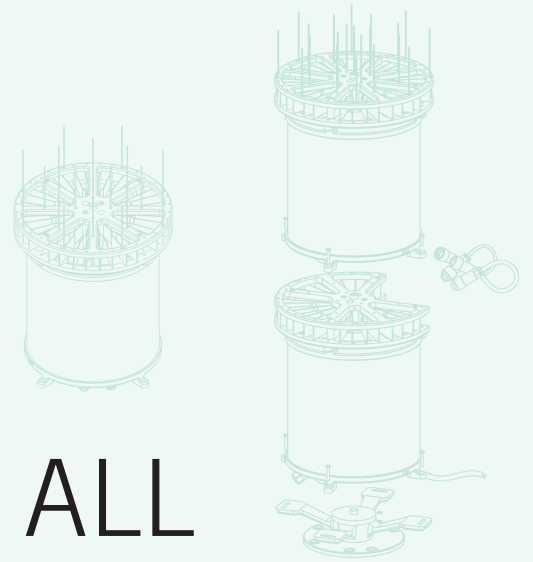




Vega *guides the way*



VSL-73 PRECISION ALL AROUND LED SECTOR LIGHT

AVAILABLE FROM 4 TO 12NM RANGE AT 0.74T



Sub unit
VSL-73 Sub unit model



3 units
VSL-73 3 units model



ISO 9001

BUREAU VERITAS
Certification



VSL-73 ALL AROUND LED SECTOR LIGHT

The VSL-73 Sector Light forms part of the Vega LED marine beacon family and is designed for omni-directional applications where precision sectoring is required. The VSL-73 provides a LED alternative for shadow casting sector lights using incandescent lamps. The VSL-73 can be used for sector light applications ranging from 4NM to 10NM with a normal visibility of 12NM (0.74T).

Each VSL-73 is customized for the particular application taking into account the required range, colours, and sector angles. Mechanically the VSL-73 is available in any combination of subunit (half unit) and full unit up to a maximum of a 3 unit high version. A full unit consists of 6-lens layers that can be the same or made up from different colours. A full unit in one colour will typically have a range of 10NM at 0.74T.

The sector angles are created using a mask fitted inside the outer acrylic wall. This provides a beacon that is suitable for outside use (IP67) and is easy to install and align. The customer is provided a base mounting drawing detailing the mounting relative to true north. A rotational adjustment of $\pm 5^\circ$ is provided on the VSL-73 for on site sector alignment.

To maximize energy efficiency only the LEDs required for the sectoring are used. This reduces the cost for any solar powered applications.

Standard colours are white, red, and green. For other colours please refer to Vega. All colours meet IALA chromaticity requirements.

PERFORMANCE AT A GLANCE

- Range of between 4 and 12NM at a transmissivity of 0.74T
- Vertical divergence of 5° to the 50% intensity level
- Sector angles from 2 to 360 degrees
- Angle of uncertainty better than 0.5° colour to colour and better than 1° at sector edge

REPLACING A SHADOW CASTING SECTOR LIGHT

A typical shadow casting sector light has a larger range for white than for the green or red sectors. For example 5NM white and 3NM red, this is due to the lower transmissivity of the colour filters. When changing to a VSL-73 LED Sector Light each colour is provided by separate LEDs, this provides the option to

1. Leave the range of the colours the same
2. Decrease the white range to the same as the colours
3. Increase the colour range to the same as the white sector

Most shadows casting sector lights are sized for the range of the colour sector. Reducing the white range to be the same as the coloured sectors will provide the most cost effective solution when using the VSL-73 LED sector light.

INSTALLING THE VSL-73 LED SECTOR LIGHT

Each VSL-73 is supplied with a base mounting drawing indicating the position of true north. The mounting for the sector light needs to be prepared to match the correct orientation. Once mounted the VSL-73 has an adjustment of $\pm 5^\circ$ to allow for final alignment.

OPERATION OF THE VSL-73 LED SECTOR LIGHT

A VSL-73 is programmed as a single unit regardless of how many sub and full units are used in the sector light.

The operation of each sector is monitored and various options are provided on how the light should behave should any problem be detected with a sector. One option, for example, is to shut down all sectors should any sector of the light fail.

The VSL-73 is supplied with a RS232 or 422, and IRDA data port, an alarm/monitor wire, and hardwired synchronising.

Additional Options

- GPS Synchronization using the VSU-29 GPS Sync Unit

EASY PROGRAMMING

There are two methods of programming the VSL-73 LED Sector Light:

1. Using the Vega IR programmer (Remote-02). This allows the beacon to be programmed one feature at a time. The VSL-73 LED Sector Light confirms the settings by flashing the programming code back to the user.
2. Using a computer and the IRDA interface (Prog-02). This allows all the VSL-73 LED Sector Light settings to be displayed on a screen and downloaded or retrieved in a single action.
3. The VSL-73 LED Sector Light supports the standard features found on Vega marine LED beacons.
 - Automatic Schmidt-Clausen intensity correction for short flashes
 - Multiple effective intensity settings
 - Day/night transition level settings
 - Programmable flash characters
 - One programmable custom character
 - Synchronisation control including master/slave options and sync delay
 - Programmable sleep and test modes
 - Programmable low battery voltage cut out
 - Program control of the IRDA and RS-232 data port.
 - Individual control of each sector colour
 - Program control on how VSL-73 responds to sector failure
 - Optional security code
 - Read supply voltage
 - Serial number, LED type etc, are stored in sector light

MONITORING

Monitoring of the VSL-73 LED Sector Light can be provided in a number of ways:

1. Using the Vega Mini VegaWeb internet monitoring unit.
2. Utilising the factory data port option. This can be RS-232 or RS-485.
3. Using the alarm/monitor connection option.

INFORMATION REQUIRED FOR A VSL-73

1. Range requirement for each sector colour
2. Sector colours and angles (as seen from seawards)
3. Flash character

SPECIFICATIONS

Optical Performance

- Peak intensity depends on the required range. Can supply lights in 3-colour combinations from 4 to 12NM at 0.74T
- Vertical divergence at 50% intensity better than 5°
- LED's monitored for excess temperature
- Sector operation monitored
- Automatic Schmidt-Clausen intensity correction for flash character
- Colours meet IALA chromaticity requirement

Electrical Performance

- Supply Voltage 12VDC
- Operating Voltage 9 to 18VDC
- Night on / average depends on range, colours, and sector angles. **Examples of average night current:**
 - 1) 5NM Red and White, FI 2sec (0.5on), Red 016-067, White 067-151, Red 151-227, 0.18A average / 0.5A peak @ 25° C
 - 2) 9NM White and 3NM Red, FI 2sec (0.5on), Red 033-213, White 213-033, 0.7A average / 2.5A peak @ 25° C
 - 3) 10NM White and 7NM Red, FI 3sec (0.5on), Red 211-259, White 259-211, 1.04A average / 5.9A peak @ 25° C
- Day current 20mA per unit or subunit
- For specific current usage refer to Vega with Sector Light details

Environmental

| | |
|-------------|---|
| Temperature | -30° to 50° Celsius |
| Intrusion | IP67 |
| Cooling | Uses heat pipe to conduct LED heat to heat sink |

| | |
|-------------------|--|
| Pressure | fully sealed |
| Equalisation | Continuous exposure to saltwater and spray |
| Salt | 90Kt |
| Wind | 20kg/m2 |
| Ice Loading | Shock 35g in 3 axes; vibration 5g |
| Shock / Vibration | |

Material for Sector Light

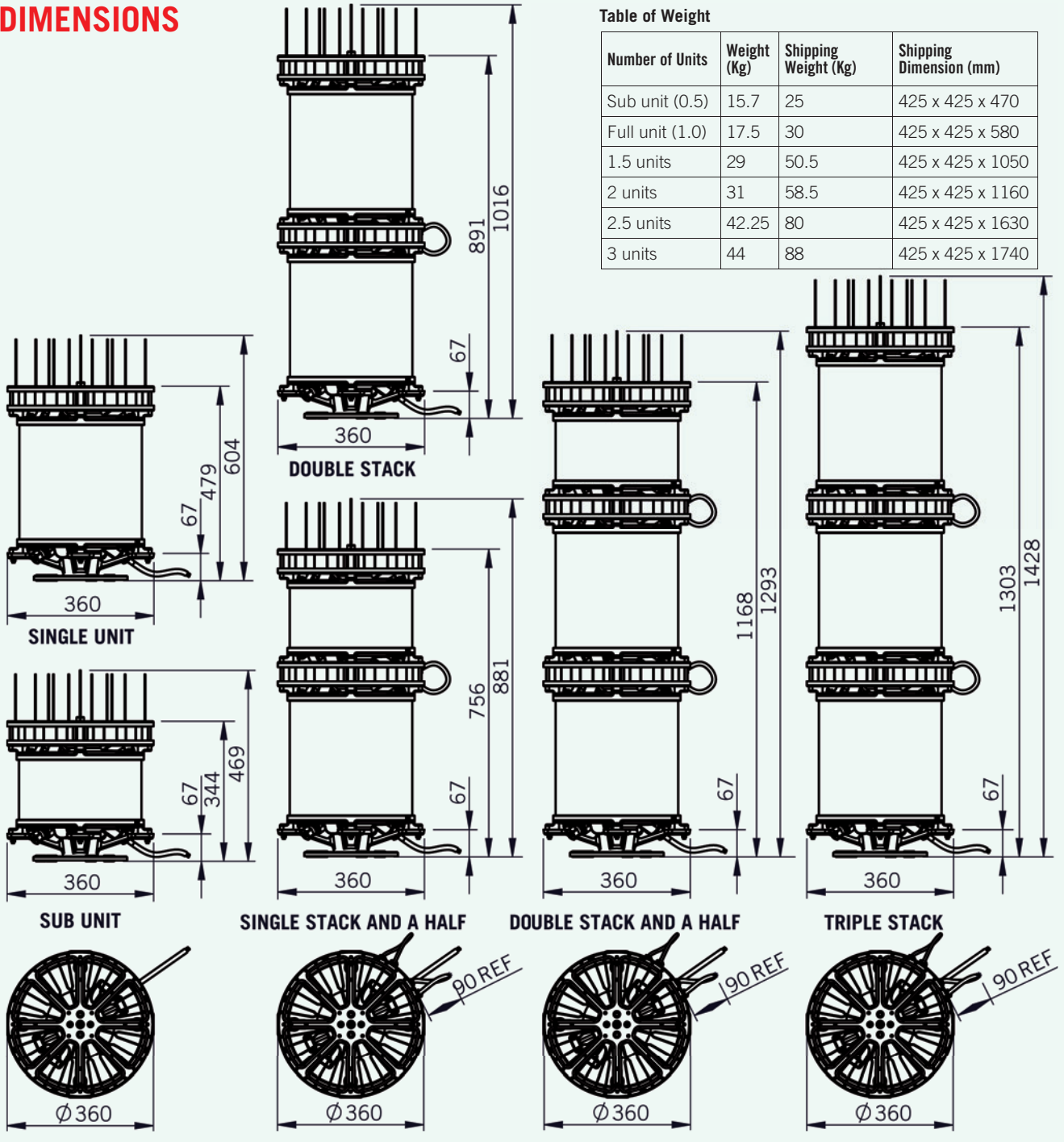
| | |
|---------------------|--|
| Lenses | Machined cast acrylic |
| Outer Cylinder | Acrylic |
| Sector Mask | PETG (painted) |
| Metal Parts | DT 5008 Marine Grade Aluminium, anodized to 25µm |
| Paint | Epoxy primer, 2-pot polyurethane gloss on exterior |
| Sealing | O-ring |
| Bird Spikes | 25 stainless steel rods on top of assembly |
| Mounting | 3 or 4 holes on 200mm PCD |
| Weight & Dimensions | See drawings |
| Service Life | 12 years |
| Warranty | 1 year. Refer to Vega warranty conditions |

Standards

| | |
|--------------|--|
| EMI/EMC | EN55015:2006 radiated and conducted emissions EN61000-4-2:2001 Electrostatic Discharge Immunity Level 4 EN61000-4-3:2002 Radiation Immunity Class 1 EN61000-4-5:1995 Class 3 Surge Immunity, 0.5KV lead to lead FCC 47 CFR Section 15 Class A IALA Recommendation E-122(2001) and E-200-3 Part 3 (2008) |
| Optical Test | IALA Recommendation E-200-1 Part 1 IALA Recommendation 1038 |
| Colour | IEC60945 Section 7 normal and peak voltage, and reverse polarity protection |
| Daylight | IP67 to EN60529 |
| Power Supply | MIL-STD-202G Method 213B Cond H MIL-STD-202G Method 204D Cond B |
| Ingress | |
| Shock | |
| Vibration | |



DIMENSIONS



PARTS FOR ORDERING

DESCRIPTION

- VSL-73 All Around LED Sector Light
- Optional Data Port – add “DP” to product code
 - Optional Monitor/Alarm – add “AL” to product code
 - IR Programmer
 - Computer Programmer

CODE

VSL-73-XX

Remote-02
Prog-02

Note: XX is number of units 05 to 30. Other information noted will be: (1) Range of each colour; (2) Sector angle of each colour; (3) LED requirement for each lens layer. Price will depend on the number of subunits, units used and number of LEDs.

DISTRIBUTOR

Released on 1 August 2011

Vega Industries Ltd T: +64 4 238 0200 F: +64 4 237 4392 E: sales@vega.co.nz www.vega.co.nz
PO Box 50443, Porirua 5240, New Zealand; 21 Heriot Drive, Porirua 5022, New Zealand