



Ratings Range

	Lean-Burn GLD Engine		Rich-Burn GSID Engine	
	60 Hz	50 Hz	60 Hz	50 Hz
Standby: kW	620-625	524-528	600	500-504
kVA	775-781	655-660	750	625-630
Prime: kW	510-600	428-504	510-540	428-456
kVA	638-750	535-630	638-675	535-570

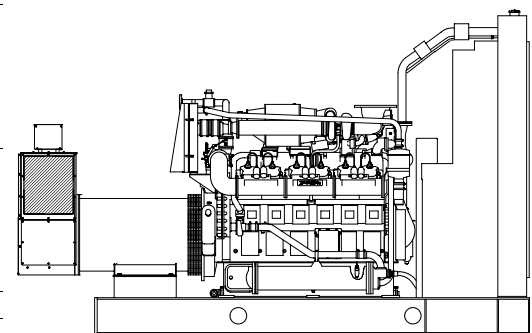
Generator Set Ratings

Alternator	Voltage	Ph	Hz	Lean-Burn GLD Engine			Rich-Burn GSID Engine		
				130°C Rise Standby	105°C Rise Prime	80°C Rise Prime	130°C Rise Standby	105°C Rise Prime	80°C Rise Prime
5M4032	120/208	3	60	620/775	590/738	570/713	600/750	535/669	535/669
	127/220	3	60	620/775	590/738	590/738	600/750	535/669	535/669
	139/240	3	60	625/781	595/744	570/713	600/750	540/675	540/675
	240/416	3	60	620/775	590/738	570/713	600/750	535/669	535/669
	277/480	3	60	625/781	595/744	570/713	600/750	540/675	540/675
	110/190	3	50	524/655	500/625	488/610	500/625	456/570	456/570
	115/200	3	50	524/655	500/625	472/590	500/625	456/570	456/570
	120/208	3	50	524/655	500/625	440/550	500/625	456/570	440/550
	220/380	3	50	524/655	500/625	488/610	500/625	456/570	456/570
	230/400	3	50	524/655	500/625	472/590	500/625	456/570	456/570
240/416	3	50	524/655	500/625	440/550	500/625	456/570	440/550	
5M4034	120/208	3	60	625/781	595/744	590/738	600/750	540/675	540/675
	127/220	3	60	625/781	595/744	595/744	600/750	540/675	540/675
	139/240	3	60	625/781	595/744	585/731	600/750	540/675	540/675
	240/416	3	60	625/781	595/744	590/738	600/750	540/675	540/675
	277/480	3	60	625/781	595/744	585/731	600/750	540/675	540/675
	110/190	3	50	528/660	504/630	500/625	504/630	456/570	456/570
	115/200	3	50	528/660	504/630	472/590	504/630	456/570	456/570
	120/208	3	50	528/660	504/630	428/535	504/630	456/570	428/535
	220/380	3	50	528/660	504/630	500/625	504/630	456/570	456/570
	230/400	3	50	528/660	504/630	472/590	504/630	456/570	456/570
240/416	3	50	528/660	504/630	428/535	504/630	456/570	428/535	
5M4036	120/208	3	60	625/781	595/744	600/750	600/750	540/675	540/675
	127/220	3	60	625/781	595/744	570/713	600/750	540/675	535/669
	139/240	3	60	625/781	595/744	595/744	600/750	540/675	540/675
	220/380	3	60	625/781	595/744	595/744	600/750	540/675	540/675
	240/416	3	60	625/781	595/744	600/750	600/750	540/675	540/675
	277/480	3	60	625/781	595/744	595/744	600/750	540/675	540/675
	110/190	3	50	528/660	504/630	504/630	504/630	456/570	456/570
	115/200	3	50	528/660	504/630	504/630	504/630	456/570	456/570
	120/208	3	50	528/660	504/630	480/600	504/630	456/570	456/570
	220/380	3	50	528/660	504/630	504/630	504/630	456/570	456/570
230/400	3	50	528/660	504/630	504/630	504/630	456/570	456/570	
240/416	3	50	528/660	504/630	480/600	504/630	456/570	456/570	
5M4164	220/380	3	60	625/781	595/744	510/638	600/750	540/675	510/638
5M4166	220/380	3	60	625/781	595/744	595/744	600/750	540/675	540/675
5M4274	347/600	3	60	625/781	595/744	530/663	600/750	535/669	530/663
5M4276	347/600	3	60	625/781	595/744	565/706	600/750	540/675	540/675

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.
- The generator set complies with ISO 8528-5, Class G4 requirements for transient performance. *
- A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are also available.
- Alternator features:
 - The brushless, rotating-field alternator has broadrange reconnectability.
 - The pilot-excited, permanent-magnet (PM) alternator provides superior short-circuit capability.
- Other features:
 - The low coolant level shutdown prevents overheating (standard on radiator models only).
 - The generator set is direct-mounted to the skid.
 - An electronic, isochronous governor delivers precise frequency regulation.
 - Electronic engine controls manage the engine.
 - Lean-burn natural gas technology provides maximum power and fuel efficiency.
 - Rich-burn natural gas technology reduces harmful exhaust emissions when used with a catalytic converter.

* This generator set does not meet NFPA 110 requirements for the one-step load acceptance and the 10-second start sequence.



RATINGS: All three-phase units are rated at 0.8 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-3046/1, BS 5514, AS 2789, and DIN 6271. **Prime Power Ratings:** Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. **Rich Burn:** A 10% overload capacity is available for one hour in twelve. **Lean Burn:** A 5% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load 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 DERATION: Altitude:** Deduct 1% for each 150 m (492 ft.) elevation above 500 m (1640 ft.). **Temperature:** Derate 2% for each 10°C (18°F) temperature above 38°C (100°F).

Alternator Specifications

Specifications	Alternator
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Permanent-Magnet, Pilot Exciter
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H, Synthetic, Nonhygroscopic
Temperature rise	130°C, 150°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Rotor balancing	125% (60 Hz), 150% (50 Hz)
Voltage regulation, no-load to full-load (with <0.5% drift due to temp. variation)	3-phase, ±0.25%
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
480 V/380 V	5M4032 (10 lead) 2200 (60Hz), 1375 (50Hz)
480 V/380 V	5M4034 (10 lead) 2600 (60Hz), 1750 (50Hz)
480 V/380 V	5M4036 (10 lead) 3150 (60Hz), 2100 (50Hz)
380 V	5M4164 (4 lead) 2250 (60Hz)
380 V	5M4166 (4 lead) 2750 (60Hz)
600 V	5M4274 (4 lead) 1545 (60Hz)
600 V	5M4276 (4 lead) 2800 (60Hz)

- 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 drip-proof construction.
- Superior voltage waveform from two-thirds pitch windings and skewed stator.
- Digital solid-state, volts-per-hertz voltage regulator with ±0.25% no-load to full-load regulation.
- Brushless alternator with brushless pilot exciter for excellent load response.

Application Data

Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	Waukesha Engine	
Engine model		
Lean-Burn GLD Engine	VGF L36GLD, 4-Cycle	
Rich-Burn GSID Engine	VGF L36GSID, 4-Cycle	
Engine type	Turbocharged, Intercooled	
Cylinder arrangement	12 V	
Displacement, L (cu. in.)	36 (2193)	
Bore and stroke, mm (in.)	152 x 165 (5.98 x 6.5)	
Compression ratio		
Lean-Burn GLD Engine	11:1	
Rich-Burn GSID Engine	8.7:1	
Piston speed, m/min. (ft./min.)	594 (1950)	495 (1625)
Main bearings: quantity, type	7, Half Shell	
Rated rpm	1800	1500
Max. power at rated rpm, kWm (BHP)		
Lean-Burn GLD Engine	690 (925)	574 (770)
Rich-Burn GSID Engine	656 (880)	548 (735)
Cylinder head material	Cast Iron	
Piston: type, material	Aluminum Alloy	
Crankshaft material	Forged Steel	
Valve material, intake/exhaust:	Hard-Faced Steel	
Governor: type, make/model	Electronic	
Frequency regulation, no-load to full-load	Isochronous	
Frequency regulation, steady state	±0.50%	
Frequency	Field-Convertible	
Air cleaner type, all models	Dry	

Fuel

Fuel System	60 Hz	50 Hz
Fuel type	Natural Gas	
Fuel supply line inlet, mm (in.)	50.8 (2)	ANSI 125 lb. Flange
Natural gas fuel supply pressure, measured at the generator set fuel inlet after any fuel system equipment accessories, kPa (oz./in. ²)	2-34 (4.6-80)	
Particulate filter requirement, mm (in.)	0.005 (0.0002)	

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust flow at rated kW, m ³ /min. (cfm)		
Lean-Burn GLD Engine	135 (4765)	108 (3816)
Rich-Burn GSID Engine	106 (3755)	84 (2952)
Exhaust temperature at rated kW, dry exhaust, °C (°F)		
Lean-Burn GLD Engine	450 (843)	427 (800)
Rich-Burn GSID Engine	600 (1114)	579 (1074)
Maximum allowable back pressure, kPa (in. Hg)	3.73 (1.1)	
Engine exhaust outlet size, mm (in.)	See ADV Drawing	

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Ignition system	Electronic	
Battery charging, min.	Requires Float/Equalizer Battery Charger, 24 V, 10 A	
Starter motor rated voltage (DC)	24	
Battery, recommended cold cranking amps (CCA):		
Qty., CCA rating	2, 1150	
Battery voltage (DC)	12	

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.)	—	
Oil pan capacity with filter, L (gal.)	163 (43)	
Oil filter: quantity, type	2, Cartridge	
Oil cooler	Water-Cooled	
Oil requirements	SAE40 Allowable Sulfated Ash Content by Weight	
	0.5-1.0% (GLD)	
	0.35-0.5% (GSID)	

Application Data

Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F)	38 (100)	
Engine jacket water capacity, L (gal.)	166 (44)	
Engine auxiliary water capacity, L (gal.)	57 (15)	
Radiator jacket water capacity, including engine, L (gal.)	357 (94)	
Radiator auxiliary water capacity, including engine, L (gal.)	224 (59)	
Minimum engine jacket water flow, Lpm (gpm)		
Lean-Burn GLD Engine	825 (218)	697 (184)
Rich-Burn GSID Engine	997 (263)	841 (222)
Minimum engine auxiliary water flow, Lpm (gpm)	235 (62)	197 (52)
Heat rejected to cooling water at standby rated kW, wet exhaust, kW (Btu/min.)		
Lean-Burn GLD Engine	649 (26920)	401 (22780)
Rich-Burn GSID Engine	574 (32670)	476 (27080)
Heat rejected to auxiliary cooling water at standby rated kW, wet exhaust, kW (Btu/min.)		
Lean-Burn GLD Engine	182 (10370)	128 (7300)
Rich-Burn GSID Engine	131 (7470)	102 (5800)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	1829 (72)	
Fan, kWm (HP)	31 (42)	19 (25)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H ₂ O)	0.125 (0.5)	

Operation Requirements

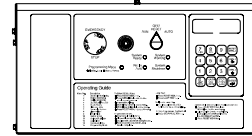
Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m ³ /min. (scfm)*	1690 (59700)	1410 (49800)
Combustion air, m ³ /min. (scfm)		
Lean-Burn GLD Engine	52 (1820)	42 (1485)
Rich-Burn GSID Engine	33 (1180)	27 (965)
Heat rejected to ambient air, kW (Btu/min.):		
Lean-Burn GLD Engine	34 (1933)	31 (1783)
Rich-Burn GSID Engine	42 (2383)	39 (2233)
Alternator	42 (2383)	35 (1960)

* Air density = 1.20 kg/m³ (0.075 lbm/ft³)

Fuel Consumption [†]	60 Hz	50 Hz
Natural Gas, m³/hr. (cfh) at % load	Lean-Burn Standby Rating	
100%	202 (7153)	164 (5794)
75%	159 (5603)	128 (4533)
50%	115 (4054)	93 (3271)
25%	71 (2504)	57 (2010)
Natural Gas, m³/hr. (cfh) at % load	Lean-Burn Prime Rating	
100%	194 (6851)	157 (5549)
75%	152 (5377)	123 (4348)
50%	111 (3903)	89 (3148)
25%	69 (2429)	55 (1948)
Natural Gas, m³/hr. (cfh) at % load	Rich-Burn Standby Rating	
100%	201 (7106)	165 (5819)
75%	159 (5602)	129 (4569)
50%	116 (4098)	94 (3319)
25%	73 (2594)	59 (2070)
Natural Gas, m³/hr. (cfh) at % load	Rich-Burn Prime Rating	
100%	186 (6559)	152 (5364)
75%	147 (5192)	120 (4228)
50%	108 (3825)	88 (3092)
25%	70 (2458)	55 (1956)

[†] Fuel energy content = 35.38 MJ/m³ (900 Btu/scft) saturated lower heating value.

Controller



Decision-Maker™ 550 Controller

Audiovisual annunciation.
 Programmable microprocessor logic and digital display features.
 Alternator safeguard circuit protection.
 24-volt engine electrical system capability.
 Remote start, remote annunciation, and remote communication options.
 Refer to G6-46 for additional controller features and accessories.

Standard Features and Accessories

Standard Features

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Alternator Protection
- Oil Drain Extension
- Operation and Installation Literature
- Radiator Duct Flange

Accessories

Enclosed Unit

- Sound Enclosure (with enclosed critical silencer)
- Weather Enclosure (with enclosed critical silencer)

Open Unit

- Exhaust Silencer, Critical, Lean-Burn GLD Engine: 60 Hz kit: PA-354898; 50 Hz kit: PA-354894
- Exhaust Silencer, Critical, Rich-Burn GSID Engine: Kit: PA-354894
- Exhaust Silencer, Residential, Kit: PA-354892
- Flexible Exhaust Connector, Stainless Steel

Cooling System

- Block Heater
- Remote Radiator Cooling

Fuel System

- Air/Fuel Ratio Controller
- Gas Regulator
- Natural Gas Filter
- Gas Solenoid Valve

Electrical System

- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater
- Battery Rack and Cables

Engine and Alternator

- Bus Bar Kits
- CSA Certification
- Alternator Strip Heater
- Line Circuit Breaker (NEMA1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA1 enclosure)
- Optional Alternators
- Pre-Lube Pumps
- Pre-Lube Pumps with Heaters
- Rated Power Factor Testing
- Remote Voltage Adjust Control
- Spring Isolators

Maintenance and Literature

- General Maintenance Literature Kit
- Maintenance Kit (includes air, oil, and fuel filters)
- Overhaul Literature Kit
- Production Literature Kit

Controller

- Common Failure Relay Kit
- Communications Products and PC Software
- Customer Connection Kit
- Dry Contact Kit (isolated alarm)
- Remote Annunciator Panel
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop Kit
- Remote Mounting Cable
- Run Relay Kit

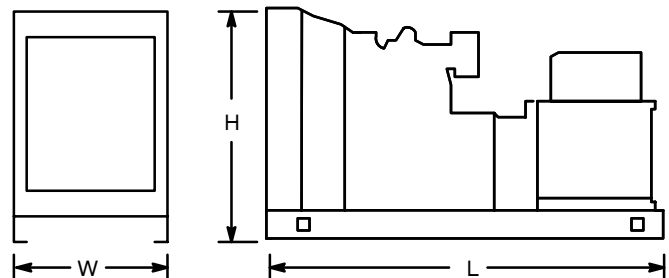
Miscellaneous Accessories

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

Dimensions and Weights

Overall Size, L x W x H, mm (in.): 4924 x 2416 x 3111
 (193.8 x 95.1 x 122.5)

Weight (radiator model), wet, kg (lb.): 10750 (23700)



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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