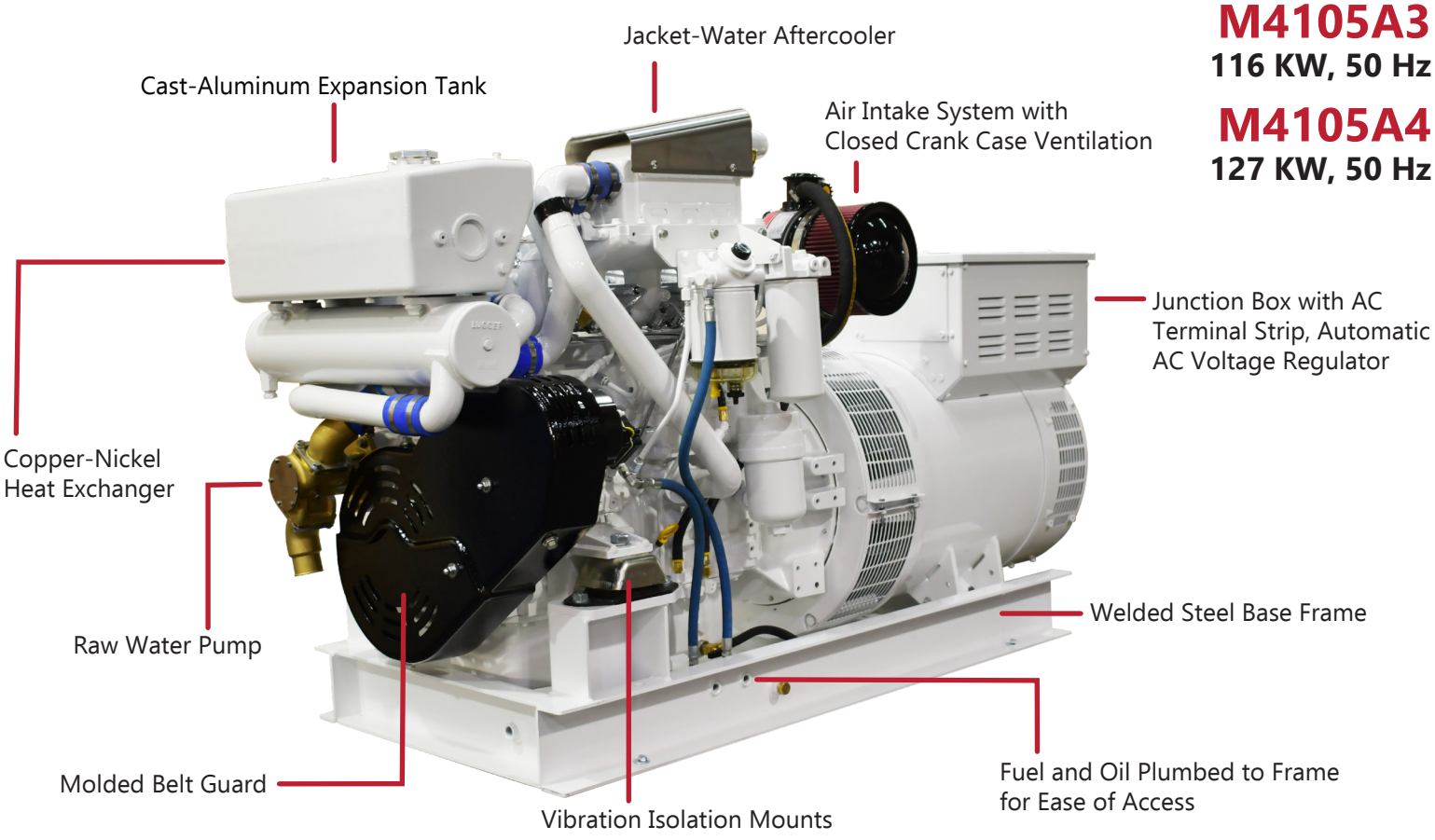
NORTHERN LIGHTS®

M4105A1
90 KW, 50 Hz

M4105A2
105 KW, 50 Hz

M4105A3
116 KW, 50 Hz

M4105A4
127 KW, 50 Hz



FEATURES & BENEFITS
Powered by Lugger

- Designed for the smallest possible footprint without sacrificing serviceability
- Minimal belts and hoses for longer life
- Reliable cast-iron, gear-driven freshwater and silicon bronze raw water pump

ENGINE BLOCK

- Four cylinder, four cycle, inline, liquid cooled, overhead valve marine diesels with replaceable wet liners
- Forged crankshaft
- Individual cylinder heads for ease of service
- Mass balancer improves vibration levels
- Heavy-duty, plate-type oil cooler
- Shaker pistons with oil gallery for improved cooling and performance

WORLD CLASS FEATURES

- Belt guard for operator safety
- Cast-iron thermostat housing for long life
- Configured for isochronous or droop speed control with integral electronic governor control supplied by ECU
- 300% short circuit protection via auxiliary winding generator-PMG not required but optionally available
- Welded steel base frame
- Sparkling white two-part polyurethane paint
- Operator and parts manual

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	M4105A1	M4105A2	M4105A3	M4105A4
	90 KW, 50 Hz	105 KW, 50 Hz	116 KW, 50 Hz	127 KW, 50 Hz
Dimensions and Weight				
Length - in (mm)	73.9 (1878)	73.9 (1878)	73.9 (1878)	73.9 (1878)
Width - in (mm)	36.17 (919)	36.17 (919)	36.17 (919)	36.17 (919)
Height - in (mm)	43.2 (1096)	43.2 (1096)	43.2 (1096)	43.2 (1096)
Weight - lbs (kg)	2604 (1181)	2604 (1181)	2604 (1181)	2888 (1310)
Dimensions and Weight with Optional Sound Enclosure				
Length - in (mm)	75.4 (1916)	75.4 (1916)	75.4 (1916)	75.4 (1916)
Width - in (mm)	42.0 (1067)	42.0 (1067)	42.0 (1067)	42.0 (1067)
Height - in (mm)	45.0 (1143)	45.0 (1143)	45.0 (1143)	45.0 (1143)
Weight - lbs (kg)	3162 (1421)	3162 (1421)	3162 (1421)	3753 (1706)
Generator Data				
Voltage Regulation	+/-0.5%	+/-0.5%	+/-0.5%	+/-0.5%
Frequency Control	Isochronous/Droop	Isochronous/Droop	Isochronous/Droop	Isochronous/Droop
Phase and Power Factor - Standard	Three phase 0.8	Three phase 0.8	Three phase 0.8	Three phase 0.8
Generator Full Load Temp. Rise at 45°C Ambient	110°	110°	110°	110°
Lugger Diesel Engine Data				
Inline Cylinder / Aspiration	I-4/Turbo-Aftercooled	I-4/Turbo-Aftercooled	I-4/Turbo-Aftercooled	I-4/Turbo-Aftercooled
Displacement - in^3 (ltr)	293 (4.8)	293 (4.8)	293 (4.8)	293 (4.8)
Bore / Stroke - in (mm)	4.13/5.39 (105/137)	4.13/5.39 (105/137)	4.13/5.39 (105/137)	4.13/5.39 (105/137)
Cooling System (Heat Exchanger Standard, Keel-Cooling Optional)				
Heat Rejection to Jacket-Water - BTU min	2342	2908	3090	C/F
Freshwater Pump Capacity - gpm (lpm)	50 (190)	50 (190)	50 (190)	50 (190)
Heat Exchanger Approx. Cooling Capacity - gal (ltr)	9.7 (37)	9.7 (37)	9.7 (37)	9.7 (37)
Engine Only Approx. Cooling Capacity - gal (ltr)	8.2 (31)	8.2 (31)	8.2 (31)	8.2 (31)
Raw Water Pump Capacity - gpm (lpm)	40 (151)	40 (151)	40 (151)	40 (151)
Max. Raw Water Pump Suction Head Lift - in (mm)	39 (1000)	39 (1000)	39 (1000)	39 (1000)
Raw Water Pump Inlet Hose ID - in (mm)	2 (51)	2 (51)	2 (51)	2 (51)
Min. Raw Water Inlet/ Discharge Thru-Hull - in (mm)	2 (51)	2 (51)	2 (51)	2 (51)
DC Electrical				
DC Starting Voltage - Standard (Optional)	12 (24)	12 (24)	12 (24)	12 (24)
Min. Battery Capacity - amp hr	90	90	90	90
Min. Battery Size - CCA	750	750	750	750
Starter Rolling Amps at 0°C - 12V (24V)	420 (225)	420 (225)	420 (225)	420 (225)
12 Volt Battery Cable Size Up to 5ft (1.5m) - mm^2	50	50	50	50
Air				
Air Consumption - m^3/m (cfm)	4.1 (146)	4.4 (157)	4.6 (162)	4.8 (169.8)
Approx. Heat Radiated to Air; Engine & Gen. - BTU/min	1304	1529	1655	1799
Generator Cooling Air Flow 1&3Ø - m^3/m (cfm)	15 (528)	15 (528)	15 (528)	17.4 (614)
Exhaust Gas Volume - kg/hr (lbs/min)	431 (15.8)	473 (17.4)	507 (18.6)	540 (19.8)
Exhaust Gas Temp. - C°(F°)	462° (864°)	482° (899°)	499° (930.2°)	524° (975.2°)
Max. Exhaust Back Pressure - in H^2O (mm H^2O)	30 (762)	30 (762)	30 (762)	30 (762)
Wet Exhaust Elbow OD - in (mm)	5 (127)	5 (127)	5 (127)	5 (127)
Dry Exhaust Elbow - in (mm)	4 (102)	4 (102)	4 (102)	4 (102)
Fuel				
Fuel Injection Pump Type and Control	Electronic (HPCR)	Electronic (HPCR)	Electronic (HPCR)	Electronic (HPCR)
Min. Suction Line Size - in (mm)	0.375 (10)	0.375 (10)	0.375 (10)	0.375 (10)
Min. Return Line Size - in (mm)	0.375 (10)	0.375 (10)	0.375 (10)	0.375 (10)
Max. Fuel Transfer Pump Suction Lift - ft (m)	3.28 (1)	3.28 (1)	3.28 (1)	3.28 (1)
Max. Fuel Flow to Transfer Pump - gph	23.8	25.3	25.8	C/F
Max. Fuel Return Line - psi	5	5	5	5
Approx. Fuel Rate at Full Load - gph (lph)	7.5 (28.35)	8.73 (30.3)	9.62 (36.4)	10.64 (48)
Max Engine Operating Angle				
Continuous - Fore/Aft	10°	10°	10°	10°
Continuous - Side to Side	22.5°	22.5°	22.5°	22.5°

C/F : Consult Factory