



# EFFORTLESS POWER

**24 / 36 / 48 / 80V  
LITHIUM-ION BATTERY SYSTEM**



**24-V**  
**Li-Ion Battery**

**36-V**  
**Li-Ion Battery**

Technical Data			80155	80163	80162	80186	80266
1	Nominal capacity	Ah	370	592	666	666	814
2	Nominal energy content	Wh	9,435	21,608	24,309	24,309	29,711
3	Nominal voltage of battery	V	25.5	36.5	36.5	36.5	36.5
4	Nominal truck voltage	V	24	36	36	36	36
5	Cell chemistry		Nickel Magnesium Cobalt (NMC)	Nickel Magnesium Cobalt (NMC)	Nickel Magnesium Cobalt (NMC)	Nickel Magnesium Cobalt (NMC)	Nickel Magnesium Cobalt (NMC)
6	Operating temperature <sup>1)</sup>	°F	32° to 104°	32° to 104°	32° to 104°	32° to 104°	32° to 104°
7	Operating temperature for charging <sup>2)</sup>	°F	32° to 104°	32° to 104°	32° to 104°	32° to 104°	32° to 104°
8	Rating		EE, UL 2580	EE, UL 2580	EE, UL 2580	EE, UL 2580	EE, UL 2580
Dimensions & Weight			80155	80163	80162	80186	80266
9	Battery dimensions (in)	in	30.59x12.68x25.28	37.83x13.27x29.96	37.87x15.59x30.91	38.31x17.87x30.91	38.23x20.08x30.91
10	Battery dimensions (mm)	mm	777x322x642	961x337x816	962x396x785	973x454x785	971x510x785
11	Battery weight (including additional weight)	lb	988	1719	2018	2304	2600
12	Battery weight (including additional weight)	kg	448	780	915	1046	1182
Charge			80155	80163	80162	80186	80266
13	Charge status display		On truck display, and when charging on the charger	On truck display, and when charging on the charger	On truck display, and when charging on the charger	On truck display, and when charging on the charger	On truck display, and when charging on the charger
14	Charge time with external charger	min	74	89	100	100	122
15	Opportunity charging with external charger		50% of nominal capacity after 37 min.	50% of nominal capacity after 44 min.	50% of nominal capacity after 50 min.	50% of nominal capacity after 50 min.	50% of nominal capacity after 61 min.
Trucks			80155	80163	80162	80186	80266
16	Available trucks		WR30/WR40	ECS14N NOR15 NR15	ECS14N ECS16N ND18 NOR15 NR18 NR20 NR23	ECS14N ECS16N ND18 NOR15 NR20 NR23	ECS18N ND18 NOR15 N%20 NR23

<sup>1</sup> Different temperatures may affect battery performance

<sup>2</sup> In terms of battery temperatures

## 48-V Lithium-ion Battery

## 48-V Lithium-ion Battery

Technical Data			Size SB	Size MB	Size LB	80187	80240	80315	80141	80245
1	Nominal capacity	Ah	390 or 520	390 or 520	390 or 520	518	518	518	592	740
2	Nominal energy content	Wh	18,432 or 24,576	18,432 or 24,576	18,432 or 24,576	26,470	26,470	26,470	30,251	37,814
3	Nominal voltage of battery	V	51.2	51.2	51.2	51.1	51.1	51.1	51.1	51.1
4	Nominal truck voltage	V	48	48	48	48	48	48	48	48
5	Cell chemistry		Lithium / iron phosphate	Lithium / iron phosphate	Lithium / iron phosphate	Nickel Magnesium Cobalt (NMC)	Nickel Magnesium Cobalt (NMC)	Nickel Magnesium Cobalt (NMC)	Nickel Magnesium Cobalt (NMC)	Nickel Magnesium Cobalt (NMC)
6	Operating temperature <sup>1)</sup>	°F	-4°F to 131°F	-4°F to 131°F	-4°F to 131°F	32° to 104°	32° to 104°	32° to 104°	32° to 104°	32° to 104°
7	Operating temperature for charging <sup>2)</sup>	°F	32°F to 131°F	32°F to 131°F	32°F to 131°F	32° to 104°	32° to 104°	32° to 104°	32° to 104°	32° to 104°
8	Rating		IP54	IP54	IP54	EE, UL 2580	EE, UL 2580	EE, UL 2580	EE, UL 2580	EE, UL 2580
Dimensions & Weight			Size SB	Size MB	Size LB	80187	80240	80315	80141	80245
9	Battery dimensions (in)	in	32.7 x 20.5 x 24.7	32.7 x 24.8 x 24.7	32.7 x 29 x 24.7	37.99 x 20.47 x 24.21	38.23 x 24.29 x 24.21	35.2 x 25.55 x 22.64	38.23 x 29.41 x 22.05	38.23 x 32.6 x 22.05
10	Battery dimensions (mm)	mm	830 x 522 x 627	830 x 630 x 627	830 x 738 x 627	971x520x615	971x617x615	894x649x575	971x747x560	971x828x560
11	Battery weight (including additional weight)	lb	1,560	1,887	2,233	1918	2250	2800	2683	3102
12	Battery weight (including additional weight)	kg	708	856	1,013	870	1021	825	1217	1407
Charge			Size SB	Size MB	Size LB	80187	80240	80315	80141	80245
13	Charge status display		In truck display	In truck display	In truck display	On truck display, and when charging on the charger	On truck display, and when charging on the charger	On truck display, and when charging on the charger	On truck display, and when charging on the charger	On truck display, and when charging on the charger
14	Charge time with external charger	48V/300A	min	78 or 104	78 or 104	78 or 104	104	104	104	118
15	Opportunity charging with external charger	48V/300A		50% of nominal capacity after 30 or 40 min.	50% of nominal capacity after 30 or 40 min.	50% of nominal capacity after 30 or 40 min.	50% of nominal capacity after 52 min.	50% of nominal capacity after 52 min.	50% of nominal capacity after 52 min.	50% of nominal capacity after 59 min.
Trucks			Size SB	Size MB	Size LB	80187	80240	80315	80141	80245
18	Available trucks		2ET2500	EPC3000 EPC3500 2ETC3000-C3500	2ET3000-4000 EP3000 EP3500 EP4000	EP16PNT	EP18PNT EP20PNT	EC15N EC18N EC18LN	EC23N EC25N	EC25EN EC25LN EC30LN EC30N

<sup>1</sup> Different temperatures may affect battery performance

<sup>2</sup> In terms of battery temperatures

## 80-V Lithium-ion Battery

Technical Data			Size S	Size M	Size L
1	Nominal capacity	Ah	500	500	500
2	Nominal energy content	Wh	43,200	43,200	43,200
3	Nominal voltage of battery	V	86.4	86.4	86.4
4	Nominal truck voltage	V	80	80	80
5	Cell chemistry		Lithium / iron phosphate	Lithium / iron phosphate	Lithium / iron phosphate
6	Operating temperature <sup>1)</sup>	°F	14°F to 131°F	14°F to 131°F	14°F to 131°F
7	Operating temperature for charging <sup>2)</sup>	°F	32°F to 131°F	32°F to 131°F	32°F to 131°F
8	Rating		IP54	IP54	IP54
Dimensions & Weight			Size S	Size M	Size L
9	Battery dimensions (in)	in	40.5 x 28 x 30.9	40.5 x 33.7 x 30.7	40.5 x 39.3 x 30.7
10	Battery dimensions (mm)	mm	1,028 x 711 x 784	1,028 x 855 x 784	1,028 x 999 x 784
11	Battery weight (including additional weight)	lb	3,434	4,107	4,790
12	Battery weight (including additional weight)	kg	1,558	1,863	2,173
Charge			Size S	Size M	Size L
13	Charge status display		In truck display	In truck display	In truck display
14	Charge time with external charger	48V/300A	—	—	—
		90V/290A	103	103	103
15	Opportunity charging with external charger	48V/300A	—	—	—
		90V/290A	50% of nominal capacity after 52 min.	50% of nominal capacity after 52 min.	50% of nominal capacity after 52 min.
16	Charge time with external charger SLH090i 48/150	48V/300A	—	—	—
		90V/290A	200	200	200
17	Opportunity charging with external charger	48V/300A	—	—	—
		90V/290A	50% of nominal capacity after 100 min.	50% of nominal capacity after 100 min.	50% of nominal capacity after 100 min.
Trucks			Size S	Size M	Size L
18	Available trucks		2EPC5000 2EPC6000	2EP5000 2EP6000 2EP6500 2EPC7000 2EPC8000 2EPC9000	2EP10000 2EP11000 2EP8000 2EP8500 2EP9000

<sup>1</sup> Different temperatures may affect battery performance

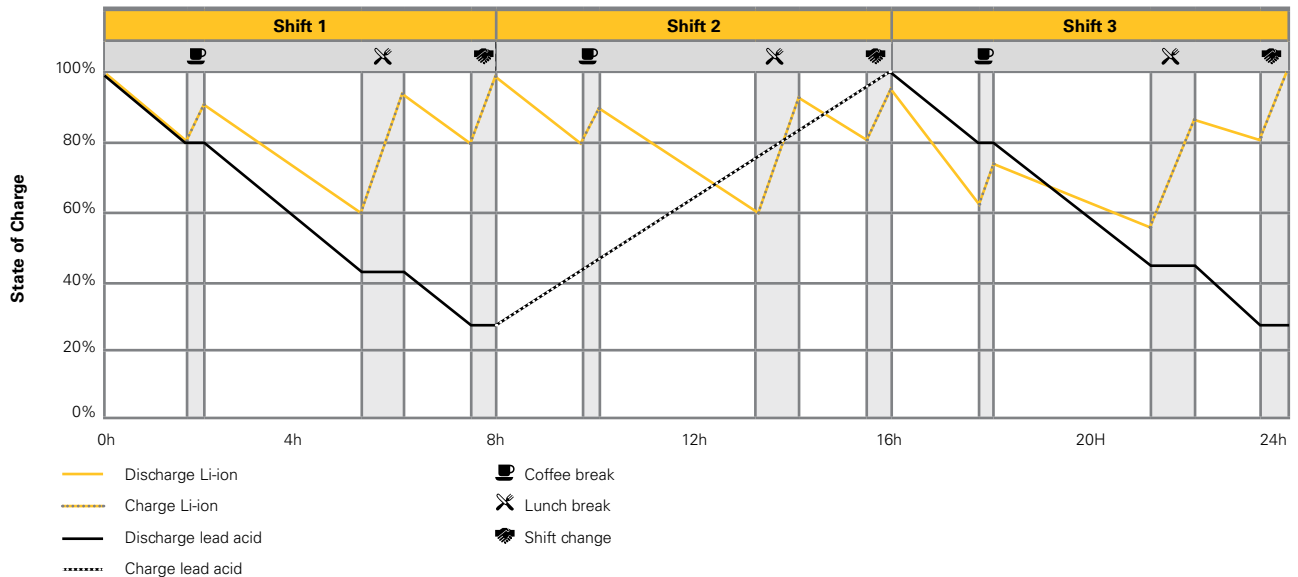
<sup>2</sup> In terms of battery temperatures

## Chargers

Type Of Charger	Input V	Dimensions (H x B x T) in.	Weight lb.	Max Current A	
24V	200 A	D 480	16.3x16.9x14.0	70	12.2 A
	300 A	D 480	16.3x16.9x14.0	82	12.2 A
36V	100 A	D 480	17.0 x 16.4 x 14.0	70	8.9 A
	150 A	D 480	17.0 x 16.4 x 14.0	82	8.9 A
	200 A	D 480	17.0 x 20.1 x 14.0	118	13.6 A
	250 A	D 480	17.0 x 20.1 x 14.0	118	16.9 A
	300 A	D 480	17.0 x 29.0 x 14.0	131	21.3 A
	350 A	D 480	17.0 x 29.0 x 14.0	146	20.7 A
	400 A	D 480	17.0 x 33.1 x 14.0	181	25.5 A
48V	150 A	D 480	16.3x16.9x14.0	82	12.0 A
	200 A	D 480	20.5x16.9x14.0	118	18.3 A
	250 A	D 480	28.9x16.9x14.0	130	24.0 A
	300 A	D 480	28.9x16.9x14.0	146	24.0 A
80V	160 A	D 480	28.9x16.9x14.0	131	24.9 A
	290 A	D 480	45.5x16.9x14.0	207	376 A

# Charging Time

Type Of Current (A)		370Ah		390Ah		500Ah		518Ah		520Ah	
		50%	100%	50%	100%	50%	100%	50%	100%	50%	100%
24V	200A	56 min	111 min	-	-	-	-	-	-	-	-
	300A	37 min	74 min	-	-	-	-	-	-	-	-
36V	100A	-	-	-	-	-	-	-	-	-	-
	150A	-	-	-	-	-	-	-	-	-	-
	200A	-	-	-	-	-	-	-	-	-	-
	250A	-	-	-	-	-	-	-	-	-	-
	300A	-	-	-	-	-	-	-	-	-	-
	350A	-	-	-	-	-	-	-	-	-	-
	400A	-	-	-	-	-	-	-	-	-	-
48V	150A	-	-	78 min	156 min	-	-	104 min	207 min	104 min	208 min
	200A	-	-	59 min	117 min	-	-	78 min	155 min	78 min	156 min
	250A	-	-	45 min	90 min	-	-	62 min	124 min	60 min	120 min
	300A	-	-	39 min	78 min	-	-	52 min	104 min	52 min	104 min
80V	160A	-	-	-	-	95 min	200 min	-	-	-	-
	290A	-	-	-	-	52 min	103 min	-	-	-	-



## Charging Time

Type Of Current (A)		592Ah		666Ah		740Ah		814Ah	
		50%	100%	50%	100%	50%	100%	50%	100%
24V	200A	-	-	-	-	-	-	-	-
	300A	-	-	-	-	-	-	-	-
36V	100A	178 min	355 min	200 min	400 min	-	-	244 min	488 min
	150A	118 min	237 min	133 min	266 min	-	-	163 min	326 min
	200A	89 min	178 min	100 min	200 min	-	-	122 min	244 min
	250A	71 min	142 min	80 min	160 min	-	-	98 min	195 min
	300A	59 min	118 min	67 min	133 min	-	-	81 min	163 min
	350A	51 min	102 min	57 min	114 min	-	-	70 min	140 min
	400A	44 min	89 min	50 min	100 min	-	-	61 min	122 min
48V	150A	118 min	237 min	-	-	148 min	296 min	-	-
	200A	89 min	178 min	-	-	111 min	222 min	-	-
	250A	71 min	142 min	-	-	89 min	178 min	-	-
	300A	59 min	118 min	-	-	74 min	148 min	-	-
80V	160A	-	-	-	-	-	-	-	-
	290A	-	-	-	-	-	-	-	-

### ADVANTAGES OF LITHIUM-ION TECHNOLOGY

#### Out performs lead-acid batteries

- Constant voltage and more power than lead-acid batteries even on a low charge.
- Save up to 20% more energy with regenerative braking and an improved overall efficiency rating.
- Communication between the battery and the charger ensures efficient charging.

#### No Battery Maintenance

Save time and money by eliminating routine battery maintenance:

- Lithium-ion batteries are maintenance-free and do not emit gas.
- Eliminate watering maintenance, battery servicing, or other infrastructure requirements.
- Changing out batteries for shift changes is no longer necessary.

#### Long Operating Times

Lithium-ion batteries are great for multi-shift operations:

- With opportunity charging, lithium-ion batteries can run 24 hours a day, 7 days a week without changing batteries.

#### Energy Efficient

- Lithium-ion batteries can last up to three times longer than traditional energy storage units.
- Extraordinary endurance and consistently higher efficiency rating secure your investment while saving on power costs.
- Each lithium-ion battery includes a 5 year warranty.



**Your Cat lift truck dealer** can provide additional options and features to specialize your lift truck for your unique application. Operator training and custom financing programs are also available to help find the right fit for your business.

Equipping any CAT models with an alternative power source (Lithium-ion, Hydrogen Fuel cell, etc.) that has not been previously approved by the factory is considered a modification. Per OSHA 1910.178 and ANSI/ITSDF B56.1, please consult with your factory representative prior to installing any non-OEM power source that has not been previously approved.

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