

The M1064 Series marine generator sets are powered by new, US EPA Tier II compliant, Luger diesels. These sets incorporate many new features that add high power density to the Northern Lights reputation for cast-iron reliability, simplicity and durability.



### An important decision.

Whether you're repowering your vessel or building a new yacht, your future enjoyment depends on the generator set you choose today. It will run day and night, so smooth, quiet operation, long engine life, and fuel consumption are major considerations. With so much depending on your new set, it pays to choose one that is built up to a high standard of quality; not down to a low price. It pays to choose Northern Lights.

### The heritage continues.

Four decades of marine experience stands behind every Northern Lights. Yachtsmen like you have made them standard equipment on yachts from the world's premier builders. Service is handled by an international dealer group with assistance from factory branches.

### Selection without compromise.

Underloaded and overloaded generators cause problems and waste money. With five models from 33 to 99 kW, there is a M1064, 60 Hz or 50 Hz set that is just the right size for your vessel.

### Multiple set power teams.

Northern Lights broad range, 5 to 520 kW, lets you combine multiple sets aboard your vessel. Use two M1064s to simplify maintenance and parts supplies. A smaller unit can be a night set. Mix and match sets for the best, single source power solution.

### Silky smooth and whisper quiet.

Noise and vibration abatement is a top Northern Lights design priority. All M1064s have counter-rotating balancing shafts. The standard hydroelastic mounts isolate 98% of set vibration from your hull. A cast valve cover absorbs valve noise and traps crankcase oil vapor for a clean engine room. The cast iron, fresh water cooled exhaust manifold absorbs combustion noise. Choose a Northern Lights super attenuated enclosure with InSep exhaust system to lower sound levels even more.

**40-99 kW**  
60 Hz / 1800 RPM

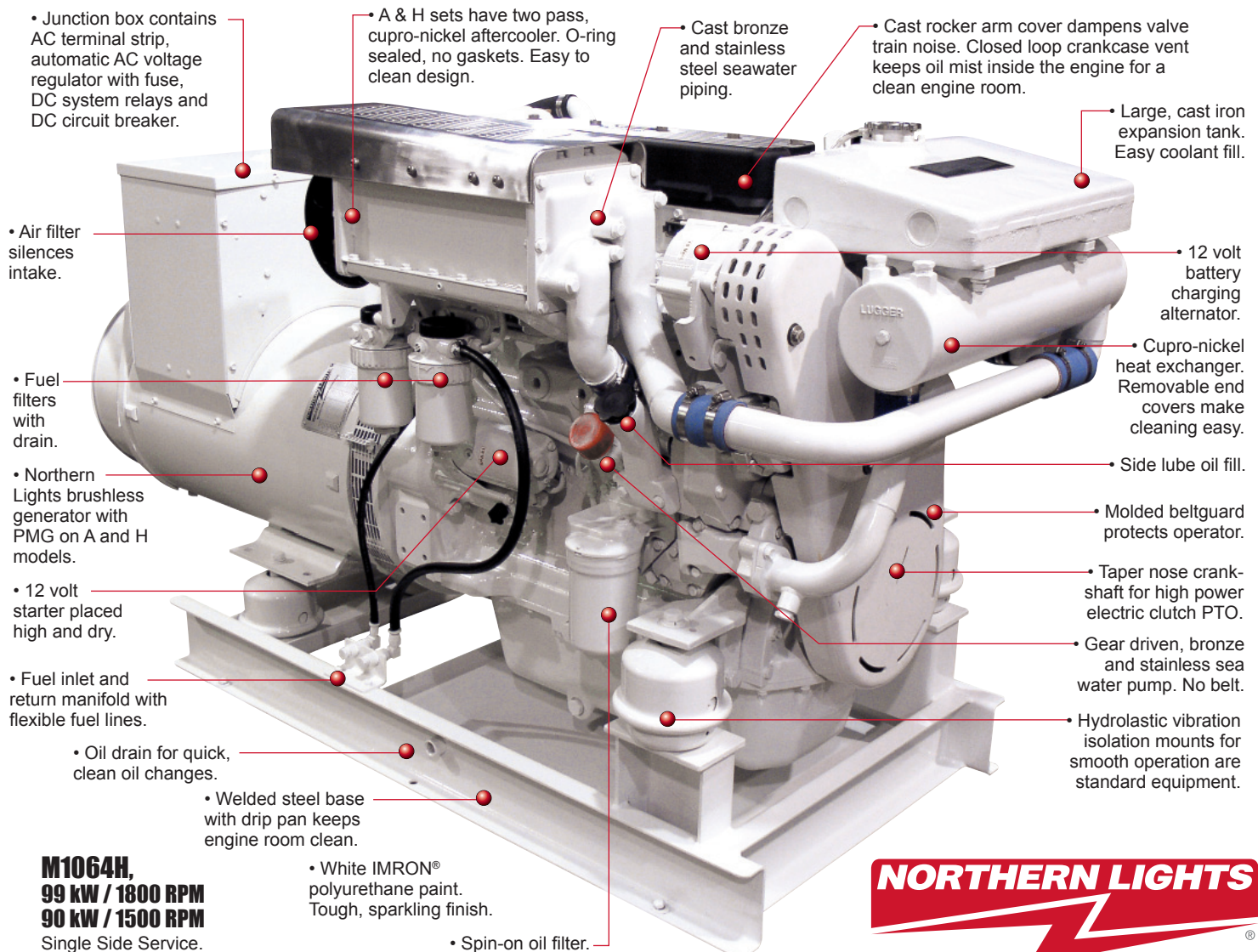
**33-90 kW**  
50 Hz / 1500 RPM

### Advanced simplicity.

Simple to operate and maintain. Hoses, gaskets and belts have been minimized. DC control panels keep you in touch with your set's performance while safety shut-downs protect it. Special 500 hour oil changes, oil drains, one side service and owners manuals simplify maintenance.

### Tough Luger diesels.

Built for continuous duty, many Luger powered sets have logged over 30,000 hours without a rebuild. The M1064 has the features to continue this tradition of reliability. Rugged components built from the finest materials.



- Junction box contains AC terminal strip, automatic AC voltage regulator with fuse, DC system relays and DC circuit breaker.
- A & H sets have two pass, cupro-nickel aftercooler. O-ring sealed, no gaskets. Easy to clean design.
- Cast bronze and stainless steel seawater piping.
- Cast rocker arm cover dampens valve train noise. Closed loop crankcase vent keeps oil mist inside the engine for a clean engine room.
- Large, cast iron expansion tank. Easy coolant fill.
- 12 volt battery charging alternator.
- Cupro-nickel heat exchanger. Removable end covers make cleaning easy.
- Side lube oil fill.
- Molded beltguard protects operator.
- Taper nose crankshaft for high power electric clutch PTO.
- Gear driven, bronze and stainless sea water pump. No belt.
- Hydrolastic vibration isolation mounts for smooth operation are standard equipment.
- Air filter silences intake.
- Fuel filters with drain.
- Northern Lights brushless generator with PMG on A and H models.
- 12 volt starter placed high and dry.
- Fuel inlet and return manifold with flexible fuel lines.
- Oil drain for quick, clean oil changes.
- Welded steel base with drip pan keeps engine room clean.
- White IMRON® polyurethane paint. Tough, sparkling finish.
- Spin-on oil filter.

**M1064H,**  
**99 kW / 1800 RPM**  
**90 kW / 1500 RPM**  
Single Side Service.



# M1064 Series

# Features that will separate your set from

## Aftercooled for high power density

A Northern Lights exclusive. No other set builder has aftercooled this engine! All A and H models have an aftercooler that cools the intake air. Cool air has more oxygen for better combustion. This aftercooler, along with electronic fuel injection, increase output to give you six cylinder power from a four cylinder set.

## Electronic system profiler

The Electronic System Profiler or "ESP" is a window to your set's real-time operating condition. The ECU that controls the electronic fuel injection gives you a SAE J1939 data stream of engine information that can be shown on an optional system monitor panel.

## Superior PMG generator ends

Northern Lights meet ABS and Lloyd's standards. All have low 95°/50° temperature rise ratings and ±0.5% voltage regulation. The "A and H" models have Permanent Magnet Generators for 300% short circuit capability required for classed vessels. PMG is optional on D, T1 and T2.

## Complete options list

Each option is designed to integrate into a total power system custom built for your vessel. Consider a new higher power PTO for up to 174 Horsepower of hydraulic power.

## Complete unit testing

Northern Lights generator sets are thoroughly factory tested and go through a complete quality control program to ensure your satisfaction with the best built marine generator on the market today.

## Engine block

- Luger 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.

## Model Specific Systems & Features

### M1064D, M1064T1:

- Mechanical rotary fuel injection pump with automatic timing advance for cleaner exhaust during start up & light load operation.
- Two valves per cylinder.

### M1064T2, M1064A:

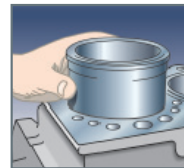
- Electronic controlled rotary fuel injection pump for higher injection pressures, variable timing control and precise fuel metering. Higher power with lower emissions.
- Two valves per cylinder.
- Isochronous electronic governor for 0% AC frequency droop.
- Electronic System Profiler (ESP)

### M1064H:

- High-pressure common rail (HPCR) for high output, improves fuel economy, better load response and lowers emissions. HPCR continuously supplies injectors with pressurized fuel. Higher pressure means better fuel atomization. Injectors are electronically operated by an engine control unit giving nearly infinite control of fuel quantity, injection timing and multiple injection events per power cycle. Pilot injection reduces cold start smoke & noise.
- Four valves per cylinder give increased air flow and allow injectors to be centered in the cylinder for an optimal spray pattern.
- Stainless steel exhaust port liners control heat rejection to the cylinder head.
- Isochronous electronic governor for 0% AC frequency droop.
- ESP (Electronic System Profiler)

- 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.
- Two gear-driven, counter-rotating balancing shafts for smooth operation.
- Eight groove poly-vee drive belt powers the alternator and freshwater pump.

- Replaceable, wet cylinder liners for long life and low rebuild costs.



## Fuel system

- Direct fuel injection systems (see model specific feature box left.)
- Ring clamp fuel filter with air bleed and drain.
- Diaphragm-type, mechanically driven fuel transfer pump with manual priming lever.
- Flexible fuel lines routed to fuel manifold on base frame for easy installation of vessel's hard piping.

## Lubrication system

- 500 hour oil change interval when fuel and oil requirements are met.
- Positive displacement gear-type oil pump.
- Full flow, spin-on oil filter.
- Oil spray cooling reduces piston crown temperature for longer life.
- Freshwater, plate-type, full flow oil cooler reduces heat and thermal breakdown of lube oil.
- Large capacity oil pan.
- Floating, cast aluminum, rocker cover traps valve noise and is a closed loop crankcase vent.
- Lube oil drain for easy changes.



## Cooling system

- Freshwater cooling system has two thermostats for safety and quicker warm-ups.
- Heat exchanger cooling includes: Gear driven, flexible impeller seawater pump. Easy to clean, tube-type heat exchanger is cupro-nickel for long life.
- Cast iron expansion tank with brass filler neck for easy filling.
- Cast-iron exhaust manifold has double pass freshwater flow for even temperature control, fast warm-up and no hot spots.
- Zinc anode electrolysis protection.
- D, T1, T2 available in keel cooled version.

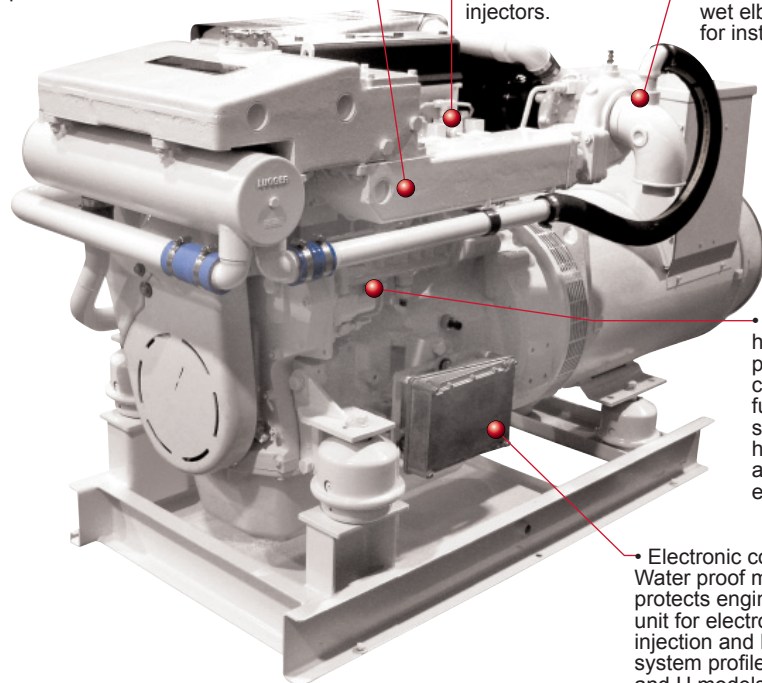


## M1064H 90kW to 99 kW - Non Service Side

- Freshwater cooled, cast iron exhaust manifold. Two pass coolant flow for even temperature control.

- M1064H has a four valve cylinder head with centered injectors.

- Turbocharger is fresh water cooled for safety. Optional wet elbow swivels for installation.

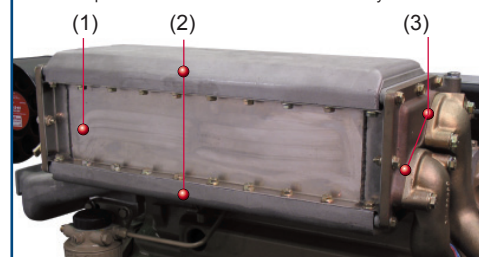


- M1064H has high pressure common rail fuel injection system for high output and low emissions.

- Electronic controls. Water proof module protects engine control unit for electronic fuel injection and ESP engine system profiler on T2, A and H models.

## Aftercooler. A Northern Lights Exclusive.

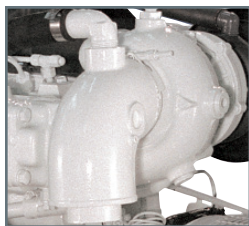
Shown unpainted and without heat shield for clarity.



## Air system-turbo and aftercooler

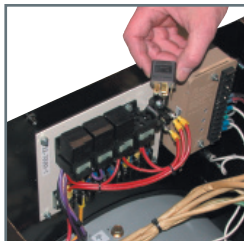
- Dry air filter silences intake noise.
- A, and H models have aftercooler with aircraft quality, 70/30 cupro-nickel (70% copper/30% nickel), two pass element (1). Oval water tubes are easy to clean and stronger than round tubes. Corrugated air cooling fin design supports tubes better than plate fin type. Seawater piping (3) is cast bronze and stainless steel. Water never touches the cast aluminum air ducts (2). No gaskets; all components are machined and have o-ring seals. Seawater direct from the gear driven pump, for maximum cooling. Dry bolt hole design protects engine cylinders.

- T1, T2, A, H models are turbocharged to increase output. Turbocharger turbine housings are freshwater cooled for safety.



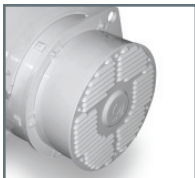
## ESP and DC electrical system

- Northern Lights ESP supplies SAE J1939 data stream through a Can Buss plug for optional engine monitor.
- Negative ground, 12 volt DC system has circuit breaker, starter motor and battery charging alternator with regulator.
- Standard, S-3B remote mount control panel with NEMA enclosure has engine hour meter, coolant temperature gauge, oil pressure gauge, DC voltmeter, start-stop and shutdown bypass switches.
- Reliable relay based DC system is easy to trouble shoot and repair. No "printed circuit board" to fail. Relays allow multiple panel installations up to 110 feet from set.
- Engine and panel are prewired with terminal strips.
- Low oil pressure and high coolant temperature safety shutdown system.



## AC generator

- Direct coupled, single bearing, 12 lead, reconnectable AC generator. Maintenance free brushless design.
- Generators meet or exceed class society standards. All have class H insulation, accessible diodes, oversized ball bearings, marine grade shafts and conservative 95°/50° heat rise ratings.
- Engines and generators are torsionally matched for long life.
- Automatic voltage regulator gives fast response to electrical load changes. Voltage is regulated to ±0.5% (one half of one percent) over the entire range from no load to full load.
- Isochronous electronic governor for 0% AC frequency droop.
- M1064A and H have PMG (permanent magnet generator) to power AVR for 300% short circuit capability for "classed" vessels. PMG is optional on D, T1, and T2.



## Special equipment

- Standard hydrolastic mounts isolate 98% of vibration from hull for owner comfort.
- Welded steel base frame with drip pan. Easy to mount and keep clean.
- Belt guard protects operator even on sets in sound enclosures.
- Sparkling white IMRON® polyurethane paint protects set and provides service visibility.
- Operator's and parts manuals.



## Design your next generator set

Here are just some of the options you can choose for customizing your Northern Lights to match your special requirements. These are not slap-dash add-ons. Each is engineered to be part of an integrated power system that works to enhance your comfort, safety and ease of vessel operation. A Northern Lights representative can assist you in designing the ultimate set for your vessel.



## Sound enclosures

Super attenuated enclosures have dual sound-dampening barriers, sound trapping air ducts, and powder coated aluminum frame and panels for corrosion resistance. Panels have easy-to-use trigger latches to allow quick access.



## InSep exhaust systems

Dramatically reduces noise by placing the muffler and gas/water separator inside the sound enclosure. Eases installation and saves engine room space.

## Full HP power take offs

At the touch of a button, the electric clutch PTO gives you 50 to 174 HP depending on the model and RPM. Run hydraulic equipment; bowthrusters, deck gear, winches, etc.



## Double wall fuel lines

With catch tank, alarm and leaking line indicator as required by Lloyd's, ABS, DNV, Germanischer Lloyd's and other class societies.



## Shutdowns and prealarms

Shutdowns for all systems are available. Prealarms warn you before a shut down occurs.



## ESP monitoring systems

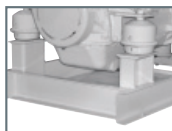
Your window to the operational condition of your set. Monitor all major engine functions and diagnostics on a read out screen mounted in a convenient location



## Permanent Magnetic Generators

PMG supplies uncorrupted power to the automatic voltage regulator. PMG enhances generator performance by making it more tolerant of nonlinear loads and it provides the 300% short circuit capability necessary for Lloyd's, ABS, DNV, USCG

and Germanischer Lloyd's classifications. PMG is standard equipment on M1064A and M1064H and optional on other M1064s.



## Aluminum base frames

Take a load off your yacht with these lightweight frames. Aluminum boat owners; have your set welded in place.

## Paralleling components

Northern Lights can supply governors and other engine controls required for parallel installations.

## Electronic governors

Protect your delicate electronic equipment with precise engine speed and frequency control. Available on D and T1 models. Isochronous ±0% governors standard on T2, A and H.



## DC alternators

12V 90A and 120A. 24V 75A and 100A. Standard or isolated ground.



## Sight oil gauge

Check the oil level in your sump with a quick glance. Alarm warns you when oil level is low.



## Exhaust Systems

Wet and dry mufflers. Exhaust gas/water separators. Cast iron wet exhaust elbows. Dry exhaust elbows and flex.

## Additional control panels

Choose the amount of control you want! Northern Lights offers five control panels for these models, each available in 12 or 24 volt. These handsome panels allow you to monitor and control your generator from one or several locations onboard. Custom control panels are also available.

### S-1 Includes:

Run light, start/stop switch and shutdown bypass/preheat switch.



### S-1B Includes:

Run light, engine hour meter, start/stop, and shutdown bypass/preheat switch.



### S-3B Includes:

DC voltmeter, coolant temperature gauge, oil pressure gauge, engine hourmeter, start/stop, and shutdown bypass/preheat switch in a NEMA enclosure. Available with autostart.



S-3C same features as S3B in a compact flush mount panel.



### S-4 Includes:

AC voltmeter, frequency meter, ammeter with phase selector switch, DC voltmeter, engine hour meter, engine oil pressure gauge, engine coolant temperature gauge and control switches. Available with autostart, flush mount or NEMA box.



# M1064 Series

# General Specifications and Dimensions

AC Output <sup>1</sup>	M1064D	M1064T1	M1064T2	M1064A	M1064H
<b>60 Hz, 1800 RPM<sup>1</sup> kW</b>	<b>40 kW</b>	<b>55 kW</b>	<b>65 kW</b>	<b>92 kW</b>	<b>99 kW</b>
<b>50 Hz, 1500 RPM<sup>1</sup> kW</b>	<b>33 kW</b>	<b>50 kW</b>	<b>55 kW</b>	<b>N/A</b>	<b>90 kW</b>
Voltage regulation and PMG	±0.5% (PMG opt)	±0.5% (PMG opt)	±0.5% (PMG opt)	±0.5% (PMG Std)	±0.5% (PMG Std)
Frequency droop control	±5%	±5%	Isosynchronous 0%	Isosynchronous 0%	Isosynchronous 0%
Phase and power factor	All models are three phase-0.8 power factor. Single phase-1.0 (unity) power factor is available on "D, T1, T2"				
Generator full load temperature rise	All are: 95°C temperature rise at 50°C ambient				
Lugger Diesel Engine Data					
Inline cylinders/Aspiration/Operating cycle	I-4/Natural/4	I-4/Turbo/4	I-4/Turbo/4	I-4/Turbo Aftercooled/4	I-4/Turbo Aftercooled/4
Displacement - cid (liter)	276 (4.5)	276 (4.5)	276 (4.5)	276 (4.5)	276 (4.5)
Bore/Stroke - inches (mm)	4.19/5 (106/127)	4.19/5 (106/127)	4.19/5 (106/127)	4.19/5 (106/127)	4.19/5 (106/127)
HP @ 1800 RPM (1500 RPM) <sup>2</sup>	62 (54)	90 (75)	102 (83)	131 (N/A)	174 (146)
Max. front power take off HP @ 60 Hz (50 Hz)	60 (50)	90 (75)	102 (83)	131 (N/A)	174 (146)
Oil capacity with filter - quarts (ltr)	14.3 (13.5)	14.3 (13.5)	14.3 (13.5)	14.3 (13.5)	21.7 (20.5)
Cooling System					
Approx. heat exchanger cooling capacity - gal (ltr)	5.5 (21)	5.5 (21)	5.5 (21)	5.5 (21)	5.5 (21)
Min. seawater inlet/discharge through hull dia. - in (mm)	1.25 (32)	1.25 (32)	1.25 (32)	2 (51)	2 (51)
Sea water pump inlet hose ID - in (mm)	1.25 (32)	1.25 (32)	1.25 (32)	2 (51)	2 (51)
Heat rejection to jacket water - 60 Hz BTU min	2151	3267	4138	2845	3415
Heat rejection to jacket water - 50 Hz BTU min	1911	2707	3025	N/A	3074
Freshwater pump capacity - 60 Hz - gpm (lpm)	38 (144)	38 (144)	38 (144)	38 (144)	60 (227)
Freshwater pump capacity - 50 Hz - gpm (lpm)	32 (120)	32 (120)	32 (120)	N/A	50 (189)
Seawater pump capacity - 60 Hz - gpm (lpm)	24 (91)	24(91)	24 (91)	42 (159)	42 (159)
Seawater pump capacity - 50 Hz - gpm (lpm)	20 (76)	20(76)	20(76)	N/A	35 (133)
Max seawater pump suction head - in (m)	39 (1)	39 (1)	39 (1)	39 (1)	39 (1)
Consult factory for keel and skin cooler sizing	Contact Factory	Contact Factory	Contact Factory	N/A	N/A
Keel cooler head diameter - in NPT	1.5	1.5	1.5	N/A	N/A
Keel cooler hose ID discharge and suction - in (mm)	2.25 (57)	2.25 (57)	2.25 (57)	N/A	N/A
DC Electrical					
DC starting voltage - standard (optional)	12 (24)	12 (24)	12 (24)	12 (24)	12 (24)
Min battery capacity - amp hr/12V CCA (24V CCA)	200/640 (570)	200/640 (570)	200/640 (570)	200/640 (570)	200/640 (570)
Starter rolling amps @ 0°C - 12VDC (24VDC)	780 (600)	780 (600)	780 (600)	780 (600)	780 (600)
12 Volt battery cable size up to 10 ft (3m)	00	00	00	00	00
Air					
Generator cooling air flow - 60 Hz/cfm	700	700	700	700	700
Generator cooling air flow - 50 Hz/cfm	575	575	575	N/A	575
Air consumption - 60 Hz - cfm (m <sup>3</sup> /m)	127 (3.6)	201 (5.7)	226 (6.4)	274 (7.8)	330 (9.4)
Air consumption - 50 Hz - cfm (m <sup>3</sup> /m)	85 (2.4)	134 (3.8)	151	N/A	240 (6.8)
Exhaust gas volume - 60 Hz - cfm (m <sup>3</sup> /m)	357 (10.1)	512 (14.5)	618 (17.5)	724 (20.5)	869 (24.6)
Exhaust gas volume - 50 Hz - cfm (m <sup>3</sup> /m)	251 (7.1)	339 (9.5)	508 (14.4)	N/A	699 (19.8)
Exhaust gas temp - 60 Hz - F° (C°)	1089° (587°)	959° (515°)	1040° (560°)	993° (534°)	979° (526°)
Exhaust gas temp - 50 Hz - F° (C°)	999° (537°)	918° (492°)	979° (511°)	N/A	1094° (590°)
Approx heat radiated to air - 60Hz - BTU/min	328	451	533	754	861
Approx heat radiated to air - 50Hz - BTU/min	271	410	451	N/A	738
Max Exhaust Back Pressure - inch H <sub>2</sub> O (mm H <sub>2</sub> O)	48 (1220)	30 (762)	30 (762)	30 (762)	30 (762)
Wet exhaust Elbow OD- in (mm)	4 (100)	4 (100)	4 (100)	4 (100)	Contact Factory
Fuel					
Fuel injection pump type and control	Rotary Mechanical	Rotary Mechanical	Rotary Electronic	Rotary Electronic	HPCR Electronic
Min suction & return line - in (mm)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)
Max fuel transfer pump suction lift - in (mm)	36 (914)	36 (914)	36 (914)	36 (914)	36 (914)
Max fuel flow to transfer pump - gph 60 Hz (50 Hz)	29.9 (28.9)	29.9 (28.9)	21.5 (20.8)	22.7 (N/A)	19.6 (18.1)
Full load fuel returned to tank - gph 60 Hz (50 Hz)	26.6 (26.1)	24.7 (25.1)	15.5 (16.5)	15.8 (N/A)	9.92 (11.0)
Specific fuel consumption max load - 60 Hz/lbs.hp.hr.	.389	.369	.378	.375	.364
Specific fuel consumption max load - 50 Hz/lbs.hp.hr.	.360	.362	.384	N/A	.349
Approx. fuel rate <sup>3</sup> at 60 Hz full load - gph (lph) <sup>3</sup>	3.29 (12.45)	5.14 (19.45)	6.01 (22.74)	6.92 (26.19)	9.13 (34.58)
Approx. fuel rate <sup>3</sup> at 50 Hz full load - gph (lph) <sup>3</sup>	2.74 (10.37)	3.83 (14.49)	4.31	N/A	7.17 (27.13)
Max Engine Operating Angle					
Continuous (with separate expansion tank)	All Models: Front Down: 0-5°, ( 0-10°). Rear Down: 0-12°. Left/Right Down: 0-5°, (0-23°)				
Intermittent (2 minutes)	All Models: Front/Rear Down: 0-30°. Left/Right Down: 0-30°				
Dimensions and Weight (See note 4)					
Set length <sup>4</sup> - inch (mm)	64.2 (1631)	67.8 (1722)	67.8 (1722)	71 (1803)	71 (1803)
Set width <sup>4</sup> - inch (mm) (*narrow version)	31 (787)	31 (787)	31 (787)	31 (787)	31 (787)
Set height <sup>4</sup> - inch (mm)	40.16 (1020)	40.16 (1020)	40.16 (1020)	40.6 (1032)	40.6 (1032)
Approx. dry weight <sup>4</sup> HE cooling 3 phase - lbs (kg)	1865 (846)	1920 (871)	1920 (871)	2233 (1013)	2236 (1014)
Approx. dry weight <sup>4</sup> HE cooling 1 phase - lbs (kg)	1925 (873)	2195 (996)	2195 (996)	N/A	N/A
Sound enclosure <sup>4</sup> - inch (mm) and weight	All models: Length 80.88 (2054) x Width 38 (965) x Height 45.65 (1159) – Weight 657 lbs (298 kg)				

## NOTES:

- Prime kW ratings for 3Ø at 0.8 power factor. Consult factory for deration factors.
- Net flywheel hp rating for fully equipped engine at rated speed under SAE J816b.
- Based on prime kW rating at 1800 and 1500 RPM. Fuel rate may vary depending on operating conditions.
- Contact factory = consult factory representative or [www.northern-lights.com](http://www.northern-lights.com) for current information.

- Data for units with hydrostatic mounts, heat exchanger cooling and 3 phase generator ends. Dimensions and weight are affected by optional equipment, AC output, phase, exhaust and cooling configuration. Standard, non-InSep enclosures.
- Dimensions are subject to change without notice, they are not intended for installations. Contact a factory representative for the current installation data.

## Dealer

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