

Silent Yachts an all-electric affair

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Silent Yachts

Is the future of silent seagoing pleasure going to become an all-electric affair?

Oceangoing [solar-electric powered](#) catamaran yachts are now in production

Solar-powered propulsion and on board household energy that offer yachting in silence came a step nearer reality during the autumn yacht shows when several new solar powered yachts made their first appearance

Self-sufficient yachts with unlimited range and without the need to burn fossil fuel offer a clean on board environment, without vibrations and fumes. Their drive-train and household power supply is virtually free of maintenance given that generators are not required for air conditioning or cooking, even at anchor.

In yachts such as these, the generator is only used to recharge the batteries

in rare cases and emergency situations.

Both Silent Yachts, a builder based in Austria and Serenity Yachts based in the Cayman Islands are offering yachts in this class

The Silent 55 is available in several power configurations to suit a variety of cruising applications. All stick to the Silent-Yachts philosophy of relying chiefly on solar power for propulsion and on board power needs.

Their “E-Power” version equipped with 2 x 135 kW electric motors can reach speeds up to 14 knots for short periods but have a more realistic cruising speed of around 6 knots. The model can be equipped as a “Cruiser” version, with a pair of 30 kW motors or a “Hybrid Power” version with 2 x 220 hp diesel engines and two 14 kW electric motors.

A “Sailor” version can be equipped with all the previously mentioned drivetrain configurations and is rigged with a mast and sails to provide additional propulsion in fair winds.

With 30 high-efficiency solar panels rated for approximately 10 kilowatt-peak, the SILENT 55 uses maximum power point tracking (MPPT) solar charge regulators and lithium batteries, which provide capacity for all-night cruising, while a 15-kVA inverter provides power for all household appliances.

The systems require hardly any maintenance and produce no fumes or noise. Because of that, the operational costs of the vessels are substantially lower compared to power yachts using more traditional propulsion systems.

Michael Köhler, CEO, at Silent Yachts has said, “What this represents to the yachtsman, among other features, is the ability to cruise for many hours at normal speed and throughout the entire day and evening at reduced speed. Our silent yachts set the standard for an entirely new

dynamic in yachting: No fuel. No maintenance. Pure solar-powered luxury.”

The Silent 55 is available in five different layouts ranging from three to six staterooms with three or four heads. A full-width central owner's stateroom is the centrepiece in three of the layouts, with guest staterooms located in port and starboard hulls. All staterooms offer double or twin berths, and all heads include a separate shower. Other layouts are available on request.

In all configurations, careful attention has been paid to onboard ergonomics. The staterooms, heads and saloon on the SILENT 55 are all created to welcome every person into spaces that are adapted to human size and create a comfortable environment for living, even for extended cruising. Large portholes and flush deck hatches admit natural light.

On the Silent 55, the interior layout is centred on a shared on board space, a huge 40 m² combination of saloon, helm and galley, with enough space for the crew to gather. The skipper will never be lonely at the lower helm as plenty of companion seating and an aft galley will keep the crew around.

Three of the layouts feature a forward owner stateroom that capitalises on the 8.46-meter beam of the yacht for a spacious layout with a walk around double berth. Other accommodation plans optimise the space with additional staterooms as the builder uses a modular construction and efficient design methods that allow additional layouts at reasonable prices.

With wide side decks for safety moving fore and aft, the yacht has a spacious cockpit sheltered by a large hardtop overhang, and enormous open foredeck space. In addition, the flying bridge promises to allow helmsman and guests to enjoy time together underway with superior lines of sight all around the boat.

The solar yacht is equipped with the company's aeration system, which

provides cool and fresh air to all accommodations, heads, and in the saloon. The air-flow in each space is individually adjustable and can be used when the weather conditions require the windows to be closed. In addition, a reverse-cycle heat-pump system can be used to heat the interior when necessary, ensuring all-season comfort. The insulated hull ensures efficient achievement of desired on board temperatures.

Constructed using vacuum-bagged resin infusion to create a lightweight glass-sandwich composite construction that has sound and temperature insulating qualities, the hull is reinforced with carbon fibre at stress points, and uses vinylester resin to prevent osmotic blistering.

The hull shape has been designed using extensive tank testing for optimal efficiency. The moulds were then created using CNC milling for true replication of the refined, enhanced shape in the tooling. The Silent 55 has a shape both above and below the waterline that is designed to slip through the wind and waves with minimal resistance.

Designed with sealed deck sections and collision compartments for safety, the yacht uses watertight bulkheads and integrated interior furniture to create a torsion-resistant hull structure.

The electrical system can allow such features as a powered aft swim platform, a 1,500-watt electric windlass, and other features yachtsmen have come to expect on world-class oceangoing cruising yachts.

Because the yacht is designed to range everywhere as a true ocean-going cruising yacht that is self-sufficient, she is equipped to keep her crew happy and comfortable for virtually any voyage.

It starts with the benefits of the propulsion system. The yacht can cruise efficiently for up to 100 miles a day for weeks. At the same time, the arrangement of the components enables the system to power all on board systems without need of fuel to power a generator. Because of her

revolutionary design, the Silent 55 travels just with the sound of the wind, and the water streaming past the hull, with no smoke, noise, or vibration of engines.

“The generator is only used to recharge the batteries in the rare case when higher speed is required for longer periods of time or if the weather is bad for several days,” Köhler says.

In addition to the ergonomics of the living spaces, the Silent 55 offers advanced conveniences and a comfort level that gives peace of mind. A water-maker powered by the solar-electric system produces enough water to supply a full six stateroom company with reasonable rate of consumption.

All on board appliances operate on the 220/110-volt system, to which her crew might be used to from their homes. The galley has refrigerator and freezer space to sustain the crew and an efficient induction cooktop, precluding the need for carrying propane.

“Under normal, average holiday conditions, the boat is self-sufficient with unlimited range without burning fuel,” Köhler says. But perhaps even more importantly, the time under way is spent enjoying the sounds of wind and water, with no fumes or vibration, with no noise but the laughter of friends and family.