

# Technical Datasheet

## ERM1000GM Natural Gas CHP Unit



Energy Balance and Part Load Data @ 0.95PF		Units	100%	75%	50%
Electrical Output	(+/-3%)	kW	1000	750	500
Electrical Efficiency (LHV)	(+/-5%)	%	41.8%	40.4%	37.6%
Heat Output	(+/-10%)	BTU/min	49402	41715	32464
Thermal Efficiency (LHV)	(+/-8%)	%	36.2%	39.4%	42.8%
Fuel Input (LHV)	(+/-5%)	BTU/min	136403	105942	75807
Total Efficiency (LHV)	(+/-8%)	%	78.0%	79.7%	80.4%
Heat Output from Jacket Water	(+/-8%)	BTU/min	19178	16762	14057
Heat Output from Exhaust Gas (Cooled to 248°F)	(+/-8%)	BTU/min	30224	24952	18407
Intercooler Heat Output	(+/-8%)	BTU/min	15974	10474	5979
Radiated Heat Output	(+/-8%)	BTU/min	4312	4078	4481
Combustion Air Flow	(+/-5%)	SCFM	2515	1885	1329
Fuel Volume Flow (LHV = 924 BTU/SCFM)	(+/-5%)	SCFM	148	115	82
Exhaust Mass Flow	(+/-5%)	lb/h	12024	9034	6376
Exhaust Volume Flow (Cooled to 248° F)	(+/-5%)	ACFM	3574	2685	1895
Steam Option: Steam boiler output @ 15 psig	(+/-5%)	lb/h	1900	TBC	TBC
Chiller Option: Absorption chiller output	(+/-5%)	Tons	140-230	TBC	TBC

### Engine Details

Manufacturer	Mitsubishi
Model	GS16R2-PTK
Fuel Type	Natural Gas
Min. Methane Number	60
Cylinders	16
Aspiration	Turbocharged/IC
Speed at Engine	1200 rpm

### Secondary Water Details

Max. Water In/Out Temp.	°F	163/183
Max. Water Flow Rate*	GPM	343
Max. Glycol Content	%	50
Connection Size	in (mm)	4 (101.6)
Connection Type		ANSI B16.5 Class 150
Pressure Loss	PSIG	TBC
Max. Test Pressure	PSIG	150

### Exhaust Details

Connection Size	in (mm)	12 (304.8)
Outlet Temp	°F	248
Max. Allowable Backpressure at Engine...	inH2O	20.0

### Ventilation Details

Connection Size	in (mm)	TBC (TBC)
Ventilation Rate	ACFM	TBC
Max. Air Inlet Temp.	°F	85
Max. Air Outlet Temp.	°F	115

### Intercooler Details of Engine

Max. Coolant Inlet Temp at Engine.	°F	95
Coolant Flow Rate	GPM	172
Connection Size	in (mm)	3.5 (88.9)
Max. Glycol Content	%	50

### Generator Details

Manufacturer	Stamford	
Model	PI736F-312	
Type	Synchronous	
Voltage	V	480
Phase	Ph	3
Frequency/Speed	Hz/RPM	60/1200
Ingress Protection		IP23
Insulation Class		H
Rated Power Factor	PF	0.8
Rated Apparent Power at 80°C Rise	kVA	1250
X"d Dir. Axis Sub-Transient		0.10
T" Sub-Transient Time Const.		0.016

### Electrical Details

CHP Breaker Size	A/Ph	1600
Current Per Phase @ 0.8PF	A	1504
Current Per Phase @ 0.95PF	A	1266
Efficiency @ 0.8PF	%	96.7%
Efficiency @ 0.95PF	%	97.3%

### EPA Certified Engine Emissions at 100% Load

NOx	g/BHP-h	1.00
CO	g/BHP-h	0.30
NMHC	g/BHP-h	0.50

### Low NOx Engine Emissions

NOx	g/BHP-h	0.60
CO	g/BHP-h	0.30
NMHC	g/BHP-h	0.50

### Noise

Enclosure SPL	@ 23 ft	Standard/Low	75/TBC
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### Fuel Details

Main Supply Connection Size	in (mm)	3/76.2
Main Supply Connection Type		ANSI B16.5 Class 150
Min. Main Supply Pressure	PSIG	2.5
Min. Pre-Chamber Supply Pressure	PSIG	45
Main/Pre-Chamber % Total Volume	%	90/10

NB: 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 - all values should be confirmed with ER on a project specific basis.

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