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NATURAL GAS COGENERATING UNIT WITH SPARK IGNITION ENGINE

MARTIN POWER MTU

Cogenerating unit model	MP 1900 M - CU
Electric power @ cos phi 0.8	1865 kVA / 1492 kW
Electric power @ cos phi 1.0	**1523 kW**
Energy input in fuel [3]	**3438 kW**
Gas consumption (min/max) @ 9,6 kWh/m^3	191/360 m^3/h
Thermal power from engine cooling	712 kW
HT-stage intercooler thermal power	included in engine cooling
Lube oil cooling thermal power	included in engine cooling
LT-stage intercooler thermal power [1]	104 kW
Thermal power from exhaust	691 kW
Thermal power on the output [2]	**1507 kW**
Electric power efficiency	**44,3%**
Thermal power efficiency	43,8%
Total efficiency	**88,1%**
Current	2747 A
Control panel current	3200 A
Speed	1500 min^{-1}

Engine model	**12V 4000 L64**
Nominal power	1560 kW
Intake	turbocharged with intercooler
Speed governor	electronic
Cylinders	12V
Bore	170 mm
Stroke	210 mm
Displacement	57,2 dm^3
Compression ratio	14:1
Ignition sequence	1-12-2-11-3-10-6-7-5-8-4-9
Ignition timing	fixed
Lambda	lean burn
Intake air temperature	25 ℃
Combustion air temperature (min/max)	20/30 ℃
Air mass flow	7560 kg/h
Exhaust gas flow	7814 kg/h
Max. back pressure at exhaust	6 kPa
Max. exhaust temperature (@ rated power)	406 ℃
Radiated heat	96 kW
Specific gas consumption	169 g/kWh
Gas consumption (CH_4) @ 100% load	256 kg/h
Gas consumption (CH_4) @ 75% load	196 kg/h
Gas consumption (CH_4) @ 50% load	136 kg/h
Engine oil volume	220 l
Engine oil consumption	0,35 l/h
Coolant volume (CHP)	220 l (engine only)
Coolant pressure (max)	6 bar
Minimal coolant flow through engine	59,6 m^3/h
Coolant temperature - engine (in/out)	78/90 ℃
Coolant temperature - CHP (in/out)	78/103 ℃
Heating water temperature (in/out)	70/90 ℃
Heating water flow rate	74,5 m^3/h
LT stage intercooler temperature (in/out)	40/43 ℃
LT stage intercooler coolant flow	35 m^3/h
Battery voltage	24 V
Starter	9 kW
Battery	4 x 170 Ah

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MARTIN POWER MTU

Cogenerating unit model	MP 1900 M - CU
Generator manufacturer	**LEROY SOMER**
Generator model	**LSA 51.2 VL90**
Nominal power	2360 kVA
F class power	2150 kVA
Protection	IP 23
Voltage regulation	electronic
Voltage precission	1,5 %

Emissions [4]	@ 5% O_2
NO_x	500 mg/Nm^3
CO	300 mg/Nm^3 (with OxiCat)
HCHO	60 mg/Nm^3

Open genset	
Length	5000 mm
Width	2000 mm
Height	2400 mm
Weight	11250 kg

Open CHP version	
Length	6500 mm
Width	2000 mm
Height	2400 mm
Weight	12500 kg

Canopied CHP version	
Length	12000 mm
Width	3100 mm
Height	3100 mm
Weight	

Container CHP version	40'
Length	12192 mm
Width	3100 mm
Height	3100 mm
Weight	

Installation - connections	
Gas inlet	DN 80 / PN 16
Heating HT circuit	DN 100 / PN 16
Heating LT circuit (optional)	DN 50 / PN 16
Exhaust (pipe up to 6 m)	DN 400 / PN 6

1) The thermal power is available if the cooling water temperature input is below 35℃
2) Theoretical usable thermal power; tolerance +/- 8 %
3) According to ISO 3046 (+ 5 % tolerance), using reference fuel used at 400 V, p.f. 1.0, 50 Hz
4) Emission values during grid parallel operation