



OPEN

Compute Project



The background is a vibrant green watercolor wash. Overlaid on this are several clusters of small, dark green arrows. Some arrows point inwards towards a central point, while others point outwards, creating a sense of dynamic movement or flow. The arrows are arranged in roughly circular or semi-circular patterns in some areas, and more scattered in others.

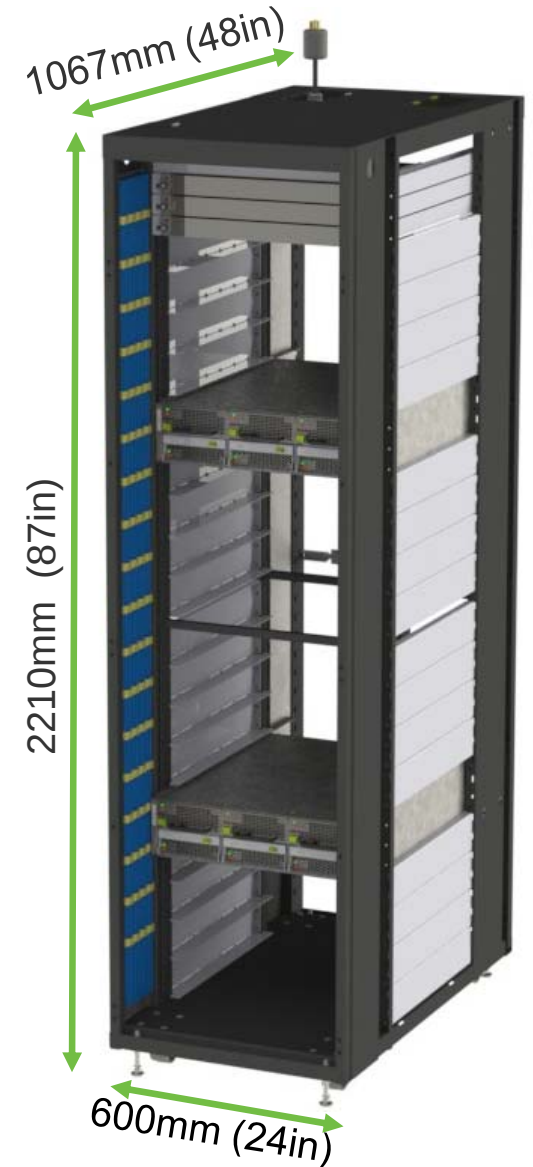
DCP U.S. SUMMIT 2016

Intro to FB Open Rack V2

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Technical Lead - Facebook

Open Rack V2 Overview

- Complies with Open Rack Standard V1.1
- Backwards compatible with all Open Rack V1 IT Gear
- Supports dynamic loading of 1400kg per ASTM D4169-09
- Footprint similar to 19" EIA rack



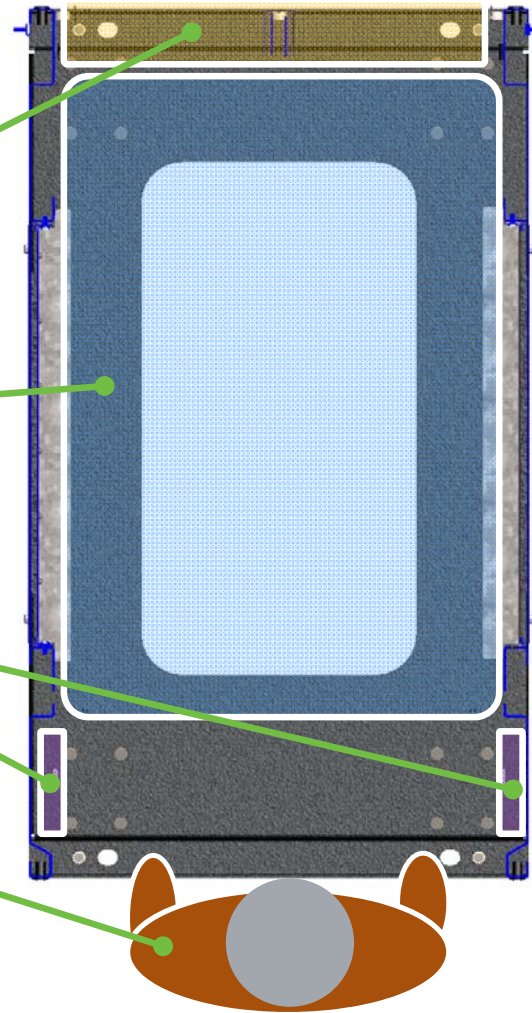
Open Rack Layout

Power Zone

Open Rack IT Zone (538mmx800mm)
Greater IT volume per floor tile vs. EIA

2x DATA Cable Zones (26mmx160mm)
Accessible from cold aisle
Segregated from AC power

Service Technician
can perform high failure
rate repairs from cold aisle



Data Center Air Flow

Top View

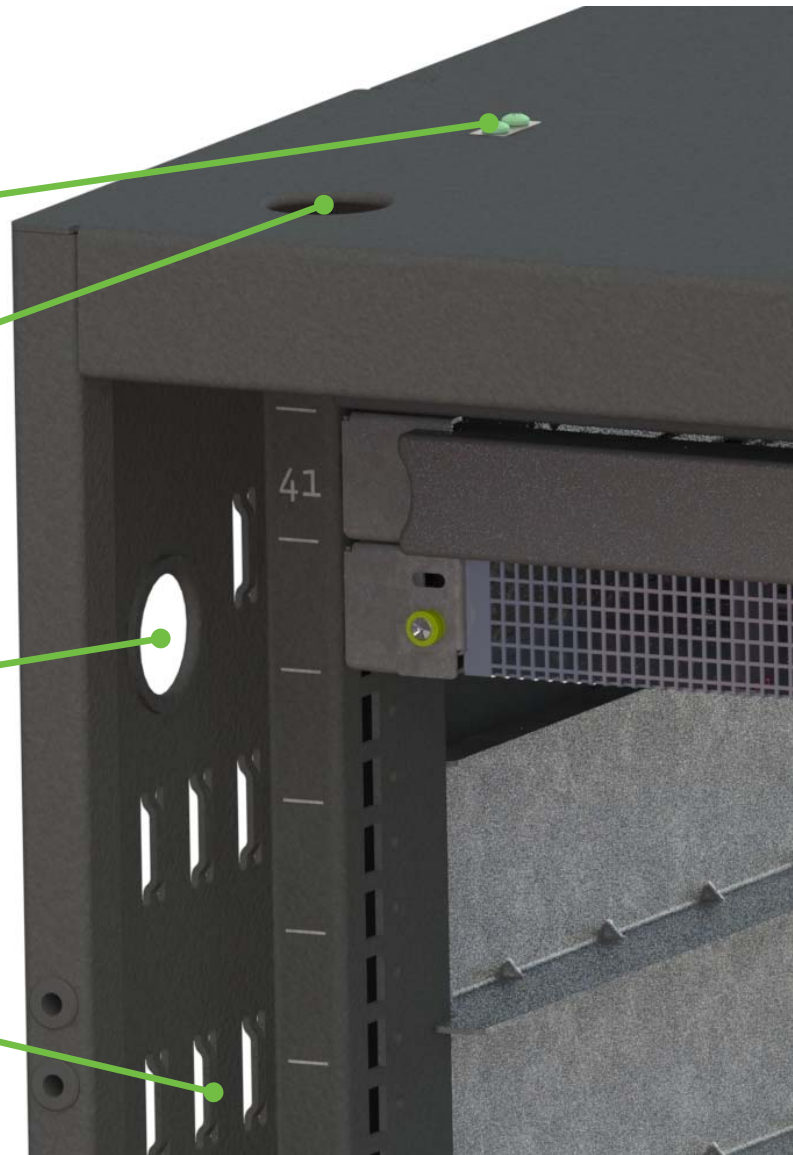
V2 Cabling

Ground points located near front of rack for easy access

Openings on top provide cable egress to data center

Openings on side provide cable egress to neighboring rack

Lances in rack provide cable management points



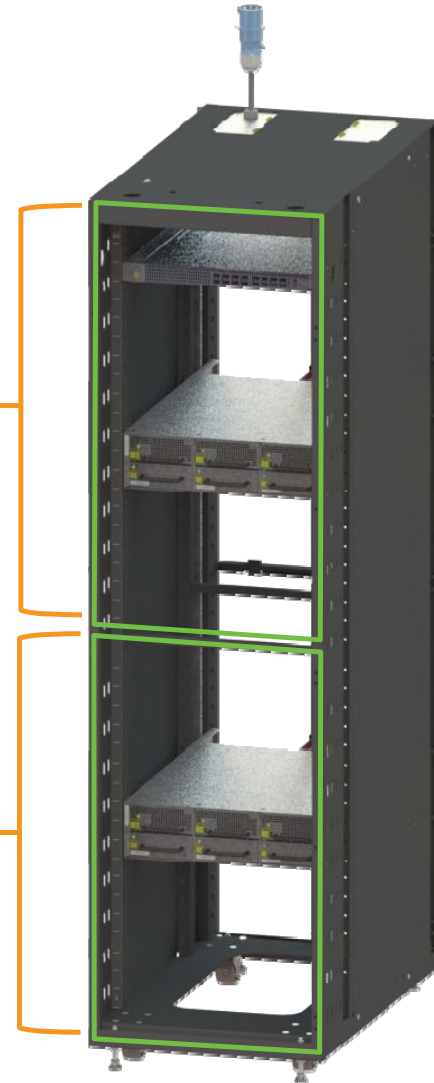
V2 Power



V2 Power Layout

1 Power Zone = 19OU
+30U Power Shelf

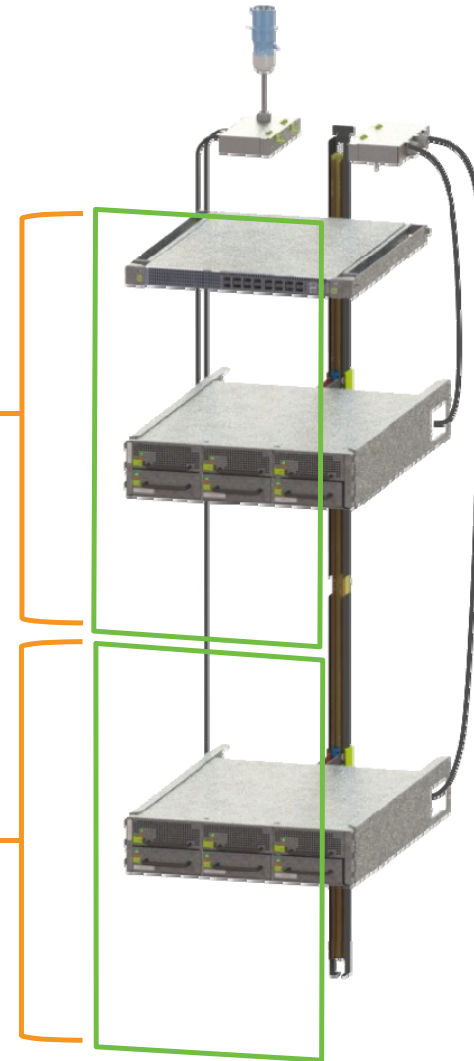
1 Power Zone = 16OU
+30U Power Shelf



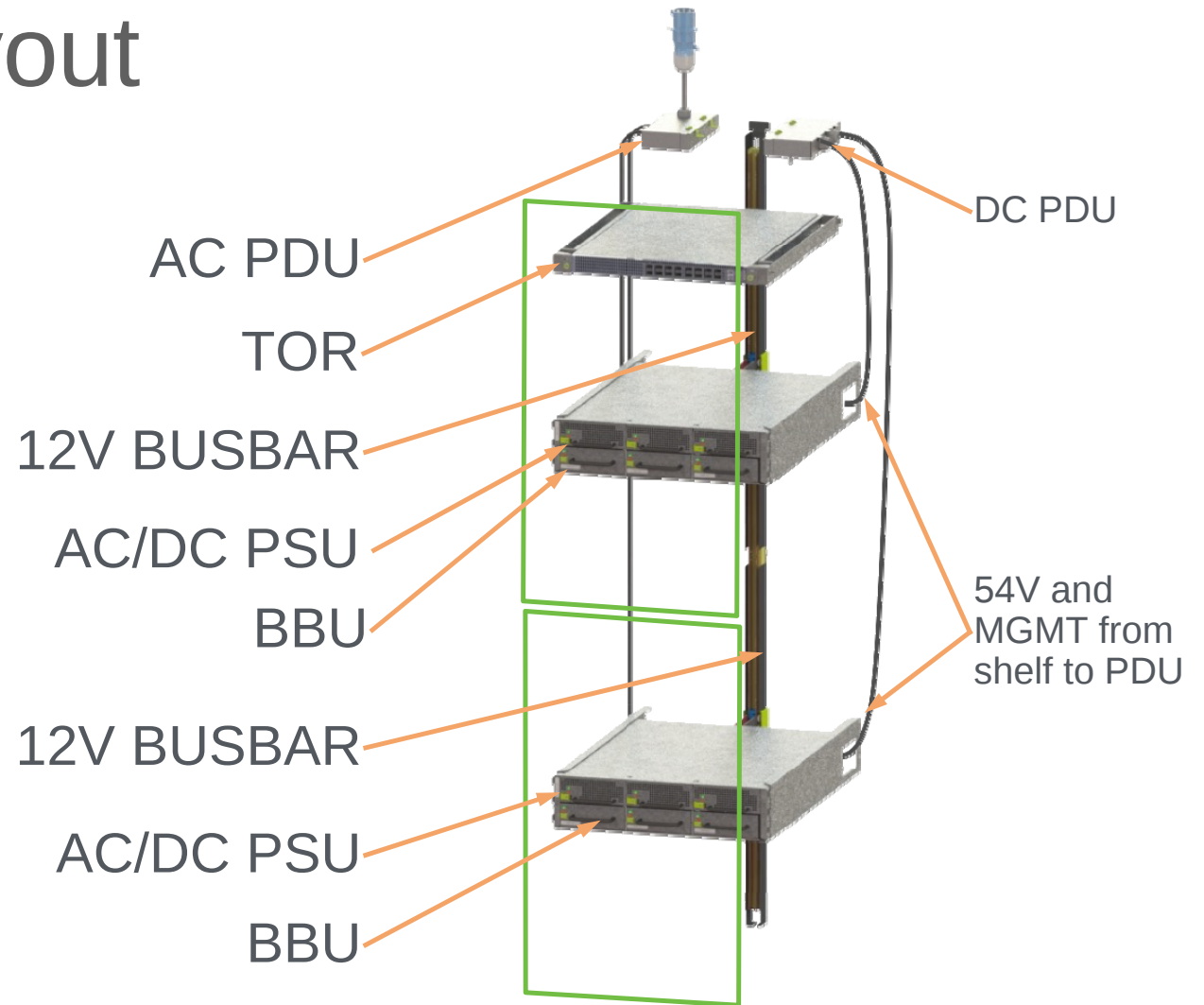
V2 Power Layout

1 Power Zone = 19OU
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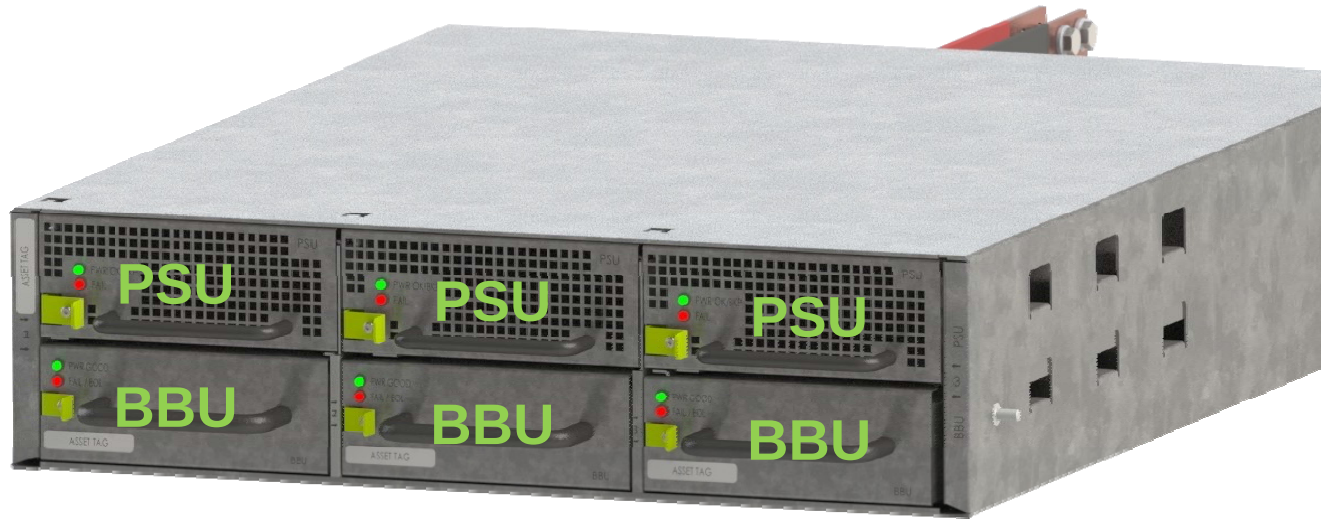
1 Power Zone = 16OU
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V2 Power Layout



V2 Power Shelf



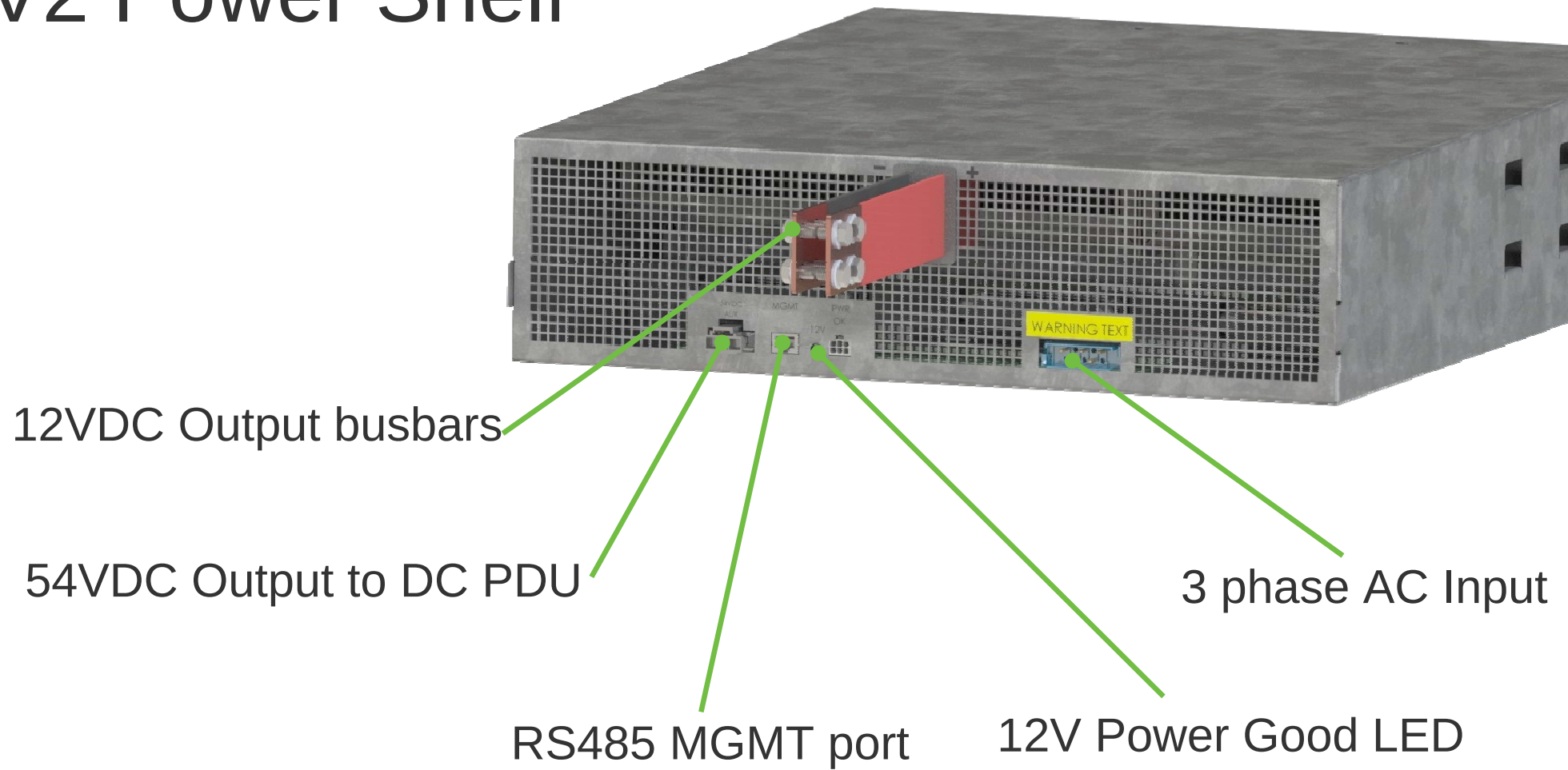
Output: **6.6Kw @12.6VDC**

Input: **Single, 3 Phase 180V-305V auto ranging**

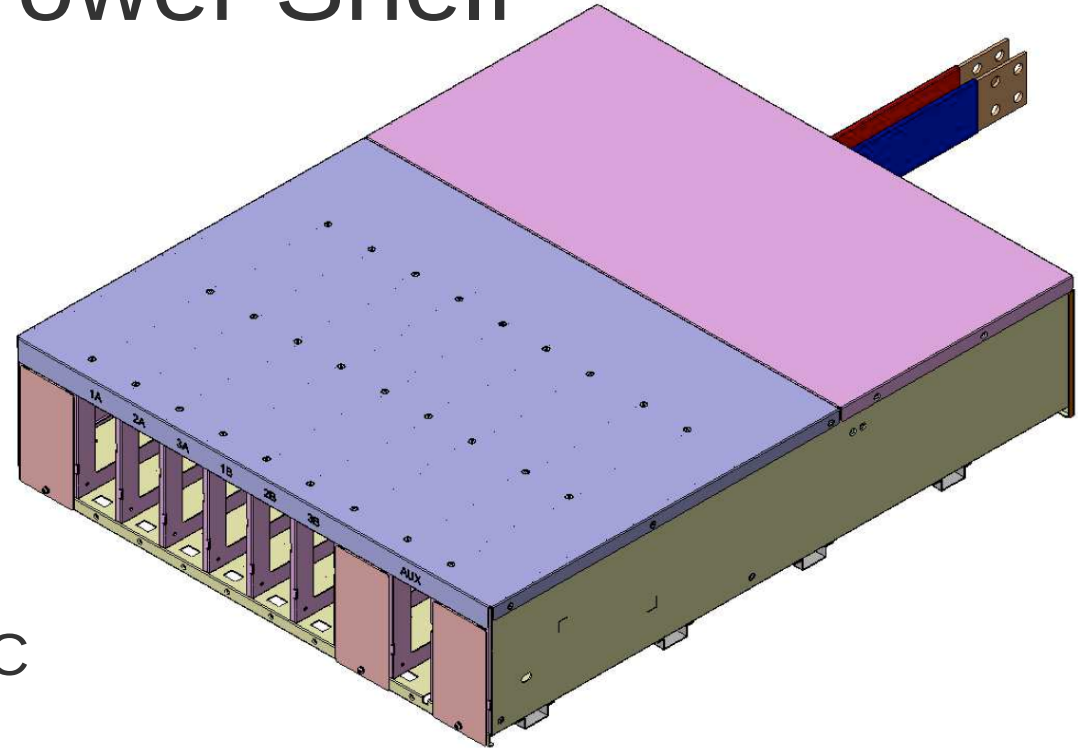
2+1 redundant, hot swap PSUs

Integrated, hot swap BBUs provide 90 seconds of uptime

V2 Power Shelf



V2 Stingray 208V Power Shelf



Input: 208V, 3 phase, Dual A+B AC

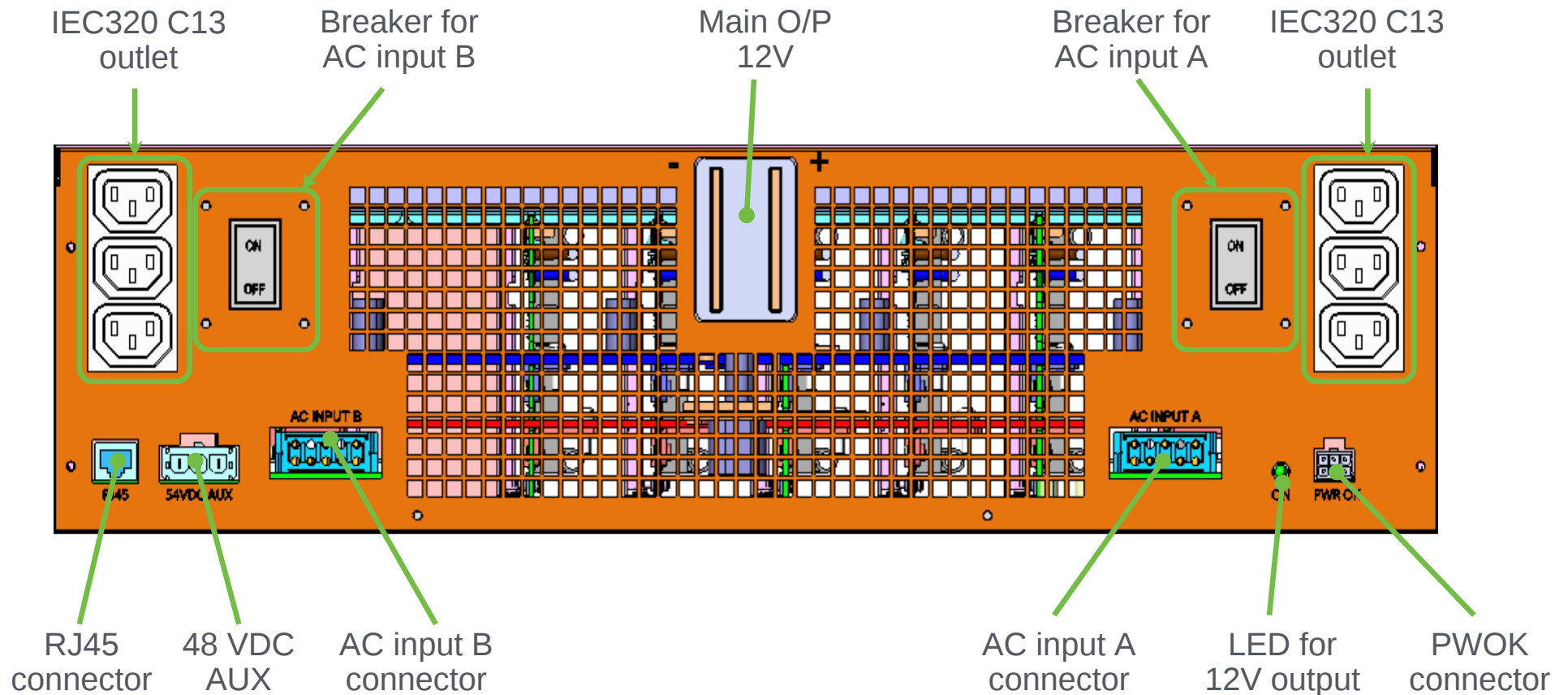
Outputs: 6.3kW @ 12.5VDC

6xC13 single phase AC

48VDC AUX

6x2.1kW, 3+3 redundant, hot-swap PSUs

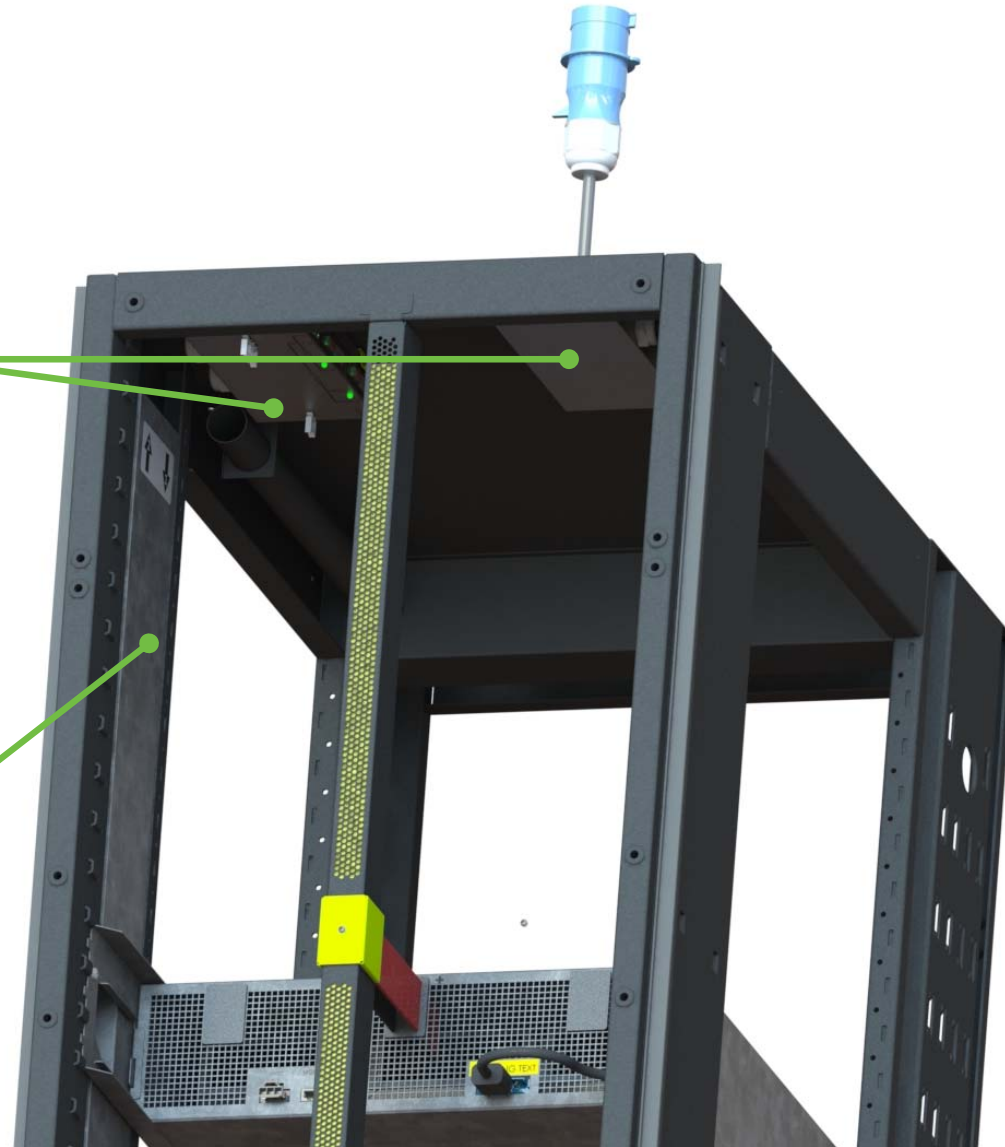
V2 Stingray 208V Power Shelf



V2 PDU Locations

2 PDU locations under canopy
Both locations support

Wires from PDUs to Power
Shelves route inside frame vertical



V2 PDUs Available

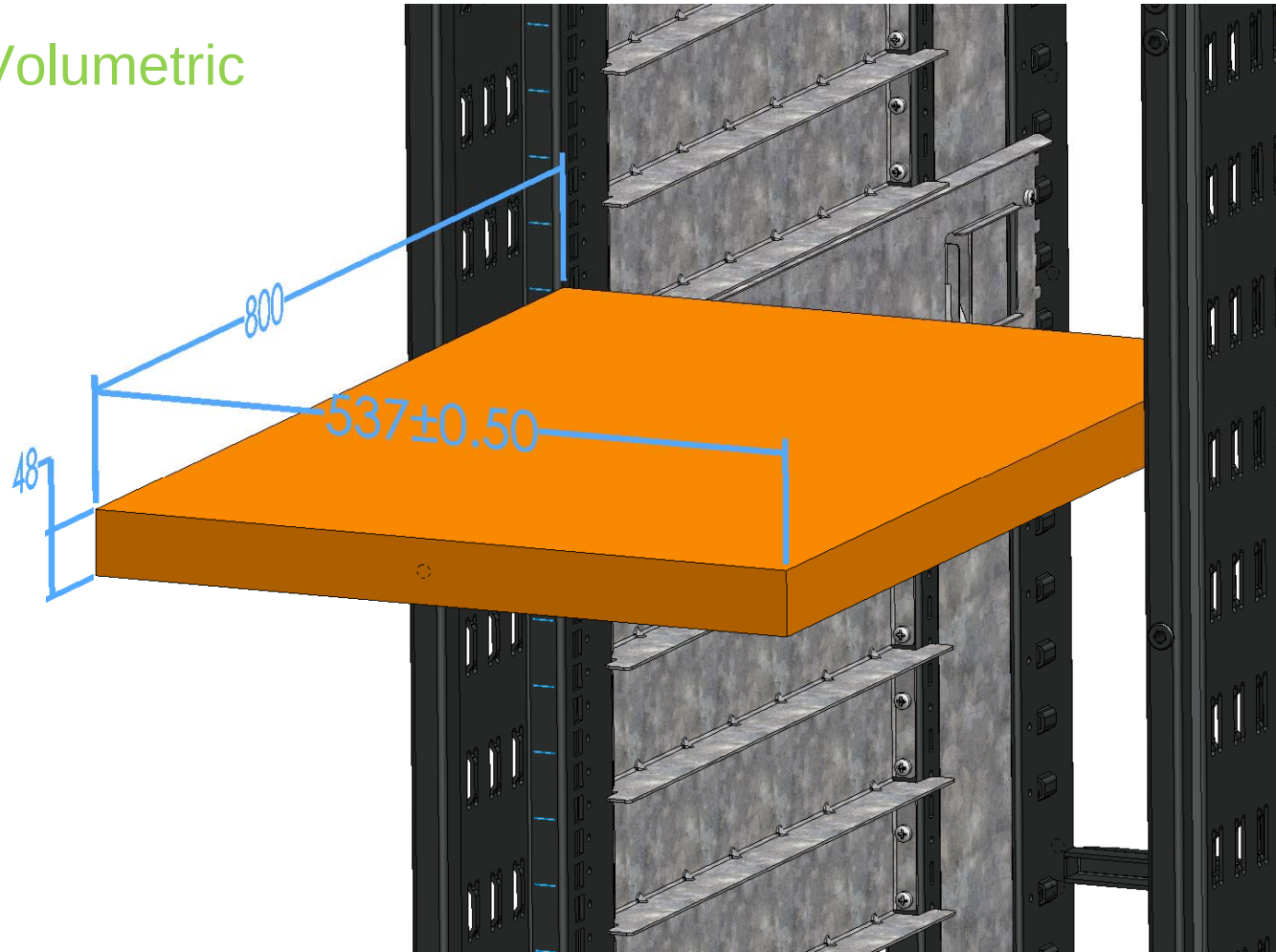
Type	NA, 277/480	EU, 240/415	NA, 120/208	NA, 277 CS	NA, 277 30A	DC PDU
Input Volt.	277V/480V 3P5W	240V/415V 3P5W	208V 3P4W	277V 1P3W	277V/480V 3P5W	54VDC
Surge Protection	Yes	Yes	No	No	Yes	No
Input Plug Type	L22-20P	IEC 309	L21-30P	L7-20P	L22-30P	N/A
In/Out Style	2 in / 2 out	1 in/ 2 out	2 in / 2 out	1in / 1out	1 in/2 out	0 in/2 out
Safety Mark	UL	CE	UL	UL	UL	UL&CE
Usage	N America	Europe	Stingray, Colo	Cold Storage	J-box NA	All racks

V2 IT Form Factors



Open Rack V2 IT Form-Factors

1 OpenU Generic Full Volumetric



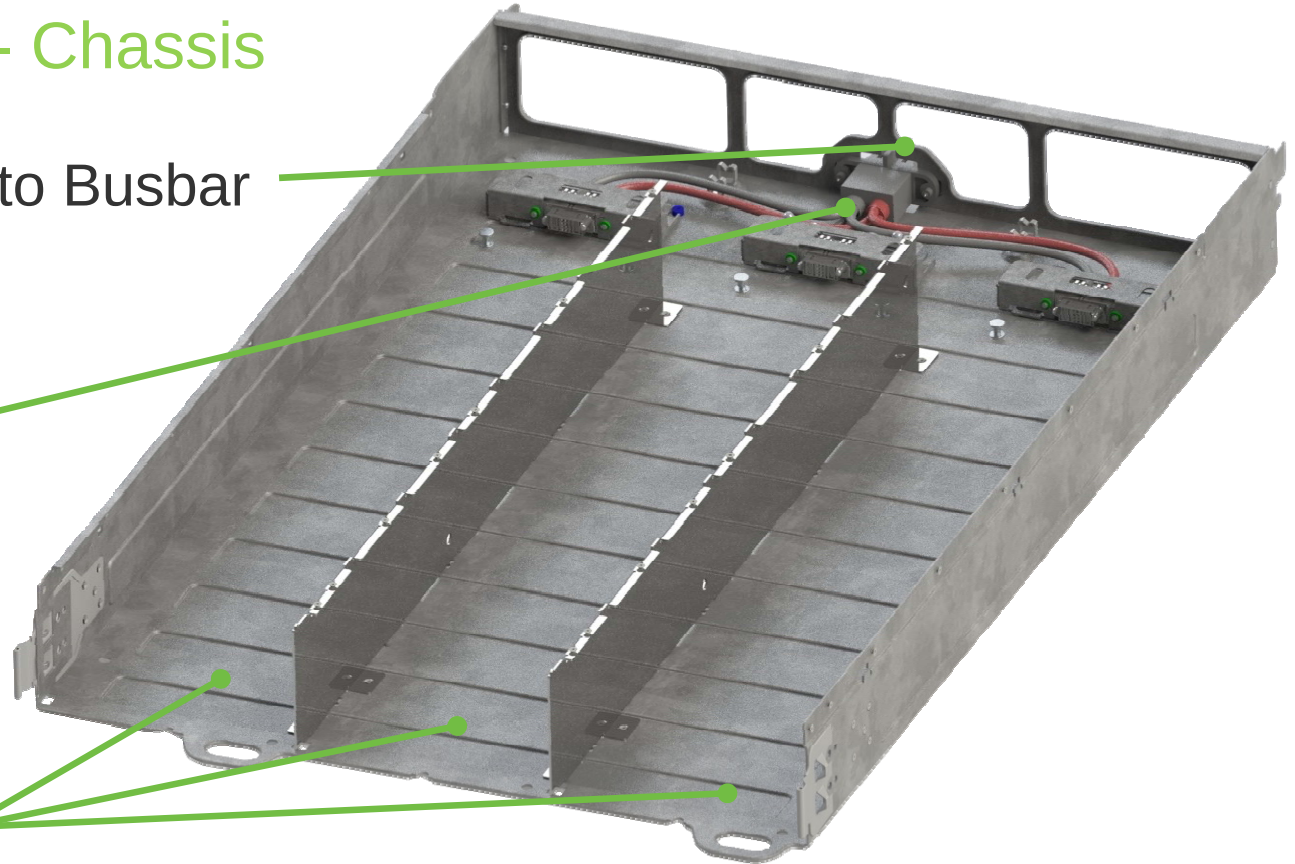
Open Rack V2 IT Form-Factors

Cubby 2 OpenU Sub- Chassis

Connector to 12V DC to Busbar

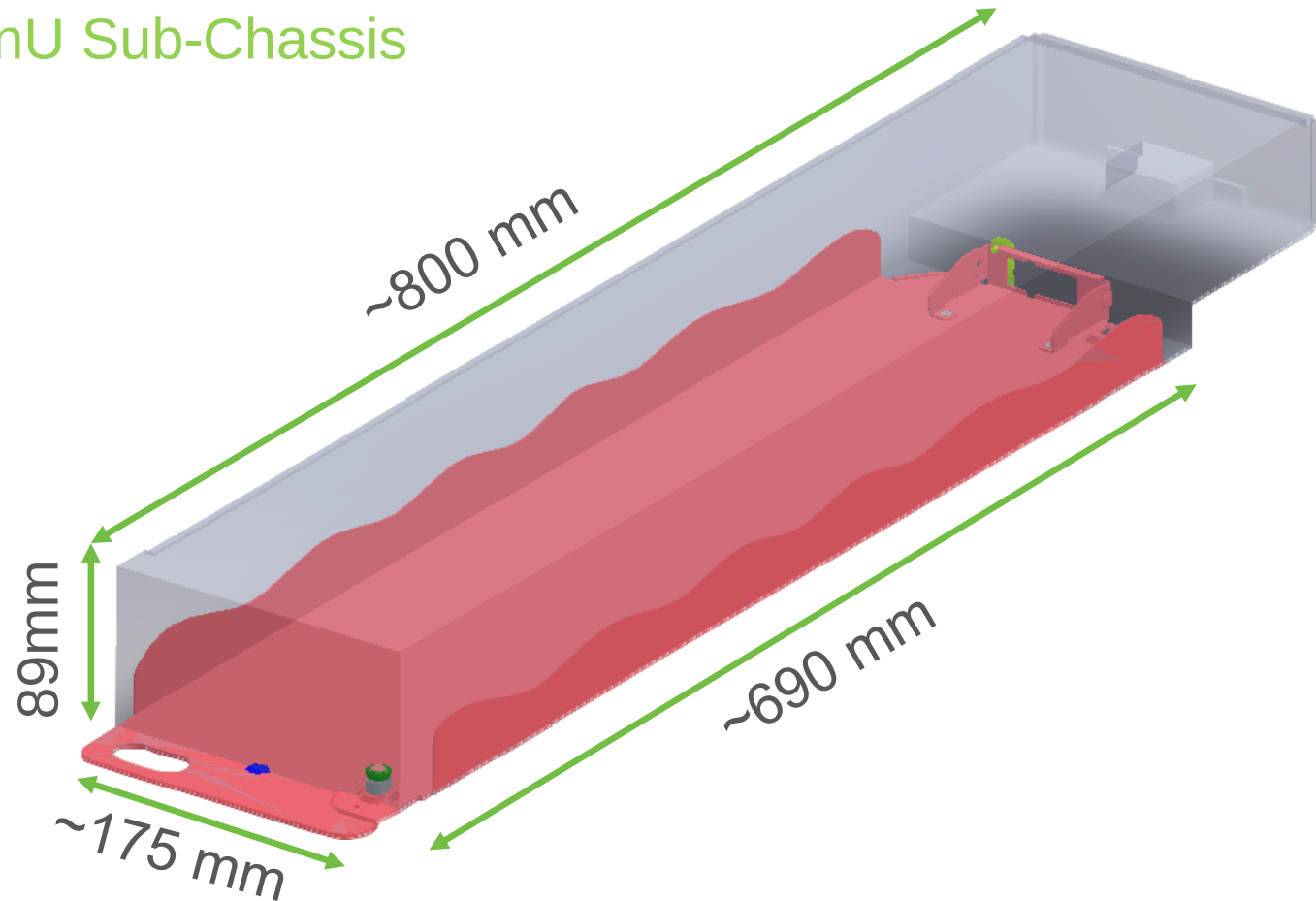
Wire Harness splits
power to 3 IT slots

Each IT Slot provides
89 x 176 x 690mm
20kg max per slot



Open Rack V2 IT Form-Factors

Cubby 2 OpenU Sub-Chassis





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