



**Ratings Range**

		<b>KV450U 60 Hz</b>	<b>KV500 50 Hz</b>
<b>Standby:</b>	<b>kW</b>	411-450	400
	<b>kVA</b>	514-563	500
<b>Prime:</b>	<b>kW</b>	374-409	364
	<b>kVA</b>	467-511	455

**Standard Features**

- Kohler Co. provides one-source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- A one-year limited warranty covers all systems and components.
- Volvo engine with 24-volt battery charging alternator.
- Leroy Somer single-bearing alternator with insulation class H.
- Unit-mounted radiator with 50°C (122°F) ambient air capability.
- Skid and vibration isolators.
- Subbase fuel tank, 500 L (132 gal.).
- Dry type air filter.
- Main line circuit breaker.
- Microprocessor controller.
- Battery, battery rack, and cables.
- Industrial exhaust silencer (loose).
- Operation and installation literature.

**Generator Set Ratings**

Alternator	Voltage	Ph	Hz	Standby Rating		Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps
LSA472S5	120/208	3	60	429/536	1488	390/487	1353
	127/220	3	60	450/563	1478	409/511	1342
	115/230	3	60	411/514	1290	374/467	1174
	120/240	3	60	429/536	1289	390/487	1173
	254/440	3	60	450/563	739	409/511	671
	277/480	3	60	450/563	677	409/511	615
	347/600	3	60	450/563	542	409/511	492
	115/200	3	50	400/500	1443	364/455	1314
	110/220	3	50	400/500	1312	364/455	1194
	115/230	3	50	400/500	1255	364/455	1142
120/240	3	50	400/500	1203	364/455	1095	
220/380	3	50	400/500	760	364/455	691	
230/400	3	50	400/500	722	364/455	657	
240/415	3	50	400/500	696	364/455	633	



**With Available Enclosure Accessory**

**RATINGS:** All three-phase units are rated at 0.8 power factor. See TIB-109 for generator set derate tables. Obtain the technical information bulletin (TIB-101) on ratings guidelines for the complete ratings definitions.  
**PRP:** Prime power is available for an unlimited number of annual operating hours in variable load applications in accordance with ISO-8528/1. A 10% overload capability is available for a period of 1 hour within a 12-hour period of operating in accordance with ISO-3046/1.  
**ESP:** The emergency standby power rating is applicable for supplying emergency power in variable load applications in accordance with ISO-8528/1. Overload is not allowed. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

# Alternator Specifications

- NEMA-MG21, UTE NF C51.111, VDE 0530, BS 4999, CSA standards compliance for temperature rise and motor starting.
- Self-ventilated and dripproof construction.
- Vacuum-impregnated windings with fungus-resistant epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.

Specifications	60 Hz	50 Hz
Ratings voltage	480	400
Standby rating @ 27°C, kVA	625	500
Prime rating @ 40°C, kVA	531	455
Efficiency @ full load	93.9%	93.8%
Air flow, m <sup>3</sup> /min. (cfm)	66 (2331)	54 (1907)
Direct axis subtransient reactance (X"d)	18%	15.4%

Specifications	Alternator
Manufacturer	Leroy Somer
Type	4-Pole, Rotating-Field
Exciter type	Shunt
Leads: quantity, type	12, Reconnectable
Voltage regulator	Solid State, R230
Insulation:	NEMA MG1
Material	Class H
Bearing: quantity, type	1, Sealed
Coupling	Direct
Voltage regulation, no-load to full-load	±0.5%

## Application Data

### Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	Volvo	
Engine model	TAD1640GE	
Engine type	4-Cycle, Turbocharged	
Cylinder arrangement	6 Inline	
Displacement, L (cu. in.)	16.1 (984)	
Bore and stroke, mm (in.)	144 x 165 (5.7 x 6.5)	
Compression ratio	17.5:1	
Piston speed, m/min. (ft./min.)	594 (1950)	495 (1626)
Rated rpm	1800	1500
Max. power at rated rpm, kWm (BHP)	479 (642)	431 (578)
Governor type	Isochronous	
Frequency regulation, no-load to full-load	ISO 5%	
Frequency regulation, steady state	±0.5%	
Air cleaner type, all models	Dry	

### Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust manifold type	Dry	
Exhaust flow at rated kW, m <sup>3</sup> /min. (cfm)	98.0 (3460)	85.4 (3015)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	444 (831)	456 (853)
Maximum allowable back pressure, kPa (in. Hg)	9.7 (2.9)	
Exhaust outlet size at engine hookup, mm (in.)	—	

### Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Battery charging alternator:	24 Volt	
Ground (negative/positive)	Negative	
Volts (DC)	24	
Starter motor rated voltage (DC)	24	
Battery, recommended cold cranking amps (CCA):		
Quantity, CCA rating each	Two, 1000	
Battery voltage (DC)	12	

### Fuel

Fuel System	60 Hz	50 Hz
Max. fuel flow, Lph (gph)	180 (47.6)	165 (43.6)
Fuel prime pump	Manual	
Recommended fuel	#2 Diesel	
Fuel tank capacity, L (gal.)	180 (47.6)	
Fuel tank capacity, L (gal.)	500 (132)	

### Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.)	42 (44.4)	
Oil pan capacity with filter, L (qt.)	48 (50.8)	

## Application Data

### Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F)	50 (122)	
Radiator system capacity, including engine, L (gal.)	60 (15.9)	
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	188 (10690)	166 (9439)
Water pump type	Centrifugal	
Fan, kWm (HP)	15 (20)	9 (12)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H <sub>2</sub> O)	0.25 (1.0)	0.3 (1.2)

### Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm) *	810 (28608)	—
Combustion air, m <sup>3</sup> /min. (cfm)	42.6 (1505)	—

\* Air density = 1.20 kg/m<sup>3</sup> (0.075 lbf/ft<sup>3</sup>)

Fuel Consumption	60 Hz	50 Hz
<b>Diesel, Lph (gph) at % load</b>	<b>Standby Rating</b>	
110% (standby rating)	118.3 (31.3)	103.4 (27.3)
<b>Diesel, Lph (gph) at % load</b>	<b>Prime Rating</b>	
100% (of the prime rating)	104.5 (27.6)	93.3 (24.6)
75% (of the prime rating)	78.4 (20.7)	69.2 (18.3)
50% (of the prime rating)	54.3 (14.4)	47.3 (12.5)

## Controllers



### Decision-Maker™ 4000

#### Standard Features

- Large LCD display panel
- Unique control wheel for system access
- User buttons for start, stop, menu, and escape
- Emergency stop button
- On/off key switch
- Panel-mounted battery fuse
- Panel-mounted USB ports for PC access and software upgrades
- Password protected access to control parameters
- Upgradeable software for future enhancements

#### LCD Panel Features

- 600 x 800 resolution
- Multiple lines of text or graphic display
- Icons for quick identification of system status
- Five languages: English, French, German, Portuguese, and Spanish

#### Communication Features

- Engine communication via CANbus
- Modbus communication via RS-485 or Ethernet
- PC and flash drive connections via USB

#### Functions

- View and adjust system operation parameters
- View system faults

#### Viewable/Selectable Parameters (may require optional module)

- Voltage: phase-to-neutral, total voltage
- Current
- Frequency
- Power (active/reactive/apparent)
- Power factor
- Engine speed
- Oil pressure
- Coolant temperature
- Battery voltage
- Fuel level (%)
- Time delays

#### Viewable Faults (over 60 individual faults are monitored) including:

- Alternator protection
- Circuit breaker and ground fault protection
- Communication and engine ECM monitoring
- Cooling air monitoring
- Electrical charging system
- Engine cooling system
- Engine lube system
- Fuel system
- Generator set status

## Available Accessories

### Enclosed Unit

- Sound Enclosure M229, 60 Hz, 73.8 dB(A) @ 7 m (23 ft.), Standby (with enclosed critical silencer)
- Sound Enclosure M229, 50 Hz, 68 dB(A) @ 7 m (23 ft.), Standby (with enclosed critical silencer)

### Open Unit

- Exhaust Silencer, Critical 40 dB(A) Reduction
- Exhaust Silencer, Residential 29 dB(A) Reduction
- Extension, 40 cm (16 in.)
- Flexible Exhaust Connector
- Protection Mesh for Exhaust Parts

### Cooling System

- Block Heater [recommended for ambient temperatures below 0°C (32°F)]
- Radiator Core Guard

### Controller

- Alternator Protection
- Audible Alarm Module
- Five Expandable Modules with Four Inputs/Six Outputs Each
- Network Modules (RTC and GSM modems and ethernet router)
- NFPA-110 Module
- Remote Annunciator
- Voltage/Speed Adjustment Module
- WinTelys Software

### Fuel System

- Automatic Fuel Tank Fill Kit
- Subbase Fuel Tank with Secondary Containment Basin
- Subbase Fuel Tank Leak Alarm
- Water Separator Fuel Filter

### Electrical System

- Battery Charger, Equalize/Float Type
- Battery Isolator Switch

### Engine and Alternator

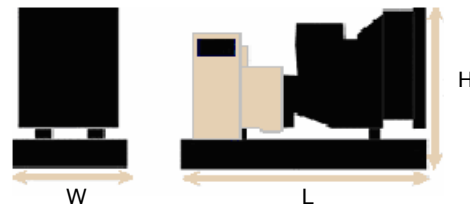
- Alternator Strip Heater
- Air Cleaner, Heavy Duty (with air restriction indicator)
- Electronic Isochronous Governor (50 Hz only)
- Lube Oil Drain Pump
- PMG Alternator and Voltage Regulator
- Tropical Heavy-Duty Alternator Insulation

### Miscellaneous Accessories

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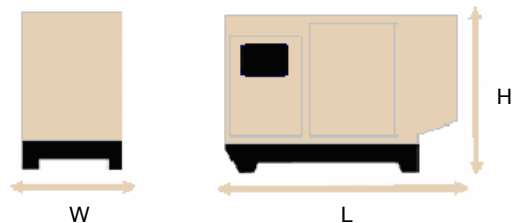
## Dimensions and Weights

### Open Model



Overall Size, L x W x H, mm (in.): 3470 x 1500 x 2043 (137 x 59 x 80)  
 Weight, wet, kg (lb.): 4030 (8882)

### With Available Enclosure Accessory



Overall Size, L x W x H, mm (in.): 5031 x 1560 x 2435 (198 x 61 x 96)  
 Weight, wet, kg (lb.): 5280 (11637)

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

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