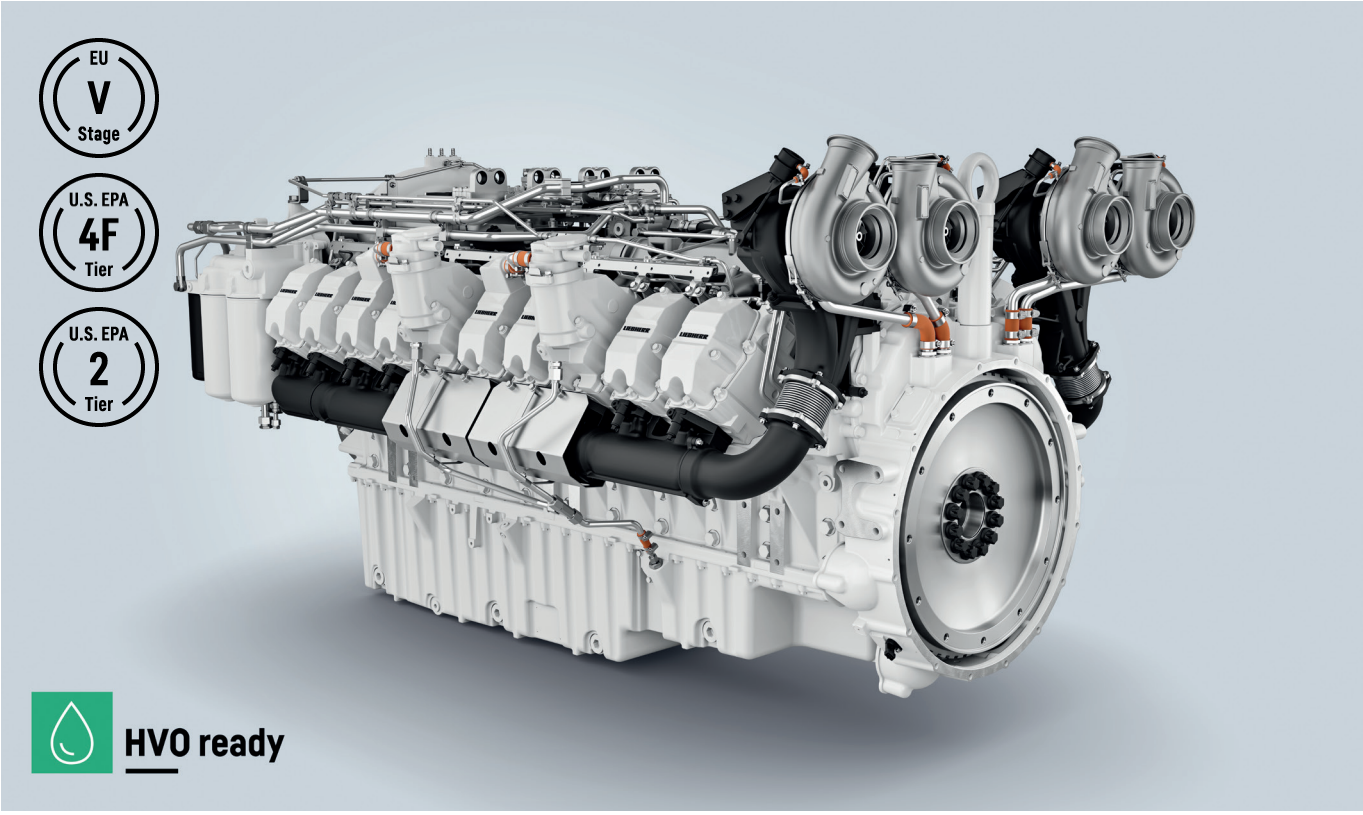
D9620 engine for the power generation industry



Designed and manufactured by Liebherr, the D9620 is a very highpower combustion engine developed for PRP and COP power generation applications, while also supporting standby power requirements in stationary installations where operational stability and longterm asset protection are key decision factors.

Built on a robust platform and backed by Liebherr's proven engineering expertise, this 20-cylinder, 45-litre engine delivers up to 2,022 kW, providing stable and predictable performance across PRP and COP duty cycles under demanding operating conditions.

Combining reliable efficiency with optimised fuel consumption and controlled emissions performance, the D9620 is designed to deliver robust and costeffective power generation at very high-power levels. Extended service intervals, simplified maintenance concepts and advanced diagnostics with LiDIA support high availability, minimise downtime and help protect longterm asset value.

System benefits for power generation packager

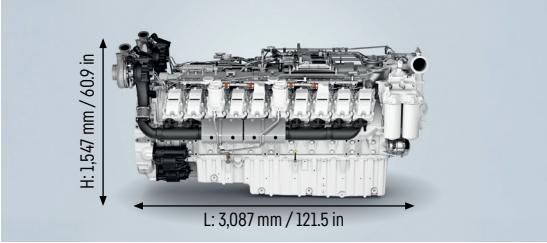
- Enabling very highpower genset solutions with stable and predictable power behaviour across a wide range of operating profiles.
- Facilitating system integration through a robust and proven engine architecture, a favourable powertoweight ratio (kW/kg) and a wellcontrolled footprint, supporting compliant operation under demanding load conditions.
- Ensuring reliable operation at very high power levels with controlled dynamic behaviour aligned with ISO 85285 requirements, supporting PRP, COP and standby power applications.
- Supporting longterm system availability through stable performance over extended running hours and predictable behaviour under severe load variations.
- Protecting longterm asset value with extended service intervals, simplified maintenance concepts and a durable engine design engineered for highpower duty cycles.

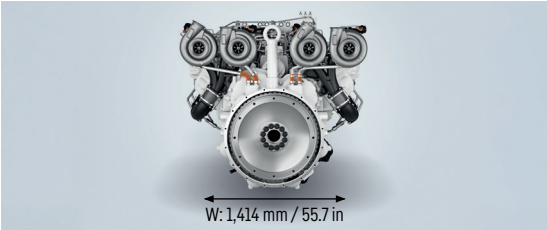
LIEBHERR

Product features

Technical data

Country of manufacture		Switzerland
Configuration		20 cylinders V line
Aspiration		Turbocharger
Fuel injection control system		High-Pressure Common Rail
Bore	mm (in)	135 (5.3)
Stroke	mm (in)	157 (6.2)
Displacement	L (in^3)	45 (2,746)
Compression ratio		15:1
Coolant capacity	L (US gal)	143 (37.8)
Lubricant capacity	L (US gal)	180 (47.1)
Estimated dry weight	kg (lbs)	4,085, (9,006)





Power ratings

50 Hz

COP			PRP			ESP		
kWm	**kWe**	**kVA**	**kWm**	**kWe**	**kVA**	**kWm**	**kWe**	**kVA**
1,230	1,169	1,461	1,500	1,425	1,781	1,684	1,600	2,000
Fuel optimized			Fuel optimized · Tier 2 · Stage V			Fuel optimized · Tier 2		

*on request

60 Hz

COP			PRP			ESP		
kWm	**kWe**	**kVA**	**kWm**	**kWe**	**kVA**	**kWm**	**kWe**	**kVA**
1,473	1,399	1,749	1,736	1,649	2,062	2,022	1,921	2,401
Fuel optimized · Tier 2 · Tier 4f			Fuel optimized · Tier 2 · Tier 4f			Fuel optimized · Tier 2 · Tier 4f*		

Generator efficiency : 95%
kWm = kiloWatt mechanical, net with fan; kWe = kiloWatt electrical = kWm x Generator eff.;
kVA = kiloVoltAmpere calculations based on a 0.8 power factor = kWe / 0.8 1 kW = 1 hp x 1.36; 1 hp = 1 kW x 0.7355

Power standards
The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with a calorific value of 42.7 MJ /kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal), also where this involves a deviation from the standards. Ratings are based on ISO 8528. Engine speed governance in accordance with ISO 8528-5 G3.

Fuel consumption*

50 Hz g/kWh (L/h)

Fuel optimized

Load	COP	PRP	ESP
100%	190 (265)	190 (319)	191 (352)
75%	192 (201)	191 (239)	190 (263)
50%	199 (139)	195 (164)	195 (179)
25%	222 (77)	214 (89)	210 (97)

60 Hz g/kWh (gall/h)

Fuel optimized			Tier 2
COP	**PRP**	**ESP**	**ESP**
202 (92)	193 (105)	193 (88)	198 (119)
210 (72)	203 (83)	192 (65)	214 (97)
216 (49)	196 (59)	215 (65)	231 (70)
244 (28)	220 (23)	241 (36)	262 (39)

Tolerances on nominal specific fuel consumption declaration are valid for Diesel fuel fulfilling standard EN 590. Fuel density: 840 gr/L

Heat rejection*

50 Hz kW (BTU/min)

Fuel optimized

Heat rejection	COP	PRP	ESP
Charge air cooler	196 (11,147)	292 (16,606)	348 (19,791)
Exhaust	860 (48,908)	989 (56,244)	1,073 (61,022)
Coolant	510 (29,004)	558 (31,733)	598 (34,008)

60 Hz kW (BTU/min)

Fuel optimized			Tier 2
COP	**PRP**	**ESP**	**ESP**
340 (19,137)	442 (25,137)	502 (28,549)	502 (28,549)
1,035 (58,860)	1,337 (76,035)	1,518 (86,329)	1,518 (86,329)
556 (31,620)	666 (37,875)	727 (41,344)	727 (41,344)

Inlet air*

50 Hz

Fuel optimized

Inlet air	COP	PRP	ESP
Combustion air inlet flow kg/h (lb/h)	5,070 (11,177)	6,207 (13,684)	6,700 (14,771)
Max. allowable combustion air inlet temp, °C (°F)	60 (140)	60 (140)	60 (140)

60 Hz

Fuel optimized

			Tier 2
COP	**PRP**	**ESP**	**ESP**
7,404 (16,323)	8,137 (17,939)	8,605 (18,971)	8,605 (18,971)
60 (140)	60 (140)	60 (140)	60 (140)

Exhaust system*

50 Hz

Fuel optimized

Exhaust system	COP	PRP	ESP
Exhaust stack gas temperature °C (°F)	522 (972)	495 (923)	498 (928)
Exhaust gas flow rate, kg/h (lb/h)	5,302 (11,689)	6,482 (14,290)	7,003 (15,439)

60 Hz

Fuel optimized

			Tier 2
COP	**PRP**	**ESP**	**ESP**
448 (838)	511 (952)	540 (1,004)	540 (1,004)
7,693 (16,960)	8,488 (18,713)	8,995 (19,831)	8,995 (19,831)

***Stage V and Tier 4f** - technical data will be available at a later stage

Rating Definition Powergen

Ratings definition in accordance with ISO 8528 and ISO 3046

Continuous Power (COP) refers to the maximum power output that a diesel engine can deliver continuously under constant load and rated speed for an unlimited number of hours per year, under standard operating conditions. This rating assumes regular maintenance and compliance with the manufacturer's specifications.

Prime Power (PRP) refers to the maximum power that a diesel engine can supply for an unlimited number of hours per year under variable load conditions. Unlike continuous power, PRP allows for load fluctuations, but the engine must not be overloaded beyond its specified limit (a 10% overload capability for governing purposes is available for this rating).

Stand-by Power (ESP) refers to the maximum power a diesel engine can supply during a power outage or emergency situation. It is intended for use only when the main power source fails and is limited to a maximum of 200 hours per year depending on the standard. No overload capability is permitted, and it is not designed for continuous or variable load operation.

Data Centre Power refers to the total electrical capacity required to operate all systems within a data center, including IT equipment, cooling infrastructure, power distribution and facility support. It must ensure continuous, reliable power delivery with redundancy and backup systems to maintain uptime.

Product specifications and options

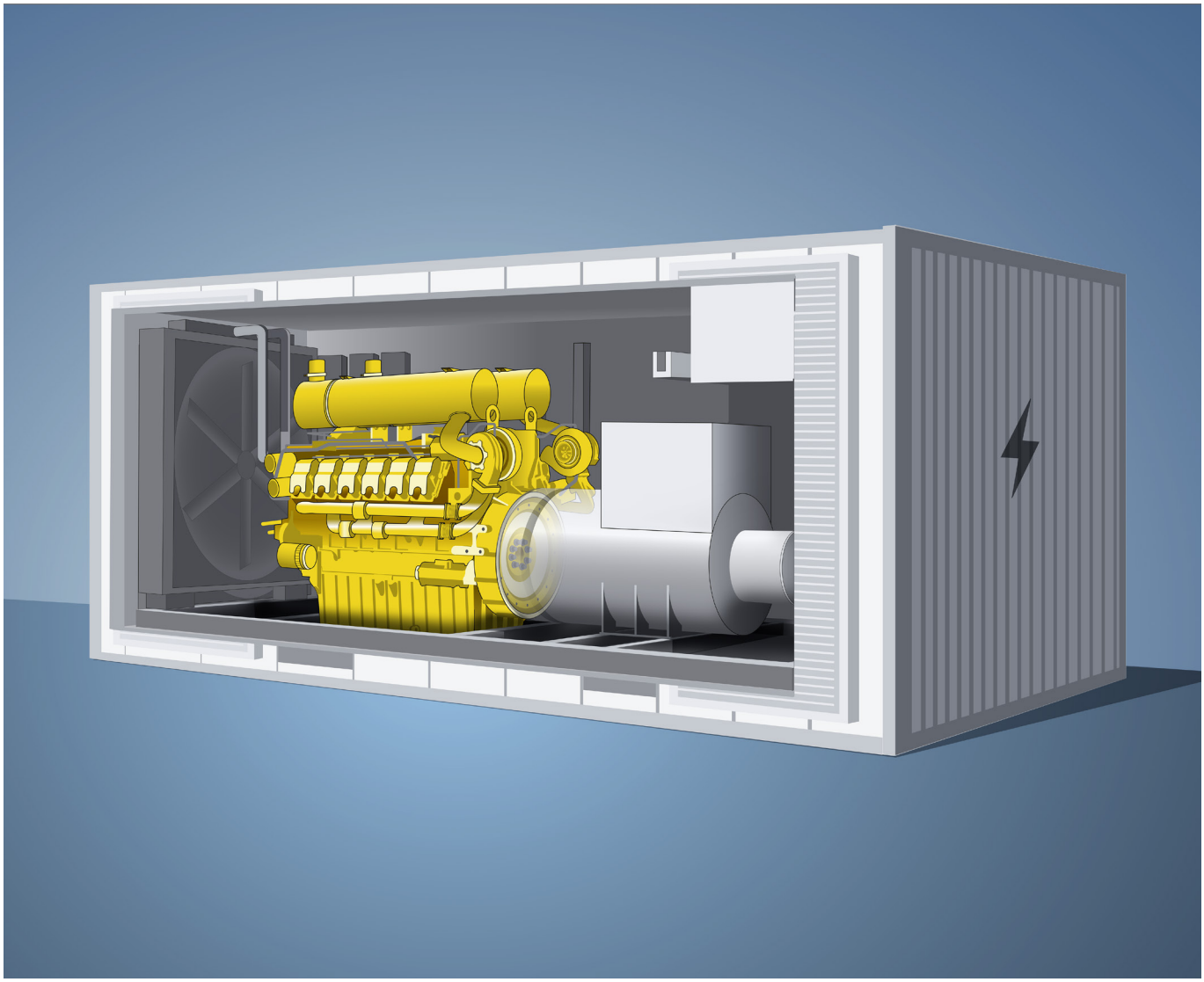
Product specifications

- Liebherr Engine Control Unit
- Liebherr high-performance injection system (2,000 bar)
- Hydrogenated vegetable oil (HVO) compatible

Options

- Cold start (-25 °C)
- Coolant inlet & outlet (90° elbow)
- Closed CCV
- Oil level sensor
- Top air inlet elbows
- Exhaust outlet elbow
- Fan drive
- LiDIA diagnostic tool

D9620 engine
for the power generation industry



Want to know more?
Scan to discover our full portfolio

Liebherr-Components AG
Brown Boveri Straße 7, 5400 Baden, SWITZERLAND · +41 56 296-4300
combustion.engines@liebherr.com · www.liebherr.com/combustion-engines