



The Kohler® Advantage

- **The Smart Choice**
Known for its reliability, the Kohler 12 kW generator has been ranked highest for value in leading consumer publications.
- **Powerful**
Exclusive Powerboost™ technology allows the Kohler 12 kW generator to start and run a typical 4 ton (48,000 BTU) central air conditioner, while still running other home appliances and electronics. *
- **Clean Power for Sensitive Electronics**
Protects sophisticated electronics with clean, stable power that exceeds strict utility requirements and IEEE standards for total harmonic distortion (THD).
- **Fast Response**
Kohler generator sets restore power in as little as 10 seconds.
- **Quiet Operation**
Kohler residential generators provide quiet, neighborhood-friendly performance.
- **Premium Five-Year or 2000 Hour Limited Warranty**

Standard Features

- **ADC-RES Advanced Digital Control**
 - Designed for today's most sophisticated electronics
 - Electronic speed control responds quickly to varying household demand
 - Digital voltage regulation protects your sensitive electronics from harmonic distortion and unstable power quality
 - LED display shows system status and setup information
- **Engine Features**
 - Kohler Command PRO® OHV engine with hydraulic valve lifters for reliable performance without routine valve adjustment or lengthy break-in requirements
 - Digital Spark Advance Ignition (DSA) optimizes engine performance for natural gas and LPG fuels
 - Simple field conversion between natural gas and LPG fuels while maintaining emission certification
- **Designed for Easy Installation**
 - Polymer base eliminates the need for a concrete mounting pad, reducing installation time and cost
 - Fuel and electrical connections through the enclosure wall eliminate the need for stub-ups through the bottom
 - Load connection terminal block allows easy field wiring
 - Designed for outdoor installation only
- **Certifications**
 - Meets emission regulations for U.S. Environmental Protection Agency (EPA) with both natural gas and LPG. **Note:** CARB does not regulate emergency standby generators outputting less than 50 HP. Only the EPA standards apply.
 - UL 2200/cUL listed (60 Hz models)
 - CSA certification available (60 Hz models)
 - Accepted by the Massachusetts Board of Registration of Plumbers and Gas Fitters
- **Warranty**
 - 5-year/2000 hour limited warranty for on-grid (standby) applications in locations served by a reliable utility source
 - 18 month/1000 hour limited warranty for off-grid (non-standby) applications

Generator Ratings

Model	Voltage	Phase	Hz	Alternator	Standby Ratings			
					Natural Gas		LPG	
					kW/kVA	Amps	kW/kVA	Amps
12RES	120/240	1	60	2F4	10.4/10.4	43	12.0/12.0	50
	115/230	1	50	2F4	9.3/9.3	40	10.5/10.5	46

RATINGS: Standby ratings apply to installations served by a reliable utility source. All single-phase units are rated at 1.0 power factor. The standby rating is applicable to variable loads with an average load factor of 80% for the duration of the power outage. No overload capacity is specified at this rating. Ratings are in accordance with ISO-3046/1, BS5514, AS2789, and DIN 6271. GENERAL GUIDELINES FOR DERATING: **ALTITUDE:** Derate 4% per 305 m (1000 ft.) elevation above 153 m (500 ft.). **TEMPERATURE:** Derate 1.5% per 5.5°C (10°F) temperature increase above 16°C (60°F). Availability is subject to change without notice. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. Contact your local Kohler Co. generator distributor for availability.

* Check the appliance manufacturer's specifications for actual power requirements. Consult a Kohler® Power Systems professional to calculate your exact residential power system requirements.

Application Data

Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	Kohler	
Engine: model, type	CH740 4-Cycle	
Cylinder arrangement	V-2	
Displacement, L (cu. in.)	0.725 (44)	
Bore and stroke, mm (in.)	83 x 67 (3.27 x 2.64)	
Compression ratio	9.0:1	
Main bearings: quantity, type	2, Parent Material	
Rated rpm	3600	3000
Max. engine power at rated rpm, kW (HP)		
LPG	17.6 (23.6)	15.8 (21.2)
Natural gas	15.3 (20.5)	13.8 (18.5)
Cylinder head material	Aluminum	
Valve material	Steel/Stellite®	
Piston type and material	Aluminum Alloy	
Crankshaft material	Heat Treated, Ductile Iron	
Governor: type	Electronic	
Frequency regulation, no load to full load	Isochronous	
Frequency regulation, steady state	±0.5%	
Air cleaner type	Dry	

Engine Electrical

Engine Electrical System	
Ignition system	Electronic, DSAM
Starter motor rated voltage (DC)	12
Battery charger, ampere rating	6
Battery (purchased separately):	
Ground	Negative
Volts (DC)	12
Battery quantity	1
Recommended cold cranking amps (CCA) rating for -18°C (0°F)	525
BCI group size	26

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust flow at rated kW, m ³ /min. (cfm)	3.8 (135)	3.2 (113)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	760 (1400)	

Lubrication

Lubricating System	
Type	Full Pressure
Oil capacity (with filter), L (qt.)	1.9 (2.0)
Oil filter: quantity, type	1, Cartridge
Oil cooler	Integral

Operation Requirements

Cooling Air	60 Hz	50 Hz
Total inlet air, m ³ /min. (cfm)	28.0 (990)	23.4 (825)
Cooling air, m ³ /min. (cfm)	26.9 (950)	22.4 (790)
Combustion air, m ³ /min. (cfm)	1.1 (39.2)	0.9 (32.6)

Fuel Requirements

Fuel System	
Fuel types	Natural Gas or LPG
Fuel supply inlet	1/2 NPT
Fuel supply pressure, kPa (in. H ₂ O):	
Natural gas	0.9-2.7 (3.5-11)
LPG	1.7-2.7 (7-11)

Fuel Composition Limits *	Nat. Gas	LPG
Methane, % by volume (minimum)	90 min.	—
Ethane, % by volume (maximum)	4.0 max.	—
Propane, % by volume	1.0 max.	85 min.
Propene, % by volume (maximum)	0.1 max.	5.0 max.
C ₄ and higher, % by volume	0.3 max.	2.5 max.
Sulfur, ppm mass (maximum)	25 max.	
Lower heating value, MJ/m ³ (Btu/ft ³), (minimum)	33.2 (890)	84.2 (2260)

* Contact your local distributor for suitability and rating derates based on fuel compositions outside these limits.

Minimum Gas Pipe Size Recommendation, in. NPT

Pipe Length, m (ft.)	Natural Gas (193,000 Btu/hr.)	LPG (203,000 Btu/hr.)
8 (25)	3/4	3/4
15 (50)	1	3/4
30(100)	1	1
46(150)	1 1/4	1
61(200)	1 1/4	1

Fuel Consumption at % rated load

% Load	60 Hz	50 Hz
Natural Gas, m ³ /hr. (cfh)		
100%	5.4 (193)	4.8 (173)
75%	4.7 (163)	4.2 (148)
50%	3.5 (124)	3.1 (108)
25%	2.6 (93)	2.4 (84)
LPG, m ³ /hr. (cfh)		
100%	2.3 (81)	2.1 (74)
75%	2.1 (75)	1.9 (68)
50%	1.8 (60)	1.5 (53)
25%	1.2 (45)	1.1 (40)
LPG, kg/hr. (lb./hr.)		
100%	4.3 (9.4)	3.9 (8.6)
75%	3.9 (8.7)	3.6 (7.9)
50%	3.4 (7.0)	2.8 (6.2)
25%	2.2 (5.2)	2.1 (4.7)

LPG conversion factors:

8.58 ft.³ = 1 lb.

0.535 m³ = 1 kg

36.39 ft.³ = 1 gal.

Nominal fuel rating:

Natural gas: 37 MJ/m³ (1000 Btu/ft.³)

LPG: 93 MJ/m³ (2500 Btu/ft.³)

Alternator

Alternator Features

- Compliance with NEMA, IEEE, and ANSI standards for temperature rise
- Self-ventilated and dripproof construction
- Windings are vacuum-impregnated with epoxy varnish for dependability and long life
- Superior voltage waveform and minimum harmonic distortion from skewed alternator construction
- Digital voltage regulator with $\pm 1.5\%$ no-load to full-load RMS regulation
- Rotating-field alternator with static exciter for excellent load response
- Skewed generator construction produces a smooth AC waveform

Alternator Specifications

Specifications	PowerBoost™ Generator 1-Phase
Manufacturer	Kohler
Output reconnectable	120/240
Type	2-Pole, Rotating Field
Leads, quantity	4
Voltage regulator	Digital
Insulation:	NEMA MG1-1.66
Material	Class H
Temperature rise	Class H
Bearing: quantity, type	1, Sealed Ball
Coupling	Direct
Amortisseur windings	Full
Voltage regulation, no-load to full-load RMS	$\pm 1.5\%$
One-step load acceptance	100% of Rating
Peak motor starting kVA @ 240 V:	32

Sound Data

Model 12RES 8 point logarithmic average sound level is 65 dB(A).

For comparison to competitor ratings, the lowest point sound level is 63 dB(A).*

All sound levels are measured at 7 meters (23 ft.) with no load.

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

ADC-RES Controller



Controller Features

- Membrane keypad:
 - Arrow keys step through generator set status displays
 - Password-protected access to system configuration and adjustment menus
 - System voltage/frequency selection and engine configuration
 - Voltage, gain, and engine speed adjustment
- LED display:
 - Engine runtime, hours
 - Output voltage, VAC
 - Output frequency, Hz
 - Battery voltage, VDC
 - Crank cycle status
 - Setup information
 - Software version
 - Faults
- Faults displayed:
 - High battery voltage
 - High engine temperature
 - Low battery voltage
 - Low oil pressure
 - Overcrank
 - Overfrequency
 - Overspeed
 - Overvoltage
 - Underfrequency
 - Undervoltage
- Compact controller integrally mounted to the generator set
- Remote two-wire start/stop capability
- Digital isochronous governor to maintain steady-state speed at all loads
- Digital voltage regulation: $\pm 1.5\%$ RMS no-load to full-load
- Automatic start with programmed cranking cycle
- Field-upgradeable application software
- Front-access DB9 connector for software upgrade on the junction box
- Generator set master switch (Run/Off-Reset/Auto) on the junction box

Standard Features

- ADC-RES Advanced Digital Control
- Battery cables
- 6-amp battery charger
- EPA-certified fuel system
- Critical silencer
- Field-connection terminal block
- Premium 5-year/2000 hour limited warranty for standby (on-grid) applications
- 18-month/1000 hour limited warranty for non-standby (off-grid) applications
- Fuel solenoid valve and secondary regulator
- Integral vibration isolation
- Line circuit breaker, 50 amps
- Field-convertible fuel system, LPG/natural gas
- Oil drain extension with shutoff valve
- Polymer base
- Rodent-resistant construction
- Sound-deadening, flame-retardant foam per UL 94, class HF-1
- Sound enclosure, quiet 65 dB(A) operation

Available Accessories

Approvals and Listings

- CSA Certification (60 Hz)

Electrical System

- Battery
- Battery heater
- Relay kit: auxiliary run relay and common fault relay

Fuel System

- Gas strainer
- Flexible fuel line

Maintenance

- Maintenance kits
- General maintenance literature kit
- Overhaul literature kit
- Production literature kit

Starting Aids

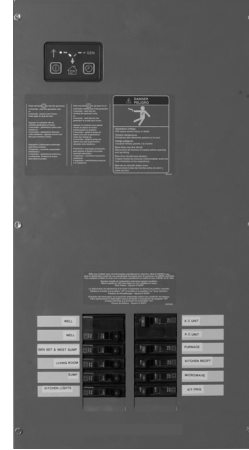
- Carburetor heater, 120 VAC (recommended for reliable starting at temperatures below 0°C [32°F])

Transfer Switch

- Kohler automatic transfer switch

Available Accessories

Model RDT Automatic Transfer Switch

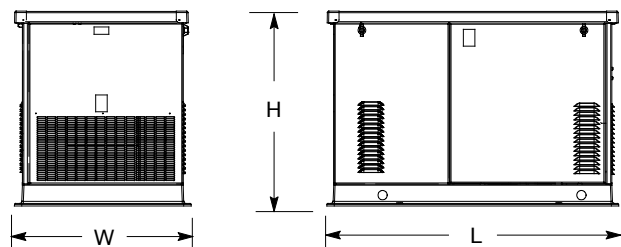


- UL listed
- 100, 200, or 400 amps
- 200 amp service entrance-rated model also available
- 240 VAC/60 Hz or 220 VAC/50 Hz
- Available with or without built-in load center
- Equipped with MPAC™ 500 microprocessor-based controls
- User-friendly controller interface with easy-to-read international symbols

See the RDT specification sheet for more information.

Dimensions and Weights

Overall Size, L x W x H:	1123 x 726 x 803 mm (44.2 x 28.6 x 31.6 in.)
Weight:	182 kg (400 lb.)
Shipping weight:	195 kg (430 lb.)



NOTE: These drawings are provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

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