



	400 V / 50 Hz	Natural gas
Electrical power		kW 1521
Total thermal output		kW 1721
Energy input		kW 3535
Fuel consumption		Nm ³ /h 374,3
Electrical efficiency		% 43,0
Thermal efficiency with LT		% 51,1
Thermal efficiency without LT		% 48,7
Overall efficiency with LT		% 94,1

Engine: MTU Type: 12V4000L64FNER

Alternator: Stamford

Type:

No. of cylinders / configuration	-	12V	Voltage / frequency	V/Hz	400/50
Engine speed	min ⁻¹	1500	PF	-	0,8L / 0,95C
Bore / stroke / displacement	mm / mm / dm ³	170/210/57,2	Alternator efficiency at rated power	%	97,5
Compression ratio	-	12,5	Max. ambient temperature	°C	40
Engine power max.	kW	1560			
Spark plugs type	-	M18			
Lube oil consumption max.	dm ³ /h	0,27			
Lube oil filling quantity max.	dm ³	280			

Energy balance

		CHP unit performance parameters at rated load			
		100	75	50	100
Load	%	100	75	50	100
ISO standard engine power	kW	1560	1171	784	1560
Electrical power	kW	1521	1141	761	1521
Engine cooling thermal output	kW	881	641	437	881
Exhaust gas thermal output (120 °C)	kW	745	639	484	745
Exhaust gas thermal output (80 °C)	kW	95	71	49	95
Thermal output mixture cooling - LT	kW	86	54	30	86
Total thermal output	kW	1721	1351	970	1721
Radiation heat max.	kW	88	-	-	88
Energy input 1)	kW	3535	2705	1882	3535
Fuel consumption	Nm ³ /h	374,3	286,4	199,3	374,3
Combustion air mass flow	kg/h	7675	5778	3939	7675
Exhaust gas mass flow, wet	kg/h	7936	5977	4077	7936
Exhaust temperature after turbocharger	°C	417	457	492	417
Alternator efficiency at PF=1	%	97,5	97,5	97,1	97,5
Electrical efficiency 1)	%	43,0	42,2	40,4	43,0
Thermal efficiency	%	48,7	49,9	51,5	48,7
Overall efficiency without LT	%	91,7	92,1	91,9	91,7

1) According to ISO 3046.

Fuel: Natural gas

Min. methane number	-	80
Lower calorific value	MJ/Nm ³	34
Gas pressure at gas regulation line inlet 1)	kPa	15,5-25
Max. gas temperature	°C	30

1) The gas regulation line for MAN engines is standardly dimensioned at 4 ÷ 5 kPa.

Heating water circuit

Thermal output	kW	1721
Temperature gradient	°C / °C	90 / 70
Min. cooling medium volume flow	m ³ /h	76,01
Max. allowable pressure loss 1)	kPa	50
Heat transfer medium	-	Treated water
Max. operating pressure	bar	6

1) Heating water circuit out of scope of supply of GENTEC CHP.

LT mixture cooling circuit

Thermal output	kW	86
Temperature gradient	°C / °C	60,3 / 58
Cooling medium volume flow	m ³ /h	35,30
Max. allowable pressure loss 1)	kPa	-
Heat transfer medium concentration - glycol / water	% vol./% vol.	40/60
Max. operating pressure	bar	6
Dry cooler acoustic sound pressure level at 10 m 2)	dB(A)	65
Max. ambient temperature	°C	35

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)	m ³ /h	26800
Max. allowable pressure loss of air duct 2)	Pa	-
Max. inlet air temperature	°C	35

1) At temperature 35 °C and pressure 101,3 kPa.

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

Exhaust gas system

Exhaust gas mass flow, wet	kg/h	7936
Exhaust gas temperature at CHP unit outlet	°C	80
Max. allowable pressure loss 1)	mbar	-
Silencer flanges 2)	-	-

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	mg/Nm ³	<300
NO _x	mg/Nm ³	<250

Correlation 5% O₂.

Noise level

CHP unit design inside container 2)	dB(A)	70
Exhaust gas noise at 1 meter 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 1 m distance from the CHP unit.

2) Sound pressure level measured at 10 m distance from the container.

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

Dimensions and weight

Container dimensions L/W/H	mm	13100/2700/2900
Dry weight CHP unit design inside container	kg	28500

Standard conditions and tolerances

Atmospheric pressure	kPa	100
Air temperature	°C	25
Relative air humidity	%	30
Tolerance for the electrical power	%	±3
Tolerance for the usable thermal output	%	±8
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
2205	EB	0	