

Ultra Low Emission Bus Scheme Certificate

Customer:	Wrightbus Limited			DYNAMOMETER SETTINGS		
Customer Address:	Galgorm Industrial Estate, Fenaghy Road, Ballymena, County Antrim, BT42 1PY.			Measured Kerb Weight (kg)	11775	
Test Purpose:	ULEB Testing			Equivalent test passengers	33	
Vehicle Manufacturer:	Wrightbus Ltd	Seated Capacity	66	Test Weight		13529kg
Vehicle Type & Number:	Wrightbus Streetdeck, AH351	Passenger Capacity	99	F°	397.02 N	
Engine:	Diesel (Euro VI)	Declared Kerb Weight (kg)	11210	F ¹	-14.6120 N/kmh	
Transmission:	Auto	Gross Vehicle Weight (kg)	18000	F ²	0.52418 N/kmh ²	
Euro VI certificate Y/N	Manufacturer Certified	GVW CHECK	OK	F ³	-0.002792 N/kmh ³	

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	17.23	g CO2e / MJ	WTT evidence	UK GHG reporting factors 2018	
Well-to-Tank Factor: Electricity	97.99	g CO2e / MJ	Fuel Type	UK Pump Diesel	

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 ₂ (g/km)	CH ₄ (g/km)*	N ₂ O (g/km)*	Fuel Consumption (l/100 km)	Fuel used over phase/cycle (litres)
Outer London	0.001	0.020	0.089	N/A	720.0	0.000	0.100	27.18	1.730
Inner London	0.003	0.031	0.145	N/A	980.1	0.000	0.109	37.00	0.912
Rural	0.000	0.010	0.210	N/A	633.6	0.000	0.105	23.92	1.754
MLTB Average	0.002	0.023	0.105	N/A	792.6	0.000	0.102	29.92	2.642
UKBC Average	0.001	0.017	0.153	0.0020	720.4	0.000	0.104	27.20	4.396

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 CO₂ equivalent

Test Phase	CO ₂ (g/km)	CH ₄ (g/km x 25)*	N ₂ O (g/km x 298)*	Fuel TTW** GHG (CO ₂ Equivalent g/km)
Outer London	720.0	0.000	29.760	749.8
Inner London	980.1	0.000	32.427	1012.5
Rural	633.6	0.000	31.249	664.9
MLTB Average	792.6	0.000	30.506	823.1
UKBC Average	720.4	0.000	30.854	751.3

Calculated total Well-to-Wheel GHG CO₂ equivalent emissions over test

Test Phase	Fuel Energy (MJ / km)	Fuel WTT*GHG Emissions (g CO ₂ e / km)	Electrical Energy (MJ / km)	Electricity WTT* GHG Emissions (g CO ₂ e / km)	Measured Fuel TTW** GHG Emissions (g CO ₂ e / km)	Total WTW*** GHG Emissions (g CO ₂ e / km)
Outer London	9.79	168.6	N/A	N/A	749.8	918.4
Inner London	13.32	229.5	N/A	N/A	1012.5	1242.1
Rural	8.61	148.4	N/A	N/A	664.9	813.3
MLTB Average	10.77	185.6	N/A	N/A	823.1	1008.7
UKBC Average	9.79	168.7	N/A	N/A	751.3	920.0

Data Generated by (On behalf of Test facility): _____ Date: 20/06/18 Data Approved by: _____ Date: 26.06.2018

Ultra Low Emission Bus Certificate Summary

GHG Well-to-Wheel	920.0	g CO ₂ e / km
Euro VI Average Diesel Equivalent	1440.8	g CO ₂ e / km
WTW GHG saving (compared with Euro VI diesel equivalent)	520.8	g CO ₂ e / km
% WTW GHG saving (compared with Euro VI diesel equivalent)	36%	g CO ₂ e / km
Max Theoretical Zero Emission Operating Range (km)	N/A	km
WTW CO ₂ per passenger km (@ Max Pass Capacity)	9.3	g CO ₂ e/pass km
Approved as Ultra-Low Emission Bus? (30% saving or more)	YES	

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

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

Test Numbers: ML02018054 (19-Jun-18), ML02018055 (19-Jun-18), ML02018056 (19-Jun-18). WTT Factors Published: 19th June 2018

Certificate approved by: _____ On behalf of Bus manufacturer

Certificate Approved by: _____ On behalf of LowCVP/DfT