Technical specification of CHP unit

KE-MNG 100

	400V/50Hz	Natural gas
Electrical power	kW	105
Thermal power	kW	137
Energy input	kW	278,0
Fuel consumption	m^3/h	29,4
Electrical efficiency	%	37,7
Thermal efficiency with LT	%	52,2
Thermal efficiency without LT	%	49,3
Overall efficiency with LT	%	**89,9**

Engine: MAN Type: E0836 LE302

No. of cylinders	-	6 in line
Rated speed	min^{-1}	1500
Bore/stroke/swept vol.	mm / mm / dm^3	108/125/6,87
Compression ratio	-	11:1
Engine power max.	kW	110
Lambda air/fule	-	1,65
Lube oil consumption	kg/h	0,125
Lube oil filling quantity	dm^3	34

Generator: LSA Type: 44.3 L10

Voltage/Frequency	V/Hz	400/50
Cos φ	-	0,8 - 1,0
General efficiency	%	95,3
Max. ambient temperature	°C	40

Rating data

					Performance parameters supplied by CHP unit
Load	%	**100**	**75**	**50**	**100**
ISO engine power	kW	110	83	55	**110**
Electrical power	kW	105	79	52	**105**
Coolant heat	kW	82	71	58	**82**
Exhaust heat (120 °C)	kW	50	39	28	**50**
Exhaust heat (90 °C)	kW	-	-	-	**-**
Intercooler heat HT	kW	5	3	0	**5**
Intercooler heat LT	kW	8	3	1	**8**
Total heat power	kW	137	113	86	**137**
Radiation heat max.	kW	5	-	-	**5**
Energy input 1)	kW	278	216	154	**278**
Fuel consumption	m^3/h	29,4	22,9	16,3	**29,4**
Combustion air	kg/h	557	423	289	**557**
Exhaust gas mass flow	kg/h	577	439	249	**577**
Exhaust gas temperature after turbocharger	°C	390	-	-	**390**
Electrical efficiency 1)	%	37,7	36,6	34,0	**37,7**
Thermal efficiency	%	49,3	52,3	55,8	**49,3**
Overall efficiency	%	**87,0**	**88,9**	**89,8**	**87,0**

1) According to ISO 3046.

Fuel: Natural gas

Min. methan no.	-	80
Calorific value	MJ/Nm^3	34
Gas pressure in the inlet pipe	kPa	1.5>3
Max. gas temperature	°C	30

Secondary circuit

Heat power	kW	137
Temperature gradient	°C / °C	90/70
Cooling medium volume flow	m^3/h	6,06
Pressure loss of PHE	bar	0,1
Heat transfer medium	-	Treated water
Max. operating pressure	bar	6

LT circuit

Heat power	kW	8
Temperature gradient	°C / °C	42,9/40
Cooling medium volume flow	m^3/h	2,58
Max. allowable pressure loss 1)	kPa	-
Heat transfer medium - ethylene glycol/water	Vol. % / Vol. %	40/60
Operating pressure nom. / max.	bar/bar	1,5/6

1) Pipework between CHP unit and dry cooler.

Ventilation air

Fan air volume flow 1)	m^3/h	4830
Max. allowable pressure loss of air duct 2)	Pa	70
Max. inlet air temperature	°C	35

1) At temperature 35 °C, 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	577
Exhaust gas temperature after EGHE	°C	120
Max. allowable pressure loss 1)	mbar	-
Silencer flanges	-	-

1) Exhaust gas pipe between CHP unit and outlet (without silencer).

Emissions

CO	mg/Nm^3	<550
NO_x	mg/Nm^3	<80

Correlation 5% O_2

Noise level

Without Canopy 1)	dB(A)	98,6
With canopy 1)	dB(A)	74
Container 2)	dB(A)	70
Exhaust line at 1 meter distance from silencer 3)	dB(A)	65
Input/Output ventilation 1)	dB(A)	65

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) Depending on the requirement, noise can be reduced by additional optimization of the standard silencer.

Standard conditions, tolerance, weigth

Atmospheric pressure	kPa	100
Air temperature	°C	25
Relative air humidity	%	30
Tolerance for the electrical output	%	±3
Tolerance for the usable heat	%	±7
Tolerance for the specific fuel consumption	%	±5
Dimensions L / W / H	mm	3550/1300/1800
Dry weight	kg	3800

Detailed technical specifications of components on demand.

Change of technical parameters and printing errors reserved.