

Technical Datasheet

ER1280F Natural Gas CHP Unit



Energy Balance and Part Load Data @ 1.0PF		Units	100%	75%	50%
Electrical Output	(+/-3%)	kW	1267	950	634
Electrical Efficiency (LHV)	(+/-5%)	%	42.2%	40.7%	38.5%
Heat Output (LTHW)	(+/-10%)	BTU/min	76433	61067	44466
Thermal Efficiency (LHV)	(+/-8%)	%	44.7%	46.0%	47.5%
Fuel Input (LHV)	(+/-5%)	BTU/min	171050	132733	93633
Total Efficiency (LHV)	(+/-8%)	%	86.9%	86.7%	86.0%
Heat Output from Jacket Water	(+/-8%)	BTU/min	38583	28850	20383
Heat Output from Exhaust Gas (Cooled to 248°F)	(+/-8%)	BTU/min	37850	32217	24083
Intercooler Heat Output (2nd Stage)	(+/-8%)	BTU/min	5067	3817	2733
Radiated Heat Output	(+/-8%)	BTU/min	5067	3800	2534
Combustion Air Flow	(+/-5%)	SCFM ¹	2984	2255	1551
Fuel Volume Flow (LHV = 924 BTU/SCFM)	(+/-5%)	SCFM ¹	185	144	101
Exhaust Mass Flow, Wet	(+/-5%)	lb/h	14923	11290	7769
Exhaust Volume Flow, Wet (32° F)	(+/-5%)	SCFM ¹	3082	2332	1604
Exhaust Temperature	(+/-5%)	°F	824	881	927
Steam Option**: Steam boiler output @ 15 psig	(+/-5%)	lb/h	1871	1588	1188
Chiller Option**: Absorption chiller output	(+/-5%)	Tons	200 - 295	TBC	TBC

Engine Details

Manufacturer	MTU
Model	GB1267N6
Fuel Type	Natural gas
Min. Methane Number	80
Cylinders	12
Aspiration	Turbocharged/IC/2 Stage
Speed at Engine	1500 rpm
Gearbox Speed	1500/1800 rpm

Secondary Water Details (Client Side)*

Max. Water In/Out Temp.	°F	170/192
Max. Water Flow Rate	GPM	473
Max. Glycol Content	%	50
Connection Size	in (mm)	4 (100)
Connection Type	ANSI B16.5 Class 150	
Pressure Loss	PSIG	On Request
Max. Test Pressure	PSIG	150

Exhaust Details*

Connection Size	in (mm)	16 (400)
Outlet Temp†	°F	248
Max. Backpressure at Exhaust Outlet...	inH2O	8.0

Ventilation Details

Maximum Supply Air Volume Flow Rate	CFM	15750
Minimum Supply Air Volume Flow Rate	CFM	10500
Max. Air Inlet Temp.	°F	85
Max. Air Outlet Temp.	°F	115

Second Stage Intercooler Details

Max. Coolant Inlet Temp at Engine.	°F	104
Coolant Flow Rate	GPM	116
Connection Size	in (mm)	2.5 (65)
Max. Glycol Content	%	300

Generator Details

Manufacturer	Leroy Somer	
Model	LSA 50.2 VL10	
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 105°C Rise	kVA	1584
X'd Dir. Axis Sub-Transient		0.12
T" Sub-Transient Time Const.		0.18

Electrical Details*

CHP Breaker Size	A/Ph	2300
Current Per Phase @ 0.8PF	A	1905
Current Per Phase @ 0.95PF	A	1604
Current Per Phase @ 1.0PF	A	1524
Efficiency @ 0.8PF...	%	95.7%
Efficiency @ 0.95PF...	%	96.4%
Efficiency @ 0.95PF...	%	96.8%

Engine Emissions at 100% Load (Dry)*

NOx	g/BHP-h	1.00
CO	g/BHP-h	2.00
NMHC	g/BHP-h	0.70

Low NOx Engine Emissions†

NOx	g/BHP-h	On Request
CO	g/BHP-h	On Request
NMHC	g/BHP-h	On Request

Noise (dBA)*

Enclosure (free field)...	@ 3 ft ... Standard/Low	78/68
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Fuel Details*

Main Supply Connection Size	in (mm)	3/80
Main Supply Connection Type	ANSI B16.5 Class 150	
Min. Main Supply Pressure	PSIG	2.95

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.