

	<b>CUMMINS INC.</b>		<b>Basic Engine Model</b>	<b>Curve No.</b>	<b>G-Drive</b>
	Columbus, Indiana 47201		<b>VTA28-G5</b>	FR-5122	
	<b>EXHAUST EMISSIONS DATA SHEET</b>		<b>Engine Critical Parts List</b>	<b>Date</b>	
			<b>CPL: 1651</b>	<b>9-Sep-96</b>	
No of Cylinders: 12		Aspiration: Turbocharged and Aftercooled			
Bore: 140 mm (5.5 in.)		Stroke: 152 mm (6.0 in.)	Displacement: : 28.0 litre (1710 in <sup>3</sup> )		
Emissions:					

Engine Speed RPM	Standby Power		Prime Power		Continuous Power	
	kWm	BHP	kWm	BHP	kWm	BHP
<b>1500</b>	615	825	560	750	492	660
<b>1800</b>	671	900	608	815	504	675

## Exhaust Emissions Data @ 1500 RPM

Component	Standby Power			Prime Power			Continuous Power		
	g/BHP-h	mg/m <sup>3</sup>	PPM	g/BHP-h	mg/m <sup>3</sup>	PPM	g/BHP-h	mg/m <sup>3</sup>	PPM
HC (Total Unburned Hydrocarbons)	0.81	371.6	601	0.51	238	385	0.25	118	481
NOx (Oxides of Nitrogen as NO <sub>2</sub> )	13.6	6254	3046	12.1	5606	2731	10.5	4895	2384
CO (Carbon Monoxide)	2.75	1256	1005	1.85	860	688	1.29	602	191
PM (Particulate Matter)	0.29	44.64	N.A.	0.21	39.4	N.A.	0.14	34.32	N.A.
SO <sub>2</sub> (Sulfur Dioxide)	0.62	N.A.	N.A.	0.61	N.A.	N.A.	0.61	N.A.	N.A.

## Exhaust Emissions Data @ 1800 RPM

Component	Standby Power			Prime Power			Continuous Power		
	g/BHP-h	mg/m <sup>3</sup>	PPM	g/BHP-h	mg/m <sup>3</sup>	PPM	g/BHP-h	mg/m <sup>3</sup>	PPM
HC (Total Unburned Hydrocarbons)	0.42	187.3	303	0.28	125.8	204	0.20	87.9	142
NOx (Oxides of Nitrogen as NO <sub>2</sub> )	13.30	5908	2878	11.80	5303	2583	9.30	4161	2027
CO (Carbon Monoxide)	1.12	497	398	0.76	344	275	0.53	238	190
PM (Particulate Matter)	0.18	34.32	N.A.	0.14	26.84	N.A.	0.12	26.84	N.A.
SO <sub>2</sub> (Sulfur Dioxide)	0.63	N.A.	N.A.	0.62	N.A.	N.A.	0.63	N.A.	N.A.

Note: mg/m<sup>3</sup> and PPM numbers are measured dry and corrected to 5% O<sub>2</sub> content.

### This 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 H<sub>2</sub>O/lb) of dry air Humidity (required for NOx correction); Intake Restriction

set to maximum allow-able 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. Tests conducted with

alternate test methods, instrumentation, fuel or reference conditions can yield different results.

Data Subject to Change Without Notice.