

## Technical facilities of boat

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### Nauticat 331 - basic data

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- Length at deck level 10,40 m
- Length at waterline 8,60 m
- Width 3,40 m
- Draught 1,60 m
- Displacement (cca) 8,30 t
- Cabin height 1,75 – 1,80 m
- Pilothouse height 1,80–1,90 m
- Ballast 2,4 t
- Drinking water tank 450 l
- Fuel tank 500 l
- Mast height 14,3 m
- Motor speed 8 knots
- Operational range app 600 N.M.

### Hull

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A hand-made structure of layered homogenous laminate, interlaminated with a special fabric. Bulkheads are made from ship-timber similar to teak and are safely connected to the hull and the deck. The ship is equipped with pure-lead ballast of 2.4 tons. The ballast is fastened to the hull with steel acid-resistant bolts. The engine compartment is made of laminate and equipped with steel fillings. The lower hull is made of a reinforced laminate structure.



### Deck and Brudge house

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The deck and bridge house are hand made from layered homogenous laminate. All surfaces, including the pilothouse ceiling, have antiskid coating. Windows are made of tempered safety glass recessed in alloy frames. The deck railing is made of teak wood, fastened to stainless-steel balusters, and are equipped with rope. The deck is accessible from the stern and starboard. There are 4 fixed deck pipes and four anchor beak irons on the ship. The deck is fastened to the hull with alloy longerons with acid-resistant steel bolts. The anchor storage space is situated on the bow.

### Engine

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The driving unit is a Yanmar 4JH-TBE diesel motor with 75 hp and 3800 rpm. It is equipped with a mechanical gear box with reduction 2.6:1 and water-cooled. The drive shaft is made of acid-resistant steel and the propeller with adjustable blades (21" x 14") is made of bronze. Underwater parts have anticorrosive coating. The fuel tanks are situated on both sides of the motor compartment and hold about 500 l. Filling holes are located on the deck, as well as a stand-alone, manual sludge pump. The operational range is about 600 nautical miles. A sound-proof generator compartment is available as well.

### Instalation

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All installations situated in the hull under the draught level are equipped with valves. The drinking water system includes a tank of total volume 450 l. Feeding holes for both tanks are situated on the deck with spill valve in the ship's kitchen. Water tanks are located under the pilothouse floor. The pressure system supplies the toilet, ship's kitchen, and bathroom, which also includes a washbasin and hand-held shower. The toilet is equipped with a pump. The volume of the waste tank, with the suction opening and a manual pump, is about 80 l. The NAUTICAT 331 is equipped with one automated electric pump and one manual pump, located in the cockpit.

## Ship control

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Two independent operating stands are connected in parallel. The hydraulic control in the wheelhouse is made by Capillano. The steering wheel can be rotated by 3-6 revolutions from one side to the other. The helm itself is made of laminate. The centre tiller is made of acid-resistant steel, with bronze supports. The emergency control lever is connected directly to the centre tiller.

## Mains power

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The ship's voltage is 12 V. It is provided by three batteries: 1 x 135 Ah and 2 x 180 Ah. The batteries are installed in a separate, closed, ventilated box in the motor compartment. The electrical system includes a main switch. When the motor is running, charging is provided by a 12V/80A alternator with relay connected in parallel. All functions are controlled from the control panel. Electric mains include automated fuses for all ship lights, including flexible lighting of maps and lamps. Also, all cabinets are equipped with lighting. All ship lights comply with international standards.

## Equipment

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The NAUTICAT 331 is a ketch. Its mast and sail-yard are made of grey aluminium and supplied by Seldén. The mast is ultrasound-tested. The winding mechanism is installed directly in the mast. The mast is embedded in the deck and its stainless-steel bottom is anchored in the keel. Inside the sail-yard, there are two reef rope systems. A conical reflector and anchor lighting are located on the mast.

- Main mast winches: 2 x Andersen 10
- Mast attachment: main mast: 1x 19 O 6-7 mm, stainless-steel cable; rear mast: 1 x 19 O 5-6 mm, stainless-steel cable
- Mobile rigging: internal reef cords of stainless steel 7 x 19, with cord ending, cord diameter 12 and 14 mm
- Winches: head sail: 2 x Harken 32 STA, two-speed
- Stainless-steel turnbuckles with omnidirectional internal joints and plates.

## Interior

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The interior is made of smoothly worked and impregnated, natural teak wood. The exceptions include the ship kitchen and toilet, made of a fine laminate layer with teak edges. The cabin floor is made of natural wood - teak imitation - with light wooden edges. Everything is covered with a coating. The pilothouse is carpeted throughout. Standard equipment also includes a wide selection of textiles for curtains and upholstery. Drapes for the wheelhouse are provided on request. The toilet floors are covered with mosaic tiles. The wastage drain at the toilet leads into the floor.

## Bow cabin

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Includes a double bed and a spacious, illuminated hanging wardrobe with shelves in the rear. Additional storage space and drawers are provided under the beds.

## Bathroom

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The bathroom is situated by the bow cabin. It includes a pressure water distribution system, a washbasin, a shower, and a water pump. An aluminium curtain rail is installed under the ceiling. Furthermore, there is the ceiling lamp. There is a storage space behind and under the washbasin. The interior is covered with a fine layer of laminate. On the ceiling, there is also a ventilation window and the bathroom uses the Dorade ventilation system. There is a large storage space next to the bathroom.

## Kitchen

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The ship kitchen layout provides a large counter space. There is a double sink, made of stainless steel, a hanging double-burner gas stove with oven and flame guard. Gas mains: a solid copper pipe, connected to a flexible hose leading to the gas bottle. The shut-off valve is located in the cabinet under the sink. A pressurized water distribution system is installed. A refrigerator with a 12V compressor is accessible from the top and its volume is 100 l. There are many spacious cabinets in the kitchen, as well as drawers and compartments, a sideboard, a food storage space with metal shelves, a chopping block, and a waste bin. The ship's kitchen is also equipped with two opening windows and a Dorade ventilator to provide enough light and ventilation for the room.

## Pilothouse

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The concept of this space distinguishes NAUTICAT from any other ship. Safety windows, embedded in aluminium frames provide an unimpeded view in all directions. Deck stairs lead from the pilothouse to the cockpit as well as to the lower parlour. On the starboard, there is the wheelhouse, a large sea chart desk with a drop lid and a large storage space for sea charts under it. There is plenty of storage room on the starboard side too. Dashboard instruments for motor and navigation functions with signal lights are clearly and conveniently integrated into the bar panel. Above the steering station, there is an opening window. The control board includes automated fuses and a siren switch. Also, there is a ceiling light and sea chart lighting. All instruments are illuminated to facilitate night sailing.

Access to the motor compartment is situated under the pilothouse floor. Alarms, warning you of oil pressure as well as temperature deviations, are located in the pilothouse and in the external operating stand. Inside, there are warning lights indicating low oil pressure and high motor temperature. The U-shaped sofa can easily accommodate six people, whether they wish to eat or rest. The sofa also provides some storage space. In the pilothouse ceiling, there are two windows, the ceiling light, and one red sea chart light. Next to the wheel on the starboard, there is also a place for autopilot, radar and some more electronic equipment. Also on the starboard is a storage space where you can put wet clothes.

## Stern cabin

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In the stern cabin, there is a large double bed, a sofa and a large illuminated wardrobe. Under the bed, there are drawers and some storage space. There are also some shelves at the sides of the bed. Above the bed, there is a reading lamp and more lights are situated in the ceiling.

## Other equipment

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### NAUTICAT 331 KETCH, draught 1,65 m

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- Motor: Yanmar 4JH3-TBE/75 hp/55 kW
- Special hull colour: American Navy Blue with white stripes

## Rigging

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- Harken 40.2 STA winch, pair, instead of standard winches
- Main mast Seldén Furlin' instead of the standard main, mechanical
- Main sail control and reefing from the cockpit
- Reefing equipment, aluminium section (Seldén Furlex) for genoa. Controlled from the stern deck, including adjustments.
- Windex wind vane

## Sails

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- Mizzen sail cover, colour: Navy Blue
- Lazy Jack for mizzen (rear mast)
- North Sails winding genoa I Crosscut Contender SP 30.9 m2, including UV protection, colour: Navy Blue
- North Sails winding main sail, main sail Crosscut Contender SP 17.2 m2 triangle Navy Blue
- Seldén Mast

## Deck equipment

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- Bowsprit (access platform on the bow), stainless steel with a step, panelled with teak, CQR anchor with winch
- Holder for 2 fenders, stainless steel, 2 pcs
- Boat holder on the stern
- Fenders (4 fenders)
- Finnish standard 5 kg gas bottle with reducing valve
- Winch functions 'up/down'
- Horizontal electric winch with foot pedal, 1200 W
- Guy anchors (6 pcs, lifeline)
- Ladder, stainless steel, teak stairs
- Beak irons (6 beak irons) on the bow, amidships and on the stern, including deck pipes
- Winch handle (1 x 8", 2 x 10", with lock)
- Sunscreen for pilothouse windshield, outside, colour: Navy Blue
- Wipers (3 for windshield)
- Cockpit table, folding
- Teak on the bow cabin roof
- Teak deck, including teak on cockpit stools
- Boat motor fitting
- Railing (stainless-steel balusters, teak massif with ropes, access from starboard and on the stern)
- Life buoys (2 horseshoe-shaped, with holders)
- Flagpole (on the mizzen)

## Interior

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- Alcantara-textile in the pilothouse: Navy Blue
- Wempe barometer, brass
- Bar cabinet (in the pilothouse, with shelves for bottles, etc., mirror)
- Washbasin and sink (stainless-steel sink in the ship kitchen, washbasin in the bathroom)
- Fire extinguishers (1 x 2 kg, 1 x 6 kg)
- Wempe clock, brass
- Refrigerator (about 100 litres, compressor 12 V)
- Stove cover
- Weatherproof double bed cover
- Night light, 3 pcs
- Additional refrigerator 85 l on the port in the kitchen, SP cooling system
- Stove (double-burner gas stove with oven and flame guard)
- Table with compass inlay
- Curtains for side windows in the pilothouse: white

## Electric appliances

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- Electric outlets (12 V, in the pilothouse, parlour, bathroom, and cockpit)
- Gel batteries instead of standard acid-based ones, 420 Ah
- 25m cable for connection to onshore power source
- Mastervolt 3500, one-cylinder diesel generator kW/230 V/50 Hz, water cooled, placed in sound-proof compartment by the motor, measurement panel in the pilothouse
- Mastervolt IVO 230 V-12 V/40 A + 2 A automatic battery charger, connection to onshore power source
- Fresh water tank gauge
- Motor start and stop controls at the stern
- Connection system for onshore 230V power source, including grounded connection with the deck, control of the circuit, fuses, pilothouse control - 3 illuminated buttons and a grounded outlet

## Navigation and electronics

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- C 80 color radar/plotter 8,4" TFT display, Navionics
- Depth gauge (Autohelm ST60)
- Horn (electric naval hooter)
- Compass (Suunto D 135, illuminated)
- Ship speed indicator (Raymarine ST 60 - measures speed, records distance and covered miles)
- Navigation table (in the wheelhouse, sea chart space)
- Lighting for navigation, steering, and anchoring - compliant with international rules, conical reflector (light for sea charts in the pilothouse, point lamp, ceiling lights and lamps, indirect lighting in the ship kitchen, cabinet lights)
- Dashboard (ignition switch, horn switch, 3 x windshield wiper switch, control lamp for motor oil pressure drop and motor temperature (at both helms) pressure water switch, navigation and anchor light switch, dashboard is illuminated.)
- Raymarine ST60 Multi instrument
- Raymarine ST60 anemometer
- Raymarine ST6001+ additional control unit for autopilot
- Raypilot S2G a ST6001+ control unit
- Raystar 120, 12 channels, SDGPS receiver WAAS/EGNOS
- Cockpit tachometer
- VHF radiotelephone, Simrad RD68 DSC D-class with international channels, on the starboard in the pilothouse
- VHF-antenna on the mast, cable in the pilothouse
- Route finder 2 kW, 45cm antenna, 15m cable

## Other equipment

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- Isotemp – water heating 40 l, heated by the motor
- Isotherm SP – refrigerator cooling system instead of the standard one
- Sludge pump (One automated sludge pump, also adjustable for use as manual pump, one manual pump in the pilothouse)
- A/C unit 12000 BTU, 230 V, cabin outlets
- Screw propeller on the bow 12 V, 60 kg/5.4 hp, control panel by the outer helm
- Isotemp heater connection to 230V power source
- Emergency control (connected directly to the centre tiller)
- Fresh water foot pump, in addition to the standard one
- Waste tank (80 litres, emptied from the deck or to the sea)
- Additional drawers and holders in the kitchen on the port + lighting
- Speakers on the rear deck, waterproof, pair
- Repair kit (finish coat in the colour of the hull, 1 litre)
- Seagull – active carbon filter + fresh water tap
- Prime coat against vegetation, 2x, light green
- Fresh-water shower on the rear deck, hot/cold
- Stereo-radio/CD player, speakers in the pilothouse
- Pressure water (In the ship kitchen and on toilets)
- Toilets (One toilet drained by ship pump, on the bow)
- FM-radio antenna (Glomex), pilot house starboard and stern cabin
- Ventilation (Pilothouse is ventilated through windows in frames. In the kitchen, front toilet and bow cabin, there are also ventilation windows in alloy frames. Kitchen and bathroom ventilation is also provided by the Dorade system.)
- All hardware in stainless steel or chrome
- Webasto AT5000D, 5000 W, heater with thermostat
- Water reserve (450 litres in a polyethylene tank)