



To meet this owner's accommodation requirements meant *IDynasty's* design and build team had to forge a new path in yachtbuilding.



# REIGNING SUPREME

**B**uilding the most complex yacht in history was not what Richard Hein, founder of Monaco-based The A group, originally intended. Designing for a client who wanted to cruise regularly with more than 12 in his party, Hein faced two choices: design the 100-meter-plus motor yacht to SOLAS passenger ship rules or to the new Passenger Yacht Code (PYC), created specifically for yachts with 13 to 36 passengers and still in development. To build to PYC would grant more design freedom, but its regulations for safety and materials were a moving target. Realizing this standard would be the wave of the future, Hein and his client took the road less traveled. *IDynasty* is the first yacht delivered to full PYC certification without additional restrictions.

A bit of backstory on the project is useful. Besides being a naval architect and designer with The A group, Hein was also a yachtbuilder, having served as president and equity partner in the Dutch yard Oceanco from 1992 to 2004. After selling his interest in the yard, Hein traveled extensively and discovered an affinity for Japan and its culture. He was impressed with the quality of Japanese coastal commercial and patrol vessels, as well as other manufacturing sectors, and invested with a Japanese partner in a brand-new manufacturing facility, opening an office in Tokyo for his project management company, VegaYachts. Vega's first contract was for a 282-foot yacht to be built in Japan. The construction was due to start when the March 2011 earthquake and tsunami struck, followed by the Fukushima nuclear power plant disaster.

"Besides the potential radiation contamination issue, Japan's manufacturing efforts shifted almost overnight to rebuilding its infrastructure," says Hein. "We had to seriously consider starting over outside Japan."

The client, however, was not discouraged, quite the contrary; not only did he ask Hein to engage a European shipyard, he asked him to enlarge the vessel. He was adamant that Hein would serve not only as the naval architect, but that he and his team would be the conduit through which the boat was built. In essence, VegaYachts was employed as owner's representative and general contractor for a turnkey project that included Studio Massari as the interior designer.

"The owner had some clear ideas about creating a multi-generation yacht with high maneuverability and heavy displacement for continuous cruising and boarding in all seas, efficient propulsion to minimize carbon emission and lots of pools and direct water access. Other things he left up to us," says Hein. By the time the design was complete, it was clear that the yacht was going to have to meet the newer, more comprehensive rules of PYC 2012.



The "shark fin" glass installation is the signature design element. It offers protection for decks so wide they can serve as terraces.



“Starting the project after the adoption of the 2012 rules gave us a higher standard than those yachts that laid keels before 2012,” says Hein. “We had the option of applying for exemptions but the owner felt that if there was a guide for building the safest possible yacht, we should adhere to it, and I agreed. We all had to discover the consequences of implementing the new Passenger Yacht Code to the normal design and construction process.”

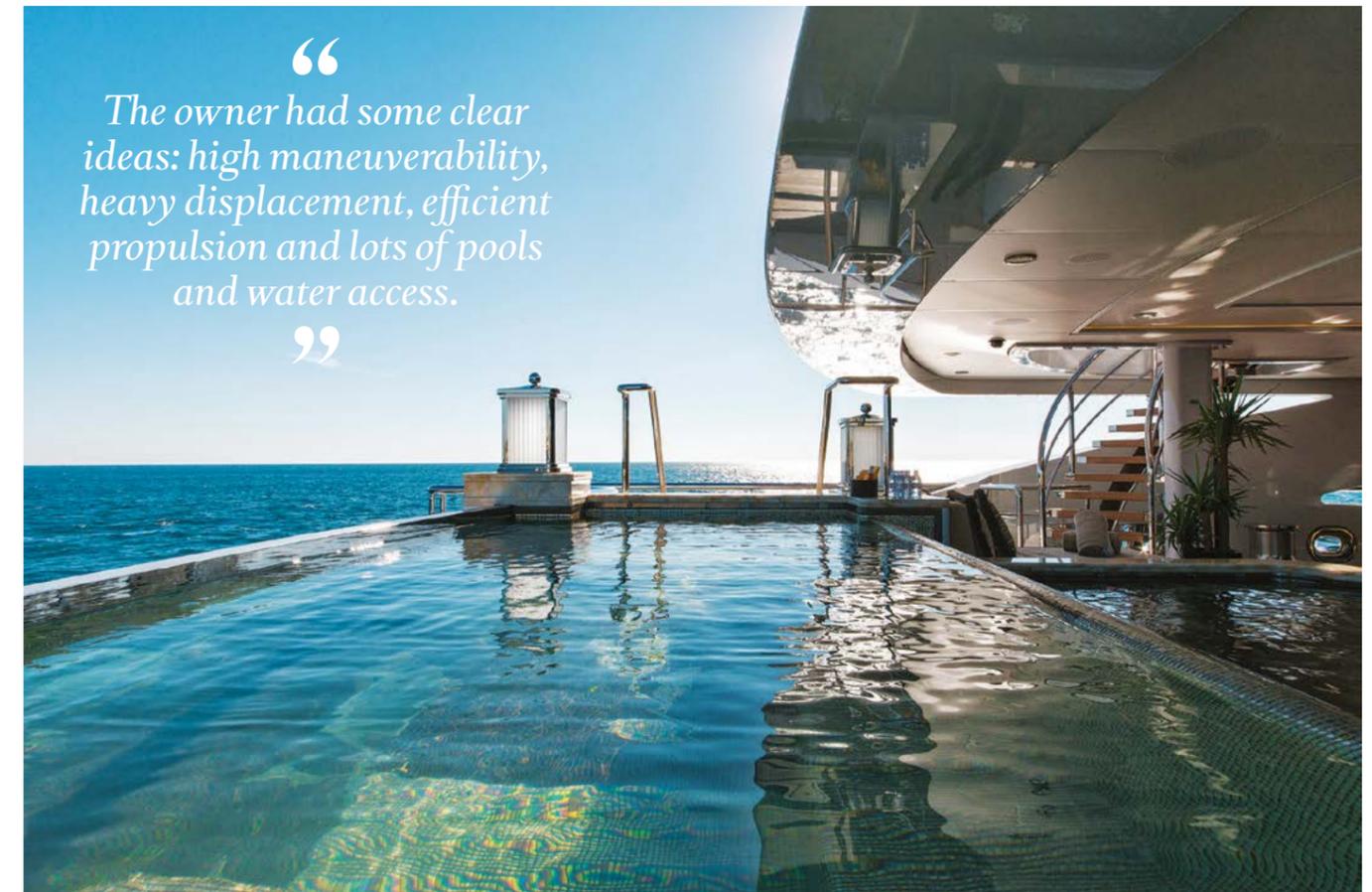
The last sentence speaks volumes. PYC’s impact was ubiquitous, as I had the opportunity to see during my visits to the Peters Werft yard in Wewelsfleth, Germany, where Kusch Yachts was building *IDynasty*. Answers to my inquiries about insulation materials, the all-steel construction, the bridge wing stations’ arrangement and the number of stairway escape routes generally contained reference to the PYC’s demand for fire containment. In the unlikely event of a fire starting (given the restriction on flammable materials), it must be contained via fire doors, use of low-flame spread surfaces and fire breaks or areas where noncombustible material such as stone, steel or A60 fire-rated glass separate two combustible materials. Every interior area is tallied for a worst-case combustion heat load, and it’s up to the designer and builder to work out material trade-off to stay below each area’s allowable load. Hein notes that Lloyd’s Register and the Cayman Islands (flag state) worked closely in cooperation with the project team and Kusch to meet the PYC requirements.

“I do not think it is possible for a designer to create a PYC yacht without involvement of a shipyard; it is just too complex a balancing act. It requires the designers, builder and engineers to be in a constant revision process to achieve the desired goal without compromising the appearance, the luxury or the livability,” says Hein.

Visually, *IDynasty* is a stunner, but the amount of “hoop-jumping” necessary to meet the requirements of the new code with materials and finishes that either didn’t exist or were not in use on yachts prior to PYC makes her awesome.

Take, for example, the design scheme that pairs pale leathers with the look of dark mahogany in the corridors, an impossibility with fire loading. Rather than strip away the elegance imparted by elaborate crown moldings, the project team found a supplier who could articulate the style using non-combustible plaster and faux wood paint. The typical fabric wall panels designers have long relied on to break up large areas and/or absorb sound can’t be made fire retardant enough, yet leather can, so beautiful stamped or woven leathers are used with abandon.

With 4,437 gross tons, *IDynasty* offers her family tremendous interior volume and many specialty areas, such as a cinema, beach club and lower arrival lobby, sauna, hair salon, massage room, hammam, gym, dive center with changing room, a forward-facing observation lounge, and main and upper salons connected by a spectacular open



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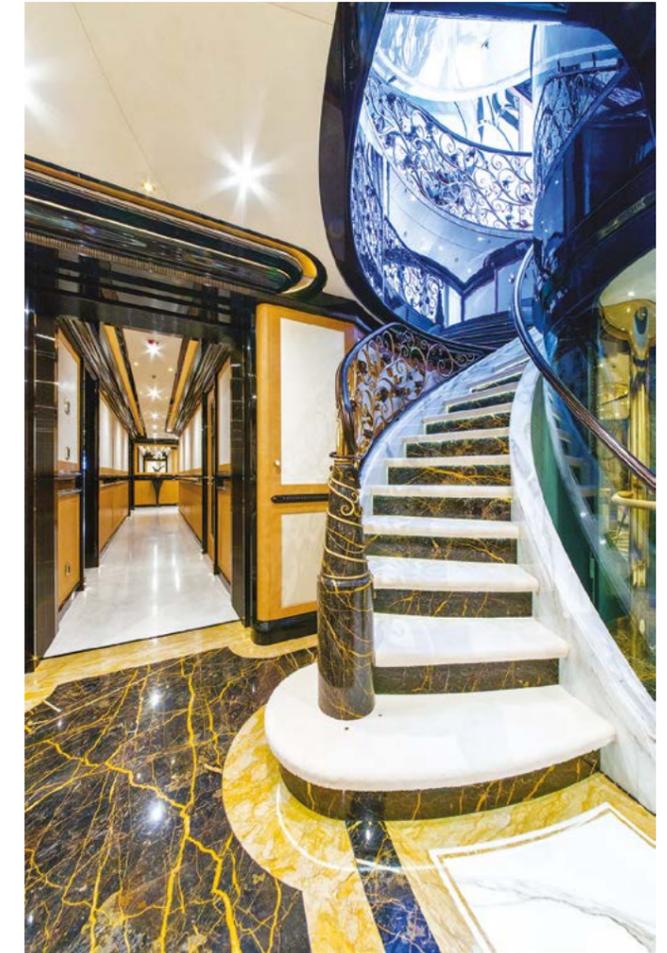


The A group and Studio Massari created multiple pool areas, including this stunning multi-level one for adults and children.





*The main salon is designed to welcome guests and draw them into the yacht. It is the most formal space on IDynasty.*



staircase. Eleven staterooms, including the owner's suite and two VIPs, are concentrated on the main and upper decks.

Alessandro Massari, who designed the interior of the client's three previous yachts, had the task of marrying The A group's contemporary exterior profile with its outstanding use of glass to an interior that honors classic design themes and a leitmotif of decorative floral elements. The owner asked for some wow factor for what the brief described as a cozy family yacht.

Studio Massari chose warm honey-colored wood, primarily anigre and madrone burl veneers, to form the background for stunning handmade marquetrie decorating the fronts of cabinets and built-in furniture. The main salon sole is a patterned parquet because Massari believes it is more formal than carpet.

The salon is a multifunctional space aft of the dining salon with several comfortable seating areas, including one around a fireplace, a games table on starboard and a library with a baby grand piano to port. Flanking the piano, a magnificent open staircase creates a tangible link to the upper salon. "Together with Richard, we discussed how to deal with the number of family members cruising; that is why the two main salons are directly connected," says Massari. "Part of

the family could be downstairs while the rest is above engaged in a different activity. It really is the heart of the yacht. The stairs minimize the feeling of being in two different spaces." A custom 16-foot chandelier from Cenedese of Murano creates a waterfall of illumination.

The décor's wow factor is also supplied through a fantastic stone foyer where dark Port Laurent marble recreates a design by Michelangelo across a field of white and Calacatta Gold marble. The light marble is the backbone of the staircase that wraps around a large glass elevator leading to the upper deck. A wrought iron balustrade with gold-plated details takes up the floral motif. "It embraces you while climbing the stairs," says Massari. Gold leaf appears throughout in accents and tray ceilings. While gold leaf itself is not low flame spread, the sealer is, according to Massari.

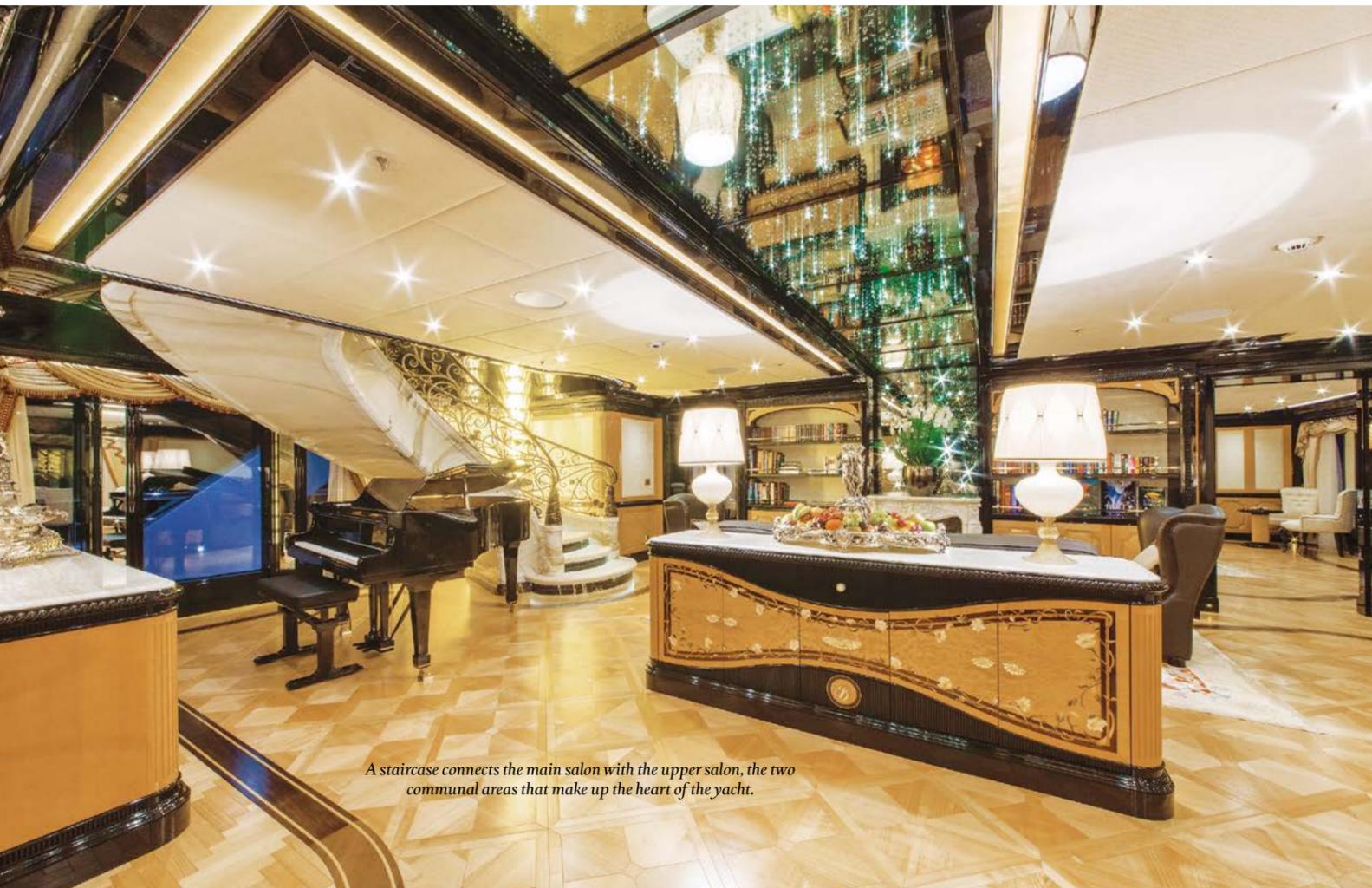
Each of the staterooms is a world unto itself with enormous space and rare marbles, some with powerful veining and striations, setting a unique color scheme. All of the guest cabins share a backlit 3D capiz-shell headboard featuring fan patterns mimicking paving stones in Italian piazzas. The mix of traditional and contemporary continues outdoors, where multiple dining areas, a covered cinema, pools and sun decks fore and aft, plus a float-in tender garage/saltwater pool,

provide plenty of options for living at sea. Equally impressive are the spaces Hein dedicated to machinery, workshops, dry and cold stores, laundry, guest services and quarters for the 32-strong crew.

"From the beginning, the stated goal was to design a very robust vessel built completely in steel to prevent dissimilar metal distortion while cruising. Plate thicknesses in excess of that required by class were used to reduce distortion due to welding, thus minimizing the use of expensive filler...while also adding a margin against future corrosion.

"From a technical point of view, our main goal was to maximize all engineering and construction solutions to prevent the unnecessary use of diesel power and related exhaust gas emissions," says Hein.

Diesel-electric power utilizes a full package of Rolls-Royce equipment and five engines, with power generation limited strictly to electrical load demand, thus hindering unnecessary fuel consumption and inherent gas emissions. Huge particulate filters occupy an exhaust silo underneath the mast, allowing clean emissions at anchor or in port. The yacht's power management system is seamless and offers surge-free power with a clean supply from 690 to 110 volts. The yacht does not rely on battery banks for smoothing peak



A staircase connects the main salon with the upper salon, the two communal areas that make up the heart of the yacht.



From top: The six guest suites on the main deck are similarly appointed, all featuring enormous windows. The upper salon and bar and the indoor cinema are aft on the bridge deck.



loads but on generators of variable sizes that start or stop automatically. As propulsion and hotel loads vary, the full range of operating scenarios can be covered efficiently. "This is an important achievement," says Hein. "This isn't about propulsion anymore, it is power management."

The wheelhouse is a masterwork designed by Rolls-Royce and the client's captain after he spent substantial time in the Rolls-Royce bridge simulator. It looks like an updated version of the Starship Enterprise's bridge. Two custom high-tech helm chairs slide back and forth on rails to suit the preferences of the helmsman. Each of the chair arms are fitted with controls and the ability to switch any combination of information displays to the center LED screen. There are also full control stations port and starboard on the console and, of course, wing stations outside. A large navigation area is behind the con on port with a monitoring station to starboard. The GMDSS station and a nighttime working area with night vision-safe low-level illumination are aft of the bridge proper.

*IDynasty* is highly maneuverable – she turns in her own length at 16 knots – thanks to a pair of Rolls-Royce Azipulls. Used with the bow thruster, they provide *IDynasty* with a full dynamic-positioning mode useful in deep water or fragile seabeds, as well as for positioning the tender side-boarding platform away from the wind and waves.

The naval architecture, engineering and exterior design also contribute to the wow factor. The floodable 33-foot tender garage holds a custom Pascoe limo tender launched via a system engineered in collaboration with Kusch Yachts. When the tender is deployed, the space becomes a huge pool deck with light and breeze also flowing from a 41-foot



Despite six decks, IDynasty presents a clean, low profile, due in part to the fact that her large tender rides in a floodable garage (left). Her wheelhouse (top left), designed by Rolls-Royce and the client's captain, resembles an updated version of the Starship Enterprise's bridge.



starboard-side shell door that opens to launch a Riva. A brilliant piece of engineering allows the tender to clear the stern opening while maintaining a closed pool for children to swim in. To keep water from sloshing unpleasantly, a teak-planked slope aft dampens motion and allows water to spill back to the sea.

The exterior lines are slick and fresh and the walkaround side decks are so large they invite placement of steamer chairs. Glass is both a feature and a structural element with floor-to-ceiling windows on the main and upper decks capped by glass "shark fins." A signature attribute, they form a windbreak and a visual transition from the strong horizontal lines of the lower profile to the top of the mast. The A group and Massari worked closely to design exterior living areas that, thanks to hidden glass doors and windows, are useable in all weather.

on the two lower decks or the continuous double-bottom requirement that Hein takes issue with, but it's the fact that some of the rules demand materials that are yet to be developed to acceptable yacht standards, such as fireproof and waterproof exterior deckheads. It's also the lack of transparency leading to different interpretation of some of these rules by surveyors and flag states.

"At The A group, we don't just design, we design to build," says Hein. "Designing to build to previously unknown rules has been a challenge for me as the naval architect and exterior stylist and also as the owner's representative and partner in the building process with Mark Dethlefs of Kusch Yachts. To accomplish this in three-and-a-half years build time is, as I look back on it, more than we could have imagined possible." ■

Although IDynasty passed PYC certification with flying colors, Hein admits there are still parts of the rule that make it challenging to meet owners' expectations. For example, rules mandate additional crew and extra escape routes via stairs rather than ladders that use considerable space in both owner and crew areas. It's not the extra R&D, build costs, the eight mandated watertight zones



## SOLAS vs. PYC

How IDynasty's owner chose

The Passenger Yacht Code (PYC) is a yacht-friendly equivalence to the Safety of Life at Sea (SOLAS) commercial convention for yachts beyond the 12-passenger limit of the Large Yacht Code (LY3). To design and build to SOLAS would mean detailed negotiation for every exemption from the standard code necessary to provide yacht-like elements. PYC offers pre-approved alternative processes that are the same for all yards and designers. It endeavors to ensure equivalent safety from the dangers of a shipboard fire or sinking but in a more attractive package than SOLAS rules allow.

Among most owner objections to SOLAS are the mandates for powered lifeboats, raised exterior doorsills and non-flammable materials for interior. The large, autonomous lifeboats, not unlike those on cruise ships, can take up valuable space on more than one deck and must have a high-visibility color on their roofs. Raised 15-inch doorsills are required to prevent water ingress, a solution that is uncomfortable and inelegant.

In PYC, autonomous lifeboats can be replaced with inflatable liferafts capable of being boarded and launched via davits from their deck canister location. The rule trades sill height for increasing the requirement for damaged hull stability, in essence augmenting the amount of the interior that can be flooded while the yacht remains afloat. Alternative solutions to reduce the risk of water intrusion include creating sumps underneath gratings just outside opening doors or fitting the openings with temporary sills when leaving port.

The issues of fire safety are more complicated (and still evolving) with tough demands for materials with low- or no flammability, barriers between flammable surfaces to slow the spread of fire and greater use of fire-containment zones and fire-fighting equipment. The number of escape routes from deck to deck has essentially doubled over LY3, while such things as teak-clad folding terraces need to be separated from interior spaces by steel doors or sliding glass walls that can be doused with a steady stream of water by dedicated systems in case of fire.

**LOA:** 331' 3" (101m)  
**LWL:** 295' 6" (90.1m)  
**Beam:** 52' 6" (16m)  
**Draft:** 18' 8" (5.7m)  
**Gross tonnage:** 4,437 GT  
**Displacement:** 4,982 tons  
**Speed (max/cruise):** 17.1/14 knots

**Power:** 2 x 2,450kW  
 Rolls-Royce Marine (RRM)  
 Bergen C25:33L8; 3 x 910kW  
 Caterpillar C32 ACERT  
**Range:** 6,000 nm @ 14 knots  
**Fuel capacity:** 147,144 U.S. gallons  
**Stabilizers:** RRM 200 folding fin with at rest stabilization

**Thrusters:** 550kW RRM  
 TT1650, 2 x 100-2,500kW  
 RRM Azipull AZP  
**Owners and guests:** 22  
**Crew and staff:** 32  
**Construction:** Steel  
**Classification:** Lloyd's Register, CISR Passenger Yacht Code

**Naval architecture:** The A group, Rolls-Royce Marine  
**Exterior styling:** The A group  
**Interior design:** Studio Massari  
**Owner's representative:** VegaYachts  
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