

Imperial

Basic Technical Data

Operation	P / E			
Nominal electrical output	4050 / 5035 kW/kVA ¹⁾			
Heat output ²⁾	13,051,000 BTU/h			
1) At emergency operation E it is non-overload-able electric output for $\cos\varphi=0,8$				
2) Heat output is heat output of secondary circuit at its full utilization				
Load	50	75	100	%
Heat power	7,903,000	10,455,000	13,051,000	BTU/h
Fuel input	17,010,000	24,011,000	31,214,000	BTU/h
Heat rate	8,400	7,906	7,707	BTU/kW _e
Electrical efficiency	40.6	43.2	44.3/44.0	%
Heat efficiency	46.5	43.5	41.8	%
Total efficiency (fuel utilization)	87.1	86.7	86.1/85.8	%
Gas consumption	18,644	26,307	34,217	CFH

The Basic Technical Data are applicable for the standard conditions pursuant to the "Technical instruction" document.

The minimum permanent electrical output must not drop below 50 % of the nominal output.

Gas consumption is expressed under the conditions (59°F, 14.648 psi, Low Heat Value 912.18 BTU/CF)

Observance of Emission Limits

Emissions	CO	NO _x	VOC	
At 15% of O ₂ in exhaust gas	0.6	1.0	0.7	g/HP-hr

Generator

Type	MJH 800 LA8		
Producer	MARELLI		
Cos φ	1,0		
Voltage	4160	V	
Frequency	60	Hz	

Metric

Basic Technical Data

Operation	P / E			
Nominal electrical output	4050 / 5035	kW/kVA ¹⁾		
Heat output ²⁾	3825	kW		
1) At emergency operation E it is non-overload-able electric output for $\cos\varphi=0,8$				
2) Heat output is heat output of secondary circuit at its full utilization				
Load	50	75	100	%
Heat power	2316	3064	3825	kW
Fuel input	4985	7037	9148	kW
Electrical efficiency	40,6	43,2	44,3/44,0	%
Heat efficiency	46,5	43,5	41,8	%
Total efficiency (fuel utilization)	87,1	86,7	86,1/85,8	%
Gas consumption	528	745	969	m ³ /h

The Basic Technical Data are applicable for the standard conditions pursuant to the "Technical instruction" document.

The minimum permanent electrical output must not drop below 50 % of the nominal output.

Gas consumption is expressed under the conditions (15°C, 101.325 kPa, Low Heat Value 34MJ/m³)

Engine

Type	TCG 2032 V16	
Producer	MWM	
Number of cylinders	16	
Arrangement of cylinders	V	
Bore x stroke	260/320	mm
Displacement	16,598	cui
Compression ratio	12 : 1	
Speed	900	rpm
Nominal oil consumption	0.2	g/kWh
Max. engine output	4153	kW

TCG2032V16; 4160V natural gas; 04.05.2016



Thermal System

Aftercooler circuit ¹⁾

Heat carrier	water + ethylene glycol	
Ethylene glycol's concentration	35	%
Total system heat recovery	1,136,000	BTU/h
Coolant temperature (outlet from CHP unit – informative)	113	°F
Coolant temperature (inlet into CHP unit) max	104	°F
Nominal flow rate	176	GPM
Pressure loss	14.5	psi

1) Parameters are valid if the dry cooler (optional) is part of delivery

Fuel, Gas Inlet

Low heat value	912.18	BTU/CF
Min. methane number	80	
Gas pressure	1.2 – 2.2	psi
Max. pressure change under varying consumption	10	%
Max. gas temperature	95	°F

Combustion and Ventilation Air

Unused heat removed by the ventilation air	1,129,000	BTU/h
Amount of combustion air	9,770	CFM
Outdoor air temperature, min / max	-68/95	°F
Max. air temperature at the outlet flange	122	°F

Exhaust Gas and Condensate Outlet

Amount of exhaust gases	7,451	CFM
Exhaust gas temperature, nominal / max	248/302	°F
Max. back-pressure of exhaust gases downstream the CHP unit flange	0.14	psi
Speed of exhaust gases at the outlet (DN 800)	13.7	m/s

Oil

Amount of lubrication oil in the engine	488	gal
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Thermal System

Aftercooler circuit ¹⁾

Heat carrier	water + ethylene glycol	
Ethylene glycol's concentration	35	%
Total system heat recovery	333	kW
Coolant temperature (outlet from CHP unit – informative)	45,0	°C
Coolant temperature (inlet into CHP unit) max	40,0	°C
Nominal flow rate	18,1	kg/s
Pressure loss	100	kPa

1) Parameters are valid if the dry cooler (optional) is part of delivery

Fuel, Gas Inlet

Low heat value	34	MJ/m ³
Min. methane number	80	
Gas pressure	8 ÷ 15	kPa
Max. pressure change under varying consumption	10	%
Max. gas temperature	35	°C

Combustion and Ventilation Air

Unused heat removed by the ventilation air	331	kW
Amount of combustion air	16600	Nm ³ /h
Outdoor air temperature, min / max	-20/35	°C
Max. air temperature at the outlet flange	50	°C

Exhaust Gas and Condensate Outlet

Amount of exhaust gases	12660	Nm ³ /h
Exhaust gas temperature, nominal / max	120/150	°C
Max. back-pressure of exhaust gases downstream the CHP unit flange	10	mbar
Speed of exhaust gases at the outlet (DN 800)	13,7	m/s

Oil

Amount of lubrication oil in the engine	1850	dm ³
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Noise Parameters

CHP unit in 10 m from container	78	dB(A)
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Electrical Parameters

nominal voltage	4 160 V
nominal frequency	60 Hz
power factor ¹⁾	0,8
nominal current at cos φ=0.8	694 A
generator circuit breaker	ABB
short-circuit resistance of switchboard high-voltage	25 kA
short-circuit resistance of switchboards R2, R4	10 kA
contribution of the actual source to the short-circuit current	Depend on generator type
High-voltage switchboards protection	IP 40
protection of control switchboard R2, R4 closed/open	IP 31/00
recommended connection cable (< 50m, at t<35°C)	As recommended by the manufacturer of HV

1) Power factor adjustable from 0,8C ÷ 1 ÷ 0,8L (range from 0.8C ÷ 1 must be verified according to the various types of generators).
 L = inductive load - overexcited
 C = capacitive load - underexcited
 Operation of the generator with a power factor of less than 0.95 causes a power limitation sets the following table:

power factor [-]	1	0,95	0,8
output [% Pnom]	100	100	98

Color Version

Engine, generator and internal parts of unit	RAL 5010 (blue)
Container	RAL 5013 (blue)

Caution

Manufacturer reserves the right to alter this document and the linked source materials.

