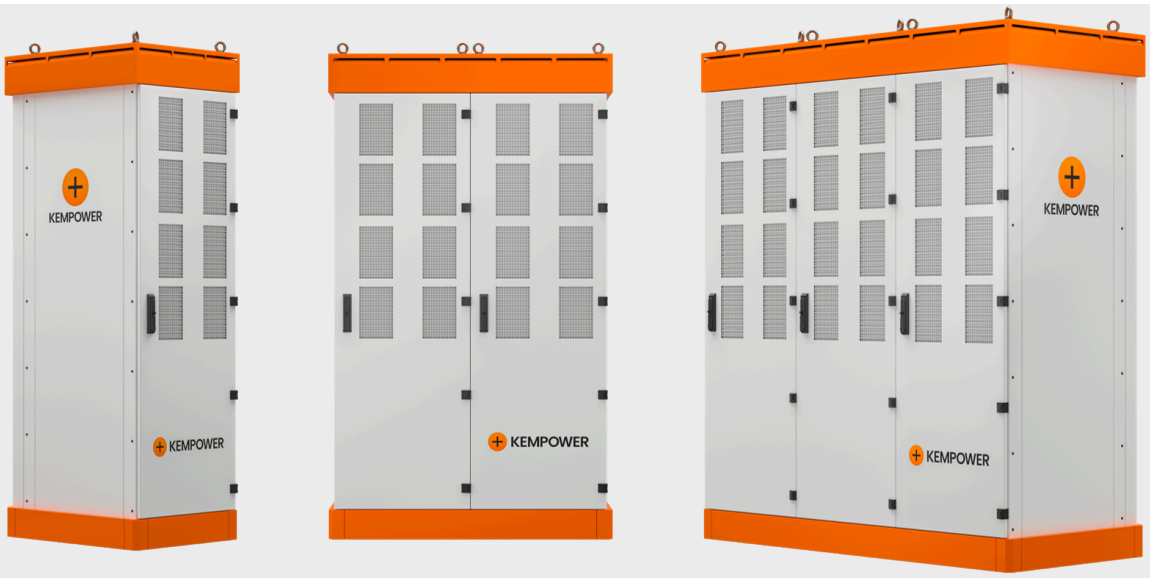
KEMPOWER

Technical Datasheet

Kempower Power Unit C500



The Kempower Power Unit is the heart of Kempower's flexible, modular and scalable DC charging system with dynamic power management.

One Power Unit can simultaneously provide energy for up to 8 DC charging outputs: Satellites or Pantographs. With different combinations of 50 kW power modules, the Power Unit's unique dynamic power management harnesses the full potential of on-demand power routing, saving both energy and costs.

A triple cabinet Power Unit can have up to twelve 50 kW power modules, providing a maximum nominal power of up to 600 kW.

With dynamic power management, the available charging power of all power modules is automatically distributed to all connected charging outputs, depending on the charging cable used and the requirements of the electric vehicles. With static power management, each power module provides pre-set charging power to one dedicated charging output.

Power range

Up to 600 kW

Adaptive voltage range

150–920 V

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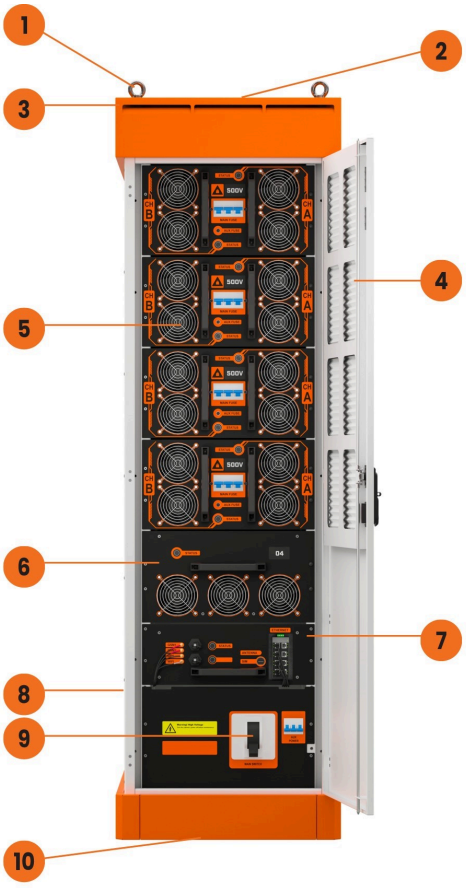

1 Lifting lugs
2 WiFi/cellular/GPS antenna
3 Air outlet
4 Air inlet
5 Power module (1–4 pcs/cabinet)
6 Power distribution module
7 Control module
8 DC output
9 Main switch
10 AC supply cable entry

Charging power for up to 8 charging outputs, 8 single Satellites or 4 double Satellites

1–4 50 kW Power Modules per cabinet

Scalability with add-on Power Modules

Improved cost efficiency of the charging system

Lockable door for safety and easy access

Advanced charging control and customization with Kempower ChargEye

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Product code interpretation

C501•P160•N•D4•L•C0

Kempower Power Unit C500 single cabinet • 200 kW charging power • no vehicle connector • up to 4 dynamic outputs • ETL certification • unbranded

Item	Code	Description
Product type	C501	Kempower Power Unit C500 single cabinet[1]
	C502	Kempower Power Unit C500 double cabinet[1]
	C503	Kempower Power Unit C500 triple cabinet[1]
Charging power[2]	P160	200 kW (4 modules)
	P320	400 kW (8 modules)
	P480	600 kW (12 modules)
Vehicle connector type	N	No connector
Power distribution modules[3]	D4	Up to 4 adaptive dynamic outputs 150–920 VDC
	D6	Up to 6 adaptive dynamic outputs 150–920 VDC
	D8	Up to 8 non-adaptive dynamic outputs 150–470 VDC[4]
	R	Static power distribution
Certification	L	North American version (ETL-approved product meeting UL and CSA requirements)
Branding options	C0	Unbranded: roof and base in black color, no stickers
	Cn	Branded: number (n) indicates branding, e.g. C8

[1] The rated current of a single charging output terminal using a power distribution module is limited to 200 A.
[2] Standard operation. See Power performance table for details.
[3] With 300 A charging cables:
350 A (rated) in 77 °F/+25 °C. Requires at least 2 output terminals and a specific hardware configuration.
[4] Power curve according to Figure Power curve – standard operation.

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General electrical specifications

Input voltage	480 VAC ±6%
Network type	TN-S, TN-C, TN-C-S
Input frequency	50/60 Hz
Overvoltage category	III (IEC 60664-1)
Icc	35 kA
Power factor at full load	0.92
Output voltage	150...920 VDC
Efficiency at full load	94%
Idle power	20 VA
Standby power	C501: 50 W C502: 100 W C503: 150 W

Environmental specifications

Operating temperature	-22...131 °F/-30...+55 °C
Current derating[1]	Charging current decreases 1.5% for every 1.8 °F/1 °C rise in temperature above 104 °F/+40 °C
Maximum altitude without derating	6,562 ft./2000 m
Altitude derating	Charging current decreases 1.4% for every 328 ft./100 m rise above 6,562 ft./2000 m
Operational noise level	< 60 dB at 3.3 ft./1 m distance
Storage temperature	-40...140 °F/-40...+60 °C
Ambient air humidity	< 95% relative humidity
Enclosure rating	Suitable for outdoor use

[1] Thermal performance applies only to a standard, unbranded Kempower Power Unit.

Connections and protocols

WiFi	2.4 / 5 GHz (802.11 b/g/n)
Cellular/GPS	LTE-FDD, LTE-TDD, WCDMA, GSM
Ethernet	RJ45, IEEE 802.3/802.3u
OCPP	1.6j/2.0.1
Connectivity	Kempower ChargEye solution

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Electrical connections (between Power Unit and vehicle connectors)

DC power cable per vehicle connector (terminals 2 x 300 MCM/2 x 150 mm² per pole)
Control power cable (24 VDC)
Communications cable (RJ45)

Electrical protections

Over/undervoltage
Surge protection
Short circuit
Overload protection
Earth leakage current monitoring
Device overtemperature

Power performance

			Standard operation			**Continuous operation**		
Product type	Number of Power Modules	Number of independent AC supply cables[1]	Charging power	Input current per supply cable at 400 V	Input current per supply cable at 480 V	Charging power	Input current per supply cable at 400 V	Input current per supply cable at 480 V
C501	1	1	50 kW	91 A	76 A	40 kW	73 A	61 A
	2	1	100 kW	181 A	151 A	80 kW	145 A	121 A
	3	1	150 kW	272 A	227 A	120 kW	218 A	182 A
	4	1	200 kW	362 A	302 A	160 kW	290 A	242 A
C502	5	2	250 kW	91 A	76 A	200 kW	73 A	61 A
	6	2	300 kW	181 A	151 A	240 kW	145 A	121 A
	7	2	350 kW	272 A	227 A	280 kW	218 A	182 A
	8	2	400 kW	362 A	302 A	320 kW	290 A	242 A
C503	9	3	450 kW	91 A	76 A	360 kW	73 A	61 A
	10	3	500kW	181 A	151 A	400 kW	145 A	121 A
	11	3	550 kW	272 A	227 A	440 kW	218 A	182 A
	12	3	600 kW	362 A	302 A	480 kW	290 A	242 A

[1] Each cabinet has a dedicated supply cable.

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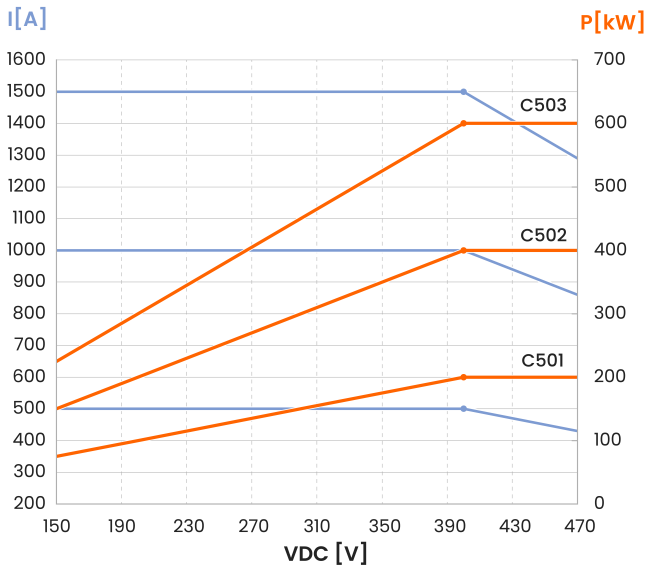
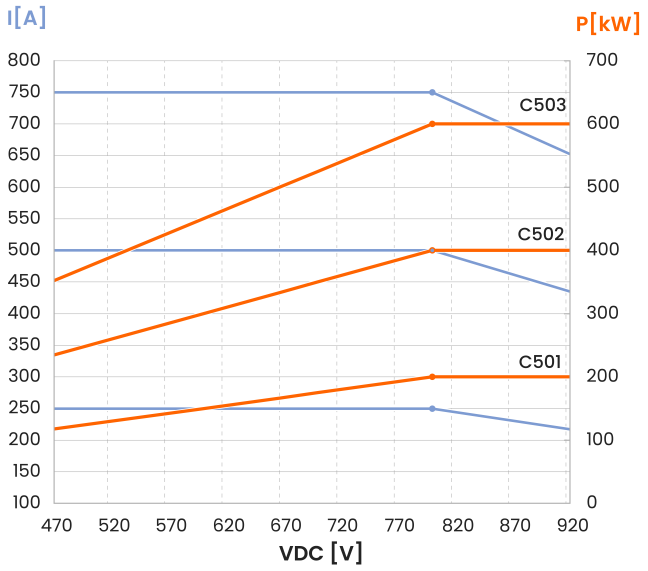
Power curve – standard operation

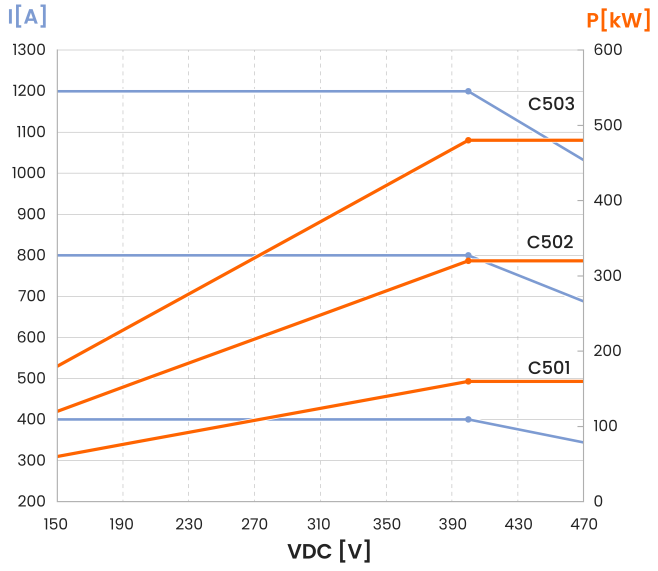


150–470 VDC

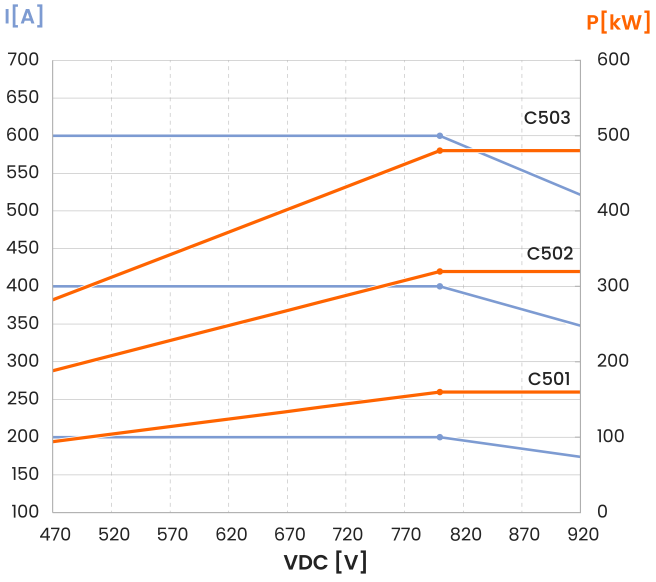


470–920 VDC

Power curve – continuous operation



150–470 VDC



470–920 VDC

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Compliance to standards

IEC 61851-1, IEC 61851-23, IEC 61851-21-2
UL 2202, UL 2231-2
CSA Std. c22.2 No. 281.2, CSA Std. c22.2 No. 107.1
FCC 47 CFR Part 15 Subpart B, Class A

Options

Customized branding	Branding options, such as custom colors and stickers Contact Kempower for availability, pricing, and minimum order quantity
Steel base	Installation kit for a single cabinet, for flat surface assembly

Mechanical dimensions

Size (W x H x D)
C501: 25.6 x 86.4 x 33.1 in./650 x 2195 x 841 mm
C502: 49.2 x 86.4 x 33.1 in./1250 x 2195 x 841 mm
C503: 72.8 x 86.4 x 33.1 in./1850 x 2195 x 841 mm

Weight	
C501P40...	617 lb./280 kg
C501P80...	705 lb./320 kg
C501P120...	794 lb./360 kg
C501P160...	882 lb./400 kg
C502P200...	1,499 lb./680 kg
C502P240...	1,587 lb./720 kg
C502P280...	1,676 lb./760 kg
C502P320...	1,764 lb./800 kg
C503P360...	2,381 lb./1080 kg
C503P400...	2,469 lb./1120 kg
C503P440...	2,557 lb./1160 kg
C503P480...	2,646 lb./1200 kg

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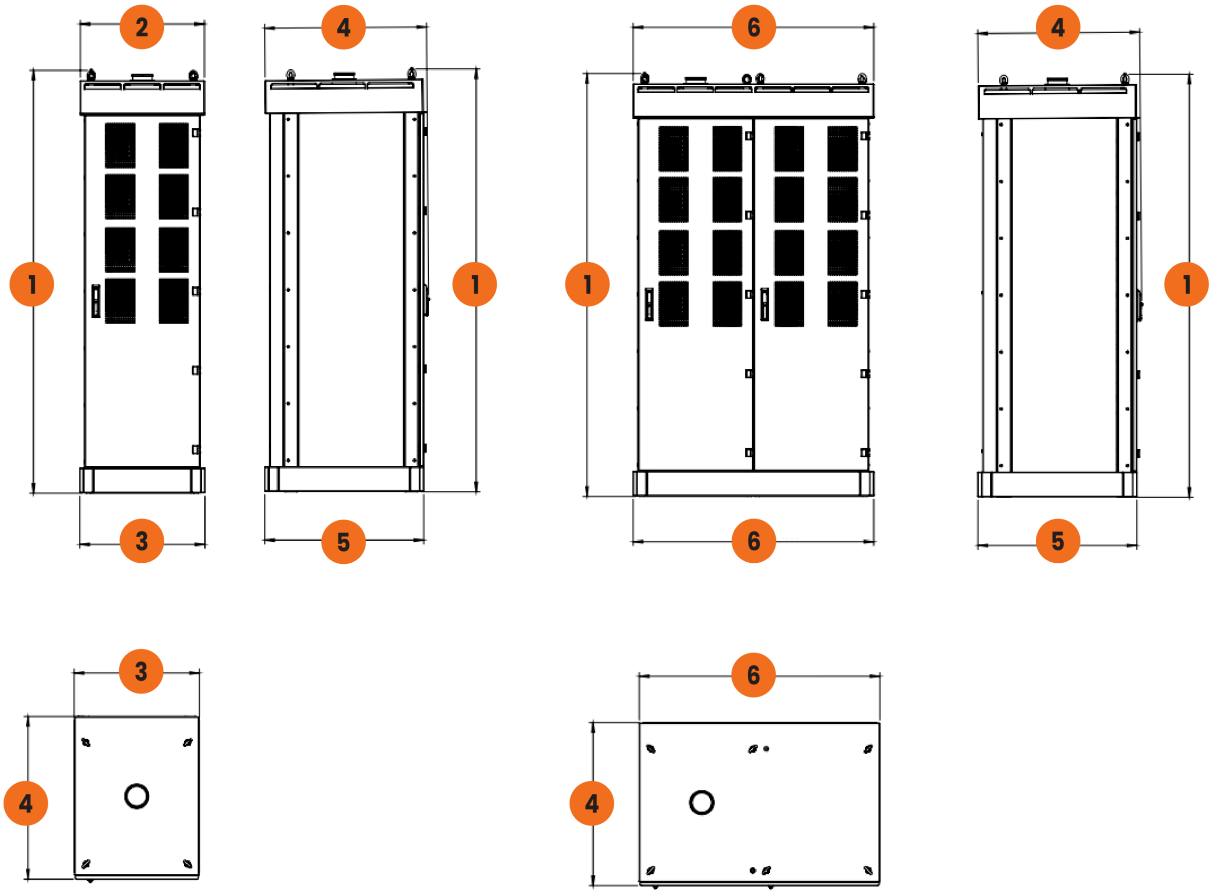

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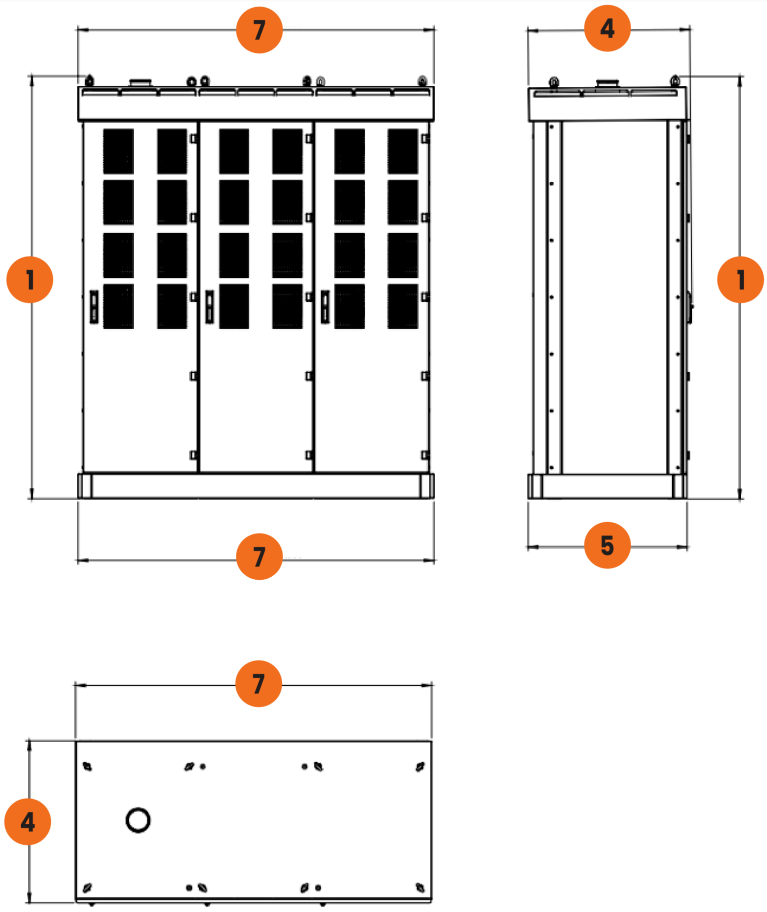

1	86.4 in./2195 mm	3	25.6 in./650 mm	5	32.5 in./825 mm	7	72.8 in./1850 mm
2	25.4 in./645 mm	4	33.1 in./841 mm	6	49.2 in./1250 mm		

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