



# Creating Undertaking & Sharing



PYTES (USA) Energy Inc.  
BATTERY EXPERT-GREEN ENERGY PROVIDER

## LI-ION BATTERY FOR ENERGY STORAGE



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# Pytes

With over 20 years of expertise, Pytes Energy has become a trusted name in the energy storage industry. Pytes solutions are specifically designed to meet the unique demands of the energy storage landscape, empowering homes and businesses to achieve energy independence and sustainability with confidence.

Serving customers in more than 60 countries, Pytes stands out with its UL9540-certified energy storage systems, recognized for their cost-effectiveness, reliability, and versatility. Our diverse product range includes low-voltage server rack batteries, stackable modular systems, and high-voltage (HV) solutions, all engineered for seamless installation and superior user experience. At the core of Pytes is a commitment to innovation and quality. Leveraging extensive research,



development, and manufacturing expertise, we deliver feature-rich battery systems that offer exceptional value without compromising performance. Pytes ensures fast and local service and delivery, while consistently refining our products based on customer feedback to meet the dynamic needs of the market.

Power a better Life with Pytes

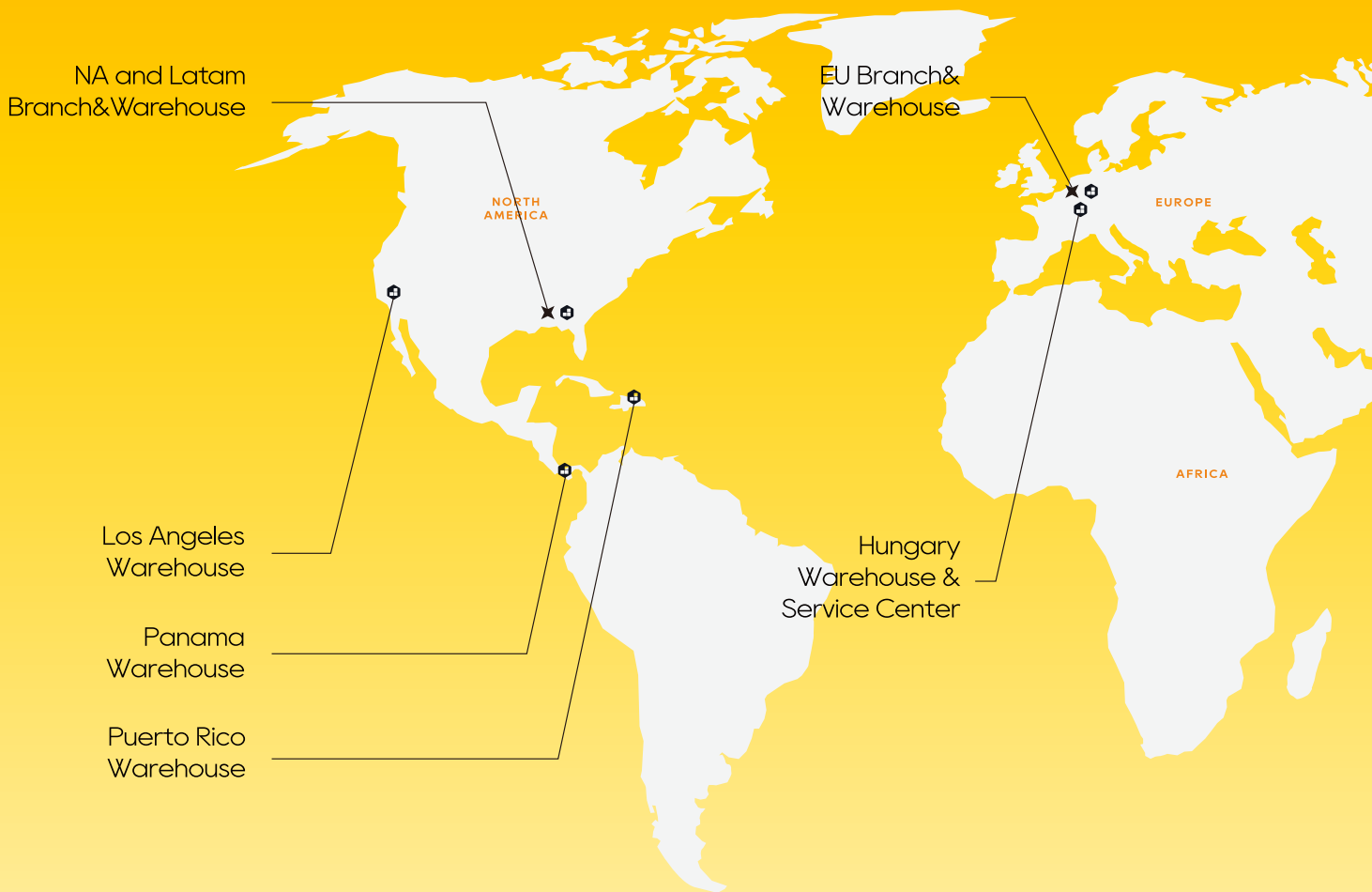
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# GLOBAL PRESENCE, LOCAL SERVICE

Grow Together with Partners, Power a Better Life

Headquarters 📍 Warehouse 🏠 Branch ✕ Factory 🏭



**\$810M**  
Total Assets



**20+ Years**  
Industry Experience



 + **1000+**  
Employees

 **4GWh**  
Annual Capacity



# SGS, TUV, BV, DEKRA

## Accredited Cooperative Testing Labs

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### Mechanical Tests



Vibration Test



Drop Test



Shocking Test



### Safety Tests



Short Circuit Test



Impact Test



Needle Test

### Environmental Tests



Altitude Simulation



Thermal Shock

### Electrical Tests



## Qualification & Certification



UL 9540



UL 9540A



UL 1973



UL 1642



IEC62619



CE



UN38.3



RoHS



REACH



KC



ISO9001:2015



ISO14001:2015

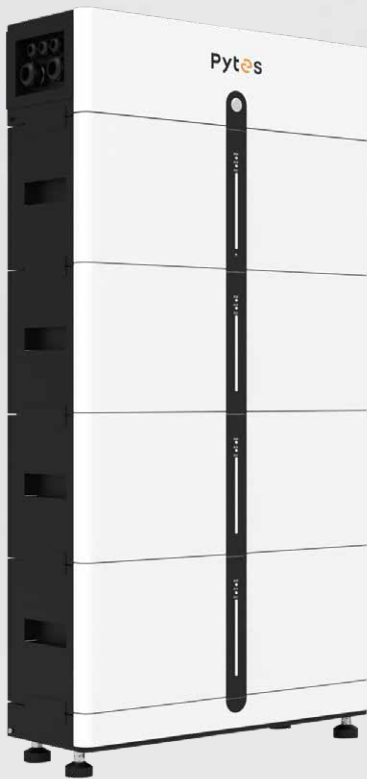
**ESS Products**

ESS Products

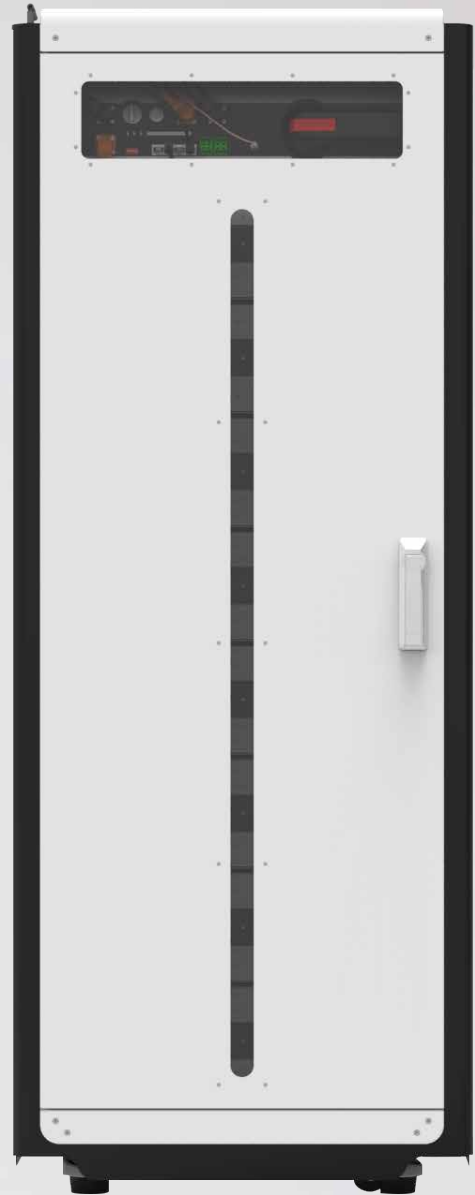




**E-BOX 48100R**



**Pi LV1**



**HV48100**

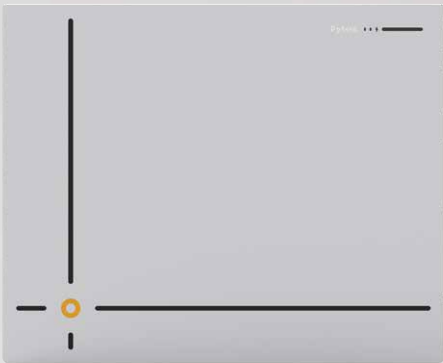




V5°



V-BOX-IC



V10



V-BOX-OC

# E-BOX 48100R



## Features



### Scalable

- From 5.12kWh to 491.5kWh



### Easy to Install



### Long-lasting

- $\geq 6000$  Cycles @ 90% DoD



### Wide Compatibility



### Safe & Reliable

- Tier 1 Automotive Grade A LiFePO<sub>4</sub> cells
- Self-designed & Field-proven BMS

# E-BOX 48100R Specifications

## Electrical

Nominal Voltage	51.2V
Voltage Range	47.5V~57.6V
Nominal Capacity	100Ah
Nominal Energy	5.12kWh
Recommended Charge / Discharge Current	50A(2.56kW dc)
Maximum Charge / Discharge Current	50A(2.56kW dc)
Peak Discharge Current	102A(5.22kW@15s)

## General

Chemistry	LFP
Communication Protocol	CAN/RS485
Dimensions (L x W x H)	17.32 x 24.41 x 4.61inch (2.6U) / 440 x 620 x 117 mm(2.6U)
Weight	112.5lbs / 51kg
Operating Temperature	Charge:32°F~113°F / 0°C~45°C Discharge:14°F~122°F / -10°C~50°C
Round-Trip Efficiency	≥ 95%
Cycle Life	≥ 6000 Cycles
Altitude	< 13123.35ft / 4000m
Warranty	10 Years
Scalability	16 pcs (81.92kWh) in a group 6 groups (491.52kWh) in a system w / a Hub

## Certifications

UL 9540 Ed.2 (2020), UL 9540A, UL 1973, CEC, SGIP

# E-BOX 48100R Brackets & Enclosures

## E BK1



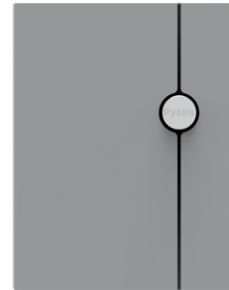
5.12kWh

Up to 6 xE-BOX 48100R  
Floor Mount  
SGCC(Galvanized Steel)

Front: 3.09x1.57x6.36inch/  
78.5x40x161.5mm  
Rear: 2.45x3x6.10inch/  
62.2x76x155mm

3.64lbs / 1.65kg

## VR-BOX-IC



10.24kWh

2 xE-BOX 48100R/V5°  
Wall Mount  
SGCC(Galvanized Steel)  
IP20

26.8x13.4x33.5inch/  
681x341x851mm

77.8lbs/35.3kg

## R-BOX-NEMA3



10.24kWh

2 x E-BOX 48100R  
Wall / Floor Mount  
NEMA3  
SGCC(Galvanized Steel)

20.8 x 15.7 x 28.9inch /  
530 x 400.3 x 734.7mm

66.1lbs / 30kg

## R-BOX-OC



20.48kWh

4 x E-BOX 48100R  
Floor Mount  
SGCC(Galvanized Steel)  
IP55, NEMA 3  
Integrated Busbar &  
DC Circuit Breaker

31.5 x 13.0 x 62.0inch /  
800 x 330 x 1575mm

176.4lbs / 80kg

## Forest RB Plus



30.72kWh

6 x E-BOX 48100R  
Floor Mount  
IP20  
Natural Convection  
SGCC(Galvanized Steel)  
Integrated Busbar

28.3 x 15.7 x 45.3inch /  
720 x 400 x 1150mm

150lbs / 68kg

# V5°

## Features



Remote Monitoring and Upgrading



Higher Charge / Discharge Rate



Wider Operation Temperature



Higher Energy Density



Greater Scalability

# V5° Specifications

## Electrical

Nominal Voltage	51.2V
Voltage Range	47.5V~57.6V
Nominal Capacity	100Ah
Nominal Energy	5.12kWh
Recommended Charge /	75A(3.84kW)
Discharge Current <sup>[1]</sup>	
Maximum Charge /	100A(5.12kW)
Discharge Current <sup>[2]</sup>	
Peak Charge /	101A~120A(3min) ; 121A~180A(15sec)
Discharge Current	

[1], [2]: The recommended and maximum charge / discharge currents apply when battery cell temperature is within 50°F~104°F / 10°C~40°C.

De-rated charge / discharge currents will occur if battery is operated outside of this temperature range.

## General

Chemistry	LFP
Communication Protocol	CAN/RS485
Dimensions (L x W x H)	17.40 x 20.87 x 5.51inch(3.2U) / 424 x 530 x 140mm(3.2U)
Weight	97lbs / 44kg
Operating Temperature	Charge:32°F~113°F / 0°C~45°C Discharge:14°F~122°F / -10°C~50°C
Round-Trip Efficiency	≥95%
Cycle Life <sup>[3]</sup>	≥6000 Cycles
Altitude	< 13123.35ft / 4000m
Warranty	10 Years
Scalability	16 pcs (81.92kWh) in a group 6 groups (491.52kWh) in a system w / a Hub

[3]: Test conditions 0.2C Charging / Discharging, @77°F / 25°C, 90% DoD

## Special Features

WIFI Connection (Optional)	Remote monitoring and upgrade
Heating Pad (Integrated)	Temperature Rise: 18°F / h / 10°C / h Operation Temperature: -4°F~50°F / -20°C~10°C

## Certifications

UL 9540 Ed.2 (2020), UL 9540A, UL 1973, CEC, SGIP

# V5° Brackets & Enclosures

**V-Bracket**



5.12kWh

Up to 6 x V5°

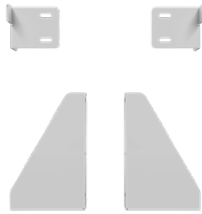
Floor Mount

SGCC(Galvanized Steel)

1.97 x 7 x 2.45inch /  
50 x 177.8 x 62.2mm

3.2lbs / 1.44kg

**V5 BK1**



5.12kWh

1 x V5°

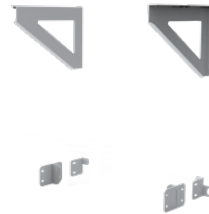
Wall

SGCC(Galvanized Steel)

Upper 5.71 x 3.62 x 1.06inch /  
145 x 92 x 27mm  
Lower auxiliary  
2.36 x 1.97 x 1.89inch /  
60 x 50 x 48mm

1.29lbs / 0.586kg

**V5 BK2**



5.12kWh

2 x V5°

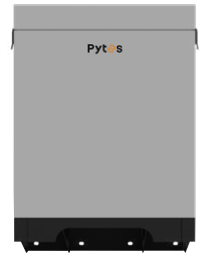
Wall Mount

SGCC(Galvanized Steel)

Upper 1.06x7.36x11.46inch/  
27x187x291mm  
Lower auxiliary  
2.09 x1.97 x2.36inch/  
53x50 x60mm

4.61lbs/2.09kg

**V-BOX NEMA 3**



10.24kWh

2 x V5°

Wall / Floor Mount

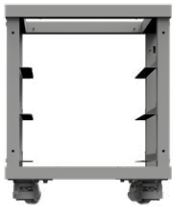
NEMA3

SGCC(Galvanized Steel)

20.5 x 17.0 x 25.5inch /  
521.5 x 430.9 x 647.4mm

65lbs / 29.5kg

### V-BOX-IC se



15.36kWh

3 x V5°

Floor mount

SGCC(Galvanized steel)

21.0 x 22.2 x 26.0inch /  
533 x 565 x 660mm

61.1lbs / 27.7kg

### V-BOX-IC



15.36kWh

3 x V5°

Floor mount

SGCC(Galvanized steel)

IP20

21.0 x 24.3 x 25.6inch /  
533 x 616 x 650mm

93lbs / 42.2kg

### V-BOX-OC



20.48kWh

4 x V5°

Floor Mount

SGCC(Galvanized Steel)

IP55, NEMA 3

Integrated Busbar &

DC Circuit Breaker

25.4 x 15.6 x 54.9inch /  
645 x 395 x 1395mm

194lbs / 88kg

# SMART MONITOR

## Features



Real-time Monitoring



Data Visualization



Remote Upgrading



Error Detection



Alarm Notification



## WiFi Modules



### WD01

Part No: 110409100151

For E-BOX 48100R

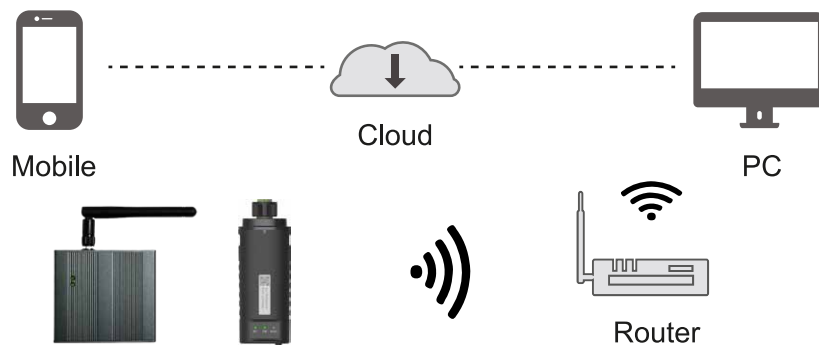


### LSW-5

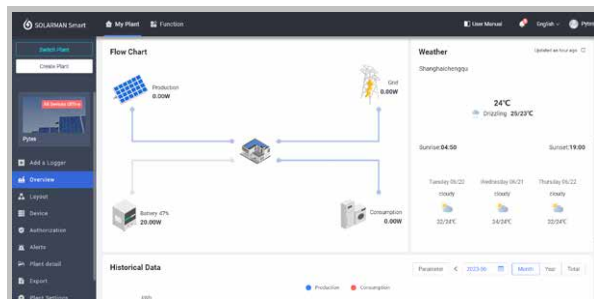
Part No: 162002100019

For V5°

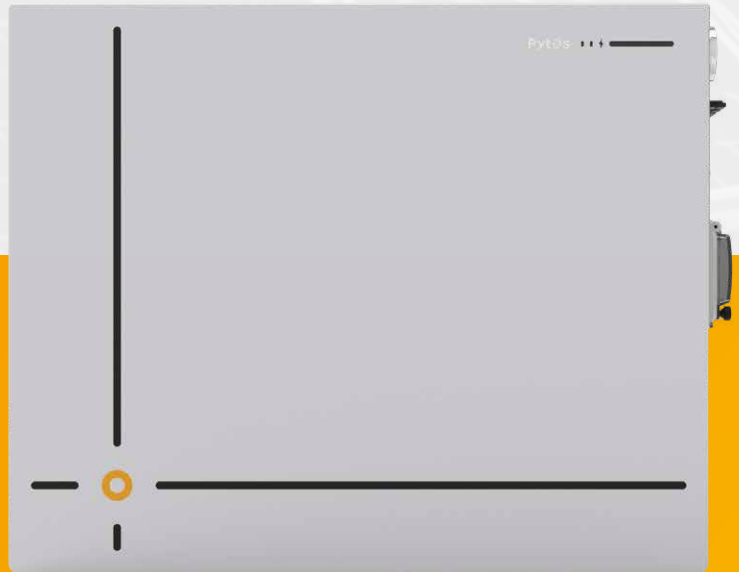
## Diagram



## WEB/APP



# V10



## Features



### Enhanced Safety

- Built-in Aerosol Fire Suppression System
- ESS Emergency Shutdown Feature
- Integrated DC Breaker & Pre-Charge Circuit



### High Power Output

- 5.12kW Continuous Output
- Whole Home Backup Capable



### Remote Monitoring and Upgrading



### Higher Energy Density

- Tier 1 Automotive Grade A 230Ah Cells
- Lighter Weight with Smaller Footprint



### Outdoor-Ready

- Weatherproof Enclosure with Integrated Heating Pad
- Wide Temperature Range for Cold Weather Applications



### Easy to Install

- Wall or Ground Mounted
- Effortless Installation and Quick Commissioning

# V10 Specifications

## Electrical

Nominal Voltage	51.2V
Nominal Capacity	230Ah
Nominal Energy	11.78kWh
Usable Energy	10kWh
Recommended Charge/Discharge Current	100A(5.12KW)
Peak Discharge Current	300A@15s

## General

Chemistry	LFP
Communication Interface	RS485 / CAN / WIFI / Dry Contact
Dimensions(L x W x H)	25.20 x 9.06 x 20.47inch / 640 x 230 x 520mm
Weight	220.5lbs / 100kg
Operating Temperature	Charge: 32~131°F / 0~55°C Discharge -4~131°F / -20~55°C
Cycle Life*	8000 Cycles
Altitude	<13123.35ft / 4000m
Warranty	10 Years Basic Warranty Fee Based Extra 2 Years Coverage
Ingress Protection	IP65
Corrosion Resistance Class	C4M
Mounting Method	Wall / Ground (W/ Optional Battery Tray)
Heating Pad (Integrated)	Temperature Rise: 14.4°F/h / 8°C/h

\*Test Conditions: 25°C, 0.5C/0.5C @90%DoD, 70% EOL

## Enhanced Safety Features

Hardware Level	Aerosol Fire Suppression DC Breaker & Pre-Charge Circuit
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## Certifications

UL 9540 Ed.3 (2023), UL 9540A, UL 1973, CEC, SGIP

# Pi LV1

## Features



### Safe

- LFP Chemistry, Field-Proven BMS Included in Individual Module, Integrated DC Breaker & Fuse



### Scalable on Demand

- Flexible Configuration from 5.12 to 30.72 kWh per Stack, Up to 4 Stacks



### Powerful

- Up to 10.24kW Continuous Output



### Outdoor Rated Enclosure

- Water & Dust Proof for Both Indoor and Outdoor Installation



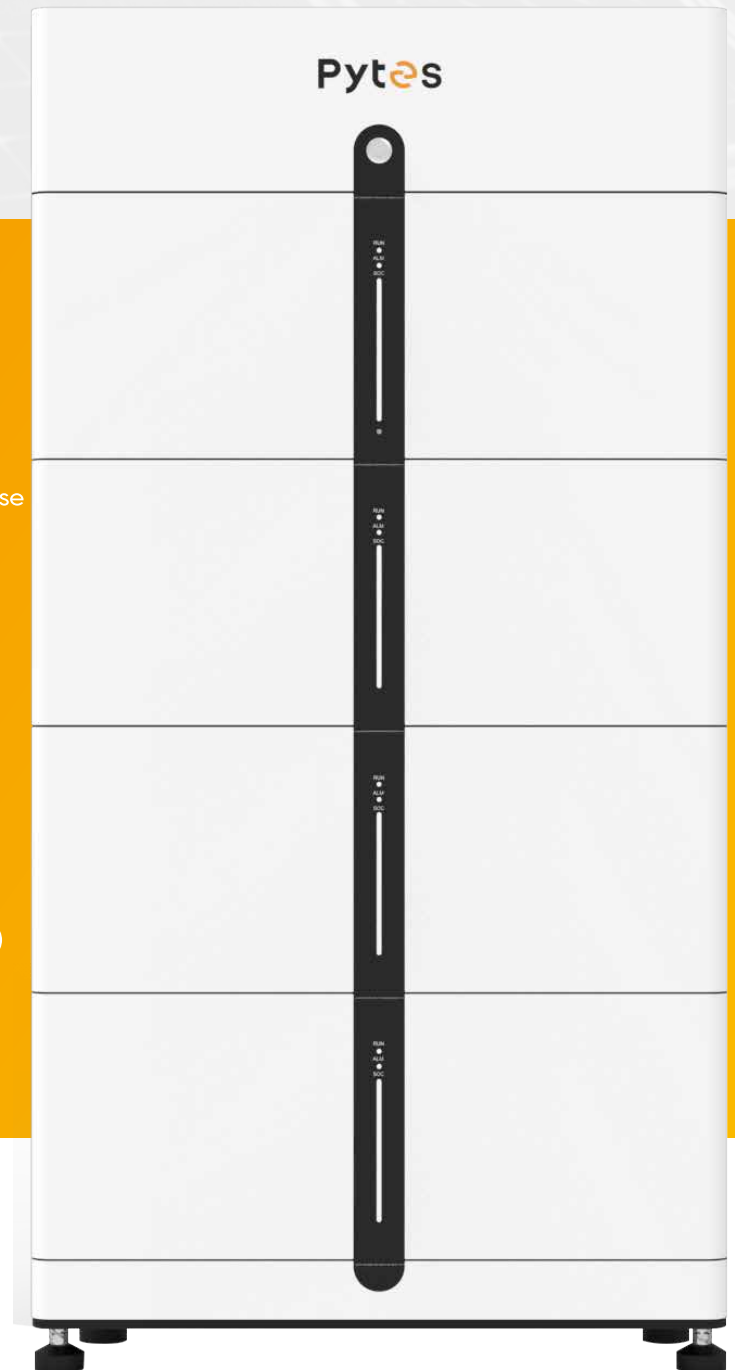
### Plug-and-play (15-min installation)

- Quick Connectors, Easy to Install



### Smart

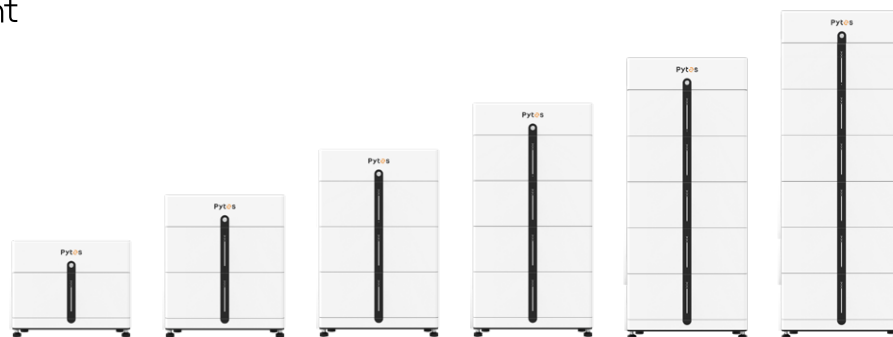
- Remote Upgrading & Monitoring



# Pi LV1 Specifications

## Battery Module Unit

Chemistry	LFP
Nominal Energy	5.12kWh
Nominal Voltage	51.2V
Voltage Range	47.5V~ 56.8V
Nominal Capacity	100Ah
Recommended Continuous Charge / Discharge Current	50A (2.56kW)



Modules <sup>[1]</sup>	1	2	3	4	5	6
Nominal Voltage	51.2V					
Voltage Range	47.5V~56.8V					
Nominal Capacity	100Ah	200Ah	300Ah	400Ah	500Ah	600Ah
Nominal Energy	5.12kWh	10.24kWh	15.36kWh	20.48kWh	25.6kWh	30.72kWh
Recommended Power	2.56kW	5.12kW	7.68kW	10.24kW	10.24kW	10.24kW
Dimensions (L x W x H) (inch / mm)	26.8x9.5x21.3 /681x242x540	26.8 x 9.5 x 31.5 /681x242x800	26.8 x 9.5 x 41.7 /681x242x1060	26.8 x 9.5 x 52.0 /681x242x1320	26.8 x 9.5 x 62.2 /681x242x1580	26.8 x 9.5 x 72.4 /681x242x1840
Weight(lbs / kg)	158.1 / 71.7	275.6 / 125	393.1 / 178.3	510.6 / 231.6	628.1 / 284.9	745.6 / 338.2
Efficiency	≥ 95%					
Communication	CAN, RS485, WIFI, Dry Contact					
WiFi Module	Wifi frequency range:2412~2472MHz Wifi Max. transmission power<20dBm Bluetooth frequency range: 2402~2480MHz Bluetooth Max. transmission power<4dBm					
Operating Temperature	Charge:32°F~113°F / 0°C~45°C Discharge:14°F~122°F / -10°C~50°C					
Ingress Protection	IP55					
Cycle Life <sup>[2]</sup>	≥ 6000 Cycles					
Altitude	< 13123.35ft / 4000m					
Warranty	10 Years					
Certifications	UL 9540 Ed.3 (2023), UL 9540A, UL 1973, CEC, SGIP					

[1]:4 models parallel in Pi LV1 is Recommended.

[2]:@77°F / 25°C, 0.5C Charging / Discharging, 90% DoD.

# HV48100

## Features



### Safety-Oriented

LFP Chemistry, Grade A Cells & Field-Proven Modular BMS Built-In



### Powerful

High Power Output, Suitable for Applications that Require Quick Bursts of Energy



### Scalable & Flexible

Increase Capacity on Demand, Ideal for Residential, Commercial & Industrial Use



### Compatibility

Field Integrated Solutions, Wide Voltage Range Compatible with Industry Leading Inverters



### High Energy Efficiency

Increased Energy Density and Low Resistive Losses



### Smart

Remote Upgrading & Monitoring



# HV48100 Specifications

## HV48100 BCU (Battery Control Unit)

Controller Working Voltage	200V~870V
Self-consumption Power	7.56W
Dimensions (W x D x H)	19.06 x 20.09 x 5.51inch / 484 x 510 x 140mm
Weight	29.32lbs / 13.3kg

## HV48100 BMU (Battery Module Unit)

Nominal Voltage	51.2V
Voltage Range	45.5~58V
Nominal Capacity	100Ah
Nominal Energy	5.12kWh
Continuous Discharging / Charging Current	50Adc
Chemistry	LFP
Communication	CAN, RS485
Dimensions (W x D x H)	19.06 x 20.87 x 5.51inch / 484 x 530 x 14mm
Weight	94.8lbs / 43kg

## HV48100 System

Nominal System Voltage	256~768V
System Voltage Range	(45.5V~58V) x n
Nominal System Capacity	100Ah
Nominal System Energy	25.6~76.8kWh
Continuous Charge / Discharge Current	50Adc
BMU Qty. (Variable)	5~15
Communication	CAN, RS485, Dry Contact, WiFi
Recommended Depth of Discharge	90%
Dimensions (W x D x H)	23.62 x 25.2 x 61.22inch / 600 x 640 x 1555mm
Weight (Cabinet+BCU+BMU)	197.5lbs+29.32lbs+94.8lbs x n 89.6kg+13.3kg+43 kg x n
Operating Temperature	Charge:32°F~134.6°F / 0°C~57°C Discharge:-0.4°F~134.6°F / -18°C~57°C
Ingress Protection	IP20
Cycle Life	≥6000 Cycles
Altitude	< 13123.35ft / 4000m
Warranty	10 Years

\*Note."n" represent the quantity of BMU, from 5 to 15 pcs.

## Certifications

UL 9540 Ed.3 (2023), UL 9540A, UL 1973

# Accessories

## Equipments



### HUB

110409100001

#### Hub

Enables communication between multiple groups of batteries



### Busbar:

161506100003

#### 300A Junction Box

300A/6 x M5+2 x M10 Terminals

### Busbar:

110409100026

#### 300A Busbar

300A/12 x M6+2 x M8 Terminals

110409100027

#### 600A Busbar

600A/6 x M10+2 x M8 Terminals



### V-Busbar

110409100167

#### V-Busbar

Combines DC battery terminals of Sol-Ark 15K inverter. Sold as a pair of two brackets

## Cables



### Power Cables

161412100244 & 161412100245

**4AWG / 78.74inch / Amphenol to M8 Bolt**

161412100251 & 161412100252

**4AWG / 6.30inch / both Amphenol ends**

161412100467 & 161412100468

**4AWG / 78.74inch / Amphenol to M10 Bolt**

161412100461 & 161412100462

**4/0AWG / 78.74inch / both M10 ends**

161412100465 & 161412100466

**2/0AWG / 78.74inch / both M10 ends**

61412101024 & 161412101026

**1/0AWG / 78.74inch / M6 to M10 ends**

### Communication Cables

161412101071

**Standard Communication Cable**

Compatible with: Sol Ark, Megarevo, Luxpower, Growatt, APsystems, SMA, Studer

1614121010XX

**Customized Communication Cable**

Customized for: Victron, Voltronic, Phocos, MPP, SRNE

161412100916

**Console Cable**

USB to RJ45 cable for monitoring & upgrading



# RELIABLE POWER FOR RESIDE



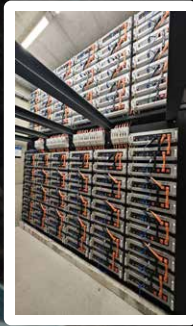
## QUALITY & PERFORMANCE



## INSTALLER FRIENDLY



# NTIAL AND C&I APPLICATIONS



FIELD-PROVEN



# Inverter Compatibility List

## Low Voltage



## High Voltage



# Pytes

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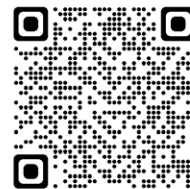
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