

# Low Emission Bus Scheme Certificate

Customer:	Alexander Dennis				
Customer Address:	Cameron House, East Pimbo, Lancashire, WN8 9QB				
Test Purpose:	LEB Testing			DYNAMOMETER SETTINGS	
Vehicle Type & Manufacturer:	ADL Scania E400 CNG	Unladen weight (kg)	10746.0	INERTIA	14730 kg
Vehicle Number:	DD16 GAS	Gross Weight (kg)	19500.0	F°	79.18 N
Engine:	Scania	Max Seated Capacity	74	F <sup>1</sup>	21.77 N/kmh
Transmission:	Auto	Passenger Capacity	86	F <sup>2</sup>	-0.327 N/kmh <sup>2</sup>
Euro VI certificate Y/N	Manufacturer Certified	SEATING OK	WEIGHT OK	F <sup>3</sup>	0.00377 N/kmh <sup>3</sup>
Net Heating Energy (MJ/Kg)	47.89		Fuel Provider:	N/A	
Well-to-Tank Factor: (g CO <sub>2</sub> e/MJ)	10.00		WTT evidence	DECC Conversion Factors	
DECC Tank-to-Wheel Factor (g CO <sub>2</sub> e /kg)	5.49		Fuel Type:	Biomethane	

### Emissions and Energy consumption results from approved test facility - Average 3 tests

Test Phase	HC (g/km)	CO (g/km)	NOx (g/km)	PM (g/km)	CO <sub>2</sub> (g/km)	CH <sub>4</sub> (g/km)*	N <sub>2</sub> O (g/km)	Fuel Consumption (Kg/100 km)
Rural	0.010	1.416	0.223	N/A	890.3	0.000	0.000	32.54
Outer London	0.014	2.606	0.248	N/A	1237.9	0.000	0.000	45.27
Inner London	0.026	6.339	0.184	N/A	1840.6	0.007	0.000	67.45
MLTB Average	0.017	3.651	0.230	N/A	1406.5	0.002	0.000	51.51
<b>LUB Average</b>	<b>0.014</b>	<b>2.641</b>	<b>0.226</b>	<b>0.0202</b>	<b>1173.2</b>	<b>0.001</b>	<b>0.000</b>	<b>42.91</b>

### Total Tank-to-Wheel GHG CO<sub>2</sub> equivalent

Test Phase	CO <sub>2</sub> (g/km)	CH <sub>4</sub> (g/km x 25)*	N <sub>2</sub> O (g/km x 298)*	TTW GHG (CO <sub>2</sub> e (g/km))
Rural	1.8	0.000	0.000	1.8
Outer London	2.5	0.000	0.000	2.5
Inner London	3.7	0.000	0.000	3.7
MLTB Average	2.8	0.000	0.000	2.8
<b>LUB Total Average</b>	<b>2.4</b>	<b>0.000</b>	<b>0.000</b>	<b>2.4</b>

### Electric energy consumption and charge efficiency

Total measured energy consumed on vehicle (kWhr)	N/A	Distance covered km	N/A
Measured grid energy during charging kWhr	N/A	Charging efficiency	N/A

### Well-to-Wheel GHG CO<sub>2</sub> equivalent

Test Phase	Fuel/energy used over cycle (Kg/km)	Total Fuel Energy (MJ/km)	Calculated WTT* GHG Emissions (CO <sub>2</sub> Equivalent g/km)	Calculated TTW** GHG Emissions (CO <sub>2</sub> Equivalent g/km)	Calculated WTW*** GHG Emissions (CO <sub>2</sub> Equivalent g/km)
Rural	0.325	15.58	155.8	1.8	157.6
Outer London	0.453	21.68	216.8	2.5	219.3
Inner London	0.675	32.30	323.0	3.7	326.7
MLTB Average	0.515	24.67	246.7	2.8	249.5
<b>LUB Total Average</b>	<b>0.429</b>	<b>20.55</b>	<b>205.5</b>	<b>2.4</b>	<b>207.9</b>

Data Generated by (On behalf of Test facility):	Date: 29/09/2016	Data Approved by:
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### Low Emission Bus Certificate Summary

GHG Well-to-Wheel	207.9	g CO <sub>2</sub> e / km
Euro V Average Diesel Equivalent	1290.1	g CO <sub>2</sub> e / km
<b>WTW GHG saving (compared to Euro V equivalent)</b>	<b>1082.3</b>	<b>g CO<sub>2</sub>e / km</b>
<b>% WTW GHG saving (compared to Euro V equivalent)</b>	<b>84%</b>	<b>g CO<sub>2</sub>e / km</b>
<b>Zero Emission operating range (km)</b>	<b>N/A</b>	<b>km</b>
<b>WTW CO<sub>2</sub>e per passenger km (@Max Pass Capacity)</b>	<b>2.42</b>	<b>g CO<sub>2</sub>e/pass km</b>
<b>Approved as Low Emission Bus? (15% saving or more)</b>	<b>YES</b>	

\*WTT - Well to Tank      \*\*TTW - Tank to Wheel      \*\*\*WTW - Wheel to Wheel

**COMMENTS:** \* compound measured via Fourier Transfer Infra-Red (FTIR), Values in RED are below levels of detectability.

**Test Numbers:** ML02015866 (9/27/2016), ML02015867 (9/27/2016), ML02015868 (9/27/2016).

Certificate approved by: On behalf of Bus manufacturer	Certificate Approved by: On behalf of LowCVP/DfT
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