



RATINGS 480 V - 60 Hz		
Standby	kVA	625
	kWe	500
Prime	kVA	568
	kWe	454



### Benefits & features

#### KOHLER premium quality

- Design offices using the latest technical innovations
- Modern fully certified factories
- A cutting edge laboratory
- The generating set, its components and a wide range of options have been fully developed, prototype tested, factory built, and production tested
- Approved for use with HVO (Hydrotreated Vegetable Oil) according to EN15940

#### KOHLER premium performances

- Optimized and certified sound levels
- Reliable power, even in extreme conditions
- Optimized fuel consumption
- Compact footprint
- Best quality of electricity, high starting and loading capacity, according to ISO8528-5
- Robust base frames and high-quality enclosures
- Protection of installations and people
- Approved in line with the most stringent standards

#### Engines

- Premium level engines, in-house or from strong partners
- High power density, small footprint
- Low temperature starting capability
- Long maintenance interval

#### Alternator

- Provide industry leading motor starting capability
- Made in Europe
- Built with a class H insulation and IP23

#### Cooling

- A compact and complete solution using a mechanically driven radiator fan
- Designed or optimized by KOHLER
- High temperature and altitude product capacity available

#### Base frame and enclosure

- High quality steel with enhanced corrosion resistance
- Highly durable QUALICOAT-certified epoxy paint
- Minimum 1000 hours of resistance to salt spray in accordance with ISO12944
- Ergonomic access to allow easy maintenance and connection of the generator
- Robust design optimized for transportation

### GENERAL SPECIFICATIONS

Engine brand	VOLVO
Alternator commercial brand	KOHLER
Voltage (V)	480/277
Standard Control Panel	APM403
Optional control panel	APM802
Optional Control Panel	M80-D
Optional control panel	Terminal block
Consumption @ 100% load ESP (L/h) *	132
Consumption @ 100% load PRP (L/h) *	122
Emission level	Emission optimization - Stage II Compliant
Type of Cooling	Mechanical driven fan
Performance class	G3

### GENERATOR SETS RATINGS

	Voltage	PH	Hz	Standby Rating			Prime Rating	
				kWe	kVA	Amps	kWe	kVA
V500UC2	480/277	3	60	500	625	752	454	568
	440/254	3	60	500	625	820	454	568
	220/127	3	60	500	625	1640	454	568
	208/120	3	60	500	625	1735	454	568

### DIMENSIONS COMPACT VERSION

Length (mm)	3470
Width (mm)	1500
Height (mm)	2048
Tank capacity (L)	500
Dry weight (kg)	3660

### DIMENSIONS SOUNDPROOFED VERSION

Type soundproofing	NOT AVAILABLE
Length (mm)	5031
Width (mm)	1560
Height (mm)	2430
Tank capacity (L)	500
Dry weight (kg)	4870
Acoustic pressure level @1m in dB(A) 60Hz (100% PRP)	87
Acoustic pressure level @7m in dB(A) 60Hz (100% PRP)	76

Reference Conditions: 25°C Air Inlet Temperature, 40°C Fuel Inlet Temperature, 100 kPa Barometric Pressure; 10.7 g/kg of dry air Humidity. Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back pressure set to maximum allowable limit; Fuel density at 0.85 kg/L.

Data was taken from a single engine test according to the test methods, fuel specification and reference conditions stated above and is subjected to instrumentation and engine-to-engine variability. Test conducted with alternate test methods, instrumentation, fuel or reference conditions can yield different results. Data and specifications subject to change without notice.

## Engine

### General

Engine brand	VOLVO
Engine ref.	TAD1641GE-B *
Air inlet system	Turbo
Fuel	Diesel Fuel/HVO
Emission level	Emission optimization - Stage II Compliant
Cylinder configuration	L
Number of cylinders	6
Displacement (l)	16.12
Bore (mm) * Stroke (mm)	144 * 165
Compression ratio	16.5 : 1
Speed (RPM)	1800
Maximum stand-by power at rated RPM 60Hz (kW)	565
Charge Air coolant	Air/Air
Frequency regulation, steady state (%)	+/- 0.25%
Injection Type	Direct
Governor type	Electronic
Air cleaner type, models	Dry

### Fuel system

Maximum fuel pump flow 60Hz (l/h)	190
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### Consumption with cooling system

Fuel consumption @ ESP Max Power 60Hz (l/h)	135.60
Fuel consumption @ PRP Max Power 60Hz (l/h)	122.70
Fuel consumption @ 75% of PRP Power 60Hz (l/h)	91.20
Fuel consumption @ 50% of PRP Power 60Hz (l/h)	62.30

### Emissions

Emission PM (g/kWh)	0.11
Emission CO (g/kW.h)	0.69
Emission NOx (g/kW.h) Diesel or NG	5.19
Emission HC (g/kW.h)	0.16

\* Engine reference may be partially modified depending on genset application, options selected by the customer and lead time required.

\* Fuel consumption is up to 4% higher when using HVO than Diesel Fuel

### Lubrication System

Oil system capacity including filters (l)	48
Min. oil pressure (bar)	0.70
Max. oil pressure (bar)	6.50
Oil sump capacity (l)	42
Oil consumption 100% ESP 60Hz (l/h)	0.11

### Air Intake system

Max. intake restriction (mm H2O)	500
Combustion air flow (l/s)	763

### Exhaust system

	PRP	ESP
Exhaust gas flow (L/s)		1840
Exhaust gas temperature @ ESP (°C)		479
Heat rejection to exhaust (kW)		442
Max. exhaust back pressure (mm H2O)		1000

### Cooling system

Radiator & Engine capacity (l)	60
Fan power 60Hz (kW)	19
Fan air flow w/o restriction (m3/s)	9.80
Available restriction on air flow (mm H2O)	25
Type of coolant	Glycol-Ethylene
Radiated heat to ambient (kW)	24
Heat rejection to coolant HT (kW)	231
Outlet coolant temperature (°C)	93
Max coolant temperature, Shutdown (°C)	103
Thermostat begin of opening HT (°C)	86
Thermostat end of opening HT (°C)	96

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#### Alternator Specifications

Alternator commercial brand	KOHLER
Kohler Alternator description	KH02450T
Number of pole	4
Number of bearing	Single Bearing
Technology	Brushless
Indication of protection	IP23
Insulation class	H
Number of wires	12
AVR Regulation	Yes
Coupling	Direct
Capacity for maintaining short circuit at 3 In for 10 s	No

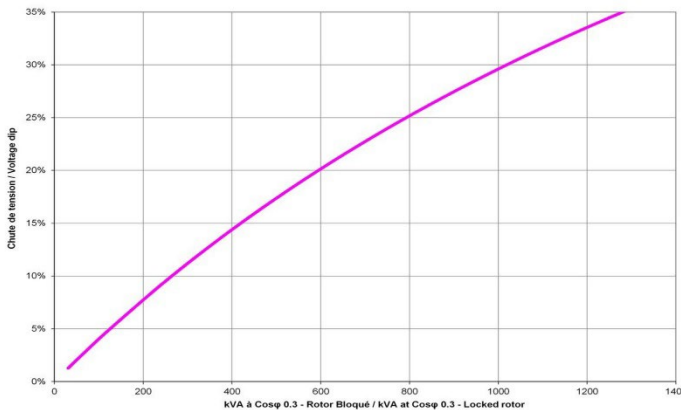
#### Application data

Overspeed (rpm)	2250
Power factor (Cos Phi)	0.80
Voltage regulation at established rating (+/- %)	0.50
Wave form : NEMA=TIF	<50
Wave form : CEI=FHT	<2
Total Harmonic Distortion in no-load DHT (%)	<2
Total Harmonic Distortion, on linear load DHT (%)	<2
Recovery time (Delta U = 20% transient) (ms)	500

#### Performance datas

Continuous Nominal Rating 40°C (kVA)	625
Unbalanced load acceptance ratio (%)	8

Peak motor starting (kVA) based on x% voltage dip power factor at 0.3



#### Alternator Standard Features

- All models are brushless, rotating-field alternators
- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting
- The AVR voltage regulator provides superior short circuit capability
- Self-ventilated and dip proof construction
- Superior voltage waveform

*Note: See Alternator Data Sheets for alternator application data and ratings, efficiency curves, voltage dip with motor starting curves, and short circuit decrement curves.*

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## Dimensions compact version

Length (mm) * Width (mm) * Height (mm)	3470 * 1500 * 2048
Dry weight (kg)	3660
Tank capacity (L)	500



## M229 soundproofed version - Not compliant with 2000/14/CE noise emissions Directive\*\*

Length (mm) * Width (mm) * Height (mm)	5031 * 1560 * 2430
Dry weight (kg)	4870
Tank capacity (L)	500
Acoustic pressure level @1m in dB(A) 60Hz (100% PRP)	87
Acoustic pressure level @7m in dB(A) 60Hz (100% PRP)	76



## Dimensions DW compact version

Length (mm) * Width (mm) * Height (mm)	5083 * 1560 * 2308
Dry weight (kg)	3490
Tank capacity (L)	1770



## M229 DW soundproofed version - Not compliant with 2000/14/CE noise emissions Directive\*\*

Length (mm) * Width (mm) * Height (mm)	5083 * 1560 * 2690
Dry weight (kg)	5590
Tank capacity (L)	1770
Acoustic pressure level @1m in dB(A) 60Hz (100% PRP)	87
Acoustic pressure level @7m in dB(A) 60Hz (100% PRP)	76



\* dimensions and weight without options

Reference Conditions: 25°C Air Inlet Temperature, 40°C Fuel Inlet Temperature, 100 kPa Barometric Pressure; 10.7 g/kg of dry air Humidity. Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back pressure set to maximum allowable limit; Fuel density at 0.85 kg/L.

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**Basic terminal block**

It is used as a basic terminal block for connecting a control unit. Offers the following functions:

- emergency stop button
- customer connection terminal block
- CE certified

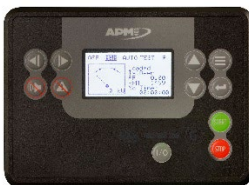
**M80-D**

The M80-D can be used as a basic terminal block for connecting a control unit and as an instrument panel with a highly intuitive LCD screen giving an overview of your generating set's basic parameters:

- Oil gauge
- Coolant temperature
- Oil temperature
- Engine speed
- Battery voltage
- Charge air temperature
- Fuel consumption
- etc.

The engine main functions can be controlled and events are recorded to facilitate diagnostics:

- Starting
- Speed adjustment
- Stopping
- Droop
- etc.

**APM403****BASIC GENERATING SET AND POWER PLANT CONTROL**

The APM403 is a versatile control unit which allows operation in manual or automatic mode

- Measurements : voltage and current
- kW/kWh/kVA power meters
- Standard specifications: Voltmeter, Frequency meter.
- Optional : Battery ammeter.
- J1939 CAN ECU engine control
- Alarms and faults: Oil pressure, Coolant temperature, Overspeed, Start-up failure, alternator min/max, Emergency stop button.
- Engine parameters: Fuel level, hour counter, battery voltage.
- Optional (standard at 24V): Oil pressure, water temperature.
- Event log/ Management of the last 300 genset events.
- Mains and genset protection
- Clock management
- USB connections, USB Host and PC,
- Communications : RS485 INTERFACE
- ModBUS protocol /SNMP
- Optional : Ethernet, GPRS, remote control, 3G, 4G,
- Websupervisor, SMS, E-mails

Reference Conditions: 25°C Air Inlet Temperature, 40°C Fuel Inlet Temperature, 100 kPa Barometric Pressure; 10.7 g/kg of dry air Humidity. Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back pressure set to maximum allowable limit; Fuel density at 0.85 kg/L.

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**APM802****ADVANCED POWER PLANT MANAGEMENT CONTROL**

Dedicated to power plant management APM802 provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility

- Graphic display with touchscreen
- User language selectable
- Specially researched ergonomics
- High level of equipment availability
- USB and Ethernet ports
- Modbus protocol
- Making it easy to extend the installation
- Complies with the international standard IEC 61131-3

Reference Conditions: 25°C Air Inlet Temperature, 40°C Fuel Inlet Temperature, 100 kPa Barometric Pressure; 10.7 g/kg of dry air Humidity. Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back pressure set to maximum allowable limit; Fuel density at 0.85 kg/L.

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## STANDARD SCOPE OF SUPPLY

All our gensets are fitted with:

- Industrial water cooled DIESEL engine
- Electric starter & charge alternator
- Standard air filter
- Schneider or ABB electric circuit breaker, adapted to the short-circuit current of the generating set
- Single bearing alternator IP 23 T° rise/ insulation to class H/H
- Welded steel base frame with 85% vibration attenuation mounts
- 4 lifting points on the chassis, lifting bar on the top included from 165 kVA ESP or optional
- highly durable QUALICOAT certified epoxy paint
- frame height optimized to allow it to be moved safely by forklift
- enclosure made of new high-quality European steel with enhanced corrosion resistance
- IP 64 locks, made from stainless materials
- enclosures and base frames tested and analyzed by the French Corrosion Institut
- 100% of tanks tested for permeability
- Personal protection ensured by protective grilles on hot and rotating parts
- Separate 9 dB(A) silencer
- Fuel tank welded inside the genset frame
- Retention bund included for gensets up to 110 kVA ESP
- Charged DC starting battery with electrolyte
- Emergency stop button on the outside
- Flexible fuel lines & lub oil drain cock
- Exhaust outlet with flexible and flanges
- User's manual (1 copy)
- Packing under plastic film
- Delivered with oil and antifreeze liquid

## CODES AND STANDARDS

Engine-generators set is designed and manufactured in facilities certified to standards ISO9001:2015 & ISO14001:2015. The generator sets and its components are prototype-tested, factory built and production tested and are in compliance with the relevant standards:

- Machinery Directive 2006/42/EC of May 17th 2006
- EMC Directive 2014/30/UE
- Safety objectives set out in the Low Voltage Directive 2014/35/UE
- EN ISO 8528-13, EN 60034-1, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 55011, EN 1679-1 et EN 60204-1

## POWER RATINGS DEFINITION according to ISO8528-1 (2018-02 edition) and ISO-3046-1

**Emergency Standby Power (ESP):** The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Average load factor per 24 hours of operation is <70%.

**Prime Power (PRP):** At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour within 12 hour of operation. Average load factor per 24 hours of operation is <70%.

## TERMS OF USE

According to the standard, the nominal power assigned by the genset is given for 25°C Air Inlet Temperature, of a barometric pressure of 100 kPa (100 m A.S.L), and 30% relative humidity. For particular conditions in your installation, refer to the derating table.

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