

Technical Datasheet

ERM815GM Natural Gas CHP Unit



Energy Balance and Part Load Data @ 0.95PF		Units	100%	75%	50%
Electrical Output	(+/-3%)	kW	815	611	408
Electrical Efficiency (LHV)	(+/-5%)	%	41.5%	39.6%	36.8%
Heat Output	(+/-10%)	BTU/min	41300	35095	28285
Thermal Efficiency (LHV)	(+/-8%)	%	36.9%	39.8%	44.7%
Fuel Input (LHV)	(+/-5%)	BTU/min	111953	88076	63270
Total Efficiency (LHV)	(+/-8%)	%	78.4%	79.5%	81.5%
Heat Output from Jacket Water	(+/-8%)	BTU/min	20337	17898	15401
Heat Output from Exhaust Gas (Cooled to 248°F)	(+/-8%)	BTU/min	20963	17197	12885
Intercooler Heat Output	(+/-8%)	BTU/min	8099	6102	2711
Radiated Heat Output	(+/-8%)	BTU/min	8582	6455	5474
Combustion Air Flow	(+/-5%)	SCFM	2115	1637	1176
Fuel Volume Flow (LHV = 924 BTU/SCFM)	(+/-5%)	SCFM	121	95	68
Exhaust Mass Flow	(+/-5%)	lb/h	10004	7750	5565
Exhaust Volume Flow (Cooled to 248° F)	(+/-5%)	ACFM	2974	2304	1654
Steam Option: Steam boiler output @ 15 psig	(+/-5%)	lb/h	1450	TBC	TBC
Chiller Option: Absorption chiller output	(+/-5%)	Tons	125-160	TBC	TBC

Engine Details

Manufacturer	Mitsubishi
Model	GS16R-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	167/183
Max. Water Flow Rate*	GPM	343
Max. Glycol Content	%	50
Connection Size	in (mm)	3 (76.2)
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	132
Connection Size	in (mm)	1.5 (38.1)
Max. Glycol Content	%	50

Generator Details

Manufacturer	Stamford	
Model	P1736D-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	1019
X"d Dir. Axis Sub-Transient		0.10
T" Sub-Transient Time Const.		0.015

Electrical Details

CHP Breaker Size	A/Ph	1600
Current Per Phase @ 0.8PF	A	1225
Current Per Phase @ 0.95PF	A	1032
Efficiency @ 0.8PF	%	96.2%
Efficiency @ 0.95PF	%	96.9%

EPA Certified Engine Emissions at 100% Load

NOx	g/BHP-h	1.00
CO	g/BHP-h	0.60
NMHC	g/BHP-h	0.30

Low NOx Engine Emissions

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

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	35
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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