% intensity ±3.7° @ 10% intensity
Temperature control	LEDs monitored for constant intensity control and over temperature protection

Main Technical Specification

Nominal Range	5 degrees, up to 21.0 NM 10 degrees, up to 17.8 NM
Lens	Acrylic and glass
Base	Marine grade aluminium
Body	Marine grade aluminium and injection moulded UV stable plastic
Designed service life	10 years
Weight	2.4 - 19.1 kg
Temperature range	-30° – +50°C
Voltage	10-30 VDC
Solar charger	N/A
Degree of protection	IP 67
Cable length	2 m / 6 m

Order Overview VLS-46 Ultra

Product code

Code	Note
VLS-46U-D-Cc(-Cc)(-Cc)(-GS)-BPY	
D	Divergence
C	Color (R, G, W)
c	Quantity of projectors in that colour (1-7)
BPY	Base plate (BP2, BP3, BP5, BP7)

Option matrix

GS	Internal GPS sync module as factory option
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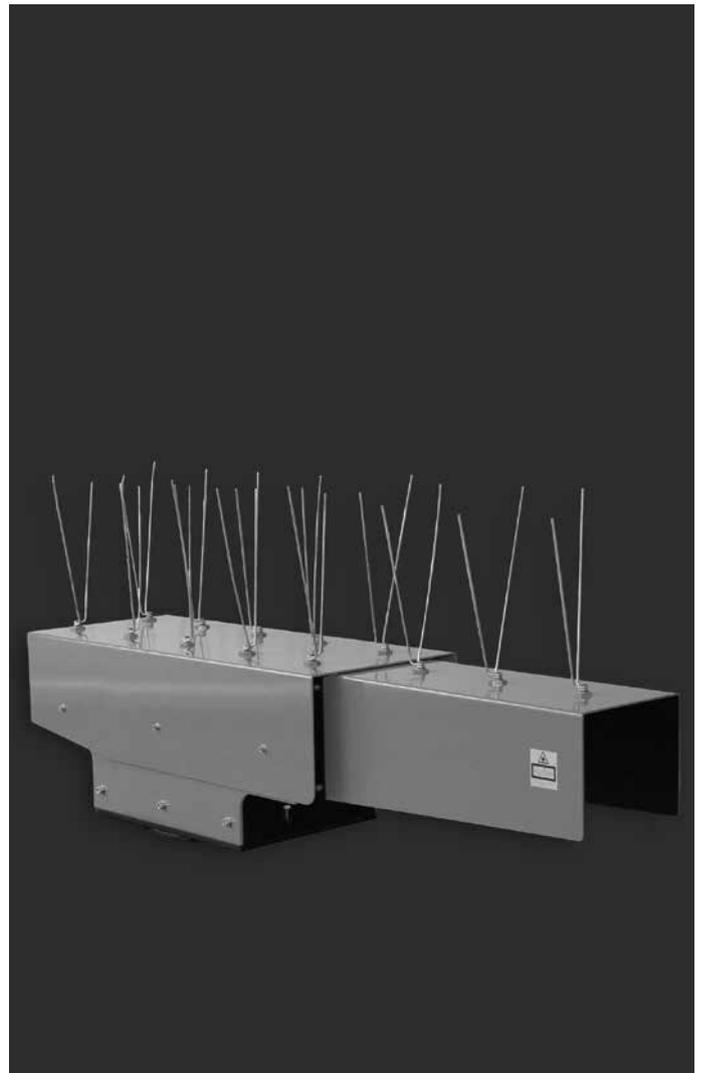


E8593

**LED Projector sector light,
up to 21 M / 4 M daytime range**

The E8593 is a high-performance, power efficient high intensity marine LED Projector sector light with beam configuration tailored to customer requirements at the factory. All E859X Lanterns feature factory configured Day and Night mode, luminous intensity, fast PWM control generating reduced intensities, as well as Fixed-and-Flashing (FFL) rhythmic characters or Slow Flash Front (SFF). The field proven E8593 supports Opposite-Isophase sector signal control reducing the latency of spatial awareness update for the mariners: the white sector signal is active during the eclipse of coloured sectors and vice versa, resulting in immediate awareness about leaving the white sector without the delay caused by the common eclipse.

- **Power efficient Day/Night light signalling system for port entry lights or leading line systems replacement**
- **Factory-customized sector configuration with precision of $\leq 0.05^\circ$ (3')**
- **Day and Night mode luminous intensities down to 10%**
- **Internal LED diagnostics with condition output**
- **Optional Opposite-Isophase sector signal control**
- **Available with triaxial acceleration sensor for Structural Health Monitoring of the AtoN mast**
- **Easy to install – requires only aiming the composite beam vertically**
- **No planned maintenance needed**

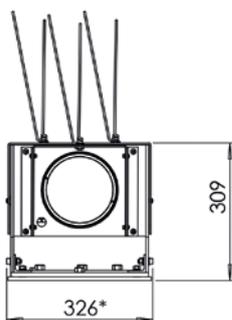
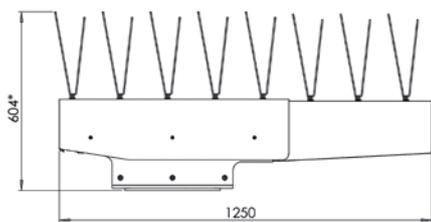


Optical performance

Number of sectors	3 (R, W, G)		
Typical luminous intensity of the light signal per colour	250,000 cd		
Nominal range, Night / Day (T=0.74)	up to 21 M / 4 M		
Subtense angle per sector (total approximately 7.5°)	≤ 1.2°	≤ 1.2°	≤ 2.5°
Vertical divergence angle	1.2°	2.5°	1.2°
Power consumption in flash	≤ 45 W	≤ 90 W	≤ 90 W
Achievable boundary resolution	~ 0.1° (6'... 9')		
Beam direction adjustment in field conditions, Hor/Vert	± 180° / ± 2°		

Main technical specification

Light source	High Power Light Emitting Diode (LED) clusters
Vertical divergence	1.2° or 2.5° (FWHM)
Lens material	optical glass
Enclosure material	polycarbonate optical unit potted in resin on aluminium bottom plate, marine grade aluminium sides and protective cover, painted steel mounting plate
Weight	< 50 kg
Operating environment	-40 °C to +55 °C
Power supply voltage	12 VDC (10–24 VDC)
Power consumption in flash	up to 90 W depending on configuration
Degree of ingress protection	IP 67
Overall height (excl. bird deterrents)	309 mm, width 326 mm, depth 1250 mm
Focal plane height	205 mm
Installation	3 x 14mm on 200 mm circle
Cable length	2 m / 6 m



Order Overview E8593

Product codes

Since this product is usually ordered in AtoN site specific configuration, simple ordering codes covering all possible alternatives are not available.

Product code example: E8593.GWR.F2.G1

- Projector sector light for IALA Region B with integrated Flasher E8672 and GPS capability

Option matrix

Sector lights for IALA Region A	E8593.RWG
Sector lights for IALA Region B	E8593.GWR

Accessories

Bird deterrent rod set (incl. screws)	8264.050
Cable Connector, 90deg, female 6 + PE-position	C016 30F006 100 10
Programmable Flasher, integrated	E8672
Programmable Flasher with GPS, integrated	E8672.G
TelFiCon™-Flasher for complete AtoN telematics, integrated	E9272