



Exhaust emission data sheet

C20 D6

60 Hz Diesel generator set EPA emission

Engine information:

Model:	Kubota V2203M	Bore:	3.43 in. (87 mm)
Type:	4 cycle, in-line, 4 cylinder diesel	Stroke:	3.64 in. (92 mm)
Aspiration:	Naturally aspirated	Displacement:	134.1 cu. in. (2 liters)
Compression ratio:	22:1		
Emission control device:			

	<u>1/4</u>	<u>1/2</u>	<u>3/4</u>	<u>Full</u>	<u>Full</u>
<u>Performance data</u>	<u>Standby</u>	<u>Standby</u>	<u>Standby</u>	<u>Standby</u>	<u>Prime</u>
BHP @ 1800 RPM (60 Hz)	9	17	26	34	31
Fuel consumption (gal/Hr)	0.6	1	1.5	1.9	1.8
Exhaust gas flow (CFM)	99	119	143	174	163
Exhaust gas temperature (°F)	359	519	722	970	882
<u>Exhaust emission data</u>					
HC (Total unburned hydrocarbons)	0.45	0.18	0.08	0.04	0.05
NOx (Oxides of nitrogen as NO2)	6.2	4.4	3.4	2.2	2.7
CO (Carbon monoxide)	0.3	0.5	2.1	0.4	0.4
PM (Particular Matter)	0.25	0.11	0.11	0.36	0.25
SO2 (Sulfur dioxide)					
Smoke (Bosch)	0	0	0.3	0.8	0.5
All values are Grams per HP - Hour					

Test conditions

Data is representative of steady-state engine speed (± 25 RPM) at designated genset loads. Pressures, temperatures, and emission rates were stabilized.

Fuel specification:	ASTM D975 No. 2-D diesel fuel with 0.03-0.05% sulfur content (by weight), and 40-48 cetane number.
Fuel temperature:	99 \pm 9 °F (at fuel pump inlet)
Intake air temperature:	77 \pm 9 °F
Barometric pressure:	29.6 \pm 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air
Reference standard:	ISO 8178

The NOx, HC, CO and PM emission data tabulated here are representative of test data taken from a single engine under the test conditions shown above. Data for the other components are estimated. 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 limits, or with improper maintenance, may result in elevated emission levels.