

Technical Dossier

Mahal Ko, Exclusive 76 Custom Catamaran

1. Basic Specification

Length	23.42m
Beam	10.50m
Draught	1.5m Centreboards Up
	3.9m Centreboards Down
Empty Displacement	40.45 tonnes
Gross Tonnage	45.92 tonnes
Number of Cabins	5
Number of Berths	10
Area of Accommodation	244 sq m
Designer	Gilles Ollier
Year of Build	2009
Build Yard	SARL VIP Composite, Les Sables d'Olonne, France
Bridge Clearance Height	34.50m (antenna removed)
Design Category	A
CE Mark	Yes, CE 0607
Registration	Caymen Island Registration
Official Number	749417
Sail Area	312 sq m up-wind
	589 sq m down-wind

2. Build Description

Basic Structure

Superstructure in GRP Foam Sandwich with carbon reinforcement in front beam and in other high load areas. Vinylester resin. Gelcoat finish, Vinyl Wrap topsides.

Features

Large wrap-around polycarbonate windows to maximise 360 degree vision.

Large lifting skylight in saloon with uplighting.

High spec carbon rig to minimise weight aloft

Good Bridgedeck clearance to minimise slamming when sailing to windward

Modular construction interior cabins, all en-suite, with Alucore lightweight furnishings.

Appendages

Spade rudders, hydraulically powered

Lifting centreboards, hydraulically activated

Large Storage Capacity

Lazarette storage in starboard bow for spinnaker and fenders.

Lazarette storage in port bow for smaller items (accessed from Mariner Cabin).

Front beam storage lockers for spinnaker, warps and fenders.

Rear beam storage lockers for liferafts, grab bags, Engine room fire extinguisher controls.

Engine Room Technical Area for generators, air conditioning equipment, watermakers (not fitted), dive compressor (not fitted), spares and tools.

Coffin locker storage in transoms for cleaning equipment, ropes, passarelle.

3. Accommodation

Port Hull

Owners Master Cabin: Double Island bed, bedside cabinets x 2, Wardrobes x 2, laptop workstations x 2. En-suite bathroom with shower enclosure, Geberit Balena 8000 electronic WC/bidet in its own enclosure, feature glass hand-wash basin with waterfall tap, dressing table and cosmetics area. Flexible LED reading lights with USB phone charging points. Rako remote control programmable feature lighting. Mave air conditioning controls.

Main Downstairs Galley: Double sink with work surface and drainage area. Gaggenau Induction hob and extractor. NEF Microwave and NEF Fan Oven/Grill. Miele clothes washing machine, Miele clothes drier, retractable ironing board. Front opening Isotherm fridge x 2 and front opening Isotherm freezer x 2. Air extractor.

Mariners Cabin: Twin bunk beds, wardrobe, en-suite bathroom with hand-wash basin, shower, 240v fresh water flush Saniflow Macerator toilet. Access hatch to port bow lazarette. Flexible LED reading lights. Rako remote control lighting.

Starboard Hull

Guest Cabin #1: Double bed, bedside cabinet, wardrobe, laptop workstation. En-suite bathroom with shower enclosure, 240v fresh water flush Saniflow Macerator toilet, hand-wash basin with waterfall tap. Flexible LED reading lights. Rako remote control programmable feature lighting. Mave air conditioning controls.

Guest Cabin #2: Twin beds, bedside cabinet, wardrobe, laptop workstation. En-suite bathroom with shower enclosure, 240v fresh water flush Saniflow Macerator toilet, hand-wash basin with waterfall tap. Flexible LED reading lights. Rako remote control programmable feature lighting. Mave air conditioning controls. Twin beds can be converted to a double with minor work from a shipyard.

Skipper Cabin: Double bed, Wardrobe, laptop workstation. Additional storage for safety equipment and additional bed linen. En-suite bathroom with shower enclosure, 240v fresh water flush Saniflow Macerator toilet, hand-wash basin with waterfall tap. Flexible LED reading lights. Rako remote control programmable feature lighting.

Bridge deck

Upstairs Galley: Sink with work surface, Miele dishwasher, Isotherm fridge, wine chiller cabinet, rubbish compactor.

Saloon with Navigation area: Seating area and dining table, many storage cupboards and drawers, concealed TV cupboard, 43 inch Samsung smart TV, JVC music system, Philips Hue smart feature lighting, electronic raising skylight roof for extra ventilation, Mave air conditioning controls. Large open floor space for additional easy seating or similar.

Cockpit: Large seating area and dining table, Philips Hue smart feature lighting, stereo music speakers, side vents for additional air flow, rear awning that can be removed in sections, depending on temperature and wind direction. Lifting hatch over Flybridge access stairs makes the Cockpit area almost completely weather proof.

Flybridge: Large seating area with weather covers when not in use, folding teak dining table with high or low level option. Stereo music speakers. Navigation area with sail controls and winches separate from the seating.

4. Tender

Carib 4m Inflatable GRP tender.
50hp 4 stroke Honda outboard.
Honda outboard service spares including spare propeller.

Hydraulic Tender Lift mechanism with handheld RF controller for single person launching.

5. Tankage

Fresh Water	2 x 1070 litres
Diesel	2 x 1800 litres.....approx 2500 Nm range
Grey Water	2 x 940 litres
Black Water	2 x 380 litres

Vega Industrial Grade digital level gauges

XALIS 9400V1 JM Concept Programmable Tank Level Indicators at Navigation Station.

Independent pressurised fresh water system per hull, with option to connect together.

Connections available for installing water makers in each hull, not currently in use.

Motorised valves are used to select which waste tank is to be emptied.

Macerator pumps in each hull to pump out waste.

Dockside waste water pump-out option.

Breather pipes for each tank with carbon granule filters.

Pumps to transfer diesel between tanks.

6. Propulsion

Engines

2 x 175 hp/129kw 3.7 litre Volvo Penta D4 Turbo Diesel each fitted with additional Mastervolt 150 amp Service Alternator.

All electronic controls including throttle.

Custom Halyard GRP silencers.

Installed 2020.

Gearbox

Electronic shift, Hydraulic clutch. Installed 2020.

Drivetrain

45mm diameter propeller shafts, Gori 26 x 21 3-blade folding propellers with rope cutters and overdrive.

LH port propeller, RH starboard propeller for sideways "walking" during manoeuvring.

Bow Thruster

Retracting 9.6kw Lewmar 250 VRTTC 48v Bow thruster situated in starboard bow, closed with flush-fitting GRP panel when not in use.

Powered by 4 x 12v Optima Red Top 50AH AGM Batteries

Supplied from Mastervolt Chargemaster 24/60-3 Auto Battery Charger.

Hydraulic Power

Hydraulic power pack in front beam with 4 x 6kw 24v electric motors

Powered by 4 x Northstar NSB-AGM31 103 Ah batteries

Supplied from Mastervolt Chargemaster 24/60-3 Auto Battery Charger

Electrical Panel with plc control to Eaton Vickers industrial solenoid valves.

Electric Generators

2 x 6.8kw Fischer Panda PMS AGT8000 24v-210amp

Kubota Diesel engines

Remote Control Panel 6-50

7. Rig and Sail Plan

Mast

33m Lorima Grand Prix Carbon Mast, 0.9 tonnes including Hydraulic Winches
Harken Switch Track system
2:1 Mainsail Halyard with Harken pulley
2:1 Spinnaker Halyard with Harken pulley
Dedicated Man-halyard
Lopo Mast Navigation lights including 4 x overhead obstruction lights
Custom LED spotlights in halo formation, with Rako remote control
Carbon Radar bracket with led deck spotlight and loud speaker for Tannoy and horn
Mast Head wind instruments, Lightning conductor.

Boom

10m Lorima Carbon V-Boom
Telescopic Vang support.

Front Beam and Compression Tube

All Carbon construction, with Carbon Seagull Striker.

Standing Rigging

Carbo-Link Terminations
Rigid Carbon rod forestays x 2 and shrouds x 4.

Running Rigging

Dyneema halyards and sheets.
Dyneema reefing lines.
Dyneema soft shackles and Dyneema lashings where needed.

Sails

Incidence Mainsail with collapsing headboard and Carbon Battens	191 sq m
Hydraulic Furling Genoa	121 sq m
Hydraulic Furling Staysail	64 sq m
Storm Jib	14 sq m
Asymmetric spinnaker on continuous line furler	350 sq m
Symmetrical Parasail spinnaker with snuffer	398 sq m

8. Decks and Hardware

Deck Details

Permateek synthetic decking
Rutgerson flush-fitting hatches to accommodation
Custom flush-fitting hatches to storage in front and rear beams
4 x Transom mounted shore power sockets
Lopo navigation lights.

Ground Tackle

Lewmar Delta 63 kg stainless-steel anchor with stainless-steel chain
2.5kw 24v Lewmar V8 electric windlass
Fortress folding anchor approx. 25kg with substantial length of shoreline on a drum.

Rope Handling

Harken 990 3-speed hydraulic winch x 3
Harken 980-C 2-speed hydraulic winch x 1
Harken 2 speed power ratio 70 hydraulic winch x 1
Harken Genoa track
Harken stand-up pulleys x 5 for headsail handling
Harken corner-turning deck mounted pulleys x 2 for headsail handling
Spinlock and Antal jammers
Hydraulic mainsail sheet and traveller, concealed in flybridge coamings.

Comfort

Flybridge seating with reticulating foam and UV protective covers
Flybridge folding table with high and low levels
Transom bathing ladders and shower fittings.

9. Electrical System

Service Batteries

12 x Lifeline AGM GPL-8D

12v -255 Ah

900kg total, situated mid-ships in cockpit seating lockers.

Inverters

8 x 5kw 240v Xtender XTH-5000-24.

Generators

2 x 6.8kw Fischer Panda PMS AGT8000 24v-210amp

Kubota Diesel driven

Remote Control Panel 6-50, starts automatically on low voltage.

Service Alternators

2 x 150 amp Mastervolt Alpha service alternators fitted to main Volvo Penta engines.

Controlled using Alpha Pro regulators.

Shore power Battery Chargers

4 x Mastervolt Chargemaster 24/100-3

Electrical Monitoring

Mastervolt Masterbus Network monitoring and control from navigation area Microsoft Laptop. Monitor currents and voltages using network of 10 shunts. Allows you to regulate settings such as the in-coming current from shore power battery chargers, to prevent overloading shore power.

Philosophy

System configured to allow power input simultaneously from shore power and generators, and main engine service alternators as required.

All 240v systems on the boat are powered from on-board inverters, to ensure clean supply and to prevent issues due to temperamental shore power.

10. Navigation System

Flybridge Navigation Station

Steering Wheel
Volvo Penta ignition switches, throttles and engines status display
Lewmar bow thruster control panel
VHF loudspeaker
Hydraulic Controls for Headsail furlers, Mainsheet, Traveller and for lowering Centreboards
B+G Zeus 2 Plotter
Position for Tablet or Phone with USB power supply socket
B+G Graphic Display x 2.

Interior Navigation Station

Volvo Penta Ignition switches, throttles and engines status display
B+G Graphic Display
B+G H5000 Pilot Controller and CPU
B+G Bluetooth WR10 Autopilot Remote Controller on lanyard
B+G Through-deck sensors and GPS sensor
B+G V90 VHF Radio with 3 x handsets and 2 x H50 wireless handset chargers
VHF loudspeaker
Simrad 4G Digital Radar system
NAIS-400 Class B AIS Transceiver
NSPL-500 VHF/AIS Splitter
Hand-held back-up VHF radio and charging station
2 x Masterbus network monitoring and control panels
Microsoft Laptop, main use being to monitor batteries and charging systems
Switch panel for emptying waste water tanks and fuel transfer between hulls.
Selector switch for navigation lights
Multi-USB charging socket
Remote displays for fuel and water tanks (fresh, grey and black)

11. Domestic Systems

Air Conditioning

Mave 15kw Air Conditioning Compressor
Eberspacher D10W 9.5kw diesel powered air heater
8 x fan coil air-transfer units
4 d digital thermostat with fan controller

Lighting

Rako remote RF control programmable cabin lighting
Philips Hue Smart lighting system in saloon and cockpit with led strip and led spotlights.
Select any colour and create any mood lighting on the smartphone app.

Air Ventilation

Fresh air flow vents in navigation area
Dometic black-out blinds with insect mesh on cabin overhead hatches.

WC

Fresh water flushing macerator toilets in every cabin. Master cabin WC also has a bidet function.

Sound and Vision

43 inch saloon Samsung Smart TV in concealed TV cabinet activated with RF remote control
Music Stereo with speakers in cockpit and flybridge, can be linked to smartphone.

Entertaining

Drinks fridge and sink in rear beam locker
Wine chiller cabinet in saloon.
Isotherm fridge in upstairs galley
2 x Isotherm fridges and 2 x Isotherm freezers in downstairs galley

12. Safety Equipment

Liferafts

2 x Plastimo Transocean >24hr 8 person Pack-C liferafts, last tested August 2017

Grab Bags A+B

Thermal protective suits, inflatable radar reflectors, Ocean Safety Cat-C first aid kit, drogue

Life Jackets

2 x child life jacket
11 x safety harness
11 x life jackets
2 x circular lifebuoys

Flare Box

2 x Orange floating smoke, 4 x hand held red, whistle, signal mirror, 4 x red meteor parachute flare with gun

EPIRB/SART

1 x SART transponder

Fire Equipment

Fire extinguishers in all cabins
Fire blanket in galley
CO2 system and smoke alarms built into engine rooms

First Aid

Several first aid kits, including large trans-ocean kit which needs updating
First Aid Manual

Emergency Hatches

In case of inversion, each hull has emergency hatches fore and aft, situated in the area of the access stairs.

Additionally there are pre-cut emergency hatch covers, in case a hull window ruptures during a passage.

13. Spare Parts

Substantial collection of tools and spare parts including:

- Engine service spares
- Generator Spares
- Tender outboard spares, including spare propeller
- Bilge Pumps
- Macerator Pumps
- Fresh water pumps
- Interior Lighting system
- Fuses and breakers
- Nav system senders
- Rutgerson flush-fitting hatches (complete set)

- Oils and coolants
- Colour-matched Gelcoat
- Spare vinyl wrap (exterior and interior)

- Large variety of Hand tools
- Spanners and socket set
- Power tools (polisher, grinder, drill)
- Multimeter, clamp-on meter

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