

LUMINOSITY



THE EXPERT'S VIEW

One of the most significant yachts recently completed, LUMINOSITY benefits from years of design work and construction. She has massive volume (5,844 GT) as a result of 3m headroom in places. Amazing views through 811 m2 of floor to ceiling windows. 12 staterooms, a conference room, hospital, gym, and an incredible beach club with pool. Commercial helicopter capability, PYC certification, diesel electric propulsion and many green attributes and the ability to spend 12 hours at anchor, silently, on battery power are but a few of her stand out features.

107.6 M/ 353'00"

SPECIFICATIONS

BUILDER	BENETTI
BUILT/REFIT	2020/
LENGTH: (M/FT)	107.6 / 353'00"
BEAM (M/FT)	17 / 55'09"
DRAFT (M/FT)	4.55 / 14'11"
HULL MATERIAL	STEEL
STATEROOMS	12
GUEST	27
CREW	37
CRUISING SPEED	10 KNOTS
MAX SPEED	16 KNOTS

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BRIEF TECHNICAL SPECIFICATION

00. GENERAL

The vessel described in this specification is a diesel electric motor yacht with a displacement hull, equipped with six diesel generators (plus 1 for emergency), battery pack, two Azipod propulsion units and two bow thrusters.

Reference GA: 272-0101-22

The hull is built in steel and the superstructure is built in aluminum alloy.

- **Builder:** Azimut Benetti Spa, Benetti Shipyard
- **Exterior designer:** Zaniz Jakubowski /Reymond Langton Design /Giorgio M. Cassetta
- **Interior designer for Owner's and guest's areas:** Zaniz Jakubowski Design
- **Designer for all external décor:** Azimut Benetti Spa, Benetti Shipyard and Zaniz Jakubowski Design
- **Interior designer for crew spaces, pantries, galley and wheelhouse:** Zaniz Jakubowski Design

DIMENSIONS AND CHARACTERISTICS

LOA	353'00"	107.60m
Beam Max	55'09"	17.00m
Max Draft	14'11"	4.55m
Flag	Any of the Red Ensign Group	
Gross Tonnage	5,844 GT	
Fuel Tank Capacity	105,669 USG	400,000 L
Ballast Water Capacity	49,136 USG	186,000 L
Fresh Water Capacity	21,134 USG	80,000 L
Helicopter Fuel: Jet A1 or JP5	1,850 USG	7,000 L
Max Speed at Half Load	16 knots	
Cruising Speed at Half Load	10 knots	
Range at 10 knots and 650kw Hotel Load (Half Load)	8000+ Nautical Miles	
Accommodation for Owner & Guests	1 Owner's suite on Owners Deck	
	11 staterooms on Lower Deck, Main Deck, Owners Deck and Bridge Deck including one 4 berths children stateroom and one Pullman berth in Owners Deck blue guest stateroom.	
	Total: up to 27 guests	

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Accommodation for Crew	1 x Captain's cabin on Bridge Deck 1 x Officer cabin on Bridge Deck 10 x double crew cabins on Lower Deck 1 x triple crew cabin on Lower Deck 1 x quadruple crew cabin on Lower Deck 8 x Officer cabins on Lower Deck Total 37 crew
Common Areas	Guest area: main salon, main stairs and corridor, beach club, gym (equipment is Owner's supply), Hamman, lower deck lobby with embarkation shell door, moon lounge, external areas, hospital Crew area: crew mess, crew galley, crew lounge, main galley, pantries, crockery store Technical space: cold rooms, cigar room, flower room, wine room, laundry, heli-fuel room, battery room
Classification and Certificates	Classification Society: Lloyd's Register of Shipping Class Notation: ✠ 100 A1 PASSENGER YACHT [✠] LMC, UMS, SCM, ECO, IWS, SDA The helicopter landing area on sun deck (and its fire and fuel facilities) is certified by an industry recognized aviation body (HCA, Helideck Certification Agency), in compliance with Annex 2 of the Passenger Yacht Code.

01. HULL AND SUPERSTRUCTURE CONSTRUCTION

01.01 Hull	The hull and decks are entirely built of welded steel (shipbuilding quality, grade AH36), according to the Classification Society rules: AH36 is used up to main deck only (including forecastle).
01.02 Superstructure	The superstructure is built of AA5083 H321 light alloy (for plates) and 6082 T6 light alloy (for extruded stiffeners and large extrusions used for decks, bulkheads and sides). Depending on strength/stability calculations and detailed design, the first tier is built (in whole or in part) by means of the same steel of the hull (shipbuilding quality, grade AH36).

02. OUTFITTING

Hull Paint	The hull top sides and superstructure are painted White
Windows	Where allowed by PYC, windows throughout the superstructure are fitted from the outside, glued and sealed with an appropriate UV resistant marine adhesive, onto an aluminum frame.

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Total glass surface 811m² for a total of 120 tons. Where required by PYC, the windows are fire rated.

Teak Decking

The following surfaces:

- Exterior decks;
- Forecastle area;
- Fixed stern platform;

are planked in teak laid with king planks, margin boards and covering boards as per Benetti LIB 21100 standard, as far as practicable: a filling compound is used to fair the deck surface as necessary. The teak planking is glued onto the decks by using weights. Plank thickness is 20mm finished, planks average length (where not restricted by deck boundaries) is not less than about 3.5m, minimum length is not less than about 3.0m. In the high traffic zones (fore deck and bathing platform) teak thickness is 27mm, 25 mm finished.

Total teak surface 1415m². Teak thickness is 22mm, 20mm finished.

Anchor Windlasses

Two combined reversible vertical anchor winches/capstans are provided, each having a wildcat gypsy (equipped with chain counter) and capstan both driven by an electric motor (arranged for dual rotation and two speed control either way).

Anchors

Two "Pool-N" type balanced HHP (High Holding Power) anchors, made of stainless steel AISI 316L with glass bead finish. Weight is as per Class requirement equipment number plus one.

Anchor weight 2.475 tons each.

Chains

Two U3 high tensile steel galvanized chains (with stud link, Kenter joining shackles, end link and chain swivel) are provided, of equal length. Size and length are according to Classification Society requirements. Equipment number plus one plus one chain length in excess for each anchor (total not less than 250m per side), chains are marked at 27.5m intervals. The last link of each chain is securely connected under deck in the chain locker, with quick release in case of an emergency.

Capstans

System of electric driven captive/drum winches is provided:

2 sets per side on main deck aft
2 sets per side on the fore deck

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In addition, electric capstans are provided:

1 set per side on the waist

1 set per side on the foredeck (integrated into the anchor windlass)

All parts of the capstans which are placed above deck are made in stainless steel; visible parts are polished.

The capstans are arranged for dual rotation and two speed control either way with magnetic brake. They are controlled by remoted wired control and locally on switchboard.

Each capstan has a pull as follows:

for maximum 30 minutes, at 10m/min, at maximum load

for maximum 10 minutes, at 20m/min, at half maximum load

The maximum load of the capstans is 40 kN

The total pull capacity of capstans and anchor windlass warping drum is about 240 kN

Cranes

Rescue Boat Cranes

2 x telescopic, electric-hydraulic driven, SOLAS approved, overhead launch and recovery systems are installed on the bridge deck, one on each side as shown on the general arrangement plan, to handle the rescue boats. SWL 2 tons each

Liferaft Cranes

Two electric-hydraulic driven, SOLAS approved davits are provided on bridge deck, one on each side as shown on the general arrangement plan, to allow dry-shod evacuation by means of DLLR life rafts. SWL 3.2 tons each

Tender Cranes

2 x man riding with the capacity of 6 tons each. These cranes are capable of supporting guests on tenders.

Top Deck Cranes

Two cranes on the top deck for disembarking cars and toys, such as Rolls-Royce Phantom, Volkswagen Caravelle, Melges sailing boat and motorcycles (Owner's supply) are placed on the top deck forward of the helipad which is approximately 18 meters above the waterline. Each crane has a lifting capacity of 3.5 tons and a hook outreach outboard of minimum 3.0m, configured to lift a car or other cargo from the centerline of the yacht and place it on quayside.

Toy Cranes

600kg SWL beam crane is installed within the toy area. Crane is integrated in the shell door mechanism

Crew Door Cranes

500kg SWL beam crane is installed within the crew loading area.

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Total Cranes

There are 12 total cranes on board which are positioned as follows:

2 on top deck for toys

2 on Bridge Deck for life rafts

4 on Bridge Deck for rescue boats

2 on Main Deck in the garage

1 on Lower Deck at the loading bay

1 on Main Deck in the jet ski garage

Tenders

Tenders are Owner's supply, taking into account the total lifting capacity of 10 tons of launch and recovery system.

For design purposes, Owner supplied tenders will be assumed as follows:

- 1 × Reliant X40T Limousine tender – 11.50m × 3.65m × 2.61m; 8,470kg
- 1 × Reliant X40 Express craft – 11.50m × 3.65m × 2.84m; 9,298kg
- 1 × Reliant X40L Lander craft – 11.50m × 3.87m × 2.89m; 11,000kg

Details on the three large tenders, which could be available by separate negotiation, are available on the Reliant Yachts website: X40T Limousine, X40 Express and X40L Lander.

Two retractable hydraulic boat booms, are installed amidships on starboard side, near the boarding platform.

Shell/Deck Doors

Large hull openings are fitted with doors, whose structures are sized according to the rules. Hull doors below main deck are watertight, as per rules. The shell doors themselves are made in light alloy. The inside of the shell doors is provided with flush aluminum inspection hatches, where deemed necessary. The frames of the openings are fabricated in steel, with a seal recess in stainless steel. The hull structure surrounding the openings are reinforced as per rules requirements.

Hull doors are hydraulically operated, by means of hydraulic rams (built of stainless steel, invisible either in opened or closed situation).

The doors are kept in position by hydraulic operated stainless steel dogs, fitted at appropriate distance along the circumference of the opening.

Suitable proximity is fitted for open/closed position and locked/unlocked indication, with status indication/alarm in the wheelhouse.

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A hand operated back-up system is provided for opening/closing and locking/unlocking of the doors, in case of failure of the relevant hydraulic power packs; chain blocks and pad eyes are also suitably placed and supplied.

Gangway

A hydraulically operated aluminum riviera gangway, with self levelling steps and bottom platform, is installed at the stern, below the main deck, on starboard side, as shown on the general arrangement plan.

The gangway is of the telescopic and swiveling type, with a maximum outreach of 5m beyond the stern platform and is able to fully retract into the transom behind an inboard turning hydraulic operated watertight hatch. The gangway is able to raise 20 degrees, lower 20 degrees and swivel 90 degrees to starboard and 15 degrees to port. The gangway is built with a seawater resistant aluminum hatch, matching the shape of the transom minimum width 900mm, over the outsides of the gangway boom.

Side Boarding Ladder

Two hydraulically operated aluminum side boarding ladders are installed, one on each side of the main deck, as shown on the general arrangement plan. Each boarding ladder consists of an upper platform, a ladder and a lower platform. The boarding ladders are retractable into a suitable recess, flush with the side shell plating. The length of each ladder will be such that the lower end will be approximately 500mm from lightest waterline, at a 45 degree operating angle.

Staff Elevator

The yacht is provided with one crew/stores elevator, located as per the general arrangement plan, compliant with EN 81-2 and ISO 8383 standards. Main features are as follows:

- Cabin size (w × d × h): 900mm × 1,440mm × 2,100mm (without decoration)
- Max working load: 450kg
- Stops: 6
- Speed: about 0.6m/sec

Cabin door size is 800 × 2,000mm; material is stainless steel AISI 304 brushed finish.

Guest Elevator

One custom built rectangular Owner's elevator is installed in way of the main staircase, operating between the lower deck and the sun deck, with stops on lower, main, Owner's, bridge and sun decks.

The elevator cabin and door are all glass ("extra clear glass" quality) sides and top with invisible drive system concealed behind the decorative wall which have two vertical slots for the cabin support frame to slide through. A thin stainless-steel connection ring on the glass cabin roof connects the walls and glass ceiling.

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- Cabin size (w x d x h): 1,900mm x 1,850mm x 3,050 mm
- Max working load: 1,275 kg
- Stops: 5
- Travel height: 14,800 mm
- Speed: about 1 m/sec

Cabin door size is 900mm x 3,000 mm, with under door drive and glass door leaves integrated in the cabin.

Pools

1 x counter flow swimming pool, with associated cold plunge pools in the beach club, with dimensions and layout in accordance with the general arrangement plan (the pool has a maximum water depth of 1.22m, and the bottom is inclined to facilitate drainage). 30m³ capacity plus cold plunge at +4° with capacity of approximately 3.5m³. This swimming pool includes underwater speakers and a moving platform which converts the pool into a dance platform.

1 x Whirlpool is fitted forward, port side, on sun deck, as per the general arrangement plan. Approximately 6 m³ capacity with glass sides.

03. AIR CONDITIONING SYSTEM

Heat transmission calculations are based on the ISO 7547:2002 standard. The air conditioning system is capable of the following performances:

Summer conditions:

Internal air (Owner's areas): 22°C

max R.H. 55%

Internal air (guests/crew areas): 22°C

max R.H. 55%

Winter conditions:

Internal air: 22°C

max R.H. 55%

04. ELECTRICAL SYSTEM

Electric systems are arranged as follows:

AC Power

- 690 VAC / 60 Hz, three-phase three-wire with insulated neutral (for propulsion system and heavy loads)
- 440 VAC / 60 Hz, three-phase three-wire with insulated neutral (for Hotel system heavy loads)

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- 208 VAC-120VAC / 60 Hz three-phase four-wire with neutral earthed, but without hull return (for Hotel medium loads)
- 220 VAC / 50 Hz single-phase two-wire with insulated neutral with dedicated frequency converter (for Accommodation European 50Hz sockets only)

DC Power

- 600VDC two-wire insulated system (from main battery power pack)
 - 24 VDC two-wire insulated system (from auxiliary batteries)
- 690V, 60 Hz, 3F AC main switchboard, divided in two sections (supplying main electric power for propulsions, thrusters, HVAC and other ships load)

Lights

Acqualuce custom made lights are installed throughout. A Lutron system manages the scenarios (lights, blinds)

05. NAVIGATION, COMMUNICATIONS & ELECTRONICS

Navigation system is supplied by L3 MAPPS UK and is based on Wärtsilä Nacos Platinum workstations. Two X-band radars (one facing aft in order to eliminate blind sectors) and an S-band radar, combined with two FLIR thermal cameras enable the highest target recognition.

A dynamic position system is integrated with thrusters and Azipods for a complete range of vessel control, maneuvering and station keeping applications.

One Wesmar sonar with traveling transducer is hull mounted for safety and security reasons.

06. AUDIO VIDEO

The centralized Audio/Visual system is supplied by AHT: the entire system is based on Crestron NVX distribution modules and allows a complete, redundant and fully customizable source distribution.

KEF floor standing speakers are used in main public areas in order to achieve superior acoustic quality.

The IT network is provided by Videoworks and its infrastructure is based on fiber optics and on Cat. 8 cables that allow a "future proof" performance level.

07. SECURITY

A Frankentek integrated security system is supplied, based on 35 Panasonic cameras, 5 underwater cameras (one PTZ), deck sensors, biometric fingerprint readers and a complete door monitoring system.

It allows several scenarios in order to choose security level and maintain inaccessibility to some private areas.

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A citadel is in the under lower deck. The area is fitted with ventilation, fresh water and sanitary systems independently run by batteries and bullet proof doors.

08. MAIN MACHINERY

Main Gensets	6 x Caterpillar C32 994 e kW/each 690V 60Hz 6 x HUG DPF fuel/soot burners are fitted to treat exhaust gas from 6 gensets at the same time when exhausting dry in the stack.
Azipods	2 x ABB CO0980, 2200kW each
Propellers	2 x ABB fixed pitch propellers, six bladed
Watermakers	2 x Idromar reverse osmosis watermakers 40,000 l/day each (80,000 l/day in total) 1 x 20,000 l/day technical water
Bow Thruster	2 x Brunvoll FU45LRC1375 400 kW each, variable pitch propellers
Stabilizer System	One set of Rolls-Royce retractable zero speed fin stabilizers Neptune 200/12m ²
Interactive Panels	Approximately 370m ² of LED interactive panels are connected to the main presence sensors for interactive purposes and can display fully customizable video contents. The interactive panels are extended on the main staircase on all 5 decks (LD, MD, OD, WD, SD) for a total of 18m. in height approximately and with total of 112 interactive panels.
Accommodations	2,600m ² surface of accommodation in total. 1,600m ² for Guests and 1,000m ² for crew. Beach area – 230m ² Owner's Stateroom – 150m ² which includes a solid marble bathtub built in Carrara marble for a total weight of 1.4 tons and a capacity of 1.5m ³ Main Salon – 290m ² The main salon includes a rotating floor with a diameter of 5m
Marble	There are 46 different types of marble on board for a total surface of 600m ² approximately
Cables	The overall length of the cables on board is around 500km

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Multimedia Main Items	<p>70 x TVs on board</p> <p>10 x Intelligent mirrors on board (touch screen with multimedia and internet connection)</p> <p>4 x Cinema projectors</p> <p>1 x Virtual window of 6m² in the Owner's Stateroom which is connected to the external bow camera</p> <p>1 x Custom screen of 8m² in the Beach Area</p>
Satellite Antennas	<p>5 x Satellite antennas for the TVs and internet connection. Two of them are ST94 type.</p>
A/V Rooms	<p>2 x A/V main rooms with 12 full height racks</p>
Flower Motion Wall	<p>19m² wall which includes 264 flowers, sculpted in Corian resin The wall has a walk by sensor which allows the flowers to open or close themselves when somebody is nearby</p>
Shell and Hull Doors	<p>2 x Beach club/gym port & starboard – 50m² each 1 x Main foyer starboard 1 x Aft transom hull door 2 x Garage portside and starboard 1 x Toy store 1 x Loading bay area 2 x Anchor inspection - 2m² each</p>
Swim Ladder Toys (All Owner's Supply)	<p>1 x Hydraulically retractable 3m wide swim ladder on the swim platform 1 x Sailing boat – Melges Performance 24</p> <p>1 x Inflatable slide 1 x Anti Jellyfish inflatable pool 2 x Multiplex carbon fiber awning system for Owner's deck FWD area and for the Sun Deck FWD area</p> <p>For design purposes, the following is provided for:</p> <p>Main Garage Area</p> <ul style="list-style-type: none">• 1 x Reliant X40T limousine tender – 11.50m × 3.65m × 2.61m; 8,470kg• 1 x Reliant X40 Express craft – 11.50m × 3.65m × 2.84m; 9,298kg• 1 x Reliant X40L Lander craft – 11.50m × 3.87m × 2.89m; 11,000kg

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Jet Ski Garage Area

2 x Jet skis - Max size and weight: 3.0m × 1.05m × 1.0m; 325kg each
4 x Small kayaks
16 x Mountain bikes
2 x Segway type personal transporters
1 x Bauer Verticus 5 dive compressor

External Sun Deck

1 x Car max 4000 x 850mm
1 x Van max 4100 x 850mm
2 x motor bikes

Helicopter Landing

Commercially approved (certified) day and night helicopter deck with Matre fire-fighting including foam, helideck sized for Bell 429 or similar.
Fuel and refueling system (Facet) are installed. The system is capable of both refueling and defueling. Storage for approx 7,000 litres of heli fuel.
Private (not certified) helideck landing pad forward.
Both helipads have a D Value 13.68m and a max take-off weight 3.4t.

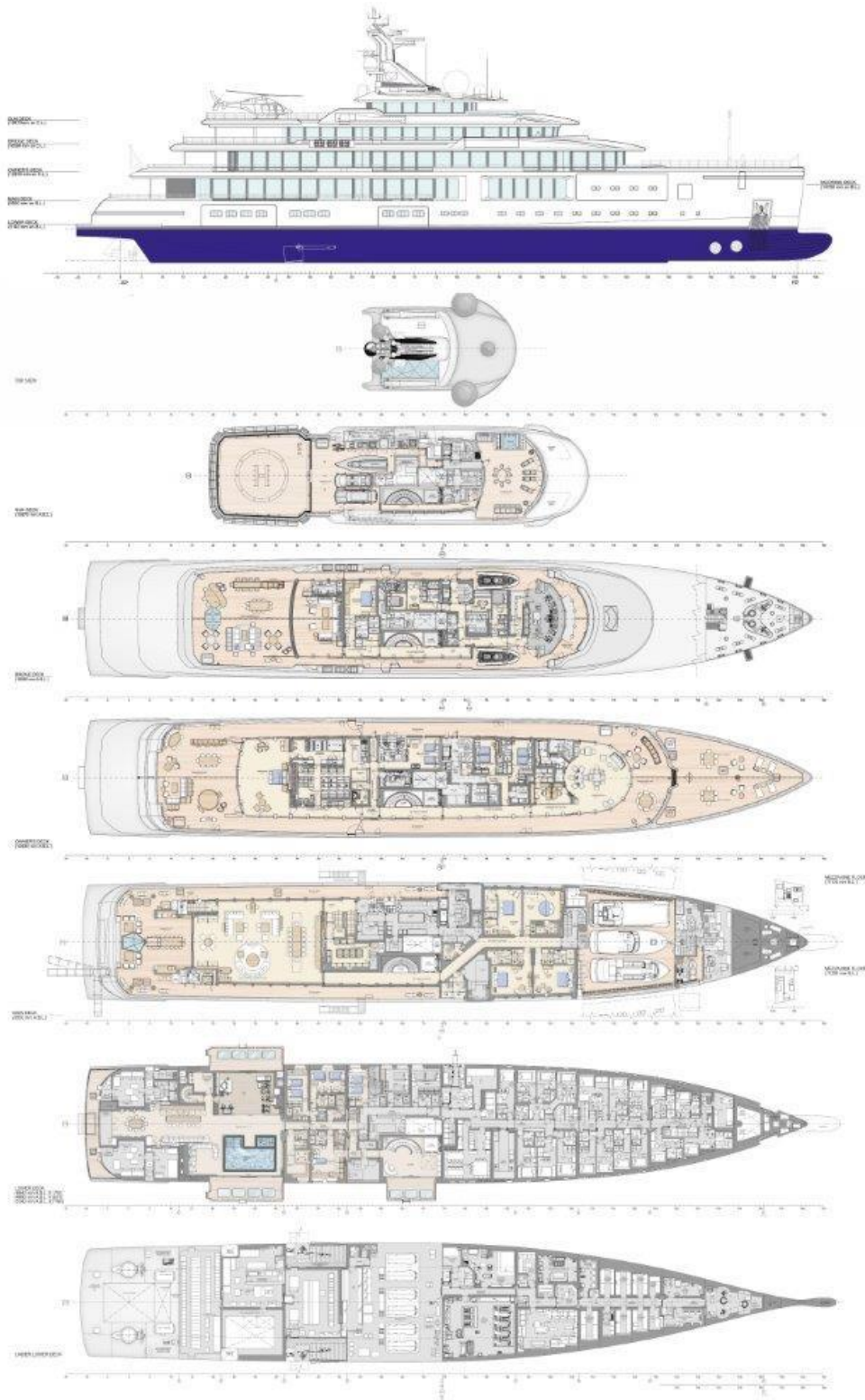
Batteries

Batteries are located on the under lower deck and their weight is approximately 36 tonnes. The batteries are divided in 780 modules which are able to provide a total power of 3 MWh which is sufficient to run the vessel for 12 hours without generator power.

DISCLAIMER

All speeds, measurements, capacities, consumptions, etc. may be approximate or estimated. Specifications provided for information only. Data was obtained from sources believed to be reliable and is not guaranteed by owner or brokers. Buyer assumes the responsibility to ascertain the correctness of all data contained herein and otherwise provided and must instruct his agent and surveyors to confirm all details for accuracy prior to purchase. Subject to prior sale price and inventory change or withdrawal from market without notice.

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