



# Exhaust Emission Data Sheet

## C3500 D5e

### 50 Hz Diesel Generator Set

### 2g TA Luft Emissions

#### Engine Information:

Model:	Cummins Inc. QSK95-G5	Bore:	7.48 in. (190 mm)
Type:	4 Cycle, VEE, 16 cylinder diesel	Stroke:	8.27 in. (210 mm)
Aspiration:	Turbocharged and Aftercooled	Displacement:	5816 cu. in. (95.3 liters)
Compression Ratio:	15.5:1		
Emission Control Device:	Turbocharged and Aftercooled		
Emission Level:	Stationary Emergency		

	<u>1/4</u>	<u>1/2</u>	<u>3/4</u>	<u>Full</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>	<u>Continuous</u>
Engine BHP @ 1500 RPM (50 Hz)	1024	2049	3073	4097	3642	3060
Fuel Consumption L/Hr (US Gal/Hr)	201 (53)	370 (98)	549 (145)	725 (192)	656 (173)	546 (144)
Exhaust Gas Flow m <sup>3</sup> /min (CFM)	220 (7765)	367 (12948)	506 (17873)	626 (22097)	585 (20665)	504 (17813)
Exhaust Gas Temperature °C (°F)	352 (666)	387 (728)	389 (732)	434 (813)	414 (777)	388 (731)
<b><u>Exhaust Emission Data</u></b>						
HC (Total Unburned Hydrocarbons)	0.35 (150)	0.16 (75)	0.10 (49)	0.07 (33)	0.08 (38)	0.10 (49)
NOx (Oxides of Nitrogen as NO <sub>2</sub> )	4.44 (1859)	4.12 (1863)	4.02 (1830)	4.74 (2270)	4.04 (1869)	4.02 (1859)
CO (Carbon Monoxide)	0.44 (185)	0.21 (94)	0.17 (78)	0.25 (118)	0.24 (111)	0.17 (78)
PM (Particulate Matter)	0.12 (42)	0.05 (21)	0.04 (15)	0.03 (14)	0.04 (18)	0.04 (15)
SO <sub>2</sub> (Sulfur Dioxide)	0.005 (1.8)	0.005 (1.8)	0.004 (1.8)	0.004 (1.8)	0.004 (1.8)	0.004 (1.8)
Smoke (FSN)	0.67	0.43	0.33	0.35	0.42	0.33

All values (except smoke) are cited: g/BHP-hr (mg/Nm<sup>3</sup> @ 5% O<sub>2</sub>)

#### Test 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 Specification:	40-48 Cetane Number, 0.0015 Wt.% Sulfur; Reference ISO8178-5, 40 CFR 86, 1313—98 Type 2-D and ASTM D975 No. 2-D. Fuel Density at 0.85 Kg/L (7.1 lbs/US Gal)
Air Inlet Temperature	25 °C (77 °F)
Fuel Inlet Temperature:	40 °C (104 °F)
Barometric Pressure:	100 kPa (29.53 in Hg)
Humidity:	NOx measurement corrected to 10.7 g/kg (75 grains H <sub>2</sub> O/lb) of dry air
Intake Restriction:	Set to 18 in of H <sub>2</sub> O as measured from compressor inlet
Exhaust Back Pressure:	Set to 1.5 in Hg

Note: mg/m<sup>3</sup> values are measured dry, corrected to 5% O<sub>2</sub> and normalized to standard temperature and pressure (0°C, 101.325 kPa)

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.