

12M26D748E201 G-Drive Engine Data Sheet

Speed	Gross Engine Output		
	COP	PRP	ESP
rpm	kWm	kWm	kWm
1800	578	680	748

Ratings Definitions

	Continuous Power (COP)	Prime Power (PRP)	Standby Power (ESP)
Mean engine load factor	100%	≤70% per 250 h	≤80% per 24 h
Annual working time	Unlimited	Unlimited	≤200 h
Time at full load	Unlimited	≤500 h per year	≤25 h per year
Overload capacity	No	1 h per 12 h (10% overload)	No

1) The power ratings are in accordance with ISO 3046.

2) Test conditions: 100 kPa, 25 °C air inlet temperature, relative humidity of 30%, with fuel density 0.84 kg/L.

3) The engine maybe operated at : up to 1000m and 30 °C without power deration. For sustained operation above these conditions, derate by 3% per 300m, and 2% per 11 °C.

4) Power output curves are based on the engine operating with fuel system, water pump and lubricating oil pump; not included are battery charging alternator, fan and optional equipment.

Engine basic data

Engine model	12M26D748E201	Cylinder number/valve number	12/48
bore diameter /stroke mm	150×150	Displacement(L)	31.8
Fuel System	Mechanical Pump	Aspiration	Turbocharged and Intercooled
Compression Ratio	15.7:1	Emission Standard	/
Overall Dimension (Length×Width×Height) (mm)	2119×1353×1705	Engine net weight (kg)	3470
Injection timing (°CA)	21-22		
Flywheel housing	SAE 0	Flywheel	18
Max. Permissible Fixing Angle (°)	Longitudinal Inclination	Front /Rear	10/10
	Cross Inclination	Left/Right	22.5/22.5
Dynamic angle (°)	Longitudinal Inclination	Front/Rear	/
	Cross Inclination	Exhaust pipe side /Intake pipe side	/

Permitted temperature ambient °C	-10~50	Permitted altitude limit m	2000
Valve lashes at cold (mm)	0.3±0.03		

Performance Data

Idle Speed (rpm)	750±30	Over Speed limit (rpm)	1854
Mean Piston Speed (m/s)	9	BMEP (MPa)	1.426
Friction Power (kW)	/	Fan Power (kW)	40
Load factor	Power kW	Fuel consum. g/kW.h	Fuel consum. L/h
10%	68	473.3	38.31
25%	170	272.3	55.11
50%	340	223.6	90.50
75%	510	214.5	130.23
85%	578	210	144.50
100%	680	207.2	167.73
110%	748	206.7	184.06

Air intake system

Intake air temperature rise (°C)	Permitted difference between turbocharger inlet temperature and ambient temperature (this parameter impacts emission, LAT and altitude capability)	≤5
Intake air resistance (kPa)	Clean filter	≤3
	Dirty filter	≤5
Air filter mass flow (kg/h)		/
Air mass flow (kg/h)	Rated Power	4536
	Standby Power	4850
Clear efficiency of air filter (%)		0.995
Recommended Min. diameter of intake pipe (mm)		140

Inter cooling system

Intercooler heat dissipating capacity (KJ/S)	Rated Power	142.3
	Standby Power	166.6
Intercooler efficiency (%)	Rated Power	≥85
	Standby Power	≥85
Max. intake temperature (°C)		55

Max. difference between intake temperature and ambient temperature (°C)	30
Permitted max. intake pressure drop of intercooler (kPa)	12
Recommended intercooler radiator cooling area (m ²)	95.2

Exhaust system

Max. exhaust back pressure (kPa)	7.5	
Max. exhaust temperature (°C)	Before turbocharger	750
	After turbocharger	550
Recommended muffler mass flow/volume (kg/h)	/	
Exhaust-gas mass flow (kg/h)	Rated Power	4676
	Standby Power	5006
Recommended Min. diameter of exhaust pipe (mm)	300	
Max. bending moment of turbocharged flange (N·m)	10	

Lubrication system

Volume of oil pan (L)	113	
Oil pressure in normal condition (kPa)	Idle speed	≥200
	Rated Power	400~600
Alarm for low & high oil pressure (kPa)	200 (≤160automatic stop) /—	
Temperature range in main oil passage at rated working condition (°C)	85~105	
max. oil temperature (°C)	/	
Max. oil pressure while engine starting (kPa)	1000	
Opening pressure of main oil passage pressure limiting valve (kPa)	500-550	
Max. Oil flow (L/min)	≥350 (1500 r/min)	
	≥360 (1800 r/min)	
Oil consumption	≤0.3%	

Noise and Emission

Emission standard	Off-road stageII	
Exhaust smoke (FSN)	Rated Power	Rb≤1.5
	Standby Power	/
Diesel engine noise dB(A)	sound power level : 122.4	

Fuel system

Injection pump type	Mechanical
Governor	Electric governer
Steady speed governing factor	±3%

Max supply fuel restriction at rated power conditon (kPa)		13
Return restriction in pipe (kPa)		15
Max. supply fuel temperature at rated power condition (°C)		45
Max. flow of fuel suply (kg/h)	Rated Power	140.31
	Standby Power	155.62
Min. pressure of fuel pump (kPa)		35
Min. Ventilation rate of fuel tank (L/h)		/
Recommended diameter of inlet pipe (mm)		12
Recommended diameter of return pipe (mm)		12

Electrical system

Electrical system voltage		24
Motor power/ working voltage (kW/V)		10/24
Battery charging Alternator/ working voltage (kW/V)		1.54/28
Permitted max. electric resistance of motor control lines (Ω)		0.002
Recommended Min. conductor cross-sectional area (mm ²)		90
The lowest cold starting temperature (°C)	No aided starting device	0
	Aided starting device	-10

Cooling system

Water pump Transmission ratio		2
Min. coolant temperature of engine working (°C)		50
Min. water fill rate (L/min)		/
Max. initial fill time (min)		/
Recommended Min diameter of outside water pipe(mm)		45
Min. pressure at water pump inlet at No or only a part of degassing Device (kPa)		50
Min. pressure at water pump inlet at Complete degassing device (kPa)		0
Max. deaeration time(min)		/
Min. expansion tank volume (% total cooling system capacity)		/
Min expansion space (% total cooling system capacity)		/
Coolant capacity of engine (L)		/
Coolant capacity of radiator (L)		/

High temperature of alarm (°C)	95
Thermostat opening temp./ full open temp. (°C)	77(1/-2)/87
Min. permitted pressure in cooling system (kPa)	50
Max. permitted external resistance (at rated speed) (kPa)	50

Heat balance test data (ambient temperature: 24.1°C)

Pressure of water in/ water out (kPa / kPa)	Rated Power	-3.2/133.8
	Standby Power	-13.8/142.1
Coolant mass flow (m ³ /h)	Rated Power	30.6
	Standby Power	34.2
Temperature of water in/ water out (°C/°C)	Rated Power	87.1/90.7
	Standby Power	86.9/91.4
Temperature of intake air : before/after intercooler (°C/°C)	Rated Power	166.0/ 54.0
	Standby Power	176.0/ 52.9
Pressure of intake air :before /after intercooler (kPa / kPa)	Rated Power	187.3/ 178.8
	Standby Power	207.5/ 198.4
Heat be taken away by Coolant (kJ/s)	Rated Power	236.9
	Standby Power	330.9
Heat be taken away by intercooler (kJ/s)	Rated Power	141.8
	Standby Power	166.6
Heat be taken away by exhaust gas (kJ/s)	Rated Power	491.2
	Standby Power	544.9
Gross Heat of Engine (kJ/s)	Rated Power/Standby Power	1639.2/1818.7

Mounting system

Inertia of complete engine (kg•m ²)		/
		/
		/
Inertia of flywheel (kg•m ²)		6.97
Inertia of crankshaft (including crankshaft gear) (kg•m ²)		2.58
Centroid position mm	X	/
	Y	/
	Z	/
Permitted static bending moment at flywheel housing flange face		/