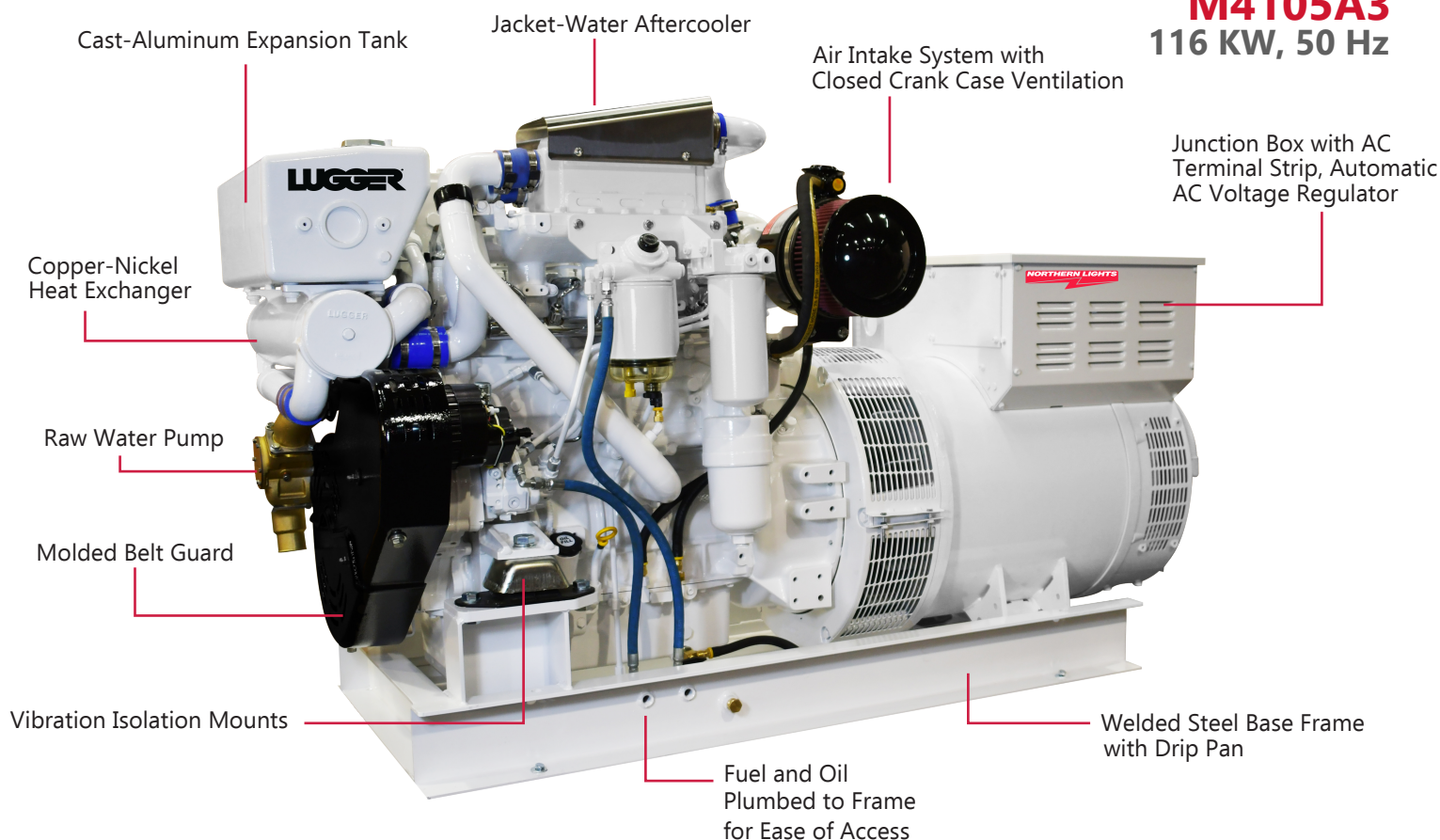




**M4105A1**  
90 KW, 50 Hz

**M4105A2**  
105 KW, 50 Hz

**M4105A3**  
116 KW, 50 Hz



## FEATURES AND BENEFITS POWERED BY LUGGER

- Designed for 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, in-line, 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
- Sparking white two-part polyurethane paint
- Operator and parts manuals
- Optional sound enclosure for sound attenuation in compact design

### Northern Lights, Inc.

4420 14th Ave NW, Seattle, WA 98107  
Tel: (206) 789-3880 | (800) 762-0165  
[www.northern-lights.com](http://www.northern-lights.com)  
[info@northern-lights.com](mailto:info@northern-lights.com)



	<b>M4105A1</b>	<b>M4105A2</b>	<b>M4105A3</b>
	90 KW, 50 Hz	105 KW, 50 Hz	116 KW, 50 Hz
<b>Dimensions and Weight</b> Do not use for installation. Contact factory for installation drawings and info.			
Length - in (mm)	73.94 (1878)	73.94 (1878)	73.94 (1878)
Width - in (mm)	36.30 (922)	36.30 (922)	36.30 (922)
Height - in (mm)	43.17 (1096)	43.17 (1096)	43.17 (1096)
Weight - lbs (kg)	2561 (1162)	2561 (1162)	2824 (1281)
<b>Dimensions and Weight with Optional Sound Enclosure</b> Do not use for installation. Contact factory for installation drawings and info.			
Length - in (mm)	75.4 (1916)	75.4 (1916)	75.4 (1916)
Width - in (mm)	42.0 (1067)	42.0 (1067)	42.0 (1067)
Height - in (mm)	45.0 (1143)	45.0 (1143)	45.0 (1143)
Weight - lbs (kg)	3166 (1436)	3166 (1436)	3429 (1555)
<b>Generator Data</b>			
Voltage Regulation	+/-0.5%	+/-0.5%	+/-0.5%
Frequency Control	Isochronous / Droop	Isochronous / Droop	Isochronous / Droop
Phase and Power Factor - Standard	Three ph. 0.8	Three ph. 0.8	Three ph. 0.8
Generator Full Load Temperature Rise at 45°C Ambient	110°C	110°C	110°C
<b>Lugger Diesel Engine Data</b>			
Inline Cylinders / Aspiration / Operating Cycle	I-4 / Turbo-Aftercooled / 4 - Stroke	I-4 / Turbo-Aftercooled / 4 - Stroke	I-4 / Turbo-Aftercooled / 4 - Stroke
Displacement - in <sup>3</sup> (ltr)	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)
<b>Cooling System (Heat Exchanger Standard, Keel-Cooling Optional)</b>			
Heat Rejection to Jacket Water - BTU min	C/F	C/F	C/F
Freshwater Pump Capacity - gpm (lpm)	50 (190)	50 (190)	50 (190)
KC Approx. Cooling Capacity - gal (ltr)	8.2 (31)	8.2 (31)	8.2 (31)
HE Approx. Cooling Capacity - gal (ltr)	9.7 (37)	9.7 (37)	9.7 (37)
Raw Water Pump Capacity - gpm (lpm)	40 (151)	40 (151)	40 (151)
Max. Raw Water Pump Suction Head Lift - in (mm)	39 (1000)	39 (1000)	39 (1000)
Raw water Pump Inlet Hose ID - in (mm)	2 (51)	2 (51)	2 (51)
Min. Raw Water Inlet / Discharge Thru-Hull - in (mm)	2 (51)	2 (51)	2 (51)
<b>DC Electrical (12V Standard, 24V Optional)</b>			
DC Starting Voltage - Standard (Optional)	12 (24)	12 (24)	12 (24)
Min. Battery Capacity - amp hr / 12V CCA (24V CCA)	90 (C/F)	90 (C/F)	90 (C/F)
Battery Size - CCA 12VDC (24 VDC)	750 (C/F)	750 (C/F)	750 (C/F)
Starter Rolling Amps @ 0°C - 12VDC (24VDC)	C/F	C/F	C/F
12 Volt Battery Cable Size Up to 5 ft (1.5m) - mm <sup>2</sup> (gauge)	50 (1/0)	50 (1/0)	50 (1/0)
<b>Air</b>			
Air Consumption - m <sup>3</sup> /m (cfm)	6.5 (231)	7.2 (255)	7.6 (267)
Approx. Heat Radiated to Air - BTU/min	1304	1529	1655
Generator Cooling Air Flow 1&3Ø - m <sup>3</sup> /m (cfm)	15 (528)	15 (528)	17.4 (614)
Exhaust Gas Volume - kg / hr (lb / min)	468 (17.2)	518 (19)	545 (20)
Exhaust Gas Temp - C° (F°)	435° (815°)	470° (878°)	488° (910°)
Max. Exhaust Back Pressure - inch H <sup>2</sup> O (mm H <sup>2</sup> O)	30 (762)	30 (762)	30 (762)
Wet Exhaust Elbow OD - in (mm)	4 (102)	4 (102)	4 (102)
Dry Exhaust Elbow - in (mm)	4 (102)	4 (102)	4 (102)
<b>Fuel</b>			
Fuel Injection Pump Type and Control	Electronic (HPCR)	Electronic (HPCR)	Electronic (HPCR)
Min. Suction Line Size - in (mm)	0.375 (9.525)	0.375 (9.525)	0.375 (9.525)
Min. Return Line Size - in (mm)	0.375 (9.525)	0.375 (9.525)	0.375 (9.525)
Max. Fuel Transfer Pump Suction Lift - ft (m)	3.28 (1)	3.28 (1)	3.28 (1)
Max. Fuel Flow to Transfer Pump at - gph	C/F	C/F	C/F
Approx. Fuel Rate at Full Load - gph (lph)	7.2 (27.5)	8.71 (32.97)	9.46 (35.82)
<b>Max Engine Operating Angle</b>			
Continuous (Fore/Aft)	10°	10°	10°
Continuous (Side to Side)	22.5°	22.5°	22.5°

C/F: Consult factory