

Reliability. Durability. Simplicity.

The Northern Lights M1276A1 & A2 Series generator sets are built to be run at high loads. Based on the solid reliability of a four-valve Luger diesel engine, the M1276A's can produce reliable on-board power, with a kilowatt range of 235-280 kW at 60 Hz (1800 RPM), or 185-230 kW at 50 Hz (1500 RPM).

It starts with engineering.

Northern Lights engineers its generators around some important core principles. At the forefront, is the commitment to creating power in a reliably efficient package. The cast iron exhaust manifold is combined with the expansion tank and heat exchanger housings on the M1276 series into a durable, robust jacket water cooling system.

If it's not there, it can't break.

Advanced engineering has minimized the number of hoses, belts and gaskets. Most service points are conveniently located on a common side. M1276A's are also designed to allow for longer time between oil changes than comparable models.

Electronics equal better fuel economy.

The ultra high pressure electronic fuel injection on the M1276A series allows for quick, smoke-less starts - even when cold - and improves fuel economy. The electronic control unit promotes protection by self-diagnosis.

Keep it safe, keep it running.

Safety and peace of mind come standard with your Northern Lights generator set as well. Northern Lights DC Logic System continually monitors vital engine functions. The automatic AC voltage regulator keeps voltage to +/- 1% to help protect the most sensitive instruments and electronics from power dips and surges. Automatic safety shutdowns for low oil pressure and high coolant temperature are standard features of the M1276A family.

Clean, quiet operation.

Compact and high powered, the M1276A's are also engineered for comfort with features like isolation mounts to reduce vibration. The closed-loop crankcase vent, intake silencers and

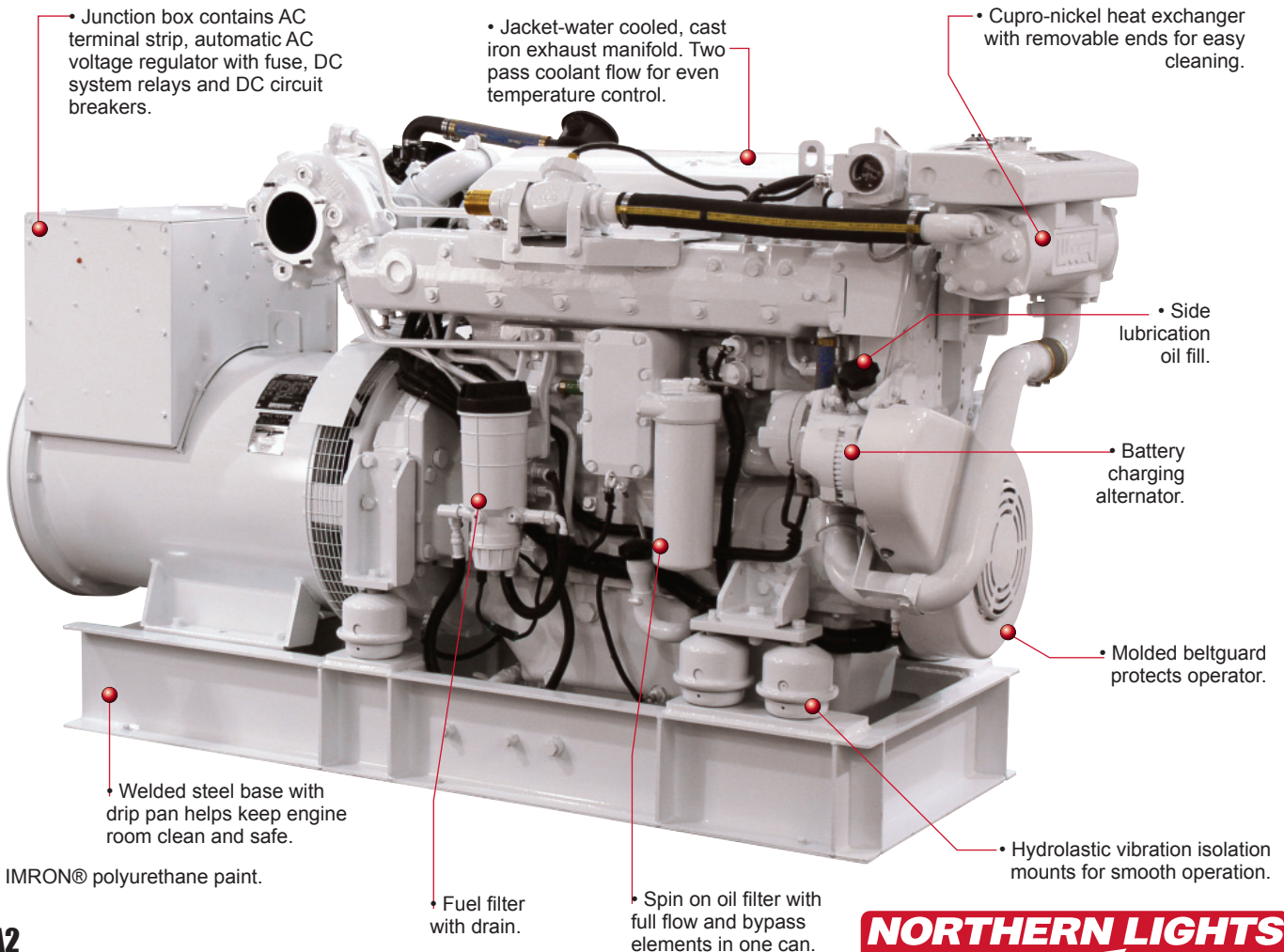
235-280 kW
60 Hz / 1800 RPM

200-230 kW
50 Hz / 1500 RPM

cast valve covers help keep your engine room remarkably clean and quiet. Optional Northern Lights innovations like InSep and our super attenuated sound enclosures can dramatically reduce the generator set's sound signatures.

Ease of customization.

With Northern Lights' famous commonality in parts, and easy customization, your M1276A series generator set can be as unique as your vessel. You have enough worries on the high seas. Your power generation system shouldn't be one of them. And thanks to the reliability, durability and simplicity of Northern Lights' M1276A series, it doesn't have to be.



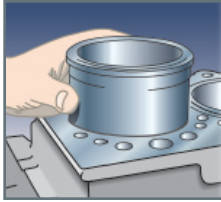
M1276A2
235 kW / 1800 RPM
200 kW / 1500 RPM
Service side.

M1276A Series

Separate your set from the ordinary.

Engine Block

- Six cylinder, in-line, four cycle, liquid cooled, overhead cam, four valve, marine diesel with a heavy-duty, cast iron, industrial-grade engine block.
- Replaceable, wet type cylinder liners are hardened and precision machined for long life. Engine is rebuildable to original factory specifications.
- Liquid cooled cylinder liner top reduces temperatures by up to 130°F (72°C) for durability and head gasket life.
- Balanced, forged crankshaft with induction hardened journals for long life.
- Replaceable valve seats and guides.



- Overhead camshaft reduces the valve train parts and improves performance. Camshaft is gear driven; no chains or timing belt to worry about. Large camshaft journals and bearings for long life. Large roller cam followers.

- Four valves per cylinder increase air flow and allow unit fuel injector to be placed in the center of the cylinder for an optimal fuel spray pattern.
- Cast aluminum, "floating" valve cover blocks valve train noise. Cover is removable with three bolts for quick service access.
- Articulated pistons with high strength steel crown and aluminum skirt for long life under high loads.
- Torsional crankshaft vibration damper.
- SAE 1 flywheel housing is standard.



Air Intake and Exhaust

- Turbocharged and aftercooled for optimum power and performance.
- Dry air filter silences intake air.
- Closed loop crankcase vent keeps engine room clear of vapors.



Lubrication

- Spin on oil filter placed high and dry on generator set. Features full flow and bypass elements in one can for ease of service.
- Side lube oil fill.
- Oil drain outlets with optional oil pump available.



Electronic Fuel Injection System

- Electronic engine control unit (ECU) monitors engine functions for easy diagnosis.
- ECU is housed in water and corrosion resistant module and supplies an SAE J1939 information data stream through a CANbus data stream for the Electronic System Profiler (ESP) monitor screen.
- Electronic unit injectors provide precise fuel delivery for excellent fuel economy and performance. Reduces cold start smoke and noise.
- Fuel filter with drain.



Cooling System

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



AC Generator

- Direct coupled, single bearing Northern Lights brushless generator is maintenance free.
- Features long-life Permanent Magnet Generator (PMG).
- Engines and generators are torsionally matched for long life. Factory tested to ensure quality.
- Class H insulation, accessible diodes, oversized ball bearings and marine grade shafts to provide stability in challenging marine environment.

DC Electrical System

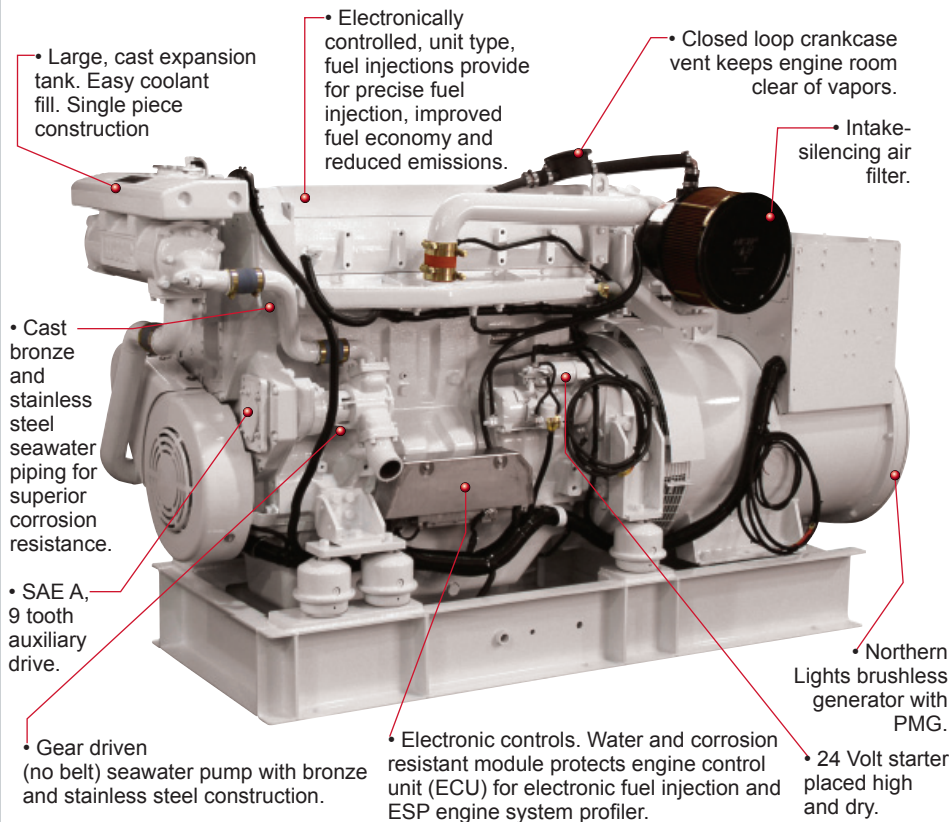
- DC system uses reliable, replaceable relays instead of unrepairable printed circuit board.
- 24 volt starter and battery charging alternator. (12 volt optional)
- Standard panel.
- Automatic shutdowns for low oil pressure and high coolant temperature.

Special Equipment

- Standard hydrostatic mounts isolate vibration from hull.
- Molded belt guard protects operator.
- White IMRON® polyurethane paint provides enhanced protection and visibility.
- Printed operator's and parts manuals standard. (Optionally available on CD-Rom.)



M1276A2 - Non Service Side



Options to customize your power system.

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 working in concert to enhance your comfort, safety and ease of vessel operation. Your Northern Lights representative will help your naval architect and boatbuilder specify the ultimate set for your vessel.



Sound Enclosures

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

High HP front power take offs

At the touch of a button, the front end power take off gives you 114 to 137 Horsepower (based on model and RPM). Run hydraulic bow thrusters, deck gear, winches and more from your generator. Equipped with an electric clutch.



Shutdowns and prealarms

Safety shutdowns are available for almost all generator set systems and pre-alarms can save even more time and money by warning before the shutdowns occur.



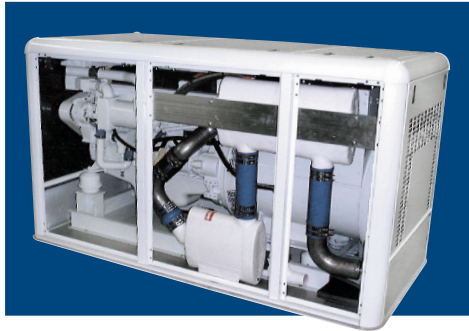
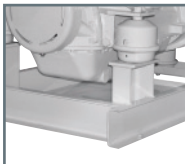
DC Alternators

High capacity battery charging power is available from our line of DC alternators. Options include 12v 90A and 120A; 24v 75A and 100A; standard or isolated ground.



Aluminum base frames

Take a load off your yacht with lightweight aluminum base frames. Aluminum boat owners can even have their sets welded into place.



InSep exhaust systems

A Northern Lights exclusive, InSep integrates the generator's water lift exhaust muffler and gas/water separator inside the sound enclosure. InSep not only saves valuable engine room space, but can dramatically aid noise reduction as well.

Paralleling controls

Northern Lights can provide load sharing controls for parallel generator installations. Contact your factory representative for more details.

ESP monitoring systems

The ESP monitoring system is your window to the operational condition of your generator set. You can monitor all major engine functions and diagnostics on an easy to read LCD screen, mounted wherever is most convenient.



Sight oil gauge/alarm

Check the oil level in your sump with a quick glance, even when the set is running, when you add a custom sight oil gauge. The optional alarm warns you when the oil level is low.



Exhaust components

Customize your generator further with our wide variety of wet and dry mufflers, exhaust gas-water separators, wet and dry exhaust elbows and dry exhaust flex. Whatever your exhaust system's needs, Northern Lights can provide it.



Control Panels



Additional control panels

Add an additional control panel, to replace or complement your system's standard panel. Northern Lights offers several to chose from, compatible with the M1276 series.

Available in 12 or 24 volt, these handsome panels allow you to monitor vital generator functions from one or more convenient onboard locations.

S-1 Includes:

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

S-1B Includes:

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

S-3B Includes:

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

S-3C Includes:

same features as S-3B 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 temp gauge and control switches. Available with autostart, flush mount or NEMA box.

Custom control panels are also available.



www.northern-lights.com

NORTHERN LIGHTS

AC Output	M1276A1	M1276A2
60Hz, 1800 RPM* kW	235 kW	280 kW
50Hz, 1500 RPM* kW	200 kW	230 kW
Voltage regulation with PMG	+/- 1%	+/- 1%
Frequency droop control	Iso 0%	Iso 0%
Phase and power factor	3 ph (0.8 pf)	3 ph (0.8 pf)
Generator full load temperature rise	95°C	95°C
Lugger L1276 Marine Diesel Engine Data		
Cylinders/Cylce	6 inline / 4 cycle	6 inline / 4 cycle
Aspiration	Turbo aftercooled	Turbo aftercooled
Displacement - cid (ltr)	763 (12.5)	763 (12.5)
Bore / Stroke - in (mm)	5.00 (127) 6.5 (165)	5.00 (127) / 6.5 (165)
HP @ 1800 RPM / HP @ 1500 RPM [^]	341 / 310	402 / 338
Oil capacity w/filter - US qts(ltrs)	44 (42)	44 (42)
Engine Cooling System		
Approx. HE cooling capacity - gal (ltr)	14.25 (54)	14.25 (54)
Min. seawater inlet/through hull dia. - in (mm)	3 (75)	3 (75)
Seawater pump inlet hose ID - in (mm)	3 (75)	3 (75)
Heat rejection to jacket water - BTU/min @60Hz/50Hz	11120 / 10175	13195 / 11094
Fresh water pump capacity - gal/min (ltr/min) @60Hz	92 (352)	92 (352)
Fresh water pump capacity - gal/min (ltr/min) @50Hz	73 (276)	73 (276)
Seawater pump capacity - gal/min (ltr/min) @60Hz	92 (352)	92 (352)
Seawater pump capacity - gal/min (ltr/min) @50Hz	76/287	76 / 287
DC Electrical Data		
Starting voltage - standard/optional (volts)	24 / 12	24 / 12
Min. battery capacity - amp/hour	225	225
Starter rolling current - 12/24VDC @ 0°C	1280 / 600	1280 / 600
Battery size - 12/24VDC (CCA)	1800 / 900	1800 / 900
Battery cable size up to 10 ft (3 m)	4-0	4-0
Air and Exhaust Systems		
Generator cooling air flow - cfm (m ³ /m) @ 60Hz	1020	880
Generator cooling air flow - cfm (m ³ /m) @ 50Hz	850	730
Air consumption - cfm (m ³ /m) @ 60Hz	794 (22.5)	816 (23.1)
Air consumption - cfm (m ³ /m) @ 50Hz	635 (18.0)	678 (19.2)
Exhaust gas volume - cfm (m ³ /m) @ 60Hz	1783 (50.5)	2083 (59)
Exhaust gas volume - cfm (m ³ /m) @ 50Hz	1514 (42.9)	1627 (46.1)
Exhaust gas temperature - °F/°C @ 60Hz	755 (402)	960 (515)
Exhaust gas temperature - °F/°C @ 50Hz	840 (449)	860 (460)
Approx. heat radiated to air - BTU/min @ 60Hz	1880	2206
Approx. heat radiated to air - BTU/min @ 50Hz	1600	1886
Max. exhaust back pressure - in H ₂ O/mm H ₂ O	30 (762)	30 (762)
Fuel System		
Fuel injection type and control	Electronic unit injectors	Electronic unit injectors
Min. suction/return line - in (mm)	3/8 (9.5)	3/8 (9.5)
Max. fuel transfer pump suction lift - in (mm)	36 (914)	36 (914)
Max. fuel flow to transfer pump - gal/hr @ 60Hz	35	35
Max. fuel flow to transfer pump - gal/hr @ 50Hz	29	29
Full load fuel returned to tank - gph (lph) @ 60Hz	20.2	15.5
Full load fuel returned to tank - gph (lph) @ 50Hz	15.4	13.9
Spec. fuel consumption max load - lbs.hp.hr @ 60Hz	consult factory	consult factory
Spec. fuel consumption max load - lbs.hp.hr @ 50Hz	consult factory	consult factory
Approx. fuel rate max load - gal/hr @ 60Hz [§]	14.8	19.5
Approx. fuel rate max load - gal/hr @ 50Hz [§]	13.6	15.1
Dimensions and Weight		
Length - in (mm)	98.7 (2507)	103.8 (2636)
Height - in (mm)	52.7 (1339)	52.7 (1339)
Width - in (mm)	35.3 (895)	35.3 (895)
Dry weight w/ heat exchanger - lbs (kg)	5660 (2515)	6002 (2723)

Notes on dimensions: Dimensions as shown are subject to change without notice and are not intended for installation. Contact a factory representative for current installation data. Data shown is for units with hydrolastic mounts, heat exchanger cooling and 3 phase generator ends. Dimensions and weight are affected by optional equipment, AC output, phase, exhaust and cooling configuration.

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.

Dealer

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Information and dimensions subject to change without notice.

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