NORTHERN LIGHTS

Commercial Series
Features and Benefits

200 - 250 kW

Selection without compromise.

If your job requires 200-plus killowatts of power, you are in no position to make compromises. Unreliable power production, or improperly loaded generator sets that lead to inefficiency and down time are poison to your business. Rely on the power production leaders at Northern Lights to keep your vessel running at peak performance.

Tough Lugger diesels.

Built for continuous duty, many Lugger powered sets have logged over 30,000 hours without a rebuild. Check the features and you will see why: replaceable wet cylinder liners, liquid cooled turbos, cast-iron exhaust manifolds, plate oil coolers, cupronickel heat exchangers, gear driven seawater pumps. Rugged components built from the finest materials in a US EPA Tier II compliant package.

Simple to operate and maintain.

Hoses, gaskets and belts have been minimized. Control panels keep you in touch with your set's performance while safety shutdowns protect it. DC relays are used instead of printed circuit boards. Most service points are on a single side to simplify maintenance.

Electronic system profiler.

"ESP" is a window to your set's real time operating condition. The engine control unit (ECU) directs the electronic fuel injection and produces a stream of engine performance and diagnostic information that can be shown on an optional monitor.

Superior generator ends.

The sea is no place for a stand-by generator. All Northern Lights have low 110°/50° temperature rise ratings, Class H epoxy insulation and ±1.5% voltage regulation

Complete options list.

Each option is designed to integrate into a total power system specifically designed for your vessel. Consider a high power PTO that can supply up to 149 HP of hydraulic power at a touch of a button.

Total unit load testing.

Complete load testing is done with all accessories installed. Testing is just one of the quality controls that supports your decision to choose the state of the art in power generator set for your workboat.

High resale value.

Northern Lights' quality reputation is a big plus when you sell your vessel. Buyers will know you cared enough to install the industry's best equipment.

Component Specific Features

Engine Block

- Lugger six cylinder, four cycle, in-line, liquid cooled, overhead valve, marine diesels based on heavy-duty industrial engine blocks.
- Balanced, forged crankshaft with induction hardened journals and rolled fillets for long life.
- Replaceable, wet cylinder liners for long life and low rebuild costs.
- Bimetallic valves have chrome stems and rotators.
- Replaceable valve seats and guides.
- Three ring aluminum alloy pistons with Ni-Resist insert for the top ring. Keystone piston ring reduces carbon buildup under light loads.
- Torsional crankshaft dampers help ensure smooth operation.
- A single poly-vee drive belt powers the alternator and jacket-water pump.

Fuel System

- High pressure common rail fuel injection for smooth, clean delivery.
- Direct fuel injection systems
- Ring clamp fuel filters have air bleed and drain.
- Diaphragm-type, mechanical fuel transfer pump with manual priming lever.

Lubrication System

- Positive displacement gear-type oil pump.
- Full flow, spin-on oil filter.
- Oil spray cooling reduces piston crown temperature for longer life.
- Jacket-water, plate-type, full flow oil cooler reduces heat and prevents lube oil breakdown.
- Large capacity oil pan.
- A closed loop crankcase vent traps oil vapor to keep the engine room clean.

Air System

- Dry air filter silences intake noise.
- Turbocharger with jacket water cooled turbine housings for safety.
- Jacket water aftercooler provides optimized combustion and output. No second keel cooler needed.

Cooling System

- Heat exchanger cooling: Cupronickel, tube type heat exchanger with removable ends for easy cleaning. Gear driven, beltless, flexible impeller, sea water pump is bronze and stainless steel.
- Cast iron expansion tank with brass filler neck.
- Two thermostats for quick warm-ups and safety.
- Cast-iron exhaust manifold has two pass jacket-water flow for even temperature control.
- Keel cooled configuration optional on M200C12.

ESP and DC Electrical System

- Electronic System Profiler (ESP) supplies an SAE J1939 data stream through a CANbus plug. Optional engine monitor screen.
- Negative ground, 12 volt DC system has circuit breaker, starter motor and alternator with regulator. Relay board and senders for gauged panels standard.
- Standard S-3C remote control panel with engine hour meter, coolant temperature gauge, oil pressure gauge, DC voltage meter, start-stop and shutdown bypass switches. Additional optional panels help you specify the amount and type of information delivered.
- Reliable, relay based DC system is easy to trouble shoot and repair. Up to 6 panels can be used up to 110 feet from set.
- Low oil pressure and high coolant temperature safety shutdown system.
- Pre-wired engine, panel with terminal strips.

AC Generator

- Direct coupled, single bearing, 12 lead, reconnectable AC generator. Maintenance free brushless design.
- All NL generators meet or exceed class society standards with Class "H" insulation, accessible diodes, oversized ball bearings, marine grade shafts and conservative 110°/50° heat rise ratings.
- Engines and generators are torsionally matched for long life.
- Automatic voltage regulator; ±1.5% regulation over the entire range from no load to full load.
- Mechanical governor for ±5% AC droop.

Special Equipment

- US EPA Tier III compliant.
- Welded steel base frame
- Belt guard
- Center bonded vibration isolation mounts
- Tough gray enamel paint
- Operator's and parts manuals

M200C13 and M250C13

General Specifications and Dimensions

AC Output[1]	M200C13	M250C13
60 Hz, 1800 RPM[1] kW	**200 kW**	**250 kW**
Voltage regulation	1.5%	1.5%
Frequency droop control	**Both Models:** Isochronous 0%	
Phase and power factor	**Both Models:** Three phase -0.8 power factor std.	
	Opt.: Single phase -1.0 power factor	
Generator full load temperture rise	**Both Models:** 110°C temperature rise at 50°C ambient	
Lugger Diesel Engine Data		
Inline cylinders/aspiration/operating cycle	I-6 / Turbo & Aftercooled / 4	I-6 / Turbo & Aftercooled / 4
Displacement - cid (liter)	549 (9.0)	549 (9.0)
Bore/stroke - inches (mm)	4.6/5 (118/127)	4.6/5 (118/127)
Fuel injection pump type and control	Electronic (HPCR)	Electronic (HPCR)
Cooling System (KC standard, HE optional)		
Heat rejection to jacket water -1800 rpm BTU min	10,530	N/A
Freshwater pump capacity - 1800 rpm/gpm (lpm)	74.6 (282)	66 (250)
KC heat exchanger approx cooling capacity - gal (ltr)	11.5 (43.5)	N/A - Heat exchanger only
KC turbo tube length @ 85°F seawater dockside - ft	Consult factory	N/A - Heat exchanger only
KC steel skin cooler @ 85°F seawater dockside - sq ft	Consult factory	N/A - Heat exchanger only
KC keel cooler head diameter - in NPT	Consult factory	N/A - Heat exchanger only
KC keel cooler hose ID discharge/suction - in (mm)	Consult factory	N/A - Heat exchanger only
HE heat exchanger approx cooling capacity - gal (ltr)	12.5 (47.5)	12.5 (47.5)
HE seawater pump capacity - 1800 rpm/gpm(lpm)	**Both Models:** 73 (276)	
HE max seawater pump suction head lift - ft (m)	**Both Models:** 10 (3)	
HE sea water pump inlet hose ID - in (mm)	**Both Models:** 2.5 (63.5)	
HE min. seawater inlet/discharge thru-hull - in (mm)	**Both Models:** 2.5 (63.5)	
DC Electrical (12V standard, 24V optional)		
DC starting voltage - standard (optional)	**Both Models:** 12 (24)	
Min battery capacity - amp hr/12V CCA (24V CCA)	**Both Models:** 255/1100 (750)	
Starter rolling amps @ 0°C - 12VDC (24VDC)	**Both Models:** 920 (600)	
12 Volt battery cable size up to 10 ft (3m)	**Both Models:** 3 (210)	
Air		
Air consumption - 1800 rpm/cfm (m^3/m)	533 (15.1)	371 (23.7)
Approx. heat radiated to air - 1800 rpm/BTU/min	2710	3254
Generator cooling air flow 1&3Ø - 1800 rpm cfm	1020	880
Exhaust gas volume - 1800 rpm/cfm (m^3/m)	1402 (39.7)	1900 (53.8)
Exhaust gas temp - 1800 rpm/F° (C°)	943 (506)	808 (431)
Max. exhaust back Pressure - inch H^2O (mm H^2O)	**Both Models:** 30 (762)	
Wet exhaust elbow OD- in (mm)	5 (127)	6 (152)
Dry exhaust elbow in (mm)	4 (102)	6 (152)
Fuel		
Fuel injection pump type and control	**Both Models:** HPCR	
Min suction & return line - in (mm)	**Both Models:** 3/8 (10)	
Max fuel transfer pump suction lift - in (mm)	**Both Models:** 80 (2032)	
Max fuel flow to transfer pump at 1800 rpm - gph	**Both Models:** 63.4 (240)	
Specific fuel consumption max load 1800 rpm - lbs.hp.hr	**Both Models:** 351	
Approx. fuel rate[3] at 1800 RPM full load - gph (lph)[3]	**Both Models:** 14.7 (55.5)	18.4 (69.7)
Max Engine Operating Angle		
Continuous (with separate expansion tank)	**Both Models:** 20°	
Intermittent (2 minutes)	**Both Models:** 30°	
Dimensions and Weight (Do not use for installation. Contact factory for installation drawings and info. Conact factory for single phase dimensions.)		
Length - inches (mm)	97.5 (2745)	102.5 (2604)
Width - inches (mm)	37.3 (947)	36.0 (914)
Height - inches (mm)	45.5 (1156)	44.8 (1138)
Weight - pounds (kilograms)	4263 (1935)	4640 (2104)

NOTES:
1. Prime kW ratings for 3Ø at 0.8 power factor. Consult factory for deration factors.
2. Net flywheel hp rating for fully equipped engine at rated speed under SAE J816b.
3. Based on prime kW rating at 1800. Fuel rate may vary depending on operating conditions.
4. Contact factory representative or www.northern-lights.com for current information.

Dealer

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Information and dimensions subject to change without notice.

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