Specifications Steeler NG65 Offshore
-Flyfish-

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1. GENERAL

Dimensions

Hull length	19,50 M
Length waterline	18,03 M
Beam	5,95 M
Draft	1,60 M
Minimum clearance	5,00 M (with folding mast)
Displacement (50% loaded)	approx. 40 ton

Type of yacht
V-shape hull with patented steep flare bow and tumble home stern.

Construction
Aluminium EN AW 5083 hull, superstructure and construction.

Propulsion
2 x Cummins QSM11 Marine diesel engine, In-line, 6 cylinder 4 stroke, Turbocharged aftercooled, 10,8 litres, 526 KW (715 HP) @ 2500 RPM.

Classification
The yacht is build according to CE classification – A

Inspection
The principal, the inspector of the CE and the suppliers have access to all the building areas during opening hours to control the quality of all the parts.

Alterations during the building process
The shipyard has the obligation to build in accordance with the specification book and the drawings. Small changes which have no consequences for the price and delivery time are admitted, after consulting the architect and/or principal and provided that the quality remains.
Changes which have consequences for price, delivery time, weight or stability will only be executed after a written agreement between the principal and the shipyard.

Checking, commissioning and test run
1. All integrated bottom tanks are being pressure tested according to CE regulations.
2. All systems like electrical installation, fuel, bilge, waste water, fresh water installation, heating, hydraulic (optional) etc. will be tested intensively in the water and on shore.
3. All exterior windows, doors and opening will be tested watertight according to CE regulations.
4. On expense of the shipyard, who is responsible for the technical installation, a test run of at least 8 hours will be held in open water to check all systems.
   The engines have to be tested at least 1 hours on full speed.
5. To achieve a horizontal and vertical trim with an unloaded ship, the shipyard is allowed to put in leaden breads till a maximum of 1000 kg, situated isolated, steady and seaworthy.

Conditions/insurance/transfer of ownership
During the building the general terms and conditions of the Hiswa apply, as mentioned at the District Court of law in Amsterdam on April 1th 2011 under number 040/2011.

Suppliers
All the rules of the suppliers will be followed exactly. If necessary the supplier will be asked to conduct inspections and when needed to install the equipment, so that the principal will be sure that the supplier has fulfilled his duty to guarantee.

Manuals and drawings
An instruction book with drawings will be delivered, according to the CE-standard with an index.
The electrical and system diagram-drawings will be delivered in a map with index, also according to the CE-standard.

2. HULL- and SUPERSTRUCTURE CONSTRUCTION

Plate material
Aluminium EN AW 5083 for the building of yachts.

Combined profiles and stiffening
As plate material.

Trade profiles
Angle bar profiles and T-profiles are according to shipbuilding quality.

Quality and welding
The welding is according to the highest standards of the Dutch shipbuilding.
Ship building requirements according ISO 12215/4 – Small craft – Hull construction and scantlings / part 4 : Workshop and manufacturing

Welding:
- MIG
- TIG
- All welders are Certified welders.

Plate thickness according to construction plans.

Specification of the materials

Hull plating	: 6 mm
Decks (also above engine room)	: 5 mm
Bulwark inside	: 4 mm
Superstructure side's and front plating	: 4 mm
Wheelhouse and cabin roof plating	: 4 mm
Frame distance	: 500 mm

Longitudinal- and transverse reinforcement
Longitudinal reinforcement are located at:
- keel construction
- tank partitions
- pass on in the engine foundation
- cabin sole in front of engine room partition to the chain locker partition.

Transverse reinforcement by ribs with knees, accumulated web ribs, tans on each rib.
The longitudinal- and transverse reinforcement are built in such a way that the water always runs to the lowest point.

Tanks
Double bottom tanks are used for the fuel tanks, which are located in the engine room and front compartment. Tank walls and sling partitions each 5 mm.
All fuel tanks are accessible through inspection covers.

Waterproof partitions
The Steeler NG65S Offshore Flyfish is constructed with three watertight compartments.
The bulkheads are being made in a continuous weld and are reinforced.
The watertight bulkheads are strengthened by T-profile.
Feed through of bulkheads are made with glands.

Locations of watertight compartments:
1. In front of forward cabin
2. Engine room
3. Storage compartment (aft of engine room)

Engine foundations
The foundation of the main engine is strengthened in order to minimize vibrations.

Bulwark
Bulwark 6 mm outside plate and 4 mm inside plate and interior provided with 8mm knees and 8 mm gunwale strip for the fitting of stainless steel sceptres of 1½"tube.

Rubbing strake
Alongside the hull plates there will be situated 2 rubbing strakes. This is a high and a low one at the swimming platform and stern. The high rubbing strake will be rejuvenated at the bow and completed at the stern. The lower rubbing strake profile goes from the swimming platform till frame 10.

Main deck
Anchor Chain locker is accessible through an integrated hatch on the foredeck.

Water gutter pipes
The anchor locker has aluminium drain pipes, the sliding roof recess in the pilot house has two aluminium drain pipes on port- and starboard side (optional). The deck water in the gangway and aft deck is collected in a water drain locker. This drain locker is positioned at the transition between aft deck and gangway and is drained overboard.

Stern
In the double curved stern integrated steps will be welded on port and starboard.

(Optional: In the middle of the stern a transom door is located, this transom door is provided with two hinges. The transom door can be opened 90 degrees by two hydraulic cylinders. The transom door provides access to the tender storage, the tender storage is made completely out of aluminium and is watertight.)

Cockpit
At rear of the cockpit there is an integrated seat in between the stairs (port and starboard) to the swimming platform.

3. PAINT SYSTEM

- A 2-components AWL-Grip or AlexSeal painting system is applied:
  - Protective primer
  - Fairing compound
  - Finishing filler
  - Finish primer
  - Premium Topcoat
- Engine room in gloss topcoat.
- Different colour hull and superstructure
- The entire paint system will be applied accurate, professional and Dust-free according to high boat building standards.
- Each yacht is separately surveyed by an independent paint-job surveyor.
- Various equipment will be anodised before painting.

4. CATHODIC PROTECTION

The Steeler NG65S Offshore Flyfish has anodes near the bow thruster, propeller shaft, propeller, rudder sand at the bottom of the ship will be placed.

5. SOUND AND VIBRATION INSULATION

Standard isolation hull and superstructure with foam core insulation. Soundproofing floor in saloon.

In general
To silence and absorb sound and vibrations as much as possible, all the engines, pumps, fans etc. will be set up flexible with hose connections connected to the pipes.

Absorbing
A sandwich construction consisting of sandwich plates, with a special layer of lead are mounted under the floors above the engine room.

Insulation engine room
Engine room entirely insulated and finished with perforated aluminium sheeting.

6. SAILING AND MANOUVERING

6.1 Propulsion installation

Main engines
2 x Cummins QSM11 Marine diesel engine, In-line, 6 cylinder 4 stroke, Turbocharged aftercooled, 10,8 litres, 526 KW (715 HP) @ 2500 RPM. Optional different engines depending on customers wishes can be installed.

- Common Rail fuel system, water-cooled turbocharger, water in fuel alarm.
- Engine Oil cooler
- Internal cooling system with heat exchanger
- 24 Volt electric starting motor – isolated ground, alternator 24 Volt – 80 amp.
- Available information via LCD display RPM gauge:
  Engine speed, coolant temp, oil pressure, battery voltage, intake manifold temp, engine percentage load, boost press, oil temp, fuel rate, engine room press, barometric press, trip hours, throttle percentage, total fuel used, total engine hours, trip fuel used
- Audible alarm and alarm reset key
- One dual throttle lever – digital throttle and shift lever head (DTS)

Gearbox
- ZF gearbox, Type ZF 85-IV
- Flexible coupling
- Flanged to engine
- Trolling
- Gearbox supports for flexible mounting
-

Propeller shaft
Stainless steel duplex shaft.

Propeller shaft tube/socket
Water lubricated propeller shaft installations will be installed.

Propeller
Bronze propeller, protected by keel-sole.

6.2 Steering installation

Stainless steel 316 rudder, with NACA profile.
Stainless steel rudder shafts and levers.
A complete steering installation with steering pump and hydraulic cylinder is installed.

6.3 Bow thruster

A SidePower 240 KGF electric bow thruster, single speed is installed.

6.4 Navigation

The yacht is equipped with the following navigation instruments:

- NSS EVO 3 12 inch, multifunctional display
- IS 42 Digital Display, depth, speed and temperature
- RS90 VHF
- 4G Radar
- Autopilot, heavy duty with NAC-3 computer and AP44 controller
- GS25 GPS antenna
- RF 300 Rudder Feedback

7. FUEL SYSTEM

Fuel tanks
Three integrated fuel tanks with a total capacity of approx. 4000 litres are installed.
Two tanks of 2000 L each are installed in the engine room on port- and starboard side.

On starboard recessed in the superstructure, a stainless steel filling station is placed from where the different tanks can be refuelled.

Fuel Supply
The fuel from buffer tank to side tanks is transported with a high capacity fuel pump.

Tank volume meter
On each fuel tank a tank measuring system with a digital reading of the equipment is placed in the cockpit.

Fuel Filters
A double fuel filter/ water separator is installed for means of redundancy. In addition the double filter is equipped with a water-in-fuel alarm.

8. BILGE SYSTEM

Automatic bilge pumps
Four 24V automatic bilge pumps with a capacity of approx. 65L/min are installed. The pumps are located in the engine room, in the foreship, midship and in the aft side of the yacht. Pumps are automatically connected outside the 24V main switch. The drain tube of the pumps are connected with the ventilated overboard pipes.
A manual bilge pump is delivered.

9. FRESHWATER SYSTEM

Freshwater tanks
One Polyethylene freshwater tank with a total capacity of approx. 1500 litres is installed in front of the ship under the cabin floor.
The tank is supplied with a filling pipe, hose and cap, which are situated in the filling station on starboard side and a ½" ventilation pipe with gooseneck. On the water tank a tank measuring system is installed with a read-out in the wheelhouse.

Water Pressure System
A Water pressure system, with an approximate capacity of 55 litres/min is installed.

Hot water System
Kabola HR500 central heating system is installed for floor heating and hot water supply.

10. WASTEWATER SYSTEM

The yacht is equipped with a 750 litre Polyethylene wastewater tank. All wastewater from the toilets is collected in this tank. The tank can be emptied automatically with a pump, which pumps the water overboard. An additional possibility is to discharge the wastewater tank in a marina through a dockside discharge (situated in filling station on starboard side).
All wastewater drains of the washing bowls, shower etc. are pumped directly overboard.
The wastewater from the shower is collected in a drainstation and pumped overboard.

All blackwater pipes are odor proof.

Toilet installation

Two Planus toilets are installed, 24V, Multi, soft closing.
All-in-one panels are installed for flush operation.

11. HEATING

Heating system
Kabola HR500 central heating system with floor heating in all interior compartments. All wet cells will have a design radiator.
Each compartment is controlled with its own thermostat.
The Engine room and storage are equipped with a radiator.

12. VENTILATION SYSTEM

Engine room ventilation
Integrated ventilation grills portside and starboard in the hull recess.

Bathroom
The bathrooms are equipped with forced ventilation.

Interior
Entire interior is ventilated.

13. ELECTRICAL INSTALLATION

The Electrical installation is executed according to the standards for the luxury yacht building. The electrical system has been designed to meet an estimated daily use and moderate charging times.

Digital Switching
Electrical system is installed with Empirbus/CANbus digital switching system, with 4 Empirbus modules (64 i/o channels).
System monitoring and operation through 10" touchscreen display mounted near helm station.

230 V AC System
The 230 V AC system is a single phase.

230 Volt Switchboard
A 230 volt switchboard is installed. Board fully equipped to switch over to shore power or 230 V inverter, automatic fuses for the 230 V system, measuring instruments for the voltage and ampere.

Shore Power
The shore connection will be connected from shore to isolation transformer. Shore power will not be directed to any sockets or users directly. This to prevent corrosion.
The shore connection will be placed at the transom.

The shore power exists off (Mastervolt):
Galvanic isolation transformer 3500W / 16A
Shorepower connection 16A, with stainless steel cover
Shorepower connection cable, 16A - 25m

Cords and Cables
All cord and cables are made of copper with a PVC insulation and connections by means of tinned lugs.

Inverter/Battery Charger
Two (2 pcs) Mastervolt Mass Combi Pro 24/3500-100A (2 x 3500 Watt inverter power) are installed. Input 24 VDC, output 230 VAC.

24 VDC System
The 24VDC system is free of grounding.

Batteries
8 x 225 Ah main batteries, 4 x 225 Ah. starting circuit and 4 x 225 Ah. bow thruster. All batteries are from Mastervolt and are AGM maintenance free. All batteries are fastened with straps in a welded construction.

Additional Battery Charger
A Mastervolt, type Chargemaster 24/30 - 3 outputs proportionally controlled battery charger will be installed in the engine room.

24 VDC main switch box
A 24 VDC switch box will be installed complete with an auxiliary switch, diode, Volt – and Ampere meter, automatic fuses for six lighting groups, automatic circuit breakers for 24 Volt users and three reserve groups.

24 VDC switch panel dashboard
A 24 VDC switch panel with switches for the windscreen wipers, navigation lighting, horn etc. will be installed near the dashboard.

Lighting, wall sockets and wiring
Light plan is upon customer wishes
Standard: Luxurious LED lighting 48x including dimmer, bedside lights LED, 6x. Wall sockets 16 pcs (double plugged).

TV
On a location of choice a 43 inch TV installed on a TV-elevator.

Audio
Fusion FM/DVD/USB/Bluetooth + 4 speakers

Navigation lights
LED navigation lights in accordance with international requirements.
The positions of the navigation lights are the following:
- 1 navigation light starboard
- 1 navigation light portside
- 1 stern light
- 1 combination anchor light/ steam light

Signal horn
Signal horn is located in the mast.

Windscreen wipers
2 double armed windscreen wipers will be mounted, a 24 Volt electric windscreen wiper, type LP, manufactured by Speich with synchronic interval (Speich dual control) with parallel arm and wiper. Including washing installation on front windows wheelhouse.

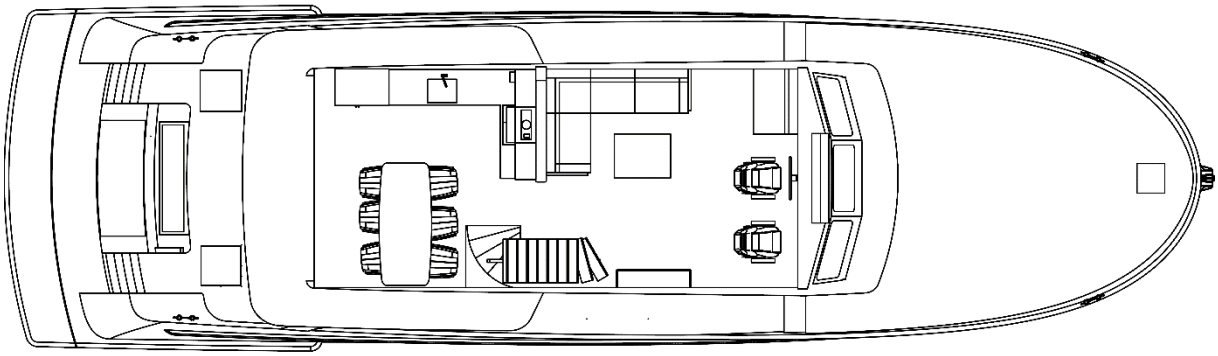
14. INTERIOR, CARPENTRY

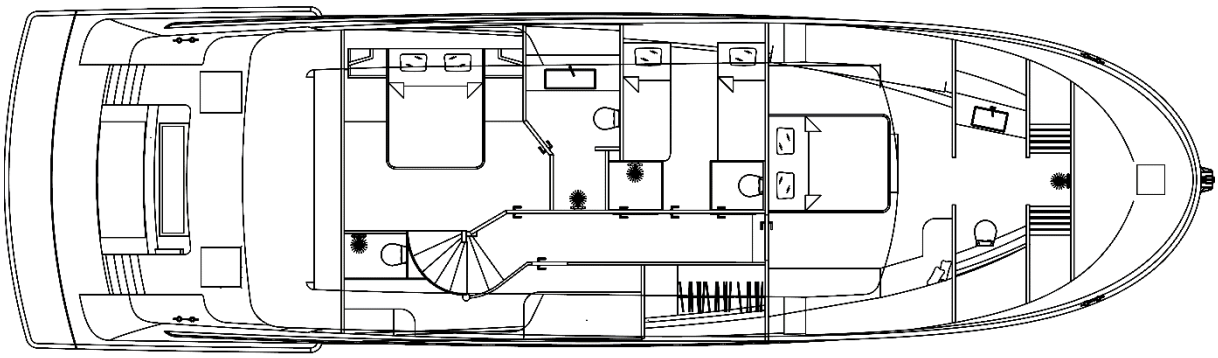
The interior lay-out is based upon customer wishes.

Design and construction carpentry
The interior will be built upon customer requirements: the standard specifications include 3 or 4 cabins with owners cabin in centre, different types of wood standard, luxurious upholstered panels, luxurious salon and cockpit table, Metroflor PVC flooring, full upholstery entire yacht including cockpit cushions (Steeler Collection), captain's chair, luxurious matrasses, stainless steel door fittings, stainless steel cabinet fittings and stainless steel hatch fittings.

Standard equipped with 2x wet cells with shower and toilets (electrical toilets), stainless steel sink unit, one handle mixer tab, shower with mixer tab and luxurious Corian Work surface.

Domestic appliances
Standard the galley is equipped with Luxurious Corian Work surface, Stainless steel sink unit, one handle mixer tab, 4-ring ceramic stove (Siemens), cooker fan, two 130 litre fridges with freeze unit, combi oven/microwave (Siemens), waste bin.





15. DOORS, WINDOWS AND PORTHOLES

Saloon/wheelhouse
Insulated double and frameless glass.

Hull
- 2 x Insulated tinted panorama windows in hull (high-impact resistant)
- 12 x Opening aluminium portholes with mosquito screens in hull recess

Superstructure
- 2x Flush opening hatch 510x510 mm. with mosquito screen and blind.
- 3 x Fixed flush insulated double glass ceiling windows with blind.

Door in Saloon
Aluminium entrance doors to saloon and wheelhouse, 4-pcs folding with insulated glass.

16. EXTERIOR

16.1 Anchor system
- 50 kg stainless steel polished anchor
- 60 metre galvanised 13 mm anchor chain

Windlass
Electric windlass with capstan 24VDC with deck push buttons.

16.2 Flexiteek
Standard equipped with Flexiteek on the cockpit floor.

16.3 Cockpit table
A luxurious cockpit table is fitted on stainless steel pedestal.

16.4 Nameplates
On both sides of the yacht Steeler logo and type of the yacht will be fitted in stainless steel.
On the stern in stainless steel character's name of the vessel will be placed.
The characters will be high-polish finished.

16.5 Guardrail
On the hull around the foredeck and gangways a guardrail will be placed.
Rail stanchions and rail made of 42,5 mm stainless steel tubes. Aluminium construction under stanchions is reinforced. Amidships on port and starboard a rail opening is located.
All welds are removed and polished.
Stainless steel fender strip around protection strip and bathing platform

16.6 Bollards and cleats
All cleats stainless steel 316.
In total 12 fixed cleats with rubbing plats under the bollards will be fitted.
All welds are removed and polished.

16.7 Boarding ladder

A stainless steel 316 boarding ladder will be delivered.
The boarding ladder is detachable and to be stowed away in the storage.

16.8 Swimming ladder

A fixed swimming ladder is mounted at the stern of the yacht.

16.9 Navigation mast

Aluminium design navigation mast on the roof of the wheelhouse, the mast is composed of four parts:

- A lowest, comparatively heavy profiled part
- two cross trees wings
- A smaller profiled upper part.

Foundations of electronics and navigation lighting to install are welded on the navigation mast.

Optional:
On the wheelhouse roof an aluminium mast is placed, that can rotate 180 degrees by a hydraulic rotation cylinder. The side plating of the mast foot, where the rotation cylinder is mounted on, is made of 20 mm aluminium. Quality of the aluminium is seaworthy aluminium EN AW-5083.

17. EQUIPMENT AND SAFETY

Mooring ropes
6 Luxurious mooring ropes, black, length 20m, 18mm.
The mooring ropes will be provided with an eye on one side.

Fenders
Six black DAN fenders, diameter ca. 38cm x 137cm height, each with an eye on each side and 14mmx2,5m luxurious nylon lines.

Diesel
The yacht is delivered with 1000 litres diesel.

Flags
Pulpit equipped with a stainless steel jack staff (brace), holder and flag.
Near the stern a stainless steel flagstaff holder will be placed with a stainless steel flagstaff and national flag.

Fire extinguishing system
In the engine room an automatic fire extinguishing systems installed.
Three portable fire extinguishers- 2 kg and three portable fire extinguishers - 6 kg with holders installed by arrangement with customer.

Floor engine room
In the engine room and in the storage an aluminium diamond plate/ checker plate floor will be placed.

18. Flybridge

Aluminium flybridge equipped with:

- Second steering position incl. steering wheel, throttles, bow thruster joystick (optional: stern thruster), Simrad NSS7 Evo 3 screen for navigation/ engine data.
- Sofa on steering position with flipping back rest, including cushions.
- Stainless steel railing around full flybridge.