



Sunpower
SOLAR ELECTRIC YACHTS

Technical Specifications: SUNPOWER-ALVA SOLAR-E 50



Technical Data

Technical Data / Design draft:

LOA: 15,20 m / 50 f

Beam : 4,85 m / 15 f

Draft: 1,28 m / 4,2 f

Light Displacement: 25,2 t

Water Capacity: 600 L + Water maker/ Opt. 2x 600 L

Fuel Capacity: 1.000 L / Opt. 2x 1.000L

Accommodation:

Cabins 3/4 + 1 crew

Berths 6/7 + 1 crew

Head compartments: 2

Performance:

Engines : 2 x 100 Kw electric Engines/

Opt. 2x 230 KW electric Engines

Generator : 50 kVa / Opt. 100 kVa

Battery capacity: 150 kWh / Opt. 240 kWh

Maximum speed (performance vers.) up to 20 kn

Cruising speed (performance vers.)

up to 16/10 kn standard version

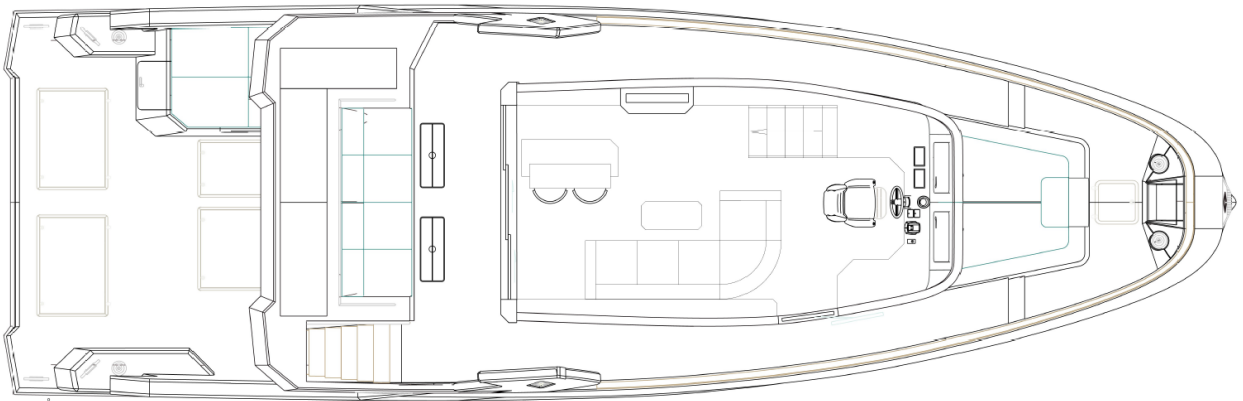
General Information

The following technical specifications ("Specifications") describe in detail the technical elements of the construction of the SUNPOWER-ALVA Solar-e YACHTS 50.

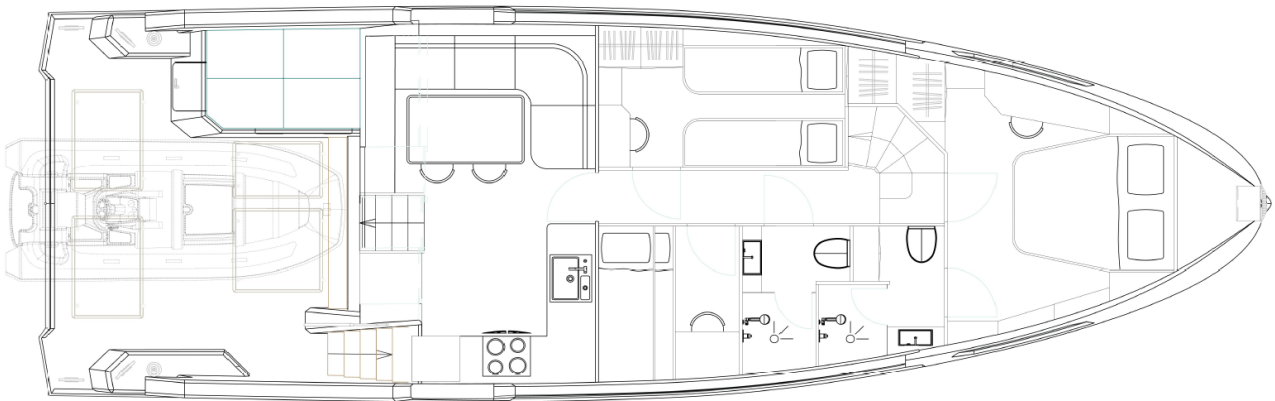
All components are marine grade and have a CE-A certificate. The Vessel has been designed and is built in accordance with the ISO rules and in compliance with the safety standards according to the 94/25/CE directive.

According to DNV-GL small Yachts directive as an option.

Layout



Upper deck 1 Salon- Helm Station-Seating area



Main Deck 1 Owners Cabin bow - 1 VIP Guest portside convertible - 2 Crew / Children's Cabin with bunk-beds

Standard Specification

CONSTRUCTION

- The hull and structural bulkheads are made of vacuum infused sandwich GRP carbon- reinforced
- Non-structural bulkheads are made of vacuum infused core sandwich
- Carbon fibre reinforcements on hull as well as on every bulkhead area that need extra strength
- Watertight bulkheads forward and aft. Bulkheads are laminated and/or bonded to hull and deck
- The Deck made of composite GRP with Carbon reinforcement
- The entire structure is certified by Swiss Lloyd classification society
- White gelcoat finish on the hull, white finish on the deck (hull colour to be specified with order)
- Main deck is laid with artificial teak or with modified wood
- Cockpit floor and seats are laid with modified wood or artificial teak
- Keel fitted to the hull with stainless steel bolts
- Twin-hanging rudders with vacuum infused rudder blades, stainless steel rudderstocks
- Push rods on rudder-quadrant
- Opening transom / swim platform giving access to tender storage
- Photovoltaic panels with 5,8 kWp at saloon roof

Noise and Vibration Insulation

- The insulation system has the purpose to ensure maximum comfort on board and to increase the efficiency of heating and cooling system. It is made of highly effective insulating materials for use in the marine environment: spray urethane foam, a radiant barrier insulation manufactured with an enclosed air space.

Accommodation

- Foam sandwich structure of boat acts as thermal and sound insulation
- In all cabins and the salon there is an additional thermal insulation between hull and furniture / wall and ceiling covers, 50 mm + aluminum moisture barrier - all around the hull and superstructure. All the sofas, chairs, armchairs, and bed heads can be selected by the customer amongst the standard decor and material samples or similar present at the shipyard showroom. All leather or artificial leather parts with double stitch at all edges and corners

Engine room

- All components of the exhaust system (hose, water lock, gas-water-separator, muffler) are supported by visco elastic elements / rubber supports.
- All components of the cooling system of AirCondition, E-motors, inverters and others are supported by visco elastic elements / rubber supports, all cooling pumps are mounted in a way that they do not create vibrations on the hull
- Sides, ceilings, and bulkheads are covered with thermal insulation sandwich secured with needles finished with aluminum tape as a moisture barrier

DECK HARDWARE

- Fixed anchor davit, electrical windlass, stainless-steel anchor, and chain (60 m, 14 mm)
 - Stainless steel pushpits and pulpit
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- LED navigation lights
- Double stainless-steel lifelines, opening gate in lifeline each side
- 8 stainless steel mooring cleats and 2 fairleads
- 2 x multipurpose warpwinches in cockpit
- 1 x steering wheel with hand sewn leather covers
- Compass on each steering pedestal
- 1 x helmsman seats with console for navigation instruments, propulsion control, and bow thruster control
- 11 flush deck hatches
- 2 flush hatches on cockpit benches (access to galley and to aft cabin)
- 2 x accesses to lazarettes from the cockpit
- 1 x access to garage from the cockpit
- 2 x accesses to life raft lockers from cockpit
- Cockpit table (option to convert it into a sunbathing area)
- Space for optional fridge
- Hot and cold shower on swimming platform

FOREPEAK

- The front locker (forepeak) is large enough to accommodate spare and ground tackle
- Large deck hatch (with exterior lock), stainless-steel ladder
- The equipment includes:
 - Lights
 - Handrails
 - Lines attachment points

TENDER Storage at aft deck

- The tender storage is accessible from the transom
- The storage can accommodate a 3.85 m electric outboard or jet tender with electric propulsion
- Dedicated system to help getting the tender in and out
- The large hydraulic aft platform spread (optional) to the sea and then serve as launching ramp
- Tender inflating electric pump

LAZARETTES

- There is one sound insulated lazarette on port as a genset storage topped by a large sun bed
 - Access from cockpit
 - Several attachment points and electric switchboards, electric extraction fan
 - Electric bilge pump
 - Access to steering mechanism and autopilot
 - Light top coat finish
 - Stainless steel swim ladder with teak steps integrated fixation points in the platform
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Propulsion

- 2x gearless electric motors with 135 kW, trust bearing, flex coupling
- Sound proofed engine compartment (extra density plate)
- Stainless steel shaft with trust bearing
- Bronze 4-blade propeller
- Propulsion control panel on helm console
- Electric Power Storage
- 2 x High voltage DC Battery set 400 V for main storage with a capacity of about 140 kWh up to 240 kWh

Battery compartment cooling system

- Battery Management System
- Each battery module comes with an integrated battery management system (BMS). This is an intelligent electronic module, that measures all cell voltages and temperatures to control balancing on both battery cell and module level. The battery modules communicate by a galvanic isolated CAN-Bus with the Master BMS, which collects and monitors the status of all battery modules. If the measured values from a battery module exceed the limit, the Master will automatically act to protect the connected battery modules.
- Monitoring and control EM-Display monitors all battery systems. The high-resolution display with integrated touch screen shows all important battery parameters immediately. The integrated Wi-Fi-module will connect the display to the cloud and makes it possible to remotely monitor your systems with our Energy Portal.

Range Extender

- Generator as range extender 50 kW- DC for direct batterie charge (optional a H² -fuel cell) enable the vessel to sail at cruising speed
- In order to reduce the noise, it is fitted with an insulation housing, a water lock, silencer and special silencer blocks

Navigation

Navigational instruments

- 2 x Touch Multifunction Display
- 2 x Tridata incl. repeaters (wind, echo, speed, temperature)
- Hydraulic Autopilot (autopilot-control, ACU computer, compass, GPS, rudder-sensor, hydr. pump and accessories)
- Flir 324CS stabilised Infrared Camera (option)
- Colour HD Radar
- VHF + AIS Package
- Satellite connection with "over-the-air" updates and troubleshooting possibility

WATER

- 1000 litres fresh water in two stainless steel tanks, located in the middle of the boat.
- Greywater Tank: 2x 300 L
- Blackwater Tank: 2x 200 L
- Pressurized hot and cold-water system
- 2x 50 l water heater on 230V
- Fresh water shore inlet
- Manual bilge pump
- Automatic bilge pumps
- Grey/Black water electric pumps

ELECTRICAL

- Main Electrical panel 12V / 24V / 230V
- Second Electrical panel 12V / 24V / 230V
- Shoreline 66 kW- 230/400 V
- 40 kVa DC generator with sound shield
- 400 V Batterie Li-Ion/NMC bank with 140 kWh capacity
- 24 V Batterie Li-Ion/NMC bank with 14 kWh capacity
- 400V -230 V / 15.000 W inverter
- Generator start battery
- 24V lighting throughout, smart system with presence sensor
- 12V & 230V electric outlets
- Air-Conditioning: 65.000 BTU frequency driven compressor
- chilled/ warm - water, reversed cycle system, super-silent fan coils individually controlled in each cabin

ACCOMMODATIONS

- Wood finishes: colored wood and lacquered areas, to be chosen among different ambiances
- Blinds on portholes
- Blinds and mosquito screens on all deck hatches
- Individual controlled Air Conditioning 76.000 Btu throughout the whole boat

COMPANIONWAY Main Salon

- Access to the saloon is through a sliding hatch and a retractable door
- Companionway wooden steps with recessed lighting
- Handrails

Galley Access

- Access to the Galley Area from the cockpit is through a sliding door made of stainless steel
- Companionway wooden steps with recessed lighting
- Handrails

ENGINE ROOM

- Underneath the cockpit floor, the engine compartment is located at the most favorable place for the boat's balance
- Access by hatches from the cockpit
- Sound-insulated engine compartment
- Remote controlled and automatic fire extinguisher system.
- 230 V outlets and LED lights
- This compartment receives the main electric motor, parts of the generator in its soundproof shield, the air conditioning system, the water-maker, the water heater, pumps and filters

SALOON

- The saloon hosts the navigation area, a convertible sofa, and a dining area
- Noticeably clear, the saloon enjoys a remarkable panoramic view to the outside
- Direct and indirect lighting are ensured via overhead and reading lights
- Night courtesy lights & 230 V outlets
- Loxone Digital-Switching display
- Numerous lockers alongside the hull and behind the seat backs
- Lounge space inside and outside with two wooden desk
- Relaxing lounge, which can be converted into a guest bed
- Free standing bar
- Wine fridge

Saloon Helm

- Navigation and propulsion control
- 12 V & 230 V outlets
- Digital-Switching display
- Steering station control panels including:

- Start/stop engine switches
- 1 x electronic twin engine control handles
- 1 x display Engines and batteries
- Magnetic compass - or similar
- Navigation, position and dashboard light switches

- Horn control
- Fuel filter alarm
- Bilge alarms
- Windshield wash/wipers controls

Dining area in the galley (port)

- Large U-shaped settee
- Extending dining table for up to 6 Persons
- Niche for a storage and the optional TV on lift

GALLEY

- The galley is located aft to starboard and can be separated from the saloon area
- The galley is equipped with high-quality kitchen appliance for yachts
- Access to the steering area and Cockpit via an opening hatch (Crew Companionway Hatch)
- Ventilation and natural light via hatch and portholes
- Extraction hood
- Direct and indirect lighting above worktops
- Functional L-shaped organization, next to the seating area
- Electrical distribution switchboard
- Loxone Digital-Switching display
- The galley also includes:
- Low and high stowage lockers
- Stone worktop
- Double sink with single lever mixer tap
- Refuse bin under the sink
- 4 burner electric stove and oven with potholder
- Microwave oven
- 407l capacity drawer front opening fridge (front of galley)
- Dishwasher
- Integrated full automated coffee-machine
- 230V outlets

OWNER'S CABIN

- The owner's cabin is located forward and offer the full beam of the yacht
- Light and ventilation via 2 fixed hull portholes and 2 opening deck hatches
- General lighting and reading lights
- Queen size bed 2.00m x 1.60m
- Drawers and wardrobes
- Bookshelves and lockers on forward bulkhead, with recess for TV
- 230V outlets
- The owner's cabin has a fully private ensuite toilet & rain shower:

- Shower cabin lined with stone
- 1 x opening deck hatch for light and ventilation,
- Overhead light, and 2nd light close to mirror,
- Gravity drain out to grey water holding tank,
- Fresh water electric marine toilet with holding tank,
- Washbasin with hot and cold water,
- Bathroom cabinet with electric plug,
- Mirror, heating towel holder

PORT GUEST CABIN

- Double bed 2.00 m x 1.60m convertible into 2 single beds
- Drawers and wardrobes
- Light and ventilation via fixed hull porthole and opening deck hatch
- General lighting and reading lights
- Hanging locker on portside
- 230 V outlets and USB sockets
- The port guest cabin has a shared bathroom (with starboard cabin) with toilet & rain shower:
 - Shower cabin lined with stone
 - Opening deck hatch for light and ventilation
 - Overhead light, and 2nd light close to mirror
 - Gravity drain out to grey water holding tank
 - Fresh water electric marine toilet with holding tank
 - Washbasin with hot and cold water
 - Bathroom cabinet with electric plug
 - Mirror

STARBOARD GUEST CABIN

- Single bunk beds to starboard 2.00m long
- Drawers and wardrobes
- Light and ventilation via fixed hull porthole and opening deck hatch.
- General lighting and reading lights
- Hanging locker to starboard
- 230 V outlet and USB sockets
- The starboard guest cabin has a shared bathroom with toilet & rain shower used as well as a day toilet
 - Shower cabin lined with stone
 - Opening deck hatch for light and ventilation
 - Overhead light, and 2nd light close to mirror

- Automatic wastewater pumps out to grey water holding tank
- Fresh water electric marine toilet with holding tank
- Washbasin with hot and cold water
- Bathroom cabinet with electric plug
- Mirror

DELIVERY

Tests before Delivery

Before the delivery, the manufacturer will carry out the following tests:

- Test of the electrical system
 - Test of the hydraulic system
 - Test of propulsion system
 - Test for manoeuvring
 - Test of speed at different rpm
 - Test and commissioning of electronics systems
 - Control and check of the correct installation and operation of all components
 - All surveys required for CE or DNV/RINA must be passed (optional)
 - Antifouling
 - Launching
 - Mooring kit
 - Fuel
 - Personalized boat preparation
 - 2 days introduction of the yacht with sea trial
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Delivery and extensive sailing training from our shipyard with 2 Crew from Sunpower-Team - up to 3 weeks as an option.

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