

# Technical Datasheet

## ERM1500GM2 Natural Gas CHP Unit



Energy Balance and Part Load Data @ 0.95PF		Units	100%	75%	50%
Electrical Output	(+/-3%)	kW	1500	1125	750
Electrical Efficiency (LHV)	(+/-5%)	%	42.6%	41.2%	39.1%
Heat Output	(+/-10%)	BTU/min	85892	67105	48435
Thermal Efficiency (LHV)	(+/-8%)	%	42.4%	42.8%	44.0%
Fuel Input (LHV)	(+/-5%)	BTU/min	202461	156914	110183
Total Efficiency (LHV)	(+/-8%)	%	85.0%	83.9%	83.1%
Heat Output from Jacket Water	(+/-8%)	BTU/min	41783	31560	22723
Heat Output from Exhaust Gas (Cooled to 248°F)	(+/-8%)	BTU/min	44109	35545	25712
Intercooler Heat Output	(+/-8%)	BTU/min	12972	9620	6489
Radiated Heat Output	(+/-8%)	BTU/min	7270	4426	35904
Combustion Air Flow	(+/-5%)	SCFM	4106	3474	2465
Fuel Volume Flow (LHV = 924 BTU/SCFM)	(+/-5%)	SCFM	219	170	119
Exhaust Mass Flow	(+/-5%)	lb/h	19454	16388	11621
Exhaust Volume Flow (Cooled to 248° F)	(+/-5%)	ACFM	5783	4871	3454
Steam Option: Steam boiler output @ 15 psig	(+/-5%)	lb/h	2450	TBC	TBC
Chiller Option: Absorption chiller output	(+/-5%)	Tons	250-330	TBC	TBC

### Engine Details

Manufacturer	Mitsubishi
Model	GS16R2-PTK
Fuel Type	Natural Gas
Min. Methane Number	60
Cylinders	16
Aspiration	Turbocharged/IC/2 Stage
Speed at Engine	1500 rpm
Speed Inverter	1500/1800 rpm

### Secondary Water Details

Max. Water In/Out Temp.	°F	149/183
Max. Water Flow Rate*	GPM	344
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)	14 (355.6)
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	159
Connection Size	in (mm)	1 (25.4)
Max. Glycol Content	%	50

### Generator Details

Manufacturer	Stamford	
Model	PI734E-312	
Type	Synchronous	
Voltage	V	480
Phase	Ph	3
Frequency/Speed	Hz/RPM	60/1800
Ingress Protection		IP23
Insulation Class		H
Rated Power Factor	PF	0.8
Rated Apparent Power at 80°C Rise	kVA	1875
X"d Dir. Axis Sub-Transient		0.11
T" Sub-Transient Time Const.		0.02

### Electrical Details

CHP Breaker Size	A/Ph	2500
Current Per Phase @ 0.8PF	A	2255
Current Per Phase @ 0.95PF	A	1899
Efficiency @ 0.8PF	%	96.4%
Efficiency @ 0.95PF	%	97.0%

### EPA Certified Engine Emissions at 100% Load

NOx	g/BHP-h	0.80
CO	g/BHP-h	0.30
NMHC	g/BHP-h	0.50

### Low NOx Engine Emissions

NOx	g/BHP-h	0.50
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)	4/101.6
Main Supply Connection Type		ANSI B16.5 Class 150
Min. Main Supply Pressure	PSIG	2.95
Min. Pre-Chamber Supply Pressure	PSIG	50
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.