

GUARDIAN

19" 3U LFP Guardian Battery Unit (GBU)

Overview

The Guardian Battery Unit (GBU) is a 48V 19" rack-mountable Lithium-ion Battery Backup Unit (BBU) designed to be used in conjunction with the Aspiro and Guardian DC Power Systems. The GBU Series has been designed for data center and telecom applications as a replacement to Lead Acid batteries.

The patented Energy Balance Technology (EBT) provides internal balancing among the GBU modules connected in parallel. The EBT ensures consistent voltage and current delivery from the entire system of connected modules, which maximizes run-time and power delivery.

Remote management via the RS-485 (ModBus) for immediate access to performance and alarm information. Integrates with many site controller platforms for remote monitoring.

Lithium Iron Phosphate chemistry provides superior power delivery, as well as the longest cycle and calendar life.

Features

- 3RU High with 105 Ahr of capacity
- 19-Inch Rack Mounting
- Current Capacity: 100A
- Operating Voltage: 48VDC
- Scalable connect multiple units in Parallel
- RS-485 Communication Ports

Advantages

- Energy Balance Technology (EBT) – When more than one Guardian Battery Unit (GBU) is connected in parallel, internal balancing among the GBU modules ensures consistent voltage and current delivery from the entire system of connected modules. The EBT function maximizes the run-time and power delivery for the entire system.
- Lithium Iron Phosphate battery chemistry offer many benefits compared to traditional lead-acid batteries and other lithium-ion batteries, including NMC and LCO based solutions;
 - Long Cycle Life and Calendar Life
 - No Maintenance
 - Extremely Safe
 - Wide Temperature Range
 - Improved Discharge & Charge Efficiency
 - Consistent Voltage and Current Delivery



Guardian Battery Unit Specifications

Guardian Battery Unit (GBU) 3U

Electrical Parameters

Lithium-Ion Chemistry	Lithium Iron Phosphate
Nominal Voltage	48 V
Voltage Range	42.7 - 54.8 Volts
Nominal Capacity	105 AHr (5040 Wh)
Continuous Discharge Current	100 A
Pulse Discharge Current	115A for 300mS
Quiescent Current	6 mA
*Maximum Input Voltage	58 Volts
Min/Max Charge Current Range	3 - 100 A
Cell Balancing	300 mA
Maximum in Parallel Operation	31. Contact Green Cubes for arrays over 10 pcs

Physical Parameters

Terminals	Four threaded receptacles, M6 bolt pattern
Dimensions	440mm x 558.8mm x 130.5mm
Weight	50kg (110 lbs)

Communications and Control

Serial Communication	ModBus over RS485
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Environmental

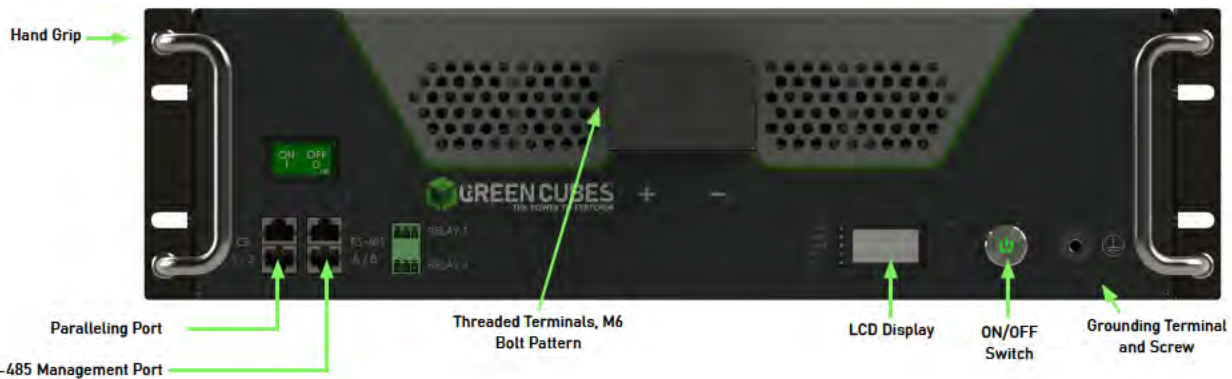
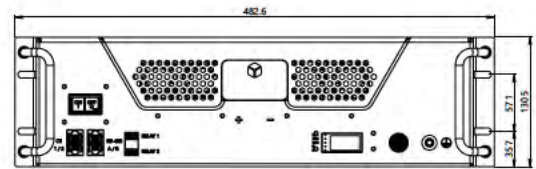
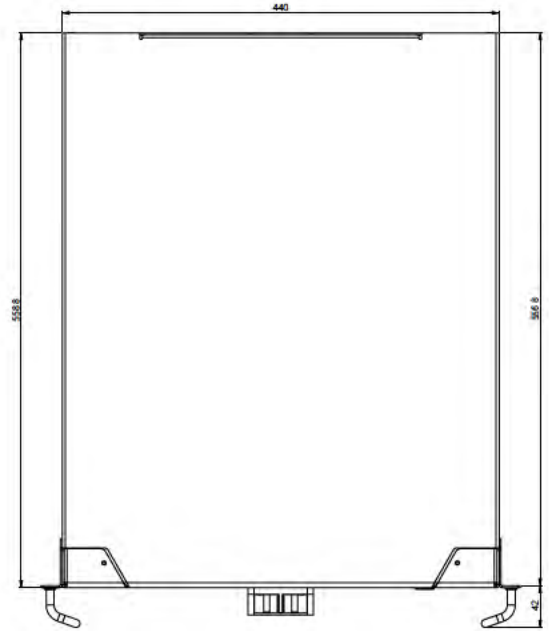
Operating Humidity	5% to 95% Non-condensing
Charge Temperature Range	0 to +55C
Discharge Temperature Range	-20 to +55C
Thermal Management	Variable Speed Fan
Airflow Direction	Back to Front
IP Rating	IP 20

Approvals and Safety

Agency Approvals	UN 38.3, IEC62368, CE (IEC62619, UL1973 Pending)
Radiated and Conducted Emission	EN55032 / CISPR 22 Class A
Design Life	Up to 20 Years
Cycle Life @ 80% SOH	3500 Cycles
Battery Modes	Battery modes - Ship and active
Shipping Classification	Class 9

*Max voltage applied to terminal

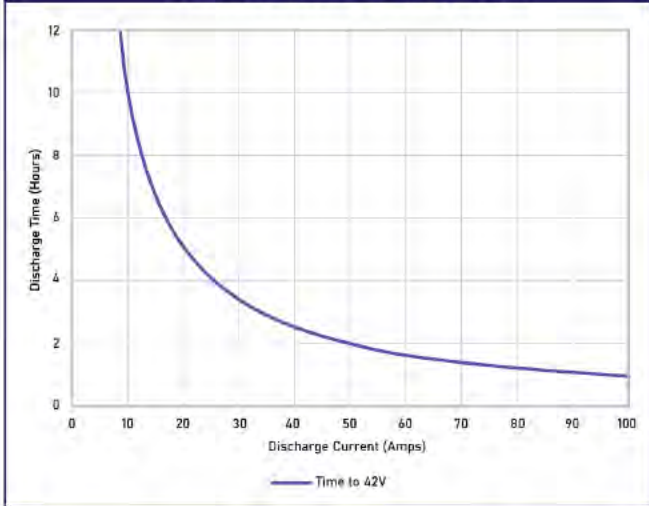
** Fan is replacement part



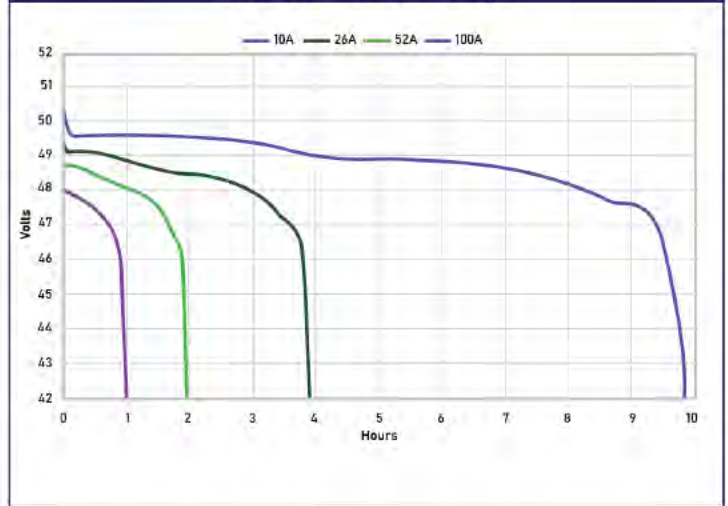
Mounting Trays: EIA Standard Trays Available to Support GBUs

# of Posts	Rack Width (inches)	Part Number
2	19	111.2020.3019 A
2	23	111.2050.3023 A
4	19	111.2051.3019 A
4	23	111.2051.3023 A

Constant Current Discharge Time



3U GBU Discharge Voltage



3U GBU (105 Ah) Constant Current Discharge Characteristics @ 25°C

Current (C Rate)	0.1C	0.15C	0.2C	0.25C	0.3C	0.4C	0.5C	0.6C	0.7C	0.8C	0.9C	1C
Time	Hours											
Voltage	46.5	45.0	43.5	42.0	40.5	39.0	9.67	9.67	9.78	9.83	9.83	9.83
	6.34	6.42	6.50	6.52	6.52	6.52	4.69	4.79	4.86	4.88	4.88	4.88
	3.72	3.82	3.88	3.89	3.89	3.89	3.07	3.18	3.23	3.24	3.24	3.24
	2.28	2.38	2.42	2.42	2.42	2.42	1.80	1.89	1.93	1.93	1.93	1.93
	1.49	1.58	1.60	1.61	1.61	1.61	1.27	1.35	1.37	1.37	1.37	1.37
	1.10	1.18	1.20	1.20	1.20	1.20	1.10	1.18	1.20	1.20	1.20	1.20
	0.98	1.04	1.07	1.07	1.07	1.07	0.98	1.04	1.07	1.07	1.07	1.07
	0.87	0.94	0.96	0.96	0.96	0.96	0.87	0.94	0.96	0.96	0.96	0.96

ABOUT GREEN CUBES TECHNOLOGY

Green Cubes Technology harnesses over 30 years of industry experience to ensure we design, develop and deliver solutions for the most challenging energy needs. We offer battery technology innovation, application design and performance management to drive productivity, scalability and sustainability.

For more information, email contact@greencubes.com or visit greencubes.com

