

Low Emission Bus Scheme Certificate

Customer:	Optare Group Ltd				
Customer Address:	Hurricane Way, Sherburn Ind. Estate, Sherburn-in-Elmet				
Test Purpose:	LEB Testing	DYNAMOMETER SETTINGS			
Vehicle Manufacturer:	Optare	Unladen weight (kg)	6951.0	Test Weight	7922 kg
Vehicle Type & Number:	Solo, VIN: SABLJ2A9FS291217	Gross Weight (kg)	11300.0	F°	-7.28 N
Engine:	Mercedes Euro VI	Seated Capacity	37	F ¹	-1.3730 N/kmh
Transmission:	Automatic	Passenger Capacity	41	F ²	0.28689 N/kmh ²
Euro VI certificate Y/N	Manufacturer Certified	GVW Check	OK	F ³	-0.002618 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	15.42	g CO _{2e} / MJ	WTT evidence	UK GHG reporting factors 2016
Well-to-Tank Factor: Electricity	143.50	g CO _{2e} / 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)	NO _x (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 cycle (litres/km)
Rural	0.001	0.009	0.037	N/A	485.9	0.000	0.031	18.35	0.183
Outer London	0.003	0.017	0.025	N/A	606.5	0.000	0.035	22.90	0.229
Inner London	0.006	0.030	0.064	N/A	862.4	0.000	0.050	32.57	0.326
MLTB Average	0.004	0.020	0.036	N/A	678.0	0.000	0.039	25.60	0.256
LUB Average	0.003	0.015	0.037	0.0032	591.0	0.000	0.035	22.32	0.223

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)
Rural	485.9	0.000	9.091	495.0
Outer London	606.5	0.000	10.399	616.9
Inner London	862.4	0.000	14.873	877.3
MLTB Average	678.0	0.000	11.649	689.6
LUB Average	591.0	0.000	10.491	601.5

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

Test Phase	Fuel Energy (MJ / km)	Fuel WTT*GHG Emissions (g CO _{2e} / km)	Electrical Energy (MJ / km)	Electricity WTT* GHG Emissions (g CO _{2e} / km)	Measured Fuel TTW** GHG Emissions (g CO _{2e} / km)	Total WTW*** GHG Emissions (g CO _{2e} / km)
Rural	6.61	101.9	N/A	N/A	495.0	596.9
Outer London	8.24	127.1	N/A	N/A	616.9	744.0
Inner London	11.72	180.8	N/A	N/A	877.3	1058.1
MLTB Average	9.22	142.1	N/A	N/A	689.6	831.7
LUB Average	8.03	123.9	N/A	N/A	601.5	725.4

Data Generated by (On behalf of Test facility):		Date: 20.07.2017	Data Approved by:		Date: 24/07/2017
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Low Emission Bus Certificate Summary

GHG Well-to-Wheel	725.4	g CO _{2e} / km
Euro V Average Diesel Equivalent	866.2	g CO _{2e} / km
WTW GHG saving (compared with Euro V diesel equivalent)	140.8	g CO _{2e} / km
% WTW GHG saving (compared with Euro V diesel equivalent)	16%	g CO _{2e} / km
Zero Emission operating range (km)	N/A	km
WTW CO ₂ per passenger km (@ Max Pass Capacity)	17.7	g CO _{2e} /pass km
Approved as Low Emission Bus? (15% saving or more)	YES	

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

COMMENTS:
*Emission results marked in red are below detection levels.

Test Numbers: ML02016643 (19 July 2017), ML02016644 (19 July 2017), ML02016645 (19 July 2017).

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