

Hallberg-Rassy 412

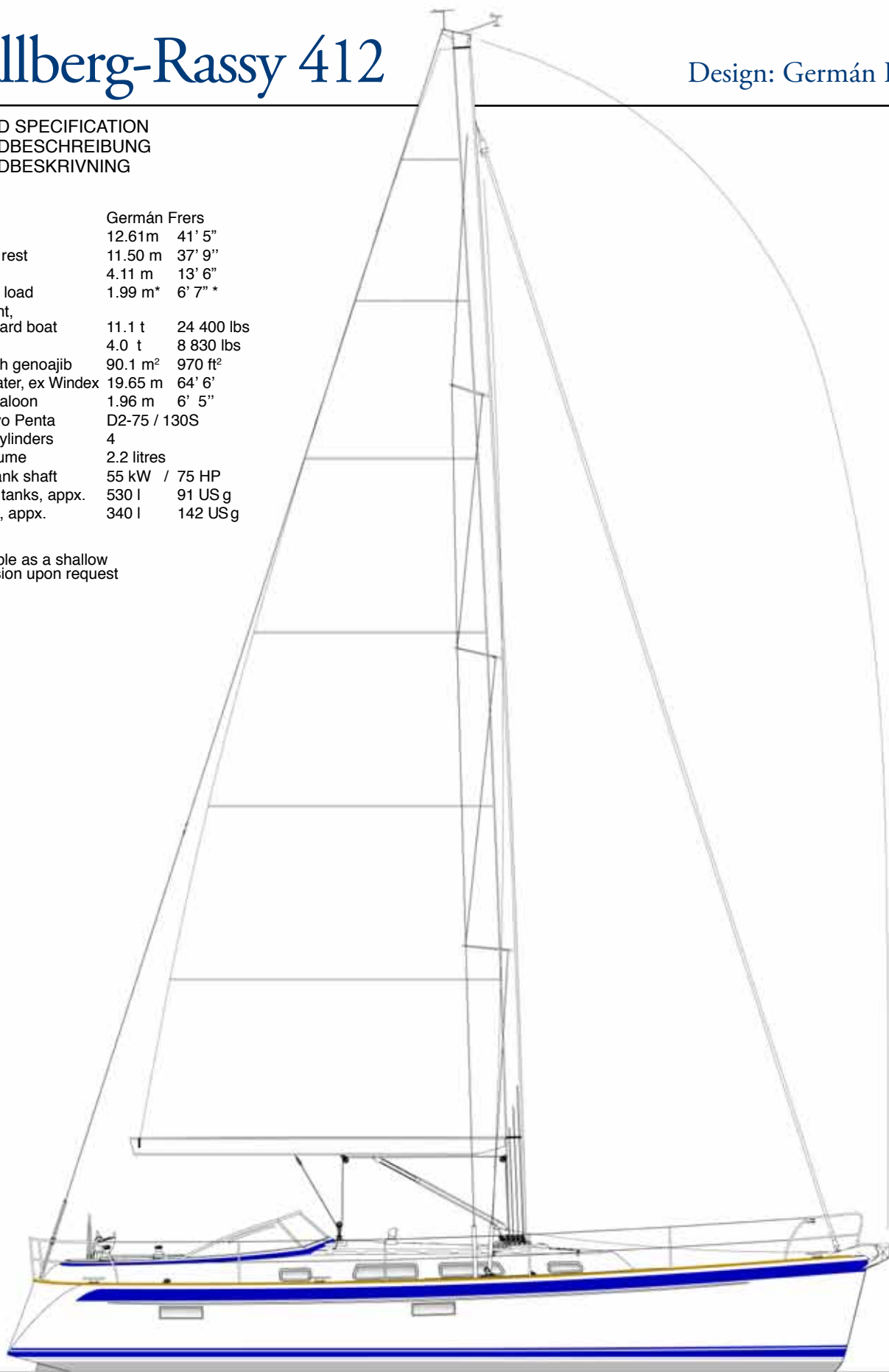
Design: Germán Frers

STANDARD SPECIFICATION
STANDARDBESCHREIBUNG
STANDARDBESKRIVNING

Main datas:

Designer	Germán Frers	
Hull length	12.61m	41' 5"
Waterline at rest	11.50 m	37' 9"
Beam	4.11 m	13' 6"
Draft, empty load	1.99 m*	6' 7" *
Displacement, empty standard boat	11.1 t	24 400 lbs
Lead keel	4.0 t	8 830 lbs
Sail area with genoajib	90.1 m ²	970 ft ²
Mast over water, ex Windex	19.65 m	64' 6"
Headroom saloon	1.96 m	6' 5"
Engine, Volvo Penta	D2-75 / 130S	
Number of cylinders	4	
Cylinder volume	2.2 litres	
Power at crank shaft	55 kW / 75 HP	
Fresh water tanks, appx.	530 l	91 US g
Diesel tanks, appx.	340 l	142 US g

*Also available as a shallow draught version upon request



Standard specification, English

Hull and Deck

Hand lay-up GRP hull with a vinylester based barrier coat. The hull is insulated above water line with Divinycell PVC-foam against heat and cold. Integrated rubbing strake with brass strip. White hull with blue decorative band in gelcoat. Under the mast support there is a steel beam moulded into the hull stiffener. Strong under floor reinforcements, bonded with composite. Lead keel with reinforcement bolted on with eleven M 24 stainless steel bolts. The stainless steel rudder shaft is carefully mounted with two self aligning bearings for low friction in all situations. Strong engine foundations of GRP for effective sound insulation. Deck, coachroof areas and cockpit are of sandwich construction, solid in parts, laminated to the hull.

Deck and deck fittings

Deck, toerail, cockpit seats, cockpit coaming, cockpit floor, and bathing platform have top quality teak laid in silicon rubber. Strong stem fitting and anchor roller. Under-deck shelf prepared for optional electric anchor winch (windlass, chain and bow anchor is an extra). Stowage beneath for fenders and lines. Two strong stainless cleats forward, aft and midships, all bolted with four bolts each. Double stainless lifelines. Two scuppers on each side which drain rain water overboard just above waterline to prevent dirt strips on the hull. Genoajib and mainsheet tracks with blocks. Genoajib block adjustable from the cockpit. Selftailing genoajib chrome winches, size 50 ST. Two 40 ST winches in the cockpit for halyards. The halyards are hidden in channels under the coachroof. Seven flush-mounted skylight hatches. Twelve aluminium framed port holes, eight of these are opening, plus four fixed hull portlights. Pulpit and pushpit have opening for easy access on board. Integrated bathing platform in transom.

Cockpit

Four cockpit lockers; on both port and starboard side there are dry stowage lockers, plus two additional aft. Wheel steering with big 122 cm diameter leather covered steering wheel. Single lever engine control. Panel for engine instruments in the steering pedestal within easy reach of helmsman. Alcove in the port side cockpit coaming. There is a separate gas locker accessible from the bathing platform with stowage for two optional 6 kg PK6 gas cylinders. Strong windscreen with side handholds, opening centre section and sprayhood over front part of cockpit. The sprayhood can be rolled away neatly into a protective cover. Sliding hatch of transparent milk coloured acrylic glass with teak handhold. On either side of this sliding hatch there are useful teak covered work surfaces, ideal as chart tables, etc. Chart tables and washboards in natural teak. Two washboards, the upper one louvered for ventilation. The washboards store in the cockpit locker.

Mast and rigging

Triple spreader deck stepped rig by Seldén. The mast is supported by a steel support with a mahogany cover. Furthermore, there is a steel beam moulded into the hull stiffener area under the mast support. Main boom with outhaul and two reefs controlled in the cockpit. Both reefs are single line reefs. German Copper system for main sheet; one line controlled from port side and one from sb. Under-deck genoajib furling and reefing system. Seldén rodkicker. Tackle backstay tensioner. Spinnaker

boom track and preparation for spinnaker boom and for topping lift are supplied as standard. Generous dimensions of standing and running rigging avoid fatigue during unrestricted ocean sailing. Turnbuckles from Seldén, aluminium protection tubes from Seldén. Deck light. Windex wind indicator on mast top.

Sails

Mainsail and furling genoajib made from dacron in special Offshore quality with leather reinforcements from Elvström Sails, Denmark. Two reefs in main, battens and sail bags.

Accommodation details

All interior woodwork in light mahogany matt silk finish. Flush locker doors with ventilation above. Floor is varnished teak wood with inlaid holly strips. Saloon ceiling has panelling with mahogany strips and ceilings in remainder of boat have light lining. Cushions on all berths in sandwich foam, 10 cm harder and 2 cm softer on top, totally 12 cm / 5" thick and resting on unvarnished, well ventilated boards to avoid condensation. Handholds are in all the right positions. All portholes are fitted with curtains. Curtains also under the skylights in the saloon and forward cabin.

Saloon

The settee offers comfortable seating. On port side an L shaped 2.00 m / 6' 7" long sofa, on starboard a straight 2.00 m / 6' 7", with backrests with upper hinges such that the whole width of the berth can be used for sleeping accommodation. Between the settees a strong table with foldable sides. Top opening bar in the table. Headroom in saloon 1.96 m / 6' 5 1/2".

Galley

Big work top in solid composite stone material with strong, all round mahogany fiddle rail. Carefully insulated fridge with Isotherm electric compressor for chilling and a basket for small items. Extra deep, double sink. Two burner gas cooker with oven, well gimballed with fiddle rails and locking device for oven door and also for the cooker when in use in the marina. Electric lighting of burners, no matches are necessary. Safety switch on gas pipe. Crockery locker and cutlery drawer. Bread board. Room for saucepans and other kitchen utensils. There are special places for the waste bin and other items.

Heads Compartments

Two heads with separate showers with plexi glass doors. Bulkheads and lockers in white laminate. Teak grating. Wash basin and countertop in solid composite stone material. There is a large mirror. Shower water drained by pump directly overboard without going into bilges. Hand switch for shower pump for utmost safety. Strong, reliable pump action toilet. 2 x 70 litres holding tank, emptied by gravity or by deck pump out. Cupboard below the washbasin. The aft heads has ventilation through opening deck hatch. The forward heads has additionally ventilation through a deck hatch and a ventilator. The deck hatch has milk coloured glass to allow light but obstruct view into the heads. There is a wet locker.

Forward Cabin

The forward cabin is spacious and has a seat for dressing and undressing. Two 2.14 m / 7' long berths, foot end 68 cm and aft end 206 cm wide. Ample stowage above and below and in addition a number of lockers. Hanging

locker. Opening skylight with curtain under.

Chart Table/work table

A comfortable work table seat. Electric panel to the right of the navigator. There are drawers and stowage slots.

Aft Cabin

The aft cabin has a hanging locker, a seat and a comfortable double berth, size 2.07 m where it is longest and 2.05 m where it is shortest. 1.52 wide where it is widest and the foot end 1.20 m. Stowage room below and above.

Engine and Engine Room

Engine: Volvo Penta D2-75/130S, 55 kW/75 HP 4 cylinder 2.2 Litres cylinder volume. Mounted with rubber feets on strong foundations and saildrive to reduce vibration and noise. Twobladed folding propeller. Water-cooled rubber exhaust pipe. Freshwater cooled engine. The hot freshwater circuit is led into a 40 L / 11 US gallon well insulated hot water tank. Due to the good insulation water remains hot for many hours after the engine has been run. The engine is served by a separate 75 Ah 12 V starter battery. There is a large filter for cooling water. There is an electric engine room fan.

Diesel

Approximately 340 litres / 91 US gallon under the port side saloon sofa. Between tank and engine there is a further large water and coarse filter in addition to the one on the engine.

Water

Fresh water capacity is approximately 530 litres / 142 US gallon in three tanks, each with a gauge. The water goes to a pump and then on to a 2 litres pressure equalising tank, and from there via a manifold is distributed to a 40 Litres / 11 US gallon hot water calorifier (heated by 230 V supply and the engine's cooling water) and the cold water system. As soon as a water tap is turned on the water which is under pressure in the pipes starts to flow. As soon as the pressure reduces the electric pump begins to work, and will continue until the pressure is built up again after closing tap. Filling of water tanks is through deck inlet. There are two bilge pumps; one manual and one high capacity electric emergency bilge pump that is floodable.

Electricity

Two separate circuits, one with 12 Volt and 75 Ah start battery for engine start and 12 Volt 240 Ah deep cycle flat plate traction batteries for general use on board. Charging of batteries is by 115 A alternator from engine. Lighting is located in all the important positions. There are adjustable lights above berths and settee. 12 V electric sockets at inner chart table and in the cockpit. Electric panel with circuit breakers at inner chart table. There is a water and diesel meter. International LED navigation lights and LED steaming light for low power consumption. The electric panel has provision for additional outlets. A wiring diagram is supplied with each boat.

Refrigeration

An Isotherm refrigeration with electrical Danfoss compressor unit is fitted for the icebox. The unit is economical to run and is operated from the 12 volt supply.

Instrumentation

Above the sliding hatch Raymarine instruments; one

i50 Speed, one i50 Depth and i60 Wind and magnetic compass. On the steering pedestal: RPM-meter, engine hours counter, oil pressure indicator and voltmeter for engine start. Tank meters for fuel and fresh water, located at the electric central above the inner chart table.

Ventilation

Seven hatches, eight opening port holes, companionway washboards, two Dorade vents in the saloon and two electrolux type ventilators in front of the mast.

Steering

Wheel steering with twin spoke 122 cm leather covered stainless steel steering wheel. Direct link transmission for direct and exact feel. Emergency tiller. Illuminated compass and single lever engine control. The rudder has double self-aligning bearings for low friction in all situations.

Safety and General

All outside skin fittings are speedily and securely sealed by using ball-valves with Delrin-sealer. Double hose clips are used under water. For the toilet special non-diffusing hoses are used. All electric cables are, where possible, laid in special tubes and where this is not possible, cables are safely loomed away from the hull. There are large limber holes so that any water can easily drain to the bilge. The bilge is accessible by a removable inspection opening in the floor board. Inspection hatches for easy access also to sea cocks and speed/depth transducer. Three fire extinguishers; one fitted to the saloon table, one in the forward cabin and one in the aft cabin.

Type of Finish

The interior is treated with a silk finish varnish. Interior GRP parts are covered with two coats of topcoat. The underwater hull has two applications of epoxy primer and two coats of antifouling.

Certification

The boat is CE certified by Germanischer Lloyd and a CE plaque for category A (unlimited ocean voyages) is supplied.

Loose Equipment

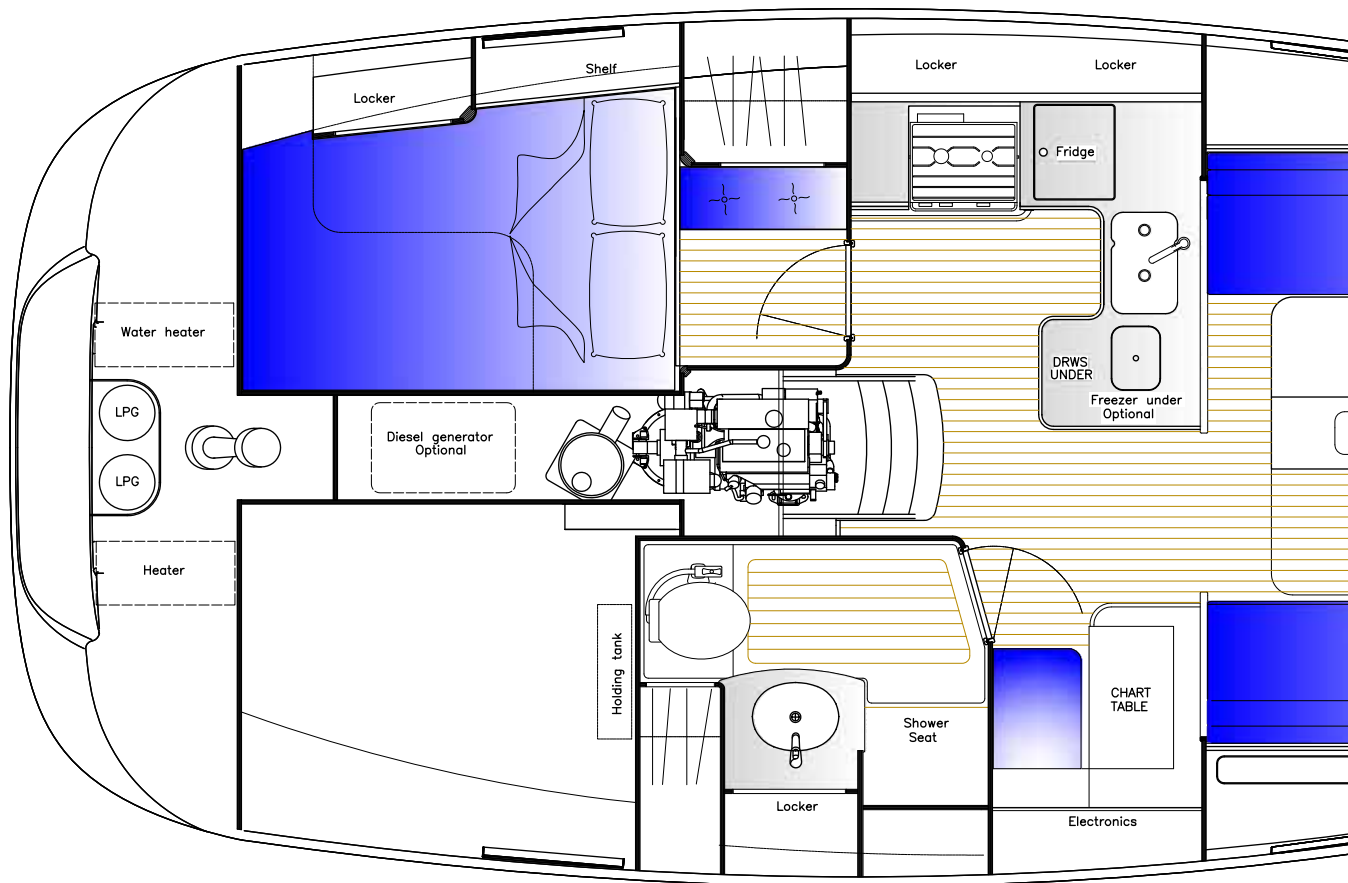
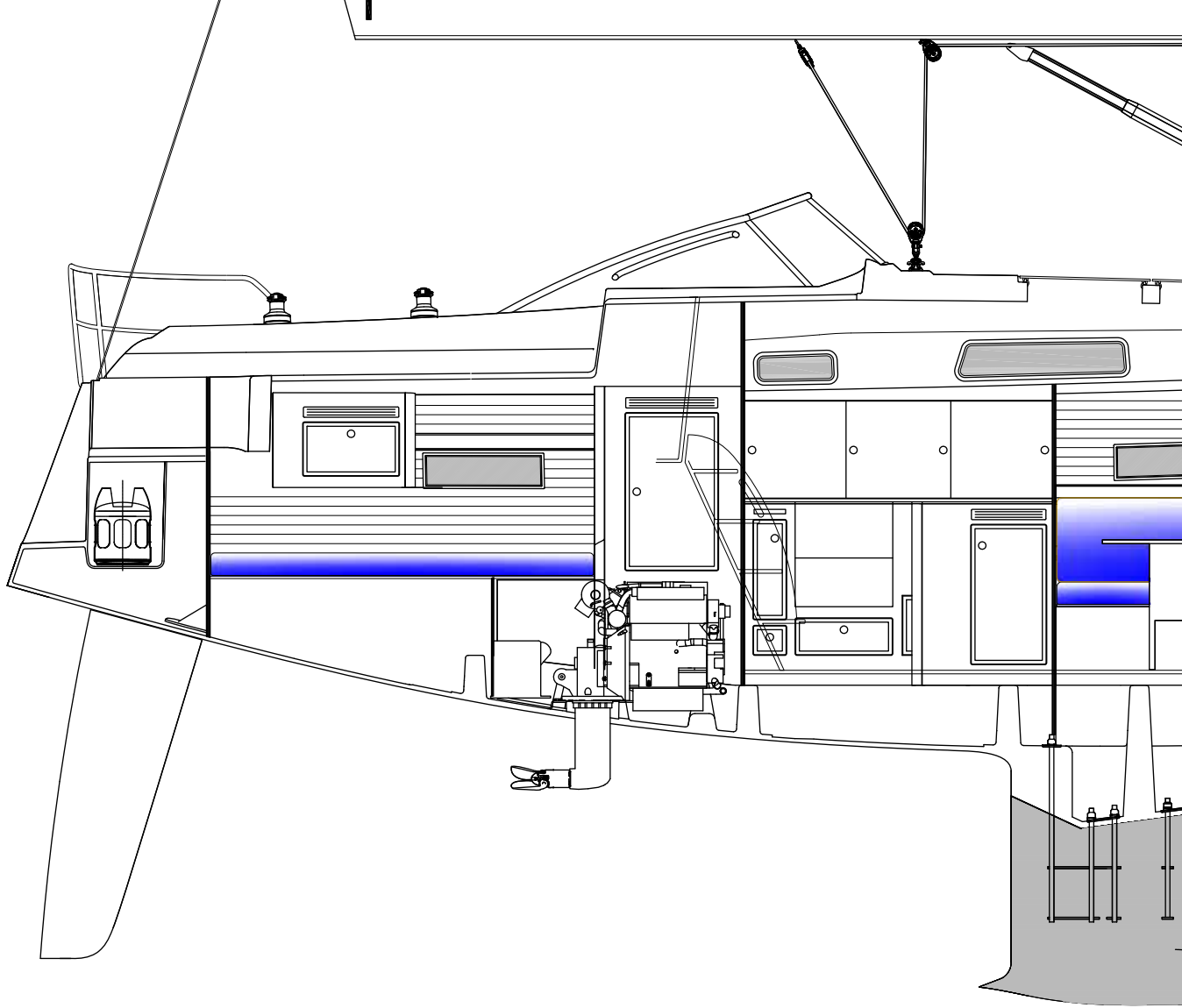
- Flagstaff
- Boat hook
- Cockpit table in teak
- 6 Fenders, 55 cm / 22"
- 4 Mooring lines 10 m / 33', 16 mm
- Emergency tiller
- Main sail cover (not supplied if in mast furling is ordered)
- Two winch handles; one long and one short.
- Spare bulbs

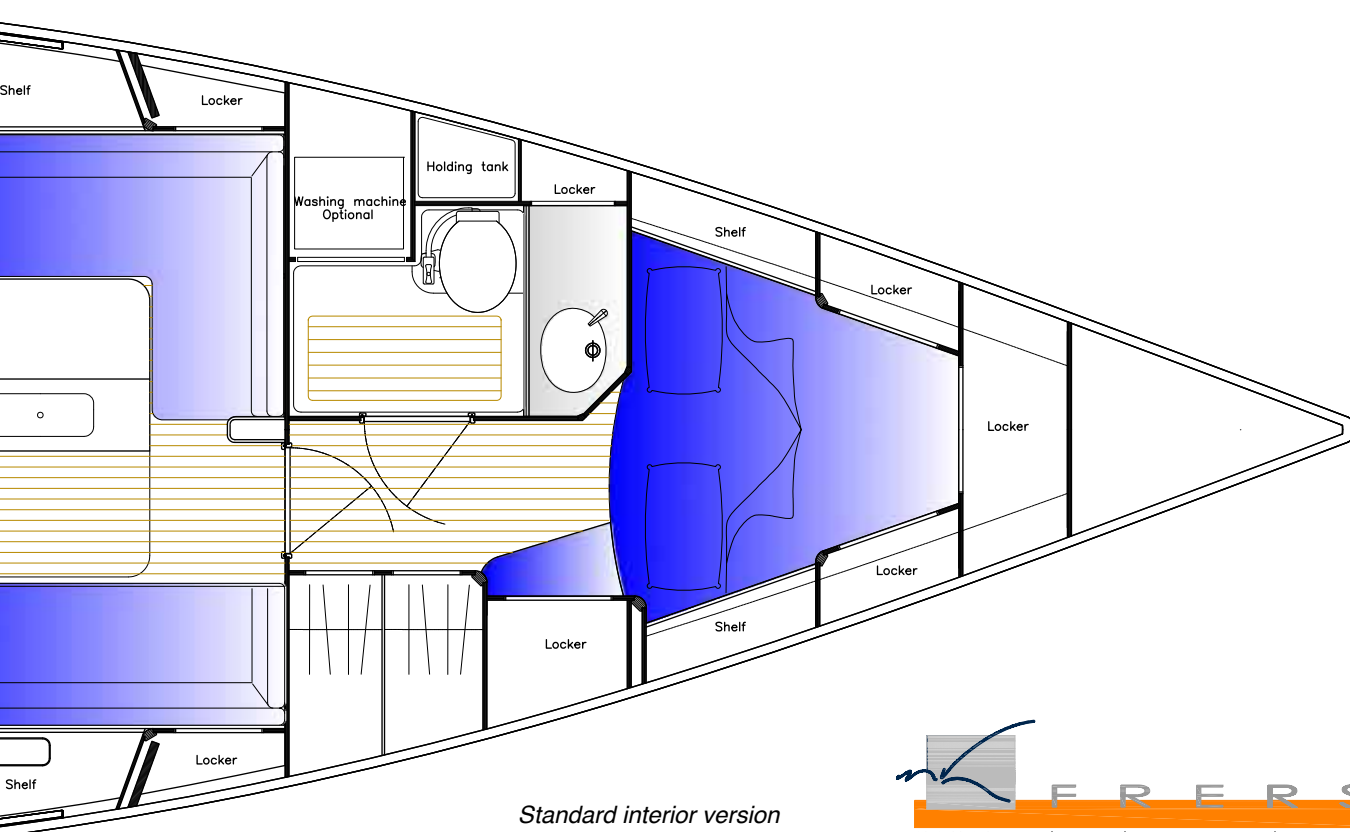
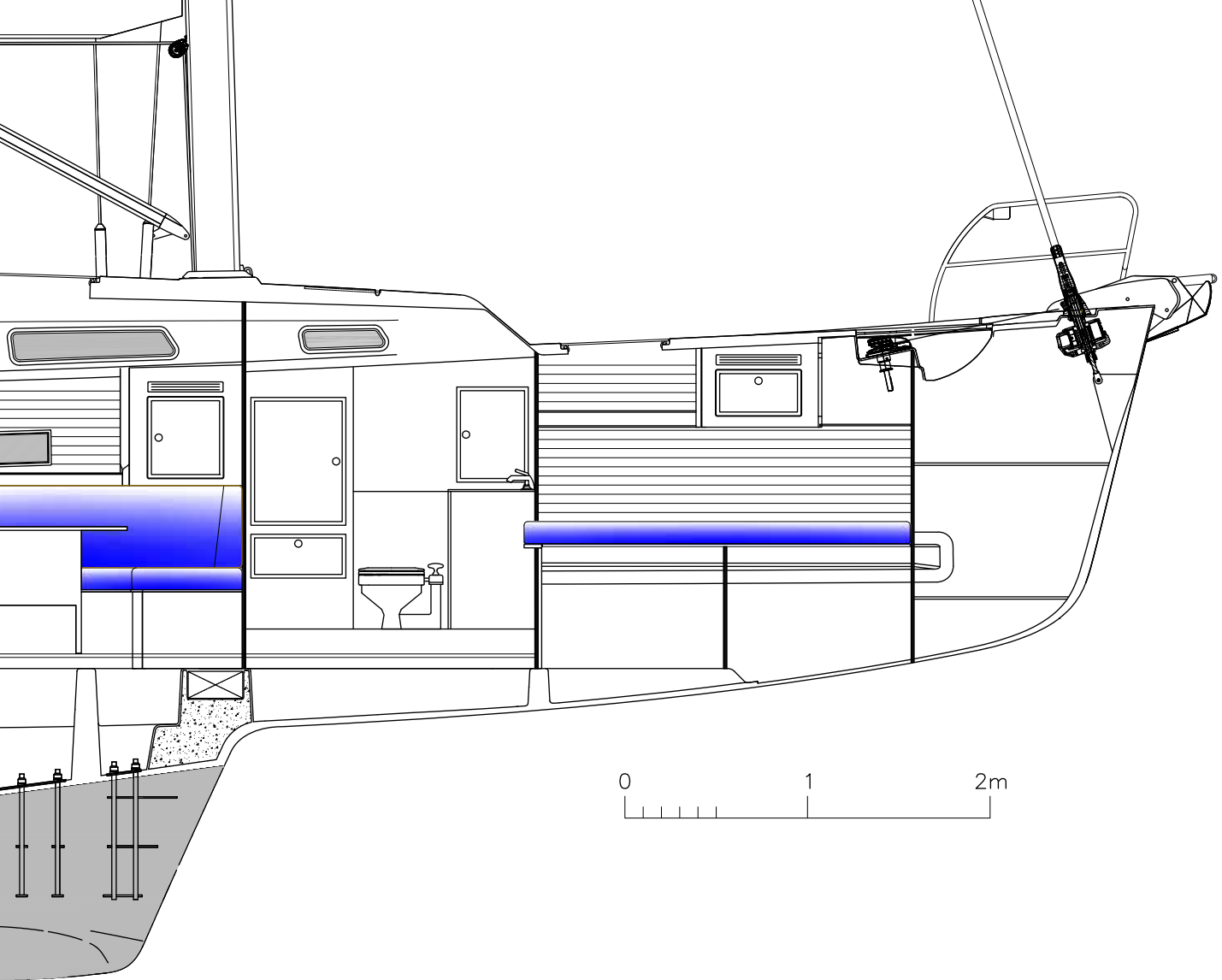
Modifications reserved.

Chosen extra equipment may affect this standard specification.

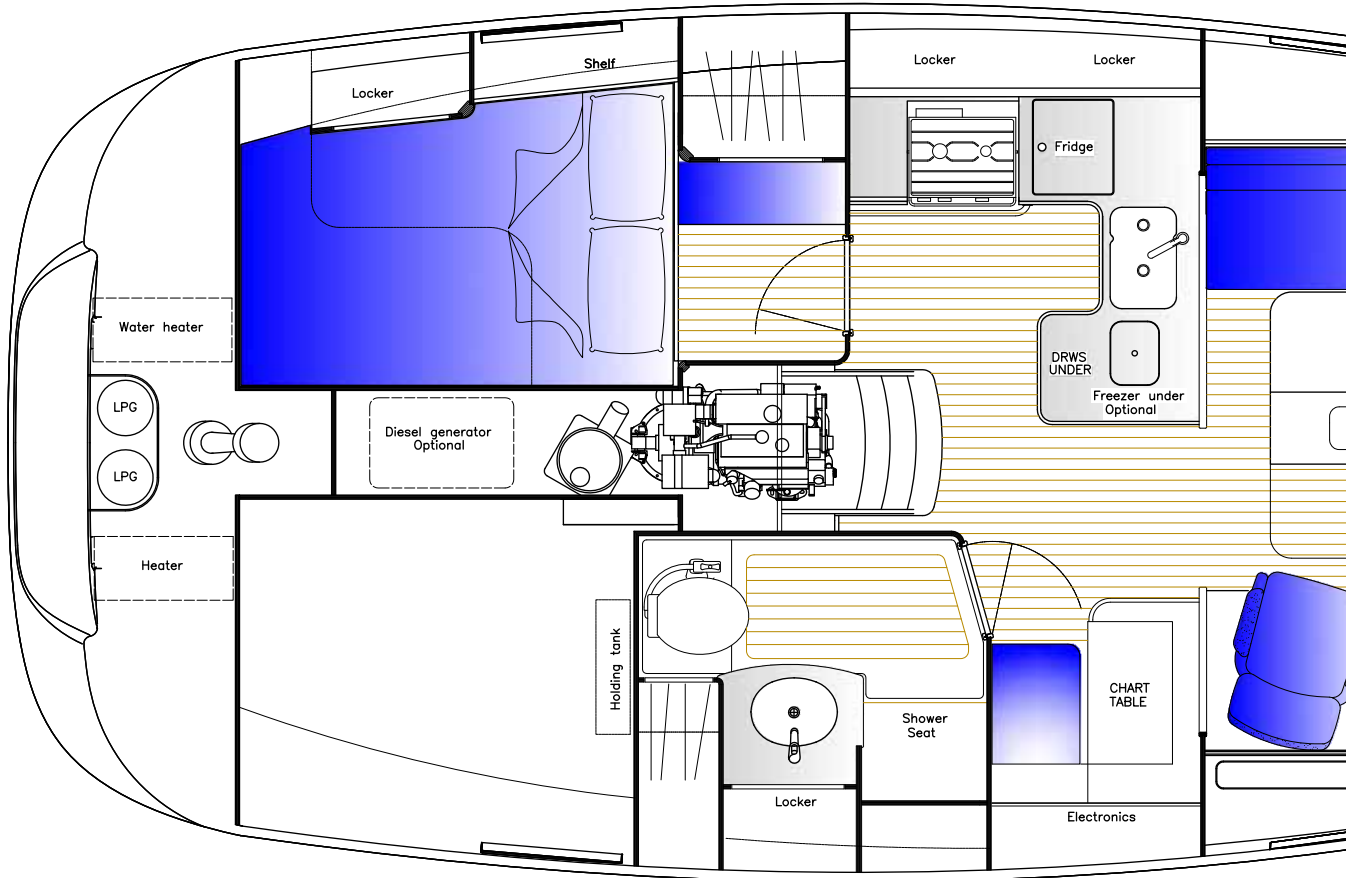
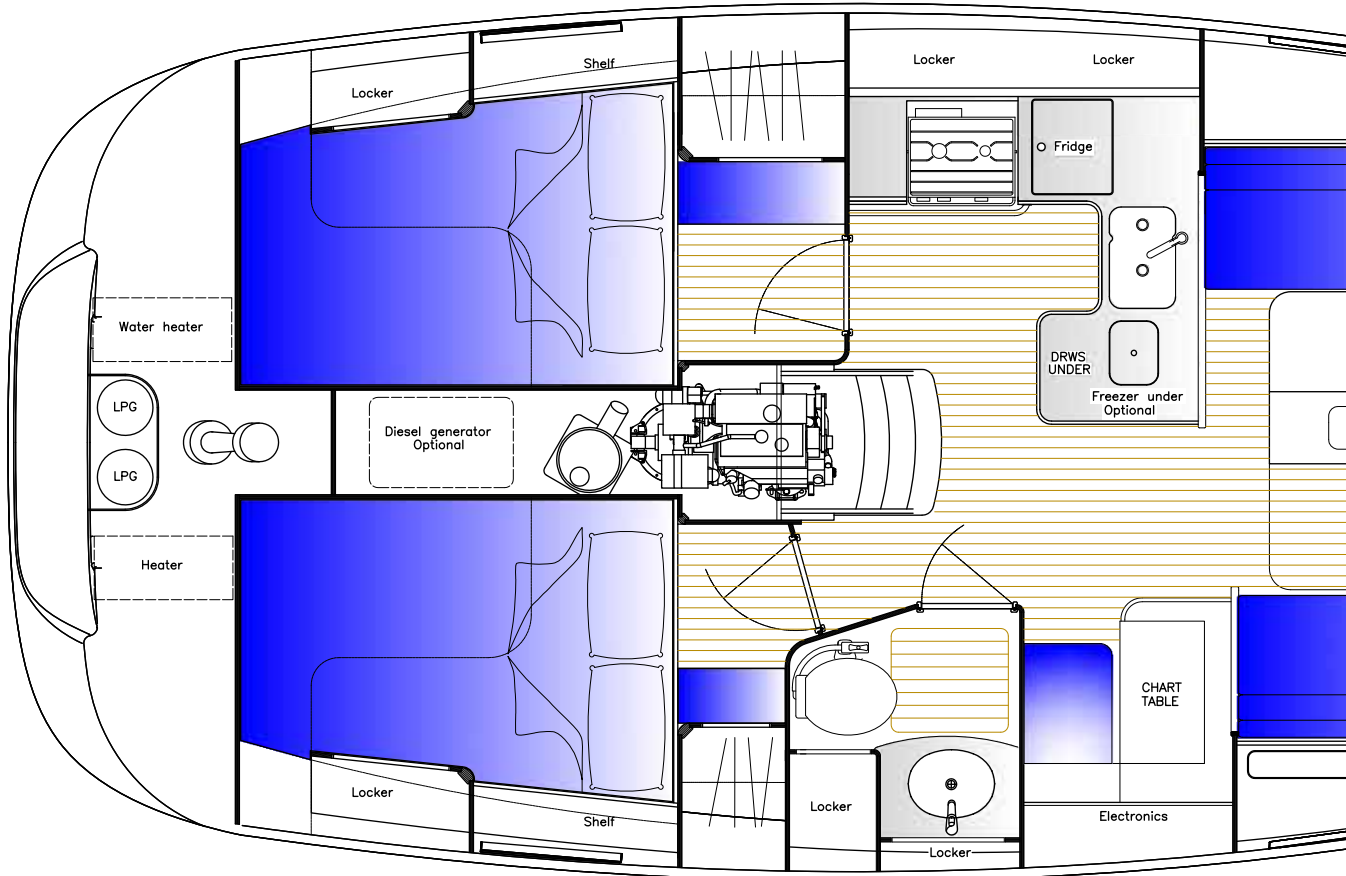
Drawings are for orientation only. Measurements are not to be taken from these drawings.

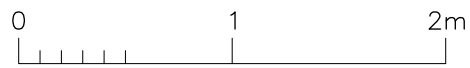
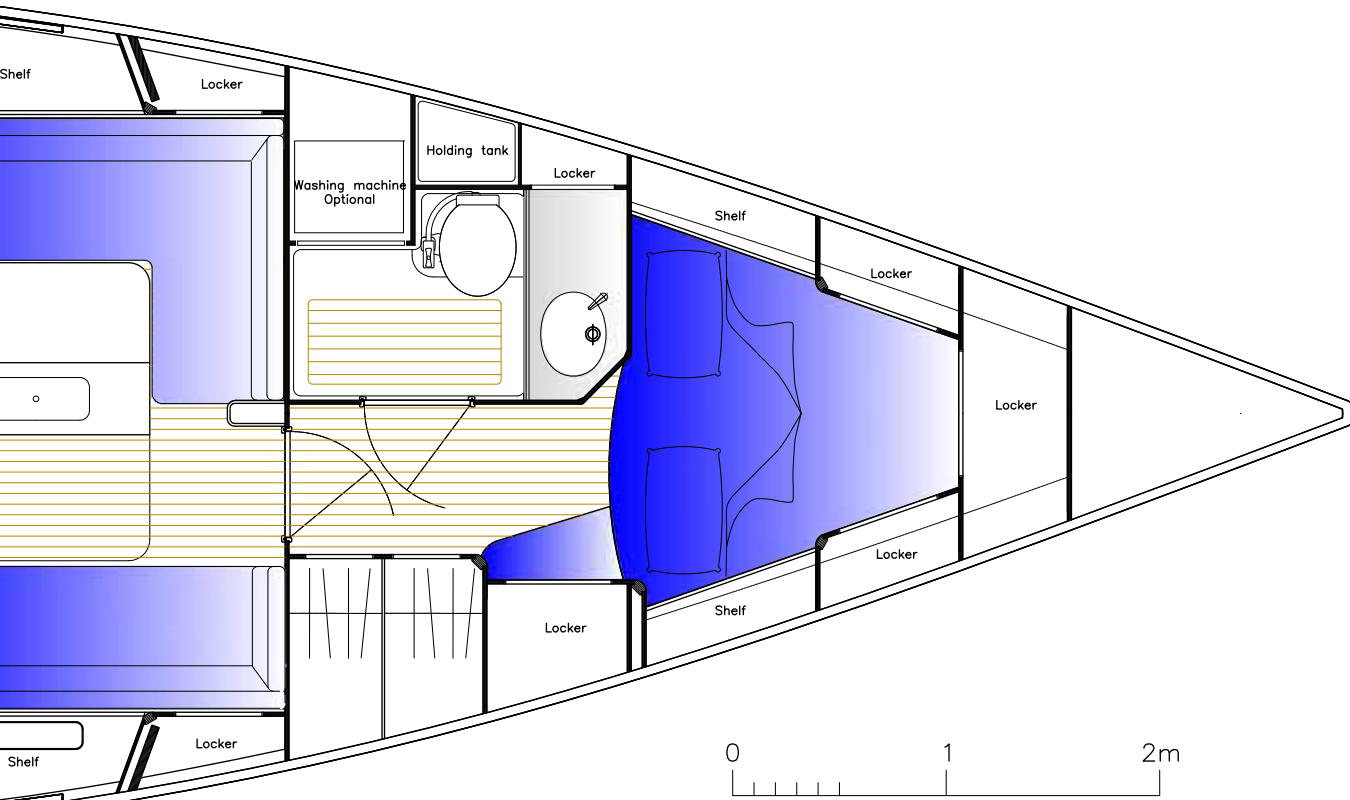
Drawings and photos show optional equipment.



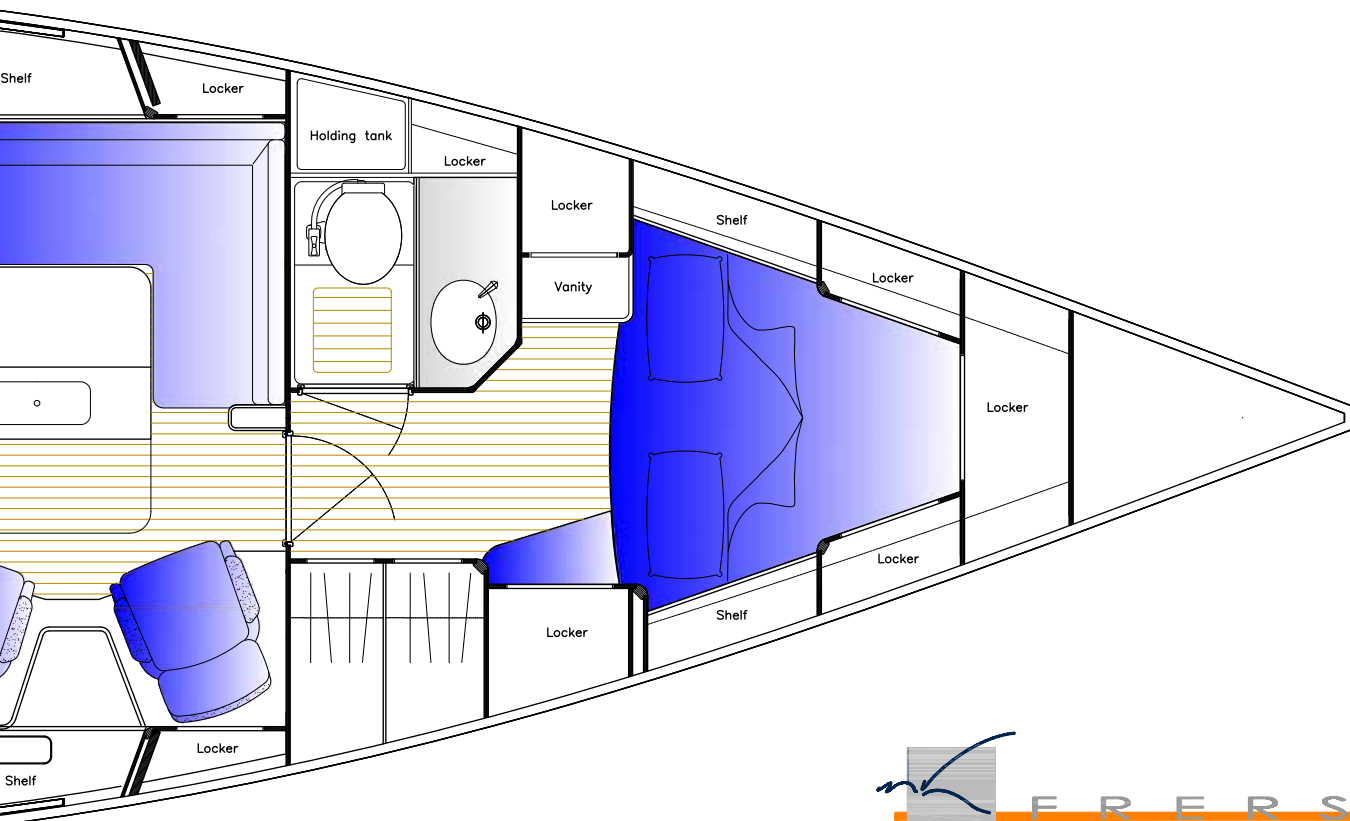


Standard interior version

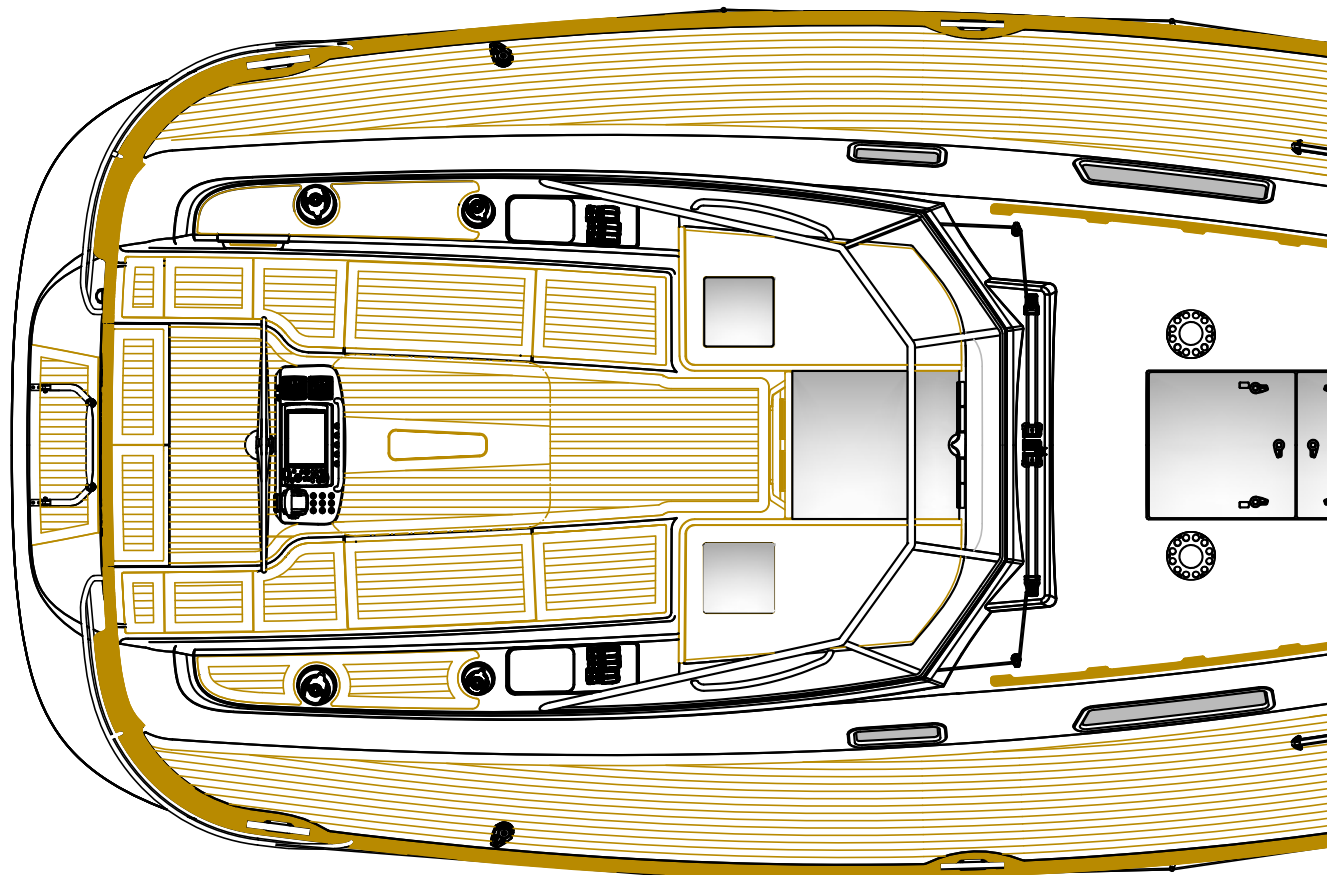
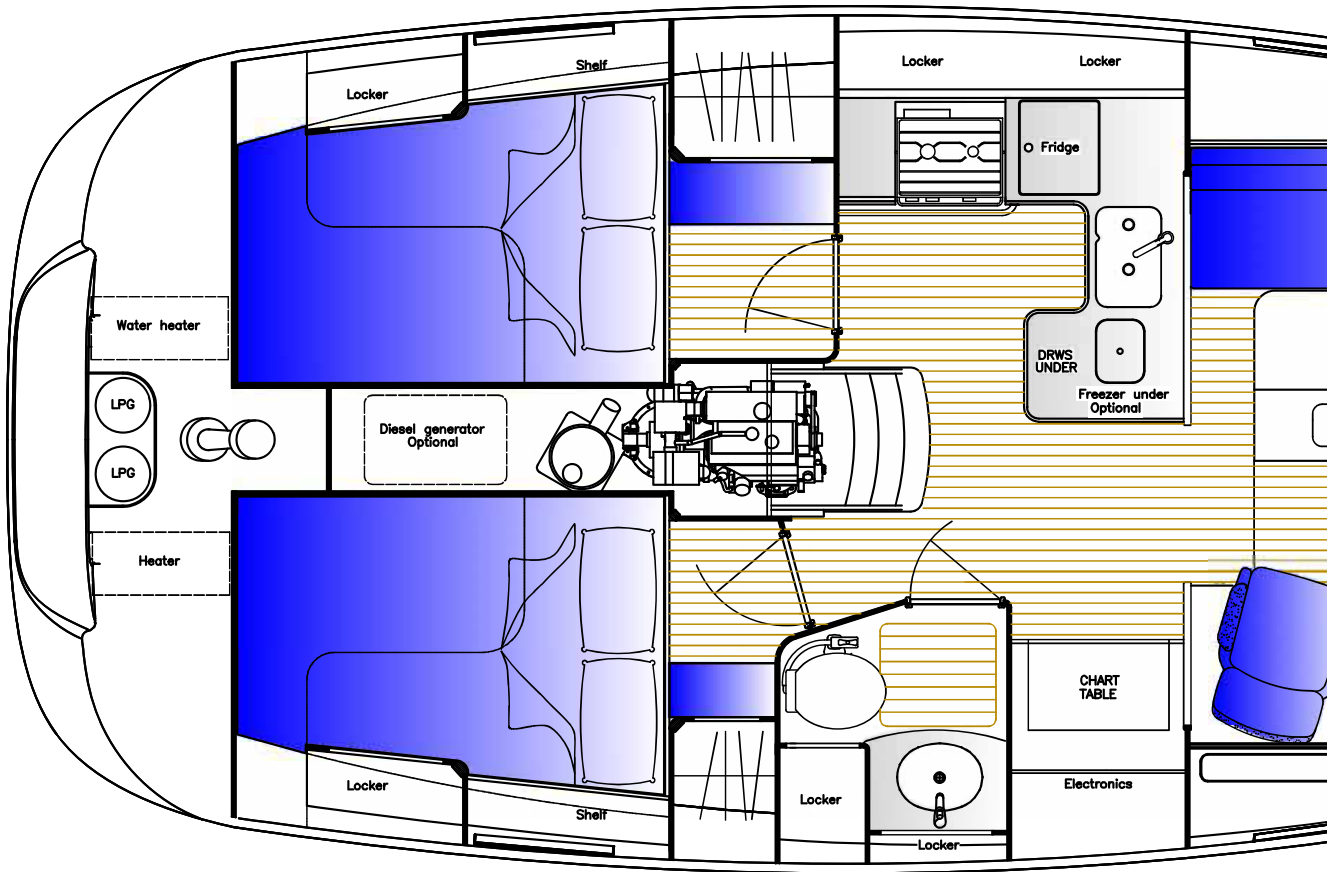


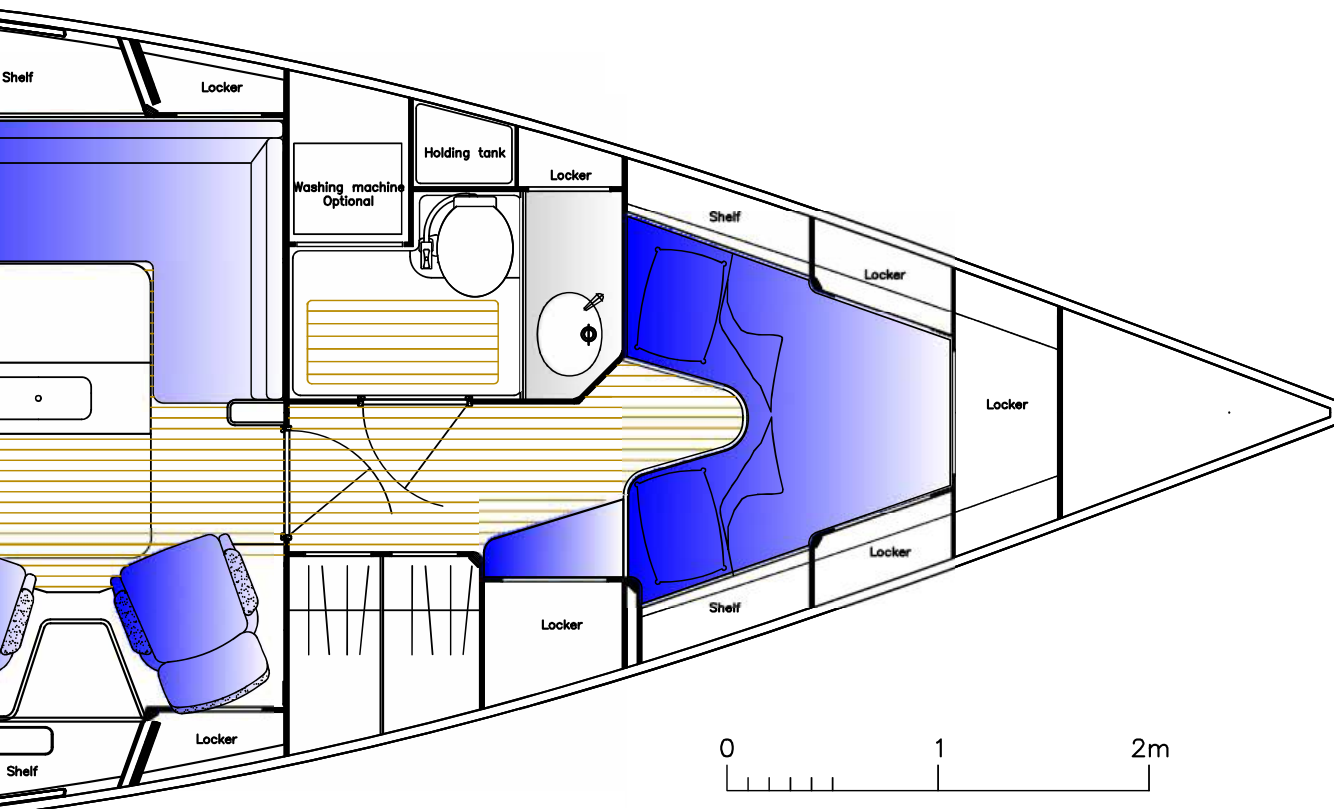


Optional extra aft cabin with two heads

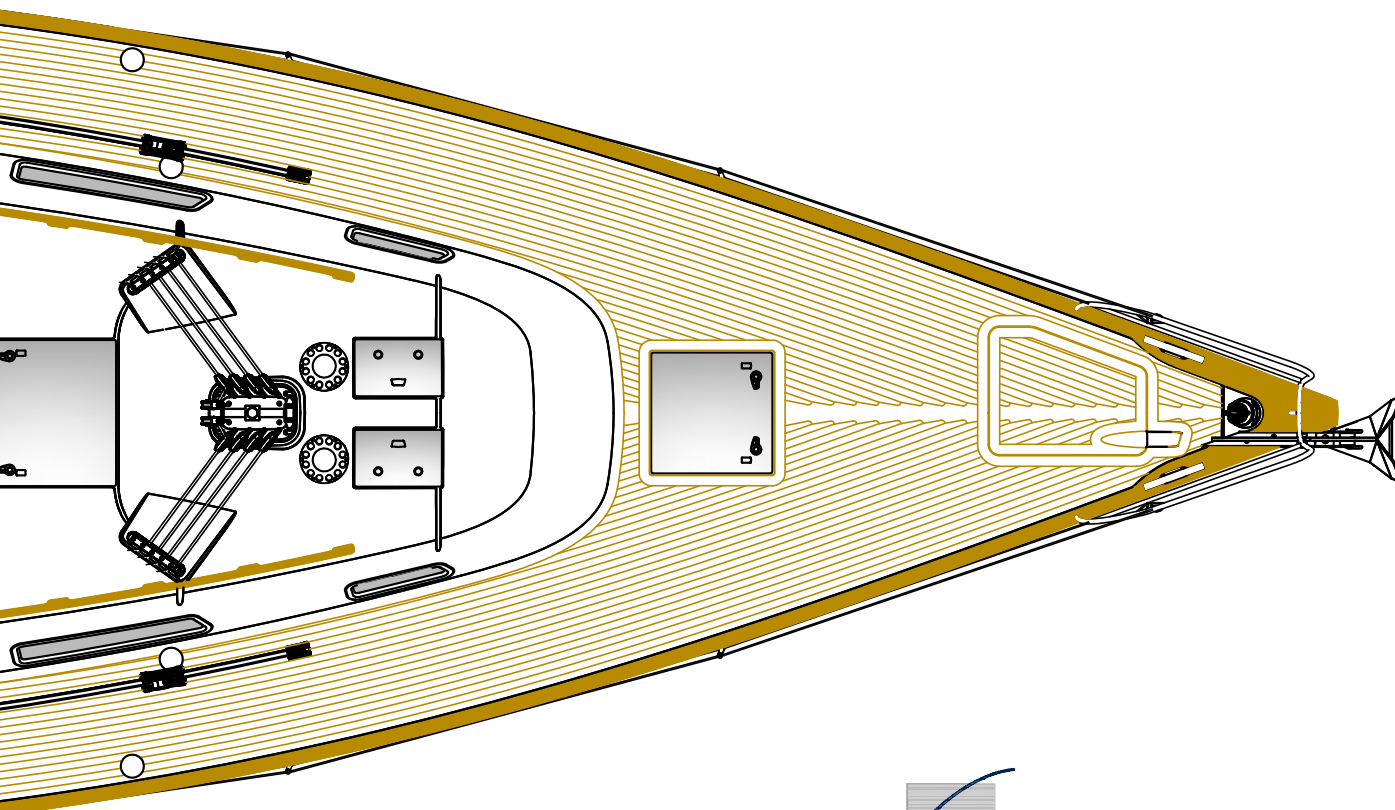


Optional armchairs in saloon, optional larger V cabin and smaller forward heads





Optional twin aft cabins, armchairs in saloon, nav station without seat and split V cabin berths



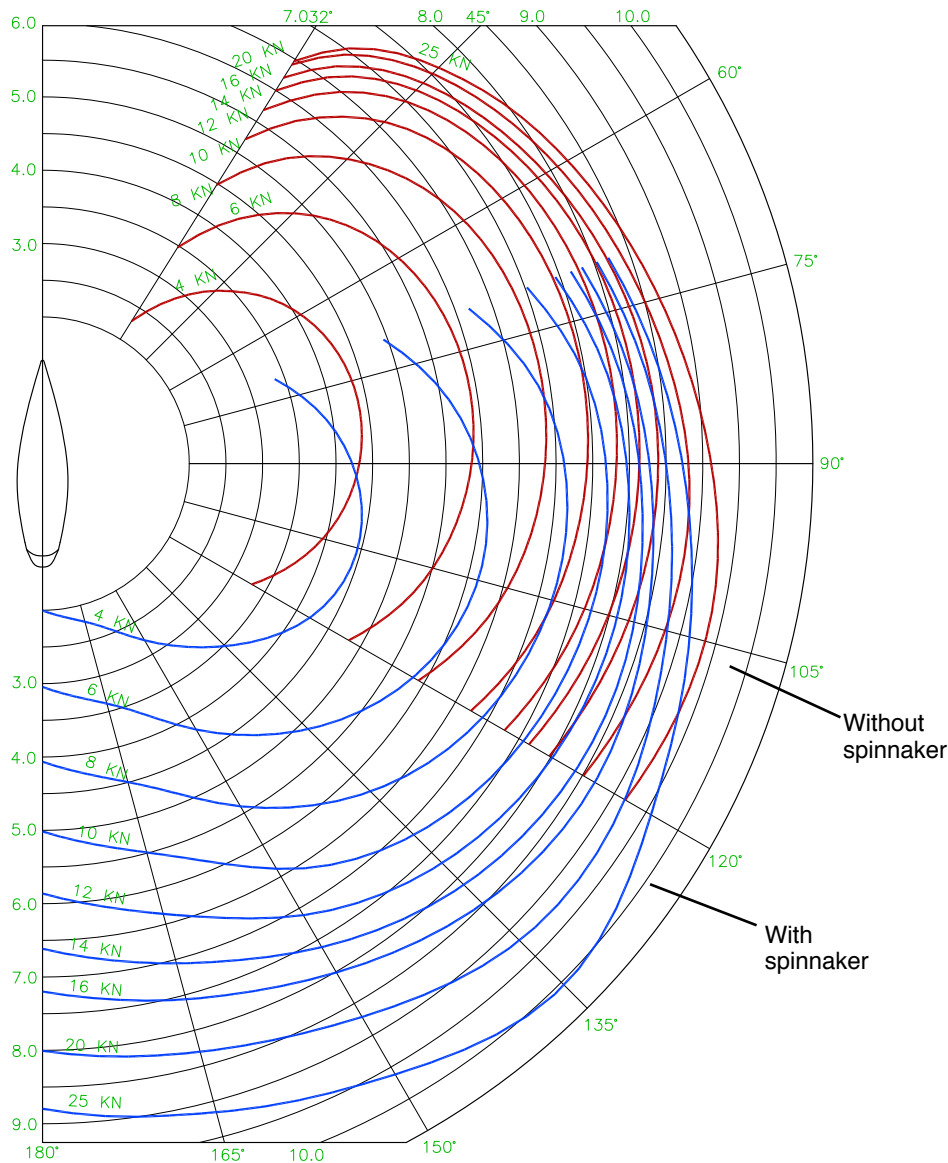




Rassker⁴¹²

Hallberg-Raas⁴¹²

Speed diagram / Geschwindigkeitsdiagramm



Comments by Germán Frers:

This diagram shows average speed, not top speeds in various wind conditions and sailing angles. They can be used as a guide to sail the boat at best using the most efficient wind angles upwind and downwind which yield the best VMG (speed made good)

Kommentar von Germán Frers:

Dieses Diagramm zeigt die Durchschnittsfahrt, nicht Topfahrt, in verschiedenen Windstärken und Richtungen. Das Diagramm kann als eine Orientierung auf Trimmfahrten benutzt werden, um die richtige Höhe am und vor dem Wind zu finden.

Kommentar av Germán Frers:

Diagrammet visar genomsnittsfarter, ej toppfarter, i olika vindstyrkor och vid olika vinklar mot vinden. Diagrammet kan användas för att hitta rätt VMG (effektiv fart mot mål) på kryss såväl som på undanvind.



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