

*DEUTZ POWER SYSTEMS*



**TCG 2016 B**

**555 – 740 kW at 1500 min<sup>-1</sup> (50 Hz)**

# Technical data 50 Hz – Sewage, bio and landfill gas applications

$\text{NO}_x \leq 500 \text{ mg/m}_n^3$  <sup>1)</sup>

Sewage gas (65%  $\text{CH}_4$  / 35%  $\text{CO}_2$ )

Biogas (60%  $\text{CH}_4$  / 32%  $\text{CO}_2$ , rest  $\text{N}_2$ ),

Landfill gas (50%  $\text{CH}_4$  / 27%  $\text{CO}_2$ , rest  $\text{N}_2$ )

Lower heating value (LHV) = 5.0 kWh/m<sub>n</sub><sup>3</sup>  
dry exhaust manifolds

Engine type		TCG 2016 B V12	TCG 2016 B V16
Engine power <sup>2)</sup>	kW	555	740
Speed	min <sup>-1</sup>	1500	1500
Exhaust temperature	approx. °C	445	450
Exhaust mass flow wet	approx. kg/h	2967	3940
Combustion air mass flow <sup>2)</sup>	approx. kg/h	2735	3634
Combustion air temperature minimum/design	°C	20/25	20/25
Water inlet temperature intercooler	°C	50	50
Ventilation air flow <sup>3)</sup>	approx. kg/h	13986	19005

## Engine parameters

Bore/stroke	mm	132/160	132/160
Displacement	dm <sup>3</sup>	26.3	35.0
Compression ratio		15.0 : 1	15.0 : 1
Mean piston speed	m/s	8.0	8.0
Lube oil content <sup>4)</sup>	dm <sup>3</sup>	100	135
Typical mean lube oil consumption <sup>5)</sup>	g/kWh	0.2	0.2

## Generator

Efficiency <sup>6)</sup>	%	96.7	96.8
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## Energy balance

Electrical power <sup>6)</sup>	kW	537	716
Jacket water heat	± 8 % kW	203	270
Intercooler LT heat <sup>7)</sup>	± 8 % kW	100	128
Exhaust cooled to 150°C	± 8 % kW	271	367
Engine radiation heat	kW	20	28
Generator radiation heat	kW	18	24
Fuel consumption <sup>8)</sup>	+ 5 % kW	1297	1725
Electrical efficiency	%	41.4	41.5
Thermal efficiency (exhaust cooled to 150 °C)	%	36.5	36.9
Total efficiency	%	77.9	78.4

1) Exhaust emissions:

$\text{NO}_x < 0.50 \text{ g NO}_2/\text{m}_n^3$  dry exhaust gas at 5%  $\text{O}_2$

2) Engine power ratings and combustion air volume flows acc. to ISO 3046/1

3) Intake air flow at delta T = 15 K including combustion air

4) Including pipes and heat exchangers

5) This values are the mean lube oil consumption between

maintenance steps which include an E 60 service. Also the procedures defined in the TPI 1111-E-06-02 and the Technical Circular TR 0199-99-2105 are to be carefully followed.

6) At 50 Hz, U = 0.4 kV, power factor = 1

7) At 50 °C water inlet for biogas

8) With a tolerance of +5 %

The values given in this data sheet are for information purposes only and not binding.

The information given in the offer is decisive.