BALANCELL

HIGH VOLTAGE

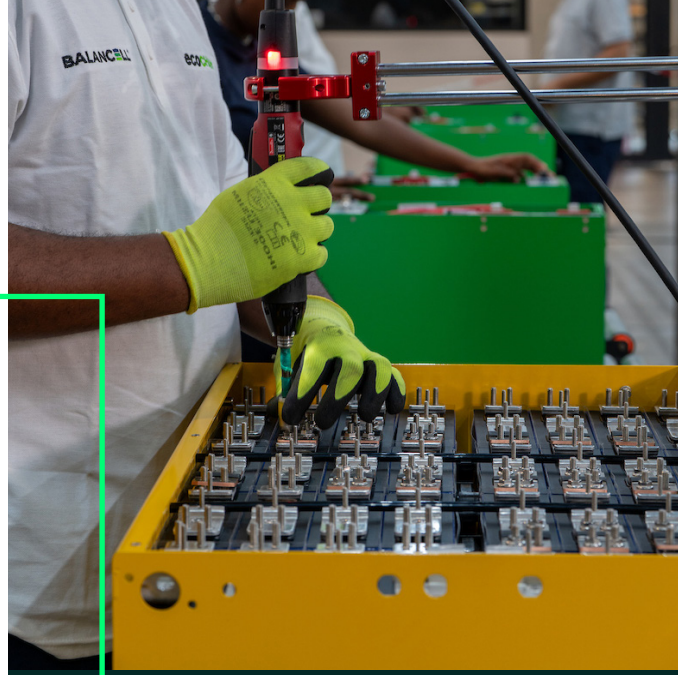
Smart, efficient and safe batteries for commercial and industrial applications

Modules

Voltage	Model	Capacity	Energy	Dimensions	Warranty
104 V	P33	206 Ah	21.4 kWh	477 mm (W) x 726 mm (L) x 275 mm (H)	103 000 kWh
	P34	277 Ah	28.8 kWh	619 mm (W) x 726 mm (L) x 274 mm (H)	139 000 kWh

Power Towers

Voltage	Model	Capacity	Energy	Dimensions	Warranty
520 V	PT520-107	206 Ah	107 kWh	650 mm (W) x 850 mm (L) x 1900 mm (H)	515 000 kWh
	PT520-144	277 Ah	144 kWh	650 mm (W) x 850 mm (L) x 1900 mm (H)	695 000 kWh
728 V	PT728-202	277 Ah	202 kWh	650 mm (W) x 850 mm (L) x 2620 mm (H)	973 000 kWh



Balancell's smart batteries give businesses more control over how they store, use and optimise energy in their operations.

TECHNICAL DATA SHEET - MODULE

Battery Voltage	104V	104V
Cell Quantity	32	32
End of Charge Voltage	112.64V	112.64V
Balance Charge Voltage	113.60V	113.60V
Charger Voltage Min	86.40V	86.40V
Charger Voltage Max	113.60V	113.60V
Battery over voltage cutout	113.60V	113.60V
Cell over voltage cutout	3.60V per Cell	3.60V per Cell
Battery under voltage cutout	92.80V	92.80V
Cell under voltage cutout	2.70V per Cell	2.70V per Cell
BMS under voltage lockout	86.00V	86.00V
BMS over voltage lockout	120.30V	120.30V

Battery Capacity in Ah	206Ah	277Ah
Max continious charging current	154,50Ah	207,75Ah
Recommended cont. charging current	144,20Ah	193,90Ah
Balance charging current	0,50Ah	0,50Ah
Cont. discharge current	206Ah	277Ah
Surge discharge current (for 2min) **Note 1***	412Ah	554Ah
Surge discharge current (for 10secs) **Note 1***	618Ah	831Ah
Note 1*: Unless limited by a fuse rating		

Energy platform with live remote monitoring, analytics and alerts			
Monitoring	With the BDI (Battery Display Interface) • LTE (2G, 4G) Global sim with lifetime connectivity (15yrs) • Wifi (2.4GHz bands) • Shows voltage , current, power, SOC		
Integration	BDI isolated up to 1000V from battery. Up to 1W at 5V available on CAN port CAN interface supports: • CANOpen standard, • Inverter CAN protocol, • Custom protocols for OEM's comms on request		
	Active only when module is within operational limits • 24V up to 6W output available • 24V 500mA dry contact relay available		
Certifications	Cell Certifications	GB	Certified to – GB31484, GB31485, GB31486, UL1973, UN38.3
	Battery Electromagnetic Compatibility	CE	Certified to – EN 301 489-1: V2.2.3, EN 301 489-52: V1.1.0, EN / IEC 61326-1
	Battery Standards	IEC	Designed to meet – IEC 62485-6, IEC 63056, IEC 62660-2 Certified to – IEC 62619, IEC 62620
	Battery Standards	UL	Designed to meet – UL 2580

Discharge Limits (Voltage & Current)		Notes
Minimum avg cell voltage for operation. Minimum individual cell voltage for operation	2.90V per cell 2.70V per cell	The battery will cut out here, regardless of indicated SOC
Discharge current limit	2C	Average over 120 sec
Discharge limit when tripped under voltage	0A	
BMS under voltage lockout	2.69V per cell average	Below this voltage the BMS will go into standby mode. No Digital communication in standby mode

Charge Limits and Charger Settings		Notes
Maximum Continuous Charging Current	0.75C as per battery capacity	Preferred range is up to 0.70C **Note 1***
End of Charge Voltage	3.52V per cell	3.55V per cell average is the recommended maximum voltage for end of charge.
Balancing Charge Voltage or Current	3.55V per cell/ 500mA	3.55V per cell average, OR charge at constant current (CC) of 500mA
Charger Voltage Range in Volts per cell average	2.70V to 3.55V	*Refer to Battery Voltage table
Battery Over Voltage Self Cut Out (Max individual cell Voltage)	3.55V per cell (3.60V)	**Note 1***

Operating SOC and Temperature	Minimum	Maximum	Notes
Usable SOC Range	0%	100%	Discharge limit active below 2% Discharge limit is reset above 5%
Recommended SOC Range	10%	100%	Preferred good practice to prevent cut out while in use
Storage SOC	20%	100%	Battery should be fully charged before Storage
SOC Accuracy	−0.10%	+ 0.10%	Typical accuracy in normal daily use
SOC Daily Drift	−0.24Ah	+0.24Ah	Daily Drift while not in use. Will reset at Top or bottom of charge
Charging Temperature	5°C	55°C	Battery cuts out beyond these. Preferred range 10°C – 45°C **Note 2&3***
Discharging Temperature	−10°C	55°C	Battery cuts out beyond these. Preferred range 10°C – 45°C **Note 2&3***
Storage Temperature	0°C	35°C	Preferred for optimum lifetime is 5–10°C

Note 1*: The battery operating limit are indicated through the digital communication interface. The signals described above are a redundant indicator of the battery being in its operating limits.
Note 2*: When a battery cuts out from going below −10°C, it has to be heated up to −5°C or warmer for it to resume operation.
Note 3*: When a battery cuts out from going above 55°C, it has to be cooled down to 50°C or colder for it to resume operation.

Protection	Individual Cell	Battery Level
Over Voltage	Yes	Analogue and Secondary Digital cutout
Over Discharge	Yes	Digital SOC and Digital under voltage
Deep Over Discharge		Analogue cutout of internal electronics to prevent further discharge. **Note 4***
Over Temperature	Yes	Digital
Under Temperature	Yes	Digital
Charge Rate		Digital

Mechanical Design
Cell Insulation – Standard with Additional PET 300 micron cover added to all cells for safety and vibration tolerance
Cell Compression – ~3000N | G-shock tolerance – > 5 times IEC 61485 | Environmental – IP61
Interlinks, Cell to Cell, Cell to Terminal: Flexible laminated copper

BALANCELL

UNLOCKING CUSTOMERS' FULL POTENTIAL FOR BUSINESS

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