



480 V / 60 Hz

Natural gas

Electric power	kW	327
Total thermal output	kBTU/hr	1385
Energy input	kBTU/hr	2880
Fuel consumption	SCFM	57.1
Electrical efficiency	%	38.8
Thermal efficiency with LT	%	50.4
Thermal efficiency without LT	%	48.1
Overall efficiency with LT	%	89.2

Engine: MAN Type: E3268 LE242

Alternator: Leroy-Somer

Type: LSA 47.3 S4

No. of cylinders / configuration	-	8V	Voltage / frequency	V/Hz	480/60
Engine speed	rpm	1800	PF	-	0.8L / 0.8C
Bore / stroke / displacement	in / in / cu in	5.20/6.18/1049	Alternator efficiency at rated power	%	96.3
Compression ratio	-	12	Max. ambient temperature	°F	104
Engine power max.	kW	340			
Spark plugs type	-	M18			
Lube oil consumption max.	lb/h	0.154			
Lube oil filling quantity max.	US gal	30.0			

Energy balance

					CHP unit performance parameters at rated load
Load	%	100	75	50	100
ISO standard engine power	kW	340	255	160	340
Electric power	kW	327	246	153	327
Engine cooling thermal output	kBTU/hr	597	519	437	597
Exhaust gas thermal output (248 °F)	kBTU/hr	703	563	406	703
Thermal output mixture cooling - HT	kBTU/hr	85	27	0	85
Thermal output mixture cooling - LT	kBTU/hr	65	48	24	65
Total thermal output	kBTU/hr	1385	1109	843	1385
Radiation heat max.	kBTU/hr	72	48	24	72
Energy input 1)	kBTU/hr	2880	2225	1576	2880
Fuel consumption	SCFM	57.1	44.1	31.3	57.1
Combustion air mass flow	lb/hr	3927	2982	912	3927
Exhaust gas mass flow, wet	lb/hr	4063	3088	2136	4063
Exhaust temperature after turbocharger	°F	864	-	-	864
Alternator efficiency at PF=1	%	96.3	96.3	95.4	96.3
Electrical efficiency 1)	%	38.8	37.7	33.0	38.8
Thermal efficiency	%	48.1	49.8	53.5	48.1
Overall efficiency without LT	%	86.9	87.5	86.5	86.9

1) According to ISO 3046.

Fuel: Natural gas

Min. methane number	-	80
Lower calorific value	BTU/SCF	840
Gas pressure at gas regulation line inlet 1)	psi	0.58±1.45
Max. gas temperature	°F	86

1) The gas regulation line for MAN engines is standardly dimensioned at 0.58 ± 0.73 psi.

Heating water circuit

Thermal output	kBTU/hr	1385
Temperature gradient	°F / °F	194 / 158
Cooling medium volume flow min.	GPM(US)	78.70
Pressure loss of heating circuit 1)	psi	3.48
Heat transfer medium	-	Treated water
Max. operating pressure	psi	87

1) Pressure loss of all heating water circuit components at GENTEC CHP scope of supply.

LT mixture cooling circuit

Thermal output	kBTU/hr	65
Temperature gradient	°F / °F	47.2 / 40
Cooling medium volume flow min.	GPM(US)	19.56
Max. allowable pressure loss 1)	psi	2.9
Heat transfer medium concentration - glycol / water	% vol./% vol.	40/60
Max. operating pressure	psi	43.5
Dry cooler acoustic sound pressure level at 33 ft 2)	dB(A)	65
Max. ambient temperature	°F	95

1) Pipework between CHP unit and dry cooler.

2) The value of the sound pressure level is considered in free field.

Ventilation and combustion air

Fan air volume flow 1)	GPM(US)	32600
Max. allowable pressure loss of air duct 2)	mpsi	7.3
Max. inlet air temperature	°F	95

1) At temperature 95 °F and pressure 14.69 psi.

2) Air ducts between CHP unit and air inlet/air outlet.

Exhaust gas system

Exhaust gas mass flow, wet	lb/hr	4063
Exhaust gas temperature at CHP unit outlet	°F	248
Max. allowable pressure loss 1)	mpsi	87
Silencer flanges 2)	-	DN200-PN10

1) Exhaust gas pipe between CHP unit and outlet excluding components at GENTEC CHP scope of supply.

2) According to EN 1092-1.

Emissions

CO	g/bhp-h	<0.688
NO _x	g/bhp-h	<0.572

Correlation 15% O₂ and at exhaust gas density 0.0326 g/SCF

Noise level

CHP unit design without canopy 1)	dB(A)	90
CHP unit design with canopy 1)	dB(A)	74
Exhaust gas noise at 3 ft distance to silencer outlet 3)	dB(A)	80
Input/Output air ventilation 1)	dB(A)	80/80

All values of the sound pressure level is considered in free field.

1) Sound pressure level measured at 3 ft distance from the CHP unit.

2) Sound pressure level measured at 33 ft distance from the container.

3) On request, noise can be reduced by additional optimization of the standard silencer.

Dimensions and weight

Canopy dimensions L/W/H	in	177.2/76.8/86.6
Dry weight of CHP unit design with canopy	lbs	16094

Standard conditions and tolerances

Atmospheric pressure	psi	14.5
Air temperature	°F	77
Relative air humidity	%	30
Tolerance for the electrical power	%	±3
Tolerance for the usable thermal output	%	±7
Tolerance for the specific fuel consumption	%	+5

The energy balance parameters listed in this data sheet are related to the standard conditions.

Detailed technical specifications of components on demand.

Change of technical parameters and printing errors reserved.

Release date	Created	Revision	Project / Offer
0	0	0	