CyScan

Positioning Technology From GUIDANCE

Laser Sensor for Dynamic Positioning…
…maximum uptime, minimum cost

CyScan is a high performance local position reference sensor specifically engineered for marine Dynamic Positioning (DP) applications. CyScan accurately measures the range and bearing of retro-reflective targets allowing for the calculation of vessel position and heading. CyScan is the standard laser sensor of choice by all major DP manufacturers.

Key Features

- Triple type approved
- Operating range up to 2500m
- Close range operation from 10m
- Full 360° scanning
- Automatic wave compensation
- Extreme low temperature -40°C variant

Applications

CyScan is suitable for applications which use fixed structures such as:

- Platform, offshore and multi-purpose supply vessel operations
- Wind farms servicing
- Accommodation barge operation
- Crew boats station-keeping
- Heavy lift activities
- Dive and ROV support
- Fish farms

CyScan is also suitable for DP applications with mobile structures such as:

- Track and ship-follow
- Shuttle tanker loading
- Pipe and cable laying
- Rock dumping
- Replenishment at sea

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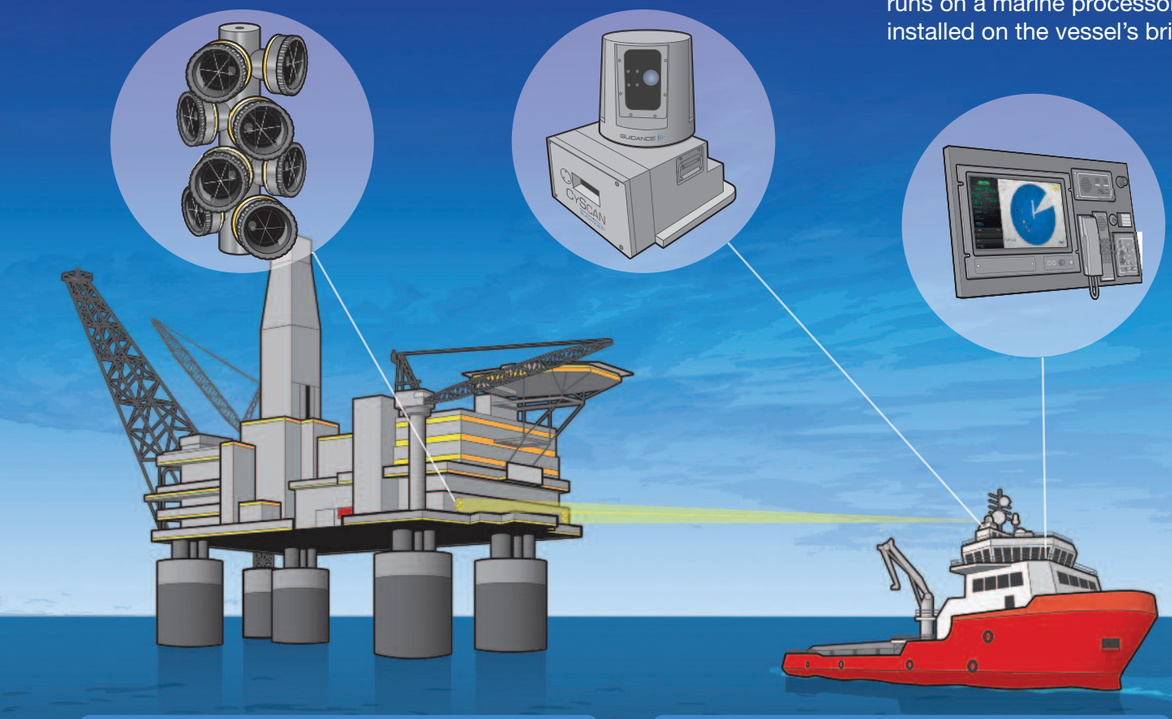
The CyScan System

The CyScan system has three main components:

- **CyScan Targets** (one or more) that are mounted on the fixed platform or mobile object
- **CyScan Sensor** that is installed on a vessel equipped with a DP system
- **CyScan Console** software is used by the DP operator to control the CyScan Sensor. It runs on a marine processor installed on the vessel's bridge



Unique Features

- High Laser Pulse rate 30Khz
- True multi-target operation gives relative heading
- Selectable tilt at 1° increments, including auto-adjusting option
- Robust construction for highest reliability
- Ease of use for quick set-up and operation
- Automatic dynamic pitch/roll wave motion compensation provides optimum target lock
- Sophisticated tracking algorithms reject false reflections
- Optimised optics protect against low sun and bright lights
- Interfaces to all known DP systems with Ethernet and/or Serial communication options
- Tracking is not stopped when manually tilting
- Adjustable 1Hz/2Hz scanning rates

CyScan Dashboard

The CyScan dashboard is a new innovative touch screen interface that enables DP operators to use CyScan safely whilst providing optimum positioning performance.

The CyScan dashboard can be supplied as an alternative state of the art solution to the traditional CyScan MK4 console.

CyScan is the standard laser sensor of choice by all major DP manufacturers and is used by all OSV & PSV operators for DP1, DP2 and DP3 class vessels.

CyScan is extensively deployed in all key oil and gas regions including the North Sea, the Gulf of Mexico, the South China Sea, Australasia and South America. CyScan also operates in regions of extreme low temperature, such as Sakhalin Russia and regions of extreme high temperature, such as the Middle East.

Global Support

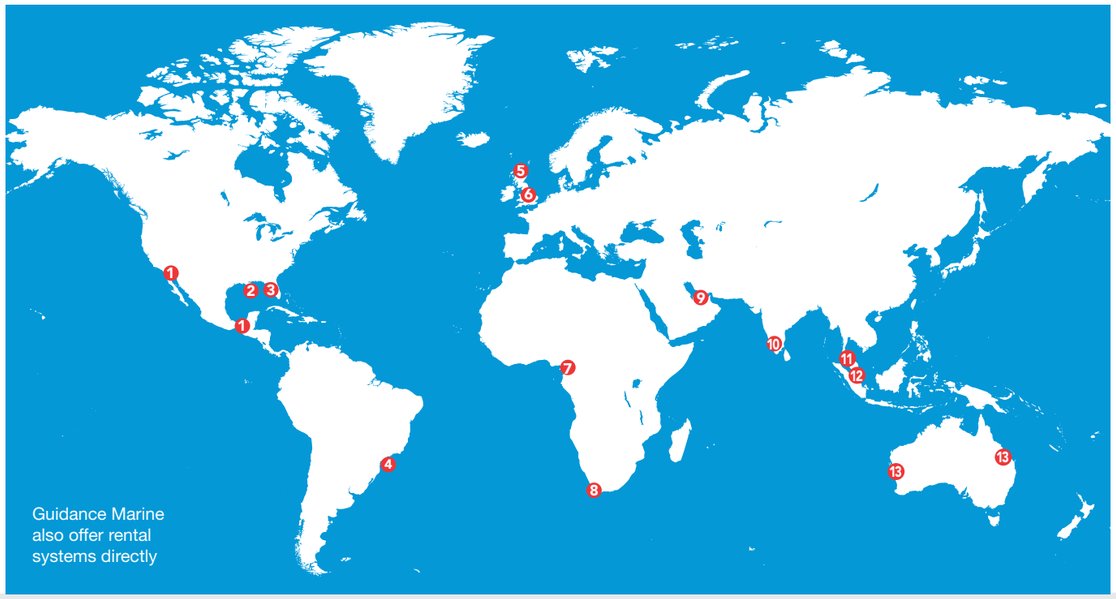
1	GlobalTech Offshore, Inc	USA/MEXICO
2	StarTech Marine Electronics, Inc	USA
3	Complete Marine Services LLC	USA
4	Japan Radio Company Ltd	BRAZIL
5	Proteus Dynamic Ltd	UK
6	Guidance Marine	UK
7	Electro-Marine	CAMEROON
8	Underwater Surveys Pty. Ltd	SOUTH AFRICA
9	KDU Worldwide Technical Services FZC	U.A.E
10	P.R.O. Marine Solutions Pvt. Ltd	INDIA
11	Dynamic Positioning Tech SDN BHD	MALAYSIA
12	Quality Marine Services Pte. Ltd	SINGAPORE
13	Cadeni Australia	AUSTRALIA

Service and Support

Guidance Marine has recognised the need for rapid response and have invested significantly in a Global Support Network of Authorised Service Partners (ASPs)

Guidance engineers have personally provided all the ASPs with comprehensive technical training in order to fully support Guidance's range of products.

"I must say that it is very seldom (if ever) to see a company with such lightning-speed of customer service response. Thanks and congratulations"



Guidance Marine also offer rental systems directly

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GUIDANCE MARINE Expert Positioning Technology

CyScan Specification

Sensor

Laser Type	Pulsed (min. 30kHz) laser diode
Laser Classification	Eye safe Class 1 IEC60825
Operating Range (nominal)	10m to 2500m (target type/environment dependent)
Range Resolution	8.5mm (<30ps time of flight)
Angular Resolution	(typical) 0.012° (0.2mrad)
Levelling Optics	Single active axis
Beam Shape (nominal)	12° vertical, 0.13° horizontal
Tilt Compensation	-20° to +20° roll and pitch
Total Vertical Angular Coverage	52° (mechanical + optical)
Wave Motion Compensation	(typical) ±5 for 5s wave period

Target Details

Target Type Typical Range	1.9m cylindrical 10m to 250m 2m flat 10m to 400m
Extended Operating Range	Prism Clusters 10m to 1250m (standard) Prism Clusters up to 2500m (long range licence)

Vessel Interface

Power Requirement	85-264VAC, 45-65Hz, max 100W, 1.5A (fuse)
Sensor Control and DP Feed I/O	2 x RS422 + 2 x Ethernet 100Base-T Auto MDI/X
Supported DP Systems	Includes Beier Radio, GE Energy, (Converteam), Kongsberg, L-3, Marine Technologies, Navis, Rolls Royce
Supported DP System Configurations	Serial Console (single) with Serial DP (single) Ethernet Console (master & slaves) with Ethernet DP (single) Ethernet Console (master & slaves) with Serial DP (single, dual)
Supported Ethernet Protocols	TCP/IP+multicast (Console), UDP/IP unicast (Console and DP)
Supported DP Telegram Formats	NMEA0183R, NMEA0183P, ASCII17, MDL standard (single & multi target), BCD, Artemis, Marine Technologies and Rolls Royce custom strings

Environmental

Temperature Range (operating)	-25°C to 70°C (-40°C option available)
Marine Certification	IEC 60945 (IE10), IMO Resolution A962 (23) 'GREEN PASSPORT'
Marine Type Approval	ABS, DNV, Lloyds Register
EMC Certification	CE Certified, FCC Part 15(a)
Water and Dust Protection	IP66 Rated

Sensor Weight & Dimensions

Width	405mm
Depth	407mm
Height	456mm
Weight	25kg

Flight Case Weight & Dimensions

System Dimensions	680 x 570 x 780mm
System Weight	61kg (with typical accessories such as computer, monitor and mouse)

GUIDANCE MARINE
Expert Positioning Technology

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CLASS 1 LASER PRODUCT

DNV TYPE APPROVED PRODUCT

ABS TYPE APPROVED PRODUCT

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