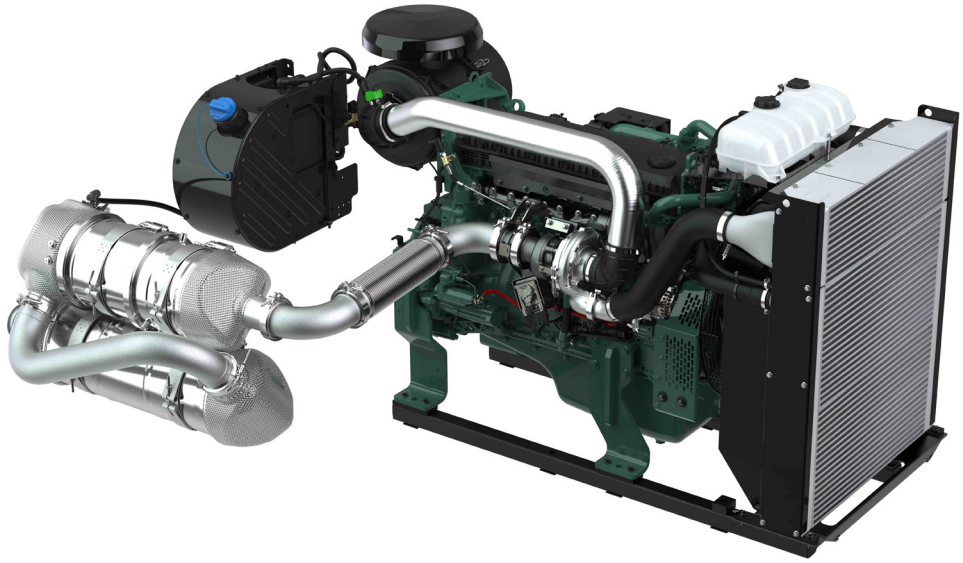
VOLVO PENTA

TAD880-882GE

7.7 liter, in-line 6 cylinder



The TAD880-882GE is a powerful, reliable and economical Generating Set Diesel Engine built on the dependable in-line six design.

Durability & low noise
Designed for easiest, fastest and most economical installation. 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 charging system with low internal losses contributes to excellent combustion and low fuel consumption.
Chosen engine design combined with optimized DPF/SCR technology ensures that TAD880-882GE complies with EU Stage V emission regulations.

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

- **Electronic govering EMS**
- **CAN bus communication**
- **Compact design for the power class**
- **High power to weight ratio**
- **Emission compliant acc. to EU Stage V**
- **Noise optimized engine design**
- **RoHS2 Compliant**
- **Dual speed**
- **Excellent passive soot regeneration**

50 Hz / 1500 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TAD880GE	97	90	113	129	120	150	142	132	165
TAD881GE	129	120	150	172	160	200	189	176	220
TAD882GE	161	150	188	215	200	250	237	220	276

60 Hz / 1800 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TAD880GE	113	105	132	151	140	175	166	154	193
TAD881GE	149	138	173	198	184	230	218	203	253
TAD882GE	164	152	190	218	203	254	240	223	279

50 Hz / 1500 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		
	kWm	kWe	kVA	kWm	kWe	kVA
TAD880GE	129	120	150	142	132	165
TAD881GE	172	160	200	189	176	220
TAD882GE	215	200	250	237	220	276

60 Hz / 1800 rpm

	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA
TAD880GE	151	140	175	166	154	193
TAD881GE	198	184	230	218	203	253
TAD882GE	218	203	254	240	223	279

Generator efficiency (typical): TAD880GE/TAD881GE/TAD882GE 93%
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
*) According to technical data

TAD880-882GE

7.7 liter, in-line 6 cylinder

Technical data

Configuration and no. of cylinders ..... in-line 6
Displacement, l (in³) 7.7 (470)
Method of operation 4-stroke
Bore, mm (in.) 110 (4.33)
Stroke, mm (in.) 135 (5.31)
Wet weight *), engine only, kg (lb) 723 (1594)
Compession ratio 17.2:1
Direction of rotation (viewed towards flywheel)) ..... counterclockwise

*) The engine is weighed with components that consist of the minimum running weight including standard flywheel and excluding cooling package, hoses and air filters.

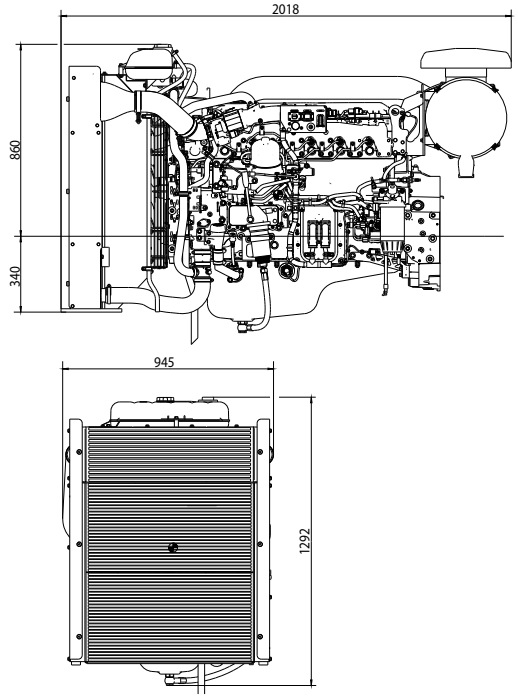
Fuel consumption

Prime Power, g/kWh (lb/hph)

	TAD880GE		TAD881GE		TAD882GE	
	1500 rpm	1800 rpm	1500 rpm	1800 rpm	1500 rpm	1800 rpm
25%	237 (0.384)	247 (0.400)	221 (0.358)	239 (0.387)	212 (0.344)	234 (0.379)
50%	206 (0.334)	213 (0.345)	199 (0.323)	206 (0.334)	196 (0.318)	205 (0.332)
75%	197 (0.319)	203 (0.329)	195 (0.316)	200 (0.325)	195 (0.316)	199 (0.323)
100%	195 (0.316)	200 (0.323)	195 (0.316)	198 (0.320)	198 (0.321)	198 (0.321)

Dimensions

Not for installation. Dimensions in mm.



Technical description

Engine and block
- Cast iron cylinder block
- Replaceable valve guides and valve seats
- Overhead camshaft and four valves per cylinder
- Flywheel housing with connection according to SAE 2

Lubrication system
- Full flow cartrigde insert filter
- Gear type lubrication oil pump, gear driven

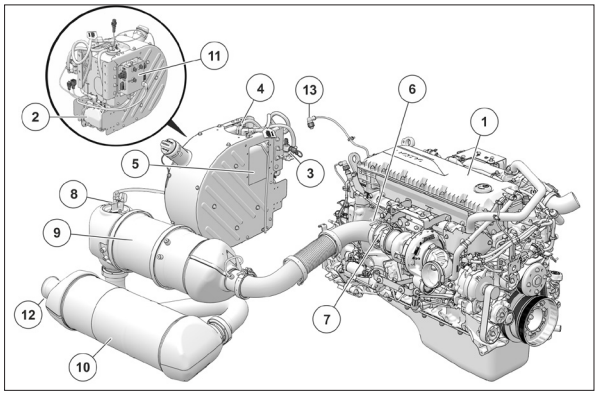
Fuel system
- Electronically controlled common rail injectors
- Gear driven fuel feed pump
- Fuel pre filter with water separator and water-in-fuel indicator/alarm
- Manual feed pump on pre filter

Cooling system
- Belt driven coolant pump with high degree of efficiency

Electrical system
- Engine Management System (EMS), includes advanced facilities for diagnostics and fault tracing.
- The instruments and controls connect to the engine via the CAN SAE J1939 interface. Options available for engine control equipment.

Exhaust after treatment system
- SCR, DPF+ DOC and uncooled EGR
- Airless urea injection
- Wide range of options available, including different sized AUS/DEF tanks (also possible for OEM to design own tank).
- AUS/DEF Quality Level Temperature Sensor

Main components



1. Engine with common rail fuel injection
2. AdBlue Pump Unit
3. Solenoid Valve, heating
4. Tank armature with sensors and heater
5. AdBlue tank, heated
6. NOx Sensor
7. Electrical Exhaust Pressure Governor
8. Dosage Valve
9. Diesel particular filter
10. Muffler with Catalytic Converter
11. After treatment Control Module (ACM)
12. NOx Sensor
13. Air inlet Temperature Sensor and pressure sensor

All necessary components are available in various lengths and sizes, cables, heated hoses and tanks. A complete system.

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. Power output guaranteed within 0 to +2% att rated ambient conditions at delivery. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 8528-5 G3.

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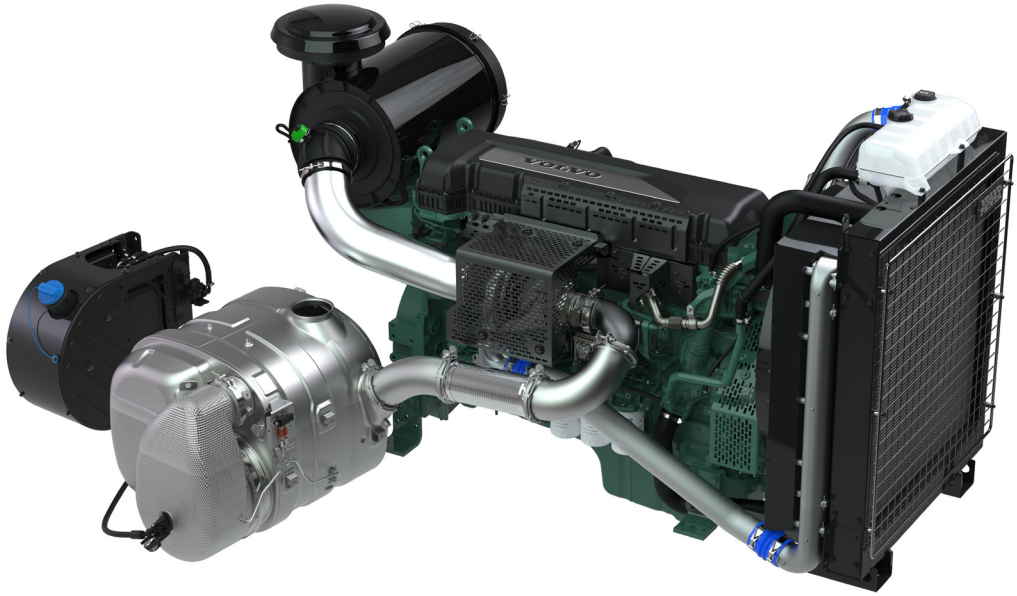
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VOLVO PENTA

TAD1380-1382GE

12.78 liter, in-line 6 cylinder



The TAD1380-1382GE is a powerful, reliable and economical Generating Set Diesel Engine built on the dependable in-line six design.

Durability & low noise
Designed for easiest, fastest and most economical installation. 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 charging system with low internal losses contributes to excellent combustion and low fuel consumption.
Chosen engine design combined with optimized DPF/SCR technology ensures that TAD1380-1382GE complies with EU Stage V emission regulations.

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

- **Electronic govering EMS**
- **CAN bus communication**
- **High power to weight ratio**
- **Emission compliant acc. to EU Stage V**
- **Noise optimized engine design**
- **RoHS2 Compliant**
- **Dual speed**
- **Exellent passive soot regeneration**

50 Hz / 1500 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TAD1380GE	195	181	227	288	242	302	318	266	332
TAD1381GE	227	211	264	303	282	352	335	310	387
TAD1382GE	255	240	300	344	320	400	380	352	440

60 Hz / 1800 rpm

	Continuous power			Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA	kWm	kWe	kVA
TAD1380GE	205	191	239	274	254	318	304	280	350
TAD1381GE	237	220	276	316	294	367	347	323	403
TAD1382GE	255	240	300	340	320	400	374	352	440

50 Hz / 1500 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		
	kWm	kWe	kVA	kWm	kWe	kVA
TAD1380GE	288	242	302	318	266	332
TAD1381GE	203	282	352	335	310	387
TAD1382GE	344	320	400	380	352	440

60 Hz / 1800 rpm

	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA
TAD1380GE	274	254	318	304	280	350
TAD1381GE	316	294	367	347	323	403
TAD1382GE	340	320	400	374	352	440

Generator efficiency: TAD1380GE/TAD1381GE 93%, TAD1382GE 94%

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

TAD1380-1382GE

12.78 liter, in-line 6 cylinder

Technical data

Configuration and no. of cylinders	in-line 6
Displacement, l (in³)	12.78 (780)
Method of operation	4-stroke
Bore, mm (in.)	131 (5.16)
Stroke, mm (in.)	158 (6.22)
Wet weight *), engine only, kg (lb)	1267 (2793)
Compession ratio	16.8:1
Direction of rotation (viewed towards flywheel))	counterclockwise

*) The engine is weighed with components that consist of the minimum running weight including standard flywheel and excluding cooling package, hoses and air filters.

Technical description

Engine and block
- Cast iron cylinder block
- Wet, replaceable cylinder liners
- Replaceable valve guides and valve seats
- Overhead camshaft and four valves per cylinder
- Flywheel housing with connection according to SAE 1

Lubrication system
- Full flow disposable spin-on filter, for extra high filtration
- Gear type lubrication oil pump, gear driven by transmission
- Oil level sensor

Fuel system
- Electronically controlled common rail injectors
- Fuel pre filter 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 valve

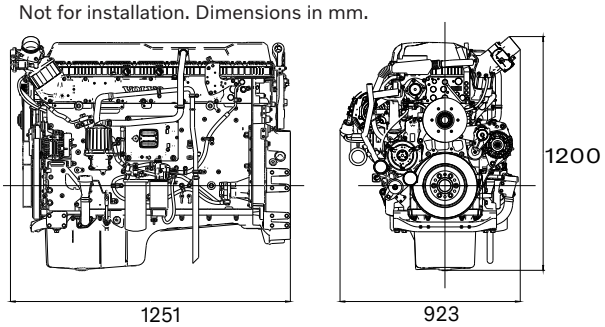
Cooling system
- Belt driven coolant pump with high degree of efficiency
- Fan and fan ring available as option

Electrical system
- Engine Management System (EMS), includes advanced facilities for diagnostics and fault tracing.
- The instruments and controls connect to the engine via the CAN SAE J1939 interface. Options available for engine control equipment.

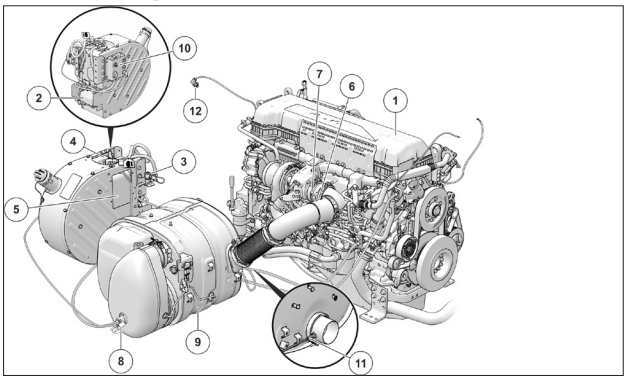
Exhaust after treatment system
- SCR, DPF+ DOC and uncooled EGR
- Airless urea injection
- Wide range of options available, including different sized AUS/DEF tanks (also possible for OEM to design own tank).
- AUS/DEF Quality Level Temperature Sensor

Dimensions

Not for installation. Dimensions in mm.



Main components



1. Engine with common rail fuel injection
2. AdBlue Pump Unit
3. Solenoid Valve, heating
4. Tank armature with sensors and heater
5. AdBlue tank, heated
6. NOx Sensor
7. Electrical Exhaust Pressure Governor and pressure sensor
8. Dosage Valve
9. Muffler with Catalytic Converter and diesel particular filter
10. After treatment Control Module (ACM)
11. NOx Sensor
12. Air inlet Temperature Sensor

All necessary components are available in various lengths and sizes, cables, heated hoses and tanks. A complete system.

Fuel consumption

Prime Power, g/kWh (lb/hph)

	TAD1380GE		TAD1381GE		TAD1382GE	
	1500 rpm	1800 rpm	1500 rpm	1800 rpm	1500 rpm	1800 rpm
25%	236 (0.383)	263 (0.426)	222 (0.360)	256 (0.415)	217 (0.351)	252 (0.408)
50%	204 (0.331)	218 (0.353)	201 (0.326)	214 (0.347)	199 (0.322)	212 (0.344)
75%	197 (0.319)	208 (0.337)	196 (0.318)	206 (0.334)	196 (0.318)	207 (0.336)
100%	196 (0.318)	207 (0.336)	197 (0.319)	206 (0.334)	198 (0.320)	205 (0.333)

Standby Power, g/kWh (lb/hph)

	TAD1380GE		TAD1381GE		TAD1382GE	
	1500 rpm	1800 rpm	1500 rpm	1800 rpm	1500 rpm	1800 rpm
25%	226 (0.366)	259 (0.420)	218 (0.353)	250 (0.405)	213 (0.346)	234 (0.379)
50%	203 (0.329)	216 (0.350)	199 (0.323)	213 (0.345)	197 (0.320)	211 (0.341)
75%	197 (0.319)	207 (0.336)	196 (0.318)	208 (0.337)	196 (0.318)	207 (0.336)
100%	197 (0.319)	207 (0.336)	197 (0.319)	206 (0.334)	200 (0.324)	207 (0.336)

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.

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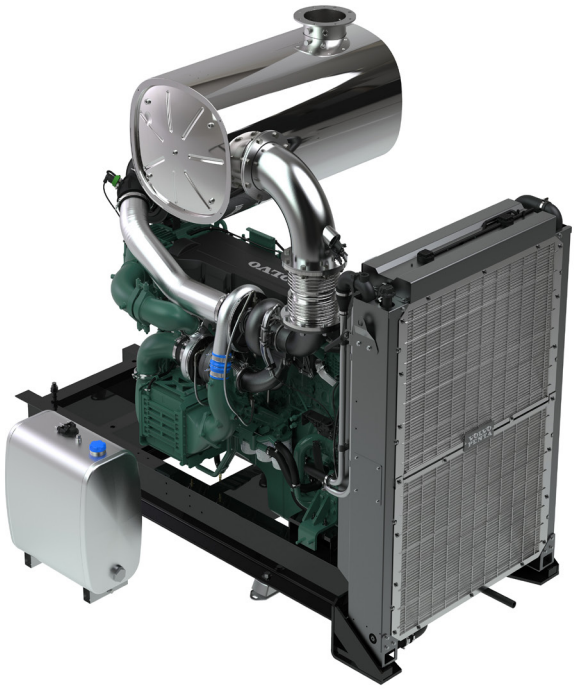
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VOLVO PENTA

TWD1682-1683GE

16.12 liter, in-line 6 cylinder



TWD1682-1683GE is a reliable, powerful and compact in-line 6 cylinder diesel engine. It is designed to power a wide range of stand-by and prime power generator sets.

This 16 liter diesel engine utilizes dual-stage turbochargers and heavy-duty steel pistons to provide excellent power density. It features a proven combustion technology with high-pressure unit injectors, resulting in high fuel efficiency and low exhaust emission levels.

Efficient injection as well as robust engine design in combination with SCR technology (Selective Catalyst Reduction) contributes to low exhaust emission, excellent combustion and low fuel consumption.
The exhaust aftertreatment system consists of only SCR, without EGR, DOC or DPF. A minimum of components are used and no downtime for regeneration or decreased service intervals. No EGR also results in less heat rejection, leading to excellent power density and improved fuel economy.

SCR technology selected by Volvo Group does not increase the amount of cooling capacity needed.

The engine also features a compact and low weight design that is well-balanced, providing smooth operation with low noise and vibration. It is designed for easily accessible service points.
A wide range of options is available, including a heavy-duty frame, cooling package and air-filter that will suit a variety of installations.

- **Proven and straight-forward design - built on Volvo Group technology**
- **RoHS2 Compliant**
- **Low cost of ownership and operation**
- **SCR only - no EGR, DOC, DPF or regeneration**
- **High efficient cooling system**
- **Excellent step load performance acc. to ISO 8528-5**
- **Compact, simple installation and easy to service**
- **Available as Genpac or Base engine configuration**

50 Hz / 1500 rpm

	Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA
TWD1682GE	-	-	-	-	-	-
TWD1683GE	570	536	670	627	589	737

60 Hz / 1800 rpm

	Prime power			Standby power		
	kWm	kWe	kVA	kWm	kWe	kVA
TWD1682GE	541	508	635	595	560	700
TWD1683GE	596	560	700	655	616	770

50 Hz / 1500 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		
	kWm	kWe	kVA	kWm	kWe	kVA
TWD1682GE	-	-	-	-	-	-
TWD1683GE	570	536	670	627	589	737

60 Hz / 1800 rpm

	>300h running per year or non-reliable utility power in the country			≤300h running per year and reliable utility power in the country		
	kWm	kWe	kVA	kWm	kWe	kVA
TWD1682GE	541	508	635	595	560	700
TWD1683GE	596	560	700	655	616	770

Generator efficiency (typical): 94%

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
*) According to technical data

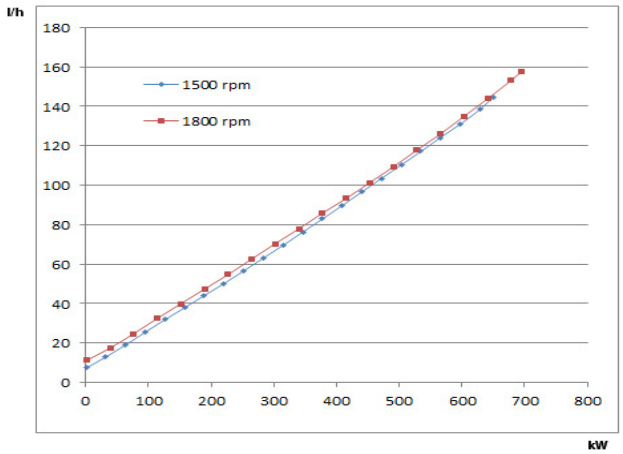
TWD1682-1683GE

16.12 liter, in-line 6 cylinder

Technical Data

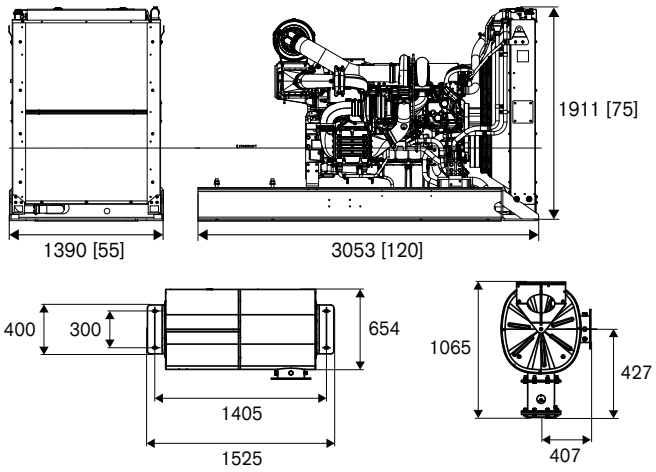
Configuration and no. of cylinders	in-line 6
Displacement, l (in³)	16.12 (983.9)
Method of operation	4-stroke
Bore, mm (in.)	144 (5.67)
Stroke, mm (in.)	165 (6.50)
Compression ratio	16.8:1
Wet weight, engine only, kg (lb)	1810 (3390)
Wet weight, Genpac (engine, cooling system, air filtration system and frame kg (lb)	2767 (6100)

Fuel consumption



Dimensions

Not for installation. Dimensions in mm [inch].



Technical description

Engine and block

- Cast iron cylinder block with optimum distribution of forces
- Wet, replaceable cylinder liners
- Tapered connecting rods for increased piston lifetime
- Crankshaft induction hardened bearing surfaces and fillets with seven main bearings
- Case hardened and Nitrocarburized transmission gears for heavy duty operation
- Viscous type crankshaft vibration dampers to withstand single bearing alternator torsional vibrations
- Replaceable valve guides and valve seats
- Overhead camshaft and 4 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 at start-up

Fuel system

- Electronic high pressure unit injectors
- Fuel prefilter with water separator and water-in-fuel indicator / alarm
- 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
- Belt driven coolant pumps with high degree of efficiency
- Water-cooled charge air coolers

Turbo charger

- Efficient and reliable dual stage turbo chargers
- Intermediate charge air coolers for both turbo chargers
- Waste gate system for the high pressure 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. The DCU2 is a control panel with display, engine control, monitoring, alarm, parameter setting and diagnostic functions. It also presents error codes in clear text. The DCU2 makes it possible to install and combine several sets of analogue and digital instruments.
- Sensors for oil pressure, oil temp, boost pressure, boost temp, coolant temp, fuel temp, water in fuel, fuel pressure and two speed sensors.

Exhaust aftertreatment system

- SCR only. No EGR, DOC, DPF or regeneration. Wide range of installation options available.
- AdBlue/DEF tank including AdBlue/DEF Quality Level Temperature Sensor

Rating guidelines

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.

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