

2 GENERAL CHARACTERISTICS

2.1 TECHNICAL CHARACTERISTICS

EFAPOWER EV-QC45 technical characteristics are indicated in the Table 1.

This unit is intended to have at least one DC output connection (CHAdEMO and/or CCS) and in addition can have one of the two AC output¹ connections (AC43 or AC22).

Table 1 – EFAPOWER EV-QC45 Technical Characteristics

Technical Data	CE	ETL		
Nominal Input	Phases/Lines	3 phases + neutral + PE		
	Voltage	(400 ± 10%) V a.c.	(480 ± 10%) V a.c.	
	Current	73 A	64 A	
	Power	53kVA (@50kW peak power); 48kVA (@45kW)		
	Frequency	(50 ± 10%) Hz	(60 ± 10%) Hz	
	Efficiency	> 93%		
	Power Factor	0,98		
	THD Input Current	12,3		
DC Output: CHAdEMO	Voltage	(50 to 500) V d.c.		
	Current	120 A d.c.		
	Nominal Power	50kW at peak; 45kW at continuous		
	Communications with EV	JEVS G104 - CHAdEMO		
	Plug	JEVS G105 - CHAdEMO		
DC Output: CCS	Voltage	(50 to 500) V d.c.		
	Current	120 A d.c.		
	Nominal Power	50kW at peak; 45kW at continuous		
	Communications with EV	PLC		
	Plug	CCS – Type 2	SAE – Type 1	
AC Output: AC43 (or AC22)	Voltage	(400 ± 10%) V a.c.		
	Current	63 A a.c. (or 32 A a.c.)		
	Nominal Power	43kVA (or 22kVA)		Not Available
	Plug (or Socket)	IEC62196 Type 2		
Insulation	Input / Output / Ground	1500 V a.c.		
	Control Circuit / Ground	500 Vac		
Cabinet	Dimensions(WxDxH)	600 x 600 x 1800 mm	24" x 24" x 74.5" high	
	Weight	600 kg	1,323 lbs.	
	Protection Degree	IP54, IK10	IP54, IK10, NEMA 3R	
HMI and Command Unit	Contactless card specification	Mifare Classic 1K&4K Mifare DesFire EV1 (Others under request)		
	Local interface	TFT Color display 6.4" Buttons		
	Communication Protocol (others under request)	Web Services over IP; Router 3G (GSM or CDMA) OCPP; Efacec; others		
	Emergency STOP	Yes		
Environment Conditions	Temperature	-25° to +50°C	-13° to +122°F	
	Cold option (under request)	-35° to +50°C	-31° to +122°F	
	Humidity	5% to 95%		
	Place of installation	Indoor / Outdoor		
	Altitude	Up to 1000m	Up to 3280 feet	
	Sound Noise	<55 dB in all directions		

Specifications are subject to change, without prior notice.

In case of an AC output connection one of the following scenarios can be supplied:

- AC and DC output connections can only charge one at a time:
In this case only the nominal current input referred above in Table 1 is needed.
- AC and one DC output connections can charge simultaneous:
 - For AC43: the total nominal current input needed is 136 A.
 - For AC22: the total nominal current input needed is 105 A.

¹ AC output not available for US market

2.2 STANDARDS

The EFAPOWER EV-QC45 Quick Charging Station complies with the following standards:

Table 2 – EFAPOWER EV-QC45 Applicable Standards

Technical Data	CE	ETL
Applicable Standards	Universal: 2006/95/CE ² 2004/108/CE ³ EN/IEC 61851-1 ⁴ IEC 62196 ⁵	UL 2231-1 ⁶ UL 2231-2 ⁷ UL 2202 ⁸ SAE J1772 ⁹ ADA ¹⁰
	DC Charging System: EN/IEC 61851-23 ¹¹ EN/IEC 61851-24 ¹² EN/IEC 61000-6-2 ¹³ EN/IEC 61000-6-4 ¹⁴	---
	AC Charging System: EN/IEC 61851-22 ¹⁵ EN/IEC 61000-6-1 ¹⁶ EN/IEC 61000-6-3 ¹⁷ EV-READY	---- (not available)



CHAdeMO Efavec is an official member of the CHAdeMO Association

² **2006/95/CE**: Low Voltage Directive

³ **2004/108/CE**: EMC directive

⁴ **EN/IEC 61851-1**: Electric vehicle conductive charging system. Part 1: General Requirements

⁵ **IEC 62196**: Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles

⁶ **UL 2231-1**: Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: General Requirements

⁷ **UL 2231-2**: Personnel Protection Systems for Electric Vehicle (EV) Supply Circuits: Particular Requirements for Protection devices for Use in Charging Systems

⁸ **UL 2202**: Electric Vehicle (EV) Charging System Equipment

⁹ **SAE J1772**: SAE Surface Vehicle Recommended Practice J1772, SAE Electric Vehicle Conductive Charge Coupler

¹⁰ **ADA**: American with Disabilities Act

¹¹ **EN/IEC 61851-23**: Electric vehicle conductive charging system - Part 23: DC electric vehicle charging station

¹² **EN/IEC 61851-24**: Electric vehicle conductive charging system - Part 24: Digital communication between a d.c. EV charging station and an electric vehicle for control of d.c. charging

¹³ **EN/IEC 61000-6-2**: Electromagnetic compatibility (EMC). Part 6-2: Generic standards – Immunity for industrial environments

¹⁴ **EN/IEC 61000-6-4**: Electromagnetic compatibility (EMC). Part 6-4: Generic standards –Emission standard for industrial environments

¹⁵ **EN/IEC 61851-22**: Electric vehicle conductive charging system. Part 22: AC Electric Vehicle Charging Station

¹⁶ **EN/IEC 61000-6-1**: Electromagnetic compatibility (EMC). Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments

¹⁷ **EN/IEC 61000-6-3**: Electromagnetic compatibility (EMC). Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments