KEY POINTS

NEEL 47

TABLE OF CONTENTS

Why a NEEL trimaran is safer at sea ?

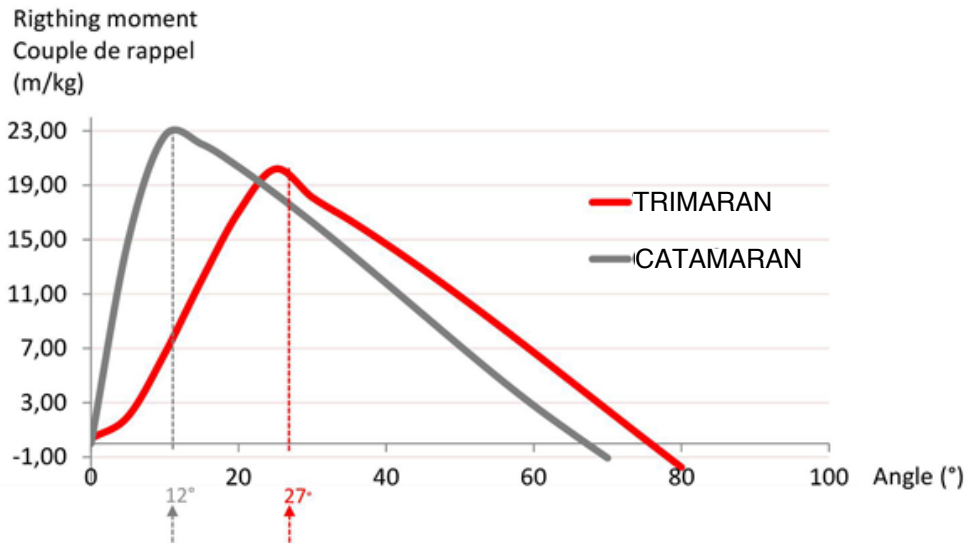
The width of NEEL trimarans is an important factor for **safety** on t**he high seas** because it is a guarantee of **stability**.

On a catamaran the maximum righting moment occurs at 12° heeling, as shown on the stability curve.

This angle can be reached relatively easily when sailing in strong winds and heavy seas.

However, on a trimaran, this maximum righting moment does not occur until 27° heeling, therefore in normal multihull conditions of use, this angle is never reached.

For this reason, and thanks to the centered weight distribution, a trimaran is much more stable than a catamaran.



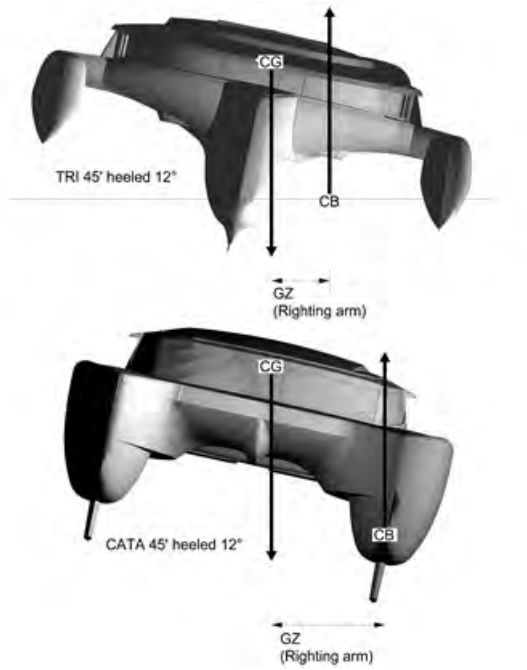
At 12° it is necessary to begin to shock the listening on a catamaran, whereas the trimaran is extremely on up to 27° heeling (*angle of heeling never reached anyway on a cruising multihull)*. At 12° the trimaran is in a very comfortable sailing pace, while the catamaran is pushed to its limit of use.

Why a NEEL trimaran is more comfortable at sea?

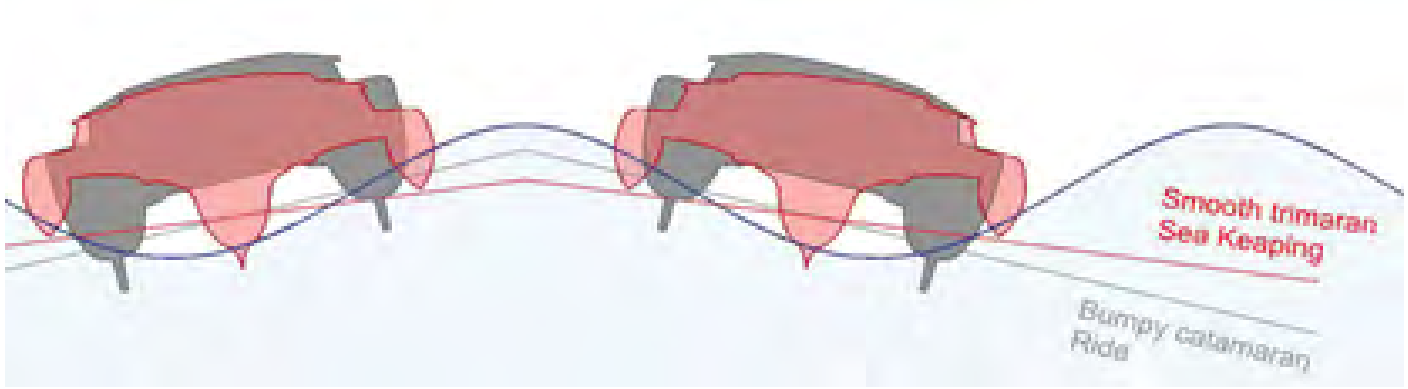
Let's consider both the trimaran and the catamaran heeling by 12 which is the **safety angle** not to be exceeded on a catamaran. As shown in the graphics, the righting moment (is much higher on the catamaran than on the trimaran. A high GZ means more brutal and uncomfortable seakeeping. At this angle of heel the catamaran's GZ is double that of the trimaran.

Therefore, sailing the trimaran is much smoother than sailing the catamaran.

The trimaran has less roll motion than the catamaran, as the center of buoyancy is never far downwind like on a catamaran. Again **centered weight is the key to success and comfort**. In fact, all significant heavy equipment is located in the main central hull on a trimaran whereas it is istributed half and half in each hull on a catamaran.



The uperiority of the trimaran is even more significant in heavy seas as shown on the illustration here.



Why
a NEEL trimaran is faster at sea?

As shown in offshore racing, the trimaran is significantly faster than monohulls or catamarans.
This is also true for cruising trimarans, as proven by the last ARC (Atlantic Rally for Cruisers) rally won by a NEEL 45 in December 2015 and by a NEEL 47 2019 and 2020.

The superiority of the trimaran is even more obvious when sailing upwind, especially due to the rig on a catamaran, the forestay pulls from the front beam, the mast compresses a central beam and the shrouds pull the two floats supporting the forestay and mast beam this platform deforms in many directions.

Consequently, it is then impossible to have a rigid forestay.
On a trimaran, the forestay, mast and mainsail tension are structurally bonded to one strong, longitudinal beam the main hull. This configuration, as per a monohull allows for a rigid forestay and good performance up wind.
Performance is also enhanced by the centered weight.

The extra speed of the trimaran is an additional safety factor.

MANEUVERABILITY

Why
a NEEL trimaran is more manoeuvrable?

NEEL trimarans are conceived for fast cruising.

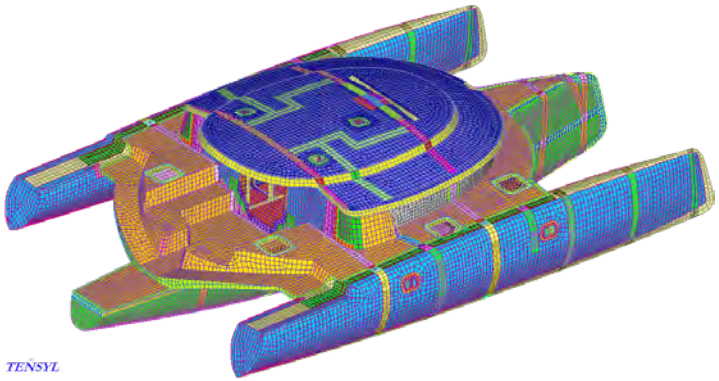
With an average cruising speed ofar 10 knots, over **200 nautical miles** are easily achievable **each 24 hours**. Speeds from **15 to 18 knots** are often reached when the breeze freshens. Weight centering is managed in order to limit pitching.
The centre hull is rockered to facilitate tacking.

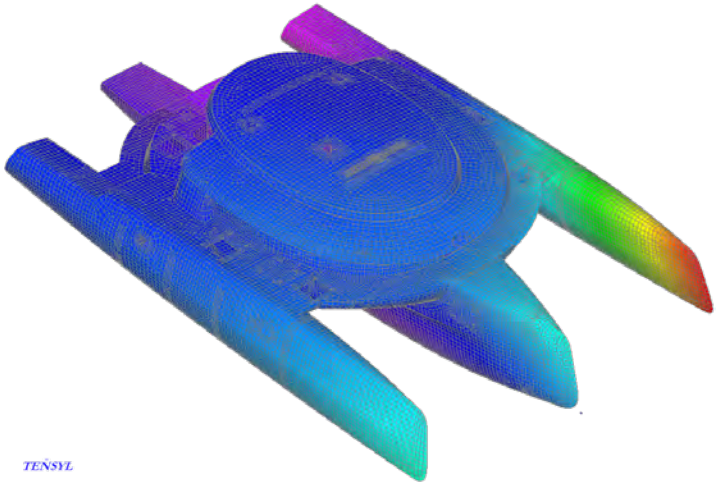
Floats are of a stretched form to privilege **directional stability** and **passage through the sea** (thin bows). The rigging is directly derived from racing trimarans, thereby achieving full cruising speeds of **1.5 to 2 times** faster than conventional cruising yachts. The sail surface area is generous with some **17m² per tonne**.
Finally, the trimaran configuration also facilitates **sustained speed under motor propulsion**. The low prismatic coefficient of the central hull means drag is very weak. The side floats are only very lightly in contact with the surface of the water.

The manoeuvres reported to the steering **station have been designed for navigation** with a reduced crew or even for **easy solo manoeuvres**.

- Choice of 2 possible rigs: **classic** or **carbon performance**
- 3 sails with berths (including a self-tacking and releasable staysail)
- Up to 3 **headsails** : genoa, staysail and asymmetrical spinnaker (option)

A thorough story





To optimise the **structure of NEEL trimarans**, we collaborated with TENSYL and Cabinet Lombard with whom we have previously worked on the structure of the racing trimaran TRILOGIC.

TENSYL and Cabinet Lombard have made a speciality of **the structural design of multi hull racing and cruising composites**. Sampling is determined from the most critical cases of offshore loading on the structure, for example catching a wave at high-speed or sailing with the wind on the beam.

The analysis programs transmit relevant information which are compared to nominal values in the specs. **Colour displays are particularly instructive in sample determination**.

The overall research programme aims to define type and quantity of construction materials best **suited to each zone** in order to eliminate unnecessary weight and apply suitable safety margins to load bearing elements.

Why
a NEEL trimaran is more manoeuvrable

High strength rigid foam
Isophtalic polyester resin with 1st layer of vinylester (better protection against osmosis)

Rigidity
Set of infused and laminated bulkhead: excessively structured and rigid structure

Many advantages:
- Closed cells = hydrophobic
- Limit the twists
- Lighter and more dense than balsa (easier to repair)

Registred innovations and modularity

Cockloon®

Full Beam Cockpit®

Antireflex Window®

3 to 5 cabins

Private areas

Perfect correlation of life and watch areas

Large and open area of 32m² full of light and ventilation

Modularity of opening (multi-position of the sliding door)

Possibility to gather up to **10 people** around 2 tables

Flush deck area (no step)

FULL BEAM COCKPIT®

2 distincted areas
Around tables
Private face-to-face

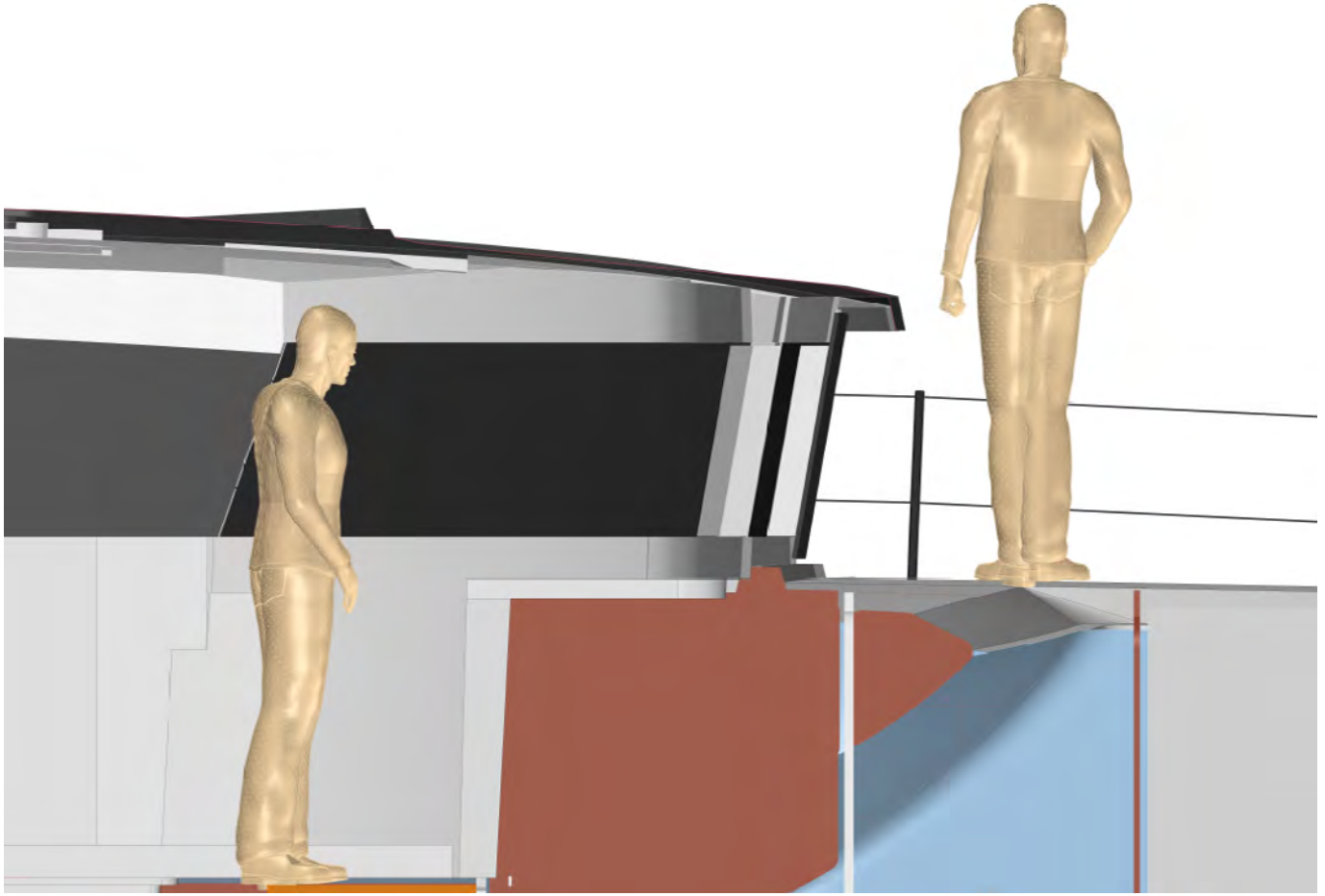
Flush area of 22 m² **fully protected** with roof

Safety and fuidity of circulation with no rigging on the cockpit

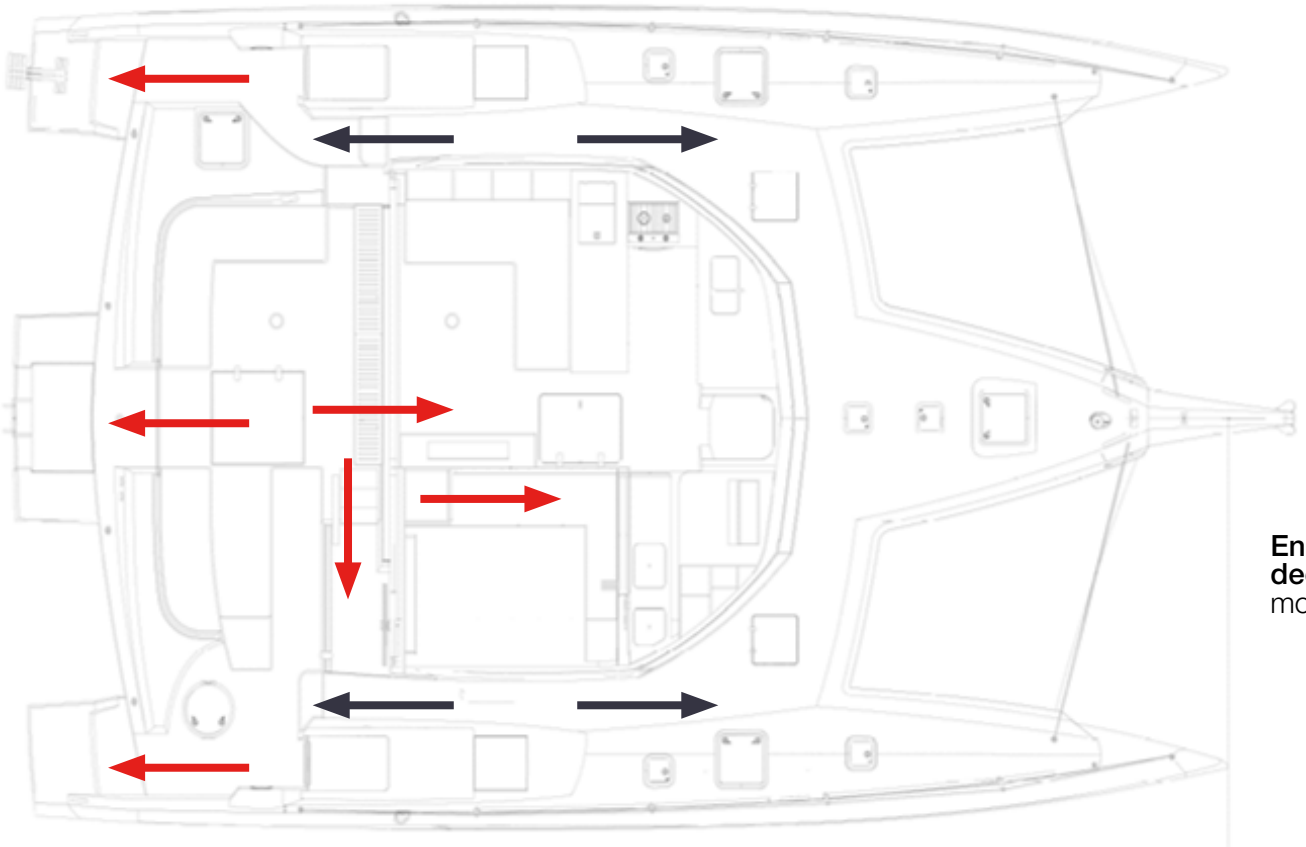
ANTIREFLEX WINDOWS®

Reversed window

- Anti-reflective (eyes comfort)
- No heat transmission
- Better nocturnal vision



EASY CIRCULATION PLAN ONBOARD



Enhanced safety et **easy deck** circulation with more space

Easy and safe circulation + central access to helm station and transom

Very secured catwalks « **interior passages** » between roof and access cabin domes

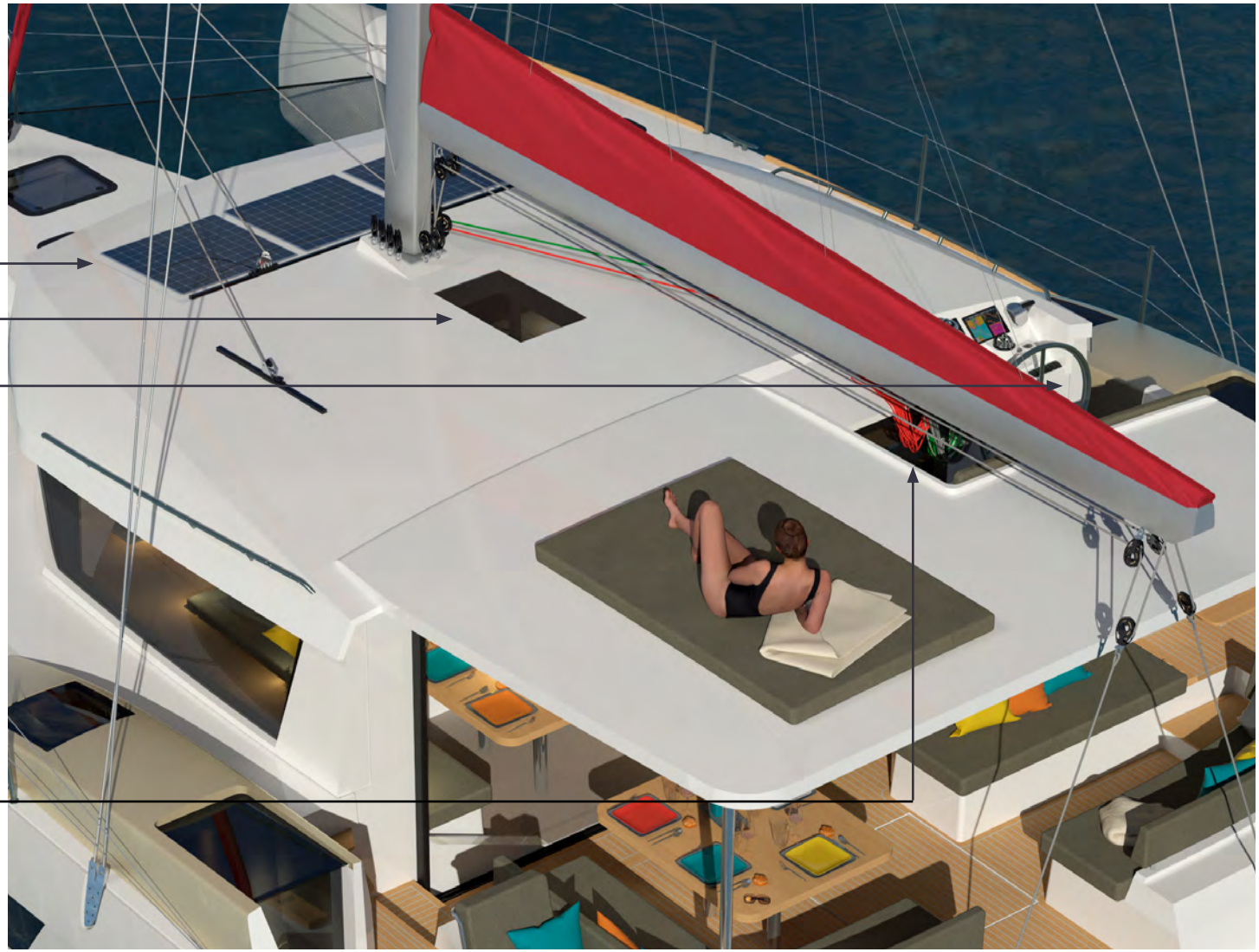
RAISED HELM STATION

Usable space
- Solar panels
- Roof mastress
- Easy access to boom

Central skylight

Flush area **360° visibility** at the helm station

All control lines led back to helm station for a **solo** or **shorthanded** sailing



HELM STATION

Centralized:
All manoeuvres are carried out at the helm station:
mainsail, sheeting, reefing....

Comfortable and convivial:
3 to 4 people can stand near the helm station without embarrassment

Secured:
- Direct and secure access from the cockpit tothe helm station
- Excellent visibility for manoeuvres

MAIN DECK

Up or down table

Comfortable and friendly living space

CONTEMPORARY KITCHEN

Modern

open

ventilated

and bright kitchen

Panoramic view

Ergonomy

Storage capacity

Conviviality on board

MASTER CABIN, AN INNOVATIVE CONCEPT

Panoramic view 270° Sea view and chart table view

Extra large windows

Possibility to **vary the atmospheres**: cosy and intimate or bright and open

Optimal ventilation and plenty of storage space

FAMILY BATHROOM

+ of 33 % of the
main hull dedicated to well-being

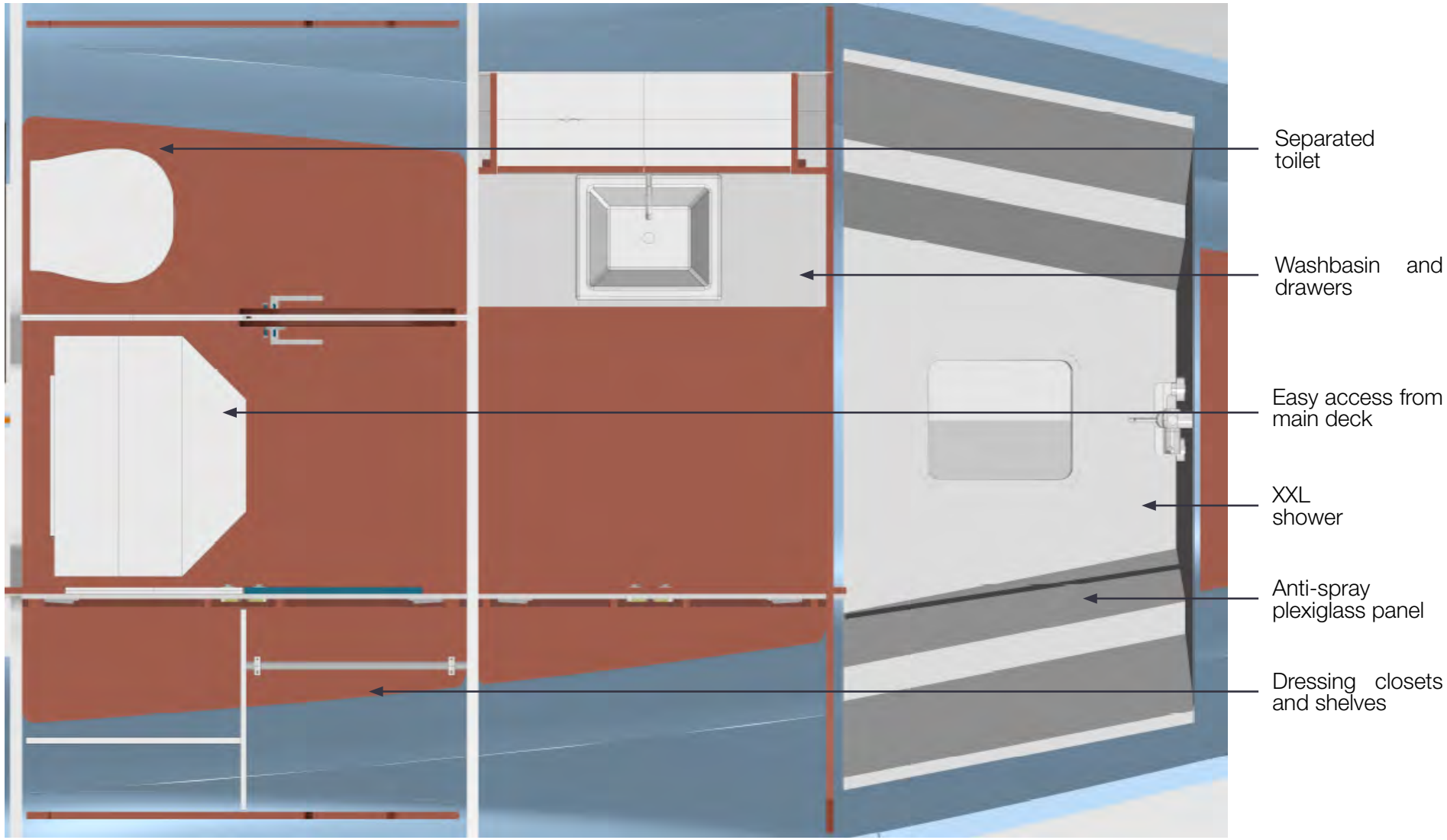


CHART TABLE

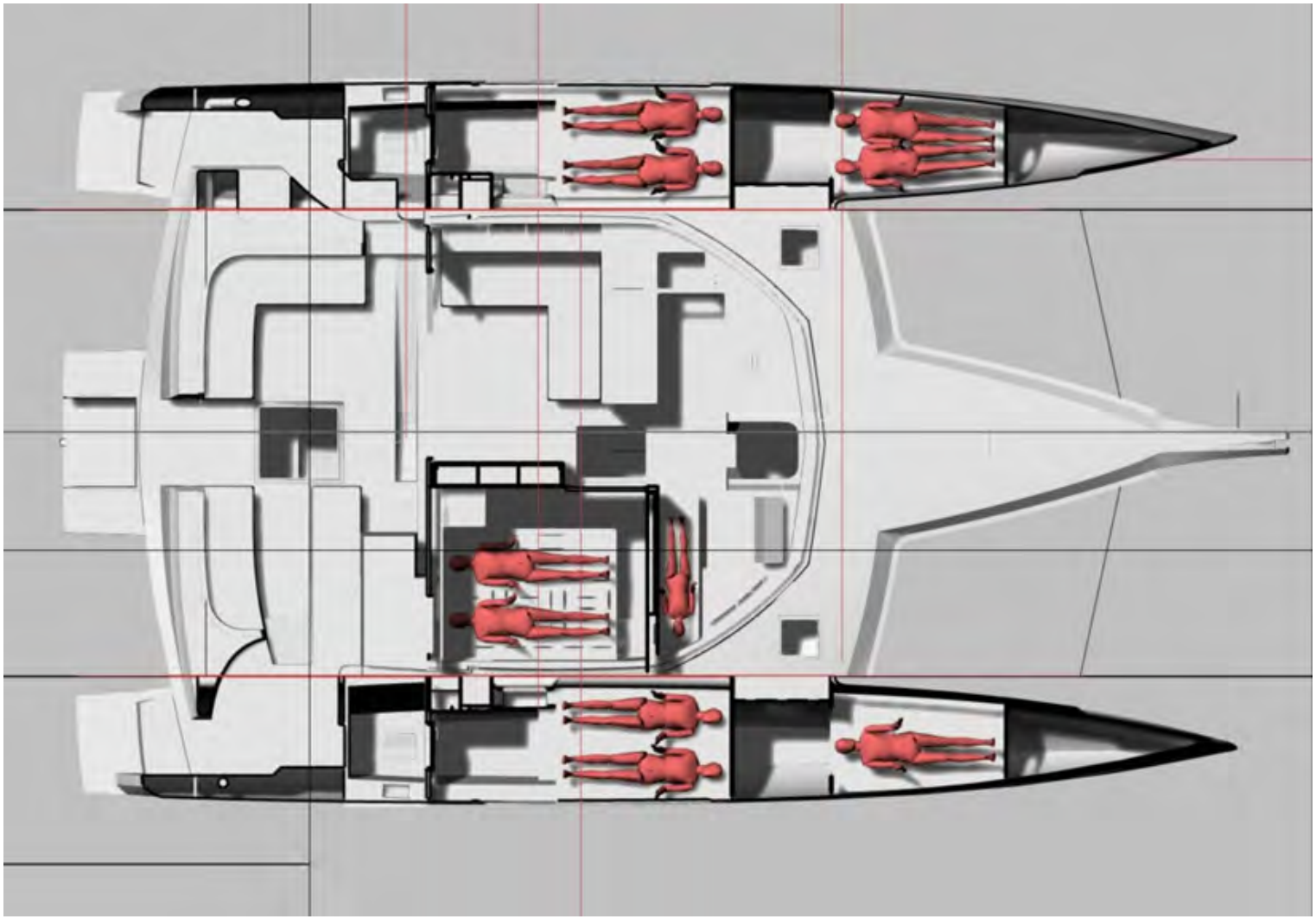
Facing the route

Bench seat convertible into a bed
(for a kid, near the parents)

Excellent night visibility (AntiReflex Windows®)

Many storage spaces

SLEEPING CAPACITY



LOWER DECK

XXL family bathroom

4th and 5th cabins on the front with deck access, starter room and berth with storages

Cabin with private access and sea view with panoramic window

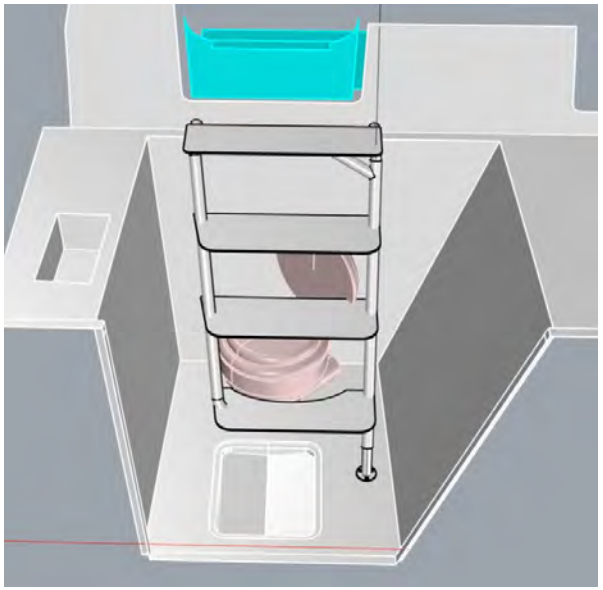
SUITS FLOATS

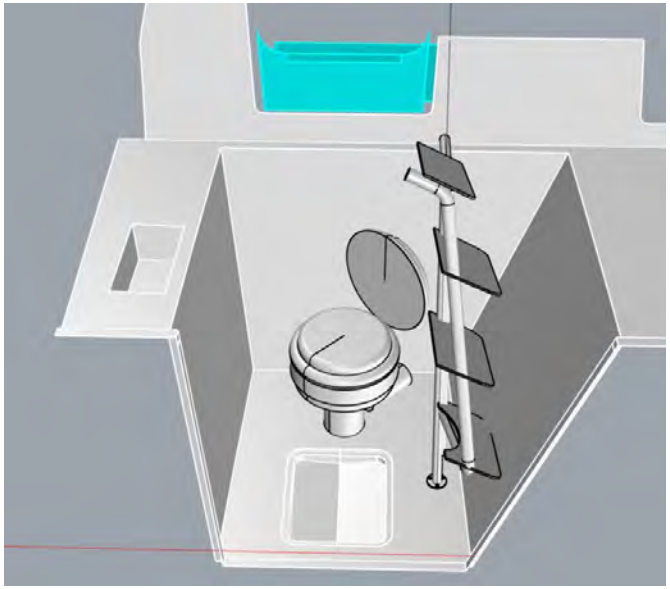
The successful challenge of **performance** and **comfort**!

Thin floats for better performance.

Comfort of life in an extremely well optimized and private space.

OPTIMIZED FLOAT ENTRANCE



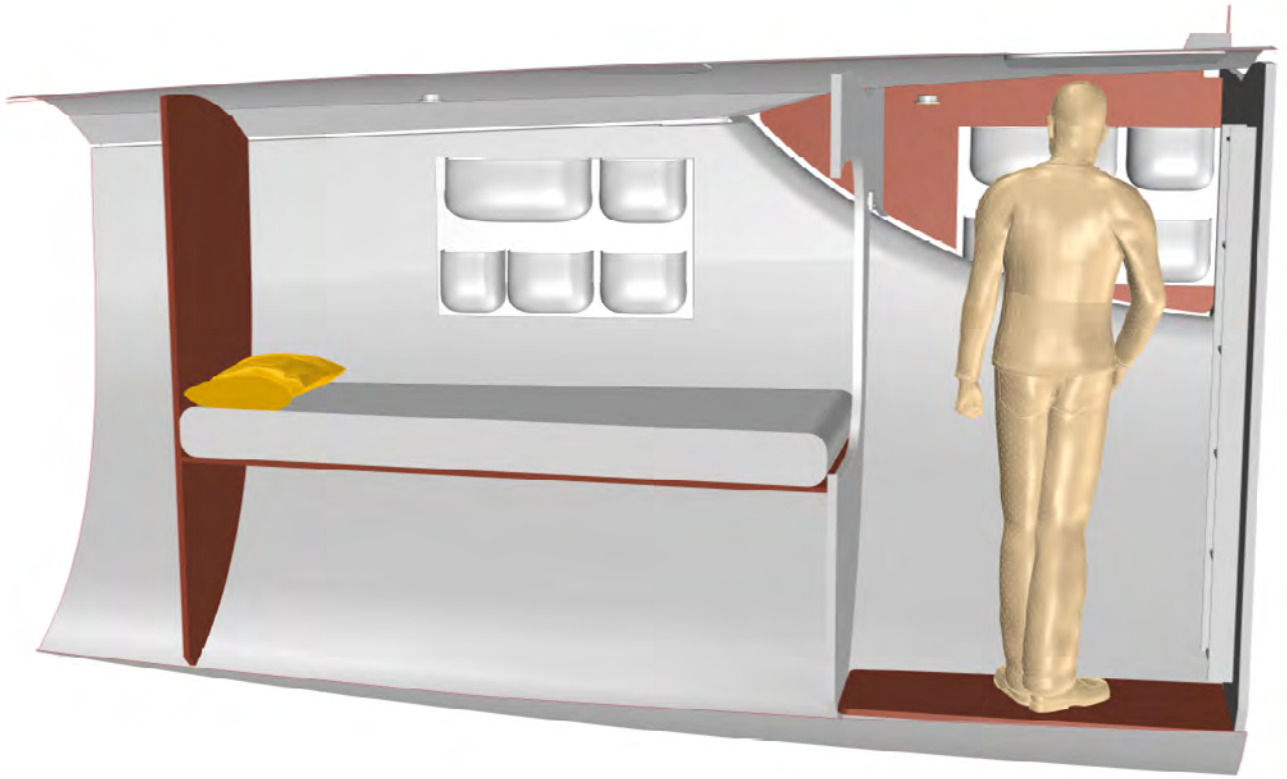


Wet area: **shower room** and **entrance airlock** in the cabin.
Optimized bathroom **ergonomics**.
The three functionalities (shower, WC, washbasin) are ensured.

FRONT BERTHS (OPTIONAL)

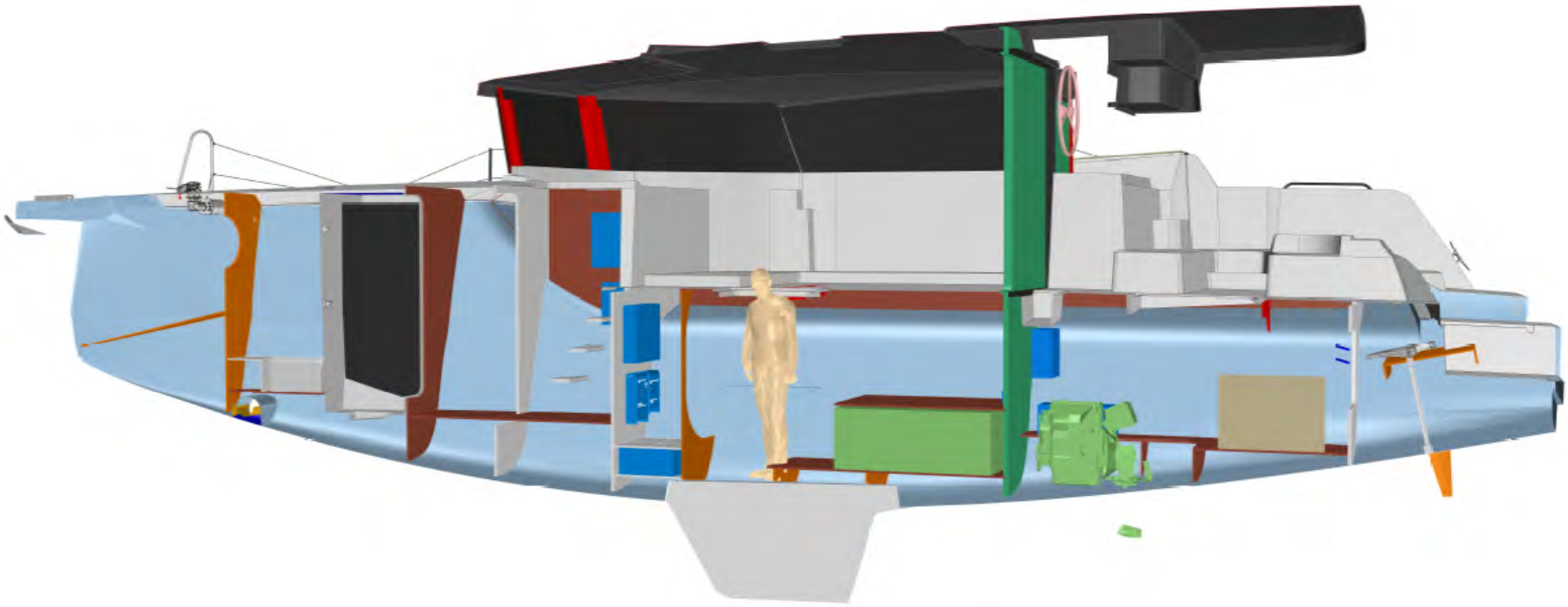
Only front cabin of this kind offering a real berth for an adult.

Proper starter room to enter the cabin, with ladder and storage.



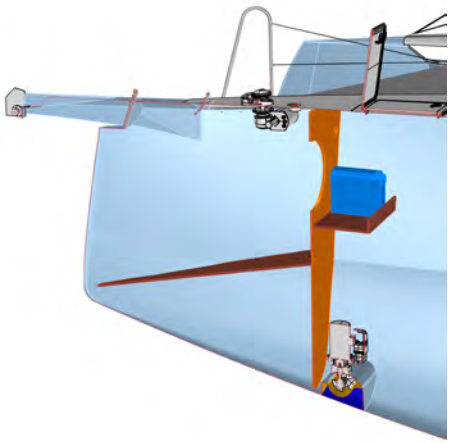
TECHNICAL AND STORAGE AREAS

A real **« workshop »** and storeroom
Technical zones with easy access
Central technical area illustrating weight centering

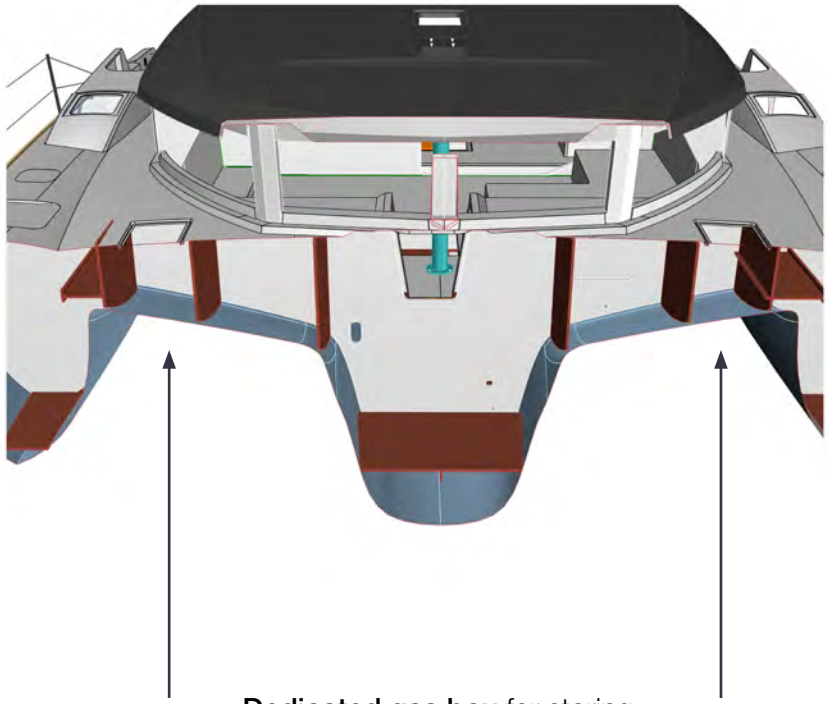


View of the central hull

TECHNICAL AND STORAGE AREAS

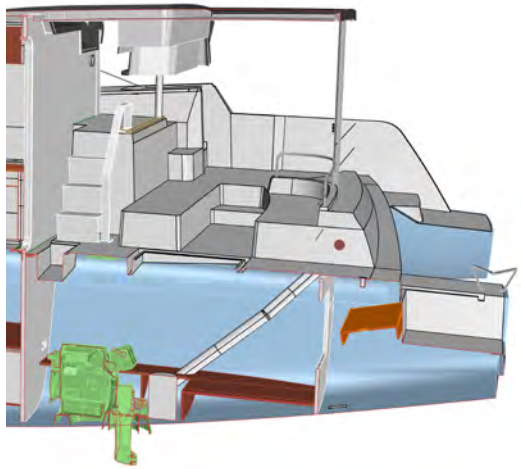


Deep anchor locker and bowthruster compartment **easy to access** in front of the central float

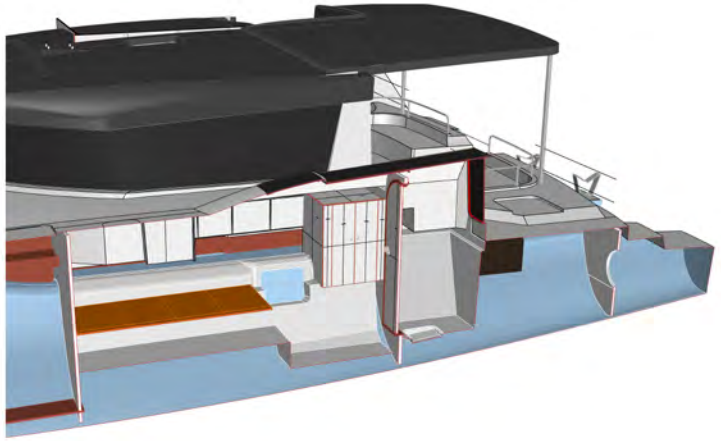


Dedicated gas box for storing **gas reserves**.
Large front trunk for **fenders** and **warps**.

TECHNICAL AND STORAGE AREAS



Engine compartment with
direct access from the cockpit.

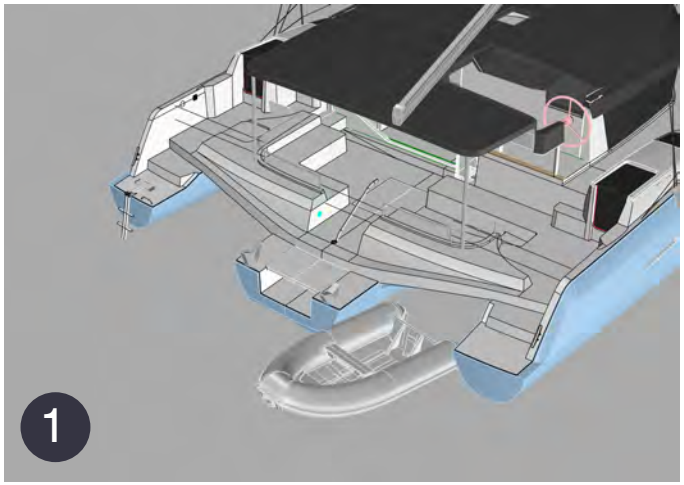


2 large **rear transom lockers**
(port and starboard)

RIGGING MANOEUVRE

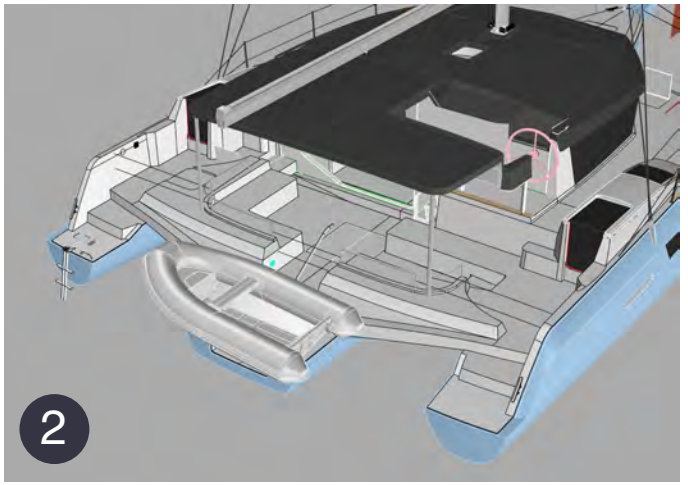
- Possibility of installing a carbon mast (optional) thanks to performance rigging.
- Set of 3 sails ready to sail in any weather conditions.
- Centralized helm station set for short-handed sailing.
- Helm sensitivity thanks to a system of pulleys and textile bar lines that reduces any friction.
- Candlestick rail, anodized titanium-coloured aluminium and fluorescent Dyneema® life lines.

TENDER ORIGINAL SYSTEM



Space-saving on the transom without davits.

Short-handed manœuvre thanks to the remote control.



Lifting / launching of the dinghy by a modern and **easy to use system** thanks to :

- Topping lift
- Boom as crane
- Line driver
- Remote control
- Craddles

video tutorial

EASY **EFFICIENT** **FAST**

The best of both worlds

NEEL-TRIMARANS HULL VS. CATAMARANS AND MONOHULLS

The **catamarans constraint** is to find the compromise between:

- floats that are either very "rocky" to facilitate change tack
- or have very tight floats to avoid pitching.

The trimaran offers both a **rocky shape main hull** (facilitating the tacking) and very tight floats (no pitching and therefore a real comfort at sea).

Only the trimaran tacks as easily as a monohull (thanks also to its staysail on a **drop-down forestay**).

CARACTERISTICS

Dimensions

Overall length	47 ft
Overall width	27 ft
Draught	5,2 ft
Air draft	62,3 ft
Displacement	10,60 T
Full battened mainsail	753,5 sq ft
Furling genoa	538 sq ft
Self tracking, furling staysail	215 sq ft
Freshwater tank	158,5 US gallons
Diesel tank	80 US gallons
Engine	1 x Diesel 60 HP
Water tank	600 L
Fuel tank	300 L

Design and conception

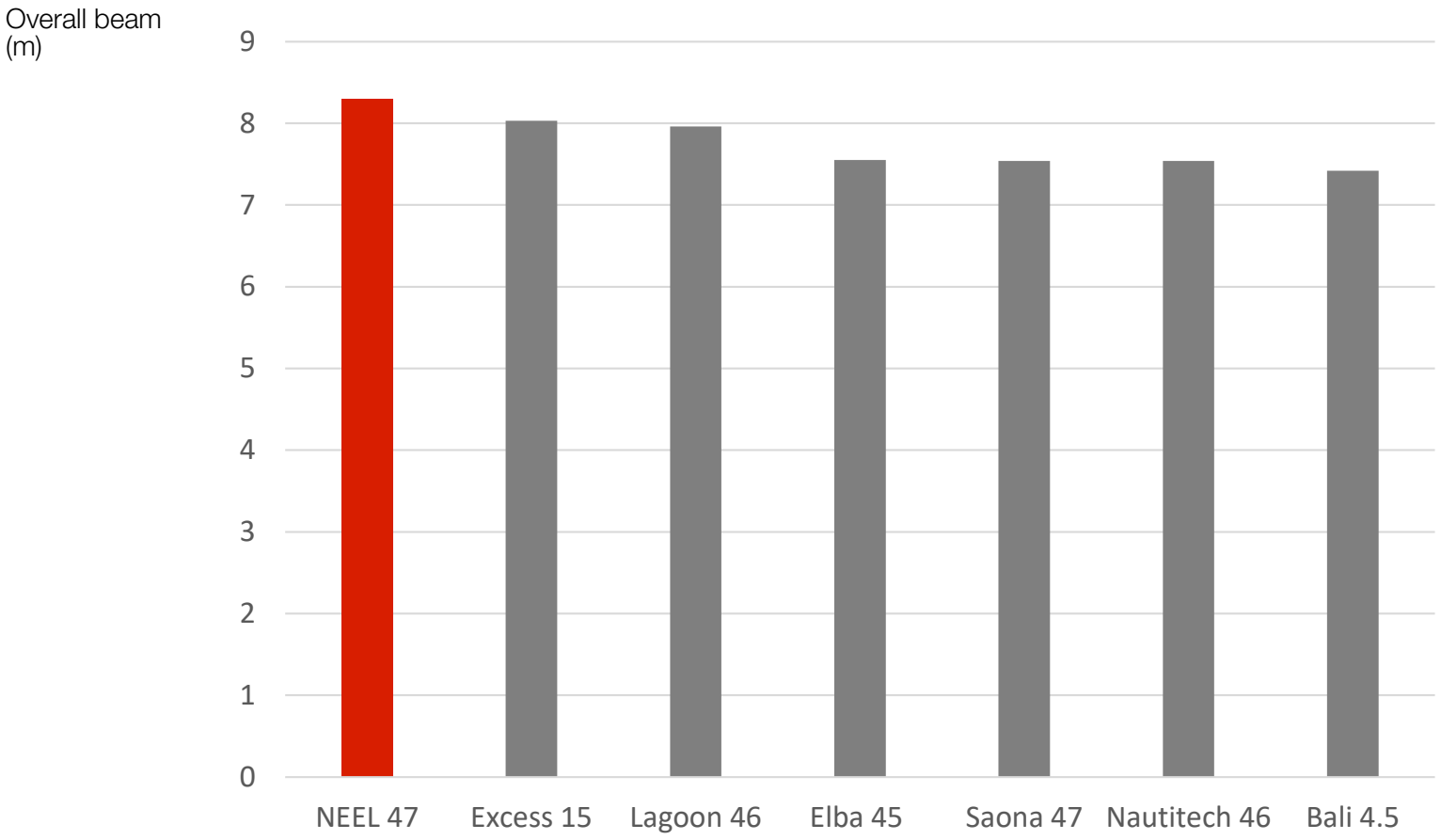
Ship designers	Marc Lombard, Yacht Design Group
Certification CE	ICNN
Conception	NEEL-TRIMARANS

CERTIFICATION

Number of people on board (CE)

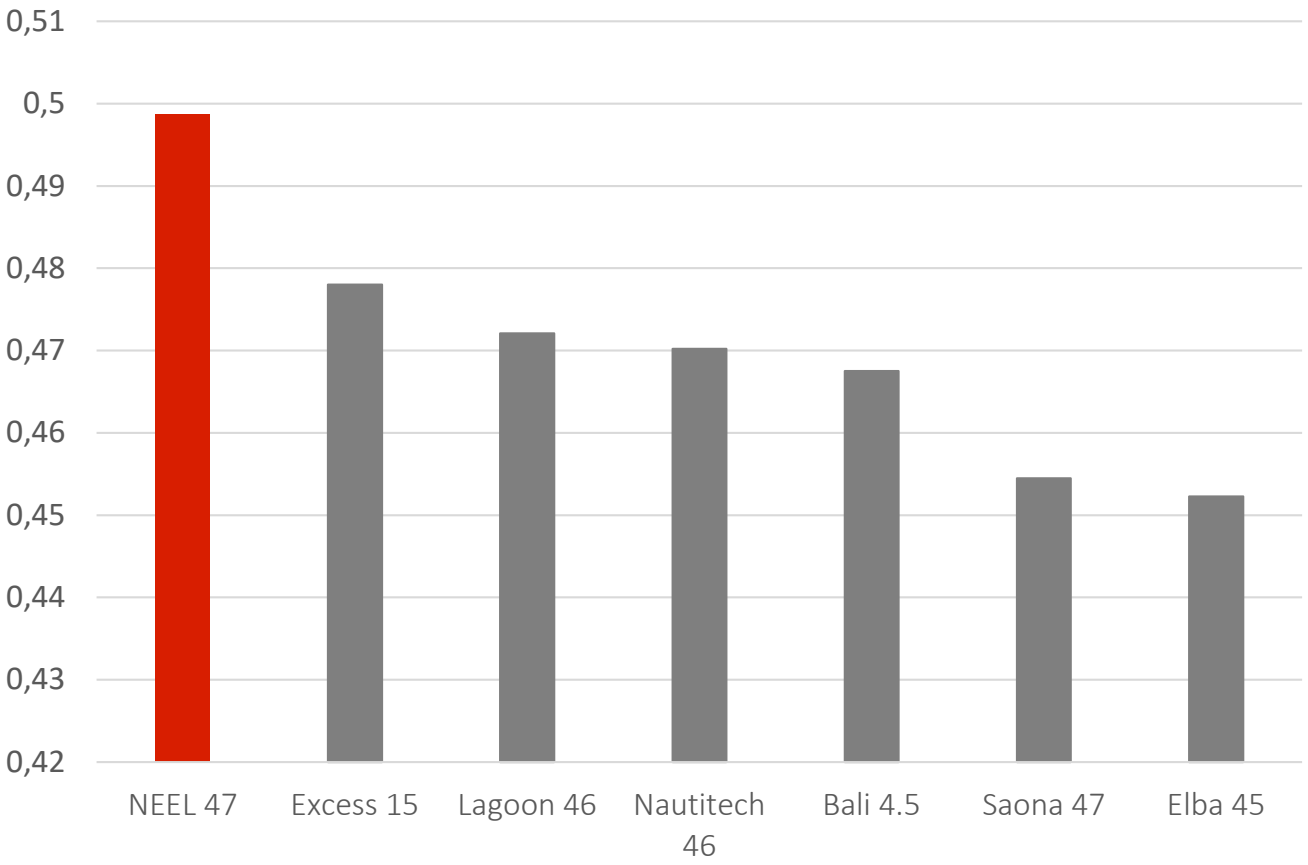
Category A	8
Category B	10
Category C	25
Category D	30

OVERALL BEAM



The NEEL 47 is only 34cm wider than a Lagoon 46

POWER TO WEIGHT RATIO



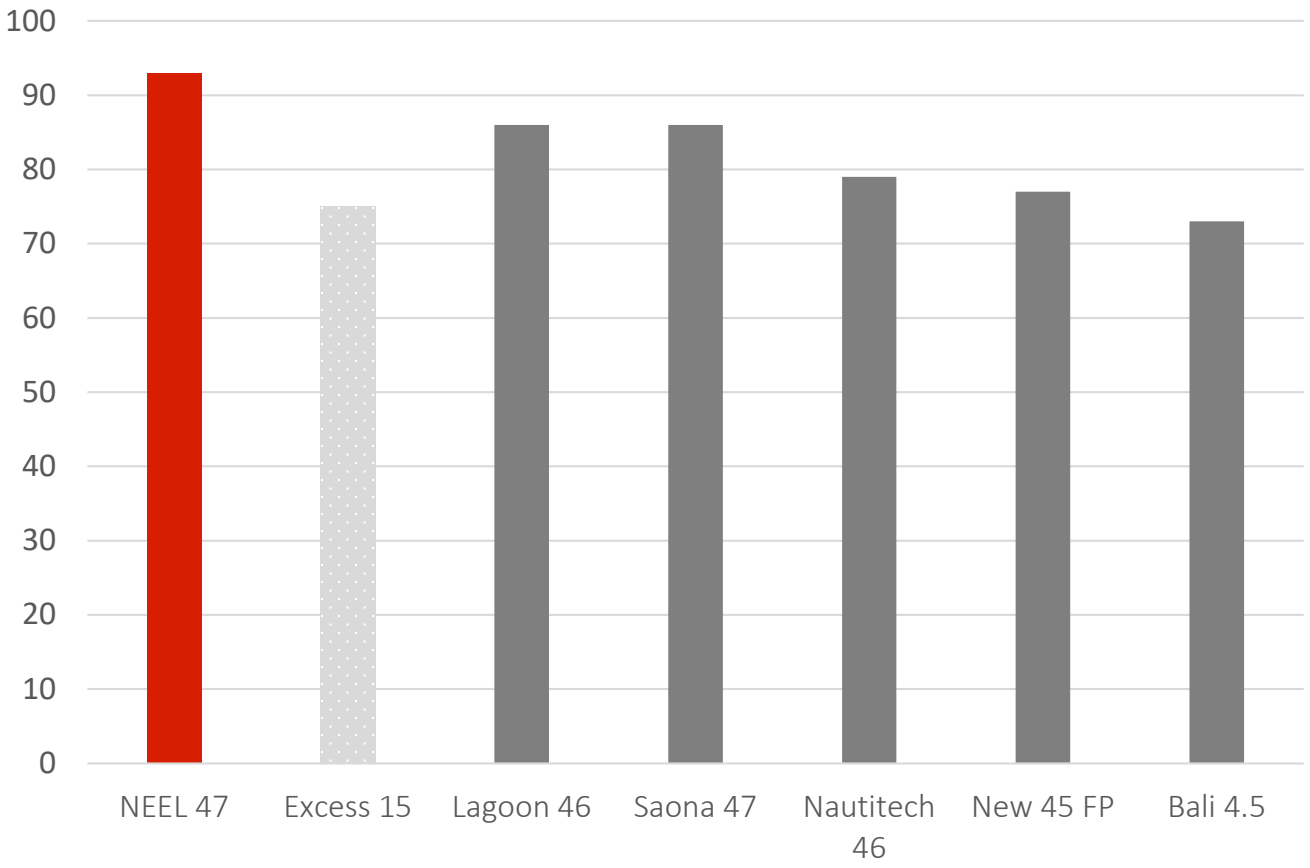
The NEEL 47 offers the best power-to-weight ratio

Power-to-weigth ratio is used to measurate the performance of the boat.

Formula is as following :

$$\sqrt{surface\ de\ voile\ au\ près} \div \sqrt[3]{poids}$$

LIVING SPACE



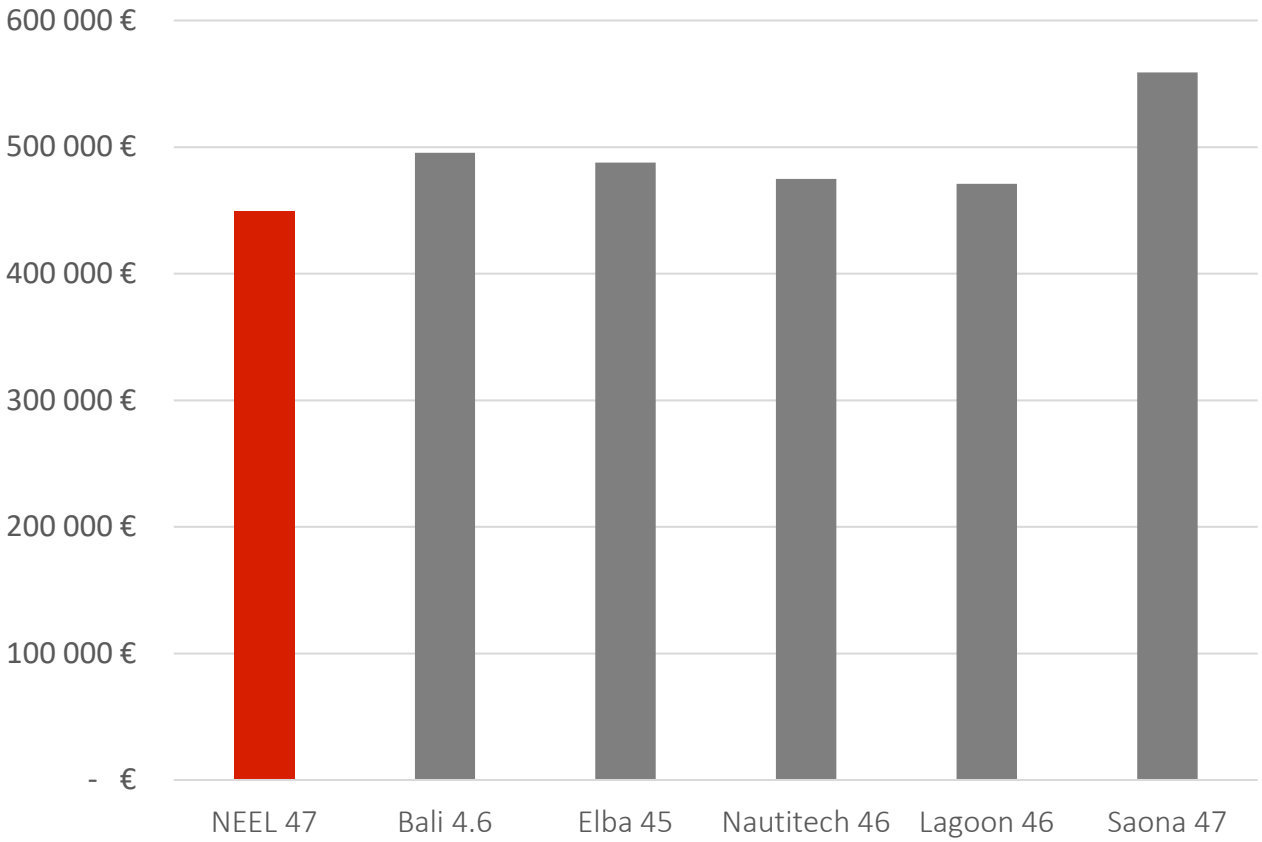
Living space surface (m^2)

93 m^2 total living space

15 m^2 total technical areas (including storage areas)

The NEEL 47 offers the best exploitable surface onboard.

PRICE



From **449 000 €** ex VAT

Front cabin 3 000€ ex VAT
Essential Pack 24 000€ ex VAT
Premium Pack 34 000€ ex VAT

The NEEL 47 offers the best attractive rate positioning

ADVANTAGES

SAFETY

MODERNITY

MODULARITY

CONVIVIALITY

EASE OF MOVMENT

QUALITY OF BUILDING

ATTRACTIVE RATE

AWARDS


2020
SAIL
BEST BOATS
NOMINEE


LIZmer
Election of the
MULTIHULL
OF THE YEAR
2020 NOMINEE
MultihullOfTheYear.com


BOAT OF THE YEAR
CRUISING WORLD
2020
NOMINEE


EUROPEAN
YACHT
OF THE YEAR
NOMINATED 2020

JUST MAKES SENSE.

NEEL-TRIMARANS
4 rue Virginie Hériot
17000 LA ROCHELLE
sales@neel-trimarans.com
www.neel-trimarans.com