

MEG 2000NS Technical data



Continuous Electric Output @ 1.0pf	kWe	2007
Mechanical Power	bhp	2769
Frequency	Hz	60
Max Permissible Oil Consumption	lb/hr	1.6

Engine Information		
Manufacturer	Siemens	
Model number	SGE-100EM	
Fuel type	Natural Gas	
Aspiration	Lean	
Cylinders	V-12	
Min Methane Number	80	
RPM	1200	

Generator Information	
Manufacturer	Marathon
Model Number	863RDL
Class - Temp Rise	Cont. F - 105°F Rise
Voltage	480
Phase	3
Ingress protection	IP23
Insulation class	H

Energy Balance			100%	75%	50%
Electrical Power Output @ 1.0PF	(+/-3%)	kW	2007	1504	995
Electric Efficiency (LHV)	(+/-5%)	%	45.17%	44.00%	41.77%
Thermal Efficiency (LHV)	(+/-8%)	%	40.64%	42.29%	45.03%
Combined Efficiency (LHV)	(+/-8%)	%	85.81%	86.29%	86.80%
Fuel Consumption (LHV)	(+ 5%)	BTU/hr	15,160,275	11,662,355	8,128,565
Heat Rate (LHV)	(+ 5%)	BTU/kWe-Hr	7,554	7,754	8,169
Total Heat Output	(+/-10%)	BTU/hr	6,160,800	4,932,000	3,660,600
Heat from water jacket	(+/-8%)	BTU/hr	3,139,200	2,487,600	1,822,200
Heat from exhaust (cooled to 248°F)	(+/-8%)	BTU/hr	3,021,600	2,444,400	1,838,400
Heat from Intercooler	(+/-8%)	BTU/hr	474,300	358,260	245,700
Radiated Output	(+/-25%)	BTU/hr	429,900	344,640	204,720
Cooling (absorption chiller single effect)	(+/-8%)	TONS	410.7	328.8	244.0
Steam Output @ 15 PSIG	(+/-8%)	Lb/hr	2,417	2,017	1,559
Exhaust temperature	(+/-20%)	DEG F	741	811	887
Combustion Mass Airflow	(+/-5%)	Lb/hr	21,560	15,220	10,080
Exhaust Mass flow (wet)	(+/-10%)	Lb/hr	22,280	15,770	10,460
Exhaust Volume Flow (cooled to 248°F)	(+/-5%)	ACFM	6786	4803	3186

Secondary Hot water system		
Hot water loop flow rate	540	GPM
Hot water loop temperatures (in/out)	170/190	DEG F
Hot water loop pressure loss	5	PSID
Flange connection size	4	in
Glycol content	50	%

Electrical Details	
Alternator	Synchronous
Inverter option	Available
CHP main breaker size	4000AF/3200AT
Current per phase @ 1.0Pf	2417
Alternator efficiency @1.0Pf	97.6%
Current per phase @ 0.8Pf	3021
Alternator efficiency @0.8Pf	96.6%

Exhaust details		
Max Allowable backpressure	in H2O	18
Flange Type	ANSI B16.5 Class 150	
Flange Size	in	20

Package Emissions		
NO _x	g/BHP-hr	1.0
CO	g/BHP-hr	1.5
NMHC	g/BHP-hr	0.5

Fuel Gas Details		
Min/Max Supply pressure	in PSIG	3 / 5
Flange Type	ANSI B16.5 Class 150	
Lower Calorific Value	BTU/ft ³	905
Flange Size	in	4

Noise	
Sound power level @ 3ft	65 dBA
Sound pressure level @ 3ft	75 dBA

*For octave band frequency please contact Martin Energy Group

Ventilation details		
Air flow requirements	ACFM	51398
Connection size	in	60

Package overall dimensions		
Length	in	600
Width	in	156
Height	in	216

Notes

Energy balance data is stated at ISO 3046-1 conditions.

Values for part load are estimates only.

Noise data stated at free-field conditions.

All information detailed is for guidance only and is subject to change without notice due to our commitment to continuous improvement

Revision

0

Issue date

mm/dd/year

MEG 2000NS Module data

2007 kWe

Cogeneration Module

Siemens® SI Engine

Marathon Synchronous Generator

Martin Energy Group designs, develops and manufactures cogeneration modules unmatched in reliability and cost-effectiveness.

BENEFITS

Siemens Engine

- proven reliable and durable for long life
- worldwide product support
- multiple fuel options including natural gas, biogas and LPG

Marathon Generator

- double-bearing, PMG excited, DVR controlled

Compliance

- meets or exceeds industry standards including UL, Rule 21, IEEE and SCAQMD

Utility Interconnection

- integrated, fault protection switchgear for simplified interconnection
- stored energy breaker for quick transition

Comap™ Control System

- Internet based remote system monitoring
- onboard data capture, storage, and communication capable of 24/7 narrowband and wireless connection
- trend analysis to anticipate wear
- early alerts to system problems to minimize downtime

Exhaust Emissions

- A/F Ratio Control with CO Catalyst
- SCR system available if required
- complies with SCAQMD Rule 1110.2 Integrated Design
- primary containment protects the environment from fluid leaks
- removable door and roof panels for maximum serviceability
- rain-tight construction provides protection from weather
- sound attenuated cabinet and air ducts for noise reduction
- integrated battery charger for reliable operation and island mode operation

EQUIPMENT

In addition to the standard module features and equipment (see module configuration document), the following equipment is specific to this module only:

Engine

- SGE-100EM manufactured by Siemens
- 12 cylinder, 4-stroke cycle, miller cycle
- 195 mm bore x 240 mm stroke
- 13.5:1 compression ratio

Generator

- Marathon model 863RDL
- PMG brushless excitation

Air Intake System

- outside combustion air ducted to a standard Siemens two-stage air cleaner
- inlet temperature up to 110°F (43°C) before derate

Complete System Heat Recovery

- stainless steel, brazed plate engine jacket water loop isolation heat exchanger
- stainless steel, water jacketed, exhaust heat exchanger

