



Tech Talk



Inspired by Tradition
Powered by Electricity



Scotland



Italy



SOLAR & ENERGY BOAT CHALLENGE

2-6 JULY 2019

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About the Company

Vita Yachts was established in 2017, with the aim of bringing the latest in automotive technology and engineering to the marine world. Our team draws together specialists in F1 and electrical engineering, the superyacht industry, the finance industry, the luxury automotive sector and high-end product design.

About the team

- Team Manager: Stewart Wilkinson
- Pilot: Adrian Gusman
- Liaison: Luisa Bonello
- Head of Power & Performance: Pete McKinlay
- Reserve pilot: Marco Virgilio
- Technical support: Michele Genovese



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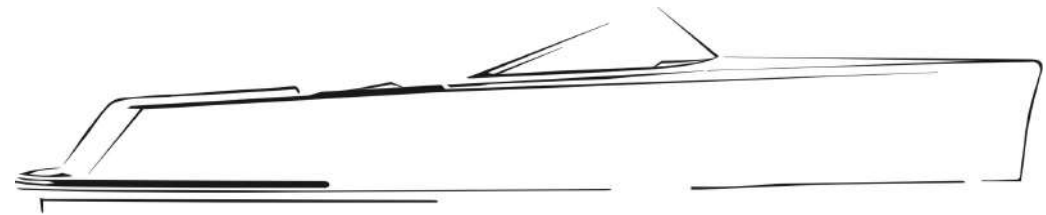
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Boat & Propulsion Characteristics

- 2 x UQM Powerphase Pro 220 Electric Motor
300kW (400bhp) continuous power
440kW (580bhp) peak power, glycol cooled
- 2 x Alamarin AJ245 Water Jets
- 4 x 58.75 kWh (235 kWh) liquid cooled lithium ion battery storage
- ‘Fly-by-wire’ touchscreen **Vita Power** proprietary power and control system
- Unique **Vita SuperPower** marine DC supercharge capabilities – shortest charge time of any boat on the water



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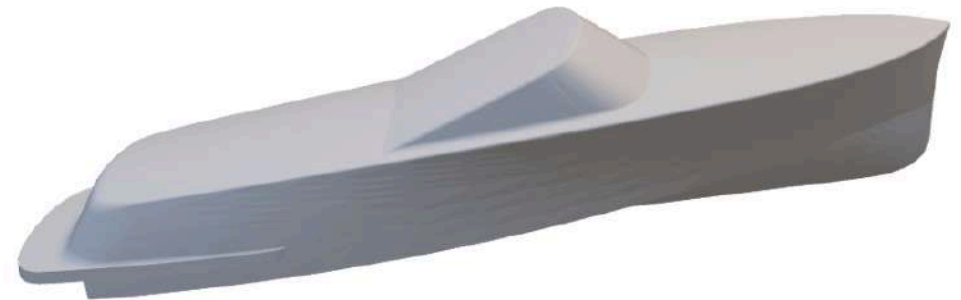
Yacht Club de Monaco



Conception methods, design, optimisation

Guiding principles

- Optimum balance of battery power, battery mass and boat range
- Match motor and impeller characteristics for best efficiency
- Lightweight hull
- High performance cooling system – corrosion resistant
- Intuitive control interface
- Solution for fast DC charging
- Parallel port and starboard drive trains – redundancy
- Jet drive, reduced draft, manoeuvrability at low speeds



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Production



Materials:

- Carbon Fibre hull
- GRP-lining for engine room
- Titanium heat exchangers
- Stainless steel infrastructure
- Lead free anti-fouling



Problems faced:

- Lead times
- Overcoming DC charging protocols
- Weight
- Engine room space

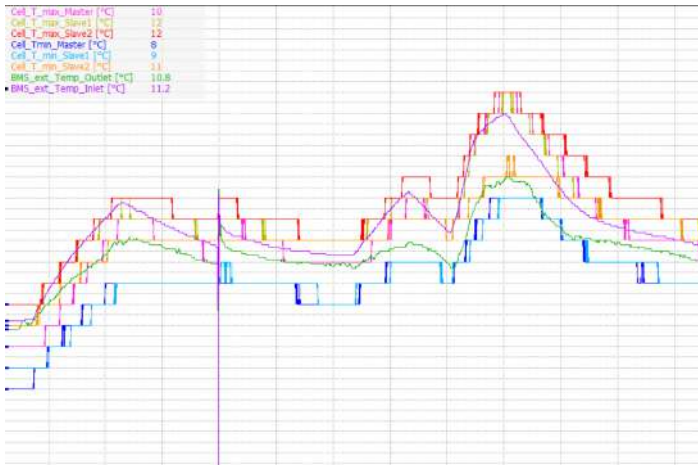


Time of production: 8 months from conception



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Cruising speed: ~20 knots @ ~4000 rpm

Top speed: ~40 knots @ ~5500 -6000 rpm

Target Weight: 4 tonnes



Testing conditions & measurement methods

- Testing conducted on lake and sea across a range of weather conditions
- Onboard logger used to record data from CAN network and some additional analogue sensors in the cooling systems.



Testing areas

- Control system
- Ride stability
- Cooling systems
- NVH (Noise, Vibration and Harshness)

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Special Feature(s)

- DC Supercharging Solution
Reduced charge time
- Parallel Drivetrain – Redundancy
Additional safety
- High efficiency cooling system
Direct cooling of cells combined with large heat exchangers to minimise cell temperatures
- Noise
Quiet operation is a defining characteristic of electric drivetrain.



VITA



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Industrialisation of the Project

Description

- Vita X now in production
- Vita SuperPower DC charging network increases range by reducing charging times

Implementation

- Vita IX and X on sale and for charter
- Vita SuperPower DC charging solution provided for all boats
- Vita SuperPower charging network initial roll-out on French Riviera

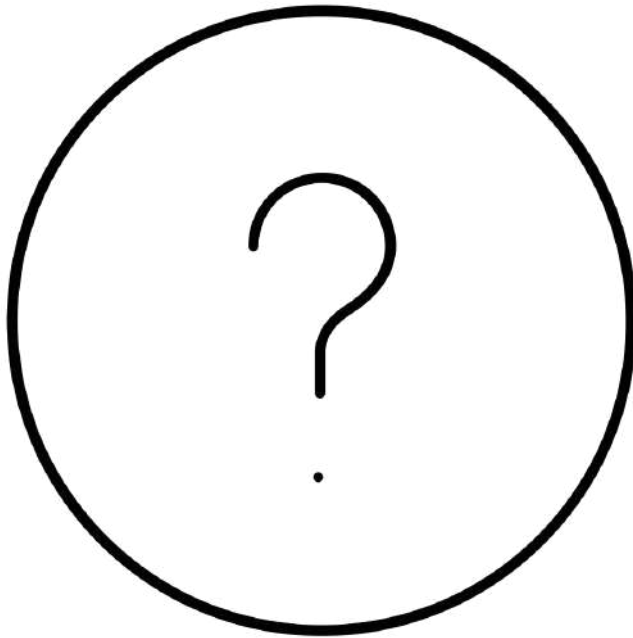


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Community Questions



- We are a young independent start-up wanting to revolutionise the leisure and taxi boat markets
- The Vita X is now in production
- Actively hiring programmers and electric power engineers as Vita Power is at the centre of our organisation
- Internships are available
- **Who is interested?**



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