GREEN CUBES
THE POWER TO PERFORM

ASPIRO

ASPIRO 2U
Front Access 2U (MS23) Integrated DC Power System -48VDC | 60A | 3.2kW

Overview

Aspiro 2U Front Access is a 2RU high 19" rack-mounted, integrated DC power system providing an output of -48VDC. The system can accommodate up to 4 Aspiro family high efficiency hot-swap rectifiers. A total load current of 60A / 3.2kW is available with battery charge current up to 30A in addition. The rectifiers are internally fan cooled with speed control which is a function of load and temperature, keeping acoustic noise to a minimum. The system offers full front access for cable connections with push-pull mounting brackets for either 19" or ETSI mounting.

The DC output circuits can provide up to 8 loads with breakers rated from 1A to 30A. 2 additional breakers provide battery protection. A programmable 125A low voltage battery disconnect (LVBD) is standard while an optional partial load disconnect (PLD), also rated at 125A and programmable, can provide non-critical load shedding when operating on batteries.

The GCC remote access system management module monitors system parameters, controls rectifier output, and provides alarms for system failures. The module is also pluggable for easy field replacement in case of failure. There are 2 LED alarm indicators which indicate failures, (RED) Alarm and (YELLOW) Message. A third green LED indicates the controller is working properly. As standard four form-C relay outputs provide the alarms for remote use. An additional 6 can be included as an option. Two digital inputs and outputs are also provided as well as a microSD card slot that accepts an up to 4GB card which is sufficient for more than 20 years data logging.

The system can be programmed by means of a remote PC web page display. Communication is by Ethernet LAN with SNMPv3 including alarm trapping. It also has provision for temperature compensated charging of an external battery using a supplied TC probe. An LCD Display/Touchpad is included for local metering, status, and setup.

Features

- >95% Efficiency Rectifiers
- 60A / 3.2kW Load Capacity
- Full Front Access
- Remote Monitoring & Control
- Field Replaceable Controller
- Ethernet Comm. with SNMPv3
- 3 LED Alarm/Status Indicators
- 4 Form-C Relay Alarms
- 8 Load & 2 Battery Breakers
- LCD Display/Touchpad
- Easy Installation
- Three Year Warranty

Safety Certification

CAN/CSA C22.2 No 62368-1:2014
UL 62368-1:2014
EN 62368-1:2014/A11:2017

System Specifications & Capability Guide

SYSTEM DESIGNATION - ASPIRO 2U - MS0023

Output

System Voltage	-48VDC nominal | 53.5VDC float	
Maximum Capacity @ 120VAC nominal	Load	60A
	Battery	60A discharge | 30A charge (s/w controlled)
Maximum Capacity @ 230/400VAC nominal	Load	60A
	Battery	60A discharge | 30A charge (s/w controlled)
No. Rectifier Slots	4	

DC Distribution

Loads Circuits	8 x 1A to 30A (see configuration guide on page 6)
Bulk Feed for External PDU Connection	1 x 60A (see configuration guide on page 6)
Battery Circuits	2 x 30A to 100A (see configuration guide on page 6)

Input

Voltage (nominal)	1-phase 100-120/200-240VAC (L + N + PE) 2-phase 200-240VAC (L1 + L2 + PE) 3-phase 230/400VAC (L1 L2 L3 + N + PE)
Frequency	47-63Hz
Maximum Input Current	32A @ 100-120VAC | 14A @ 200-240VAC | 8A per phase @ 400/230VAC
Rectifier Power Factor	>0.98 (typical)
Surge Protection	Optional (see configuration guide on page 6)

Monitoring & Control

Alarm Relays	4
Local Interface	4 x 20 LCD, 4-key menu, USB / RS232, microSD card slot (4GB max,) for data logging
Remote Interface	Ethernet / Modem using PowCom™ software package Ethernet port allows monitoring and control over a TCP/IP network. Web browser support + SNMPv3
LED Indications	Green - System ON; Yellow - Message(s); Red LED - Alarm(s)
External Digital I/O	2 x Inputs, 2 x Outputs (Open Collector)

Battery Management

Symmetry Inputs	6 or 12 (can be redefined as analog inputs up to 100VDC)
Low Voltage Battery Disconnect (LVBD)	1 x 125A Programmable
Partial Load Disconnect (PLD)	1 x 125A Programmable (see configuration guide on page 6)
Temperature Compensated Charging	Programmable

Compliance

EMC	EN 300 386 ; EN61000-6-3 (Emission) ; EN61000-6-2 (Immunity)
Safety	CAN/CSA C22.2 No 62368-1:2014 | UL 62368-1:2014 | EN 62368-1:2014/A11:2017

Environmental

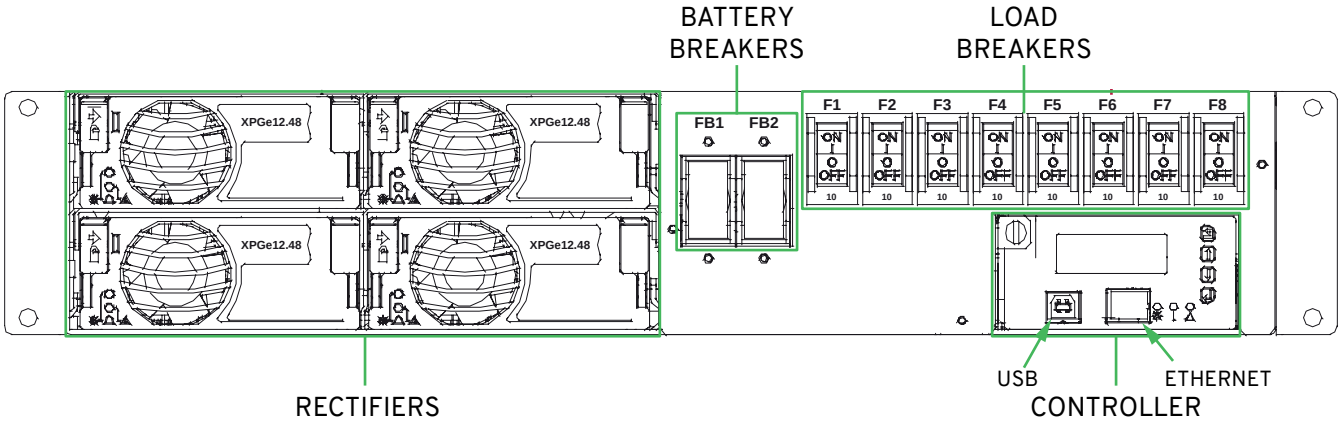
Operating Temperature	-40ºC to +55ºC
Storage Temperature	-40ºC to +85ºC

Rectifier Module vs. System Capacity

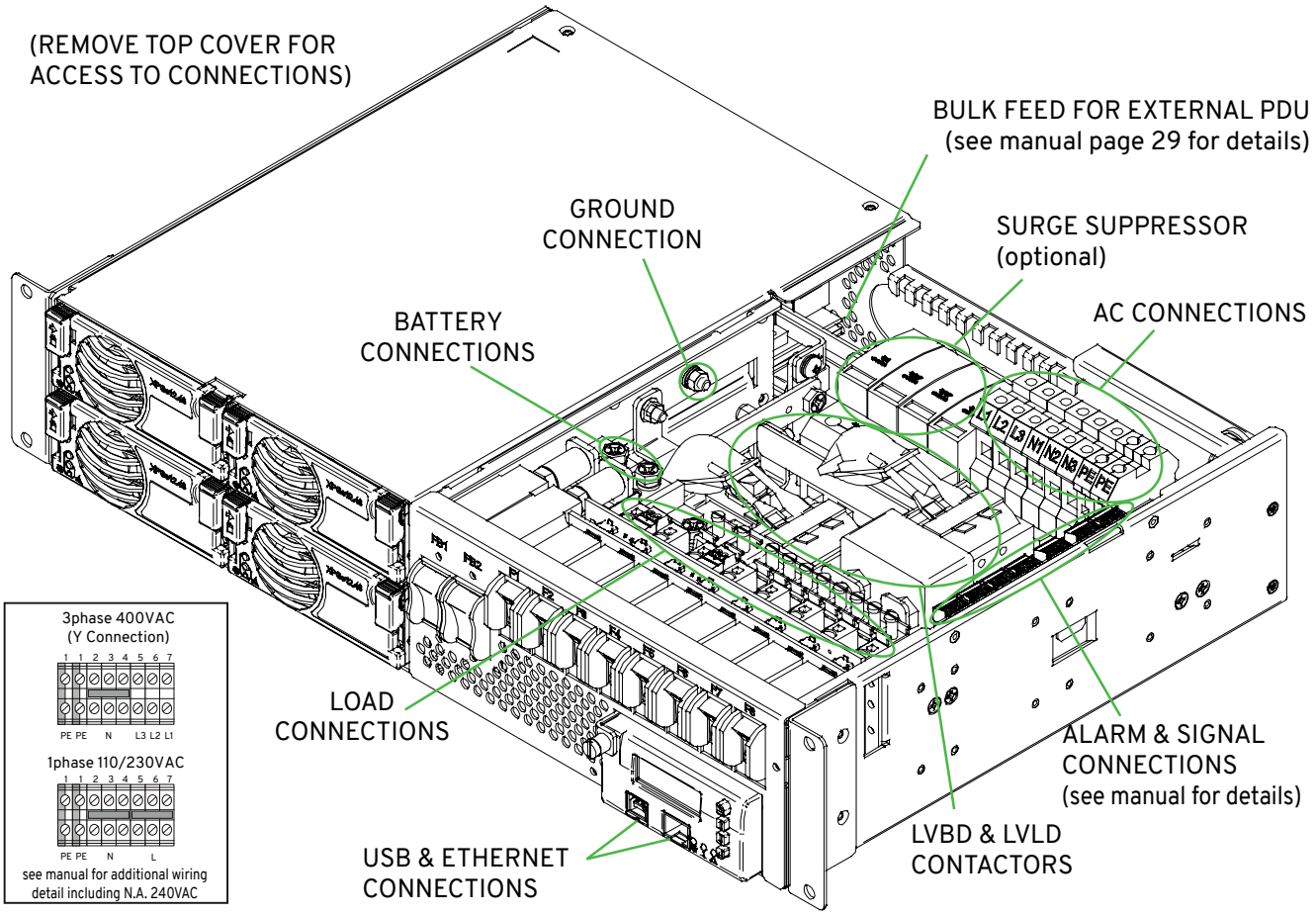
Rectifier Modules						System Capacity @ Float	
Model Number	**Efficiency [1]**	**Input Voltage [2]**	**Input Current [3]**	**Output Power**	**Output Current 48V / 53.5V**	**Max. Load Current**	
						Total	**3+1 [4]**
XPGe12.48G	>95.0%	90-180VAC	7.3A	600W	12.5A / 11.2A	44.8A	33.6A
		185-275VAC	7.0A	1200W	25.0A / 22.4A	60.0A	60.0A

Notes:
1. When operating at 230VAC.
2. Operates over the full range, automatically limiting output current/power according to the actual input voltage range applied.
3. Input currents shown are expected maximums at 90VAC/180VAC as appropriate.
4. Figures quoted are at 110VAC input. See separate rectifier datasheet for details.

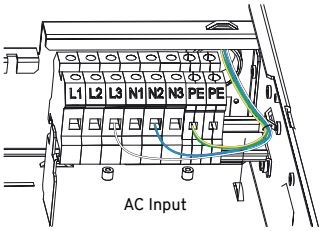
Front Panel Description



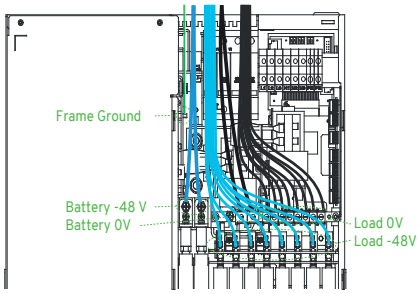
Perspective Front View



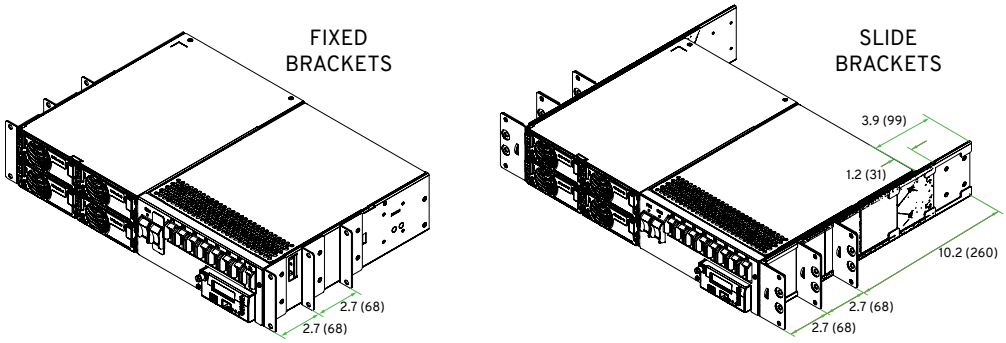
Rear View



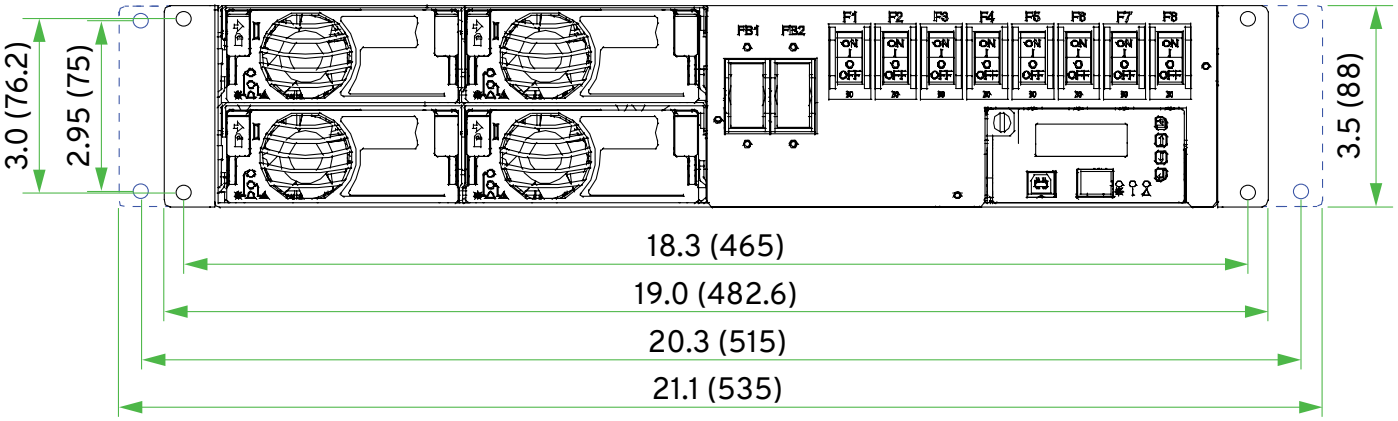
Cable Routing

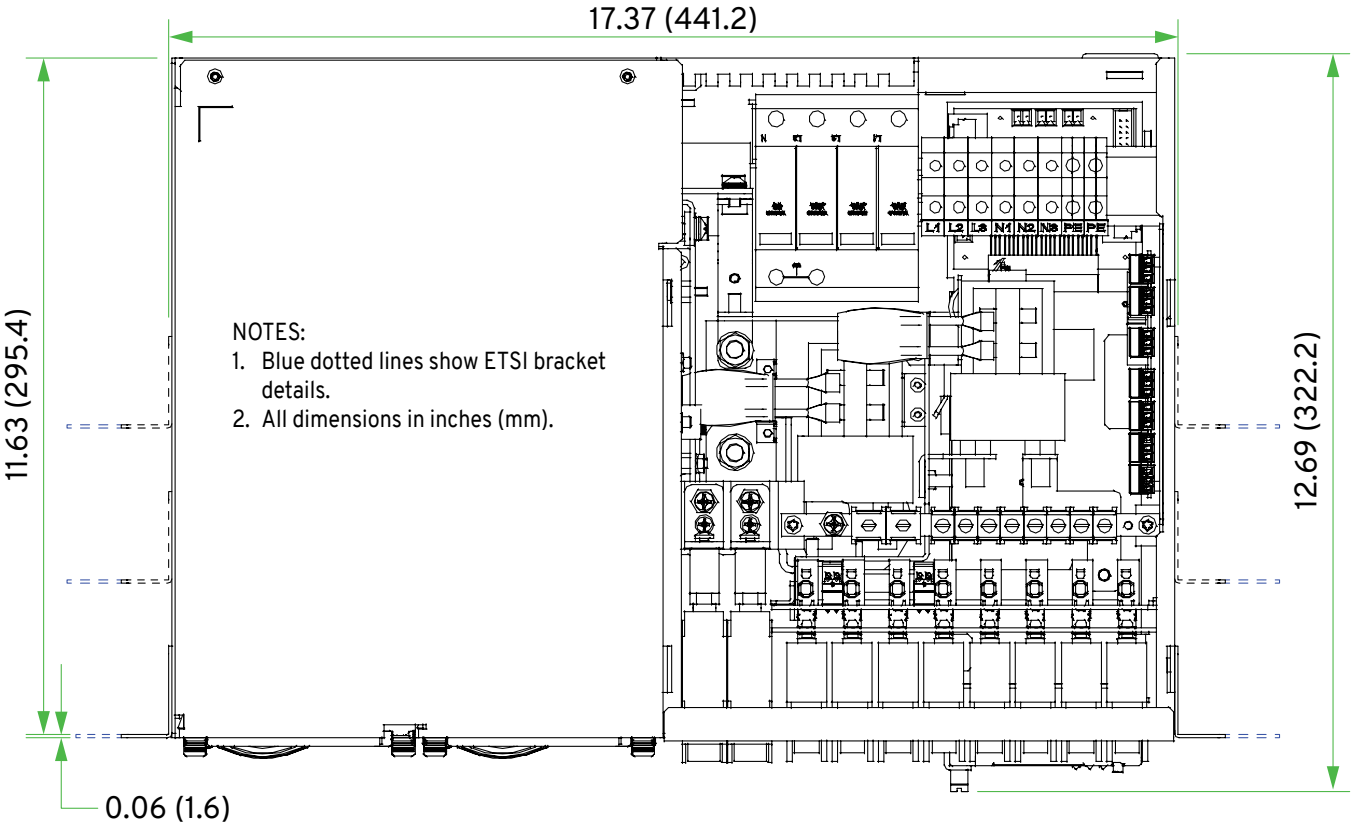


Mounting Bracket Configurations

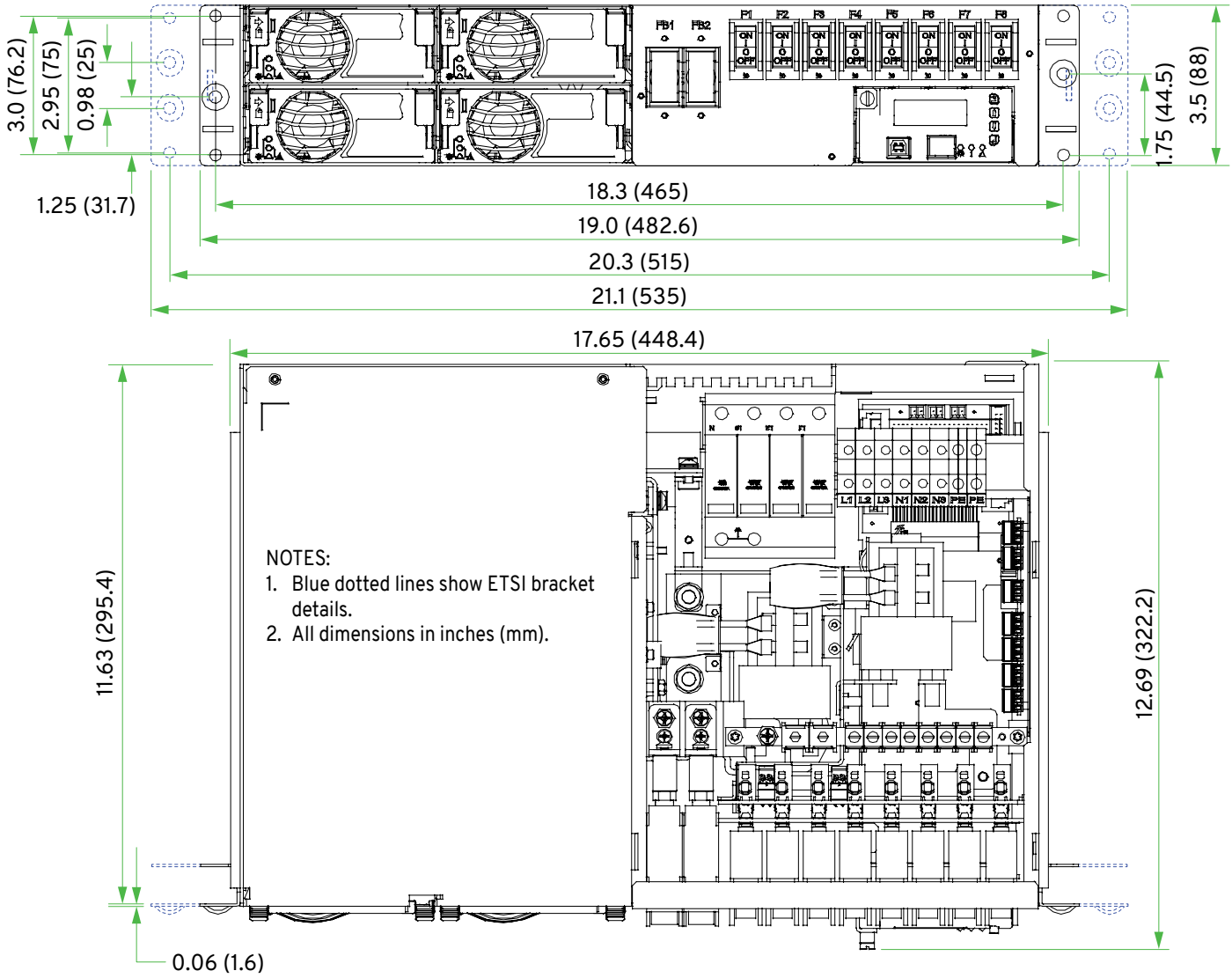


Detailed Dimensions - Fixed Bracket Option





Detailed Dimensions - Slide Bracket Option



Weights & Dimensions

UNIT	UNIT				PACKAGED				
	Width	Height	Depth	Weight	Width	Height	Depth	Weight	# in box
System Unit (19" Mounting)	19.00 (482.5)	3.50 (88.0)	11.70 (297.2)	22 lbs (10 kg)	23.2 (589)	7.9 (200)	15.3 (387)	25 lbs (11.4 kg)	1
System Unit (ETSI Mounting)	21.10 (535.0)								
Rectifier Module	4.0 (102)	1.6 (41)	9.0 (229)	2.4 lbs (1.1 kg)	6.0 (152)	2.2 (55)	11.5 (291)	2.6 lbs (1.2 kg)	1

Dimensions in inches (mm)

Configuration Guide

PLEASE COMPLETE THE BELOW TABLE AND SUBMIT TO GREEN CUBES FOR VERIFICATION AND CONF. NO. ALLOCATION
(This form is fully interactive and may be completed electronically OR it can be printed and completed by hand)

STEP 1 - CUSTOMER DETAILS

Company: _____	Contact Name: _____
Address: _____	Email Address: _____
_____	Telephone: _____
Zip Code: _____ Country: _____	Quantity for quotation: _____

STEP 2 - RECTIFIER MODULES - Enter quantity between 1 and 4 - blanking modules XB-01-G will be inserted into unused slots

XPGe12.48G - 1200W / 22.6A - >95% Efficiency	Qty 1 ☐ OR Qty 2 ☐ OR Qty 3 ☐ OR Qty 4 ☐

STEP 3 - BATTERY BREAKERS - Choose rating and quantity or NONE (Breakers MUST be identical rating)

No Breakers [PLEASE CHECK WITH SALES FOR AVAILABILITY]	None ☐
OR 30A x1 or x2	OR Qty 1 ☐ OR Qty 2 ☐
OR 45A x1 or x2	OR Qty 1 ☐ OR Qty 2 ☐
OR 60A x1 or x2	OR Qty 1 ☐ OR Qty 2 ☐
OR 80A x1 or x2	OR Qty 1 ☐ OR Qty 2 ☐
OR 100A x1 or x2	OR Qty 1 ☐ OR Qty 2 ☐

STEP 4 - PARTIAL LOAD DISCONNECT (PLD) - Select YES or NO (default) [PLEASE CHECK WITH SALES FOR AVAILABILITY]

125A PLD (partial load / load shed disconnect)	YES ☐ OR NO ☑

STEP 5 - LOAD BREAKERS - Choose quantity for desired ratings - maximum 8 positions in total. Positions not filled will have a blank fitted.
When the PLD option is not selected populate only the LVBD 'critical' circuits column. [Configuration will be checked by Green Cubes]

	LVBD CIRCUITS (Critical)	PLD CIRCUITS (non Critical)
1A single pole	Quantity ____ (8 max. or 7 with PLD)	Quantity ____ (1 to 7 max.)
4A single pole	Quantity ____ (8 max. or 7 with PLD)	Quantity ____ (1 to 7 max.)
5A single pole	Quantity ____ (8 max. or 7 with PLD)	Quantity ____ (1 to 7 max.)
7.5A single pole	Quantity ____ (8 max. or 7 with PLD)	Quantity ____ (1 to 7 max.)
10A single pole	Quantity ____ (8 max. or 7 with PLD)	Quantity ____ (1 to 7 max.)
15A single pole	Quantity ____ (8 max. or 7 with PLD)	Quantity ____ (1 to 7 max.)
20A single pole	Quantity ____ (8 max. or 7 with PLD)	Quantity ____ (1 to 7 max.)
25A single pole	Quantity ____ (8 max. or 7 with PLD)	Quantity ____ (1 to 7 max.)
30A single pole	Quantity ____ (8 max. or 7 with PLD)	Quantity ____ (1 to 7 max.)

STEP 6 - TEMPERATURE SENSOR - available for battery and ambient temperature measurement

Battery Temperature Sensor - 3.0m (~10ft)	NONE ☐ OR 3m (~10ft) ☐
Ambient Temperature Sensor - 3.0m (~10ft)	NONE ☐ OR 3m (~10ft) ☐

STEP 7 - SYMMETRY CABLES - choose none or type desired. Quantity will be matched to battery breakers installed.

None	NONE ☐
OR - End Measure (3-wire 4 block) 3.0m (~10ft)	OR End Measure 3.0m ☐
OR - Mid Measure (1-wire 2 block) 3.1m (~10ft)	OR Mid Measure 3.1m ☐

STEP 8 - MOUNTING BRACKETS - choose one type only - slide types allow front access

19" Slide (allows front or mid push-pull mounting)	19" Slide ☑ (Standard - Available in all regions)
OR ETSI Slide (allows front or mid push-pull mounting)	OR ETSI Slide ☐ (Available in EMEA region only)
OR 19" Fixed (allows front or mid fixed position mounting)	OR 19" Fixed ☐ [PLEASE CHECK WITH SALES FOR AVAILABILITY]
OR ETSI Fixed (allows front or mid fixed position mounting)	OR ETSI Fixed ☐ [PLEASE CHECK WITH SALES FOR AVAILABILITY]

STEP 9 - OPTIONS & ACCESSORIES (Select required items) [PLEASE CHECK WITH SALES FOR AVAILABILITY]

Surge Protection Kit (factory fit)	NONE ☑ OR YES ☐
Parallel Connection Kit (allows bulk connection to external PDU)	NONE ☑ OR YES ☐

STEP 10 - SUBMIT COMPLETED FORM TO Green Cubes FOR CHECKING AND ALLOCATION OF CONFIGURATION PART NUMBER

Configuration Part Number: MS0023G_____ (leave blank for completion by Green Cubes)

NOTE: Items marked "Please check with sales for availability" may require extended leadtimes and/or minimum order quantities.

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.

Green Cubes provides complete power systems to the stationary power industry. With the addition of the Guardian and Aspiro Product lines offered under the UNIPOWER brand, these industry proven DC plant systems serve critical applications all around the world. Green Cubes offers complete power solutions including energy storage, power conversion, and seamless integration.

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

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