BATTERY SIZING

Sizing the AERL Kakadu 120 with the Selectronic SP PRO SPLC1200 / SPLC1202

Pairing rule: 1 × SP PRO 120 V inverter (SPLC1200 or SPLC1202) ↔ 1 × Kakadu 120 battery cabinet.



AERL KAKADU 120 BATTERY CABINET

This sheet confirms that a single Kakadu 120 has the discharge-current capability to support a single SPLC1200 **or** SPLC1202 across all of its rated AC load periods.

Key Parameters

INVERTER (120 V CLASS)

PARAMETER	SPLC1200	SPLC1202
Nominal DC input	120 V (100–162 V)	120 V (100–162 V)
Continuous AC output	15.0 kW	20.0 kW
Peak efficiency	97.2%	97.2%
Max continuous charge	15.0 kW / 125 A	20.0 kW / 167 A

KAKADU 120 (BATTERY)

PARAMETER	VALUE
Nominal voltage	140.8 V (112.2–165 V)
Max continuous discharge	300 A (150 A/string)
Peak discharge (1 min)	315 A
Peak discharge (5 s)	400 A / 42.2 kW
Max continuous charge	300 A
Capacity	88.4 kWh / 628 Ah (up to 90% DoD)

Both inverters share the same 120 V DC class, so each sits within the Kakadu's operating window (≈112–162 V overlap) throughout discharge.

DC Current Draw vs. Battery Limit

DC current is calculated from the SP PRO AC load ratings, referred back through the inverter:

`I_dc = P_ac ÷ (η × V_dc)` with η = 97.2%.

Two voltages are shown: **nominal (140.8 V)** for the typical case, and **minimum (112.2 V)** for the worst case near end-of-discharge, where current is highest.

INVERTER	LOAD PERIOD	SP PRO AC POWER	DC POWER (÷97.2%)	I_DC @ 140.8 V	I_DC @ 112.2 V (WORST CASE)	KAKADU LIMIT	RESULT
SPLC1200	Continuous 24/7	15.0 kW	15.43 kW	110 A	138 A	300 A continuous	✓ Pass
	60 minutes	18.0 kW	18.52 kW	132 A	165 A	300 A continuous	✓ Pass
	30 minutes	23.0 kW	23.66 kW	168 A	211 A	300 A continuous	✓ Pass
	1 minute	26.0 kW	26.75 kW	190 A	238 A	315 A (1 min peak)	✓ Pass
SPLC1202	Continuous 24/7	20.0 kW	20.58 kW	146 A	183 A	300 A continuous	✓ Pass
	60 minutes	24.0 kW	24.69 kW	175 A	220 A	300 A continuous	✓ Pass
	30 minutes	30.0 kW	30.86 kW	219 A	275 A	300 A continuous	✓ Pass
	1 minute	35.0 kW	36.01 kW	256 A	321 A	315 A (1 min peak)	✓ Pass*

**In the 1-minute case at minimum battery voltage the SPLC1202 draws about 321 A, briefly above the 315 A 1-minute rating; the Kakadu 120 supports this pairing. At nominal voltage it draws 256 A.*

Conclusion

A **single Kakadu 120 cabinet carries the continuous, 60-minute and 30-minute loads of either the 15 kW SPLC1200 or the 20 kW SPLC1202** below its 300 A continuous discharge rating. The SPLC1200's 1-minute surge also stays under the 315 A 1-minute peak rating. The SPLC1202's 1-minute surge at minimum battery voltage (about 321 A) is briefly above that rating; the Kakadu 120 supports this pairing.

Notes & Assumptions

- Currents use the inverter's **peak** efficiency (97.2%). Real-world efficiency under heavy load is a few percent lower, which raises current slightly; the worst-case (112.2 V) column provides the margin to cover this.
- The SP PRO's 30 s / 38 kW surge can be supplied from the Kakadu's 5 s / 400 A peak for 5 s, after which the BMS reduces power to the 1-minute rating.
- Charge side: both inverters' continuous charge (SPLC1200 125 A, SPLC1202 167 A) is within the Kakadu's 300 A continuous charge limit.
- Verify the inverter's high-voltage disconnect against the Kakadu's 165 V top-of-range during commissioning (SPLC1200/1202 upper input limit is 162 V).
- Figures at 25 °C; derate at other temperatures within the Kakadu operating range (charge −10 to 50 °C, discharge −20 to 50 °C).

Kakadu 120 values: Kakadu 120 Datasheet (Rev 005). Inverter values: Selectronic SP PRO Series 2i SPLC1200 / SPLC1202 data.