Newcastle PSNU-RM Remote Battery Meter
Quick Start Guide

The behavior and instructions for use of the PSNU-RM Remote Battery Meter for the PowerSwap Nucleus Lithium Power System are as follows:

- Upon startup, there is a splash screen with Newcastle Systems logo with “Reading Battery Data” below it.
- After bootup, the battery state-of-charge will appear.
- If the AC load on the PowerDock is less than 10W, the meter will read “No Load”.
- Once a load greater than 10W is applied, the meter will read “Calculating Runtime”. The meter then collects power consumption data for up to 5 minutes.
- The “Runtime Remaining” countdown will then appear in the middle of the screen. The background of the screen will now reflect the duration of runtime remaining.
- To access additional battery data, press the green button once. To return to the Runtime Screen press the green button once more.

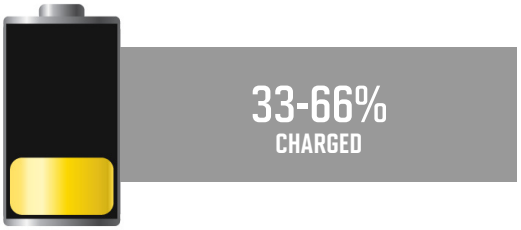
BATTERY CHARGE STATES

BATTERY CHARGE STATE: GREEN

When the battery is more than 66% charged, the battery icon will appear green.

BATTERY CHARGE STATE: YELLOW

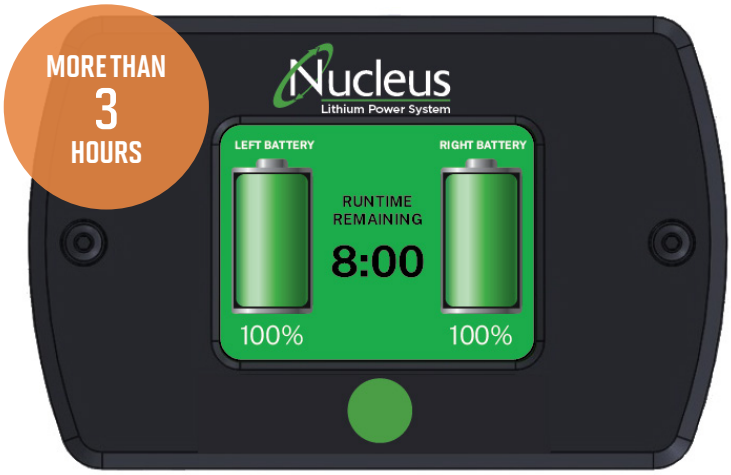
When the battery is between 33% and 66% charged, the battery icon will appear yellow.



BATTERY CHARGE STATE: RED

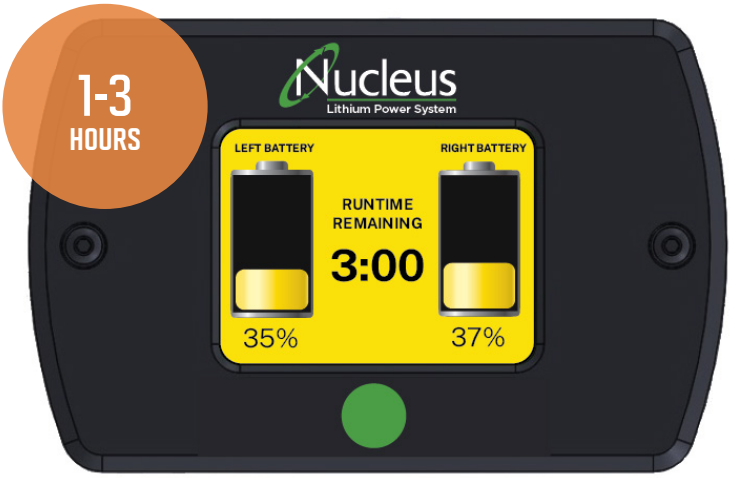
When the battery is less than 33% charged, the battery icon will appear red.

BATTERY RUNTIME STATES



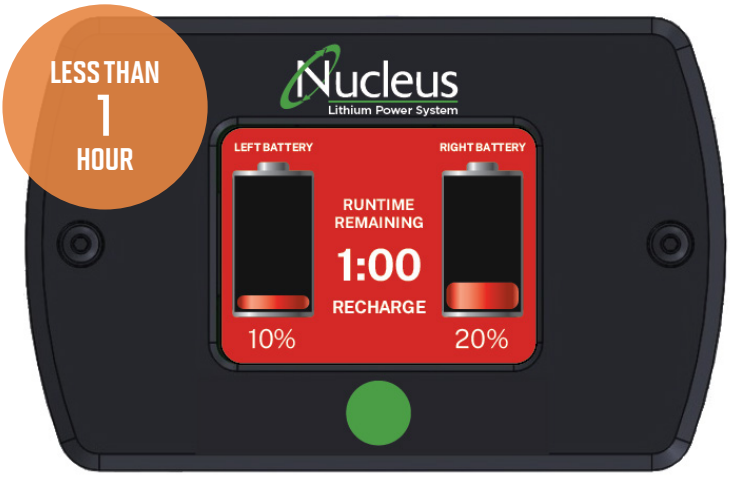
RUNTIME STATE: GREEN

When the duration of runtime remaining is more than 3 hours, the screen background will appear green.



RUNTIME STATE: YELLOW

When the duration of runtime remaining is 1-3 hours, the screen background will appear yellow.

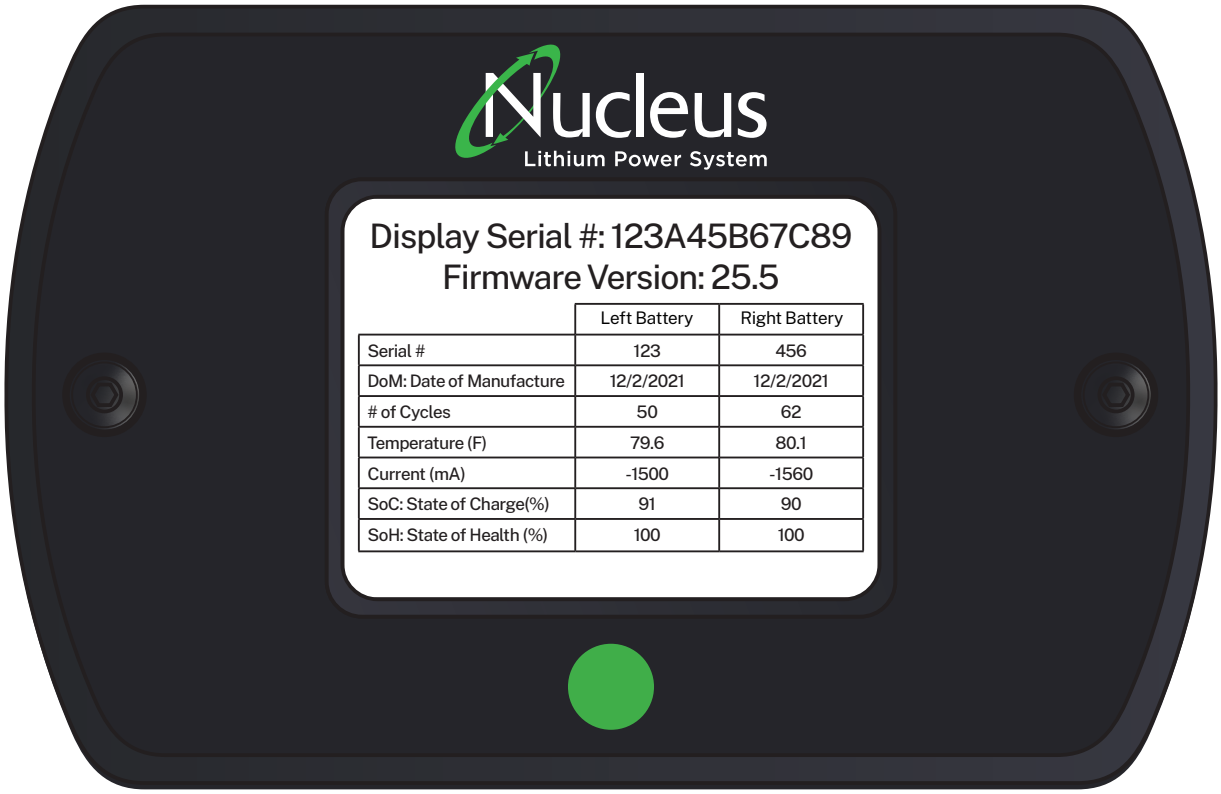


RUNTIME STATE: RED

When the duration of runtime remaining is less than 1 hour, the screen background will appear red.

ADDITIONAL DATA

The data shown is in the image below.



	Left Battery	Right Battery
Serial #	123	456
DoM: Date of Manufacture	12/2/2021	12/2/2021
# of Cycles	50	62
Temperature (F)	79.6	80.1
Current (mA)	-1500	-1560
SoC: State of Charge(%)	91	90
SoH: State of Health (%)	100	100

EXPLANATION OF DATA

		ADDITIONAL NOTES
SERIAL #	Unique serial number for your Nucleus® battery	
DOM: DATE OF MANUFACTURE	Date your battery was manufactured	Actual PCBA build date
# OF CYCLES	Number of discharge cycles the battery has experienced	One cycle equals 60% depletion
TEMPERATURE (F)	Current temperature of your battery. Battery runs hotter than ambient	Battery will hibernate if internal temperature is not within 32-140° F. Once internal temperature returns to allowable range, the battery will automatically reset.
CURRENT (MA)	Current flow from/to battery. Discharging will show as a (-) value	
SOC: STATE OF CHARGE (%)	Remaining battery capacity as a percentage of full capacity	Best practice: Charge battery after every use
SOH: STATE OF HEALTH (%)	Current full-charge battery capacity divided by original capacity	Industry standard recommends battery replacement at 75-80% SOH