

## Low Emission Bus Scheme Certificate

Customer:	Volvo Group UK Ltd				
Customer Address:	Wedgnoek Lane, Warwick, CV34 5YA				
Test Purpose:	LEB Testing	Test Type:	LEB Certification	DYNAMOMETER SETTINGS	
Vehicle Manufacturer:	Volvo	Unladen weight (kg)	13912	Test Weight	17526 kg
Vehicle Type & Number:	B8L, BU69XYJ	Gross Weight (kg)	24750	F°	466.34 N
Engine:	Volvo D8K350 7.7L	Seated Capacity	98	F <sup>1</sup>	5.7409 N/kmh
Transmission:	Auto, ZF 6AP1400C	Passenger Capacity	134	F <sup>2</sup>	0.15871 N/kmh <sup>2</sup>
Euro VI certificate Y/N	Y	GVW Check	OK		

### Declared fuel, properties and source plus carbon conversion factors

Net Heating Value: Diesel	36.00	MJ / Litre	Fuel Provider	UK market standard
Well-to-Tank Factor: Diesel	15.42	g CO <sub>2</sub> e / MJ	WTT evidence	UK GHG reporting factors 2016
Well-to-Tank Factor: Electricity	80.92	g CO <sub>2</sub> e / MJ	Fuel Type	UK Pump Diesel, UK Grid Electricity

### 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 (l/100 km)	Fuel used over phase/cycle (litres)
Rural	0.000	0.000	0.267	0.005	992.0	0.012	0.109	37.70	2.791
Outer London	0.000	0.044	0.271	0.004	1249.9	0.018	0.157	47.51	3.079
Inner London	0.000	0.275	1.368	0.0029	1711.0	0.025	0.233	65.05	1.644
MLTB Average	0.000	0.021	0.269	0.0042	1112.4	0.015	0.132	42.28	5.870
LUB Average	0.000	0.060	0.438	0.0040	1204.6	0.016	0.147	45.79	7.514

### Zero Emissions (Z.E.) Range: Energy consumption and charging efficiency

Total measured energy consumed on vehicle (kWh)	N/A	Distance in Z.E. mode (km)	N/A	Usable Battery Capacity (kWh)	N/A
Measured grid energy during charging (kWh)*	N/A	Charging efficiency (%)	N/A	Max Theoretical Z.E. Range (km)	N/A

### 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)*	Fuel TTW** GHG (CO <sub>2</sub> Equivalent g/km)
Rural	992.0	0.305	32.568	1024.9
Outer London	1249.9	0.448	46.887	1297.2
Inner London	1711.0	0.626	69.514	1781.1
MLTB Average	1112.4	0.372	39.252	1152.0
LUB Average	1204.6	0.411	43.913	1248.9

### Calculated total Well-to-Wheel GHG CO<sub>2</sub> equivalent emissions over test

Test Phase	Fuel Energy (MJ / km)	Fuel WTT*GHG Emissions (g CO <sub>2</sub> e / km)	Electrical Energy (MJ / km)	Electricity WTT* GHG Emissions (g CO <sub>2</sub> e / km)	Measured Fuel TTW** GHG Emissions (g CO <sub>2</sub> e / km)	Total WTW*** GHG Emissions (g CO <sub>2</sub> e / km)
Rural	13.57	209.3	N/A	N/A	1024.9	1234.2
Outer London	17.10	263.7	N/A	N/A	1297.2	1561.0
Inner London	23.42	361.1	N/A	N/A	1781.1	2142.2
MLTB Average	15.22	234.7	N/A	N/A	1152.0	1386.7
LUB Average	16.48	254.2	N/A	N/A	1248.9	1503.1

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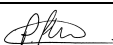
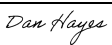
### Low Emission Bus Certificate Summary

GHG Well-to-Wheel	1503.1	g CO <sub>2</sub> e / km
Euro VI Average Diesel Equivalent	1777.1	g CO <sub>2</sub> e / km
WTW GHG saving (compared with Euro VI diesel equivalent)	274.1	g CO <sub>2</sub> e / km
% WTW GHG saving (compared with Euro VI diesel equivalent)	15%	g CO <sub>2</sub> e / km
Zero Emission operating range (km)	N/A	km
WTW CO <sub>2</sub> per passenger km (@ Max Pass Capacity)	11.2	g CO <sub>2</sub> e/pass km
Approved as Low Emission Bus? (15% saving or more)	<b>YES</b>	

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

<b>COMMENTS:</b> Emission results marked in red are below detection levels.
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**Test Numbers:** 20220307\_1452\_WU\_LUB, 20220307\_1659\_WU\_LUB, 20220307\_1941\_WU\_LUB

Certificate approved by: On behalf of Bus manufacturer		Certificate Approved by: On behalf of LowCVP/DfT	Dan Hayes. 11.04.2022	
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