**Color Hybrid Ro-Pax**

### VESSEL INFORMATION

- **Owner**: Color Line Marine AS, Norway
- **Shipyard**: Ulstein Verft AS, Norway
- **Hull Number**: 331
- **Year Built**: 2019
- **IMO Number**: 9824289
- **Ship Design**: Fosen Design, Norway
- **Class**: DNV - Ice 1B
- **Prime mover**: Diesel Mechanical
  - Type: B33 45L6P
    - Power: 3600 kW
    - RPM: 750
  - Type: B33 45L8P
    - Power: 4800 kW
    - RPM: 750

### BRUNVOLL SUPPLY

- **Reduction Gear**: ACG TS1400 Coax600 & SA600
- **PTO/PTI**: SA600
- **Propellers**: ECP 115, diameter 4600 mm, 30-120 RPM, with Integrated Costa Propulsion (ICP)
- **Rudder**: Van der Velden® TTA Rudder, and Steering gear type COMMANDER™ BRV 630-45
- **Tunnel Thrusters**: Bow: FU100 LTA 2750 x 2, Stern: Rim Driven Thruster RDT 1800 F
- **Control System**: Brunvoll Controls for Propulsion, Thruster & Steering Gear

### Hybrid CP Propulsion

A Hybrid system enables ships with variable power requirements to run at high propeller efficiency. A large number of operational modes are available in the complex configurations, enabling the engines and propellers to run optimally over a wide power range.

This configuration is designed for dual fuel or battery electrical drive. In such a system design the vessel can utilize the power required for the specific operation in pure electric mode, or in dual fuel mode, or in a boost mode or peak shaving by engaging both systems.

A hybrid system configuration is a fuel efficient and flexible system, with high redundancy. The system allows the engines to run in optimized load condition, and the most efficient way in respect of energy consumption.
Brunvoll supplies propulsion, manoeuvring and control systems for efficient and sustainable operation. The system is optimised to the operation profile of Color Hybrid.

**Reduction Gearbox for Hybrid Propulsion**
Flexible gearbox designed for the possibility of a high number of operational modes;
- Hybrid system prepared for multiple engines and energy sources
- Efficient power distribution from a wide range of power input and power output (PTI/PTO)
- Compliant with all types of future energy sources
- Compatible with all engine makes
- Configured to your specific needs and operating profiles
- High quality in materials and a robust design

**Integrated Costa Propulsion (ICP)**
ICP consists of a twisted leading-edge rudder and a hub cap acting as one system. ICP improves energy efficiency and reduces fuel consumption;
- Significantly increased propulsion efficiency
- Reduced noise, pressure pulses and cavitation
- Robust and reliable construction
- Improved low-speed manoeuvrability

**Rim Driven Tunnel Thruster (RDT)**
Sustainable tunnel thruster with motor and propeller in one compact unit;
- Efficient operation
- High degree of manoeuvrability
- Low noise and vibration
- Compact design with savings in weight and space
- No transmission losses
- Reduced cost by system simplicity