CV1100
Propeller design optimization

Retrofit focus - Container vessel series CV1100: Benefit from upgrading your CV1100 vessel with the latest technology and hydrodynamic know-how. Everllence is now offering a complete upgrade package, that will significantly improve the current CII rating, reduce CO_2 emissions, and lower fuel consumption with more than 20%.

How these results are possible
Our product range is constantly under review, being developed and improved according to present and future requirements and conditions. Initially, the CV1100 vessels were designed and optimized for 19.6 knots. However, as of today's requirements most of the vessels are operating far below the original design speed.

This means that a number of these vessels are operating in off-design conditions, often resulting in relatively high power and fuel consumption, leading to poor efficiency, low CII rating, and high fuel expenses.

Propulsion optimization concept
Everllence has introduced a standardized design concept specifically for the CV1100 container vessel series, operating within 12–15 knots vessel speed, and thereby meeting the vast majority of today's vessel trading speeds.

Depending on operational profile and annual operating hours, the return of investment (ROI) is typically less than one year.

The optimization mode is synchronous rpm, meaning that utilization of the shaft generator will not be compromised.

Hydrodynamic aft ship integration
Achieving perfect hydrodynamic integration involves optimizing the propeller with the ship's hull and wakefield. Besides the propeller blade optimization, Everllence has developed a permanent power limitation, that will make room for even higher propeller efficiencies.

Everllence PrimeServ

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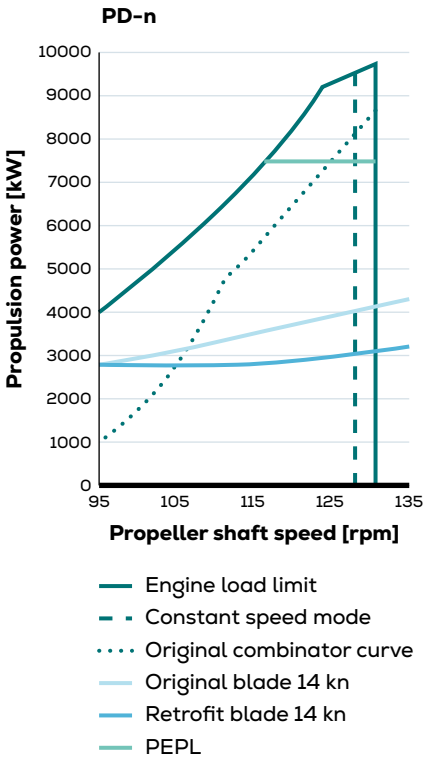
Power and speed:
The PD-n diagram illustrates

Engine load limit, the currently installed combinator curve, the 14 knots vessel speed curves for original blade and retrofit blade respectively. Furthermore, the synchronous speed line and the required permanent power limitation line (7,500 kW) is indicated. Actual power saving corresponds to more than 20%.



Principial ship particulars

CV 1100 example	Container vessel design
Length o.a.	147.8 m
Breadth	23.25 m
Depth	11.50 m
Draught	8.5 m
TEU capacity	approx. 1,100
Main engine	7L58/64 or 8L48/60
Engine output	9,730 kW or 9.600 kW
Permanent power limitation	7,500 kW (by AT2000 controls)
Alpha CP propeller	VBS 1380
Optimized propeller diameter	5,400 mm
Optimized ship speed	12-15 knots

Key benefits

- Increased propulsion efficiency
- Reduced propulsion power requirement, fuel consumption and emissions
- Short installation time for propeller blades - norm. less than one week
- Installation during normal Propeller Maintenance / planned dry-docking or even afloat
- Optimization supporting your Carbon Intensity Indicator (CII) targets
- Short return on investment

Scope of supply

- New optimized propeller blades on exchange basis
- All relevant class approvals
- All slide and sealing rings
- Complete documentation package and Installation Guide
- PPL Alphatronic 2000 (Permanent Power Limitation) software package

Applicable to

Applicable for existing CV1100 vessels with Alpha VBS1380 / Alphatronic 2000 CP propeller configurations.

More information

Contact your local Everllence PrimeServ office for more information about the solution and how the upgrade can improve your propulsion configuration.

Everllence PrimeServ

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