

# PHI 3.8™ BATTERY



CHEMISTRY	Lithium Ferro Phosphate (LFP) The safest Lithium Ion chemistry available No cobalt or risk of thermal runaway
OCPD	Built-in, accessible 80 Amp DC breaker on/off switch
BMS	Built-in Battery Management System
COMPATIBILITY	Compatible with all industry standard inverters and charge controllers Battery bank-to-inverter output sizing must adhere to a 2:1 ratio: $\text{battery quantity} = \frac{\text{inverter } kW_{AC} \text{ rating} \div \text{inverter efficiency}}{\text{battery MAX Continuous Discharge Rate (kW}_{DC})}$
MAINTENANCE	Maintenance-free No ventilation, cooling or thermal regulation required

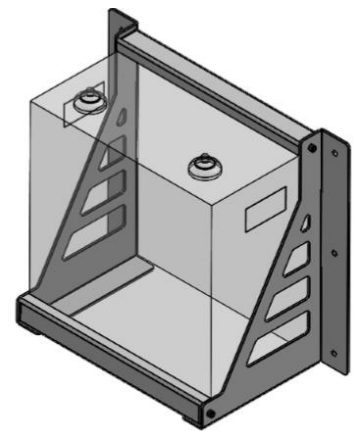
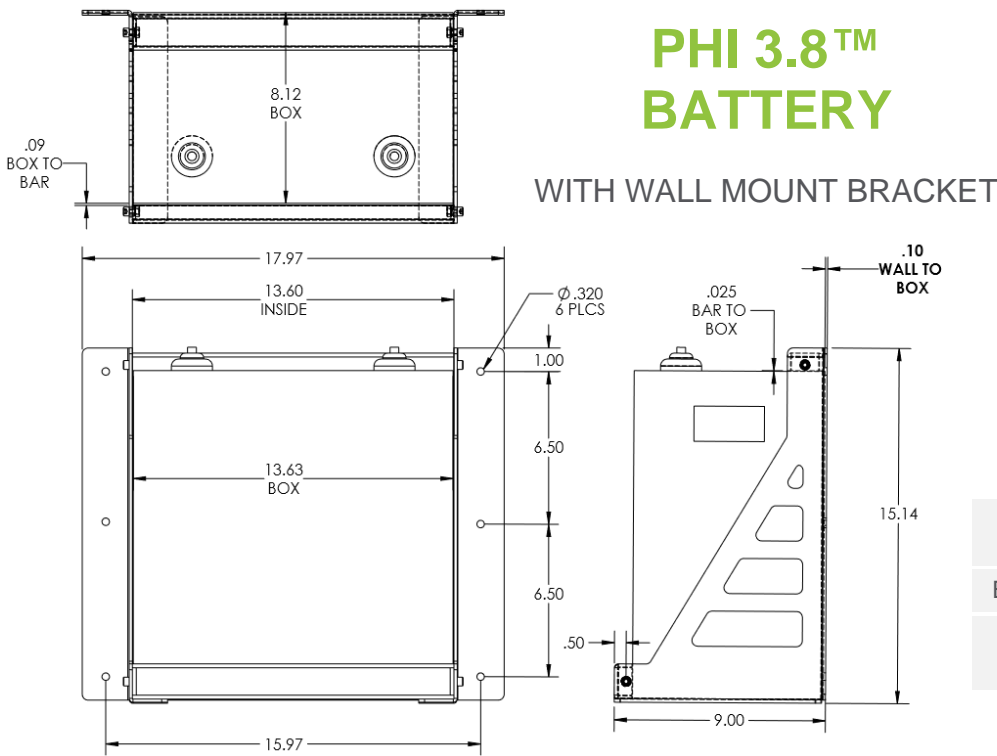
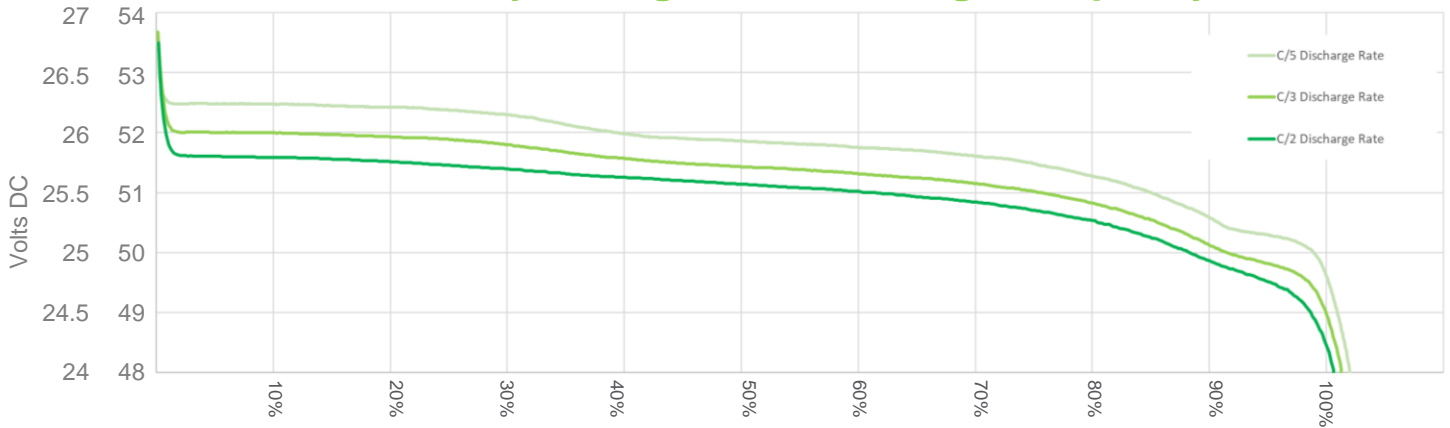
PHI 3.8 kWh Module	24V	48V
DC Voltages - Nominal	25.6 VDC	51.2 VDC
Amp-Hours	151 Ah	75 Ah
Rated kWh Capacity	3.8 kWh DC @ 100% DOD 3.04 kWh DC @ 80% DOD	3.8 kWh DC @ 100% DOD 3.04 kWh DC @ 80% DOD
MAX Discharge Rate (10 minutes)	60 Amps DC (1.53 kW DC)	60 Amps DC (3.07 kW DC)
MAX Continuous Discharge Rate	45 Amps DC ( <b>1.15 kW DC</b> )	37.5 Amps DC ( <b>1.92 kW DC</b> )
MAX Continuous Charge Rate	45 Amps DC (1.15 kW DC)	37.5 Amps DC (1.92 kW DC)
DC Voltage Range <sup>1</sup>	24 VDC to 28 VDC	48 VDC to 56 VDC
Depth of Discharge <sup>1</sup>	up to 100%	
Operating Efficiency	98%	
Charging Temperature <sup>1</sup>	32° to 120° F (0° to 49° C)	
Operating Temperature <sup>1</sup>	-4° to 140° F (-20° to 60° C)	
Storage Temperature	6 months: 14° to 77° F (-10° to 25° C) 3 months: -4° to 113° F (-20° to 45° C)	
Self-Discharge Rate	< 1% per month	
Cycle Life	10,000+ cycles (@ 80% DOD)	
Memory Effect	None	
Warranty	10 Years or 10,000 cycles (@ 80% DOD)	
Weight	78.24 lbs. (35.5 kg)	
Dimensions (W x H x D)	13.5 x 14 x 8 in. (15.5" H w/terminals) / 0.88 ft <sup>3</sup> (34.3 x 35.6 x 20.3 cm / 0.025 m <sup>3</sup> )	

1. Max operating ranges. Refer to Installation Manual for recommended conditions.

- All specifications listed are typical/nominal and subject to change without notice.
- UN 3480, Lithium ion batteries, 9, II
- UL, CE, UN/DOT and RoHS compliant components - UL Compliant
- Designed and manufactured in California, USA

CERTIFIED  
TO UL 1973

## Battery Voltage VS. Discharged Capacity



Terminals	3/8 IN	10 MM
Battery Cables	6 AWG MINIMUM	
See Installation Manual for detailed wiring instructions.		

### Short Circuit Current

Absolute discharge rate limits:

Based on	Amps DC
internal battery impedance	~2,000 A
battery management system	~200 A
built-in circuit breaker	80 A (continuous)
	200 A (1 second)
	400 A (100 microseconds)
	550 A (10 microseconds)

All PHI batteries monitor internal temperatures. Operating within the specified and warranted parameters ensures these temperatures are not exceeded and the battery is not adversely stressed. When critical temperatures are exceeded, the BMS will disconnect the battery from the DC Bus at indeterminate times and without notice/warning. Repeated exposure to these extremes adversely affects the health of the battery and voids the Warranty.

PHI 3.8™	24V	48V
Bulk & Absorb Charge	27.2 VDC	54.4 VDC
Absorb Time	1 HR	1 HR
Charge Controller Float Charge	27 VDC	54 VDC
Inverter Charging	2 STAGE NO FLOAT	
Equalization Charge	NONE	
Temperature Compensation	NONE	

Refer to the Integration Guide section of SimpliPhi's [Product Documentation](#) web page for inverter and/or charge controller specific settings. Must be followed to maintain PHI Warranty.