

MODULE DATA SHEET



powered exclusively by 

BENEFITS

Caterpillar Engine

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

Marathon Generator

- single-bearing, PMG excited, DVR controlled

Compliance

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

Utility Interconnection

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

GenView™ 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

- NSCR system with A/F Ratio Control
- complies with EPA, JJJ requirements

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

385 kWe Cogeneration Module

Caterpillar® SI Engine
Marathon Synchronous Generator

E3NV designs, develops and manufactures cogeneration modules unmatched in reliability and cost-effectiveness.

EQUIPMENT

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

Engine

G3412TA manufactured by Caterpillar
60° V-12 cylinder, 4-stroke cycle, naturally aspirated
137 mm bore x 152.4 mm stroke
9.7:1 compression ratio

Generator

Marathon model 572RSL4027 - 12 lead
reconnectable synchronous
PMG brushless excitation

Air Intake System

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

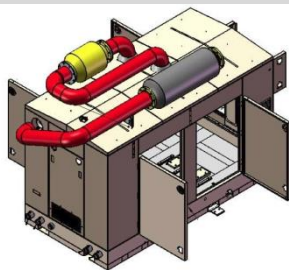
Complete System Heat Recovery

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

TECHNICAL DATA

Frequency	Hz		60 ^(a)	
Continuous Electric Output @ 1.0 pf	kWe		385	
Mechanical Power	bhp	kWb	539	402
RPM			1,800	
Heat Rate	Btu/kWe-hr	MJ/kWe-hr ^(b)	10,575	11.1
Combined Efficiency	%		80.6	
electrical efficiency	%		32.3	
thermal efficiency	%		48.3	
Fuel Consumption @ 905 Btu/scf – LHV	scfh	nm³/h	4,494	127.2
Fuel Consumption	therms per hour	kW	40.7	1,192
Total Thermal Energy Output	Btu/hour	kW	1,963,000	575
heat from water jacket	Btu/hour	kW	1,427,370	418
heat from exhaust	Btu/hour	kW	672,160	197
cooling (absorption chilling) ^(c)	tons	kW	112 - 130	
engine out exhaust temperature	°F	°C	993	534
module out exhaust temperature	°F	°C	305	152
exhaust flow	lbm/hour	kg/hour	3,417	1,550
minimum cogeneration loop water flow	gpm	m³/hour	150	34
maximum cogeneration loop water pressure	psig	bar	50	3.4
maximum module out water temperature	°F	°C	207	97
nominal cogeneration return temperature	°F	°C	176	80
Environmental				
NOx	grams/bhp-hour	ppmv@15% O₂	1.0	82
CO	grams/bhp-hour	ppmv@15% O₂	2.0	270
noise	dBA @ meters		< 65 ^(d)	
Generator Electrical Output	3 phase AC voltage		120/208, 120/240, or 277/480	
^(a) 50 Hz values available on request				
^(b) heat rate assumes maximum exhaust back pressure of 2 inches Hg (6.7 kPa)				
^(c) depending on site conditions and application parameters				
^(d) 600 V available on request				

DIMENSIONS



Length	157"	4.00m
Height	92"	2.40m
Width	78"	2.00m
Weight	14,150lb	6,420kg

