



# PRECISION LED PEL

## PEL-4

**Available in 3.5°, 5 and 10° horizontal divergences\***

Sectors are customised for every unique application

The PEL-4 is a precise aid to navigation. When sailing through hazardous waters, the PEL-4 will provide sharp visual feedback whether you are inside or outside a sector. If combined with Vega's oscillating boundary, the exact position within the sector will be known also.

The PEL-4 is equipped with LED technology and is bright enough to be used day and night. It is energy efficient and maintenance free as well. This makes it solar-power friendly and removes costly re-lamping visits.



\* Contact Vega for other horizontal divergences.

The term PEL is an abbreviation of the Physics and Engineering Laboratory in New Zealand, where the original PEL was invented in 1972.

# OUTSTANDING FUNCTIONALITY AND FEATURES

## ACCURACY

The PEL-4 has a complete colour change between sectors over 1 minute of arc. This allows the mariner to make instant corrections before they stray off-course. If the mariner is 2NM from the PEL-4, they will see a complete colour change within 1m of sideways movement as they sail into the next sector.

## BRIGHTNESS

The PEL-4 is bright enough to be seen day and night. The intensity depends on which model is used (see specifications). All models have a large vertical divergence to ensure that they can be seen by short and tall vessels at all times. A Vega Solution Engineer will assist with choosing the correct model for your situation.

## ENERGY EFFICIENT

The PEL-4 uses efficient high-intensity LED technology. At full intensity, the PEL-4-5° produces 225,000cd while consuming less than 50W of power. This makes the PEL-4 bright and efficient for solar-powered sites.

## MAINTENANCE

The PEL-4 does not need re-lamping. Maintenance has been reduced to simple checks as to the condition of the beacon.

## ROBUST FOR MARINE USE

The PEL-4 is made of heavy-duty marine alloys. Hundreds of Vega PELs are still in use after 30 years of being exposed to marine conditions.

## MOUNTING

The structure that is used to hold a sector light must be resistant to any twisting in gale-force winds. Minor twisting of the tower affects the direction in which the sector light is pointing and may reduce its effectiveness. The PEL-4 is heavy-duty, to match the rigid structure which is designed to hold it.

## FEATURES

- Horizontal divergence available from 3.5° to 10°\*
- Weatherproof enclosure suitable for external mounting
- Maintenance-free LED (easy to replace if needed)
- Constant-current LED drivers
- Fully programmable IALA flash characters
- Day and night intensity is adjustable from 0.3% to 100%
- Automatic day/night detection and change-over
- Optional security code
- Programmable low-voltage cut-out
- Selectable master/back-up operation mode
- Digital input/output
- RS232 port
- Optional oscillating boundary

## MONITORING

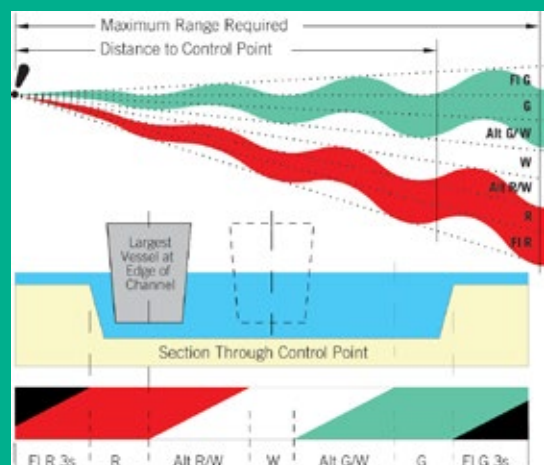
The PEL-4 can be monitored or controlled with VegaWeb and one of the following products:

- VegaWeb Cellular Transmitter (VWEB-GPRS)
- VegaWeb Satellite Transmitter (to marine conditions, VWEB-SAT)
- Vega AIS Transponder (VAIS-1E/3E)

\* Contact Vega for other horizontal divergences.

## EXTRA PRECISION REQUIRED?

The PEL-4 commonly has three sectors (red, white and green). In some applications, additional precision is required. If the PEL-4 is purchased with an oscillating boundary, up to seven sectors can be projected by alternating two colours. As well as giving the mariner greater accuracy of their position, it also tells them where they are within a sector. For example, a long red flash with a short white flash tells the mariner they are about to exit the red/white sector and enter the solid red sector. When combined with the information on their marine chart, they will know exactly where they are within their sector.



# SPECIFICATIONS

## MODELS AND INTENSITIES

<b>Light Source</b>	High-intensity LED
<b>Sector Colours</b>	Red, White and Green
<b>Flash Character</b>	Either oscillating boundary or programmable IALA flash characters
<b>Sector Angles</b>	Custom-made for each application
<b>Boundary Resolution</b>	Typically 1 minute of arc

## MODELS AND INTENSITIES

Model	Divergence	White Intensity*	Red/Green Intensity
PEL-4-3.5D	Horizontal: 3.5° Vertical: 2°	350,000cd	77,500cd
PEL-4-5D	Horizontal: 5° Vertical: 3°	225,000cd	50,000cd
PEL-4-10D	Horizontal: 10° Vertical: 5.3°	91,000cd	20,200cd

\* PEL-4 can be ordered with white intensity lowered to the same intensity as red/green sectors. Please inform the Vega Solution Engineer that uniform intensity across all colours is required.

## ENVIRONMENTAL

<b>Ingress Protection</b>	IP-67
<b>Operating Temperature</b>	-30°C to 85°C
<b>Thermal Protection</b>	LED intensity reduced above 50°C

## MATERIALS

<b>Lens</b>	Glass and acrylic
<b>Body</b>	Bronze, stainless steel, marine-grade aluminium
<b>Exterior Finish</b>	Epoxy primer surfacer, 2-pot polyurethane gloss



## ELECTRICAL PERFORMANCE

<b>Operating Voltage*</b>	12/24VDC
<b>Minimum Voltage</b>	10VDC
<b>Maximum Voltage</b>	35VDC
<b>Battery Protection</b>	Programmable low-voltage shutdown Reverse polarity protection
<b>Power Consumption</b>	Maximum: 47W
<b>Inputs/outputs</b>	Alarm output On/off output Synchronisation input/output RS232 (RS485 optional) input/output On/off control input Day/night control input

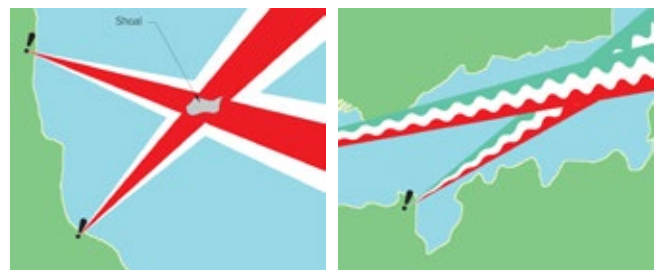
\* Contact Vega for 120/240 VAC (grid power) options

## APPLICATION EXAMPLE



PEL-4 is used to initiate narrow turn into channel.

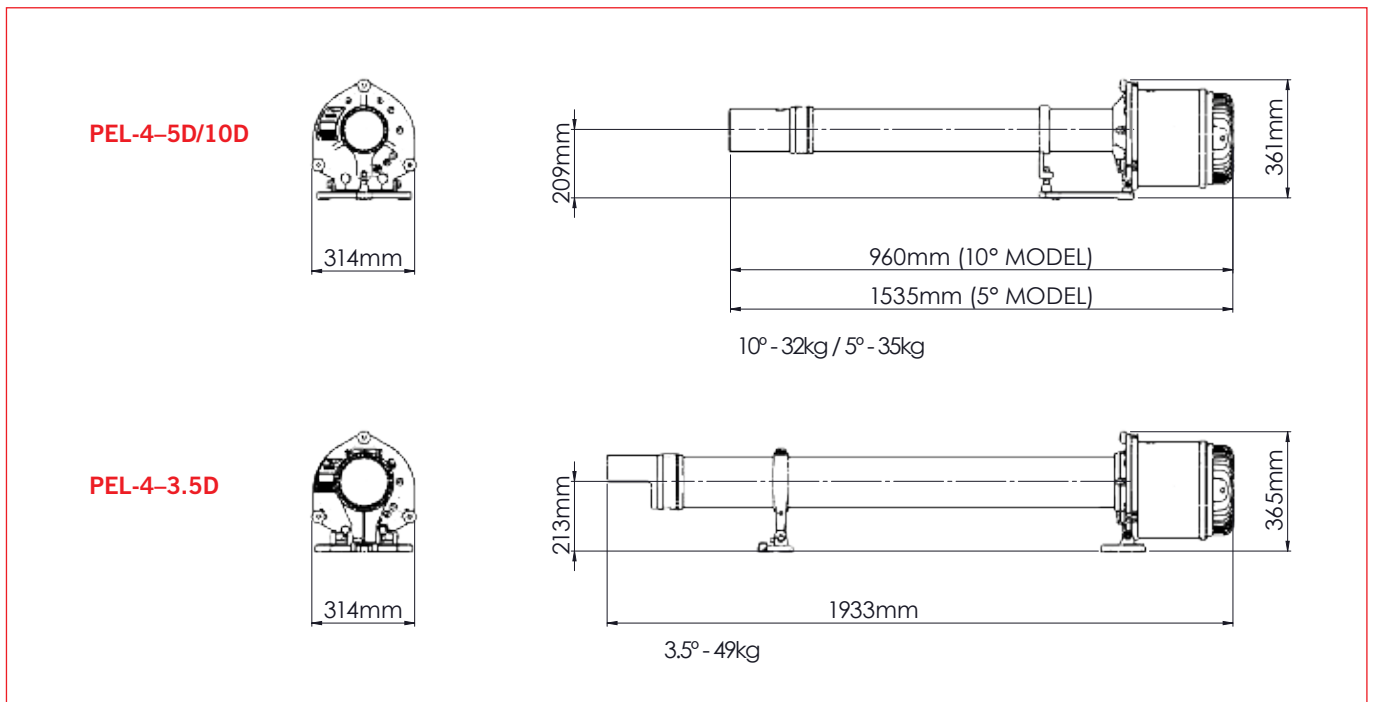
Dual PEL-4s are used to mark a parallel channel.



Dual PEL-4s are used to mark a submerged hazard.

Several PEL-4s can be used to guide vessels through canals.

# DIMENSIONS AND WEIGHTS



## PARTS FOR ORDERING

### DESCRIPTION

Precision LED PEL

### PRODUCT CODE FORMAT

**PEL-4-D-S**

Where **D (Horizontal subtense)** is

= 3.5°, 5°, 10°\*

Where **S (Sector)** is

= OB – Oscillating boundary

= FX – Fixed boundary

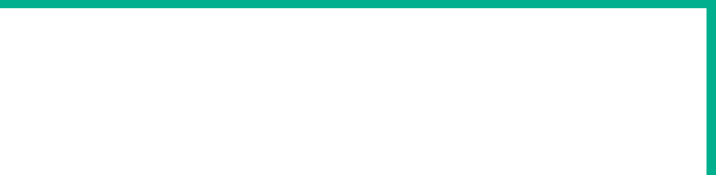
**Example:** PEL-4-3.5°-OB

\* Contact Vega for other horizontal divergences.

### OPTIONAL EXTRAS

AIS Monitoring	<b>VAIS-1S or 3S</b>
GSM/Satellite Monitoring	<b>Mini VegaWeb/VegaWeb</b>
Extra Infrared Remote	<b>Remote-02</b>
Extra Filter Set-fixed	<b>FA 400</b>
Extra Filter Set-oscillating	<b>OB 400</b>

Vega prides itself on a long history of leading-edge optical innovation. For more information, please email the sales team at [sales@vega.co.nz](mailto:sales@vega.co.nz). For other factory options, visit our website, [www.vega.co.nz](http://www.vega.co.nz).



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