



# FUGRO-TSM

## HAVILA HARMONY

**The Havila Harmony is a true multi-role DP2 vessel with the ability to perform a wide spectrum of work scopes. It is equally capable of executing subsea installation programs, ROV intervention, diving operations or well intervention tasks.**

Based on the Marin Teknikk MT6010 hull, the vessel has excellent sea keeping capabilities, providing a stable platform over a wide range of weather conditions.

With modern accommodation for up to 88 personnel, the vessel has been designed and built in accordance with the Norwegian Clean Comfort Class standard, providing a greater level of passenger comfort, including reduced levels of noise and vibration.

The Havila Harmony has been specifically modified to comply with DNV Well Intervention Class Notation and has an accepted NOPSA Safety Case covering,

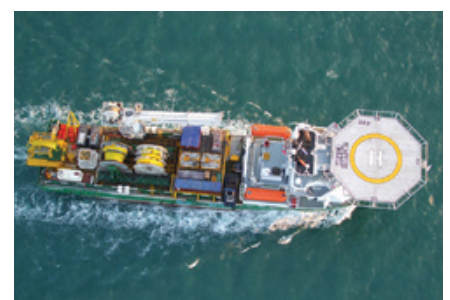
among other things, construction, well Intervention, subsea tree deployment and ROV activities.

Two high specification FCV 3000 Work Class ROV's are installed onboard, both with a maximum working depth of 3000m. Additionally, the combination of a 150T AHC crane and 800m<sup>2</sup> of back deck space provides a level of operational flexibility unmatched by many other vessels of this size.

Through our fleet of high specification vessels, including the Havila Harmony, Fugro-TSM are able to offer a broad range of services across the life cycle of a subsea field.



*Christmas Tree installation from the Havila Harmony*



*Aerial view of Havila Harmony with reels and overboarding arch in place*



# HAVILA HARMONY

## Technical Specifications

### General

|                         |   |
|-------------------------|---|
| Name                    | Havila Harmony  |
| Classification          | DNV + 1A1, Ship-shaped Well Intervention Unit, SF, LFL* COMF-V(3), HELDECK - SH, DSV-Sat, E0, Dynpos AUTR, CLEAN, DK (+), HL(2.8) |
| Built                   | 2005 as DP2 PSV, 2007 converted to current configuration  |
| Design                  | MT 6010   |
| Port of Registry / Flag | Labuan, Malaysia  |
| IMO                     | 9343596   |

### Dimensions

|                      |            |
|----------------------|------------|
| Length Overall       | 92.95m     |
| Length BP            | 86.6m      |
| Breadth              | 19.70m     |
| Depth                | 7.7m       |
| Maximum Loaded Draft | 6.3m       |
| Moonpool             | 6m x 5.28m |
| Gross Tonnage        | 4724Te     |

### Accommodation

|                |                           |
|----------------|---------------------------|
| Total Berths   | 88, Fully Air-conditioned |
| 1 Person Cabin | 18                        |
| 2 Person Cabin | 30                        |
| 4 Person Cabin | 2                         |

### Machinery

|                         |                                  |
|-------------------------|----------------------------------|
| Electric Driven - Power | 4 x 1900kW                       |
| Electric Driven - Type  | 4 x Cummins QSK60-D(M)           |
| Propellers              | 2 x 2600kW LIPs Type FT 275-S/WN |
| System Voltage          | 690V / 440V / 220V               |
| Main Thrusters          | 2 x 1000kW LIPs Type FT 250H-DL  |
| Emergency Generator     | 1 x Cummins KTA19DM 485kW        |

### Capacities

|                        |                         |
|------------------------|-------------------------|
| Deck Area (excl. Mezz) | 800m <sup>2</sup>       |
| Stern Deck Strength    | 5 - 10Te/m <sup>2</sup> |
| Potable/Fresh Water    | 1012m <sup>3</sup>      |
| Fuel Oil               | 1140m <sup>3</sup>      |

### Deck Equipment

|                      |                                 |
|----------------------|---------------------------------|
| Capstans             | 2 x 10Te                        |
| Tugger Winches       | 2 x 15t                         |
| Deck Cranes          | 1 x 3Te, 1 x 1Te                |
| Cargo Securing Winch | 4 x 3Te pull, 5Te brake holding |

### Offshore Crane

|                             |  |
|-----------------------------|--|
| Type                        | Hydramarine AHC Offshore Knuckle Jib Crane |
| Maximum Lift (Single Fall)  | SWL 100Te                                  |
| Maximum Lift (Double Block) | SWL 150Te                                  |
| Whip Line                   | SWL 15Te                                   |
| Personnel Lift Capacity     | Available                                  |

### Dynamic Positioning

|            |                                      |
|------------|--------------------------------------|
| DP System  | Kongsberg Simrad SDP22 DP II         |
| References | 2 x DGPS, 1 x HiPap 500, 1 x Fanbeam |

### Speed and Fuel Consumption

|                              |                        |
|------------------------------|------------------------|
| Maximum Speed/Consumption    | 13.5 knots @ 30Te/Day* |
| Economical Speed/Consumption | 11.5 knots @ 25Te/Day* |
| DP Consumption               | 6-8Te/Day*             |

\*figures are approximate and may change depending on vessel loading, draft and environmental conditions

### ROV's

|              |   |
|--------------|---|
| Type         | FCV3000 Work Class ROV's                        |
| Power        | 150 hp  |
| Depth        | Rating 3000m                                    |
| Payload      | 3000kg  |
| Manipulators | Schilling T4 – 7 function, Shilling Rigmaster 5 |
| Quantity     | 2 systems installed onboard, 1 either side      |

### Helicopter Deck

|              |  |
|--------------|--|
| Diameter     | 19.5m  |
| Suitable For | Supa Puma Type AS332L2 or equivalent (9.2Te) |

### Navigation and Communication

|      |  |
|------|--|
| Type | A C-Band Internet and Communications System is installed on the Vessel |
|------|--|

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