

	<b>Cummins Inc.</b> Columbus, Indiana 47201	Basic Engine Model: <b>QSB5-G2 NR3</b>	Curve Number: <b>FR-92203</b>	<b>G-DRIVE QSB 1</b>
	<b>EXHAUST EMISSIONS DATA SHEET</b>	Engine Critical Parts List: <b>CPL: 1100</b>	Date: <b>23Feb07</b>	
Displacement : <b>4.5 litre (275 in<sup>3</sup>)</b>		Bore : <b>107 mm (4.21 in.)</b> Stroke : <b>124 mm (4.88 in.)</b>		
No. of Cylinders : <b>4</b>		Aspiration : <b>Turbocharged and Charge Air Cooled</b>		

Engine Speed RPM	Standby Power		Prime Power		Continuous Power	
	kWm	BHP	kWm	BHP	kWm	BHP
<b>1500</b>	<b>84</b>	<b>113</b>	<b>73</b>	<b>98</b>	<b>66</b>	<b>89</b>
<b>1800</b>	<b>96</b>	<b>129</b>	<b>84</b>	<b>112</b>	<b>77</b>	<b>103</b>

## US EPA/CARB

This engine, tested in accordance with 40 CFR 89, is in compliance with the US EPA Nonroad Tier 3 regulations:

Component	g/BHP-hr	g/kW-hr
<b>NO<sub>x</sub> + HC (Oxides of Nitrogen + Hydrocarbons)</b>	3.0	4.0
<b>CO (Carbon Monoxide)</b>	3.7	5.0
<b>PM (Particulate Matter)</b>	0.22	0.30

### Test Methods and Conditions:

Tests to demonstrate compliance with the regulated levels shown above were conducted per 40CFR89 (ref. ISO8178-1) and weighted at load points prescribed in Subpart E, Appendix A for Constant Speed Engines. (ref.ISO8178-4,D2).

### Fuel Specifications:

40-46 Cetane Number, 0.03 - 0.05 Wt.% Sulfur; Reference ISO8178-5, 40CFR86, 1313-98 Type 2-D and ASTM D975 No. 2 D.

### Reference:

25°C (77°F) Air Inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H2O/lb) of dry air Humidity (required for NO<sub>x</sub> correction); Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back Pressure set to maximum allowable limit.

## TA-Luft

The Prime rating with emissions corrected to 5% O<sub>2</sub> content, is in compliance with the following TA-Luft standards (see test conditions below):

<b>NO<sub>x</sub> : 2000 mg/nm<sup>3</sup></b>	<b>NMHC : 150 mg/nm<sup>3</sup></b>
<b>CO : 650 mg/nm<sup>3</sup></b>	<b>Particulates : 130 mg/nm<sup>3</sup></b>

### Test Methods and Conditions:

Steady-State emissions recorded per ISO8178-1 during operation at rated engine speed (+/-2%) and stated constant load (+/-2%) with engine temperatures, pressures and emission rates stabilized.

### Fuel Specifications:

40-48 Cetane Number, 0.03 -0.05 Wt.% Sulfur; Reference ISO8178-5, 40CFR86, 1313-98 Type 2-D and ASTM D975 No. 2-D.

### Reference Conditions:

25°C (77°F) Air Inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H2O/lb) of dry air Humidity (required for NO<sub>x</sub> correction); Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back Pressure set to maximum allowable limit. Data was taken from a single engine test according to the test methods, fuel specification and reference conditions stated above and is subject to engine-to-engine variability. Test conducted with alternate test methods, instrumentation, fuel or reference conditions can yield different results.

## EU NRMM

This engine, tested in accordance with directive 97/68/EC, is in compliance with the EU NRMM Stage III A regulations.

Component	g/BHP-hr	g/kW-hr
<b>NO<sub>x</sub> + HC (Oxides of Nitrogen + Hydrocarbons)</b>	3.0	4.0
<b>CO (Carbon Monoxide)</b>	3.7	5.0
<b>PM (Particulate Matter)</b>	0.22	0.30

### Test Methods and Conditions:

Tests to demonstrate compliance with the regulated levels shown above were conducted per 97/68/EC (ref. ISO8178-1) and weighted at load points prescribed in 97/68/EC Annex 3, "test procedures". (ref.ISO8178-4,D2).

### Fuel Specifications:

52-54 Cetane Number, 0.03 Max. Wt.% Sulfur; as referenced by directive 97/68/EC.

### Reference:

25°C (77°F) Air Inlet Temperature, 40°C (104°F) Fuel Inlet Temperature, 100 kPa (29.53 in Hg) Barometric Pressure; 10.7 g/kg (75 grains H2O/lb) of dry air Humidity (required for NO<sub>x</sub> correction); Intake Restriction set to maximum allowable limit for clean filter; Exhaust Back Pressure set to maximum allowable limit.