BATTERY CHARGER, 454041-L, LI-ION

SPECIFICATIONS	1 CELL	2 CELLS	3 CELLS	4 CELLS	5 CELLS
Cell-Con part number:	454041-LA	454041-LB	454041-LC	454041-LD	454041-LE
Input voltage:	90-264VAC				
Line frequency:	47-63Hz				
Max output power:	21W	42W			
Step 0 <10min Yellow:	CC 300mA ±25mA, when battery voltage <3V	CC 300mA ±25mA, when battery voltage <6V	CC 300mA ±25mA, when battery voltage <9V	CC 150mA ±25mA, when battery voltage <12V	CC 150mA ±25mA, when battery voltage <15V
Step 0 >10min Red (4 blinks):	0A / 0V				
Step 1 (constant current) Yellow:	CC 5A ±0.36A, when 3V <Vbat <4.2V	CC 5A ±0.36A, when 6V <Vbat <8.4V	CC 3.33A ±0.24A, when 9V <Vbat <12.6V	CC 2.5A ±0.18A, when 12V <Vbat <16.8V	CC 2A ±0.15A, when 15V <Vbat <21.0V
Step 2 (constant voltage) Flashing Yellow:	CV 4.2V ±0.05V, until I charge <300mA or max. 1h	CV 8.4V ±0.1V, until I charge <300mA or max. 1h	CV 12.6V ±0.1V, until I charge <300mA or max. 1h	CV 16.8V ±0.1V, until I charge <150mA or max. 1h	CV 21.0V ±0.1V, until I charge <150mA or max. 1h
Charge timer (step2, CV):	1h				
Safety timer (all steps) Red (5 blinks):	72h				
Step 3 (charge completed) Green:	0A				
Restart voltage:	4.1V	8.2V	12.3V	16.4V	20.5V
Formation charge (step 0):	Low current start-up of deeply discharged battery				
Wake-up of deeply discharged battery:	Yes, will apply voltage which deactivates deep discharge protection in battery pack				
Indication when "battery not connected":	Flashing Green (1s/1s)				
NTC input, on request (std is 10kohm, B-value approx. 4000):	0–45 °C: Normal charge. Battery temperature <0 °C (too cold) or >45°C (too hot): No charge, wait until temp. is OK.				
Ripple:	<100mV p-p				
Efficiency (at 100% load) approx:	0.7	0.85		0.87	
Switch frequency approx.:	65kHz				
Leakage current from battery with mains switched off:	<300µA at nominal battery voltage (<0.22 Ah/month)				
Protection:	Protected against reversed polarity. Error Indication: Red (2 blinks) Short circuit proof. Error Indication: Red (3 blinks) Charging of wrong lower voltage battery pack will be terminated after 10min. Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF				
Temperature range:	**Operating:** -25 to +40°C / **Transport and short time storage:** -25 to +85°C				
Safety:	**Medical:** EN 60601-1 / **Home Health Care:** EN 60601-1-11 / **Battery Charger:** EN 60335-2-29 / **A/V and Comm. Tech:** IEC 62368-1				
Insulation class:	Class II				
Insulation voltage: primary–secondary:	4000VAC/5700VDC				
EMC standards:	EN 55014-1 and –2, EN 61000-6-3, EN 61000-6-1, EN 60601-1-2				
Input termina:	2-pins IEC 320 with C8 connector for exchangeable mains plug (EU, US, UK and AUS) or mains cord with C7 connector				
Output terminals:	DC connector, Battery clips, Push-on terminals or open ends				
IP-Grade:	IP41 (IP 67 on Request)				
Rec. battery capacity:	5Ah (1C) to 30Ah (<300mA charge current as EoC detection) or up to 200Ah (utilizing the 1h CV timer as EoC detection)	5Ah (1C) to 30Ah (<300mA charge current as EoC detection) or up to 200Ah (utilizing the 1h CV timer as EoC detection)	3.33Ah (1C) to 30Ah (<300mA charge current as EoC detection) or up to 133Ah (utilizing the 1h CV timer as EoC detection)	2.5Ah (1C) to 15Ah (<150mA charge current as EoC detection) or up to 100Ah (utilizing the 1h CV timer as EoC detection)	2Ah (1C) to 15Ah (<150mA charge current as EoC detection) or up to 80Ah (utilizing the 1h CV timer as EoC detection)
Dimensions:	131×57.5×36mm				
Weight:	230g				

CELL-CON
Battery & Charger Solutions

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BATTERY CHARGER, 454041-L, LI-ION

SPECIFICATIONS	6 CELLS	7 CELLS	8 CELLS	10 CELLS	14 CELLS
Cell-Con part number:	454041-LF	454041-LG	454041-LH	454041-LJ	454041-LN
Input voltage:	90-264VAC				
Line frequency:	47-63Hz				
Max output power:	42W				
Step 0 <10min Yellow:	CC 150mA ±25mA, when battery voltage <18V	CC 150mA ±25mA, when battery voltage <21V	CC 150mA ±25mA, when battery voltage <24V	CC 100mA ±25mA, when battery voltage <30V	CC 100mA ±15mA, when battery voltage <42V
Step 0 >10min Red (4 blinks):	0A / 0V				
Step 1 (constant current) Yellow:	CC 1.67A ±0.19A when 18V <Vbat <25.2V	CC 1.43A ±0.17A, when 21V <Vbat <29.4V	CC 1.25A ±0.15A, when 24V <Vbat <33.6V	CC 1A ±0.12A, when 30V <Vbat <42V	CC 0.71A ±0.09A, when 42V <Vbat <58.8V
Step 2 (constant voltage) Flashing Yellow:	CV 25.2V ±0.2V, until I charge <150mA or max. 1h	CV 29.4V ±0.2V, until I charge <150mA or max. 1h	CV 33.6V ±0.2V, until I charge <100mA or max. 1h	CV 42V ±0.3V, until I charge <100mA or max. 1h	CV 58.8V ±0.5V, until I charge <100mA or max. 1h
Charge timer (step2, CV):	1h				
Safety timer (all steps) Red (5 blinks):	72h				
Step 3 (charge completed) Green:	0A				
Restart voltage:	24.6V	28.7V	32.8V	41V	57.4V
Formation charge (step 0):	Low current start-up of deeply discharged battery				
Wake-up of deeply discharged battery:	Yes, will apply voltage which deactivates deep discharge protection in battery pack				
Indication when "battery not connected":	Flashing Green (1s/1s)				
NTC input, on request (std is 10kohm, B-value approx. 4000):	0–45 °C: Normal charge. Battery temperature <0 °C (too cold) or >45°C (too hot): No charge, wait until temp. is OK.				
Ripple:	<100mV p-p				
Efficiency (at 100% load) approx:	0.87				
Switch frequency approx.:	65kHz				
Leakage current from battery with mains switched off:	<300µA at nominal battery voltage (<0.22 Ah/month)				
Protection:	Protected against reversed polarity. Error Indication: Red (2 blinks) Short circuit proof. Error Indication: Red (3 blinks) Charging of wrong lower voltage battery pack will be terminated after 10min. Indication: Red (4 blinks) Safety timer. Error Indication: Red (5 blinks) No charge (or charge terminated) if connecting wrong battery pack with higher voltage. Indication: LED is OFF				
Temperature range:	**Operating:** -25 to +40°C / **Transport and short time storage:** -25 to +85°C				
Safety:	**Medical:** EN 60601-1 / **Home Health Care:** EN 60601-1-11 / **Battery Charger:** EN 60335-2-29 / **A/V and Comm. Tech:** IEC 62368-1				
Insulation class:	Class II				
Insulation voltage: primary–secondary:	4000VAC/5700VDC				
EMC standards:	EN 55014-1 and –2, EN 61000-6-3, EN 61000-6-1, EN 60601-1-2				
Input termina:	2-pins IEC 320 with C8 connector for exchangeable mains plug (EU, US, UK and AUS) or mains cord with C7 connector				
Output terminals:	DC connector, Battery clips, Push-on terminals or open ends				
IP-Grade:	IP41 (IP 67 on Request)				
Rec. battery capacity:	1.67Ah (1C) to 15Ah (<150mA charge current as EoC detection) or up to 67Ah (utilizing the 1h CV timer as EoC detection)	1.43Ah (1C) to 10Ah (<150mA charge current as EoC detection) or up to 57Ah (utilizing the 1h CV timer as EoC detection)	1.25Ah (1C) to 10Ah (<100mA charge current as EoC detection) or up to 50Ah (utilizing the 1h CV timer as EoC detection)	1Ah (1C) to 10Ah (<100mA charge current as EoC detection) or up to 40Ah (utilizing the 1h CV timer as EoC detection)	0.71Ah (1C) to 10Ah (<100mA charge current as EoC detection) or up to 29Ah (utilizing the 1h CV timer as EoC detection)
Dimensions:	131×57.5×36mm				
Weight:	230g				

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