# Industrial Diesel Generator Set – V250U
## 60 Hz


| RATINGS 480 V - 60 Hz | | |
|---|---|---|
| Standby | kVA | 297 |
| | kWe | 238 |
| Prime | kVA | 270 |
| | kWe | 216 |

### 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) * | 64 |
| Consumption @ 100% load PRP (L/h) * | 58 |
| Emission level | Emission optimization - Stage II Compliant |
| Type of Cooling | Mechanical driven fan |
| Performance class | G3 |

**GENERATOR SETS RATINGS**

| | | | | Standby Rating | | | Prime Rating | |
|---|---|---|---|---|---|---|---|---|
| | Voltage | PH | Hz | kWe | kVA | Amps | kWe | kVA |
| V250U | 480/277 | 3 | 60 | 238 | 297 | 357 | 216 | 270 |
| | 440/254 | 3 | 60 | 238 | 297 | 390 | 216 | 270 |
| | 220/127 | 3 | 60 | 238 | 297 | 779 | 216 | 270 |
| | 208/120 | 3 | 60 | 234 | 292,50 | 812 | 213 | 266 |

| DIMENSIONS COMPACT VERSION | |
|---|---|
| Length (mm) | 2900 |
| Width (mm) | 1300 |
| Height (mm) | 1586 |
| Tank capacity (L) | 390 |
| Dry weight (kg) | 2172 |

| DIMENSIONS SOUNDPROOFED VERSION | |
|---|---|
| Type soundproofing | NOT AVAILABLE |
| Length (mm) | 4004 |
| Width (mm) | 1380 |
| Height (mm) | 2145 |
| Tank capacity (L) | 390 |
| Dry weight (kg) | 3102 |
| Acoustic pressure level @1m in dB(A) 60Hz (100% PRP) | 84 |
| Acoustic pressure level @7m in dB(A) 60Hz (100% PRP) | 74 |

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.

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### Engine

| General | |
|---|---|
| Engine brand | VOLVO |
| Engine ref. | TAD734GE * |
| Air inlet system | Turbo |
| Fuel | Diesel Fuel/HVO |
| Emission level | Emission optimization - Stage II Compliant |
| Cylinder configuration | L |
| Number of cylinders | 6 |
| Displacement (l) | 7.15 |
| Bore (mm) * Stroke (mm) | 108 * 130 |
| Compression ratio | 17.1 : 1 |
| Speed (RPM) | 1800 |
| Maximum stand-by power at rated RPM 60Hz (kW) | 263 |
| 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) | 300 |
| **Consumption with cooling system** | |
| Fuel consumption @ ESP Max Power 60Hz (l/h) | 64 |
| Fuel consumption @ PRP Max Power 60Hz (l/h) | 57.60 |
| Fuel consumption @ 75% of PRP Power 60Hz (l/h) | 46.80 |
| Fuel consumption @ 50% of PRP Power 60Hz (l/h) | 33.30 |

**Emissions**

* 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) | 29 |
| Min. oil pressure (bar) | 1 |
| Max. oil pressure (bar) | 4.50 |
| Oil sump capacity (l) | 24 |
| Oil consumption 100% ESP 60Hz (l/h) | 0.01 |

| Air Intake system | |
|---|---|
| Max. intake restriction (mm H2O) | 300 |
| Combustion air flow (l/s) | 315 |

| Exhaust system | PRP | ESP |
|---|---|---|
| Exhaust gas flow (L/s) | | 632 |
| Exhaust gas temperature @ ESP (°C) | 510 | |
| Max. exhaust back pressure (mm H2O) | 750 | |

| Cooling system | |
|---|---|
| Radiator & Engine capacity (l) | 32 |
| Fan power 60Hz (kW) | 6.60 |
| Fan air flow w/o restriction (m3/s) | 6 |
| Available restriction on air flow (mm H2O) | 20 |
| Type of coolant | Glycol-Ethylene |
| Radiated heat to ambiant (kW) | 27 |
| Heat rejection to coolant HT (kW) | 137 |
| HT circuit flow rate (l/min) | 295 |
| Coolant capacity HT, engine only (l) | 10 |
| Outlet coolant temperature (°C) | 93 |
| Max coolant temperature, Shutdown (°C) | 109 |
| Thermostat begin of opening HT (°C) | 86 |
| Thermostat end of opening HT (°C) | 98 |

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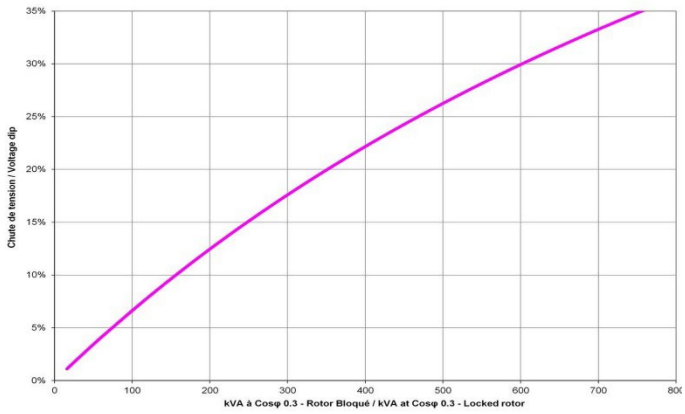
| Alternator Specifications | |
|---|---|
| Alternator commercial brand | KOHLER |
| Kohler Alternator description | KH01421T |
| Number of pole | 4 |
| Number of bearing | Single Bearing |
| Technology | Brushless |
| Indication of protection | IP23 |
| Insulation class | H |
| Number of wires | 12 |
| 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 (%) | <2.5 |
| Total Harmonic Distortion, on linear load DHT (%) | <2.5 |
| Recovery time (Delta U = 20% transcient) (ms) | 500 |
| **Performance datas** | |
| Continuous Nominal Rating 40°C (kVA) | 313 |
| 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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# Industrial Diesel Generator Set – V250U
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### Dimensions compact version

| | |
|---|---|
| Length (mm) * Width (mm) * Height (mm) | 2900 * 1300 * 1586 |
| Dry weight (kg) | 2172 |
| Tank capacity (L) | 390 |


### M227 soundproofed version - Not compliant with 2000/14/CE noise emissions Directive**

| | |
|---|---|
| Length (mm) * Width (mm) * Height (mm) | 4004 * 1380 * 2145 |
| Dry weight (kg) | 3102 |
| Tank capacity (L) | 390 |
| Acoustic pressure level @1m in dB(A) 60Hz (100% PRP) | 84 |
| Acoustic pressure level @7m in dB(A) 60Hz (100% PRP) | 74 |


### Dimensions DW compact version

| | |
|---|---|
| Length (mm) * Width (mm) * Height (mm) | 4056 * 1360 * 1801 |
| Dry weight (kg) | 2920 |
| Tank capacity (L) | 950 |


### M227 DW soundproofed version - Not compliant with 2000/14/CE noise emissions Directive**

| | |
|---|---|
| Length (mm) * Width (mm) * Height (mm) | 4056 * 1380 * 2340 |
| Dry weight (kg) | 3815 |
| Tank capacity (L) | 950 |
| Acoustic pressure level @1m in dB(A) 60Hz (100% PRP) | 84 |
| Acoustic pressure level @7m in dB(A) 60Hz (100% PRP) | 74 |


* dimensions and weight without options

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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

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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

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KOHLER

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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 Directive2014/30/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 Intlet 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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