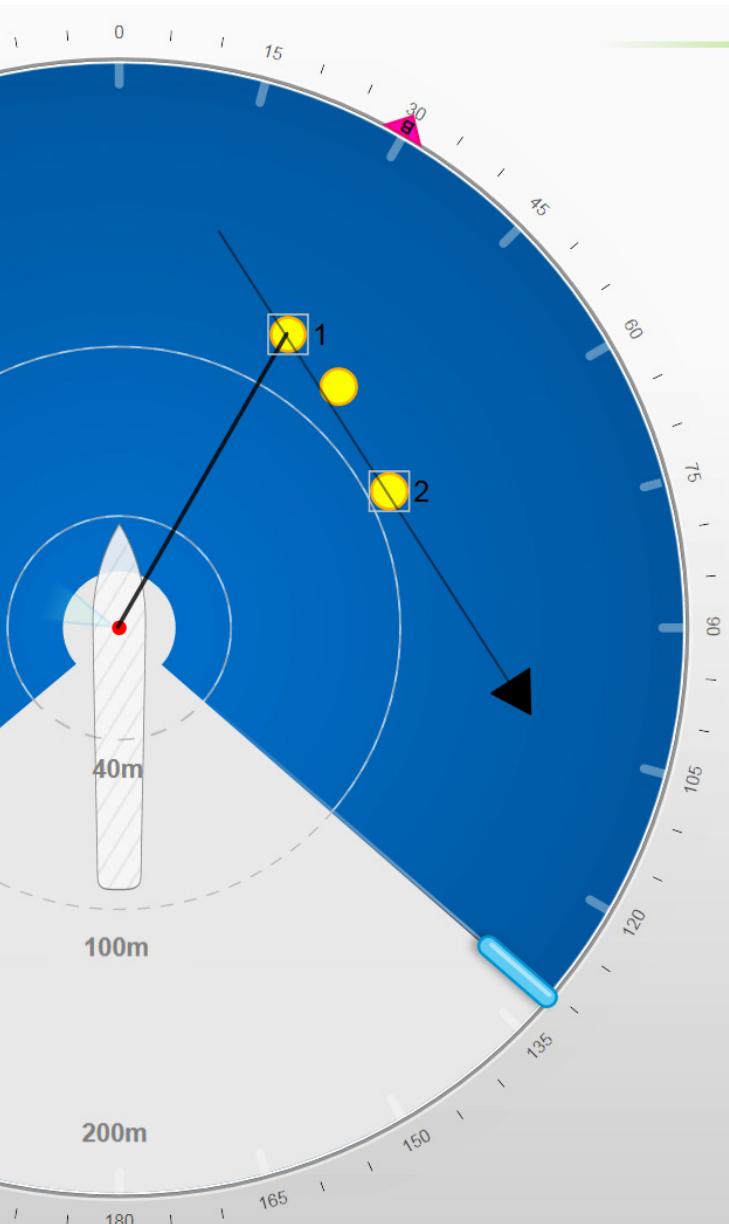


# Wärtsilä CyScan Mk4

The standard laser sensor of choice by major DP integrators



The CyScan system is a local position reference sensor for marine Dynamic Positioning (DP) applications. It measures the range and bearing of retro-reflective targets allowing the DP system to maintain the vessel's position and heading relative to the target structure of another vessel.



## Benefits

- Longest range DP laser sensor on the market today
- Type approved (ABS, DNV, Lloyds Register and RMRS)
- Extreme low temperature (XT) -40°C variant available
- Maximum uptime from rotor design
- Modular sensor design aids in-vessel servicing

## Typical applications

CyScan Mk4 is suitable for applications which use fixed structures such as:

- Platform, offshore and multipurpose supply vessel operations
- Wind farm service operation vessels
- Accommodation barge operation
- Crew boats station-keeping
- Dive and ROV support
- Fish farm

CyScan Mk4 is also suitable for DP applications mobile structures such as:

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



# Main data

Sensor Details	
Laser Type	Pulsed (min. 30kHz) semiconductor laser diode (904nm)
Laser Classification	Eye Safe to Class 1 IEC 60825
Beam Shape (Nominal)	12° Vertical, 0.13° Horizontal
Operating Range (Nominal)	10m to 3250m (dependent on target size and atmospheric conditions)
Range Resolution	8.5mm (<30ps time of flight)
Angular Resolution (Typical)	0.012° (0.2 mrad)
Range Repeatability (Typical)	75mm [3σ @ <100m], 150mm [3σ @ < 100m]
Angular Repeatability (Typical)	0.02° (0.35 mrad) [3σ @ <100m], 0.04° (0.70 mrad) [3σ @ <1000m]
Target to Target Repeat (Typical)	0.03° (0.45 mrad) [3σ @ <100m]
Position Repeatability (Typical)	0.3m [3σ] or better than 0.5% of range @ <100m, 0.05% @ <1000m
Heading Repeatability (Typical)	0.5° [3σ @ <100m] - two targets
Rotational Scanning Frequency	1Hz (60rpm), or 2Hz (120rpm) - operator selectable

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
Sensor Cable Connectors	Power (J12) - 3 way R/A socket w/strain relief Serial (J9 & J11) - 8 way socket w/strain relief
Sensor Diagnostics Display	2 lines 20 character VFD (startup messages and runtime status or diagnostics)
Service Access I/O	1 x USB 2.0 + 1 x Ethernet 1--Base-T + VGA
Supported DP Protocols	Standard sensor: NMEA0183R, NMEA0183P, ASCII17, MDL Standard, MDL Multi-Target, Nautronix Standard, Artemis Mk IV, Kongsberg Standard, MT Custom, Rolls-Royce Custom KM sensor: ASCII17, Kongsberg Custom, Kongsberg Standard, MDL Standard, MDL Multi-target
Supported Operating Modes	Serial Client (single) + Serial DP (single) Ethernet Client (In Command & Monitoring) + Serial DP (single or dual)

Levelling Optics		Environmental	
Active Axis	Single axis with automatic dynamic stepper control	Temperature Range	Min: -25°C   Max†: 70°C
Tilt Compensation	-20° to +20° roll and pitch (combined)	Marine Certification	IEC 60945 (IE10) and IMO Resolution A.962(23) 'GREEN PASSPORT'
Sensors	3 axis solid state gyro and accelerometers 2 axis inclinometer	Marine Type Approval	ABS, Lloyds Register, DNV, RMRS
Total Vertical Angular Coverage	52° (mechanical + optical)	EMC Certification	CE Certified, FCC Part 15(a)
Wave Motion Compensation (typical)	±5° for 5 second wave period	Compass Safe Distance	1000m (worst case) @ 0.3° deflection
		Water / Dust Protection	IP66 rated

Flight Case Weight & Dimensions		Sensor Weight & Dimensions	
System Dimensions	680 x 570 x 780mm	Enclosure	Anodised alloy with powder coating
System Weight	ca. 61kg (typical accessories)	Dimensions	405 x 407mm footprint, 456mm height
		Weight	ca. 25kg (without flight case and accessories)

†: Internal to sensor

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