

# mobileFLEX

## EPA-certified Mobile Power Generation with ESM® 2

L7044GSI-EPA (Engine Only) and VHP7104GSI-EPA (Enginator®)

### Technical Data

#### (Engine only)

|                         |                                                    |
|-------------------------|----------------------------------------------------|
| Rated power bhp (kWb)   | 1,680 (1,253)                                      |
| Engine speed            | 1,200 rpm                                          |
| Emissions Certification | EPA Emergency Stationary<br>EPA Mobile Off-Highway |
| Cylinders               | V12                                                |
| Piston displacement     | 115L (7,040 cu. in.)                               |
| Compression ratio       | 8:1                                                |
| Bore & stroke           | 238 x 216 mm<br>(9.375" x 8.5")                    |
| Engine Control System   | ESM2/AFR2                                          |

#### (Optional generator)

|                        |                              |
|------------------------|------------------------------|
| Rated power kWe (kVA)* | 1,200 (1,500)                |
| Frequency              | 60Hz                         |
| Voltage                | 600V                         |
| Alternator Model       | Kato (6P6-3300)              |
| Temperature Rise       | 80 °C over 50 °C ambient     |
| Connection             | 4 wire, wye                  |
| Insulation             | Class F                      |
| Bearing Design         | 2 regreaseable anti-friction |
| Enclosure              | IP-23                        |
| Excitation             | Self-excited                 |

mobileFLEX is redefining oil field power generation for drill rig applications. Leveraging over 115 years of engine design, development, and manufacturing, Waukesha is the global leader in rich burn gas engine technology and is bringing decarbonization to the oil and gas industry. mobileFLEX is designed to displace conventional diesel engines and generator sets for drilling applications, offering substantial savings on fuel costs while reducing emissions and carbon footprint. mobileFLEX offers diesel-like performance and reliability to support the unique power requirements of the drilling industry. Additionally, mobileFLEX can operate on a variety of fuel types and fuel qualities, enabling our customers to leverage the right source of fuel for their operations.

#### Product Benefits:

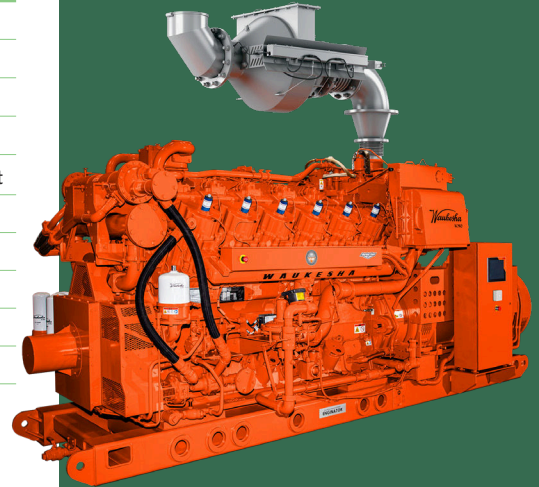
- **FUEL SAVINGS:** Up to 94% fuel savings versus diesel when utilizing well-head gas and up to 83% fuel savings when utilizing LNG/CNG. mobileFLEX users have offset an average of 2,000 gallons of diesel fuel per day.
- **LOWER EMISSIONS:** Achieve over 90% lower methane emissions and over 40% lower CO<sub>2</sub>e compared to diesel-gas blend engines. NO<sub>x</sub>, PM, and GHG are all lowered compared to diesel. mobileFLEX is EPA certified and designed for decarbonization.

#### • DIESEL-LIKE PERFORMANCE:

mobileFLEX loads and unloads like a diesel, ensuring continuous power to all critical drilling and oilfield equipment. The power cylinder is custom-designed for drill rigs, minimizing low-load oil consumption and the emission of CO, VOCs, and formaldehyde.

#### Product Features:

- **Operation:** Diesel-like load tolerance without the fuel costs. Fast start in less than 10 seconds.
- **Fuel Flexibility:** Reliable, proven fuel flexibility across a wide range of fuel qualities (850 – 2400 BTU/ft<sup>3</sup>). Designed to run on NG, CNG/LNG, propane, shale field, and well head gas.
- **Mobility:** Superior altitude and temperature performance. No derate up to 8,000 ft at 100°F.
- **Emissions:** EPA certified. Three-way catalyst eliminates the need for complex SCR aftertreatment systems required for diesel.
- **Packaging:** Simple to package with a pony skid or tailboard skid. Can be used by modifying existing rigs or design of new rigs.
- **Interface:** All engine and catalyst performance parameters, data logging and analysis, troubleshooting, engine set-up, and interface from a single HMI. Remote monitoring available.



Engine supplied with 3-way catalyst but without exhaust piping. Engine-out and catalyst-out exhaust piping shown for illustrative purposes only.

#### Standard configuration:

- xCooled cylinder heads
- Drill rig piston
- ESM 2/AFR2 integrated control system
- 12" HMI
- emPact emissions control system
- Advanced closed crankcase breather
- Ignition Power Module Diagnostics (IPMD)
- Heavy duty air filters
- Spin-on oil filters and engine-mounted oil cooler
- Single fuel inlet
- Main bearing thermocouples
- Exhaust thermocouples
- Front stub shaft
- Air/gas starter (electric optional)
- Flywheel machined for generator coupling
- Side inlet jacket water pump header
- Jacket water outlet; Dresser coupling
- Auxiliary water thermostatic valve
- Pony skid (Enginator only)

A POWERFUL FUTURE

*Waukesha*

# mobileFLEX L7044GSI-EPA/VHP7104GSI-EPA

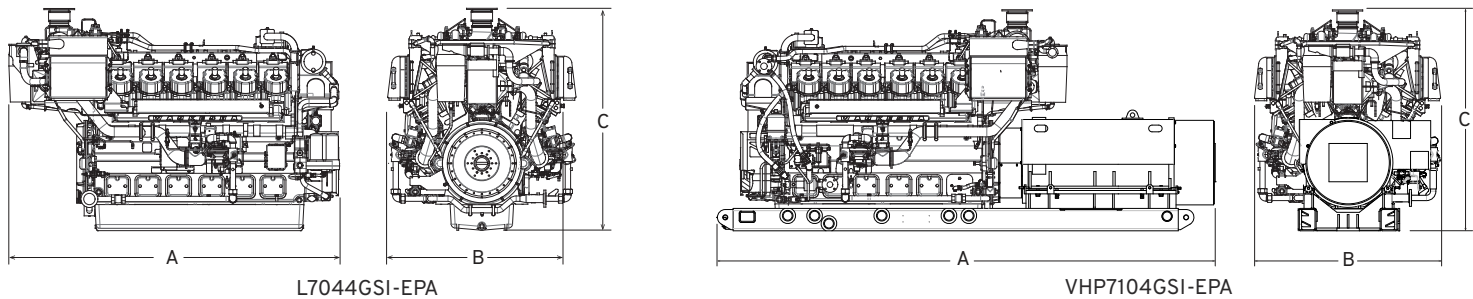
## Performance Data

| Intercooler Water Temperature 130°F (54°C) |                                            | 60 Hz/1,200 RPM |
|--------------------------------------------|--------------------------------------------|-----------------|
| Fuel Consumption                           | Power bhp (kWb)                            | 1,680 (1,253)   |
|                                            | Typical Generator Set Rating kWe (kVA)*    | 1,200 (1,500)   |
|                                            | BSFC @ 100% Load (LHV) Btu/bhp-hr (kJ/kWh) | 7,881 (11,149)  |
|                                            | 100% Load mmBtu/hr (MW)                    | 13.29 (3.89)    |
|                                            | 75% Load mmBtu/hr (MW)                     | 10.15 (2.98)    |
|                                            | 50% Load mmBtu/hr (MW)                     | 7.30 (2.14)     |
|                                            | 25% Load mmBtu/hr (MW)                     | 4.57 (1.34)     |
|                                            | 10% Load mmBtu/hr (MW)                     | 3.19 (0.94)     |
| Heat Balance                               | Heat to Jacket Water Btu/hr x 1000 (kW)    | 3,849 (1,128)   |
|                                            | Heat to Lube Oil Btu/hr x 1000 (kW)        | 567 (166)       |
|                                            | Heat to Intercooler Btu/hr x 1000 (kW)     | 179 (53)        |
|                                            | Heat to Radiation Btu/hr x 1000 (kW)       | 724 (212)       |
|                                            | Total Exhaust Heat Btu/hr x 1000 (kW)      | 3,900 (1,143)   |
| Intake/ Exhaust System                     | Induction Air Flow scfm (Nm³/hr)           | 2,424 (3,651)   |
|                                            | Exhaust Flow lb/hr (kg/hr)                 | 11,273 (5,113)  |
|                                            | Exhaust Temperature °F (°C)                | 1,179 (637)     |

\* Generator set rating calculated based on a customer supplied genset alternator with 96% efficiency and 0.8 power factor.

## Dimensions/Weight \*Engine shipped on shipping skid

|                           | A<br>in (mm) | B<br>in (mm) | C<br>in (mm)  | weight<br>lb (kg) |
|---------------------------|--------------|--------------|---------------|-------------------|
| L7044GSI-EPA mobileFLEX   | 147 (3,734)  | 85 (2,159)   | 97.83 (2,485) | 24,250 (11,000)   |
| VHP7104GSI-EPA mobileFLEX | 205 (5,207)  | 85 (2,159)   | 103 (2,616)   | 42,000 (19,050)   |



All data according to full load and subject to technical development and modification.

Consult your local Waukesha representative 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.

The emission values expressed are for reference only.

**Waukesha – an INNIO brand** - INNIO's Waukesha engines are at the forefront of the energy transition, providing reliable and compliant energy solutions for distributed gas compression and power generation applications. The brand's rich and lean-burn engines, ranging from 335 hp to 5,000 hp, set an industry standard for low emissions, high reliability, and fuel flexibility. Waukesha products are continuously upgraded to help operators stay emission-compliant without sacrificing operational excellence. These upgrades include new and remanufactured engines and parts, as well as conversion and modification kits, all of which are backed by OEM warranty and more than 115 years of engine expertise. Additionally, our Waukesha digital solutions include a collaborative solution with Detection Technologies for gas compression applications and INNIO's myPlant platform for power generation applications. Both solutions provide customers with enhanced monitoring and optimization capabilities, resulting in improved performance and reduced downtime. We connect locally with our customers to enable a rapid response to their service needs, providing enhanced support through our broad network of distributors and solution providers with parts, services, and digital offerings. Waukesha engines are engineered in Waukesha, Wisconsin, U.S., and manufactured in Welland, Ontario, Canada. To learn more about the company's products and services, please visit INNIO's website at [www.waukeshaengine.com](http://www.waukeshaengine.com) or follow Waukesha engines on [LinkedIn](https://www.linkedin.com/company/waukesha).

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