M1308 SERIES

435-545 kW / 400-475 kW

FEATURES AND BENEFITS

THE STATE-OF-THE ART IN MARINE EQUIPMENT

The growing demands of the marine marketplace demand a big, robust power producer. As the world's yachts grow more sophisticated, their power generation system must keep pace.

Northern Lights generator sets are based on world-class components - including industrial strength base engines and generator ends. Our exclusive marinization process ensures reliable, clean power no matter what your vessel requires.

ELECTRONIC SYSTEM PROFILER

The M1308 series comes standard with a ComAp InteliGen NT marine panel for switchgear mounting which displays engine and AC data. The ECU that controls the electronic fuel injection provides a SAE J1939 data stream of engine information that can be shown on an optional system monitor panel.

SUPERIOR PMG GENERATOR ENDS

Northern Lights generator ends achieve ±0.5% voltage regulation. All have low temperature rise ratings to meet or exceed marine requirements. All M1308's have Permanent Magnet Generators for 300% short circuit capability required for classed vessels.

COMPREHENSIVE OPTIONS LIST

Each option is designed to integrate into a total power system specifically designed for your vessel. Consider a high power PTO, world class sound enclosure or customizable control panel to make your generator set as unique as your boat.

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.

COMPONENT SPECIFIC FEATURES

ENGINE BLOCK

- Vee-eight cylinder, four cycle, liquid cooled, overhead valve, marine diesels based on heavy-duty industrial engine blocks
- Balanced, alloy steel crankshaft with hardened and polished bearing surfaces
- High position alloy steel camshaft and pistons
- 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, strength-optimized wet cylinder liners for long life and low rebuild costs

FUEL SYSTEM

- Electronically controlled fuel injection systems for low exhaust emissions and superior fuel economy
- High torque at low revolution. (1800 or 1500 rpm)
- 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
- Centrifugal oil cleaner 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

AIR SYSTEM-TURBO AND AFTERCOOLER

- Closed crankcase ventilation
- Dry air filter silences intake noise
- After-cooler with aircraft quality, 70/30 cupro-nickel, two pass element
- Twin, isolated turbocharged for increased output. Fresh-water cooled turbine housings for safety

COOLING SYSTEM

- Freshwater cooling system with twin thermostats for quicker warm-ups
- Duel heat exchanger with expansion tanks. Gear driven, flexible impeller seawater pump. Easy to clean, tube-type cupro-nickel heat exchanger
- Cast iron expansion tank with brass filler neck. Cast-iron exhaust manifold has double pass freshwater flow for even temperature control, fast warm-up and no hot spots
- Zinc anode electrolysis protection

DC ELECTRICAL SYSTEM

- SAE J1939 data stream available through a CAN bus plug for optional engine monitor.
- Isolated ground 24 VDC system with circuit breaker, starter motor and battery charging alternator with regulator
- Standard ComAp InteliGen NT marine panel for switchgear mounting displays engine and AC data. Upgradable with enclosure, synchronizing and paralleling capability
- 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
- PMG (permanent magnet generator) to power AVR for 300% short circuit capability for classed vessels

SPECIAL EQUIPMENT

- Standard hydrolastic mounts isolate 98% of hull vibration
- 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 for protection and visibility
- Operator's and parts manuals

CLASSIFICATION STANDARDS

- Meets or exceeds US EPA Tier III emission standards
- IMO compliant
- Consult factory for additional details

GENERAL SPECIFICATIONS AND DIMENSIONS

AC Output⁜	**M1308A12**	**M1308A22**	**M1308A32**	**M1308A42**	**M1308A43**
60 Hz, 1800 RPM[1] kW	**435 kW**	**475 kW**	**514 kW**	**545 kW**	**525 kW**
50 Hz, 1500 RPM[1] kW	**400 kW**	**420 kW**	**450 kW**	**475 kW**	
Voltage regulation and PMG			All models: +/-0.5%		
Frequency droop control			0-10%		
Phase and power factor			3 phase, 0.8 pf		
Generator full load temperature rise			Max 95°C/50°C		
Diesel Engine Data					
Cylinders/Aspiration/Operating cycle			All models: V-8/Turbo & Aftercooled/4		
Displacement - cid (liter)			1001 (16.4)		
Bore/Stroke - inches (mm)			5.12/6.1 (130/154)		
HP @ 1800 RPM (1500 RPM) ✓	628 (577)	685 (603)	742 (644)	799 (685)	742 (644)
Max. front power take off HP @ 60 Hz (50 Hz)			202 (168)		
Oil capacity with filter - quarts (ltr)			51 (48)		
Cooling System					
Approx. heat exchanger cooling capacity - gal (ltr)			All models: 17 (63)		
Min. seawater inlet/discharge through hull dia. - in (mm)			C/F		
Sea water pump inlet hose ID - in (mm)			C/F		
Heat rejection to jacket water - 60 Hz BTU/min (kW)	20,470 (360)	21,950 (386)	23,660 (416)	25,530 (449)	23,660 (416)
50 Hz BTU/min (kW)	17,910 (315)	18,650 (328)	19,960 (351)	21,380 (376)	19,960 (351)
Freshwater pump capacity - 60 Hz - gpm (lpm)			C/F		
50 Hz - gpm (lpm)			C/F		
Seawater pump capacity - 60 Hz - gpm (lpm)			66 (250)		
50 Hz - gpm (lpm)			57 (215)		
Max. seawater pump suction head - in (m)			118 (3)		
Consult factory for keel and skin cooler sizing			C/F		
DC Electrical					
DC starting voltage - standard (optional)			24		
Min battery capacity - amp hr/12V CCA (24V CCA)			C/F		
Starter rolling amps @ 0°C - 12VDC (24VDC)			C/F		
24 Volt battery cable size up to 10 ft (3m)			C/F		
Air					
Generator cooling air flow - 60 Hz/cfm	1536 (43.5)	1428 (40.5)	1428 (40.5)	C/F	1428 (40.5)
50 Hz/cfm	1280 (36.3)	1190 (33.7)	C/F	C/F	C/F
Air consumption - 60 Hz - cfm (m^3/m)	1160 (32.9)	1190 (33.7)	1250 (35.3)	1300 (36.9)	1250 (35.3)
50 Hz - cfm (m^3/m)	886 (25.1)	913 (25.9)	969 (27.4)	996 (28.2)	969 (27.4)
Exhaust gas volume - 60 Hz - cfm (m^3/m)	2960 (83.8)	3150 (89.2)	3350 (95.0)	3580 (101.0)	3350 (95.0)
50 Hz - cfm (m^3/m)	2510 (71.0)	2600 (73.5)	2700 (76.4)	2880 (81.5)	2700 (76.4)
Exhaust gas temp - 60 Hz - F° (C°)	761 (405)	781 (416)	806 (430)	837 (447)	806 (430)
50 Hz - F° (C°)	847 (453)	855 (457)	869 (465)	883 (473)	869 (465)
Approx. heat radiated to air - 60Hz - BTU/min (kW)	3108 (54.6)	3261 (57.3)	3525 (62.0)	C/F	3525 (62.0)
50Hz - BTU/min	2793 (49.1)	3033 (53.3)	3050 (53.6)	C/F	3060 (53.6)
Max. Exhaust Back Pressure - inch H_2O (mm H_2O)			All models: 30 (762)		
Wet exhaust Elbow OD- in (mm)			C/F		
Fuel					
Fuel injection pump type and control			All models: PDE/S6 EMS		
Min suction & return line - in (mm)			0.5 (13)		
Max fuel transfer pump suction lift - in (mm)			79 (2000)		
Max fuel flow to transfer pump - gph 60 Hz (50 Hz)			106 (100)		
Full load fuel returned to tank - gph 60 Hz (50 Hz)	73.7 (71.1)	71.1 (70.0)	68.4 (68.1)	64.6 (65.6)	68.4 (68.1)
Specific fuel consumption max load - 60 Hz - lbs./hp-hr.	0.366	0.332	0.331	0.332	0.331
50 Hz - lbs./hp-hr.	0.327	0.326	0.326	0.327	0.326
Approx. fuel rate ⁂ at 60 Hz full load - gph (lph)	32.3 (122)	34.9 (132)	37.6 (142)	41.4 (157)	37.6 (142)
50 Hz full load - gph (lph)[3]	28.9 (110)	30.0 (114)	31.9 (121)	34.4 (130)	31.9 (121)
Maximum Engine Operating Angle					
Continuous (with separate expansion tank)			All models: 12° front/rear, 10° lateral		
Intermittent (2 minutes)			25° front/rear, 30° lateral		
Dimensions and Weight (See note ƛ & ≁)					
Set length[ƛ] - inch (mm)			All models: 106 (2683)		
Set width[ƛ] - inch (mm)			48.2 (1224)		
Set height[ƛ] - inch (mm)			51.7 (1314)		
Approx. dry weight[ƛ] HE cooling 60 Hz - lbs (kg)	C/F	7607 (3450)	C/F	C/F	C/F
Approx. dry weight[ƛ] HE cooling 50 Hz - lbs (kg)	C/F	7607 (3450)	C/F	C/F	C/F
Sound enclosure[ƛ] - inch (mm)			C/F		
Sound enclosure[ƛ] weight - lbs (kg)			C/F		
					IMO Tier III

NOTES:
C/F = Contact factory representative or www.northern-lights.com for current information

⁜ 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.
ƛ Data 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. Consult factory for data on enclosures for sets with InSep.
≁ Dimensions are subject to change without notice, they are not intended for installations. Contact a factory representative for the current installation data.

NORTHERN LIGHTS®

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Information and dimensions subject to change without notice.