

ARSOUIN 40 HYBRID

A talented, innovating and giving wellbeing traveler



STEP ONBOARD !

Arsouin 40 hybrid is a lifting keel sailboat, the first in a range of cruising yachts designed from the start with electric propulsion and hybrid energy.

Far from the conventional paths of sailing, Arsouin 40 innovates in the design of its interior fittings, in the ergonomics of its cockpit and tillers positions and in its design for a high-performance, eco-responsible sailing and wellbeing on board.



*“Creativity is contagious, pass it on.”
Albert Einstein*



A NORMANDY PROJECT
FÉCAMP, BERNIÈRES-SUR-MER ET LE HAVRE

THE BOAT

Length: 40 feet (12.47m)

Displacement: 12 tons

Draft: 2.60 m (1.10 m centerboard raised)

Double rudder and double tiller

Sail upwind: 84.7 m²

Category : A

ELECTRIC HYBRID INNOVATION

Propulsion: 20 Kw electric POD

Batteries : 70 Kwh

Autonomy on batteries : 36 miles

Sufficient energy: Wind turbine, solar panel covering the roof, Pod in hydro-generator operation

Hybrid energy: 20 Kw electric generator

Control: Control screen dedicated to energy on board

Connected boat: availability, history and online monitoring of batteries and charging



SAILING

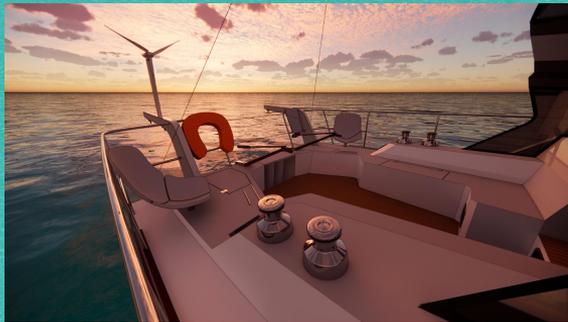
A LIVELY AND SLENDER HULL FOR PERFORMANCE AND PLEASURE

Arsouin 40 is a boat inviting to distant voyages, to freedom and adventure, as well as to family life on board.

However fast and efficient, Arsouin 40 may participate prominently in competitions and ships gatherings. Its hull design and architectural options make it a competitive sailboat for many events.

Arsouin 40 benefits from the performance of a modern design by the architect Vincent Lebailly, optimized by his feedback in the design of modern hulls and computer simulation.





INNOVATIVE ERGONOMICS

The position of the helmsman is often disastrous for the spine on long voyages: facing the cockpit to steer, and looking forward to see and anticipate, as on this Class40 and this small cruiser.



Arsouin 40 offers the helmsman 2 tiller positions to suit all navigations :

A tiller position perched on the rear trunk, wedged into a seat, for regatta or racing navigation, slightly turned forward for perfect visibility in an optimal comfort position.

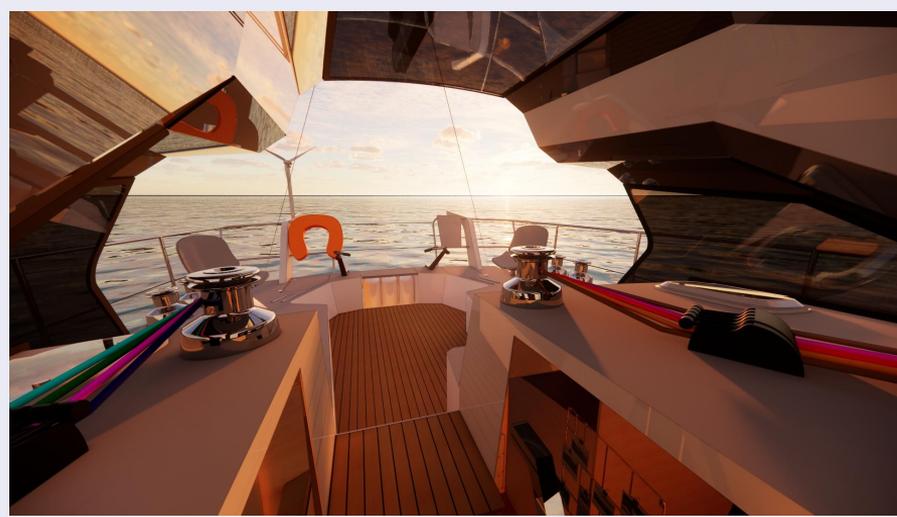


A second position located on the bench offers better protection and easier access, ideal for long navigations.

VISIBILITY, SAFETY FOR A GREAT TRAVELER

The protective hard top, essential for offshore sailing, has been designed to offer a good compromise between protection against the elements, a large space at the wide piano to maneuver the winches and clutches, and good forward visibility which makes often lacking in classic cruisers.

This is what the original and innovative design of the hard top of Arsovin 40 offers.



LIFE ABOARD

WELLBEING, ELEGANCE AND WARM PERSONALITY

No more light wooden main cabin that looks like any other light wooden main cabin!

Natalie Amoros, designer from Le Havre, offers us an original, joyful, colorful and elegant interior where we feel good.

Nowhere more than in navigation, the concept of "wellbeing" of the design of Natalie Amoros imposes itself more than in the face of external conditions which often, when traveling, change quickly and strongly.

The design of Natalie Amoros brings to the navigator a quality and an art of living on board for days of conviviality or distant voyages, alone, with a crew or with the family.





A LARGE AND LIGHTING INTERIOR AND AN ADDITIONAL CABIN

The interior space of Arsouin 40 is exceptionally large thanks to the choice of electric.

Arsouin 40 thus has an additional cabin in the space occupied by the thermal engine box of traditional sailboats. The batteries are positioned in a sealed and ventilated box located under the floors and the thruster is a POD under the hull.

Reading corner, playroom for children, storage of sail bags or small cabin, this additional room provides volume around a light and cleared stairs.

LEATHER, THE NATURAL MATERIAL OF SEAMANSHIP

Warm and beautiful, natural full-grain leather is the traditional material for seamanship in the navy. Applied with precision, it gives the messroom a touch of « marine » elegance and good quality.

LINEN, A NATURAL MATERIAL AND A « FRENCH NORMANDY TOUCH »

Arsouin Marine has chosen flax-based composite for certain panels and kitchen tops, tables and shelves.



ELECTRICS SILENCE FOR MUSIC LOVERS

In port as well as when sailing, the wall-mounted soundbar and the associated subwoofer provide listening pleasure in the silence of electric propulsion. The particularly discreet electric generator in its housing is located in the engine hold, itself isolated, and will be able to be made forget.



RESPECT THE SEA

THE INNOVATION OF HYBRID ENERGY

Arsouin 40 has the particularity of having been designed and thought out from the outset, in its smallest detail as well as in its general architecture, for the electrics.

This design by which all the options of traditional boats have been put back on the drawing board, has made it possible to enhance the advantages of onboard electric energy and provide effective solutions to its constraints.

To think that building an electric boat would only consist of only placing batteries and an electric motor on board in it is an illusion

The batteries

The batteries dedicated to propulsion and comfort on board have a capacity of 75 Kwh. Placed in a sealed and ventilated housing, their safety is ensured by a BMS (Battery Management system) which monitors the batteries as close as possible to its cells.

Sufficient electricity production

Arsouin 40 has 3 soft energy generators :

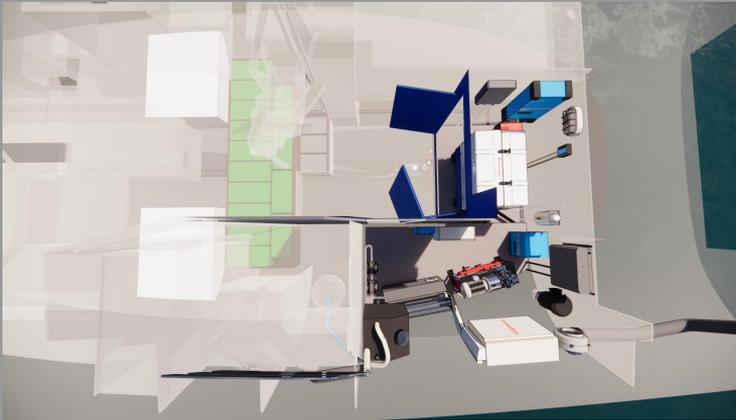
- ❑ *The wind turbine, proven equipment in any travel sailboat, can generate up to 350 W at 25 knots of apparent wind ;*
- ❑ *The Pod in hydro-generator operation generates up to 500 w at 6 knots ;*
- ❑ *The 5.5 m2 solar panel fixed on the roof generates 800 Wc.*



This innovative panel, whose technology is now mature, is made-to-measure by Solar-Cloth, an innovative SME that has won many awards and is renowned in solar applications for sailing.

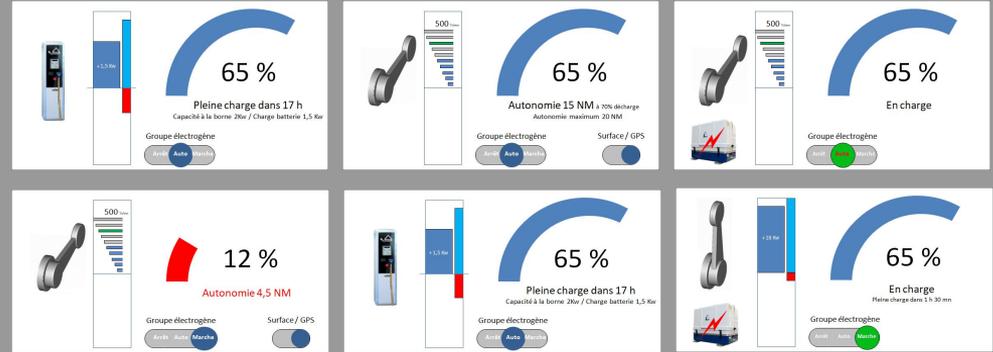
The steerable Pod propeller

The steerable electric POD placed under the hull offers added stability and better manoeuvrability without the need for a bow thruster.

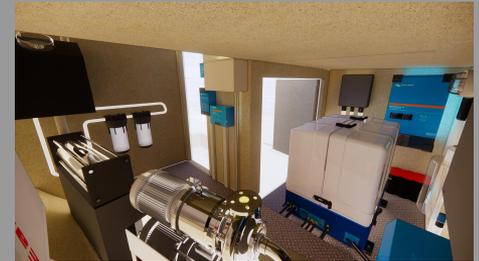
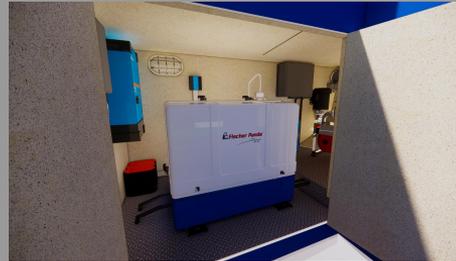


The control and command screen

When sailing, the helmsman needs to have a global vision, complete but limited to only useful data from the electrical system, to decide in each situation.



For its safety, Arsouin 40 is equipped with a 20Kw Fisher Panda **electrical generator**. This power can cover the entire capacity of the motor, or fully recharge the batteries in 3 hours (DoD 80%) and 1 hour 52 minutes (DoD 50%).





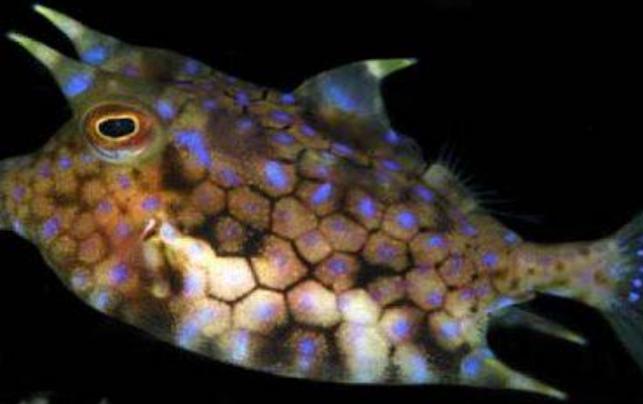
ARSOUIN 40, A **CONNECTED BOAT**

Arsouin 40 is a connected boat to provide owners with online services dedicated to the use of electricity, such as state-of-charge monitoring, boat availability, and specific services that will eventually be offered by marinas.

Arsouin Marine can effectively monitor the proper use of batteries for their efficient functioning, durability and good health.



ELECTRICS : TO RESPECT THE SEA



INNOVATION AND COMFORT

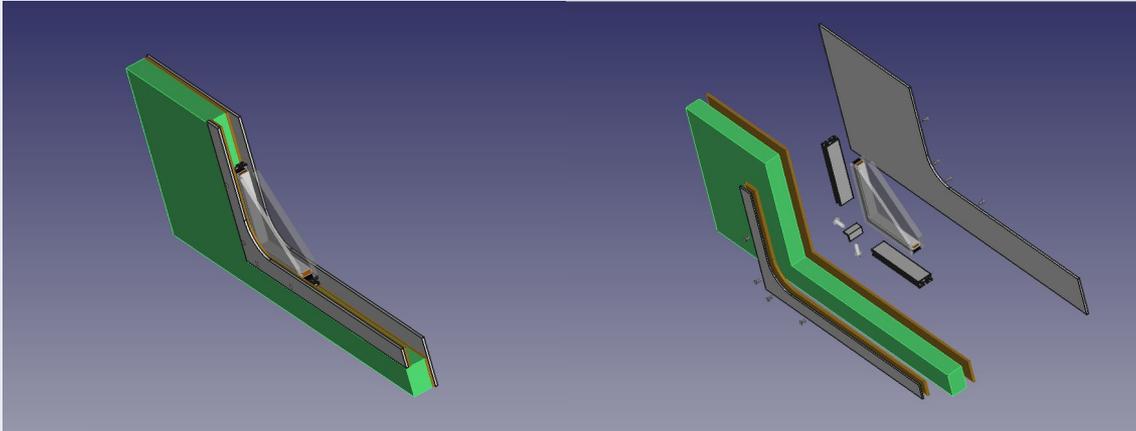
Insulation and double glazing

Energy is precious aboard an electric ship.

Thus, the insulation has been carefully studied.

Double glazing has been designed to equip the roof portholes. The digital cutting technology of the sheets and the digital machining make it possible to assemble portholes that are perfectly adjusted and flush with the roof.

Thus, the energy performance of Arsouin 40 does not sacrifice anything to the aesthetics, the elegance of the lines and the quality of the realization



Heating and water-heating

Heating is provided by low-temperature radiant panels, discreet because they are thin, and fixed to the ceilings.

Hot water is produced on demand by two 10-litre water heaters, one in the bathroom, the other in the galley. The advantages are numerous compared to a traditional water heater, in particular an economical use of the heating energy requested only on demand, and a substantial saving of water due to the proximity of the balloons to the taps.

In a traditional ship, hot water is only available when sailing with the start of the combustion engine, a deplorable carbon footprint and efficiency.

DATASHEET

40 feet (12.47 meters), lifting keel

Displacement: 12 tons

Draught: 2.60 meters (1.1 m centerboard raised)

Double rudder and double tiller

Conventional rig with 2 stages of swept spreaders

Sail upwind: 84.7 m2

Main sail 45 m2, genoa 39.7 m2, staysail 13.8 m2

Spinnaker and / or gennaker

Category A. CE-Division 240 certification (hull length less than 24 m)

Electric propulsion:

20 kW motor (equivalent to a 27 hp thermal engine, or 40 hp at 2/3 of its power)

Propulsion battery capacity: 75 kwh, a range of 36 miles at 6 kts (up to 80% discharge)

Recharging :

Socket type			A	V	Kw	Charging time in en h DoD 50%	Charging time in en h DoD 80%
Type F ou dor	0	Monophasé	10	230	2,3	16	26
Type 1	0	Monophasé	32	230	7	5	9
(*) Type 2	Normal single	Single-phase	16	230	4	9	15
	Normal	Three-phase	16	230/400	11	3	5
	Accelereted	Three-phase	32	230/400	22	1 h 42 mn	2 h 42 mn
	Fast	Three-phase	63	230/400	43	54 mn	1 h 24 mn

(*)The three-phase version will be developed later when marinas will be equipped with it.

(**) The single-phase type F or domestic socket can support up to 11.4 Kw (3.4 Kw dedicated to recharging and 9 Kw to comfort equipment)

Services and electronics batteries: 2 marine lead batteries 110 AH - 12 V

Autonomous charging with soft energy:

- Wind turbine, up to 350 W at 25 knots of apparent wind ;
- POD in hydro-generator operation, 500 w at 6 knots ;
- 5.5 m2 solar panel covering the roof, 800 Wc.

Autonomous charging with carbonaceous energy :

Electric generator 20 Kw : 3 h (DoD 80%) et 1 h 52 Mn (DoD 50 %).

PLAN





The ARSOUIN MARINE project was created by Jean-Pierre Bigot, Engineer graduated from Ecole Centrale de Lille, and legal expert at the Court of Appeal of Versailles.

Jean-Pierre BIGOT led a career in computer engineering for industrial and transportation domains, before devoting himself to legal expertise, and now, ARSOUIN MARINE project.

Passionate about sailing, Jean-Pierre BIGOT owns a 40-foot travel sailboat, comfortable as well as fast, designed by 2 talented architects Joubert & Nivelt, and called Arsouin, which inspired the ARSOUIN 40 hybrid program.



For 13 years, his office of naval architecture has specialized in the design of large customised boats and in innovative small-series projects with professional shipyards.

The VINCENT LEBAILLY YACHT DESIGN office is equipped with the most advanced tools and software to assist in the design of complex and tailor-made boats: Virtual reality room, CAD software.



My name is Natalie AMOROS, I am Peruvian and I am the creator of R3Dstudio. Interior design has always been a passion for me and it is reflected in my career. In Peru, I first graduated as an interior designer, then as a 3D designer.

Since 2017 and my arrival in France, I have participated in the renovation of several apartments and in 2019 I decided to create R3Dstudio in Le Havre. The concept: **Interior design focused on well-being**, to improve our quality of life and therefore the quality of the space around us.



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