NEEL 51 | SAFETY

JUST MAKES SENSE.

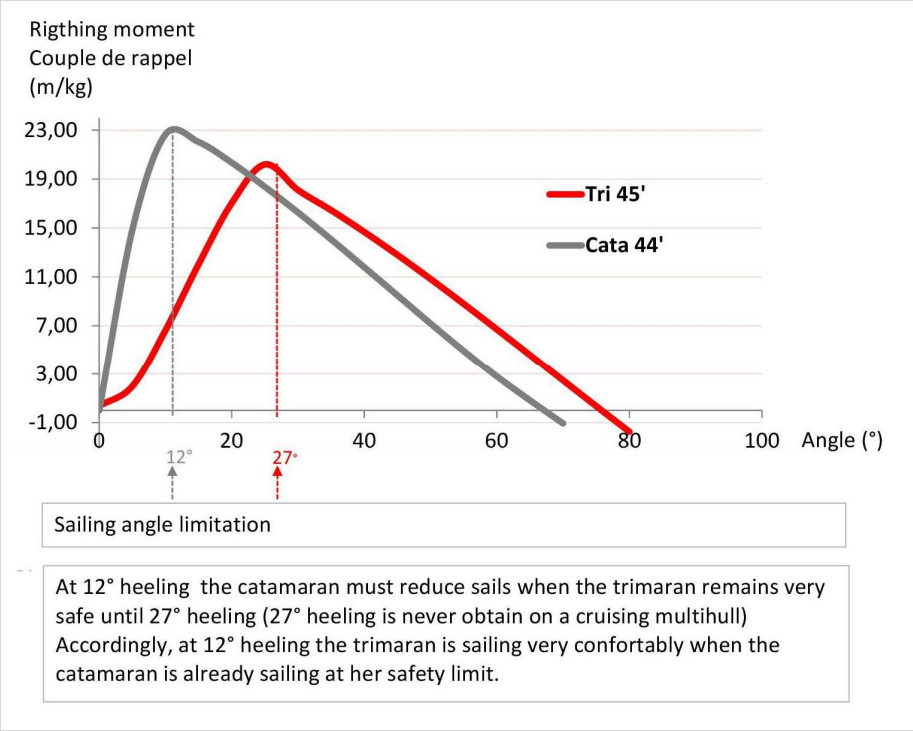
The width of **NEEL trimarans** is an important factor for **safety on the high seas** because it is a guarantee of **stability**

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 32° 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.



Sailing angle limitation

At 12° heeling the catamaran must reduce sails when the trimaran remains very safe until 27° heeling (27° heeling is never obtain on a cruising multihull) Accordingly, at 12° heeling the trimaran is sailing very confortably when the catamaran is already sailing at her safety limit.

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Innovation | Performance | Comfort | Safety | Value

A NEEL Trimaran offers better seakeeping

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 (GZ) is much higher on the catamaran than on the trimaran.

A high GZ means more brutal and uncomfortable seakeeping.

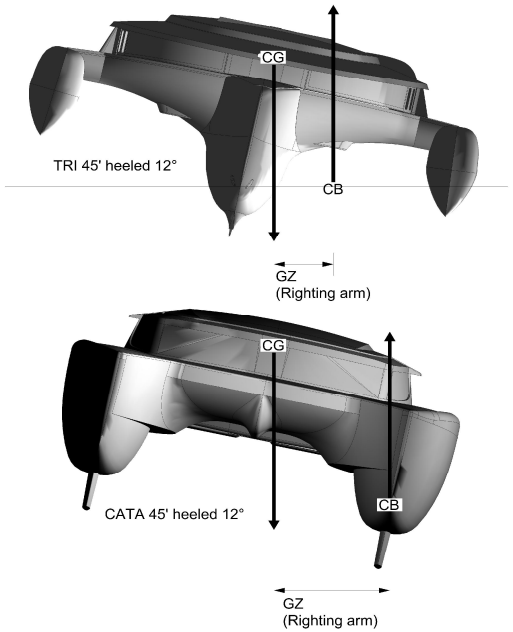
At this angle of heel the catamaran's GZ is double that of the trimaran.

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

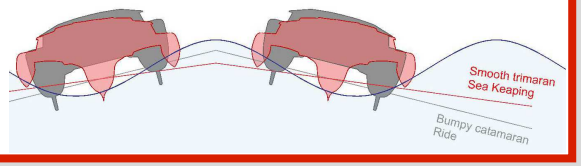
The trimaran has less roll motion than the catamaran, as the center of buoyancy is never far downwind like on a catamaran.

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 distributed half and half in each hull on a catamaran.



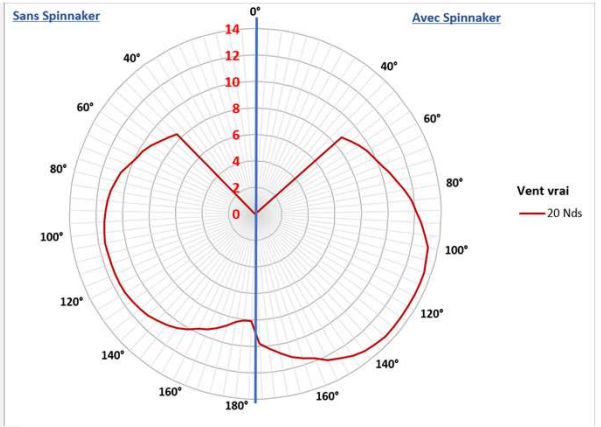
This superiority of the trimaran is even more significant in heavy seas as shown on the illustration here.



The NEEL Trimaran is faster

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 rally won by a NEEL 45.
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.

NEEL trimarans are conceived for fast cruising.
With an average cruising speed of around **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 advancement of the centre of buoyancy as a function of sail loading.
The rigging is directly derived from racing trimarans, thereby achieving full cruising speeds up to **twice as fast as conventional cruising yachts**. The sail surface area is generous
Finally, the trimaran configuration also facilitates sus**tained 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.

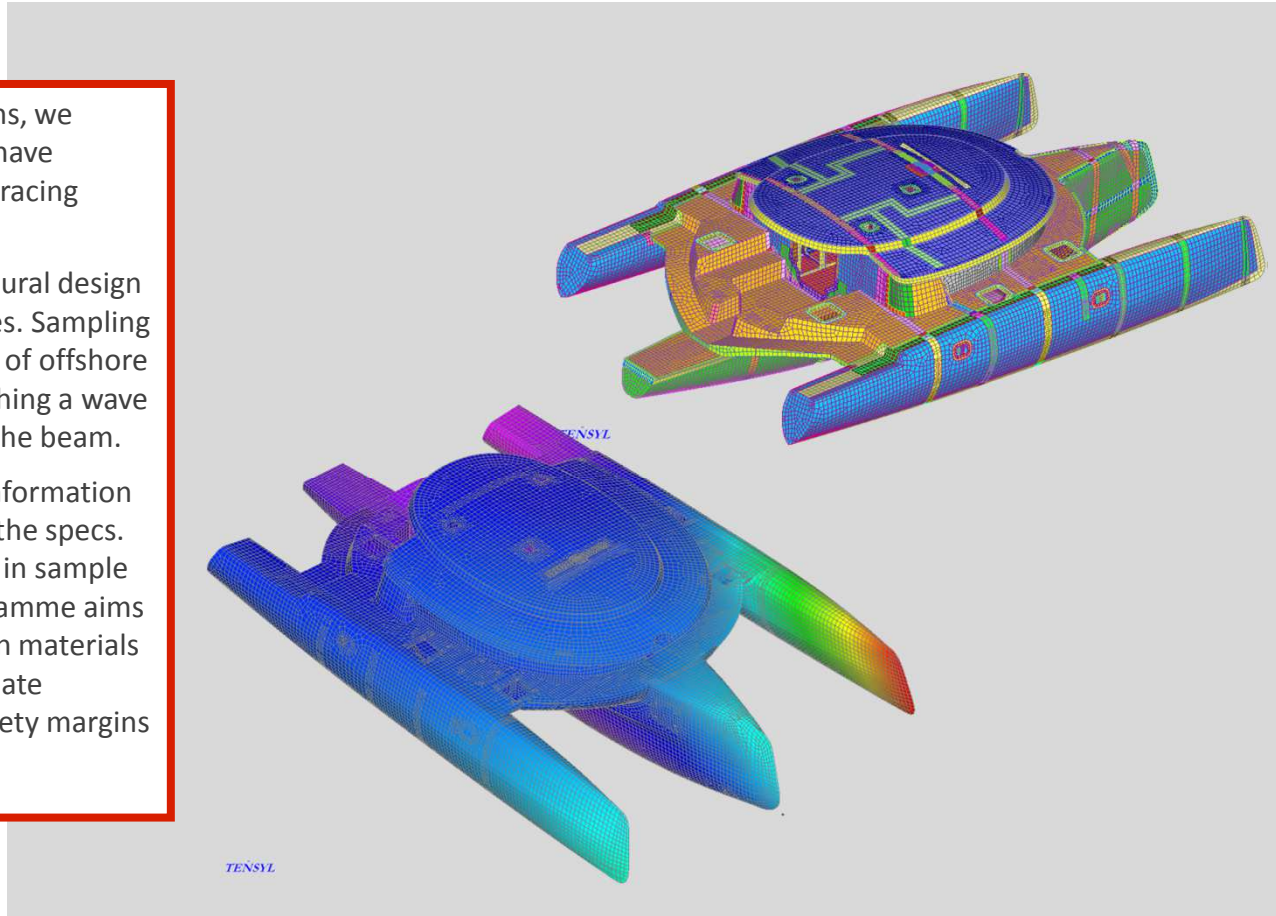


An in-depth study

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

TENSYL has 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.



NEEL 51

JUST MAKES SENSE.

BOAT OF THE YEAR
CRUISING WORLD
2013
NEEL 45

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WINNER

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Innovation | Performance | Comfort | Safety | Value

NEEL 51 | TOP DECK

JUST MAKES SENSE.

Flybridge
Wide sun deck and sociable sofa area

Built-in solar panels

Large windows and ventilation

Mooring from the bow of the centre hull
Stable and comfortable at anchor
Anchor locker 1.5 m deep

BOAT OF THE YEAR CRUISING WORLD 2013 NEEL 45

2013 SAIL BEST BOATS SPONSORED BY Raymarine WINNER

WINNER

Innovation | Performance | Comfort | Safety | Value

NEEL 51 | EXTERIOR

JUST MAKES SENSE.

- Self-tacking staysail
- Generous headroom under and above the main floor, safety and comfort at sea
- Panoramic view
- Very thin bow, speed guaranteed

BOAT OF THE YEAR Cruising World 2013 Neel 45

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WINNER

Innovation | Performance | Comfort | Safety | Value

NEEL 51 | OPEN-PLAN COCKLOON

JUST MAKES SENSE.

COCKLOON
The open plan cockpit and saloon

Wide visibility from the cockpit

Lots of naturel light

Outside galley

Cockpit sofa

BOAT OF THE YEAR Cruising World 2013 NEEL 45

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WINNER

Innovation | Performance | Comfort | Safety | Value

NEEL 51 | THE EXTERIOR

JUST MAKES SENSE.

One single diesel 75HP Sail drive, for a good cruising speed and fuel efficiency,
+ Light + Efficient + Economic

High protection offered by the pulpit, pushpit and guard rail

Phosphorescent textile guard-rails

The three transoms are shaped for easy and comfortable boarding from the dinghy or the quay

BOAT OF THE YEAR Cruising World 2013 NEEL 45

2013 SAIL BEST BOATS SPONSORED BY Raymarine WINNER

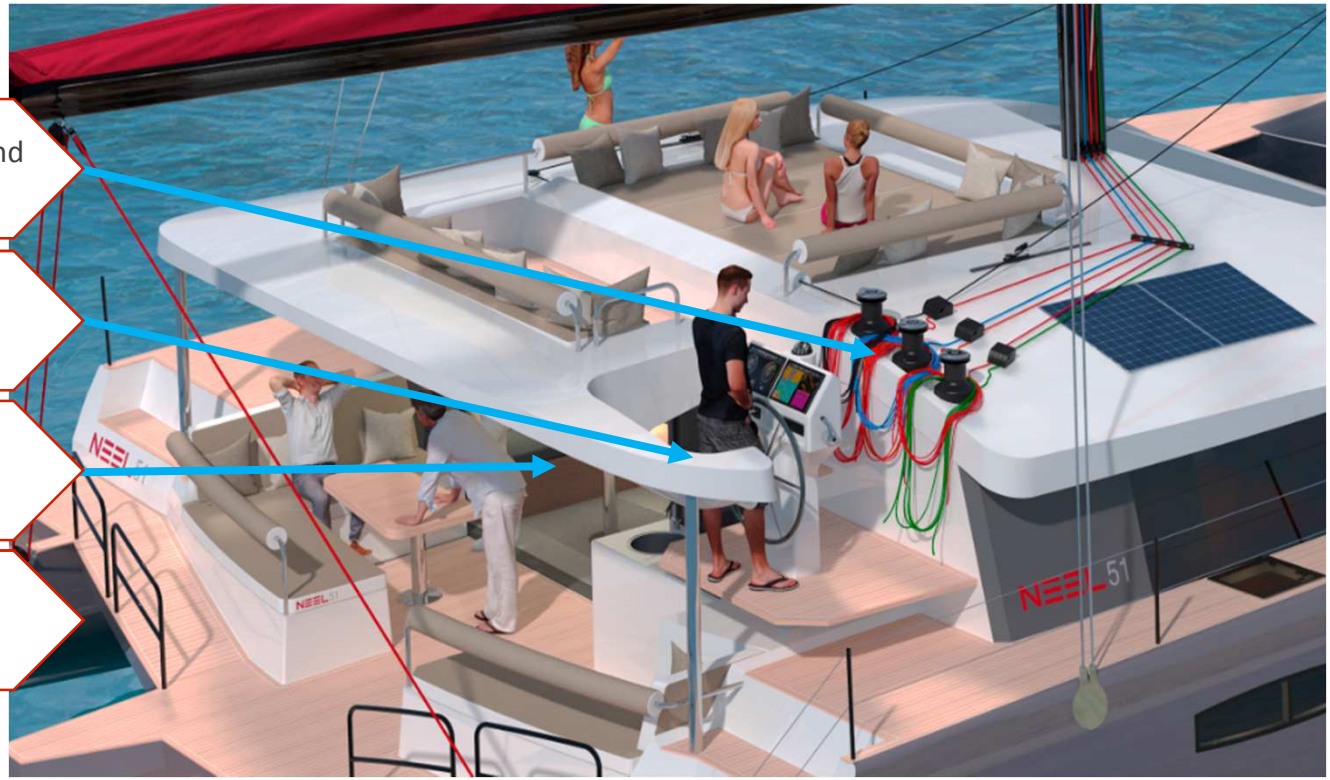
WINNER

Innovation | Performance | Comfort | Safety | Value

NEEL 51 | THE FLYBRIDGE

JUST MAKES SENSE.

- Area fully devoted to the ergonomic and functional controls
- Double seat at the helm station Independent and secure.
- Total protection in the cockpit by the rigid bimini
- Deck fittings: Easy and simple to use



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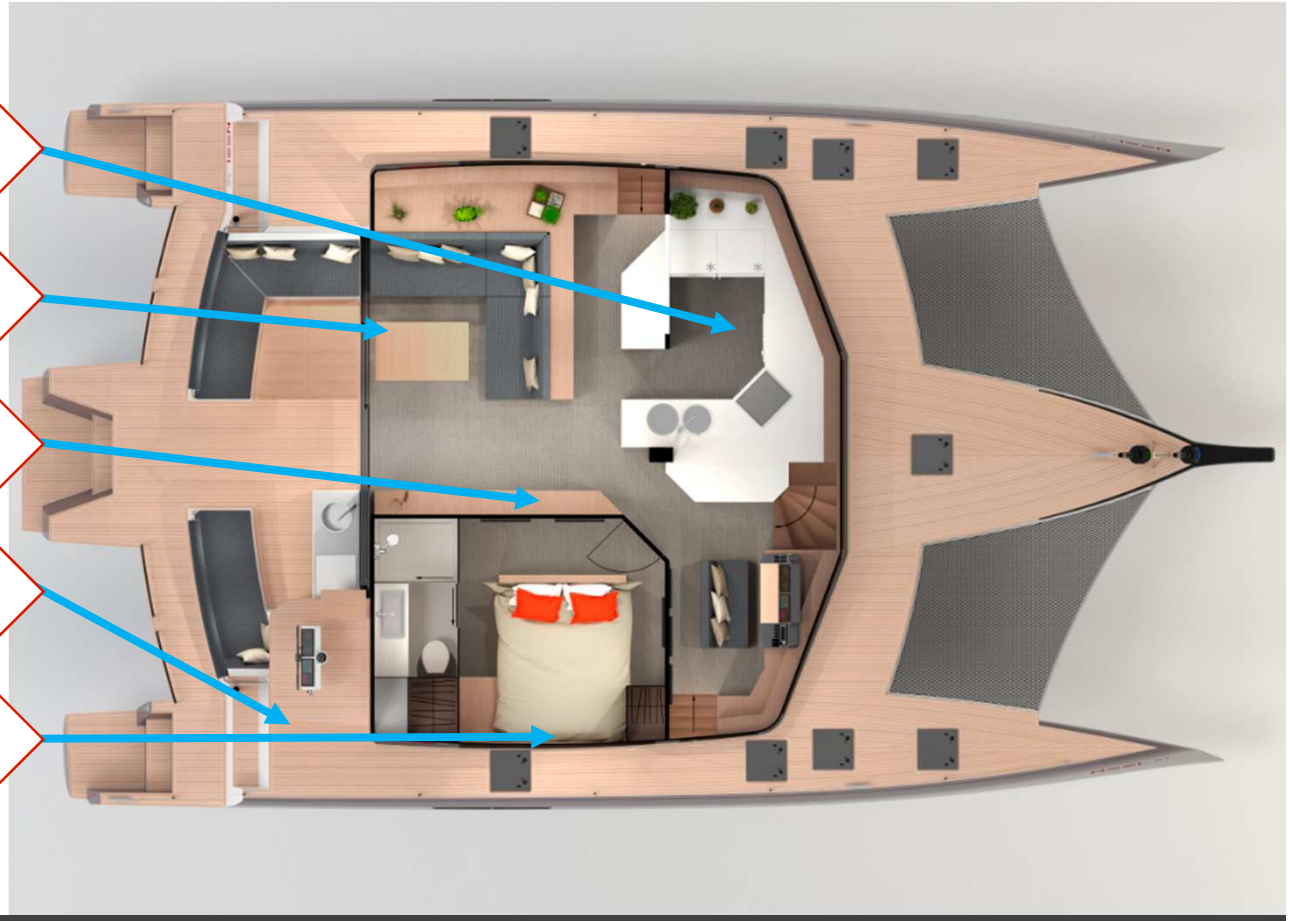
WINNER

Innovation | Performance | Comfort | Safety | Value

NEEL 51 | MAIN DECK

JUST MAKES SENSE.

- Galley with panoramic sea view
- Two tables can combine into one large dining table for up to 12 guests
- Furniture unit for storage
- Two large garages for gear storage (3,5m long, 1,85m high) accessible by cylinder assisted hatches
- Large owner suite (10 m^2) on maindeck level with sea view and complete island bed



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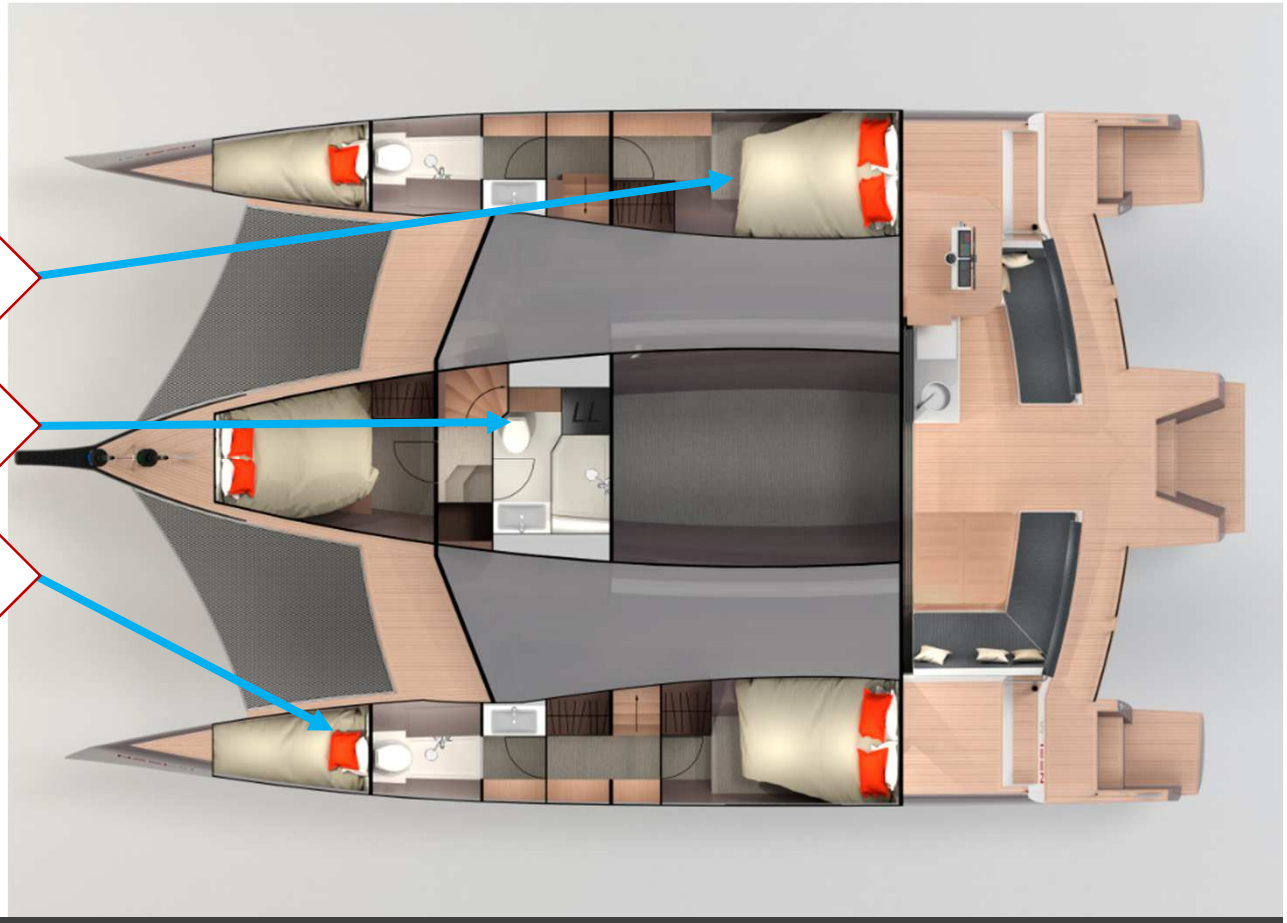
WINNER

Innovation | Performance | Comfort | Safety | Value

NEEL 51 | LOWER DECK

JUST MAKES SENSE.

- Three cabins, each with separate stairway and semi-island bed
- Main hull head directly accessible to all crew
- Different possibilities for forward compartment: Storage/berth/head



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WINNER

Innovation | Performance | Comfort | Safety | Value

NEEL 51 | TECHNICAL & STORAGE AREAS

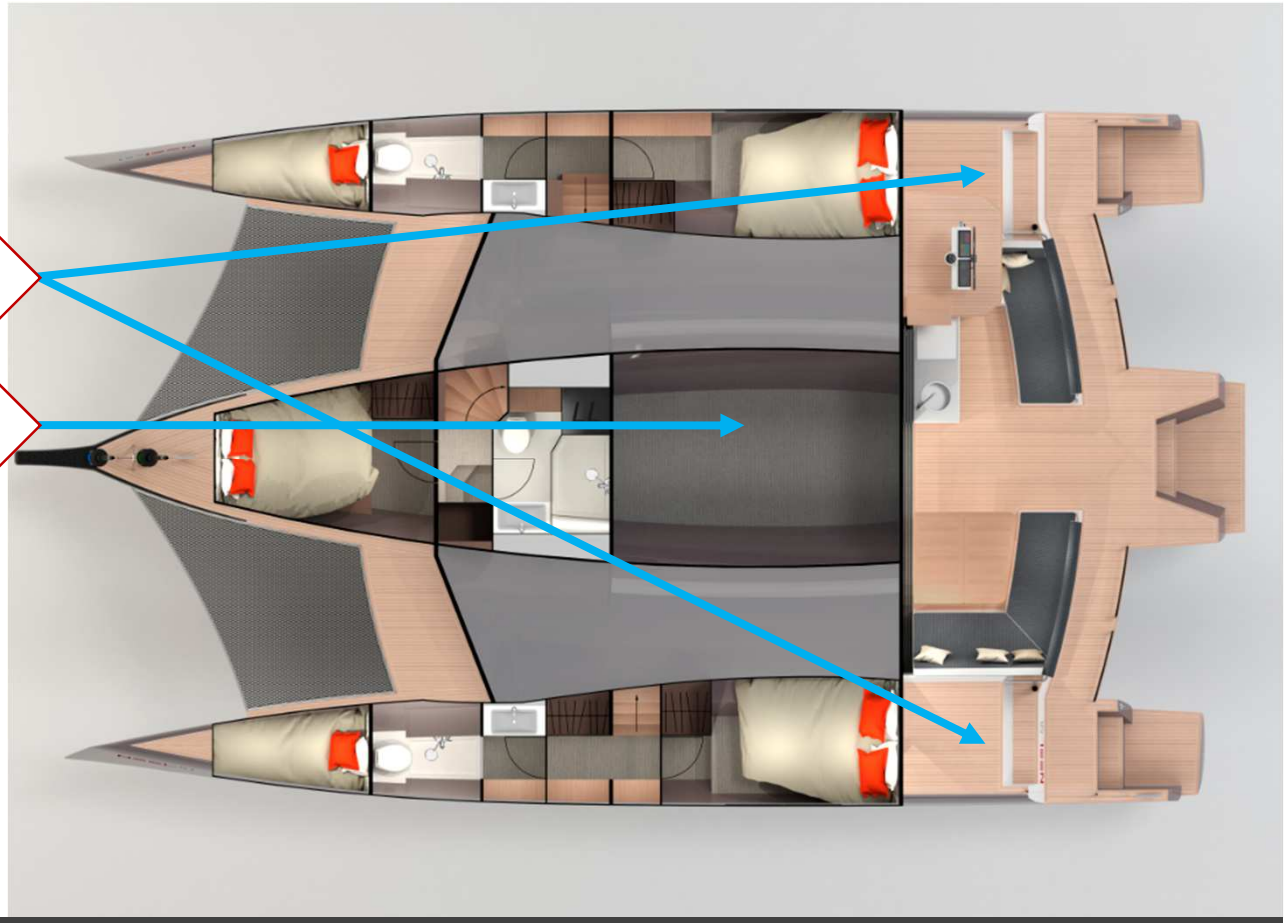
JUST MAKES SENSE.

Three technical storage areas

Two garages for equipment:
1,85m high and 3m long

A very large technical compartment in the main hull

Total storage area = 18 m²



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Innovation | Performance | Comfort | Safety | Value

NEEL 51 | CARACTERISTICS

JUST MAKES SENSE.

Overall length	> 51’
Overall width	> 29.18’
Draught	> 5.9’
Displacement (CE norms)	> 14 T
Maximum sail area closed the wind	> 1,938 sq.ft
Maximum spinaker	> 2,227 sq.ft
Water	> 160 US gallons
Fuel	> 160 US gallons
Engine	> Sail drive 75 HP
Manufacturer	> NEEL Trimarans
Architects	> Joubert-Nivelt-Muratet
CE certification	> ICNN

BOAT OF THE YEAR CRUISING WORLD 2013 NEEL 45

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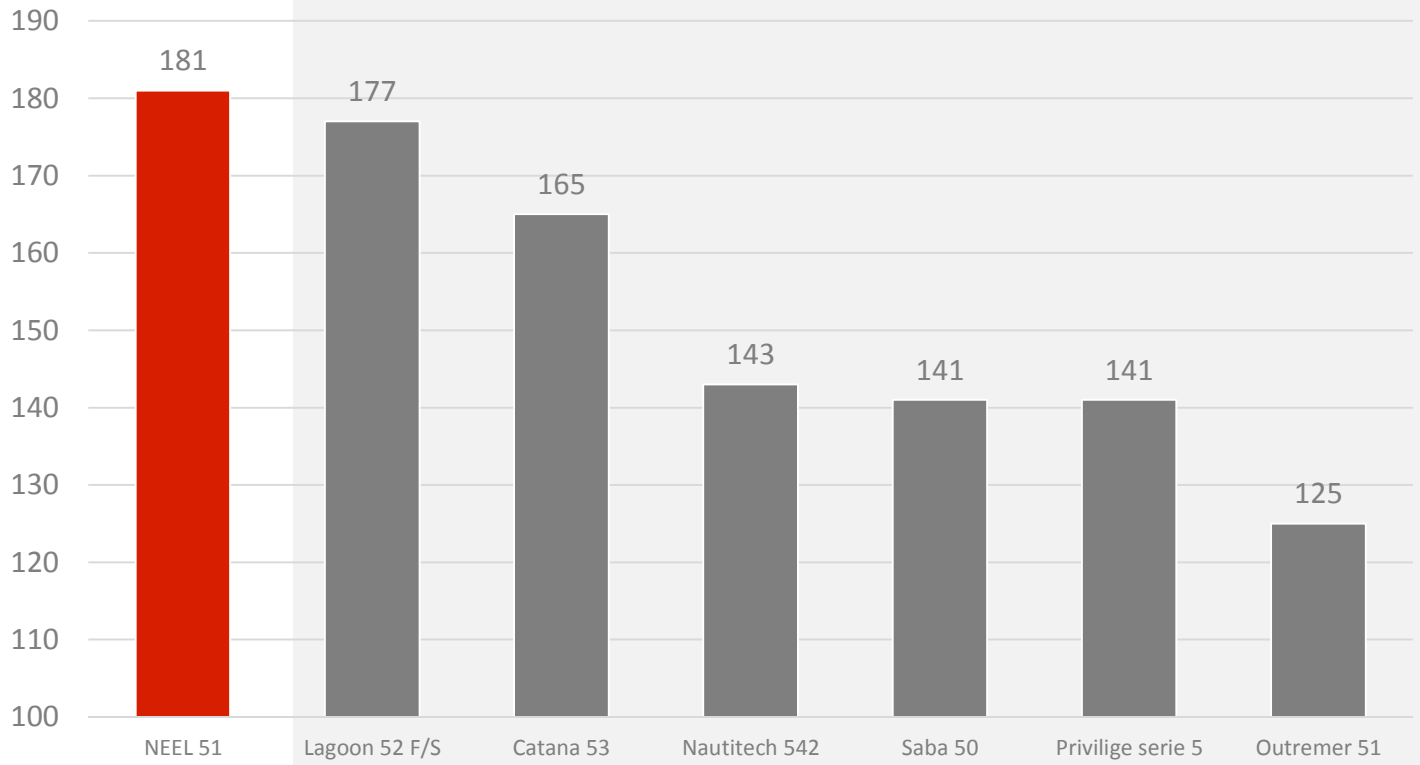
WINNER

Innovation · Performance · Comfort · Safety · Value

NEEL 51 | SAIL AREA

JUST MAKES SENSE.

Total sail area close hauled (m^2)



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2013 SAILBEST BOATS WINNER

WINNER

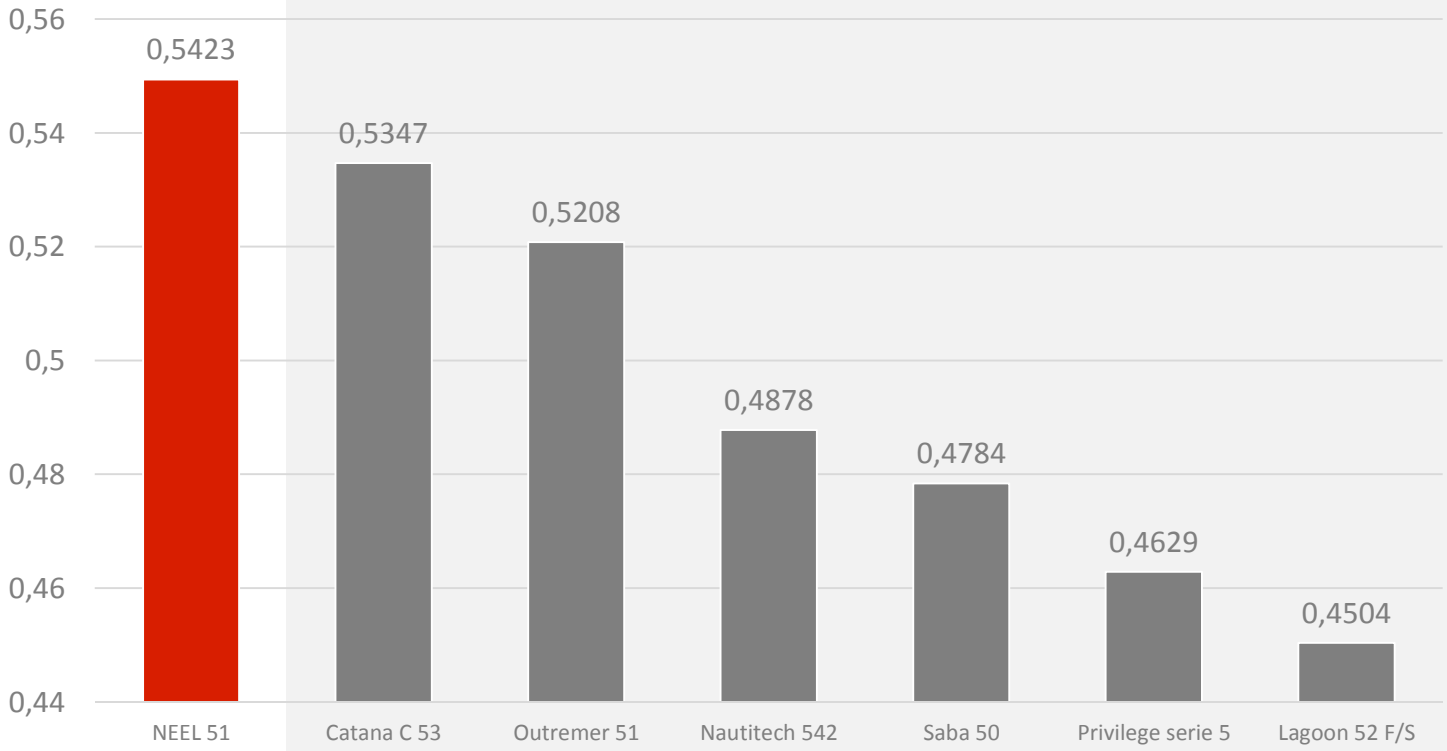
Innovation | Performance | Comfort | Safety | Value

NEEL 51 | POWER TO WEIGHT

JUST MAKES SENSE.

The NEEL 51 offers the best Power to Weight ratio

(1 / (cube root of the weight in kg / square root of the sail area in m2)



BOAT OF THE YEAR CRUISING WORLD 2013 NEEL 51

2013 SAIL BEST BOATS SPONSORED BY Raymarine WINNER

WINNER

Innovation | Performance | Comfort | Safety | Value

NEEL 51 | SPACE

JUST MAKES SENSE.

89 m2 of living space on board

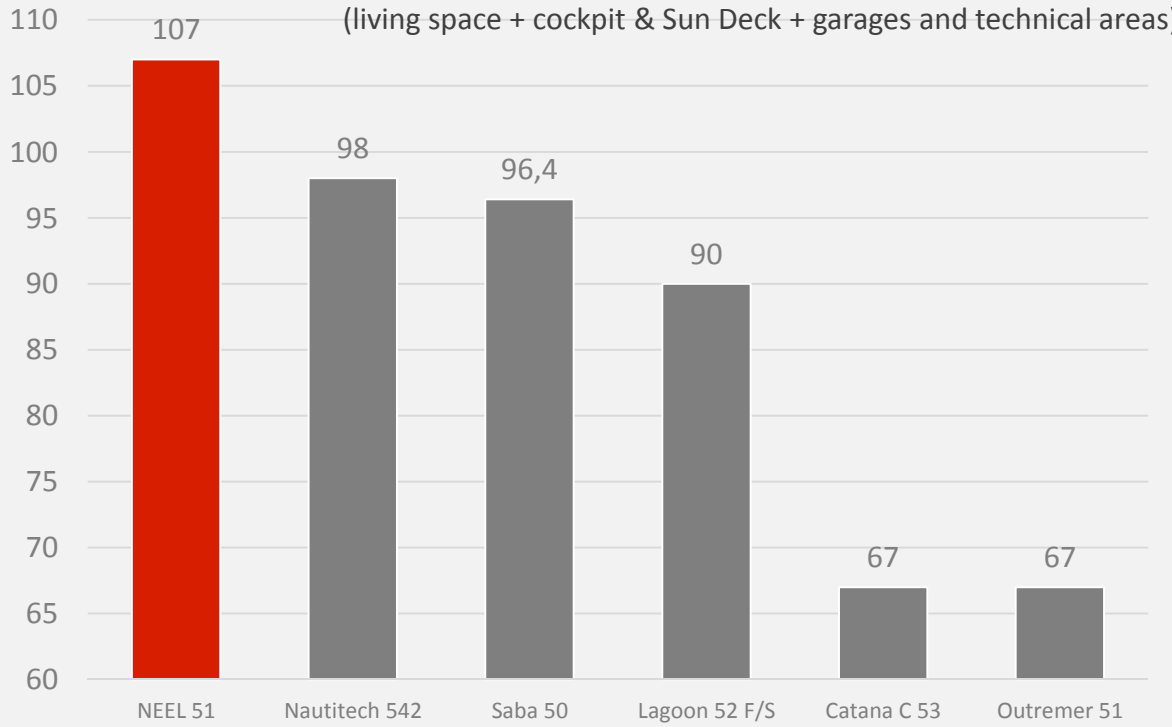
Area facing the sea	= 38 m²
Two on-suite hulls	= 17 m²
Forward cabin and bathroom	= 9 m²
Cockpit	= 16 m²
Sun deck	= 9 m²

18 m2 of garages and technical area

Main hull	= 10 m²
Garage X2 starboard and port	= 8 m²

Total = 107 m²

THE NEEL 51 offers the most useable space on board
(living space + cockpit & Sun Deck + garages and technical areas)



BOAT OF THE YEAR Cruising World 2013 NEEL 45

2013 SAIL BEST BOATS WINNER

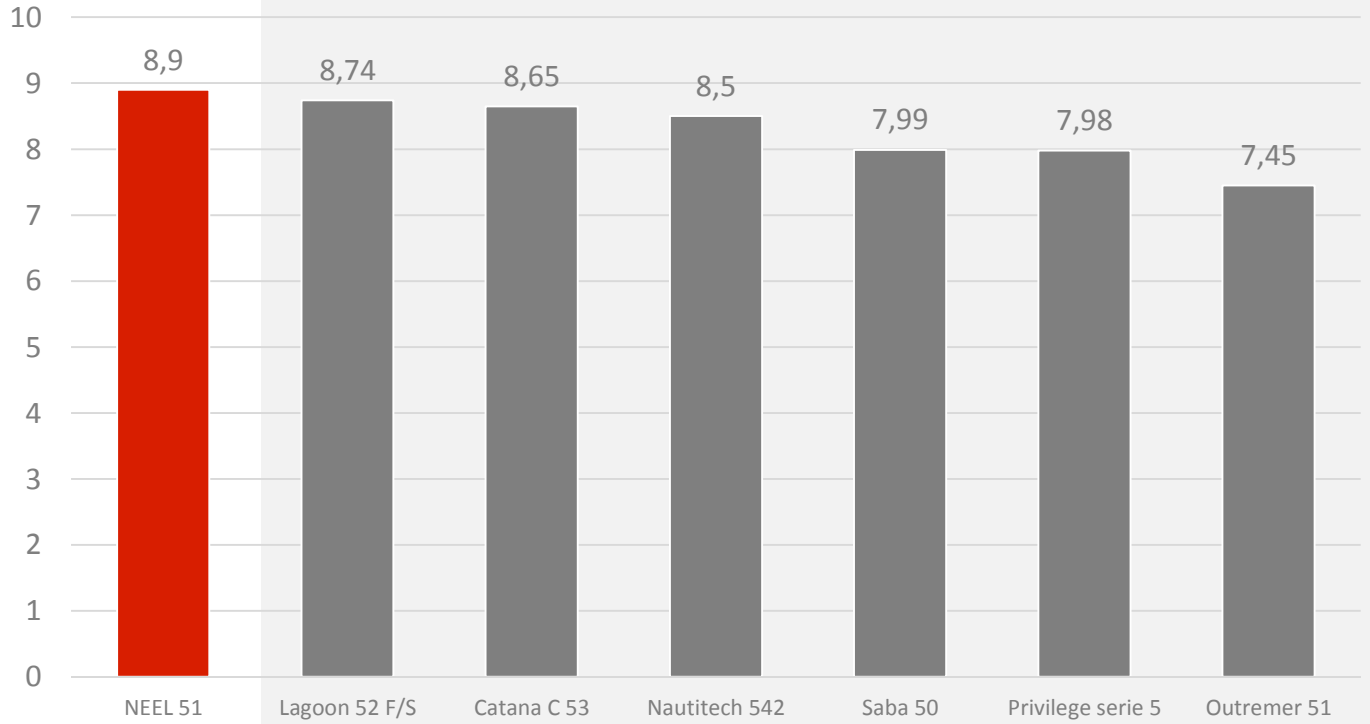
WINNER

Innovation | Performance | Comfort | Safety | Value

NEEL 51 | SIZE

JUST MAKES SENSE.

The NEEL 51 is only 16 cm wider than a Lagoon 52



BOAT OF THE YEAR CRUISING WORLD 2013 NEEL 45

2013 SAIL BEST BOATS SPONSORED BY Raymarine WINNER

WINNER

Innovation | Performance | Comfort | Safety | Value

NEEL 51 | PRICE

JUST MAKES SENSE.

BOAT OF THE YEAR CRUISING WORLD 2013 NEEL 51

2013 SAIL BEST BOATS SPONSORED BY Raymarine WINNER

WINNER

Innovation | Performance | Comfort | Safety | Value

AVANTAGES

JUST MAKES SENSE.

AVANTAGES:

+ Comfort of sailing
+ Power to weight
+ Space
+ Quality of conception
+ Size
+ Price

BOAT OF THE YEAR Cruising World 2013 NEEL 45

2013 SAIL BEST BOATS Sponsored by Raymarine WINNER

WINNER

Innovant | Flatteur | Facile et confortable | Sécurisant | Economique