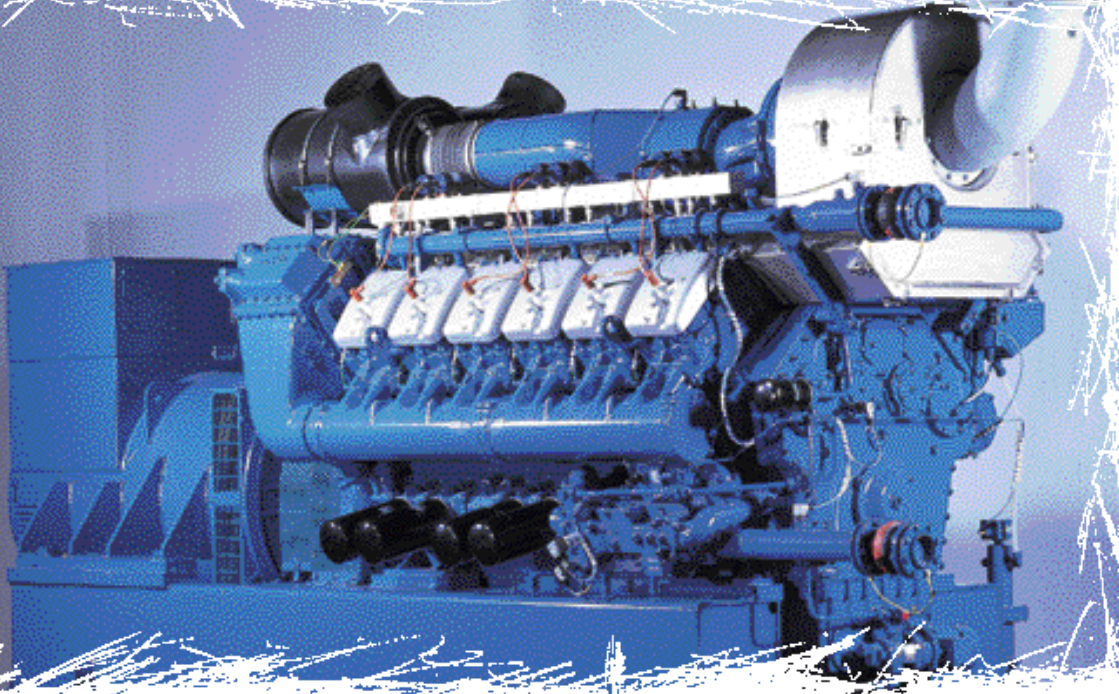


TBG 620. The gas engine.



790-1400 kW at 1500 min⁻¹



These are the characteristics of the TBG 620:

- Modern 12- and 16-cylinder V-engines.
- Turbocharging and intercooling.
- Single cylinder heads with four-valve technology.
- Centrally arranged industrial spark plug with intensive plug seat cooling.
- Microprocessor-controlled high-voltage ignition system.
- One ignition coil per cylinder.
- Electronic control and monitoring of genset operation through TEM.
- Exhaust emissions controlled according to combustion chamber temperature.
- Single-circuit or dual-circuit intercooling depending on power requirement.

Your benefits:

- ▶ Package of favourable investment and low operating costs.
Low energy consumption thanks to maximum primary energy utilization.
Long service intervals and ease of service guarantee additional cost savings.
- ▶ Efficient energy conversion with outstanding efficiencies.
- ▶ Intercooling permits maximum power even when using gases with low methane numbers.
- ▶ Reliable control and monitoring with high safety standards ensure optimum combustion and maximum engine protection.
- ▶ All governing, service, control and monitoring functions are easy and comfortable to operate.

DEUTZ ENERGY

► Technical data

Natural gas applications NO_x 500 mg/mn³

Engine type		TBG 620 V12	V16	V12 k	V16 k
Engine power ¹⁾	kW	790	1100	1050	1400
Mean effective pressure	bar	11.9	12.4	15.8	15.8
Exhaust temperature	approx. °C	416	400	517	525
Exhaust weight wet	approx. kg/h	4721	6537	5499	7332
Combustion air volume flow ¹⁾	kg/h	4501	6232	5296	7061
Intake air volume flow ²⁾	m ³ /h	20280	27040	23200	29170

Generator

Efficiency ³⁾	%	96.7	97.0	97.0	97.0
--------------------------	---	------	------	------	------

Energy balance

Terminal power output ³⁾	kW	764	1067	1019	1358
Cooling water and air-fuel heat HT	kW	698	994	478	628
Air-fuel heat LT ⁴⁾	kW	–	–	83	112
Exhaust heat up to 120°C	kW	437	573	682	928
Lube oil heat	kW	–	–	–	–
Cooled exhaust manifold	kW	–	–	–	–
Radiation engine	kW	55	74	60	72
Radiation generator	kW	26	33	32	42
Fuel input ⁵⁾	kW	2136	2958	2545	3393
Electric efficiency	%	35.8	36.1	40.0	40.0
Thermal efficiency	%	53.1	53.0	45.6	45.9
Total efficiency	%	88.9	89.0	85.6	85.9

System parameters

Cooling water circulation flow rate					
– Engine/kVs value ⁶⁾	m ³ /h	51/64.6	60/70	46/44	57/44
– Intercooler/kVs value ⁶⁾	m ³ /h	–	–	35/42.9	35/42.9
Max. exhaust backpressure	mbar	50	50	50	50
Max. intake pressure loss	mbar	5	5	5	5
Gas flow pressure (tolerance +/- 10%)	mbar	20...100	20...100	20...100	20...100
Starter battery	Ah	283	420	283	210
Dead weight					
– Engine	kg	6100	7100	6100	7250
– Genset	kg	9000	11500	9000	11050

Engine type		TBG 620 V12	V16	V12 k	V16 k
Bore/stroke	mm	170/195	170/195	170/195	170/195
Displacement	l	53.1	70.8	53.1	70.8
Compression ratio		12:1	12:1	12:1	12:1
Mean piston speed	m/s	9.8	9.8	9.8	9.8
Lube oil filling ⁷⁾	l	240	320	240	320
Lube oil temperature	°C	–	–	–	–
Lube oil flow rate	l/min	–	–	–	–
Lube oil consumption ⁸⁾	kg/h	0.3	0.4	0.4	0.4
Cooling water volume					
– Engine	l	173	226	173	226
– Intercooler	l	23	–	23	23
Cooling water temperature ⁹⁾	°C	74/90	74/90	82/92	82/92
Intercooler cooling water temperature ⁹⁾	°C	40/43	–	40/43	40/43

► Technical data

Sewage and landfill gas applications NO_x 500 mg/mn³

Engine type		TBG 620 V12	V16	V12 k	V16 k
Engine power ¹⁾	kW	762	1017	970	1294
Mean effective pressure	bar	11.5	11.5	14.6	14.6
Exhaust temperature	approx. °C	429	416	469	471
Exhaust weight wet	approx. kg/h	4465	5961	5099	6796
Combustion air volume flow ¹⁾	kg/h	3964	5292	4661	6211
Intake air volume flow ²⁾	m ³ /h	19630	25830	20060	26820

Generator

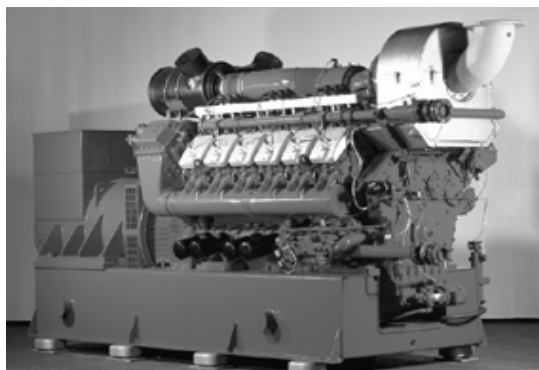
Efficiency ³⁾	%	96.7	97.0	97.0	97.0
--------------------------	---	------	------	------	------

Energy balance

Terminal power output ³⁾	kW	737	986	941	1255
Cooling water and air-fuel heat HT	kW	678	925	656	873
Air-fuel heat LT ⁴⁾	kW	–	–	79	106
Exhaust heat up to 120°C	kW	428	548	537	717
Lube oil heat	kW	–	–	–	–
Cooled exhaust manifold	kW	–	–	–	–
Radiation engine	kW	55	74	42	56
Radiation generator	kW	25	31	29	39
Fuel input ⁵⁾	kW	2073	2766	2454	3273
Electric efficiency	%	35.5	35.7	38.4	38.4
Thermal efficiency	%	53.4	53.3	48.6	48.6
Total efficiency	%	88.9	88.9	87.0	87.0

System parameters

Cooling water circulation flow rate					
– Engine/kVs value ⁶⁾	m ³ /h	50.5/64.6	60/70	46/43	57/43
– Intercooler/kVs value ⁶⁾	m ³ /h	–	–	35/42.9	35/42.9
Max. exhaust backpressure	mbar	50	50	50	50
Max. intake pressure loss	mbar	5	5	5	5
Gas flow pressure (tolerance +/- 10%)	mbar	20...100	20...100	20...100	20...100
Starter battery	Ah	283	420	283	420
Dead weight					
– Engine	kg	5500	7100	6100	7250
– Genset	kg	7800	11500	9000	11050



1. Engine power ratings and combustion air volume flows acc. to ISO 3046/1.
2. Intake air volume flow at ΔT 15 K including combustion air.
3. At 50 Hz, $U=0.4$ kV, $\cos(\varphi) = 1$.
4. At 40°C water inlet.
5. With a tolerance of +5%.
6. The kVs value is the parameter for the pressure loss in the cooling system.
7. Including pipes.
8. At full load.
9. Inlet/outlet.

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

Dimensions		Length	Width	Height
TBG 620 V12/k	mm	3055	1390	2033
TBG 620 V16/k	mm	3555	1390	2033

► Noise emissions*

Noise frequency band	Hz	63	125	250	500	1000	2000	4000	8000
Engine type TBG 620 V12									
Exhaust noise	dB	126	126	117	116	113	111	112	105
Air-borne noise	dB	85	91	98	98	99	95	94	93
Engine type TBG 620 V16									
Exhaust noise	dB	116	125	118	114	111	110	109	103
Air-borne noise	dB	92	96	98	97	99	97	96	98
Engine type TBG 620 V12 k									
Exhaust noise	dB	126	126	117	116	113	111	112	105
Air-borne noise	dB	85	91	98	98	99	95	94	93
Engine type TBG 620 V16 k									
Exhaust noise	dB	116	125	117	114	113	112	109	104
Air-borne noise	dB	92	96	98	97	99	97	96	98

* Values apply to natural gas applications. For further details please contact DEUTZ ENERGY GmbH in Mannheim.



DEUTZ ENERGY GmbH

Carl-Benz-Straße 5

D-68167 Mannheim

Telephone: ++49 (0) 621-384-8670

Fax: ++49 (0) 621-384-8612

A Member of DEUTZ AG