



# Exhaust emission data sheet

## C50 N6H

### 60 Hz Spark ignited generator set

### EPA emissions

#### Engine information:

|                          |                                                                     |               |                             |
|--------------------------|---------------------------------------------------------------------|---------------|-----------------------------|
| Model:                   | QSJ2.4                                                              | Bore:         | 3.41 in. (86.5 mm)          |
| Type:                    | 4 cycle, in-line, 4 cylinder                                        | Stroke:       | 3.94 in. (100 mm)           |
| Aspiration:              | Naturally aspirated                                                 | Displacement: | 146.46 cu. in. (2.4 liters) |
| Compression ratio:       | 9.5:1                                                               |               |                             |
| Emission control device: | Electronic air/fuel ratio control, and closed-loop breather system. |               |                             |

| <u>Performance data</u>                                                                                                                                          | <u>Natural gas</u> | <u>Propane</u> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|----------------|
|                                                                                                                                                                  | <u>Standby</u>     | <u>Standby</u> |
| BHP @ 3600 RPM (60 Hz)                                                                                                                                           | 85.5               | 87.5           |
| Fuel consumption (SCFH)                                                                                                                                          | 704.7              | 289.5          |
| Air to fuel ratio                                                                                                                                                | 16.4               | 14.4           |
| Exhaust gas flow (CFM)                                                                                                                                           | 439.3              | 442.3          |
| Exhaust gas temperature (°F)                                                                                                                                     | 1494               | 1531           |
| <u>Exhaust emission data</u>                                                                                                                                     |                    |                |
| HC (Total unburned hydrocarbons)*                                                                                                                                | 55                 | 325            |
| NOx (Oxides of nitrogen as NO <sub>2</sub> )                                                                                                                     | 2509               | 2048           |
| CO (Carbon monoxide)                                                                                                                                             | 12497              | 22604          |
| Values are ppmvd                                                                                                                                                 |                    |                |
| HC (Total unburned hydrocarbons)*                                                                                                                                | 0.09               | 0.43           |
| NOx (Oxides of nitrogen as NO <sub>2</sub> )                                                                                                                     | 9.85               | 7.44           |
| CO (Carbon monoxide)                                                                                                                                             | 34.49              | 57.70          |
| Values are Grams per HP-Hour                                                                                                                                     |                    |                |
| *HC includes all NMHC, VOC, POC, and ROC constituents (Non-Methane HC, Volatile Organic Compounds, Precursor Organic Compounds, and Reactive Organic Compounds). |                    |                |

#### Test conditions

Data was recorded during steady-state rated engine speed ( $\pm 25$  RPM) with full load ( $\pm 2\%$ ). Pressures, temperatures, and emission rates were stabilized.

#### Fuel specification:

|                         |                                                                                                                     |
|-------------------------|---------------------------------------------------------------------------------------------------------------------|
| Natural gas             | Dry gas as received from Supplier (1000 BTU/SCF).                                                                   |
| Propane                 | Meets the requirements for Commercial Grade Propane under the ASTM D1835 Standard Specification for Liquefied Gases |
| Fuel temperature        | 60 $\pm$ 9 °F at Flow Transmitter                                                                                   |
| Fuel pressure           | 14.73 PSIA $\pm$ 0.5 PSIA at Flow Transmitter                                                                       |
| Intake air temperature: | 77 $\pm$ 9 °F at inlet                                                                                              |
| Barometric pressure:    | 29.92 in. Hg $\pm$ 1 in. Hg                                                                                         |
| Humidity:               | NOx measurement corrected to 75 grains H <sub>2</sub> O/lb dry air                                                  |

The NO<sub>x</sub>, HC, and CO emission data tabulated here were from a single engine under the test conditions shown above. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limit, or with improper maintenance, may result in elevated emission levels.