

Tier 4 Final EPA-Certified for Nonroad Applications

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Ratings Range

Prime:	kW	60 Hz
		12-20
		kVA



Mobile Generator Set

- One-source responsibility for the generating system and accessories.
- Approved for use with certified renewable Hydrotreated Vegetable Oil (HVO)/Renewable Diesel (RD) fuels compliant with EN15940/ASTM D975.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- A three-year, 3000-hour limited warranty covers all generator set systems and components. The trailer has a one-year limited warranty.
- **Generator set features:**
 - Unit-mounted radiator with 45°C (113°F) ambient air capability at the prime rating.
- **Engine features:**
 - Heavy-duty air cleaner with electronic air restrictor indicator switch.
 - The generator set engine is certified by the Environmental Protection Agency (EPA) to conform to Tier 4 Final nonroad emissions regulations.
 - Uses cooled Exhaust Gas Regeneration (EGR) and Diesel Oxidation Catalyst (DOC) to meet Tier 4 Final without a Diesel Particulate Filter (DPF).
 - Battery disconnect switch.
- **Enclosure/tank features:**
 - Durable steel, sound-attenuating housing with quiet operation of 66 dB(A) log average @ 7 m (23 ft.) with full load at the prime rating.
 - Stainless steel hinges and lockable latches on doors.
 - 100% secondary containment tank for fuel.
 - Single-point lifting eye and four-point tie down system.
 - Subbase fuel tank for 33-hour run time with full load at prime rating (minimum).
- **Customer connection panel features:**
 - Decision-Maker® 3500 controller with potted circuitry for protection from vibration and debris.
 - Externally mounted, recessed emergency stop switch.
 - Adjustable trip main line circuit breaker.
 - 1 load lug per phase #6-350MCM, 400 amp.
 - Remote start/stop capabilities.
 - Shore power connection points to front of junction box for block heater and battery charger.

Generator Set Ratings

Alternator	Voltage	Ph	Hz	125°C Rise Prime Rating	
				kW/kVA	Amps
ECP28 L4 C US	120/208	3	60	17/21	59
	120/240	1	60	15/15	63
	277/480	3	60	20/25	31
ECP28 L4 C CA	120/208	3	60	16/20	56
	120/240	1	60	12/12	50
	277/480	3	60	18/23	28
	346/600	3	60	18/23	22

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. Prime Power Ratings: At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528-1 and ISO-3046-1. For limited running time ratings, consult the factory. Obtain technical information bulletin (TIB-101) for ratings guidelines, complete ratings definitions, and site condition derates. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

Alternator Specifications

Specifications	Alternator
Manufacturer	Mecc Alte
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Wound-Field
Leads: quantity, type	12, Reconnectable
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H
Temperature rise	150°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load	±0.5%
One-step load acceptance	100% of Rating
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
480 V	ECP28 L4 C US 100
600 V	ECP28 L4 C CA 95

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Capable of sustained line-to-neutral short-circuit current of up to 300% of the rated current for up to 2 seconds. (IEC 60092-301 short-circuit performance.)
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Windings are vacuum-impregnated with polyester resin for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.

Application Data
Engine

Engine Specifications	
Engine : model, type	KDI 1903 TCR
	4-Cycle, Turbocharged
Cylinder arrangement	3 Inline
Displacement, L (cu. in.)	1.9 (113.6)
Bore and stroke, mm (in.)	88 x 102 (3.46 x 4.01)
Compression ratio	17.0:1
Piston speed, m/min. (ft./min.)	275 (905)
Rated rpm	1800
Max. power at rated rpm, kW (HP)	37 (49)
Valve (exhaust) material	Stainless Steel
Governor type	Electronic
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±0.28%
Air cleaner type, all models	Dry

Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust flow at rated kW, m ³ /min. (cfm)	6.7 (238)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	382 (720)
Allowable back pressure, kPa (in. Hg)	7-12 (2.1-3.5)
Back pressure available after losses due to exhaust aftertreatment system, kPa (in. Hg)	2.88 (0.85)

Engine Electrical

Engine Electrical System	
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	12
Ampere rating	80
Starter motor rated voltage (DC)	12
Battery, recommended cold cranking amps (CCA):	
Qty., rating for -18°C (0°F)	One, 1000
Battery voltage (DC)	12

Fuel

Fuel System	
Fuel supply line, min. ID, mm (in.)	8 (0.31)
Fuel return line, min. ID, mm (in.)	6.3 (0.25)
Max. lift, fuel pump: type, m (ft.)	Mechanical, 2.5 (8.2)
Max. fuel flow, Lph (gph)	35.9 (9.3)
Max. return line restriction, kPa (in. Hg)	20 (5.9)
Fuel prime pump	Manual
Fuel filter	
Primary	5 Microns @ 98% Efficiency
Water separator	Yes
Recommended fuel	ASTM D975 or EN 590 Ultra Low Sulfur Diesel (ULSD) with sulfur content <15 mg/kg (15 ppm) / RD / HVO

Lubrication

Lubricating System	
Type	Full Pressure
Oil pan capacity, L (qt.) §	8.4 (8.9)
Oil pan capacity with filter, L (qt.) §	8.9 (9.4)
Oil filter: quantity, type §	One, Cartridge
Oil type §	API CJ-4 or ACEA E6-E9
§ The use of Genuine oil and filters is recommended.	

Cooling

Radiator System	
Radiator system capacity, including engine, L (gal.)	11.5 (3.0)

Operation Requirements

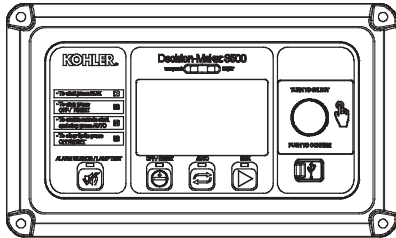
Air Requirements	
Radiator-cooled cooling air, m ³ /min. (scfm)†	79.3 (2800)
Combustion air, m ³ /min. (cfm)	2.4 (86.3)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	28 (1592)
Alternator, kW (Btu/min.)	2.8 (159)
† Air density = 1.20 kg/m ³ (0.075 lbf/ft ³)	

Fuel Consumption**

Diesel, Lph (gph) at % load	Prime Ratings
100%	6.8 (1.8)
75%	5.5 (1.5)
50%	4.2 (1.1)
25%	2.4 (0.6)

** Volumetric Fuel consumption is up to 4% higher when using HVO/RD than #2 ULSD.

Controller



Decision-Maker® 3500 Paralleling Controller

Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.

- Paralleling capability with bus sensing, first-on logic, synchronizer, and (isochronous, droop, and external controlled) load sharing
- Digital display with adjustable contrast and menu control provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or serial configuration
- Controller supports Modbus® protocol
- Integrated hybrid voltage regulator with ±0.5% regulation
- Potted circuitry for protection from vibration and debris
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Fuel Tank

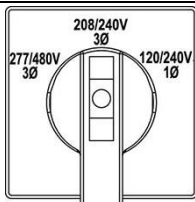
- Subbase fuel tank for 33-hour run time with full load at prime rating (minimum).
- Fuel tank includes the fuel level gauge, fuel fill with lockable cap, and an atmospheric vent.
- The secondary containment tank's construction protects against fuel leaks or ruptures. The inner (primary) tank is inside the outer (secondary) tank. The outer tank contains the fuel if the inner tank leaks or ruptures.
- Dyked open-top containment construction

Fuel Tank Specifications

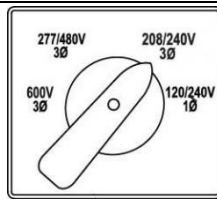
Fuel tank capacity	237 L (63 gal.)
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Available Voltage Selector Switch

(Available Options, see page 4)

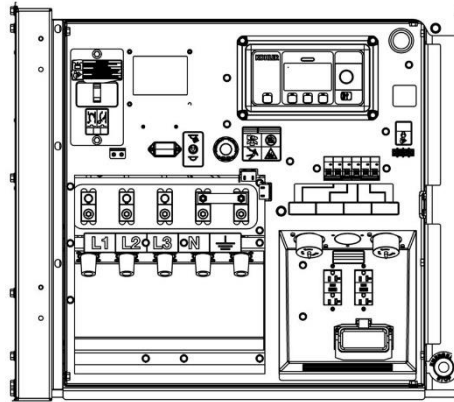


- Voltage selector switch, 3-position lockable, wired for:
 - 120/240 volt, 1 phase
 - 120/208 volt, 3 phase
 - 277/480 volt, 3 phase



- Voltage selector switch, 4-position lockable, wired for:
 - 120/240 volt, 1 phase
 - 120/208 volt, 3 phase
 - 277/480 volt, 3 phase
 - 347/600 volt, 3 phase

Customer Connection Panel



- Viewable generator set controller with security cover
- Emergency stop switch
- Shore power connector, 120 V, 15 amp (for battery charger and block heater)
- Remote start connection
- Mobile paralleling box connection
- Main line circuit breaker
 - Rating 80 amps, field adjustable based on voltage selected
- Two 20-amp 120 V, 1 phase, GFCI duplex receptacles (includes circuit breakers)
- Two 50-amp 240 V twistlock receptacles (includes circuit breakers)
- Color-coded camlock connectors

Available Trailer

(Available Options, see page 4)

- Single-axle trailer with electric brake system and battery back-up breakaway system.
- DOT and TC (Transport Canada) compliant per current specifications published by both agencies, at the time of trailer manufacture.
- 2 in. ball hitch coupler.
- Running lights with 7-wire harness and connector.
- Front tongue jack.

Trailer Specifications

Axle Rating	Single, 1588 kg (3500 lb)
Tires	ST205 / 75D-15
Wheels	Steel, Black, 15x5JJ, 5 on 4.5" bcd

Modbus® is a registered trademark of Schneider Electric.

Standard Features

- Alternator Protection
- Battery, Battery Rack, and Battery Cables
- Engine Oil and Coolant Added
- Integral Vibration Isolation
- Local Emergency Stop Switch
- 15-Relay Dry Contact
- Battery Charger
- Voltage Selector Switch and Convenience Receptacles (2-240 volt, 2-120 volt)
- Camlock Style Load Connectors, Color Coded
- Two-Way Fuel Valve (for connection of a user-supplied external fuel tank)
- Fuel Tank

Available Options

Paralleling System

- Mobile Paralleling Box

Literature

- General Maintenance
- Overhaul
- Production

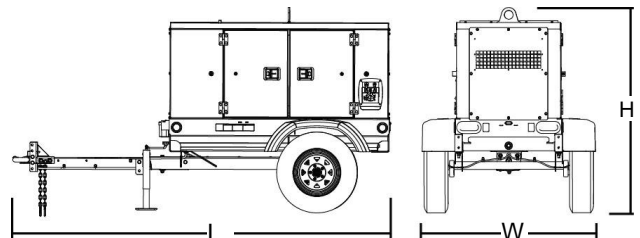
Other Options

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____

Dimensions and Weights (On Trailer)

Overall Size, L x W x H, mm (in.): 3349 x 1480 x 1748
 (131.8 x 58.3 x 68.8)

Weight with engine fluids and no fuel in tank kg (lb.): 1168 (2576)



Note: This drawing is provided for reference only and should not be used for planning. Contact your local distributor for more detailed information.