

Technical Datasheet

ERM600GM Natural Gas CHP Unit



Energy Balance and Part Load Data @ 0.95PF		Units	100%	75%	50%
Electrical Output	(+/-3%)	kW	610	458	305
Electrical Efficiency (LHV)	(+/-5%)	%	41.1%	39.7%	37.0%
Heat Output	(+/-10%)	BTU/min	31583	26151	20857
Thermal Efficiency (LHV)	(+/-8%)	%	38.1%	40.6%	45.2%
Fuel Input (LHV)	(+/-5%)	BTU/min	82990	64456	46121
Total Efficiency (LHV)	(+/-8%)	%	79.2%	80.3%	82.2%
Heat Output from Jacket Water	(+/-8%)	BTU/min	14842	13062	11240
Heat Output from Exhaust Gas (Cooled to 248°F)	(+/-8%)	BTU/min	16741	13088	9617
Intercooler Heat Output	(+/-8%)	BTU/min	5911	4453	1979
Radiated Heat Output	(+/-8%)	BTU/min	5433	4092	3669
Combustion Air Flow	(+/-5%)	SCFM	1548	1161	819
Fuel Volume Flow (LHV = 924 BTU/SCFM)	(+/-5%)	SCFM	90	70	50
Exhaust Mass Flow	(+/-5%)	lb/h	7367	5535	3907
Exhaust Volume Flow (Cooled to 248°F)	(+/-5%)	ACFM	2190	1645	1161
Steam Option: Steam boiler output @ 15 psig	(+/-5%)	lb/h	1380	TBC	TBC
Chiller Option: Absorption chiller output	(+/-5%)	Tons	80-110	TBC	TBC

Engine Details

Manufacturer	Mitsubishi
Model	GS12R-PTK
Fuel Type	Natural Gas
Min. Methane Number	60
Cylinders	12
Aspiration	Turbocharged/IC
Speed at Engine	1200 rpm

Secondary Water Details

Max. Water In/Out Temp.	168/183 °F
Max. Water Flow Rate*	291 GPM
Max. Glycol Content	50 %
Connection Size	3 (76.2) in (mm)
Connection Type	ANSI B16.5 Class 150
Pressure Loss	TBC PSIG
Max. Test Pressure	150 PSIG

Exhaust Details

Connection Size	10 (254) in (mm)
Outlet Temp	248 °F
Max. Allowable Backpressure at Engine	20.0 inH2O

Ventilation Details

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

Intercooler Details of Engine

Max. Coolant Inlet Temp at Engine	95 °F
Coolant Flow Rate	66 GPM
Connection Size	1 (25.4) in (mm)
Max. Glycol Content	50 %

Generator Details

Manufacturer	Stamford
Model	PI736B-312
Type	Synchronous
Voltage	480 V
Phase	3 Ph
Frequency/Speed	60/1200 Hz/RPM
Ingress Protection	IP23
Insulation Class	H
Rated Power Factor	0.8 PF
Rated Apparent Power at 80°C Rise	763 kVA
X"d Dir. Axis Sub-Transient	0.10
T" Sub-Transient Time Const.	0.013

Electrical Details

CHP Breaker Size	1200 A/Ph
Current Per Phase @ 0.8PF	917 A
Current Per Phase @ 0.95PF	772 A
Efficiency @ 0.8PF	95.8%
Efficiency @ 0.95PF	96.5%

EPA Certified Engine Emissions at 100% Load

NOx	0.90 g/BHP-h
CO	0.60 g/BHP-h
NMHC	0.30 g/BHP-h

Low NOx Engine Emissions

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

Noise

Enclosure SPL @ 23 ft	Standard/Low	75/TBC
-----------------------	--------------	--------

Fuel Details

Main Supply Connection Size	3/76.2 in (mm)
Main Supply Connection Type	ANSI B16.5 Class 150
Min. Main Supply Pressure	2.5 PSIG
Min. Pre-Chamber Supply Pressure	35 PSIG
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.