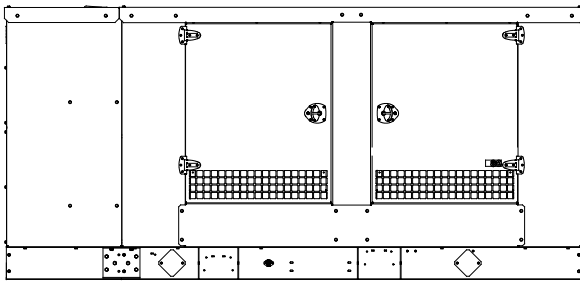




**EPA-Certified for Stationary Emergency Applications**

**Ratings Range**

|                 |            |              |
|-----------------|------------|--------------|
|                 |            | <b>60 Hz</b> |
| <b>Standby:</b> | <b>kW</b>  | 91-128       |
|                 | <b>kVA</b> | 91-160       |



**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.
- UL 2200 listing is available.
- CSA approval is available.
- The generator set accepts rated load in one step.
- The 60 Hz generator set engine is certified by the Environmental Protection Agency (EPA) to conform to the New Source Performance Standard (NSPS) for stationary spark-ignited emissions.
- A one-year limited warranty covers all systems and components. Two- and five-year extended warranties are also available.
- Alternator features:
  - The unique Fast-Response™ X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth permanent magnet (PM)-excited alternator.
  - The brushless, rotating-field alternator has broadrange reconnectability.
- Other features:
  - Kohler® Decision-Maker® 3000 controller. See Controllers on page 3.
  - The electronic, isochronous governor incorporates an integrated drive-by-wire throttle body actuator delivering precise frequency regulation.
- Quick-ship (QS) models with selected features and a five-year basic warranty are available. See your Kohler distributor for details.

**Generator Set Ratings**

| Alternator | Voltage   | Ph | Hz | Natural Gas<br>130°C Rise<br>Standby Rating |      | LPG<br>130°C Rise<br>Standby Rating |      |
|------------|-----------|----|----|---|------|-------------------------------------|------|
|            |           |    |    | kW/kVA                                      | Amps | kW/kVA                              | Amps |
| 4R12X      | 120/208   | 3  | 60 | 124/155                                     | 430  | 105/131                             | 364  |
|            | 127/220   | 3  | 60 | 125/156                                     | 410  | 105/131                             | 344  |
|            | 120/240   | 3  | 60 | 124/155                                     | 373  | 105/131                             | 316  |
|            | 120/240   | 1  | 60 | 91/91                                       | 379  | 91/91                               | 379  |
|            | 139/240 * | 3  | 60 | 125/156                                     | 376  | 105/131                             | 316  |
|            | 220/380 * | 3  | 60 | 112/140                                     | 213  | 105/131                             | 199  |
| 4R13X      | 277/480   | 3  | 60 | 125/156                                     | 188  | 105/131                             | 158  |
|            | 120/208   | 3  | 60 | 128/160                                     | 444  | 106/133                             | 368  |
|            | 127/220   | 3  | 60 | 128/160                                     | 420  | 106/133                             | 348  |
|            | 120/240   | 3  | 60 | 128/160                                     | 385  | 106/133                             | 319  |
|            | 120/240   | 1  | 60 | 107/107                                     | 446  | 100/100                             | 417  |
|            | 139/240 * | 3  | 60 | 128/160                                     | 385  | 106/133                             | 319  |
| 4T13X      | 220/380 * | 3  | 60 | 124/155                                     | 235  | 106/133                             | 201  |
|            | 277/480   | 3  | 60 | 128/160                                     | 192  | 106/133                             | 159  |
| 4T13X      | 120/240   | 1  | 60 | 125/125                                     | 521  | 105/105                             | 438  |

\* Voltage configuration not available from the factory. Field-adjustable by an authorized service technician.

**RATINGS:** All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. *Standby Ratings:* Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-8528-1 and ISO-3046-1. For limited running time and continuous ratings, consult the factory. Obtain the technical information bulletin (TIB-101) on ratings guidelines for the complete ratings definitions. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. **GENERAL GUIDELINES FOR DERATING:** *Altitude:* Derate 1.3% per 100 m (328 ft.) elevation above 200 m (656 ft.) up to a maximum elevation of 3000 m (9842 ft.). *Temperature:* Derate 2.0% per 10°C (18°F) temperature above 25°C (77°F) up to 50°C (122°F). For units having enclosures with enclosed silencers, add 5°C (9°F) to the ambient temperature. For dual fuel engines, use the LPG ratings for both the primary and secondary fuels.

# Alternator Specifications

| Specifications                           | Alternator                              |
|--|---|
| Manufacturer                             | Kohler                                  |
| Type                                     | 4-Pole, Rotating-Field                  |
| Exciter type                             | Brushless, Rare-Earth Permanent- Magnet |
| Leads: quantity, type                    |   |
| 4RX                                      | 12, Reconnectable                       |
| 4TX                                      | 4, 120/240                              |
| Voltage regulator                        | Solid State, Volts/Hz                   |
| Insulation:                              | NEMA MG1                                |
| Material                                 | Class H                                 |
| Temperature rise                         | 130°C, Standby                          |
| Bearing: quantity, type                  | 1, Sealed                               |
| Coupling                                 | Flexible Disc                           |
| Amortisseur windings                     | Full                                    |
| Voltage regulation, no-load to full-load | ± 0.5%                                  |
| Unbalanced load capability               | 100% of Rated Standby Current           |
| One-step load acceptance                 | 100% of Rating                          |
| Peak motor starting kVA:                 | (35% dip for voltages below)            |
| 480 V                                    | 4R12X (12 lead) 448 (60 Hz)             |
| 480 V                                    | 4R13X (12 lead) 540 (60 Hz)             |
| 240 V                                    | 4T13X (4 lead) 440 (60 Hz)              |

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- 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.
- Total harmonic distortion (THD) from no load to full load with a linear load is less than 3.3%.

## Application Data

### Engine

| Engine Specifications                      |   |
|--|---|
| Manufacturer                               | PSI   |
| Engine: model, type                        | Industrial 8.8 L, 4-Cycle, Turbocharged             |
| Cylinder arrangement                       | V-8   |
| Displacement, L (cu. in.)                  | 8.8 (537)   |
| Bore and stroke, mm (in.)                  | 110 x 114 (4.35 x 4.5)                              |
| Compression ratio                          | 10.1:1  |
| Piston speed, m/min. (ft./min.)            | 411 (1350)  |
| Main bearings: quantity, type              | 5, Bi-Metal Steel and Aluminum                      |
| Rated rpm                                  | 1800  |
| Max. power at rated rpm, NG, kW (HP)       | 142 (190)   |
| Max. power at rated rpm, LPG, kW (HP)      | 121 (162)   |
| Cylinder head material                     | Cast Iron   |
| Piston type and material                   | Flat Top, Hypereutectic Cast Alum.                  |
| Crankshaft material                        | Forged Steel, Induction Hardened, Tangential Fillet |
| Valve (exhaust) material                   | Int.-A193 Exh. Inconel                              |
| Governor type                              | Electronic  |
| Frequency regulation, no-load to full-load | Isochronous   |
| Frequency regulation, steady state         | ±0.5%   |
| Frequency                                  | Fixed   |
| Air cleaner type, all models               | Dry   |

### Exhaust

| Exhaust System  |                 |
|---|-----------------|
| Exhaust manifold type                                 | Dry             |
| Exhaust flow at rated kW, m <sup>3</sup> /min. (cfm)  | 21.1 (745)      |
| Exhaust temperature at rated kW, dry exhaust, °C (°F) | 649 (1200)      |
| Maximum allowable back pressure, kPa (in. Hg)         | 10.2 (3.0)      |
| Exhaust outlet size at engine hookup                  | See ADV drawing |

### Engine Electrical

| Engine Electrical System                       |                                    |
|--|------------------------------------|
| Ignition system                                | Individual Coil Near Plug Ignition |
| Battery charging alternator:                   |                                    |
| Ground (negative/positive)                     | Negative                           |
| Volts (DC)                                     | 12                                 |
| Ampere rating                                  | 70                                 |
| Starter motor rated voltage (DC)               | 12                                 |
| Battery, recommended cold cranking amps (CCA): |                                    |
| Qty., rating for -18°C (0°F)                   | One, 630                           |
| Battery voltage (DC)                           | 12                                 |

### Fuel

| Fuel System  |                                |
|--|--------------------------------|
| Fuel type  | Natural Gas, LPG, or Dual Fuel |
| Fuel supply line inlet   | 1.5 NPTF                       |
| Natural gas fuel supply pressure, kPa (in. H <sub>2</sub> O)                           | 1.74-2.74 (7-11)               |
| LPG vapor withdrawal fuel supply pressure, kPa (in. H <sub>2</sub> O)                  | 1.24-2.74 (5-11)               |
| Dual fuel engine, LP vapor withdrawal fuel supply pressure, kPa (in. H <sub>2</sub> O) | 1.24 (5)                       |

| Fuel Composition Limits *   | Nat. Gas   | LPG         |
|---|------------|-------------|
| Methane, % by volume  | 90 min.    | 1.2 max.    |
| Ethane, % by volume   | 4.0 max.   | 10 max.     |
| Propane, % by volume  | 1.0 max.   | 96 max.     |
| Propene, % by volume  | 0.1 max.   | 3 max.      |
| C <sub>4</sub> and higher, % by volume                              | 0.3 max.   | 3 max.      |
| Sulfur, ppm mass  | 25 max.    | 25 max.     |
| Lower heating value, MJ/m <sup>3</sup> (Btu/ft <sup>3</sup> ), min. | 33.2 (890) | 78.8 (2116) |

\* Fuels with other compositions may be acceptable. If your fuel is outside the listed specifications, contact your local distributor for further analysis and advice.

# Application Data

## Lubrication

### Lubricating System

|                                       |               |
|---------------------------------------|---------------|
| Type                                  | Full Pressure |
| Oil pan capacity, L (qt.)             | 8.0 (8.5)     |
| Oil pan capacity with filter, L (qt.) | 8.5 (9.0)     |
| Oil filter: quantity, type            | 1, Cartridge  |

## Cooling

### Radiator System

|  |             |
|--|-------------|
| Ambient temperature, °C (°F)   | 45 (113)    |
| Engine jacket water capacity, L (gal.)   | 13.4 (3.54) |
| Radiator system capacity, including engine, L (gal.)   | 27.6 (7.3)  |
| Engine jacket water flow, Lpm (gpm)  | 125 (33)    |
| Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)                             | 73.5 (4184) |
| Heat rejected to engine oil at rated kW, kW (Btu/min.)   | 1.2 (67.5)  |
| Water pump type  | Centrifugal |
| Fan diameter, including blades, mm (in.)   | 660 (26)    |
| Fan, kWm (HP)  | 8.9 (12.0)  |
| Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H <sub>2</sub> O) | 0.125 (0.5) |

## Operation Requirements

### Air Requirements

|   |             |
|---|-------------|
| Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm)† | 306 (10800) |
| Combustion air, m <sup>3</sup> /min. (cfm)                | 6.9 (244)   |
| Heat rejected to ambient air:                             |             |
| Engine, kW (Btu/min.)                                     | 21.6 (1230) |
| Alternator, kW (Btu/min.)                                 | 15.7 (893)  |

† Air density = 1.20 kg/m<sup>3</sup> (0.075 lbm/ft<sup>3</sup>)

### Fuel Consumption‡ Standby Rating

#### Natural Gas, m<sup>3</sup>/hr. (cfh) at % load

|      |             |
|------|-------------|
| 100% | 42.8 (1511) |
| 75%  | 34.1 (1204) |
| 50%  | 25.2 (890)  |
| 25%  | 16.5 (583)  |
| 0%   | 6.8 (240)   |

#### LPG, m<sup>3</sup>/hr. (cfh) at % load

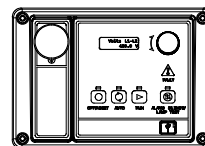
|      |            |
|------|------------|
| 100% | 17.7 (626) |
| 75%  | 13.4 (473) |
| 50%  | 9.5 (334)  |
| 25%  | 5.9 (209)  |
| 0%   | 2.7 (95)   |

‡ Nominal fuel rating: Natural gas, 37 MJ/m<sup>3</sup> (1000 Btu/ft<sup>3</sup>)  
LPG, 93 MJ/m<sup>3</sup> (2500 Btu/ft<sup>3</sup>)

LPG conversion factors:

8.58 ft.<sup>3</sup> = 1 lb.  
0.535 m<sup>3</sup> = 1 kg.  
36.39 ft.<sup>3</sup> = 1 gal.

## Controller



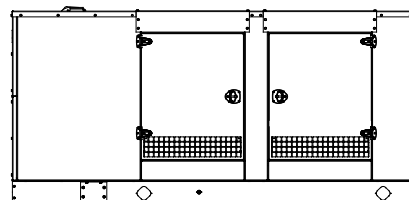
### Decision-Maker® 3000 Controller

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

- Digital display and menu control provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication through a PC via network or serial configuration
- Integrated hybrid voltage regulator with ±0.5% regulation
- Built-in alternator thermal overload protection

Refer to G6-100 for additional controller features and accessories.

## Sound Enclosure



- Sound level (8 point logarithmic average) at 7 m (23 ft.) with full load: 73 dB(A).
- Sound level compared to competitor ratings with no load: 70 dB(A).\*
- Sound attenuating enclosure uses acoustic insulation that meets UL 94 HF1 flammability classification and repels moisture absorption.
- Vertical air inlet and outlet discharge with 90 degree bends to redirect air and reduce noise.
- Internal-mounted critical silencer and flexible exhaust connector.
- Skid-mounted, steel (standard) or aluminum (optional) construction with hinged doors.
- Fade-, scratch-, and corrosion-resistant Kohler® Cashmere Power Armor™ textured e-coat paint.
- Lockable, flush-mounted door latches.
- Certified to withstand 241 kph (150 mph) wind load rating (aluminum enclosures only).

\* Lowest of 8 points measured around the generator. Sound levels at other points around generator may be higher depending on installation parameters.

## Additional Standard Features

- Alternator Protection
- Battery Rack and Cables
- Electronic, Isochronous Governor
- Gas Fuel System (includes fuel mixer, electronic secondary gas regulator, gas solenoid valve, and flexible fuel line between the engine and the skid-mounted fuel system components)
- Integral Vibration Isolation
- Local Emergency Stop Switch
- Oil Drain Extension
- Operation and Installation Literature
- Steel Sound Enclosure
- Three-Way Exhaust Catalyst

## Available Options

### Approvals and Listings

- CSA Approval
- UL 2200 Listing

### Enclosure

- Aluminum Sound Enclosure

### Fuel System

- Dual Fuel NG/LPG (automatic changeover)
- Flexible Fuel Line (required when the generator set skid is spring mounted)
- Gas Filter
- LP Liquid Withdrawal (vaporizer)
- Second Gas Solenoid Valve

### Controller

- Common Fault Relay
- Communication Products and PC Software
- Input/Output Module
- Remote Annunciator Panel
- Remote Emergency Stop
- Run Relay

### Cooling System

- Block Heater, 1800 W, 110-120 V
- Block Heater, 2000 W, 190-240 V [recommended for ambient temperatures below 10°C (50°F)]

### Electrical System

- Alternator Strip Heater
- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater
- Line Circuit Breaker (NEMA1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA1 enclosure)

### Miscellaneous

- Air Cleaner Restrictor Indicator
- Crankcase Ventilation (CCV) Heater [recommended for ambient temperatures below 0°C (32°F)]
- Engine Fluids Added
- Rated Power Factor Testing
- Rodent Guards

### Literature

- General Maintenance
- Overhaul
- Production

### Warranty

- 2-Year Basic
- 5-Year Basic
- 5-Year Comprehensive

### Other Options

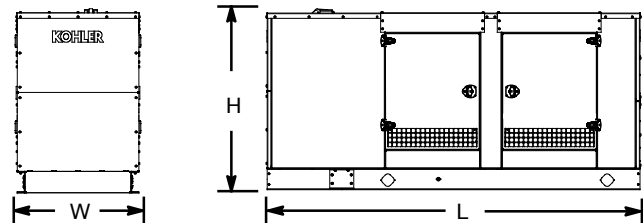
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## Dimensions and Weights

Overall Size, L x W x H, mm (in.) : 3526 x 1153 x 1724  
(139 x 45.4 x 67.9)

Weight, wet, kg (lb.):  
 With steel sound enclosure 1758 (3876)  
 With aluminum sound enclosure 1592 (3509)

Weight includes generator set with the 4R or 4T alternator, engine fluids, sound enclosure, and silencer.



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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