

## BASIC ENGINEATOR<sup>®</sup> SPECIFICATIONS

**AIR CLEANER** – Two stage, dry panel type with rain shield and service indicator. Engine mounted.

**BARRING DEVICE** – Manual.

**BASE** – Engine, generator and radiator or heat exchanger are mounted and aligned on a welded steel, wide flange base, designed for solid mounting on an inertia block, with standard through-base holes for lifting.

**BREATHER** – Closed system.

**CONNECTING RODS** – Drop forged alloy steel, angle split, serrated joint, oil jet piston pin lubrication.

**COOLING SYSTEM** – Choice of mounted radiator with pusher fan, core guard and duct adaptor, heat exchanger with mounted surge tank or flanged connections for remote radiator cooling.

**CRANKCASE** – Alloy cast iron, fully ribbed, integral with cylinder frame.

**CRANKSHAFT** – Drop forged alloy steel with induction hardened journals, dynamically balanced and fully counterweighted. Viscous vibration dampener.

**CYLINDER HEADS** – Individual, interchangeable valve-in-head type with deep section alloy casting. Two hard-faced intake and two hard-faced exhaust valves per cylinder. Replaceable intake and exhaust valve seats. Mechanical valve lifters with pivoted roller followers.

**CYLINDERS** – Removable wet type liners of centrifugally cast alloy iron.

**ENGINE PROTECTION SHUTDOWN CONTACTS** – High water temperature, low oil pressure, and overspeed.

**EXHAUST** – Water-cooled, cast iron exhaust manifold. Single vertical flexible stainless steel exhaust connection with 8" outlet flange.

**FUEL SYSTEM** – Natural gas carburetor, gas pressure regulator, and 24V DC gas solenoid valve (shipped loose). Pressure required: GL models, 25 – 50 psig; GLD models, 8" – 20" W.C.

**GENERATOR** – Waukesha drip-proof, direct connected, synchronous, fan cooled, AC revolving field type, 2/3 pitch, single bearing generator with PMG brushless exciter for 300% short circuit sustain (250% for 50 Hz) and motor starting. TIF and Deviation Factor within NEMA MG-1.22. Voltage: 480/277, 3 phase, 12 wire Wye, 60 Hz, and 380/220, 3 phase, 12 wire Wye, 50 Hz. Temperature rise within NEMA 105° C for continuous duty, within NEMA 130° C for standby duty. Voltage regulation is ± 0.5%. All generators are rated at 0.8 power factor, are mounted on the engine flywheel housing, and have multiple steel disc flexible coupling drive. All continuous power gensets have 10% overload capability.

**GOVERNOR** – Woodward 4024 Electrically Powered Governor (EPG) control system. Includes mounted actuator and magnetic pickup, and control box (shipped loose). 24 V DC operation.

**IGNITION** – Waukesha Custom Engine Control<sup>®</sup> electronic ignition system with coils, cables, hall effect pickup and spark plugs. Non-shielded. 24 V DC power required.

**INTERCOOLER** – Air-to-water.

**INSTRUMENT PANEL** – Engine mounted, includes water temperature, oil pressure, intake manifold temperature and intake manifold pressure gauges, and emergency stop pushbutton.

**JUNCTION BOXES** – Separate AC & DC junction boxes for engine wiring and external connections.

**LUBRICATION SYSTEM** – Gear type pump, full flow spin-on filters and industrial type oil pan. Engine mounted plate type oil cooler.

**PAINT** – Oilfield Orange.

**PISTONS** – Aluminum alloy, three ring, with combustion bowl. Oil jet cooled with full floating piston pin. 11:1 compression ratio.

**STARTING SYSTEM** – 24 V DC starting motor. Crank termination switch, (shipped loose).

**TURBOCHARGER** – Dry-type with wastegate.

**VOLTAGE REGULATOR** – Automatic type.

### WATER CIRCULATING SYSTEM

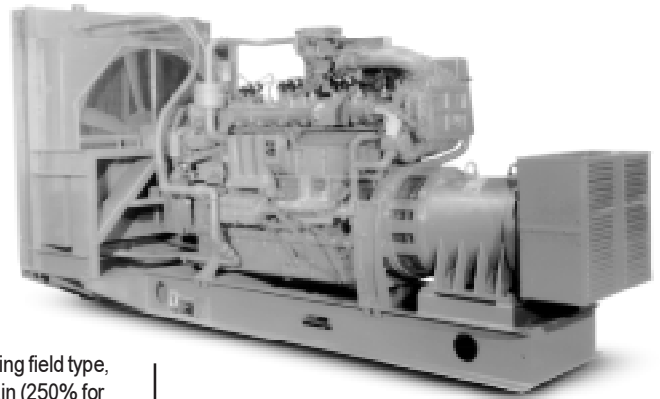
**Auxiliary Circuit** – Gear driven pump for intercooler and oil cooler. Inlet temperature of 130° F (54° C) for all models.

**Jacket Water Circuit** – 180° – 190° F (82° – 88° C) thermostatic temperature regulation. Gear-driven pump.

# VGF18GL/GLD

## VGF Series Gas Engineator<sup>®</sup> Generating System

220 - 315 kW



### Model VGF18GL/GLD

Turbocharged and Intercooled, Lean Combustion Gas Fueled Engineator<sup>®</sup>

## SPECIFICATIONS

|  |   |
|--|---|
| <b>Waukesha Engine</b><br>F18GL/GLD                        | <b>Jacket Water Capacity</b>  |
| <b>Cylinders</b><br>Inline 6                               | 13 gal.<br>(50 L)   |
| <b>Piston Displacement</b><br>1096 cu. in.<br>(18 L)       | <b>Starting System</b><br>24V DC Electric                               |
| <b>Bore &amp; Stroke</b><br>5.98" x 6.5"<br>(152 x 165 mm) | <b>Fuel LHV</b><br>900 Btu/ft <sup>3</sup><br>(33.5 J/cm <sup>3</sup> ) |
| <b>Compression Ratio</b><br>11:1                           | <b>Lube Oil Capacity</b><br>22 gal.<br>(83 L)                           |

# PERFORMANCE DATA: VGF18GL/GLD GAS ENGINEATOR® GENERATING SYSTEM

| HEAT EXCHANGER COOLING<br>Intercooler Water: 130°F (54°C) | CONTINUOUS POWER* |                   | STANDBY POWER     |                   |
|---|-------------------|-------------------|-------------------|-------------------|
|   | 1800 rpm<br>60 Hz | 1500 rpm<br>50 Hz | 1800 rpm<br>60 Hz | 1500 rpm<br>50 Hz |
| kW RATING   | 280               | 230               | 315               | 260               |
| Fuel Consumption x 1000 Btu/h (kW)                        | 2826 (828)        | 2230 (654)        | 3175 (931)        | 2570 (753)        |
| Jacket Water x 1000 Btu/h (kW)                            | 690 (202)         | 560 (164)         | 752 (220)         | 612 (179)         |
| Intercooler x 1000 Btu/h (kW)                             | 126 (37)          | 87 (25)           | 156 (46)          | 119 (35)          |
| Lube Oil x 1000 Btu/h (kW)                                | 127 (37)          | 100 (29)          | 131 (38)          | 102 (30)          |
| Heat Radiated x 1000 Btu/h (kW)                           | 128 (37)          | 66 (19)           | 155 (45)          | 147 (43)          |
| Exhaust Heat** x 1000 Btu/h (kW)                          | 800 (234)         | 632 (185)         | 906 (266)         | 703 (206)         |
| Exhaust Flow lb/h (kg/h)                                  | 3665 (1662)       | 2970 (1347)       | 4105 (1862)       | 3330 (1510)       |
| Exhaust Temperature °F (°C)                               | 855 (457)         | 826 (441)         | 861 (461)         | 821 (438)         |
| Induction Air Flow scfm (m³/min)                          | 820 (23)          | 665 (19)          | 920 (26)          | 745 (21)          |

| WATER CONNECTION COOLING<br>Intercooler Water: 130°F (54°C) | CONTINUOUS POWER* |                   | STANDBY POWER     |                   |
|---|-------------------|-------------------|-------------------|-------------------|
|   | 1800 rpm<br>60 Hz | 1500 rpm<br>50 Hz | 1800 rpm<br>60 Hz | 1500 rpm<br>50 Hz |
| kW RATING   | 280               | 230               | 315               | 260               |
| Fuel Consumption x 1000 Btu/h (kW)                          | 2826 (828)        | 2230 (654)        | 3175 (931)        | 2570 (752)        |
| Jacket Water x 1000 Btu/h (kW)                              | 690 (202)         | 560 (164)         | 752 (220)         | 612 (179)         |
| Intercooler x 1000 Btu/h (kW)                               | 126 (37)          | 87 (25)           | 156 (46)          | 119 (35)          |
| Lube Oil x 1000 Btu/h (kW)                                  | 127 (37)          | 100 (29)          | 131 (38)          | 102 (30)          |
| Heat Radiated x 1000 Btu/h (kW)                             | 128 (37)          | 66 (19)           | 155 (45)          | 147 (43)          |
| Exhaust Heat** x 1000 Btu/h (kW)                            | 800 (234)         | 632 (185)         | 906 (266)         | 703 (206)         |
| Exhaust Flow lb/h (kg/h)                                    | 3665 (1662)       | 2970 (1347)       | 4105 (1862)       | 3330 (1510)       |
| Exhaust Temperature °F (°C)                                 | 855 (457)         | 826 (441)         | 861 (461)         | 821 (438)         |
| Induction Air Flow scfm (m³/min)                            | 820 (23)          | 665 (19)          | 920 (26)          | 745 (21)          |

| RADIATOR COOLING - MOUNTED<br>Intercooler Water: 130°F (54°C) | CONTINUOUS POWER* |                   | STANDBY POWER     |                   |
|---|-------------------|-------------------|-------------------|-------------------|
|   | 1800 rpm<br>60 Hz | 1500 rpm<br>50 Hz | 1800 rpm<br>60 Hz | 1500 rpm<br>50 Hz |
| kW RATING   | 265               | 220               | 300               | 250               |
| Fuel Consumption x 1000 Btu/h (kW)                            | 2826 (828)        | 2230 (654)        | 3175 (931)        | 2570 (753)        |
| Jacket Water x 1000 Btu/h (kW)                                | 690 (202)         | 560 (164)         | 752 (220)         | 612 (179)         |
| Intercooler x 1000 Btu/h (kW)                                 | 126 (37)          | 87 (25)           | 156 (46)          | 119 (35)          |
| Lube Oil x 1000 Btu/h (kW)                                    | 127 (37)          | 100 (29)          | 131 (38)          | 102 (30)          |
| Heat Radiated x 1000 Btu/h (kW)                               | 128 (37)          | 70 (20)           | 156 (46)          | 150 (44)          |
| Exhaust Heat** x 1000 Btu/h (kW)                              | 800 (234)         | 632 (185)         | 906 (266)         | 703 (206)         |
| Exhaust Flow lb/h (kg/h)                                      | 3665 (1662)       | 2970 (1347)       | 4105 (1862)       | 3330 (1510)       |
| Exhaust Temperature °F (°C)                                   | 855 (457)         | 826 (441)         | 861 (461)         | 821 (438)         |
| Induction Air Flow scfm (m³/min)                              | 820 (23)          | 665 (19)          | 920 (26)          | 745 (21)          |
| Radiator Air Flow scfm (m³/min)                               | 34000 (963)       | 28000 (793)       | 34000 (963)       | 28000 (793)       |

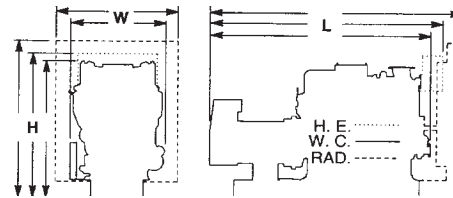
Typical heat balance data is shown. Consult factory for guaranteed data.

**\*Continuous Power Rating:** The highest electrical power output of the Enginator® available for an unlimited number of hours per year, less maintenance. It is permissible to operate the Enginator® with up to 10% overload for two hours in each 24 hour period.

**Standby Power Rating:** This rating applies to those systems used as a secondary source of electrical power. This rating is the electrical power output of the Enginator® (no overload) 24 hours a day, for the duration of the primary power source outage.

**Rating Standard:** The Waukesha Enginator® power rating descriptions are in accordance to ISO 8528, DIN6271 and BS5514. It is also valid for ISO 3046/1-1986 with an engine mechanical efficiency of 90% and Tora (clause 10.0) is limited to ± 10° F (5° C).

\*\*Heat rejection based on cooling exhaust gas to 85° F (29° C).



| Cooling Equipment | L in (mm)  | W in (mm) | H in (mm) | Avg. Wt. lb (kg) |
|-------------------|------------|-----------|-----------|------------------|
| Heat Exchanger    | 122 (3100) | 54 (1370) | 77 (1960) | 8400 (3810)      |
| Water Cooler      | 113 (2870) | 54 (1370) | 77 (1960) | 8100 (3573)      |
| Radiator          | 160 (4064) | 72 (1829) | 92 (2337) | 9100 (4127)      |



## WAUKESHA ENGINE POWER SYSTEMS

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Consult your local Waukesha Distributor for system application assistance. The manufacturer reserves the right to change or modify without notice, the design or equipment specifications as herein set forth without incurring any obligation either with respect to equipment previously sold or in the process of construction except where otherwise specifically guaranteed by the manufacturer.