






## Delivery Chart 2022

## Compact CHP units driven by sewage gas / biogas

CHP unit type	Specification engine producer MAN, engine type	Power data			Efficiency rates			power to heat ratio <sup>2)</sup>	Servicing		Dimensions			operating weight [kg]	noise level [dB(A) in 1m]
		electrical [kW] <sup>1)</sup>	thermal [kW]	gas input [kW H <sub>i</sub> ]	electrical [%]	thermal [%]	total [%]		servicing interval <sup>3)</sup> [hours of operation]	general overhaul after ca. [h]	length [mm] (base pan)	width [mm]	height [mm]		
 <b>50 kW class</b>															
<b>FG 34 VR</b> <sup>4)</sup>	E0834 E312	35	65	112	31,3	58,0	89,3	0,51	1.000	60.000	2.200	900	1.830	1.880	62
<b>FG 50 VRS</b> <sup>5)</sup>	E0836 E312	51	91	159	32,1	57,2	89,3	0,54	1.000	60.000	2.500	900	1.800	2.460	63
 <b>100 kW class</b>															
<b>FG 73</b> <sup>6)</sup>	E0836 LE302	75	116	211	35,5	55,0	90,5	0,61	1.000	50.000	2.900	900	2.000	3.080	69
<b>FG 95</b> <sup>6)</sup>	E0836 LE302	95	137	258	36,8	53,1	89,9	0,66	1.000	50.000	2.900	900	2.000	3.080	69
<b>FG 123</b>	E2876 TE302	123	180	341	36,1	52,8	88,9	0,67	1.000	50.000	2.900	900	2.000	3.330	67
 <b>200 kW class</b>															
<b>FG 165</b> <sup>6)</sup>	E2676 LE212	167	217	433	38,6	50,1	88,7	0,74	1.000	50.000	3.400	1.300	2.320	4.250	69
<b>FG 206</b> <sup>6)</sup>	E2676 LE212	211	253	531	39,7	47,6	87,3	0,81	1.000	50.000	3.400	1.300	2.320	4.250	69
 <b>400 kW class</b>															
<b>FG 305</b> <sup>6)</sup>	E3268 LE252	308	405	790	39,0	51,3	90,3	0,74	1.000	50.000	3.700	1.500	2.550	6.870	73
<b>FG 305e</b> <sup>6)</sup>	E3268 LE262	308	379	764	40,3	49,6	89,9	0,79	1.000	50.000	3.700	1.500	2.550	6.870	73
<b>FG 355</b> <sup>6)</sup>	E3268 LE232	357	472	923	38,7	51,1	89,8	0,74	1.000	50.000	3.700	1.500	2.550	6.870	73
<b>FG 355e</b> <sup>6)</sup>	E3268 LE222	357	401	878	40,7	45,7	86,4	0,87	1.000	50.000	3.700	1.500	2.550	6.870	73
<b>FG 430</b> <sup>6)</sup>	E3262 LE242	435	553	1.095	39,7	50,5	90,2	0,77	1.000	50.000	3.700	1.500	2.550	7.240	74
 <b>500 kW class</b>															
<b>FG 530</b> <sup>6, 7)</sup>	E3262 LE202	528	688	1.349	39,1	51,0	90,1	0,75	1.000	50.000	3.700	1.500	2.600	7.290	74
<b>FG 530e</b> <sup>6, 7)</sup>	E3262 LE212	528	656	1.320	40,0	49,7	89,7	0,79	1.000	50.000	3.700	1.500	2.600	7.290	74

1) Value given as electric gross power at the connector block of the alternator at fuel composition 60 % CH<sub>4</sub> and 40 % CO<sub>2</sub>.

2) Calculated with net electrical power.

3) Depending on the sewage gas / biogas quality, the oil change intervals may differ from the servicing intervals.

4) Variable heating water pump and return increase integrated ready for operation.

5) Variable heating water pump and return increase integrated ready for operation, system separation heating water.

6) Power values apply to 40 °C mixture cooler return temperature. Heating power values include the mixture intercooler heat.

7) External switchgear cabinet for the power section, dimensions (width x depth x height ⇒) 1200 x 600 x 2200 mm, without cross-wiring.

Scope of delivery: CHP unit consisting of gas engine and alternator, connected by an elastic coupling and a rigid flange, cooling water and exhaust heat exchanger, cooling water pump, safety gas regulation unit, oil supply tank, oil refilling unit with level monitoring etc. with complete internal pipework, for operation in heating water systems at 90/70 °C flow/return temperatures, mounted in a sound-absorbing case ready for installation. Integrated switchgear cabinet with control and power section for fully automatic operation including mains monitoring with protection devices according to German guideline AR-N 4105:2018 (< 100 kWel.) resp. VDE AR-N 4110:2018 (>= 100 kWel.), fully wired

<sup>6)</sup> Pollutant reduction by lambda-regulation according to German BImSchG § 22, optional version for 44. BImSchV. Filled with lubricating oil and anticorrosive. Test bench run followed by first servicing is performed in factory prior to delivery. For further details see corresponding technical description.

Attention: The exhaust heat exchangers are dimensioned to reach 120 °C exhaust temperature after the CHP unit. When operated with biogas, we dimension them to reach 150 °C exhaust temperature to avoid corrosion damages. This decreases the thermal output slightly, details can be read in the technical descriptions.

All specifications are standard values and subject to change.

Special versions for the bivalent operation with natural gas or propane gas available on demand.