

REDEFINING THE ENGINE ROOM

- Maximize Space
- Optimize Fuel Efficiency
- Minimize Noise Signatures
- Eliminate Wet Stacking

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INTRODUCING THE HYBRID MARINE SYSTEM BY NORTHERN LIGHTS

Northern Lights, Incorporated, an innovator in the marine diesel market, is redefining the traditional engine room with an unmatched hybrid marine solution; combining its high performance Lugger propulsion engines with BAE System's HybriDrive® Propulsion System – the world's most successful series hybrid.

A SIMPLE, ROBUST PROPULSION SYSTEM – WITH HYBRID TECHNOLOGY

Northern Lights' hybrid marine system provides clean, reliable power with world class components. Based on a tested, reliable Lugger propulsion engine and traction generator, energy is held in a series of battery packs and metered through a power control system. The traction motor provides power to the prop, while energy is stored for its most efficient usage. Available in 3 phase, 60 or 50 Hz configurations, the amount of power produced and stored can be customized to fit a myriad of marine applications.

Because its world class components are fully scalable, the Northern Lights hybrid marine system provides far greater flexibility in engine room layout. It will run not only as a standard electric propulsion system, but can be upgraded into an auxiliary power kit to provide all of the ship's service AC power without the waste and pollution associated with underloading. The hybrid system can even be outfitted for accessory power for modern yacht's complex system of thrusters and winches.

The entire package is designed to be clean, quiet, and environmentally responsible, reducing both energy waste and fuel costs as soon as it is installed.



TOP QUALITY ENGINE AND COMPONENT SYSTEMS FROM INDUSTRY LEADERS

Optimized Engine Performance-

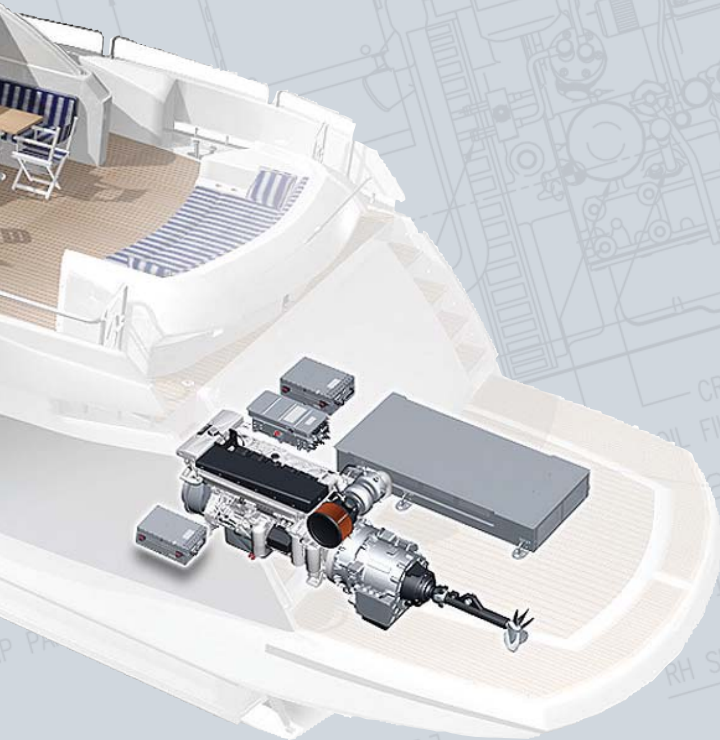
- The engine operates at its optimal fuel curve at all times. The system helps ensure that load demand is met without over or underloading your ship's power supply.
- Maximum fuel efficiency.
- Eliminates wet stacking.
- Reduces engine usage.
- Lowers maintenance requirements.
- Reduces sound signature.



Optimized Components-

- Reliable, durable, simple to use propulsion from a trusted name in marine manufacturing.
- Proven hybrid components with millions of trouble-free operational hours of commercial service.
- Sealed electric components require no service with substantially reduced maintenance requirements.
- Modular component replacement if needed.

CLEAN, EFFICIENT, RELIABLE - BENEFITS OF THE HYBRID MARINE SYSTEM



Flexibility -

- The traction motor remains fixed with the propeller - all other components can be located where they best suit your needs.



Silent Operation -

- The system permits you to run all of the ship service load and propulsion without engine operation, for quiet, fuel saving operation.



Scalability -

- Design the system for electric propulsion only, for electric propulsion with ship board power, or to power all of your vessel's equipment and machinery.



Ease of Operation -

- All of the operational devices will fit into existing vessel control systems, providing increased precision and accuracy.





NORTHERN LIGHTS

Founded in 1958, Northern Lights, Inc. is a leading manufacturer of marine-diesel generators, Lugger propulsion engines and Technicold marine systems. The company's products are distributed through a global sales and service network to over 40 countries. Northern Lights manufactures a line of rugged Lugger propulsion engines, 40 to 525 Horsepower. Proven in commercial fishing boats, high-mileage trawlers and high-performance yachts, Northern Lights products provide unmatched quality and reliability.

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