EV FACT SHEET

Mercedes eSprinter

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Mercedes eSprinter. Image: Mercedes-Benz media

INTRODUCTION

The Mercedes eSprinter is the electric version of the Mercedes Sprinter light commercial van range.

Whilst the diesel versions are offered with the choice of cab chassis, dual-cab chassis and minibus options, the eSprinter is currently offered only in the van configuration – although that does include medium and long wheelbase (MWB & LWB) in both standard and high roof configurations.

Note: whilst the eSprinter does come with a 'BYO' charging lead for use with Mode 3 (wall mounted) BYO lead chargers, it does **not** come with a portable charger for use with power outlets. However, these latter are now easily sourced from a growing number of aftermarket suppliers.

DRIVING RANGE

Currently, the official Australian ADR 81/02 test cycle is based on the outdated (and highly over-optimistic) European NEDC test cycle. However few manufacturers now quote this figure for their new releases. Instead they give the more achievable ranges found using the newer European WLTP test cycle.

Therefore, to avoid disappointment - always check which test cycle has been used when assessing an EV for your needs. As a guide, NEDC is generally 30% too high, WLTP a good estimate if doing mostly urban and outer suburban driving and US EPA the better guide if doing mostly outer suburban to regional driving.

DRIVING RANGE (continued)

National testing system range estimates in kilometres			
Version	**ADR81/02 (Aust)**	**WLTP (Euro)**	**US EPA**
MWB: 81 kWh	440	310	NA[1]
LWB: 113 kWh	530	440	NA[1]

Table 1: test cycle range estimates for the Mercedes eSprinter.

FLEET EV TRANSITION TIPS:

Key to increasing the efficient use of an electric LCV is recharging whilst loading and unloading at delivery points as well as during down-times at its home base. Installing the maximum AC charger size at the home base may be useful, as well as placing a charger adjacent to the loading area.

Note: Planning for a business EV transition where more than one LCV is used will include the need to review the business location's power supply situation as well as an overall EV fleet use-case charging needs assessment.

Knowing, finding and using three phase outlets and DC fast-chargers is important for longer trips where you intend to take an 81kWh battery version of the Mercedes eSprinter on a single trip exceeding around 250 km (or for a 113 kWh version, over 350 km). To navigate this new aspect of EV fleet management, fleet managers will need to provide information and training to drivers on higher power portable chargers (if supplied), DC charging and how to use the Apps from the major fast-charge providers. (These include Chargefox, Evie, BP Pulse and Ampol's AmpCharge, as well as the open source Plugshare[2]).

CHARGING SPEEDS/REQUIREMENTS

Charging port

The Mercedes eSprinter is fitted with a CCS2 socket allowing it to charge via Type 2 AC chargers[3] as well as via CCS2 DC fast-chargers.

CCS2 charging plug and socket

Notes:

1. US EPA does not rate commercial vehicles.
2. https://www.plugshare.com/
3. The Mercedes eSprinter can be charged at any AC EVSE, however an adaptor will be needed to use the (very few) remaining older EVSEs fitted with Type 1 (J1772) plugs. It will also only charge at a maximum of 7.4 kW on a Type 1 plug EVSE.

CHARGING SPEEDS/REQUIREMENTS (CONTINUED)

AC charging:

Like all new EVs sold in Australia, the eSprinter is fitted with a type 2 AC socket as part of the CCS2 AC/DC charge plug system.

Charging rates:

Single phase: maximum of 7.4 kW (32A)
Three phase: maximum of 11 kW (16A per phase)

Charging speeds and times vary on the capacity of the EVSE (Electric Vehicle Supply Equipment) it is connected to and the chosen battery size. Approximate charging times for the Mercedes eSprinter battery sizes are shown in table 2 below.

AC: 0 – 100% time				DC: 0 – 80% time	
10 A (power point)	15 A 1 phase (Caravan outlet)	32 A (1 ph. Home EVSE)	16 or 32 A (3 phase public AC EVSE)	DC Fast charge (50kW)	DC Fast charge (120+kW)
81kWh: 36h	24h	12h	16A: 8h 32A: 8h	1h 23m	36m
113kWh: 49.5h	33h	16.5h	16A: 11h 32A: 11h	1h 51m	48m

Table 2: Approximate charging times for the Mercedes eSprinter

DC fast charging:

The eSprinter uses the CCS2 DC fast-charge connector and can charge at up to 115 DC.

V2X capability:

The eSprinter does not include any V2X capabilities.

Notes:

V2X is the generic term covering the options of getting 230V AC power from the battery and supplying it as:

- V2L: vehicle to load (230V power available from outlet in car)
- V2H: vehicle to home (supply home via a special connection)
- V2G: vehicle to grid (supply home or grid via spec. connection)

HOME CHARGING CONSIDERATIONS

General

To get the shortest home -base charging time for the Mercedes eSprinter, an 11 kW three phase AC EVSE would be needed.

However, depending on your existing power supply and/or charging needs, a lower rated EVSE may only be practicable, or needed. (See notes below). Lower capacity EVSEs will increase charging times, as shown in table 2 above.

When power point charging the eSprinter from 0-100% (using a 2.3 kW Mode 2 portable EVSE) it will take around 36hrs for the 81kWh battery and 50hrs for a 113 kWh one.

Important notes for any EVSE installation:

1. High charging rates are generally not needed for overnight charging.
2. Homes do not normally have three phase AC connected, although many businesses do.
3. Switchboard and/or electrical supply upgrades may be needed if your home or business is more than 20 years old. For more information on this item - read EV Information articles at *EVchoice.com.au* or see:
   (a) Renew magazine edition 143. (EVSE wiring)
   (b) Renew magazine edition 156. (EVSE buyer's guide)

SPECIFICATIONS

Seating capacity: 2 or 3 (depending on option chosen)

Dimensions and weights:

Dimensions/weights/volumes	MWB	LWB
Length (mm)	5932	6967
Width (mm) – mirrors in	2020	
Width (mm) – mirrors out	2345	
Height[1] (m)	2.38/2.67/2.66	
Ground clearance (mm)	163	162
Wheel base (mm)	3665	4325
Turning circle (m)	12.4	14.4
Cargo area length (mm)	3515	4410
Cargo area width (mm)	Not provided	
Cargo area height[2] (mm)	1719/2009	
Width at wheel arches (mm)	1350	
Rear door opening width (mm)	1555	
Rear door opening height[2] (mm)	1550/1846	
Side door opening width (mm)	1260	
Side door opening height[2] (mm)	1519/1818	
Gross vehicle mass (kg)	4250	
Payload (kg)	1523	1115
Tare weight (kg)	2727	3135
Cargo volume (m^3)	10.5	14
Spare wheel?	Yes	
Maximum rated speed (km/h)	120	

1: MWB, std roof/MWB, high roof/LWB, high roof
2: Standard roof/high roof

Battery:

- 81 kWh (medium wheel-base)
- 113 kWh (long wheel-base)

Charging:

- 1 phase AC: 7.4 kW (maximum)
- 3 phase AC: 11 kW (maximum)
- DC: 115 kW (maximum)

Charge port location:

- Centre of grille (behind Mercedes star)

Vehicle to Load connection: (position and power): Not fitted

Energy consumption: (WLTP):

- Not provided

Drive configuration:

- rear wheel drive

Towing:

- 750 kg unbraked/2000 kg braked.

Performance:

Motor power	Motor torque	0 – 100 km/h time
150 kW	400Nm	Not provided

IMPORTANT NOTES:

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