



Photo: Symbolic; may differ from the module described.

**Compact CHP, ready-for-connection, primarily consisting of:
consisting of:**

- Spark-ignition gas engine in industrial serial production
- water-cooled asynchronous generator
- Aluminium exhaust gas heat exchanger integrated into coolant circuit with calorific value utilisation
- Controlled unit with high-performance microcontrollers for fully automating operation control and remote monitoring
- Gas pressure regulator and safety system

Heat extraction integrated into the module

- Expansion vessel in the engine and heating circuit
- Safety valve in engine and heating circuit
- Filling, drainage and venting valves
- Transfer plate heat exchanger to separate the heating system from the CHP engine water circuit
- Pumps for engine and heating circuit

Water and gas connections are equipped with compensators. All connections are routed through the mounting plate to the outside.

The engine and generator connect to the module's base frame on an anti-vibration mounting.

The module's base frame is additionally disconnected from the installation surface by vibration insulation elements.

The control cabinet is configured as a separate unit. All control and regulation functions as well as operating elements are integrated into it. All operating and status values can be adjusted via a menu-driven touch screen display.

A water-cooled spark-ignition gas engine configured for continuous stationary operation serves for propulsion.

The water-cooled asynchronous generator is used to start the gas engine.

Expansion vessel, overpressure valve, top-up, emptying and bleed valves are attached to the outside of the module and are easy to access without opening the housing.

Engine data			Engine operating media		
	Hz	50			
Rotation speed	1/min	1.514	Oil refill tank approx.	l	42
ISO standard performance (mech.)	kW	54	Engine oil volume (approx.)	l	13
Air ratio (lambda)	λ	1,0			
Type		In-line	Coolant filling amount, approx.	l	50
Number of cylinders		4	Max. operating pressure	bar	2
Bore	mm	108	Min. coolant flow volume	m ³ /h	9,1
Stroke	mm	125	Min. cooling water temperature	°C	80
Engine displacement	l	4580	Max. cooling water temperature:	°C	88
Flywheel rotation direction		Left	Difference (max. intake-outlet)	K	6
Compression ratio	ϵ	scale 13:1			
Mean effective pressure	bar	9,43	Degrees of efficiency		
Mean piston speed	m/s	6,3			
Performance specifications					
	Hz	50			
Electric performance range	kW	25- 49,5	Load	%	100
Thermal performance range*	kW	44 - 88	Electric	%	34,5
			Mechanical	%	36,5
			Thermal*	%	61,3
			Total (el. + th.) *	%	95,8
Load	%	100	CHP coefficient *		0,563
Ignition time before dead centre	degrees	18			
ISO standard performance (mech.)	kW	54	Mass and volume flows		
Electrical power	kW	49,5			
Coolant heat	kW	46	Combustion air mass flow	kg/h	178
Exhaust gas heat*	kW	40	Combustion air volume flow	m ³ /h	150
Generator heat*	kW	2			
Useful thermal output*	kW	88	Fuel mass flow	kg/h	11,2
Fuel power	kW H _i	144	Fuel volume flow	m ³ /h	14,0
Fuel consumption (mech.)	kWh/kWh	2,67			
Fuel consumption (el.)	kWh/kWh	2,91	Exhaust mass flow, wet	kg/h	189
Internal consumption approx.	kW	1 - 2	Exhaust mass flow, dry	kg/h	165
Start-up current	A	< 60	Exhaust volume flow, wet	m ³ /h	150
			Exhaust volume flow, dry	m ³ /h	124
Temperatures and pressures					
			Heating water volume flow (max.)	m ³ /h	3 - 10
Exhaust gas temperature	°C	620			
Max. exhaust gas temperature after exhaust gas he	°C	85***	Technical boundary conditions		
Exhaust gas back pressure at module outlet (max.)	mbar	10			
			Performance conditions in accordance with DIN-ISO-3046		
Heating water return temperature (max)	°C	70	Standard reference conditions: Air pressure: 1000 mbar,		
Heating water supply temperature (max)	°C	85	Air temperature: 25°C, relative Air humidity: 30%		
Heating circuit pressure loss (internal)	mbar	300	Gas quality in accordance with 2G Technical Manual		
			2G-TA 04 – Gas quality		
Max. supply vacuum	mbar	15	All data apply under full motor load at the specified		
Gas flow pressure	mbar	≥ 20	Media temperatures and are subject to further technical		
Gas connection pressure	mbar	20-100	Further developments. The operating fluids and plant systems		
			must be executed according to the 2G Technical Manual.		
Emission values at 5% residual oxygen			In the case of installation at over 400m and/or intake		
			air temperatures of over 30°C		
NOx	mg/Nm ³	< 125**	the reduction in performance will have to be determined for the		
CO	mg/Nm ³	< 150**	specific project in question.		
Noise emissions (under open area conditions at a distance of 1m)			* Based on a heater return flow temperature of approx. 60°C		
			** 1/2 TA Luft (German air pollution control regulation limits)		
Sound pressure level approx.	dB (A)	71	*** Safety temperature limiter set to 120°C		

Generator data			Main dimensions and weights		
Manufacturer	Weier		Module sound capsule:		
Type	DASGM 250 / 4L		Length (L):	mm	2.427
			Height (H):	mm	1.625
Rated output at cos φ= 0.86	kVA	65	Width (W):	mm	994
Voltage (3-phase)	V	400	Weight (approx.)	kg	1.800
Frequency	Hz	50			
Rated engine speed	1/min	1514	Module without sound capsule:		
Rated current	A	94,0	Approx. length (L):	mm	2.300
Cos φ		0,86	Height approx. (H):	mm	1.400
Degree of efficiency (full load)	%	94,70	Width approx. (W):	mm	750
Stator circuit	Triangle		Weight (approx.)	kg	1.350
Protection type	IP 54				
			Control cabinet:		
Interfaces			Height (H):	mm	1.800
			Width (W):	mm	800
Exhaust gas outlet	mm	80	Depth (D)	mm	500
Gas connection	Inches	1"	Weight (approx.)	kg	150
Heating circuit supply line	DN	40			
Heating circuit return line	DN	40			
Dimensions:					

