

# ImPreSión, a Sailor of Choices

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# ImPreSión, *Gulliver 57-2*

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ImPreSión, a sailboat of Choices

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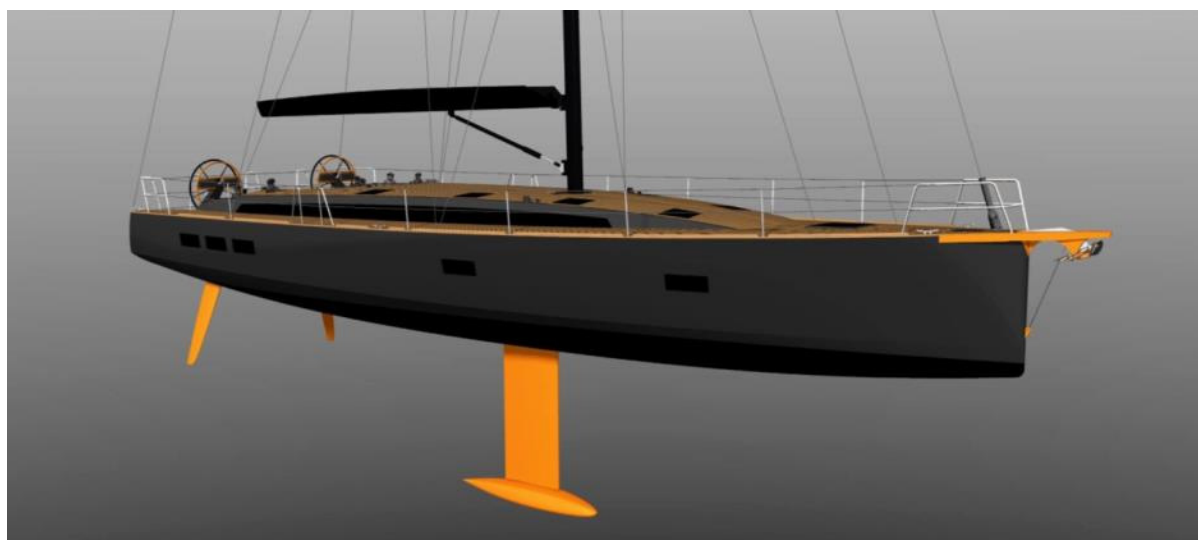
Gulliver 57-1 Imagination3



Gulliver 57-2 ImPreSión



Gulliver 57-2 ImPreSión



Gulliver 57-1 Imagination3

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## **1 ImPreSión presents itself**

Overall concept :	Marc Lombard
Detailed concept and interior design :	Alessandro Valenti
Builder	GU Service, Carlo Gullotta
Certification	ICNN, Cat. A – 12 personnes

### **1.1 Caractéristiques principales**

Aluminum Performance Bluewater Cruiser

Length overall	18,60m (61ft)
Hull length	17,50 (57,5ft)
Waterline	17,41m
Beam	5,18 m
Beam at waterline	3,94 m
Displacement	19.054 kg (*)
Ballast	4.254 kg
Weight of the structure	4.800 kg
Draft	1,70m – 3,50m (Hydraulic lifting keel with lead bulb)
Height	27,2m (without antennas)
Engine	Lombardini Saildrive 84 hp
Sail area upwind	195 m <sup>2</sup>
Main	105 m <sup>2</sup>
Solent	90 m <sup>2</sup>
Sail area downwind	392 m <sup>2</sup>
Water capacity	550l (350l + 200l)
Diesel capacity	590l (500l + tank journalier de 90l)

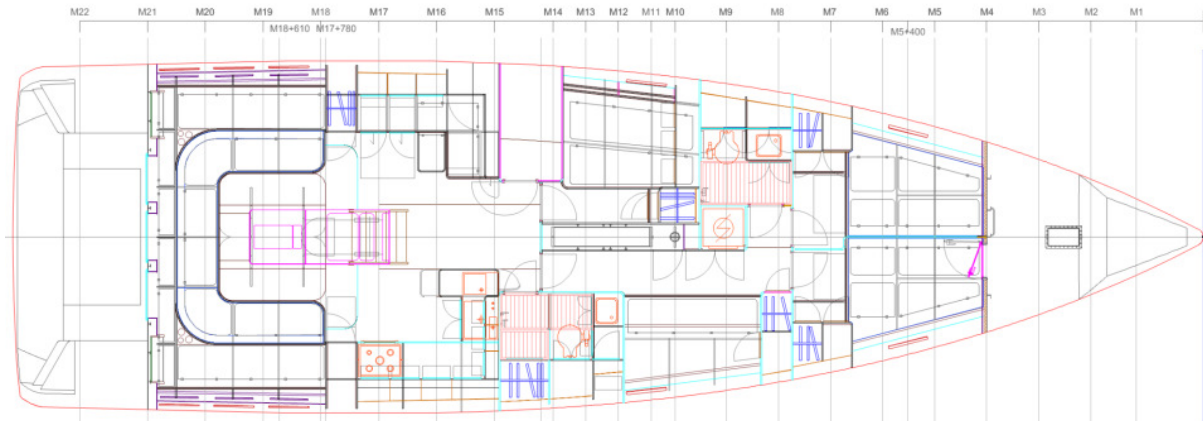
(\*) The 57-2 version includes a high-performance insulation, a painted hull, a teak deck, two hydraulic reels, a second pilot, two hydrogenerators, a water maker 100l / h, a generator, an inverter, a maximized storage space in marinized drawers, a HIFI system, a washer / dryer, and an industrial standard electrical and electronic equipment, totalling a weight estimate of 2800 kg compared to a less sophisticated version.

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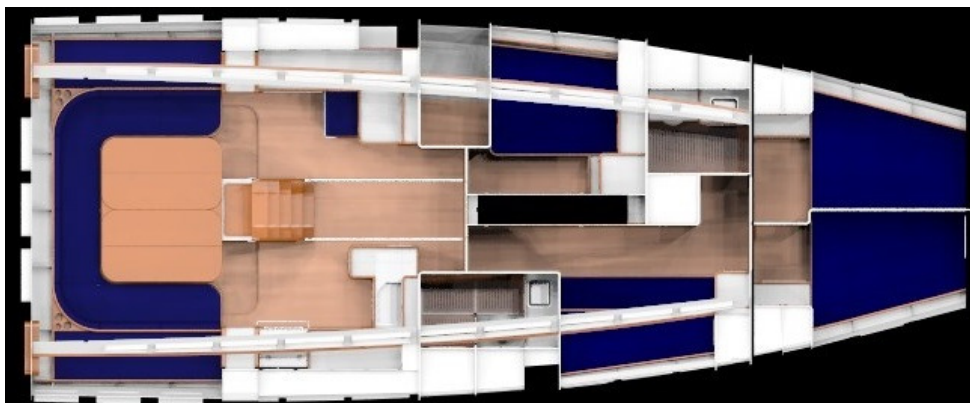
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## 1.2 Layout



- Aft Dinette – 12 people + two berths
- Large Gastronorm Galley
- Chart table with integrated office
- Central keel box
- Central main cabin on port side
- Starboard bathroom with storage for sailcloths
- Starboard cabin with two berths
- Two front double cabins (alternative : One master cabin with bathroom)
- Port side bathroom
- Large sail locker
- Front dry locker for fenders and waste
- Chain locker
- Open aft with 5 lockers



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## 1.3 Rigging

Cutter rig

Cathedral rig (2 ½) with Lorima carbon mast and V-boom

ROD Navtec

10 Andersen winches

Solent under deck hydraulic reel from Reckmann

Staysail on deck hydraulic reel from Reckmann

Reckmann hydraulic cylinders for Vang, outhaul, staysail halyard and halyard stay

Spinnaker halyard

Inner mast Facnor 7t hook for Code 0

Inner mast Facnor 3t hook for Staysail 2 / storm sail

Ronstan Main sail sheet rail

Ronstan solent / staysail sheet rails

## 1.4 Sail set – Incidences

- Main DFI Aramide / Dyneema 105 m2 on linear Harken rail
  - o Reef 1 : 67 m2, Reef 2 : 42 m2, Reef 3 : 27 m2
- Solent on reel DFI Aramide / Dyneema 90 m2
- Staysail on reel DFI Aramide / Dyneema 55,5 m2
- Staysail 2 (on Stay 3) D4 Vectran / Aramide 28 m2 + deck bag
- Storm sail (on Stay 3) Dacron 14,5 m2
- Cape Sail Dacron 19 m2 on independent harken rail
- Code 0 CZ 60/90 149 m2 on Facnor FX+7000
- Assymetrical spinnaker Nylon 65g 287 m2 with bag (\*)

(\*) Furling possible via Facnor FX+ or Profurl electrical furler

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## **1.5 Steering**

Two independent rudders

Solimar steering.

2 independent B&G hydraulic autopilots.

## **1.6 Instrumentation and communication**

2 x chart plotter B&G Zeus 3, 9 inch at the helms

1 x chart plotter B&G Zeus 2, 12 inch at the chart table

Computer B&G H5000

Carbon wind measurement set

Radar B&G

Forward Scan B&G

2 instruments B&G at the helms

1 instrument B&G in the cockpit table for night watches

1 instrument B&G in the living area

VHF B&G V90 with 3 fixed hand units et 2 mobile hand units

AIS

NMEA emergency wind measurement unit

VHF B&G V50 emergency VHF on emergency battery

Autocalibration

2 Autopilot calculators

PC Interface (Maxsea)

Board PC + Maxsea

Iridium GO

Iridium Extreme

Portable VHF ICOM GPS

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## 1.7 Electrical equipment

- Mastervolt Isolation transformer
- 24V Charger Mastervolt
- 12V Charger Mastervolt
- 24V emergency charger Mastervolt
- Alternators 12V and 24V on engine
- Batteries AGM 6 x 12V 200A in 24V connection - 24V pour les services
- Batteries AGM 4 x 12V 200A in 24V connection for bow thruster and anchor winch
- Engine battery Moteur + emergency battery
- Inverter 2500W Mastervolt
- Individual protection of each function
- 2 hydrogenerators Watt& Sea 600W
- 2 Solbian solar panel drawers

## 1.8 Miscellaneous

- Retractable bow thruster
- Lewmar anchor winch with 2 cabled controls (front and helm)
- Anchor Ultra 35 kg + 75m chain 12mm
- Fortress secondary anchor
- Water maker Schenker 100l / h
- Boom Brake Waldner
- Double Drogue + 60m rope
- Inflatable fenders with electrical blower
- Tender Zodiac Fastroller 285 + Electrical motor Torqueedo + 2 batteries
- Washing / Drying machine
- Quiet water pump
- Sea water pump and distribution
- 2 heating / ventilation units Eberspächer
- Cooker GN-Espace Oceanchef XL, Sink GN Espace 900

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- HIFI Fusion / Mosconi / Focal + screen
- Dimmable Prebit lighting (16 groups) + night red at chart table, galley, boom and reading lights

## **1.9 Safety**

- Water tight walls aft and front to sail locker (with door)
- Water tight main entrance door
- 4 electrical bilge pumps + 1 manual bilge pump
- Diesel shut off at helm
- Aft gas extinguisher actuated from helm
- 8 powder extinguisher 2kg
- 3 atomiser extinguishers
- Epirb GPS
- Emergency VHF on emergency battery with emergency antenna
- Portable VHF GPS / DSC
- 3 marine medical emergency bags + pediatrics
- Defibrillator
- 4 SOLAS automatic vests with PLB
- 12 automatic vests 275N
- 4 individual LED personal emergency lights
- 5 LED headlights + 4 LED torches
- Extra navigation lights at masthead
- Masthead Stoboscope
- Emergency raft VIKING 8 people
- Emergency raft ocean Plastimo 4 people
- Emergency ladder
- MOB



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## **2 Use of ImPreSión**

The fixed crew of ImPreSión includes a family of two parents and two children (8 and 5 years old, beginning of 2017). Regularly 3 large sons in pair join this basic crew. We wanted to create a lifelong sailboat that can be sailed alone safely, in full comfort and performance.



A maximalized pentagone : Safety, Confort, Performance, Beauty, Economics

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## **3 Overall Concept**

All conceptual decisions were made to maximize an Equilateral Safety - Comfort - Performance triangle. Following this reasoning without compromise, we have seen that the triangle has become a pentagon.

All the design is based on a search for balances, weight balance, balance in the centers of gravity and sails, balance in sail reduction, balance of forces in rigging, balance in day-night use, navigation-mooring, .....

So we made choices that are contrary to current market trends:

- Fully watertight aluminium structure
- Inner floors on single level
- Sleek sides
- Easy and safe on-deck circulation
- Hand rails everywhere and footrests
- Multiplication of the winches per function
- Complete sail trim
- All-Weather Sailplan and rig

Le résultat est un voilier intemporel à la fois classique et hyper moderne.

Bien que le voilier est équipé et préparé pour les voyages hauturiers en toutes latitudes, sa conception est évolutive.

Démarrant son voyage avec un sprayhood en toile protégé par un bord casse-vagues en alu, les plans sont faits pour un sprayhood avec pare-brise et toile jusqu'au doghouse fermé, passant par un sprayhood fixe vitré comme représenté ci-dessous.

The result is a timeless sailboat that is both classic and ultra modern.

Although the yacht is equipped and prepared for bluewater voyages in all latitudes, its design is evolutionary. Starting his journey with a canvas sprayhood protected by an aluminum snap edge, the plans are made for a sprayhood with windshield and canvas up to closed doghouse, passing through a fixed glazed sprayhood as shown below:



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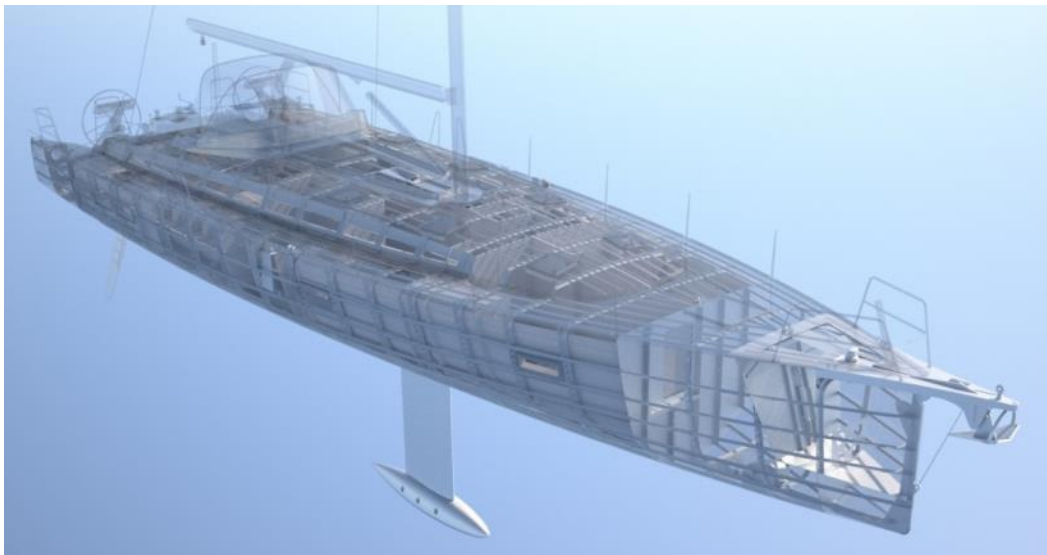
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## **4**   **Structure**

We chose a full alu construction (hull-deck-Bow sprit-pods-cockpit table) mechanically welded with watertight walls at the front and back of the living space. There are five reasons for this choice:

- Robustness and impact safety
- Weight
- Lifetime
- Adaptable
- Recyclable



One piece of aluminum

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## **5** **Appendices**

Choosing the kind of keel requires a lot of attention. We chose a 3.5m lead keel hydraulically liftable to 1.7m with safety plugs to keep the keel down if the sailboat turns. This proven design (Marc Lombard) made it possible to realize a sailing boat performing downwind as well as close tight upwind. Indeed the sailboat easily ascends to 30 degrees of the real wind (20 apparent!) And holds all its canvas above 22 nds of apparent wind in all stability. The result is impressive and gives a strong sense of security.

We have built two independent rudders connected by a link bar.

Thanks to the chines, the boat gently moderates and allows to sail at all the speeds on a single rudder in the event of loss of a rudder. Each individual rudder can be used with an emergency bar. The appendices are calculated in order to be able to beach the boat in emergency. We do not intend to use this feature.

## **6** **Rig**

The rigging and the sails are the motor of the sailing boat. The whole thing was designed to sail from 4 knots of wind (even less if we have a lot of time and we will take it). Therefore no compromise on rigging!

After 1.5 years of reflection we chose a cathedral rigging.

The double catenary lowered rig reduces the center of gravity towards the center of the mast and avoids any ragging with the mainsail. The rigging is calculated to operate without bastaques but is equipped with runners and fixing points for low bastaques. The double backstay is regulated by a hoist that connects its two strands (Marc Lombard)

The cutter rigging with two hydraulically wound sails, a J1 solent and a J2 staysail, offers comfort and safety of use that we would not want miss. By joining a third hooked forestay, J3, equipped with a staysail or a storm sail, this sailboat will sail only rarely with a sail partially wound.

The mast and the canoe boom were made of carbon by Lorima with a vang cylinder, a cylinder for the outhaul of the main sheet and a cylinder on the halyard of J2 which makes it possible to resume the tension on the stay 2 by a cylinder in the base of the J2 reel. All these hydraulic controls are brought back to a manual control unit on the pod between the helm stations. The mast is equipped with a 700mm stem.

Although today's carbon rig is mature and has a good longevity, we have chosen a ROD rig for our travel sailboat.

The equipment of the boat as well as the supply of all the current rigging was done by Iroise Rigging which equipped the first 7 arrivals of the last Vendée Globe as well as the last Jacques Vabre



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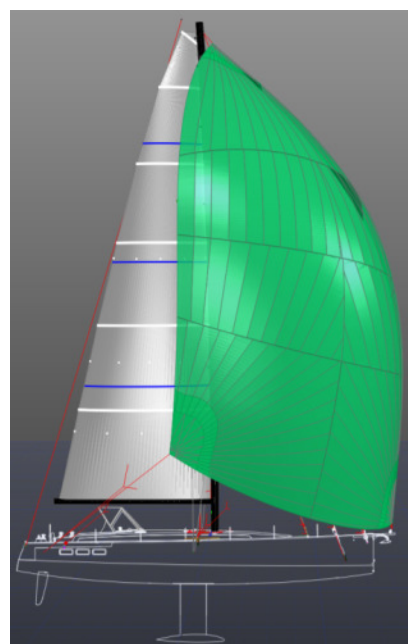
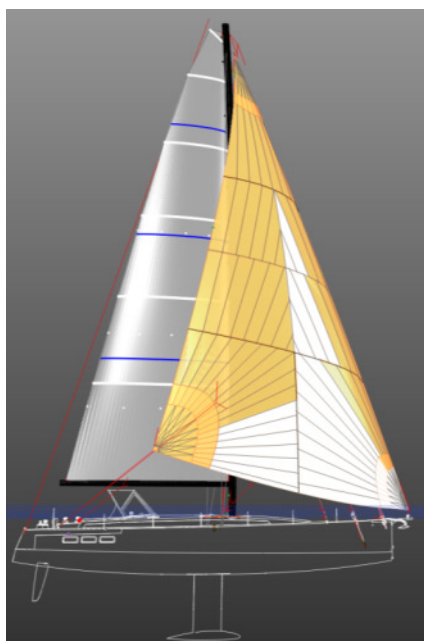
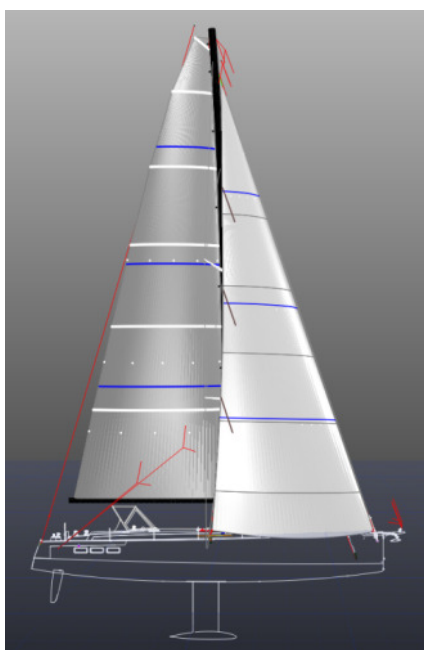
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## **7** **Sails**

Here too, no compromise, the latest generation of Incense Sails is complete for all winds:

Main battened 3 reef, Solent, Staysail, Staysail 2, Storm, Cape Sail, Code 0 and Asymmetric Spin.

Sails of good weather can be manipulated from the front deck alone using the winch at the mast foot. It is also possible to bring the spinnaker halyard back to the cockpit.



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## **8    Propulsion**

We would have to do the study today with confirmation of performance under sail, we would have installed a generator in place of the diesel engine combined with two electric motors, one per rudder, all linked to the main battery park.

Since the structure was completed at the end of April 2015, we decided to maintain the original propulsion, ie a 84 hp Saildrive Lombardini engine with an EWOL propeller. This motorization allows a cruising speed of 7,5 knots and a leakage speed of 8 knots, which is sufficient considering that this sailboat will travel mainly under sail.

## **9    Energies**

Considering we will combine mooring with regular sailing, we have chosen for following combination :

- 2 hydrogenerators Watt & Sea Cruising de 600W each
- 2 solar panels in aluminum drawer at the aft of the boat.

Combined with an important battery pack, the long term autonomy is assured

## **10   Comfort**

Speaking of comfort it is necessary to start with a primordial aspect for a sailing boat: insulation, thermal and acoustic. We investigated a long time on the subject and were amazed by the result.

At the base we applied 4 coats of Mascoat insulating paint from 30 cm below the waterline, including the roof. Around the engine, the bow and 1m around the waterline we applied 4 layers of Mascoat dB, the version that aims to alleviate the structural noise of the metal. On the set we put 50mm of marinized rockwool finished with an aluminum protection.

After a first winter we can say that there is no condensation in the boat. The Mascoat layer prevents condensation in the Rockwool insulation.

The most impressive is the total silence inside a boat that runs at 10 knots under an apparent wind of 35 knots. Absolutely nice.

Under engine, the combination with the engine Lombardini, which is silent by itself, does not make the engine sound outside and gives a non-disturbing zoom inside.

As far as the comfort of life on board, the photos say much more than a text. Storage and handrails allover. Let us just note that all the visible spaces (under the beds, benches, wardrobes, ...) are practical storage with a natural ventilation under the benches for the food storage.

For heating we have chosen for two units of heating / ventilating with forced air which in combination with the insulation will give satisfaction in most latitudes. Everything is planned to install a Reflex in the center of the boat at the back of the keel. We never know.

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