M80A13L

FEATURES AND BENEFITS

ENGINE BLOCK
- US EPA Tier III compliant.
- Four 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 with 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.
- 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 system.
- Ring clamp fuel filters with air bleed and drain.
- Electric fuel pump integrated into primary fuel filter. Computer controlled priming for ease of operation.

LUBRICATION SYSTEM
- Positive displacement gear-type oil pump.
- Full flow, spin-on oil filter.
- Oil spray cooling reduces piston crown temperature.
- Jacket-water, plate-type, full flow oil cooler.
- Large capacity oil pan.
- Closed loop crankcase vent.

AIR SYSTEM
- Dry air filter silences intake noise.
- Turbocharger with jacket water cooled turbine housing.

COOLING SYSTEM
- Heat exchanger with keel cooled option.
- Gear driven sea water pump with self-priming flexible impeller. Bronze with stainless steel shaft.
- Cast iron expansion tank.
- Two thermostats for quick warm-ups and safety.
- Cast-iron exhaust manifold for reliable temperature control.

ESP AND DC ELECTRICAL SYSTEM
- Negative ground, 12 volt DC system has circuit breaker, starter motor and alternator with regulator.
- Low oil pressure and high coolant temperature safety shutdowns.
- Optional control panels help you specify the amount and type of information required. Comprehensive list of optional alarms and safety shutdowns.
- Optional DC logic system for simplified maintenance.
- Optional 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 90°/50° heat rise ratings.
- Engines and generators are torsionally matched for long life.
- Automatic voltage regulator; ±0.5% regulation over the entire range from no load to full load.
- Configured for 0% isochronous droop with integral electronic governor control supplied by ECU.

SPECIAL EQUIPMENT
- PMG option for 300% short circuit protection.
- Welded steel base frame.
- Sparkling white IMRON® polyurethane paint.
- Operator's and parts manuals.
- Optional sound enclosure for industry best sound and vibration attenuation in a compact design.

AC Output⤫	**M80A13L**
60 Hz, 1800 RPM* kW	**80 kW**
Voltage regulation	1%
Frequency droop control	Isochronous 0%
Phase and power factor	Three phase -0.8 power factor std.
Generator full load temperature rise	90°C temperature rise at 50°C ambient
Lugger Diesel Engine Data	
Inline cylinders/aspiration/operating cycle**	I-4 / Turbo & Aftercooled / 4
Displacement - cid (liter)	276 (4.5)
Bore/stroke - inches (mm)	4.19/5 (106/127)
Fuel injection pump type and control	Electronic (HPCR)
Cooling System (Heat exchanger standard)	
Heat rejection to jacket water - BTU min	5,863
Freshwater pump capacity - gpm (lpm)***	40.9 (155)
Approximate keel coolant capacity - gal (ltr)	5.2 (20)
Heat exchanger connection size in/out - inch	2.0
Heat exchanger approx. coolant capacity - gal (ltr)	4.4 (17)
Seawater pump capacity - gpm(lpm)	52 (197)
Max seawater pump suction head lift - ft (m)	10 (3)
Sea water pump inlet hose ID - in (mm)	2.0 (51)
Min. seawater inlet/discharge thru-hull - in (mm)	2.0 (51)
DC Electrical (12V standard, 24V optional)	
DC starting voltage - standard (optional)	12 (24)
Min battery capacity - amp hr/12V CCA (24V CCA)	200/1100 (750)
Starter rolling amps @ 0°C - 12VDC (24VDC)	920 (600)
12 Volt battery cable size up to 10 ft (3m)	2/0
Air	
Air consumption - cfm (m^3/m)	301 (8.5)
Approx heat radiated to air - BTU/min	689
Generator cooling air flow 1&3Ø - cfm	700
Exhaust gas volume - cfm (m^3/m)	685 (19.4)
Exhaust gas temp - F° (C°)	813 (434)
Max. exhaust back Pressure - inch H^2O (mm H^2O)	30 (762)
Wet exhaust elbow OD- in (mm)	4.5 (114)
Dry exhaust elbow in (mm)	4 (102)
Fuel	
Fuel injection pump type and control	HPCR
Min suction line I.D. - in (mm)	3/8 (10)
Min return line I.D. - in (mm)	1/4 (6)
Max fuel transfer pump suction lift - in (mm)	80 (2032)
Max fuel flow to transfer pump - gph	40.0
Specific fuel consumption max load (110%) - lbs.hp.hr	0.375
Approx. fuel rate✓ at full load (100%) - gph (lph)	6.1 (23)
Max Engine Operating Angle	
Continuous (with separate expansion tank)	30°
Intermittent (2 minutes)	45°
Dimensions and Weight (Do not use for installation. Contact factory for installation drawings and info)	
Length - inches (mm)	75.0 (1905)
Width - inches (mm)	38.0 (965)
Height - inches (mm)	39.4 (1001)
Weight - pounds (kilograms)	3107 (1409)
Dimensions and Weight w/Optional Sound Enclosure (Contact factory for installation drawings and info)	
Length - inches (mm)	75.0 (1905)
Width - inches (mm)	38.0 (965)
Height - inches (mm)	40.9 (1039)
Weight - pounds (kilograms)	3599 (1632)

⤫ Prime kW ratings for 3Ø at 0.8 power factor. Consult factory for deration factors.
✓ Based on prime kW rating at 1800 and 1500 RPM. Fuel rate may vary depending on operating conditions.

Northern Lights, Inc. is ISO 9001 certified through Lloyds Register Quality Assurance

4420 14th Ave. NW., Seattle WA 98107
Tel: (206) 789-3880 • 1-800-762-0165 • Fax: (206) 782-5455