VOLVO PENTA

TAD1350GE

12.78 liter, in-line 6 cylinder

The TWD1350GE is a powerful, reliable and economical Generating Set Diesel Engine built on the dependable in-line six design.

Durability & low noise
Designed for easy, fast and economical installation. Field tested to ensure highest standard of durability and long life. Well-balanced to produce smooth and vibration-free operation with low noise level.

To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling. The engine is also fitted with replaceable cylinder liners and valve seats/guides to ensure maximum durability and service life of the engine.

Low exhaust emission
The state of the art, high-tech injection and highly efficient charge air system with low internal losses contributes to excellent combustion and low fuel consumption.

The TAD1350GE is EPA/CARB Tier 3 emission certified. These regulations are met by using V-ACT™ (Volvo Advanced Combustion technology).
V-ACT includes a flexible high pressure fuel injection system, an air management system including an internal exhaust gas recirculation device and an enhanced electronic controller.

Easy service & maintenance
Easily accessible service and maintenance points contribute to the ease of service of the engine.

- **Excellent load acceptance**
- **High efficient cooling system (AOT 65 °C at Standby power)**
- **Optimized for 1800 rpm**
- **EMS**
- **EPA/CARB Tier 3 emission certified**
- **Wide range of optional equipment**

60 Hz/1800 rpm

Continuous power			Prime power			Standby power		
kWm	kWe	kVa	kWm	kWe	kVa	kWm	kWe	kVa
184	170	213	245	228	285	269	250	313

60 Hz/1800 rpm

Data Center Power	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
Engine	kWm	kWe	kVa	kWm	kWe	kVa
TWD1350GE	245	228	285	269	250	313

Generator efficiency (typical): 93%

kWm = kiloWatt mechanical, net with fan according to technical data
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

TAD1350GE

12.78 liter, in-line 6 cylinder

Technical Data

General

Engine designation	TAD1350GE
No. of cylinders and configuration	in-line 6
Method of operation	4-stroke
Bore, mm (in.)	131 (5.16)
Stroke, mm (in.)	158 (6.22)
Displacement, l (in³)	12.78 (780)
Compression ratio	18.1:1
Dry weight, kg (lb)	1295 (2855)
Dry weight with Gen Pac, kg (lb)	1715 (3781)
Wet weight, kg (lb)	1325 (2921)
Wet weight ith Gen Pac, kg (lb)	1790 (3946)

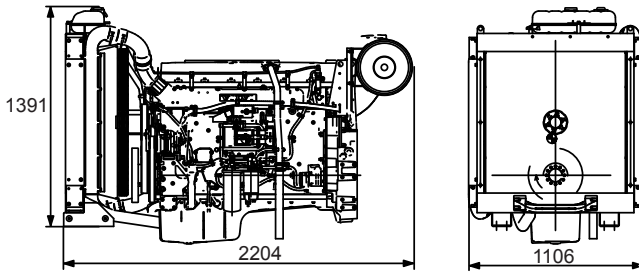
Performance	**1800 rpm**
with fan, kW (hp) at:	
Prime Power	245 (333)
Standby Power	269 (366)

Lubrication system	**1800 rpm**
Oil consumption, liter/h (US gal/h) at:	
Prime Power	0.03 (0.008)
Standby Power	0.04 (0.011)
Oil system capacity incl filters, liter	36

Fuel system	**1800 rpm**
Specific fuel consumption at:	
Prime Power, g/kWh (lb/hph)	
25 %	283 (0.459)
50 %	230 (0.373)
75 %	219 (0.355)
100 %	216 (0.350)
Standby Power, g/kWh (lb/hph)	
25 %	269 (0.436)
50 %	223 (0.361)
75 %	218 (0.353)
100 %	214 (0.347)

Dimensions TAD1350GE

Not for installation



Technical description

Engine and block

- Cast iron cylinder block with optimum distribution of forces without the block being unnessarily heavy.
- Wet, replaceable cylinder liners
- Piston cooling for low piston temperature and reduced ring temperature
- Tapered connecting rods for increased piston lifetime
- Crankshaft induction hardened bearing surfaces and fillets with seven bearings for moderate load on main and high-end bearings
- Case hardened and Nitrocarburized transmission gears for heavy duty operation
- Keystone top compression rings for long service life
- Viscous type crankshaft vibration dampers to withstand single bearing alternator torsional vibrations
- Replaceable valve guides and valve seats
- Over head camshaft and four valves per cylinder

Lubrication system

- Full flow oil cooler
- Full flow disposable spin-on oil filter, for extra high filtration
- The lubricating oil level can be measured during operation
- Gear type lubricating oil pump, gear driven by the transmission

Fuel system

- Electronic high pressure unit injectors
- Fuel prefilter with water separator and water-in-fuel indicator / alarm
- Gear driven low-pressure fuel pump
- Fine fuel filter with manual feed pump and fuel pressure switch

Cooling system

- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block. Reliable sleeve thermostat with minimum pressure drop
- Belt driven coolant pump with high degree of efficiency

Turbo charger

- Efficient and reliable turbo charger
- Electronically controlled Waste-gate
- Extra oil filter for the turbo charger

Electrical system

- Engine Management System (EMS), an electronically controlled processing system which optimizes engine performance. It also includes advanced facilities for diagnostics and fault tracing
- The instruments and controls connect to the engine via the CAN SAE J1939 interface, either through the Control Interface Unit (CIU) or the Digital Control Unit (DCU). The CIU converts the digital CAN bus signal to an anolog signal, making it possible to connect a variety of instruments. The DCU is a control panel with display, engine control, monitoring, alarm, parameter setting and diagnostic functions. The DCU also presents error codes in clear text.
- Sensors for oil pressure, oil temp, boost pressure, boost temp, coolant temp, fuel temp, water in fuel, fuel pressure and two speed sensors.

Rating guidelines

CONTINUOUS POWER is defined as being the maximum power which the generating set is capable of delivering continuously while supplying a constant electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer.

PRIME POWER rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A10 % overload capability for govering purpose is available for this rating.

STAND-BY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying stand-by electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.

DATA CENTRE POWER is defined as being the maximum power which a generating set is capable of delivering while supplying a variable or continuous electrical load and during unlimited run hours. Depending on the sites to supply and the availability of reliable utility, the generating set manufacturer is responsible to define what power level he is able to supply to fulfil that requirement including hardware or software or maintenance plan adaptation.

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 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 governing in accordance with ISO 8528-5 G3.

Please note that products illustrated may differ from production models. Not all models and accessories are available in all markets, and standard equipment may vary between different markets. Every effort has been made to ensure that facts and figures are correct at the time of publication. However, Volvo Penta reserves the right to make changes without prior notice at any time.

Please contact your local Volvo Penta dealer for further information.

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