

# VECTOR LITE MKII and PRO MKIII

## Professional, robust and high performance GPS Compasses



The Vector Lite MKII and Pro MKIII GPS Compasses have superb heading and positioning performance. The rugged IP69K design housing is sealed for the harshest environments. They incorporate fixed and pole mounting capability for both marine and land applications. The Vector Lite MKII and Pro MKIII are suitable for commercial and professional marine since they are THD certified.

The CrossDipole low-multipath antennas are separated by 50 cm between phase centers, resulting in better than 0.3°, 95% RMS heading performance .

The positioning accuracy is for the Vector Lite MKII better than 60 cm, 95% RMS, when using SBAS corrections. The Vector Pro MKIII has a position accuracy better than 30 cm, 95% RMS, with SBAS, or Beacon, corrections (Vector Pro MKIII has SBAS and IALA beacon correction capability).

The Vector Lite MKII and Pro MKIII support both NMEA 0183 and NMEA 2000 interfacing (respectively), enabling a seamless choice of communication protocols. Crescent Vector technology delivers accurate and continuous performance, including position, heading, heave, pitch and roll. The stability and maintenance-free design of the Vector units replaces traditional gyro compasses and stand-alone GPS at a fraction of the cost.

## YOUR GPS PARTNER



## Technical specifications

### GPS Sensor Specifications

Receiver Type	: L1, C/A code, with carrier phase smoothing
Signal Received	: <b>LITE MKII</b> = GPS <b>PRO MKII</b> = GPS and GLONASS
SBAS Tracking	: 2-channel, parallel tracking
Update Rate	: 20 Hz standard
Horizontal Accuracy:	<b>LITE MKII</b> : < 0,6 m 95% RMS (DGPS <sup>1</sup> ) < 2.5 m 95% RMS (no SA <sup>2</sup> ) <b>PRO MKII</b> : < 0,3 m 95% RMS (DGPS <sup>1</sup> ) < 1.2 m 95% RMS (no SA <sup>2</sup> )
Heading Accuracy	: < 0.30° rms
Pitch/Roll Accuracy	: < 1° rms
Heave Accuracy	: < 30 cm <sup>3</sup>
Timing (1PPS) Acc.	: 50ns
Rate of Turn	: 90°/s maximum
Compass Safe Dist.	: 0,75 cm (with enclosure) <sup>4</sup>
Cold Start	: < 60 s (no almanac or RTC)
Warm Start	: < 20 s typical (almanac and RTC)
Hot Start	: < 1 s typical (alm., RTC and pos.)
Heading Fix	: < 10 s typical (valid position)
Maximum Speed	: 1,850 mph (999 kts)
Maximum Altitude	: 18,288 m (60,000 ft)

### Beacon Sensor Specifications (Vector PRO MKIII):

Channels	: 2-channel, parallel tracking
Frequency Range	: 283.5 to 325 kHz
Operating Modes	: Manual, automatic, and database
Compliance	: IEC 61108-4 beacon standard

### Communications

Serial Ports	: 1 full-duplex RS-232, 1 full-duplex RS-422 & 1 half-duplex RS-422 (Tx)
Baud Rates	: 4800 - 38400
Correction I/O Prot.	: RTCM v2.3 (DGPS), RTCM SC-104, L-Dif <sup>TM</sup> 5
Data I/O Protocol	: NMEA 0183, NMEA 2000, Crescent binary <sup>5</sup> , L-Dif
Timing Output	: 1PPS CMOS, active low, falling edge sync, 10 kΩ, 10pF load
Heading Warning I/O:	Open relay system indicates invalid heading



True Heading Dealer

### Environmental

Operating Temperature	: -30°C to + 70°C (-22°F to + 158°F)
Storage Temperature	: -40°C to + 85°C (-40°F to + 185°F)
Humidity	: 90% non-condensing
Vibration	: IEC 60945
EMC	: CE (IEC 60945 Emissions and Immunity) FCC Part 15, Subpart B
IMO Wheelmark Cert.	: Yes <sup>6</sup>

### Electrical

Input Voltage	: 6 to 36 VDC
Power Consumption	: <b>LITE MKII</b> : ~3 W nominal <b>PRO MKIII</b> : ~4.3-4.6 W nominal
Power Isolation	: Isolated to enclosure
Reverse Polarity Prot.	: Yes <sup>6</sup>

### Physical

Dimensions	: 66,3 L x 20,9 W x 14,6 H cm (26.1" L x 8.3" W x 5.8" H)
Weight	: <b>LITE MKII</b> : 2,1 kg (4.6 lb) <b>PRO MKIII</b> : 2,4 kg (5.4 lb)
Power/Data Connector	: 18-pin, environmentally sealed

### Aiding Devices

Gyro:

Provides smooth heading, fast heading reacquisition and reliable <1° heading for periods up to 3 minutes when loss of GPS has occurred<sup>4</sup>.

Tilt Sensors:

Assists in fast startup of heading solution.

- <sup>1</sup> Depends on multipath environment, number of satellites in view, satellite geometry, ionospheric activity and use of SBAS
- <sup>2</sup> Depends on multipath environment, number of satellites in view, satellite geometry and ionospheric activity
- <sup>3</sup> Based on a 40 second time constant
- <sup>4</sup> This is the minimum safe distance measured when the product is placed in the vicinity of the steering magnetic compass. The ISO 694 defines "vicinity" relative to the compass as within 5 m (16.4 ft) separation.
- <sup>5</sup> True Heading proprietary
- <sup>6</sup> When connected via NMEA 0183 only



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