Technical Datasheet

ERM380GM Natural Gas CHP Unit

Energy Balance and Part Load Data @ 0.95PF		Units	100%	75%	50%
Electrical Output	(+/-3%)	kW	380	285	190
Electrical Efficiency (LHV)	(+/-5%)	%	41.5%	38.7%	36.7%
Heat Output	(+/-10%)	BTU/min	20018	17476	13799
Thermal Efficiency (LHV)	(+/-8%)	%	38.5%	41.7%	46.9%
Fuel Input (LHV)	(+/-5%)	BTU/min	52053	41954	29450
Total Efficiency (LHV)	(+/-8%)	%	80.0%	80.3%	83.6%
Heat Output from Jacket Water	(+/-8%)	BTU/min	9633	8510	7297
Heat Output from Exhaust Gas (Cooled to248°F)	(+/-8%)	BTU/min	10386	8966	6502
Intercooler Heat Output	(+/-8%)	BTU/min	4000	2724	1055
Radiated Heat Output	(+/-8%)	BTU/min	2581	2642	1995
Combustion Air Flow	(+/-5%)	SCFM	1022	824	578
Fuel Volume Flow (LHV = 924 BTU/SCFM)	(+/-5%)	SCFM	56	45	32
Exhaust Mass Flow	(+/-5%)	lb/h	4825	3889	2730
Exhaust Volume Flow (Cooled to 248°F)	(+/-5%)	ACFM	1434	1156	812
Steam Option: Steam boiler output @ 15 psig	(+/-5%)	lb/h	550	TBC	TBC
Chiller Option: Abosorption chiller ouput	(+/-5%)	Tons	50-80	TBC	TBC

Engine Details

Manufacturer		Mitsubishi
Model		GS6R2-PTK
Fuel Type		Natural Gas
Min. Methane Number		60
Cylinders		6
Aspiration		Turbocharged/IC
Speed at Engine	rpm	1200

Secondary Water Details

Max. Water In/Out Temp.	°F	167/183
Max. Water Flow Rate*	GPM	174
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)	8 (203.2)
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	45
Connection Size	in (mm)	1 (25.4)
Max. Glycol Content	%	50

Generator Details

Manufacturer		Stamford
Model		HCI636K-312
Type		Syncronous
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	475
X"d Dir. Axis Sub-Transient		0.10
T" Sub-Transient Time Const.		0.015

Electrical Details

CHP Breaker Size	A/Ph	800
Current Per Phase @ 0.8PF	A	571
Current Per Phase @ 0.95PF	A	481
Efficiency @ 0.8PF...	%	95.2%
Efficiency @ 0.95PF...	%	96.6%

EPA Certified Engine Emissions at 100% Load

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

Low NOx Engine Emissions

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

Noise

Enclosure SPL @ 23 ft	Standard/Low	75/TBC

Fuel Details

Main Supply Connection Size	in (mm)	2/50.8
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.