

# Vector

Affordable, compact, GPS compass



## Vector

- GPS Compass provides accurate 2D heading and positioning data to radar, sonar, chartplotters and AIS
- Smart antenna design requires no external processor or display, simplifying installation & reducing redundant equipment
- Heading accuracy of 0.5 degrees
- Heading updates up to 10 Hz
- Position updates up to 5 Hz
- Integrated DGPS sources including WAAS and EGNOS
- Beacon DGPS source available with the Vector PRO
- Sub-meter differential positioning accuracy
- Fast start-up times
- Sustained tracking during rates of turn up to 25°/s
- Sealed enclosure with IP 67 rating
- NMEA 0183 interface with provision for external RTCM SC-104 corrections
- RS-232 and RS-422 serial ports



Type Approved. See back page.

**Hemisphere**  
GPS

[www.hemispheregps.com](http://www.hemispheregps.com)

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## General Specifications

<b>Receiver Type:</b>	L1, C/A code, with carrier phase smoothing
<b>Channels:</b>	12-channel, parallel tracking (10-channel when tracking SBAS)
<b>Update Rate:</b>	5 Hz position max, 10 Hz heading max
<b>Horizontal Accuracy:</b>	< 1 m 95% (DGPS)* < 5 m 95% (autonomous, no SA)**
<b>Heading Accuracy:</b>	< 0.5 degrees rms
<b>Rate of Turn:</b>	25°/s max
<b>Pitch / Roll Accuracy:</b>	< 1 degree rms
<b>Start-up Time:</b>	< 60 s typ.
<b>Heading Fix:</b>	< 20 s
<b>Satellite Reacquisition:</b>	< 1 s

## Differential Beacon Specifications (PRO version only)

<b>Channels:</b>	2-channel, parallel tracking
<b>Frequency Range:</b>	283.5 to 325 kHz
<b>Operating Modes:</b>	Automatic and manual
<b>Sensitivity:</b>	2.5 dB $\mu$ V for 6 dB SNR @ 200 bps
<b>Dynamic Range:</b>	100 dB
<b>Adjacent Channel Rejection:</b>	61 dB @ $\pm$ 400 Hz offset

## Communications

<b>Serial ports:</b>	3 full duplex RS-232 and 2 half-duplex RS-422
<b>Isolation:</b>	All serial ports optically isolated from power supply
<b>Baud Rates:</b>	4800, 9600, 19200
<b>Data I/O Protocol:</b>	NMEA 0183 and SLX binary
<b>Correction I/O Protocol:</b>	RTCM SC-104
<b>Timing Output:</b>	1 PPS (HCMOS, active high, rising edge sync, 10 k $\Omega$ , 10 pF load)
<b>IPPS Accuracy:</b>	50 ns
<b>NMEA Heading Messages:</b>	\$HEHDT, \$HEROT, \$PSAT, HPR

## Environmental

<b>Operating Temperature:</b>	-30°C to +70°C
<b>Storage Temperature:</b>	-40°C to +85°C
<b>Humidity:</b>	100% condensing

## Power

<b>Input Voltage:</b>	8.0 to 40 VDC
<b>Isolated:</b>	Power supply isolated from serial ports
<b>Reverse Polarity Protection:</b>	Yes (but not reverse polarity operation)
<b>Power Consumption:</b>	< 4.5 W
<b>Current Consumption:</b>	< 360 mA @ 12.0VDC

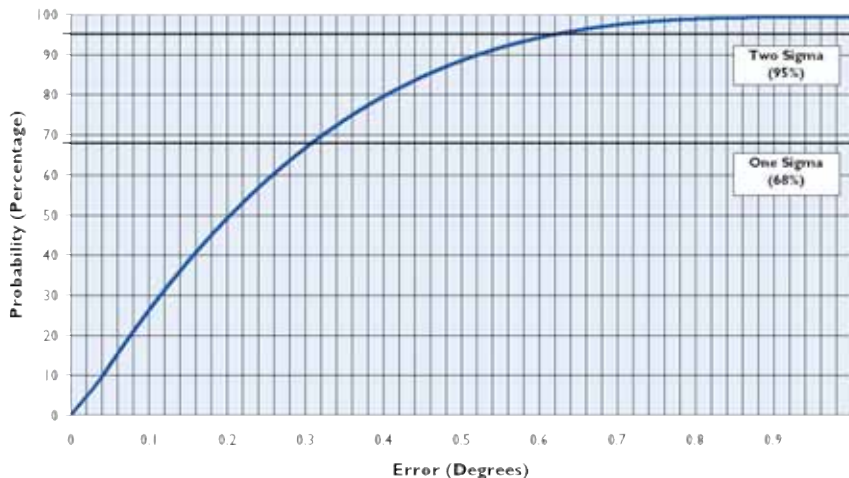
## Mechanical

<b>Dimensions:</b>	60 cm L x 16 cm W x 18 cm H (Not including mounts)
<b>Weight:</b>	< 1.5 kg
<b>Power/Data Connector:</b>	18-pin, Environmentally sealed

Type Approved as a Verified THD (Transmit Heading Device) meeting Regulation V/19.2.5.1, IMO Resolution MSC.97 (73) 13.2.5 (2000 HSC Code), IMO Resolution A.382 (X), IMO Resolution MSC.116(73), IMO Resolution A.694(17) using General requirements -Methods of testing and required test results of Future ISO 22090-3, EN 60945 (2002), EN 61162

\* Depends on multipath environment, number of satellites in view, satellite geometry, baseline length (for local services), and ionospheric activity  
 \*\* Depends on multipath environment, number of satellites in view, and satellite geometry  
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Vector Heading Performance



Note: 25 days of data collected at a 0.5m antenna separation under ideal conditions

Hemisphere GPS® Dealer



Avery label #05260 (laser print)



4110 - 9th Street SE • Calgary • AB • Canada • T2G 3C4  
 Phone (403) 259-3311 • Fax (403) 259-8866