

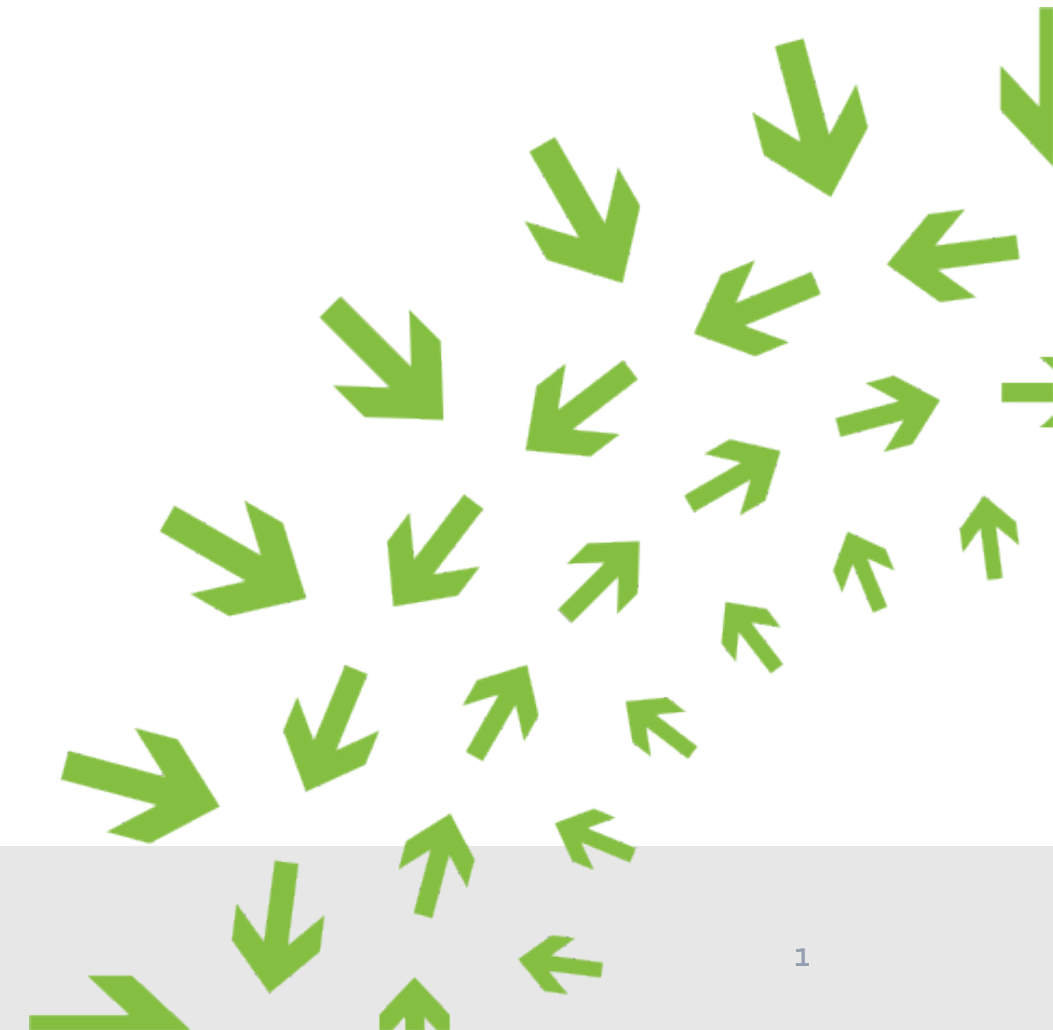


The Open RACK Project

Engineering Summit

San Jose

13 AUG 13



Welcome

Who are we?

Who are you?

What are your goals for attending?

Is there anything in particular you want to cover today?

AGENDA

Morning Session:

11:15 – Noon

Welcome and Introductions

FB Open Rack Update

Noon – 1

Lunch

AGENDA

Afternoon Session:

Rittal Open Rack Update from Andy Gill

Review Previous Changes to Open Rack Standard

Discuss New Changes to Open Rack Standard

New Business

Wrap-up

Why Open Rack?

Open Rack Overview

Wide 21” equipment bay for maximum space efficiency

Shared 12v DC power system

Well-defined “Mechanical API” to standardize the interface between the server and the rack

Layout to optimize IT gear serviceability and deployment



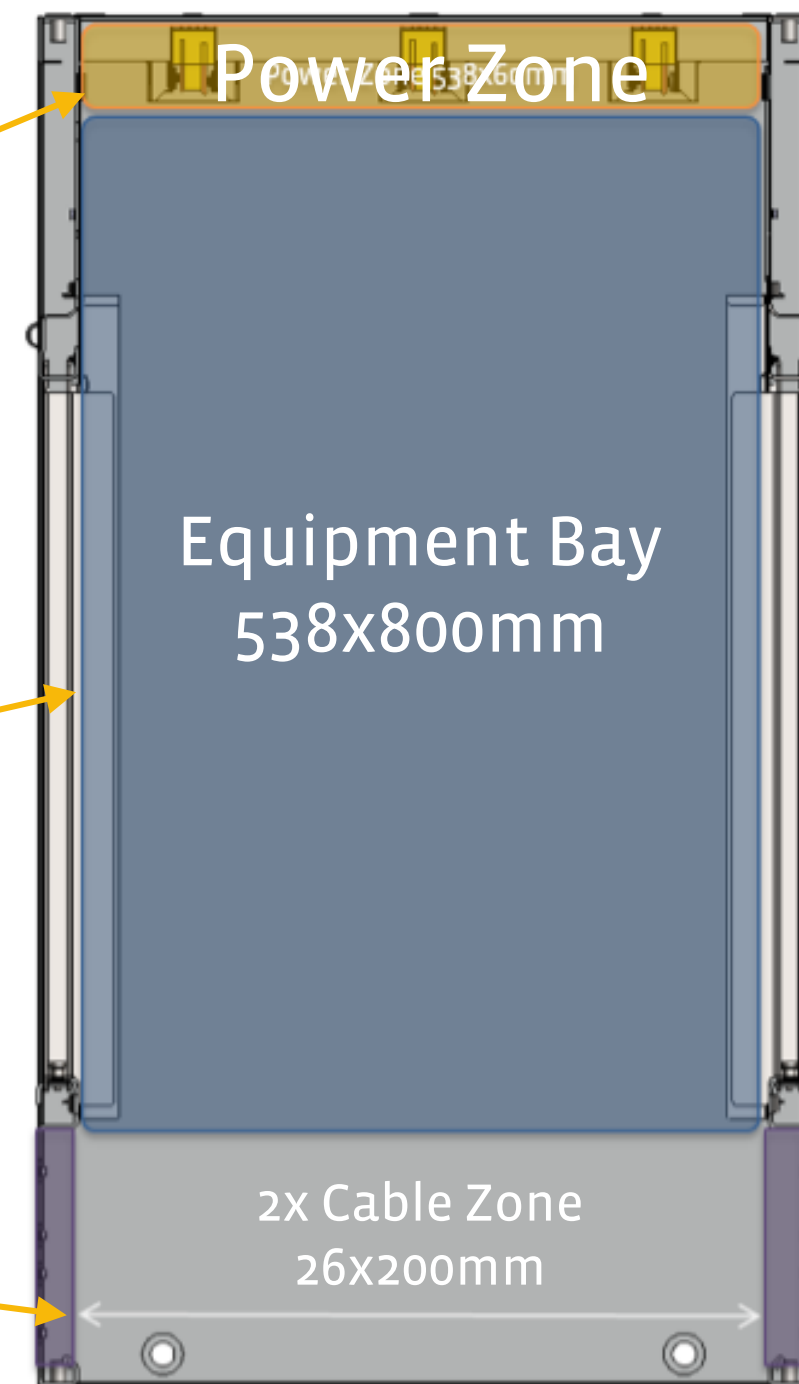
Open Rack: Top View

1 or 3 Busbars located in the rear supply power from shared power subsystem

IT Gear is serviceable from the cold aisle

Cables located in front for serviceability

Hot Aisle of the Data Center



Cold-Aisle Side of the Data Center

Open Rack: Front View

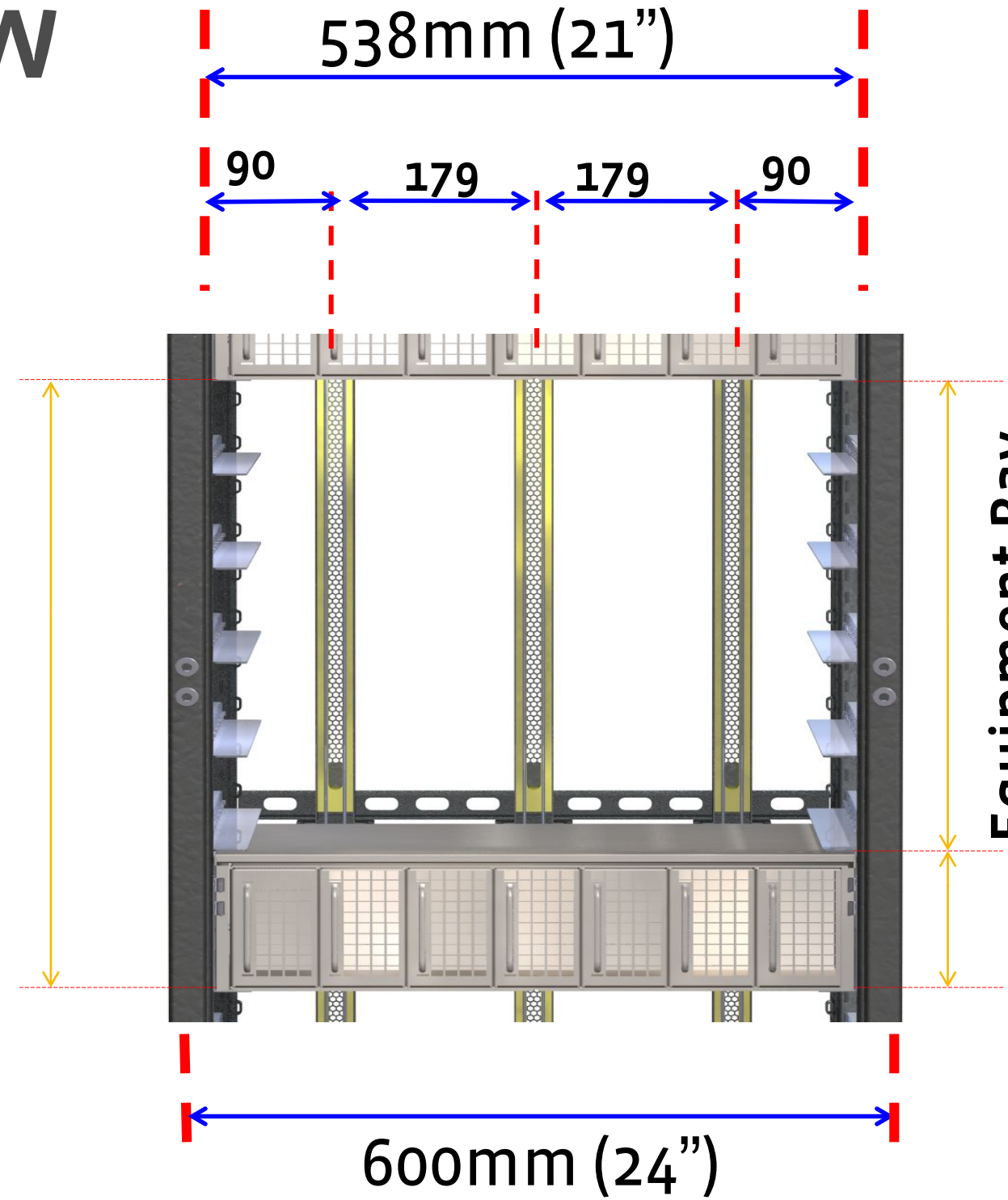
Wider 21" equipment bay
optimizes room for IT
Gear

Divided vertically into
48mm OpenU

Support ½ OpenU
increments

Power
Zone
13X
OpenU

Equipment Bay
10X OpenU



Front view

Facebook Update

facebook

Open Rack Update

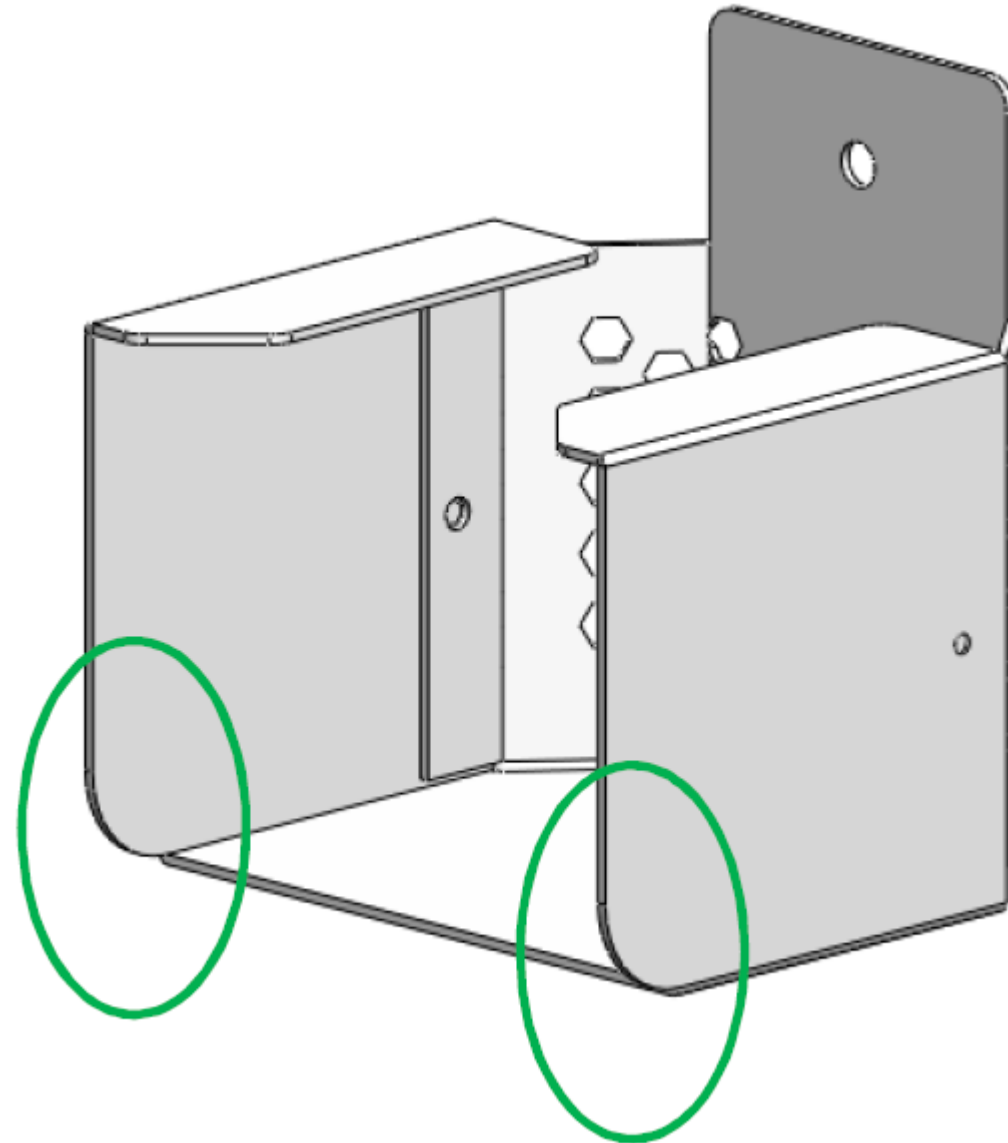
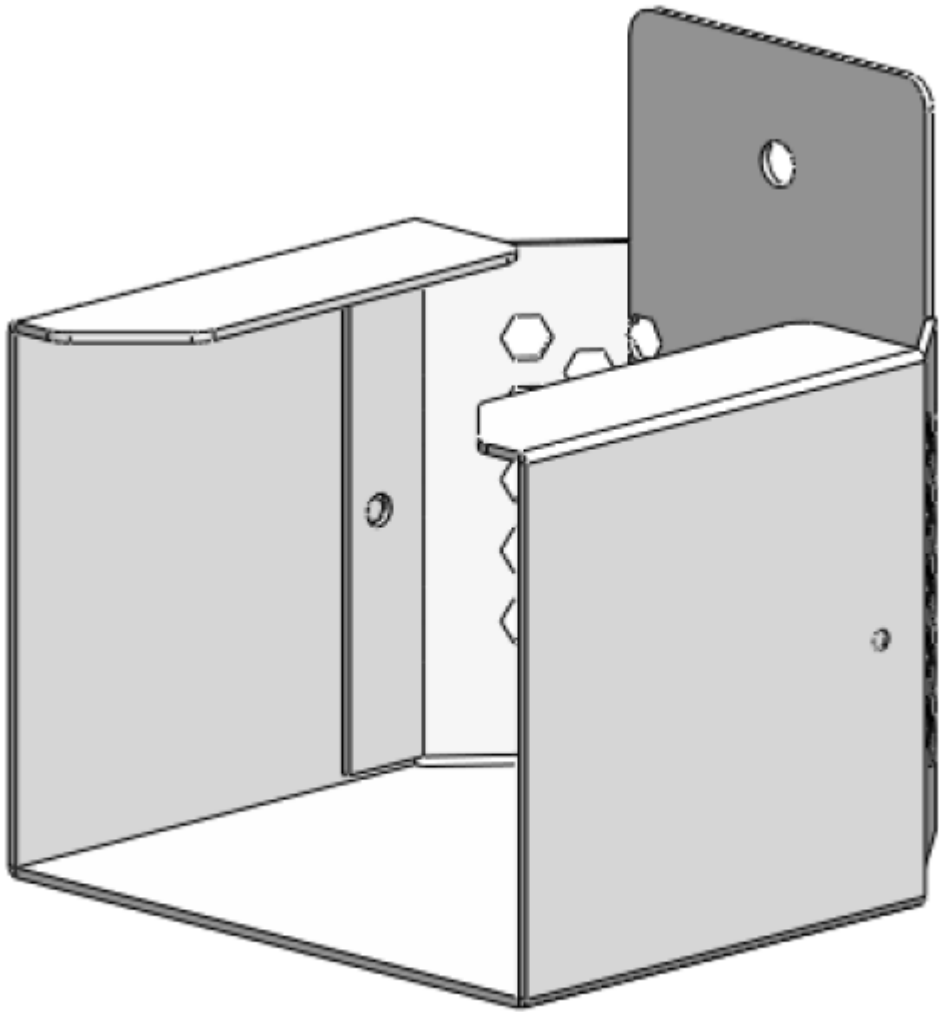
Steve Mills

Mechanical Engineer

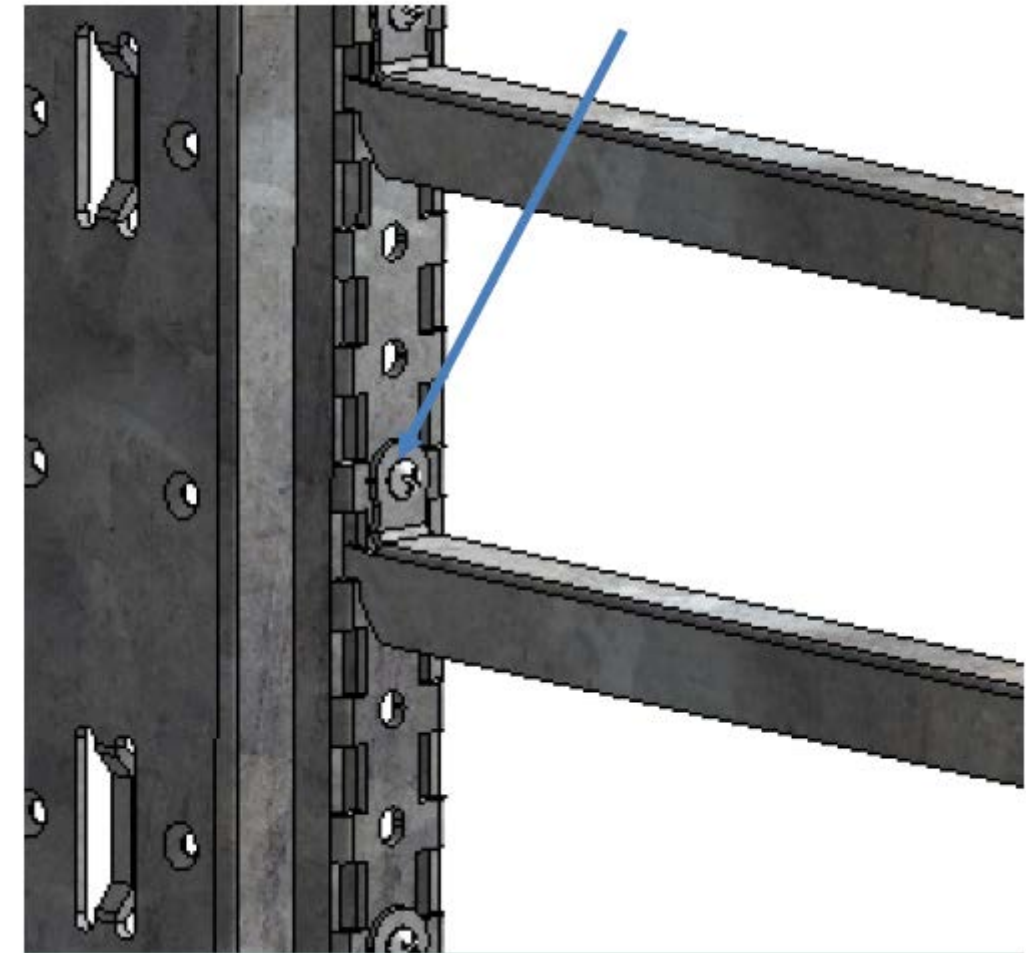
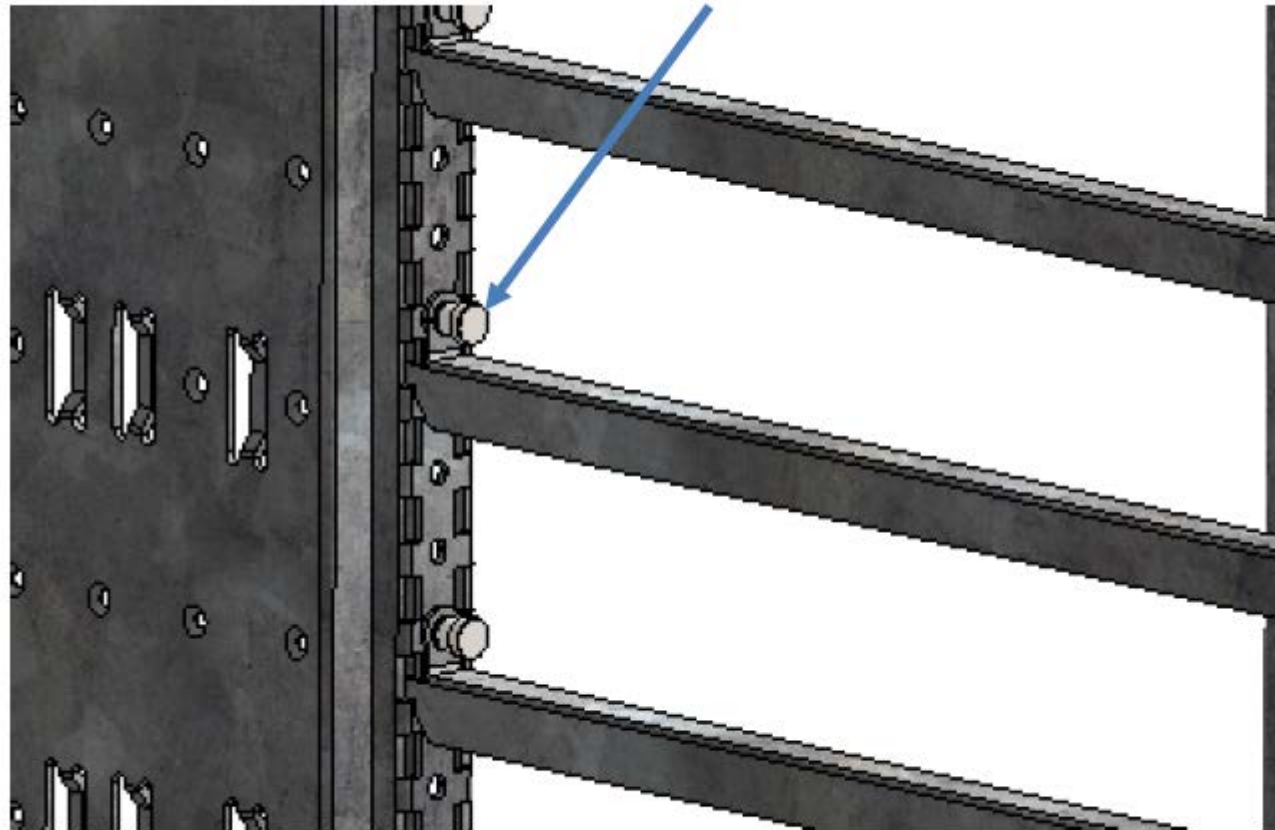
Rack and Power Design, Infrastructure

10 13 AUG 13

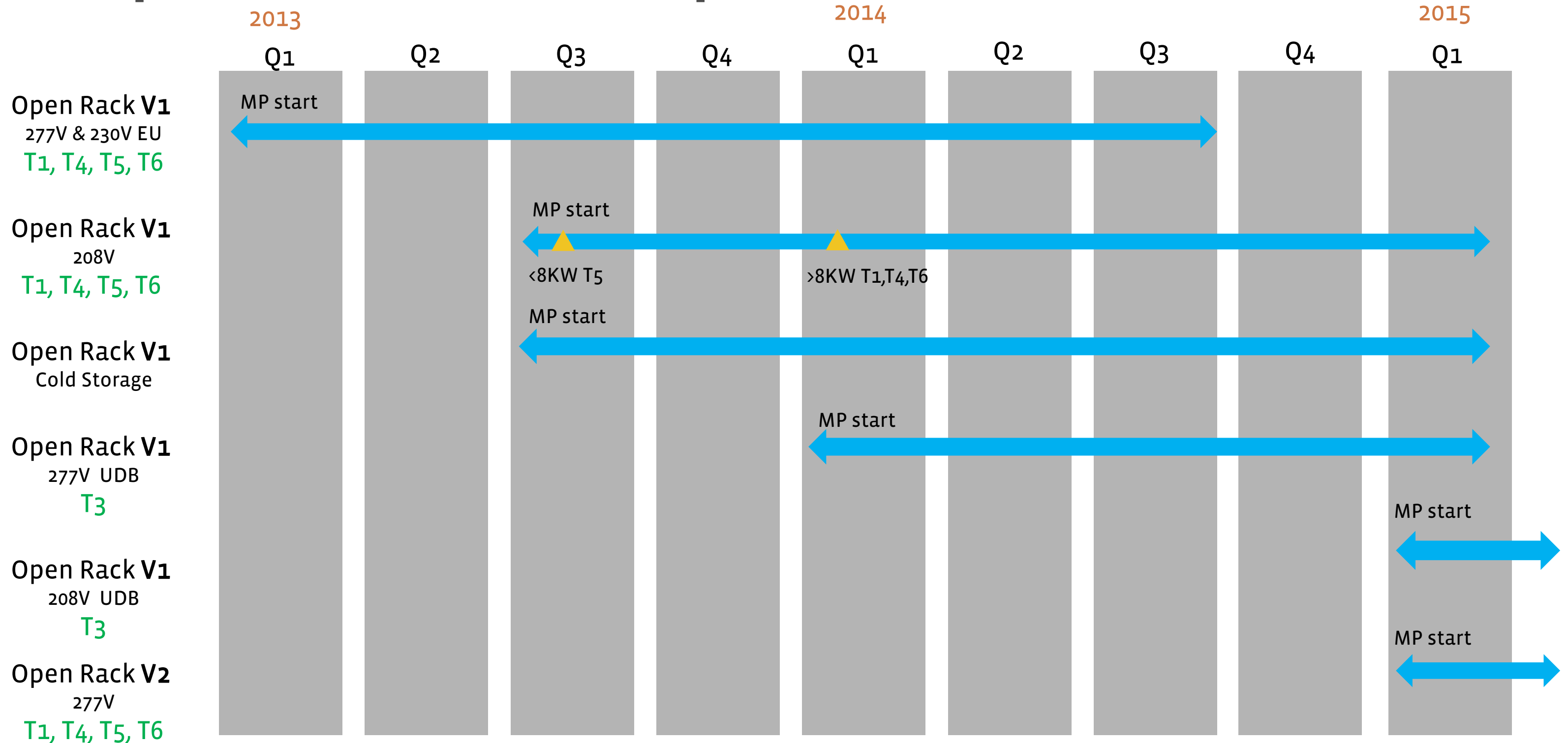
FB Open Rack Update: Busbar Lug Covers



FB Open Rack Update: IT Gear Support Changed to M5 Screw



Open Rack Roadmap

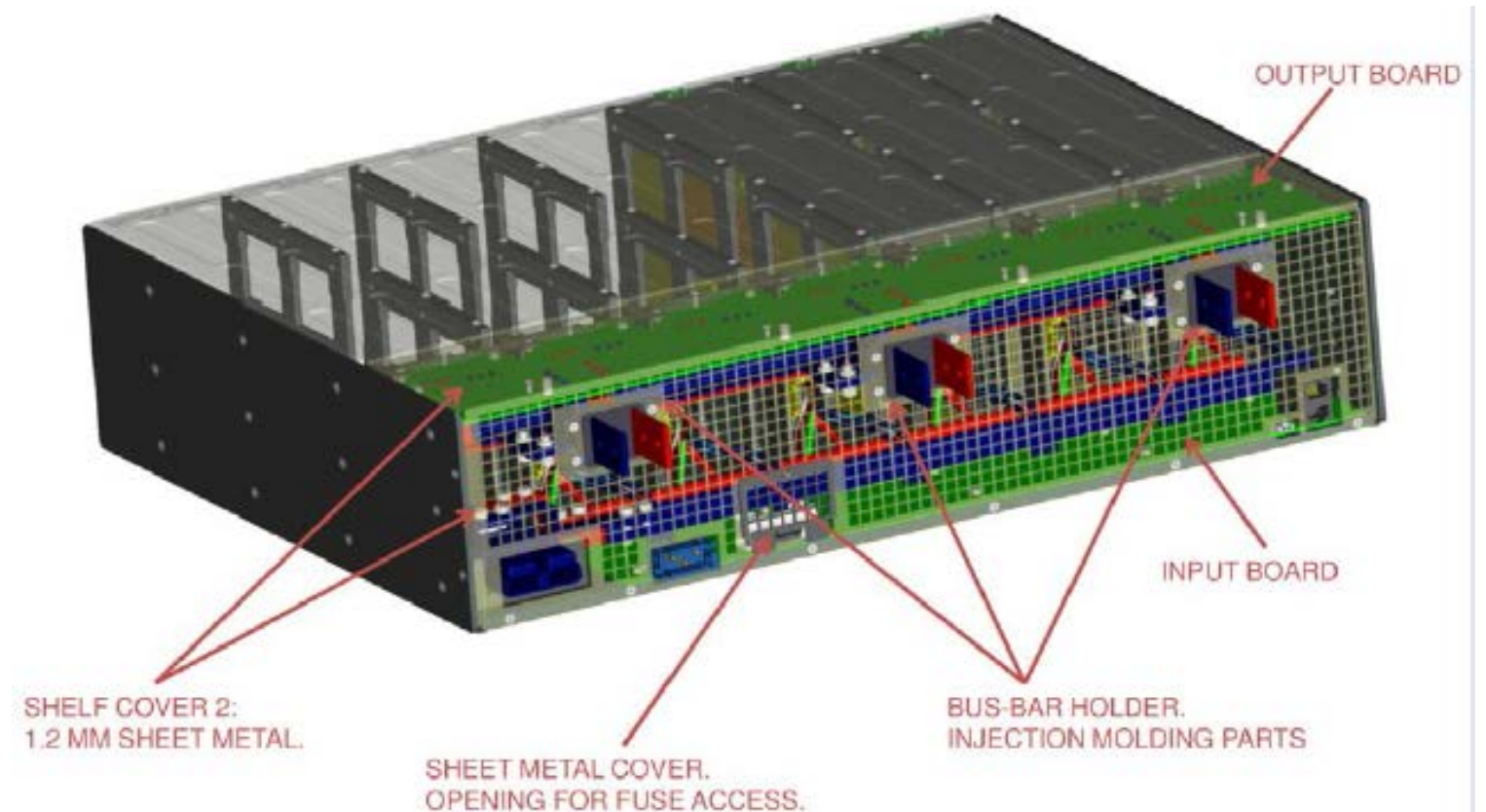
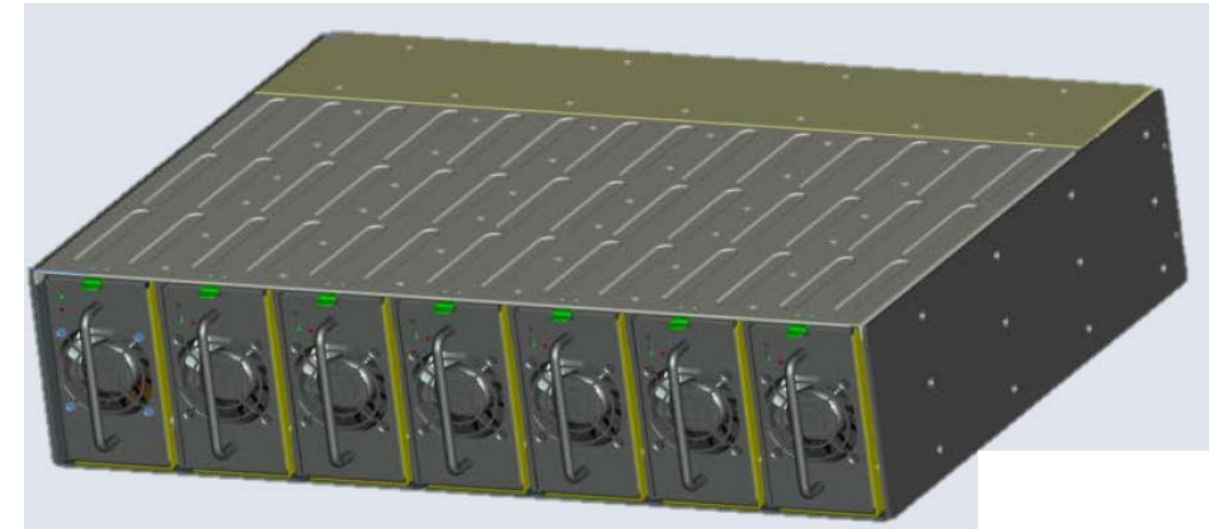


Power Update: V1 Shelf

Single Phase 230/277V AC input
12V DC Output to 3 sets of busbars

6 PSUs + 1 redundant
 $700\text{W per PSU} \times 6 \text{ per shelf} = 4.2\text{kW}$
3 shelves per rack = 12.6 kW per Rack

Currently in Production

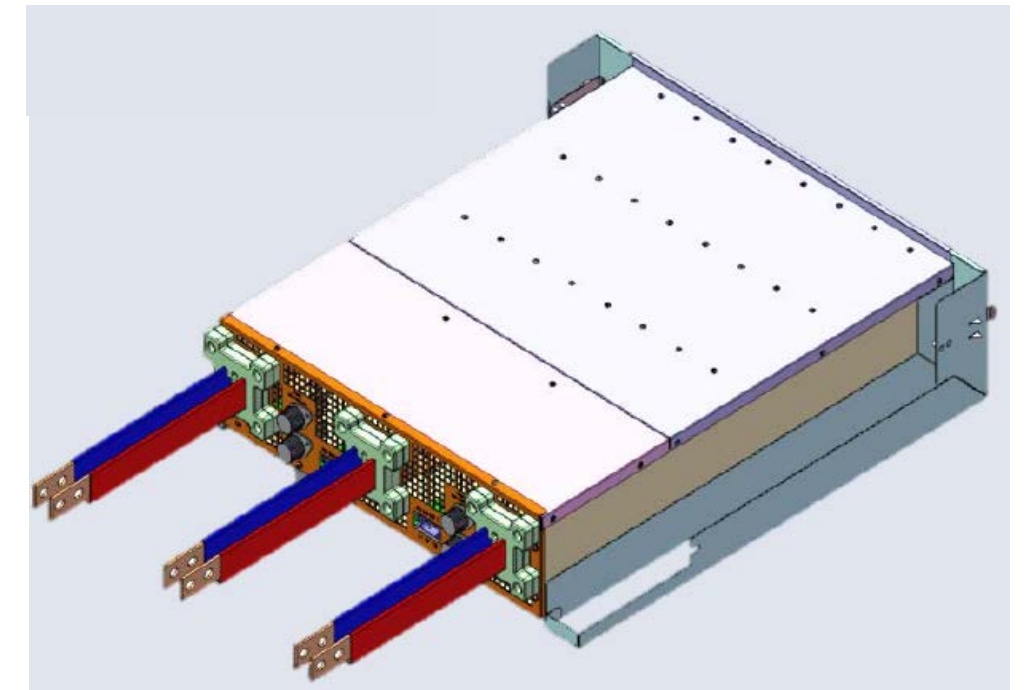
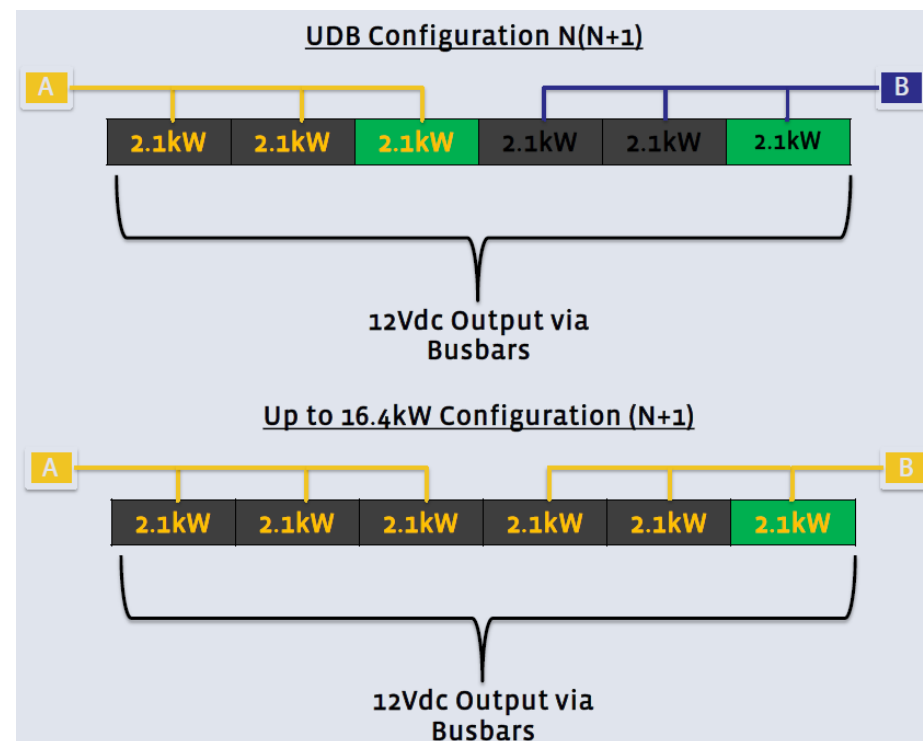
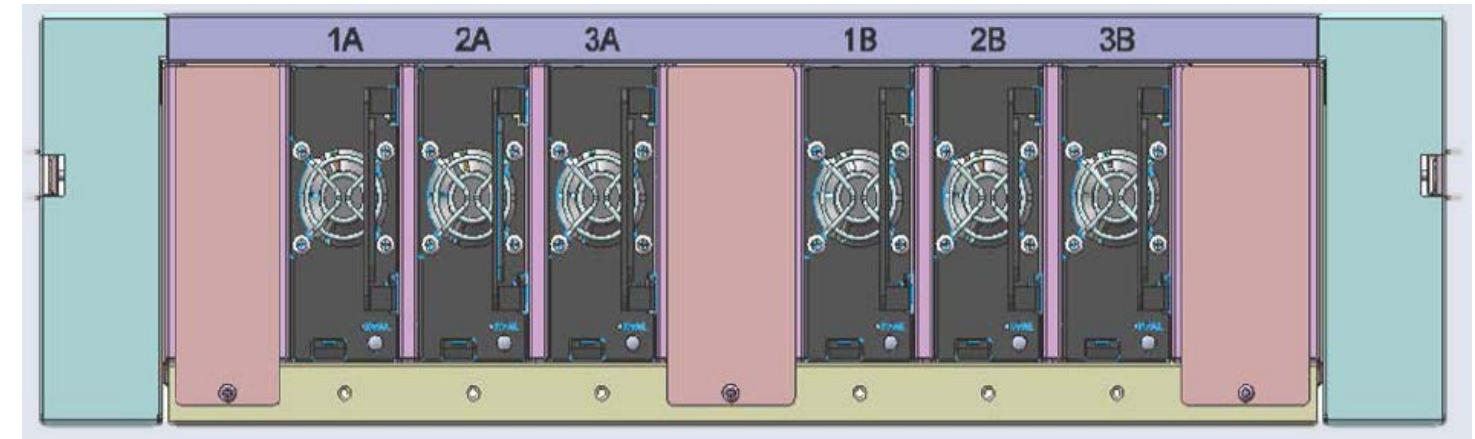


Power Update: 208V Dual Feed Shelf

Currently in EVT

Minor Issues in
Bring-up

No Changes from
last summit



Lessons Learned

FB Lessons Learned

Adding Wood Brace to the front of the rack during shipping for very heavy configurations >800 kg IT gear



Lunch Break Until 1 pm

RITTAL Update on Open Rack

Andy Gill

Engineering Director

Review Open Rack Standard

Review changes from May Summit

Any new changes to the standard requested?

Why Create an Open Rack Standard?

Define the Mechanical and Electrical Interfaces between the Rack and the IT Gear

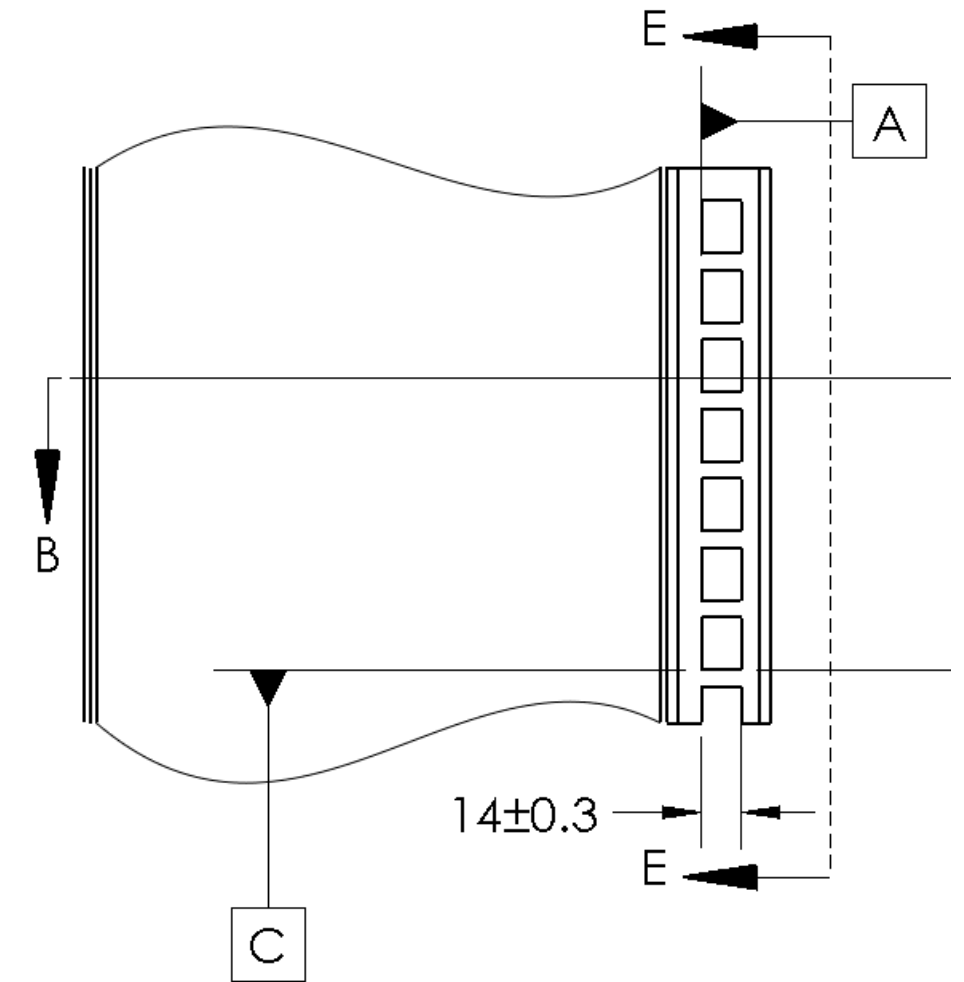
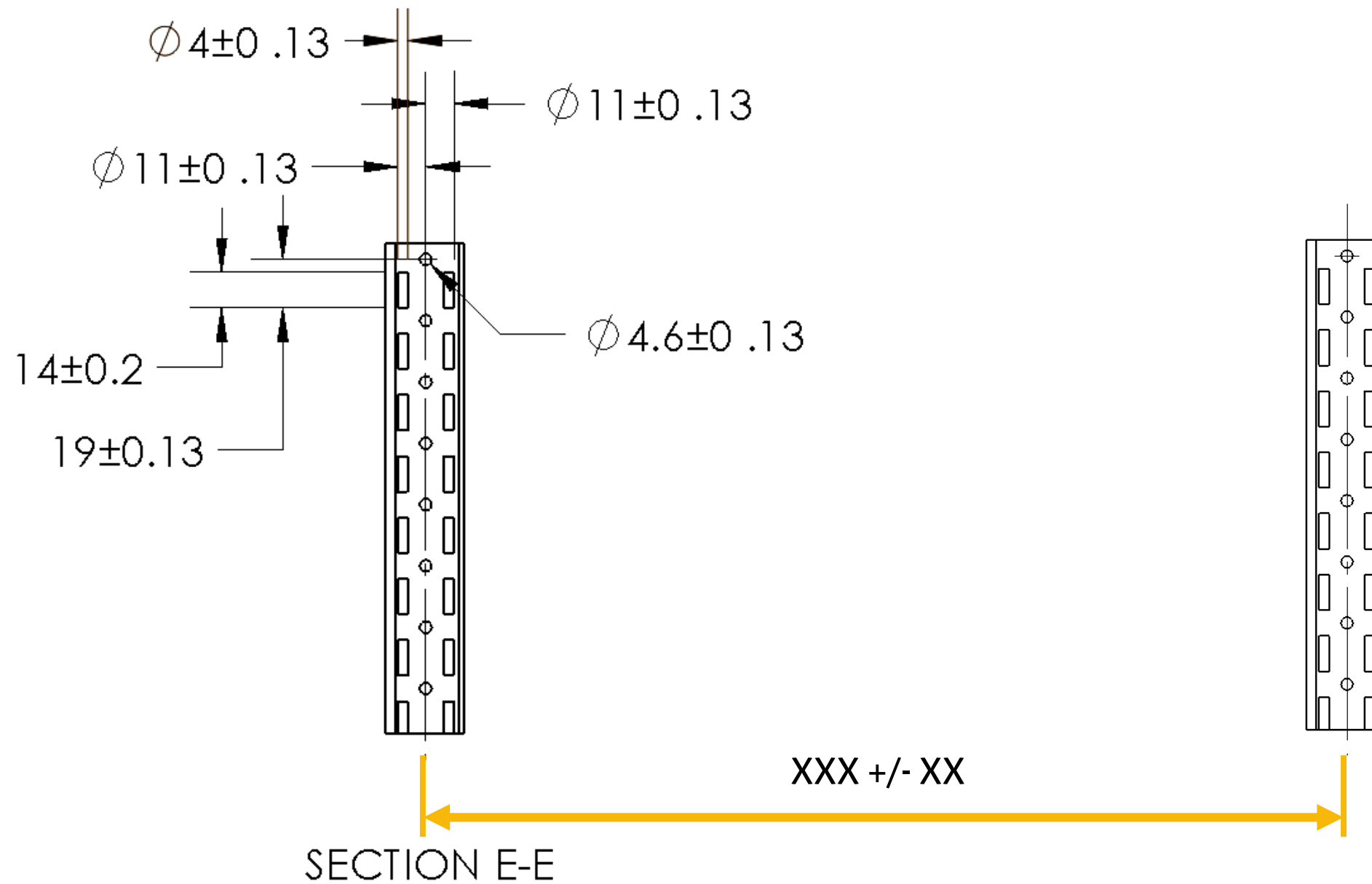
- Create Interoperability between Rack and IT Gear manufacturers
- Retain flexibility for innovation
- Optimize designs for large scale deployment
- Reduce development and deployment cost and cycle time

Review Open Rack Standard

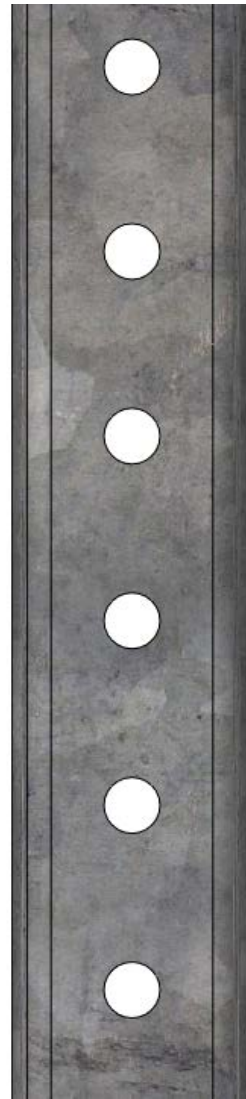
Review changes from May Summit

Any new changes to the standard requested?

Possible Changes: Add width dimension



Possible Changes: IT Gear Support Features



New Business

Feedback on Summit

What worked?

What could have been better?

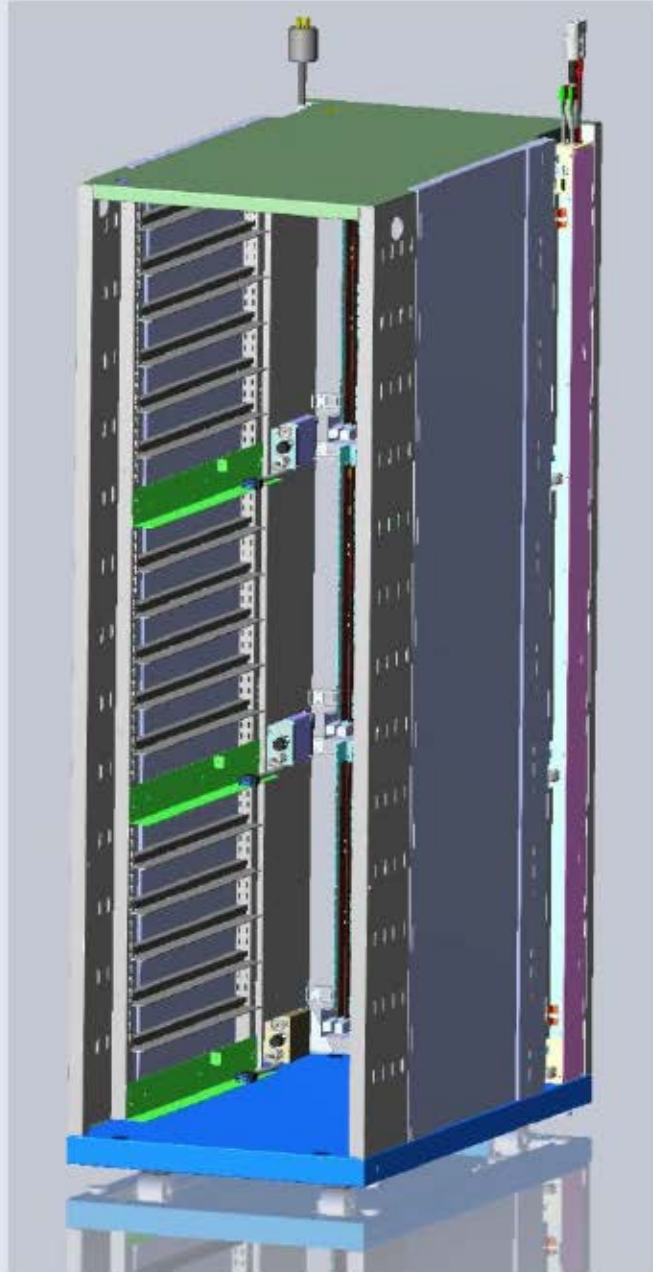
Thanks



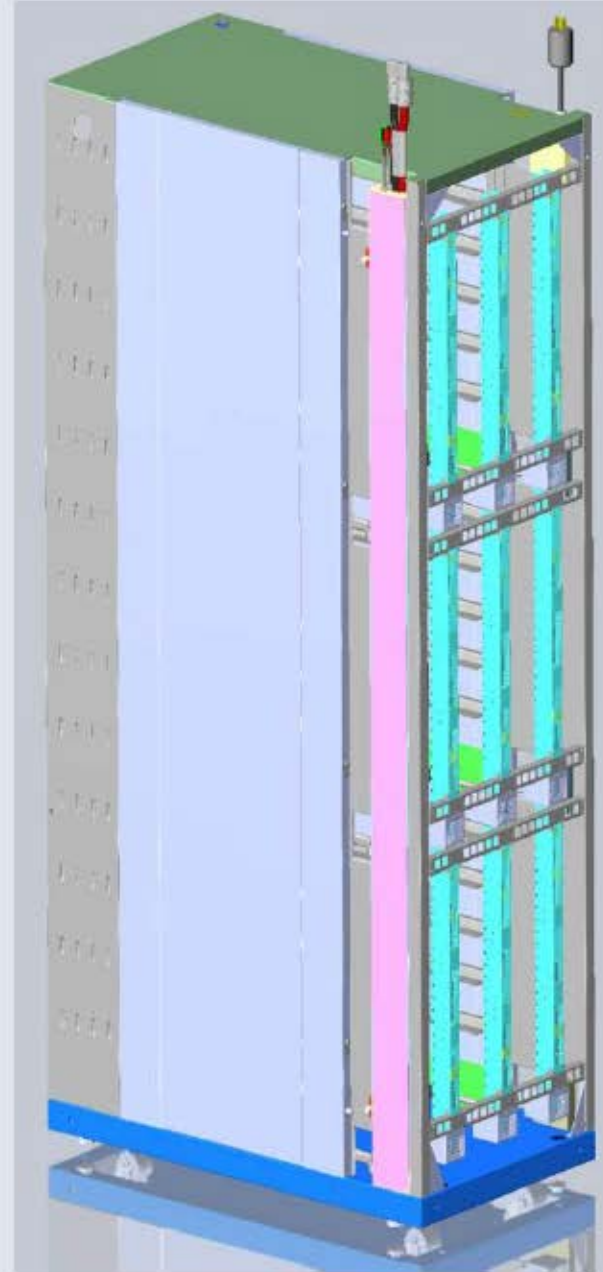
**THIS JOURNEY
2% FINISHED**

Backup

Open Rack Singlet



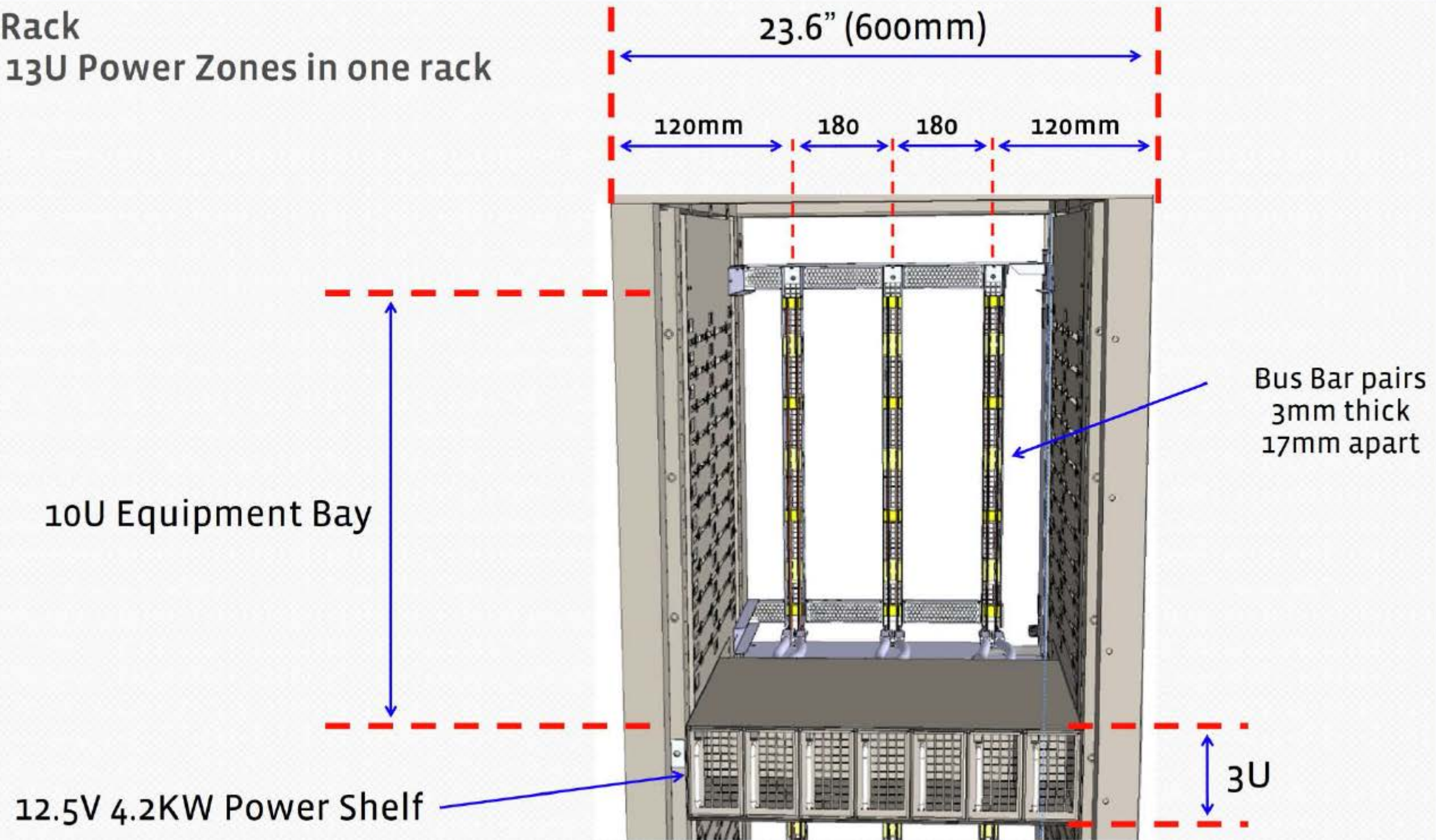
Front View

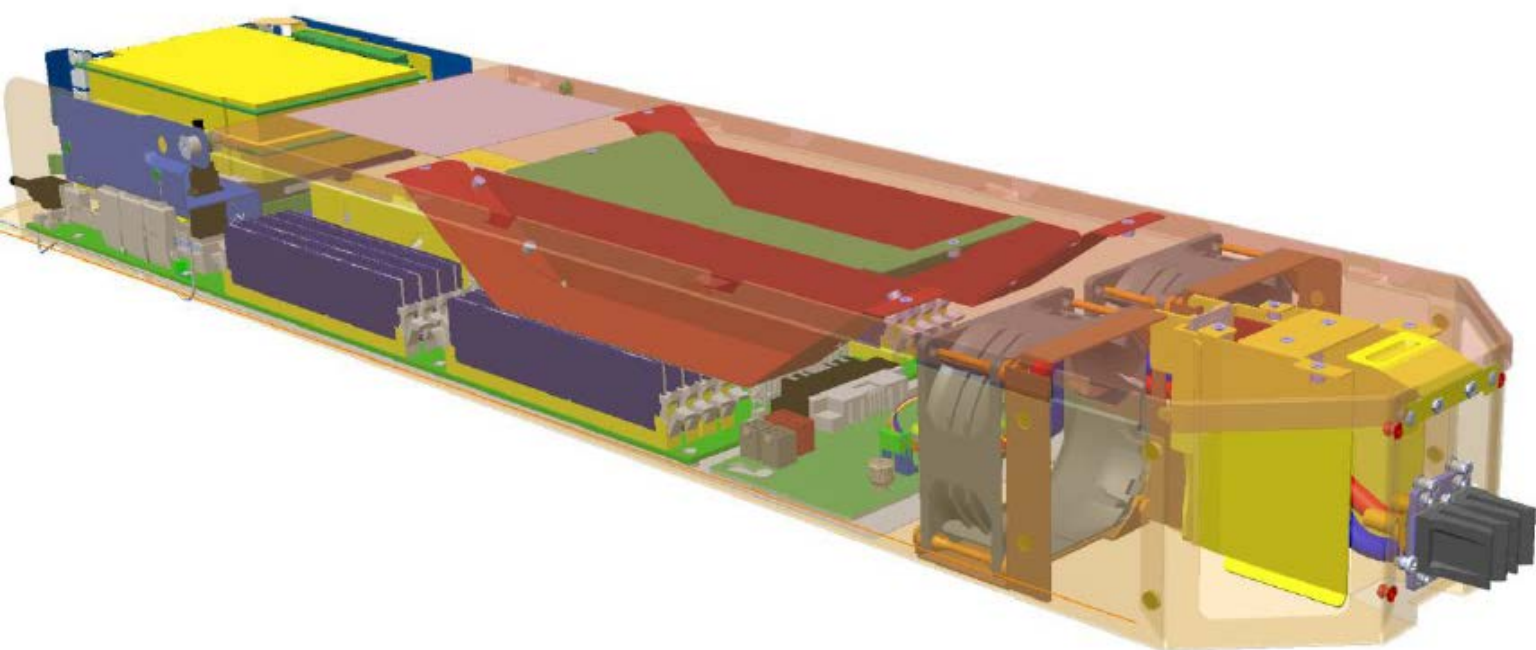


Back View

Rack

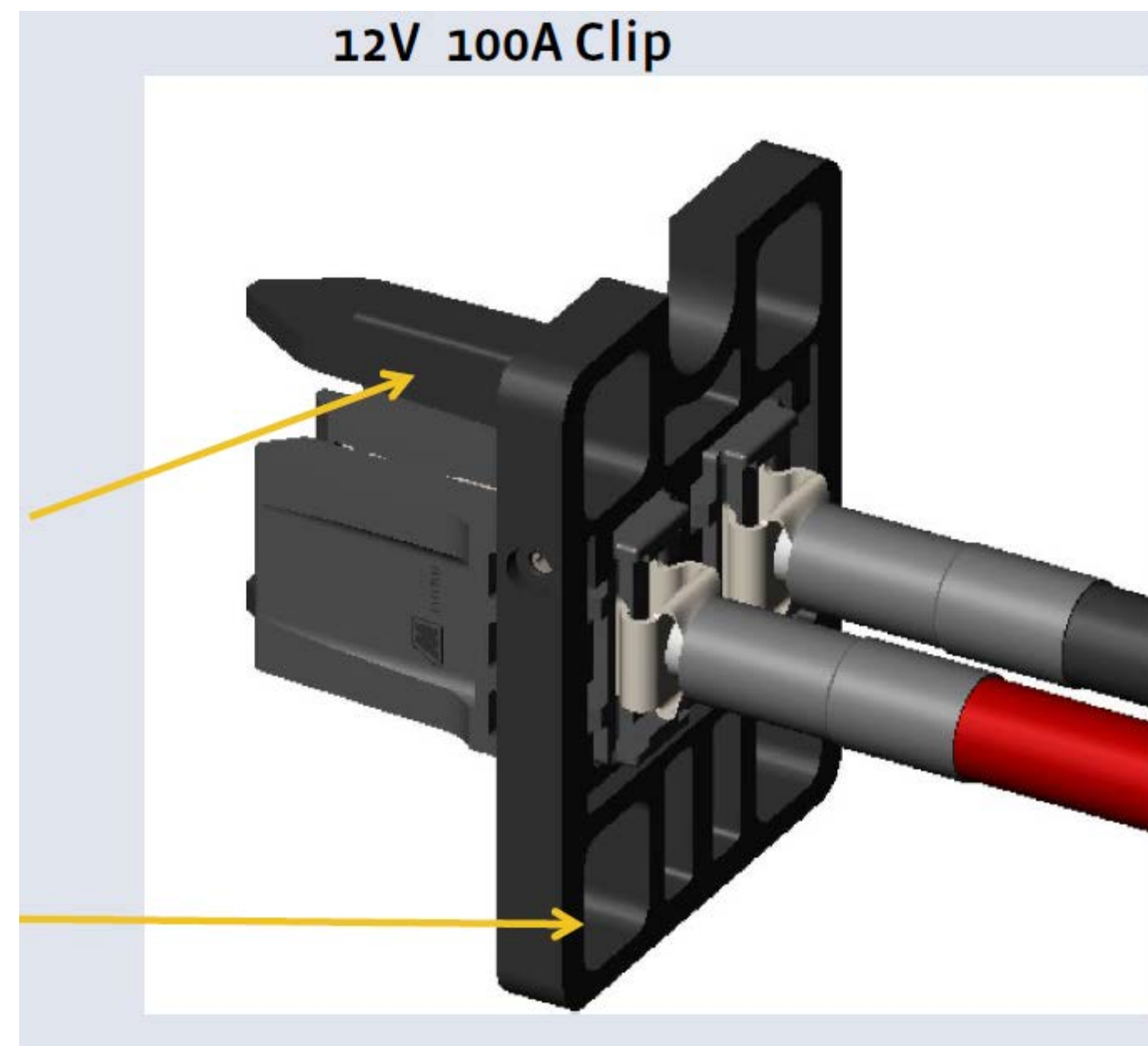
Open Rack
Three 13U Power Zones in one rack



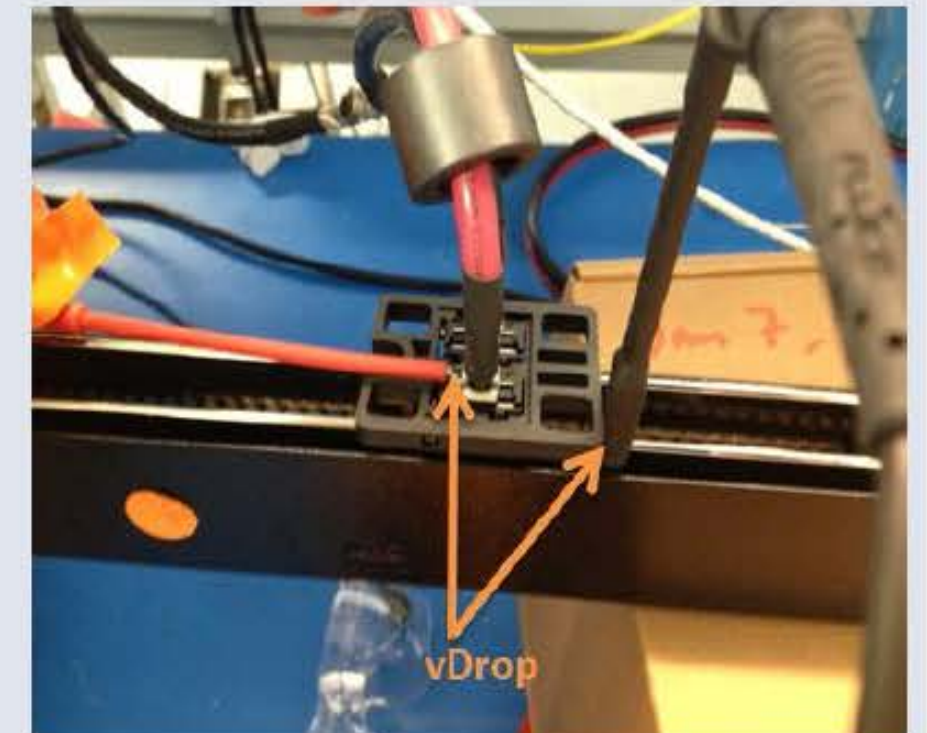
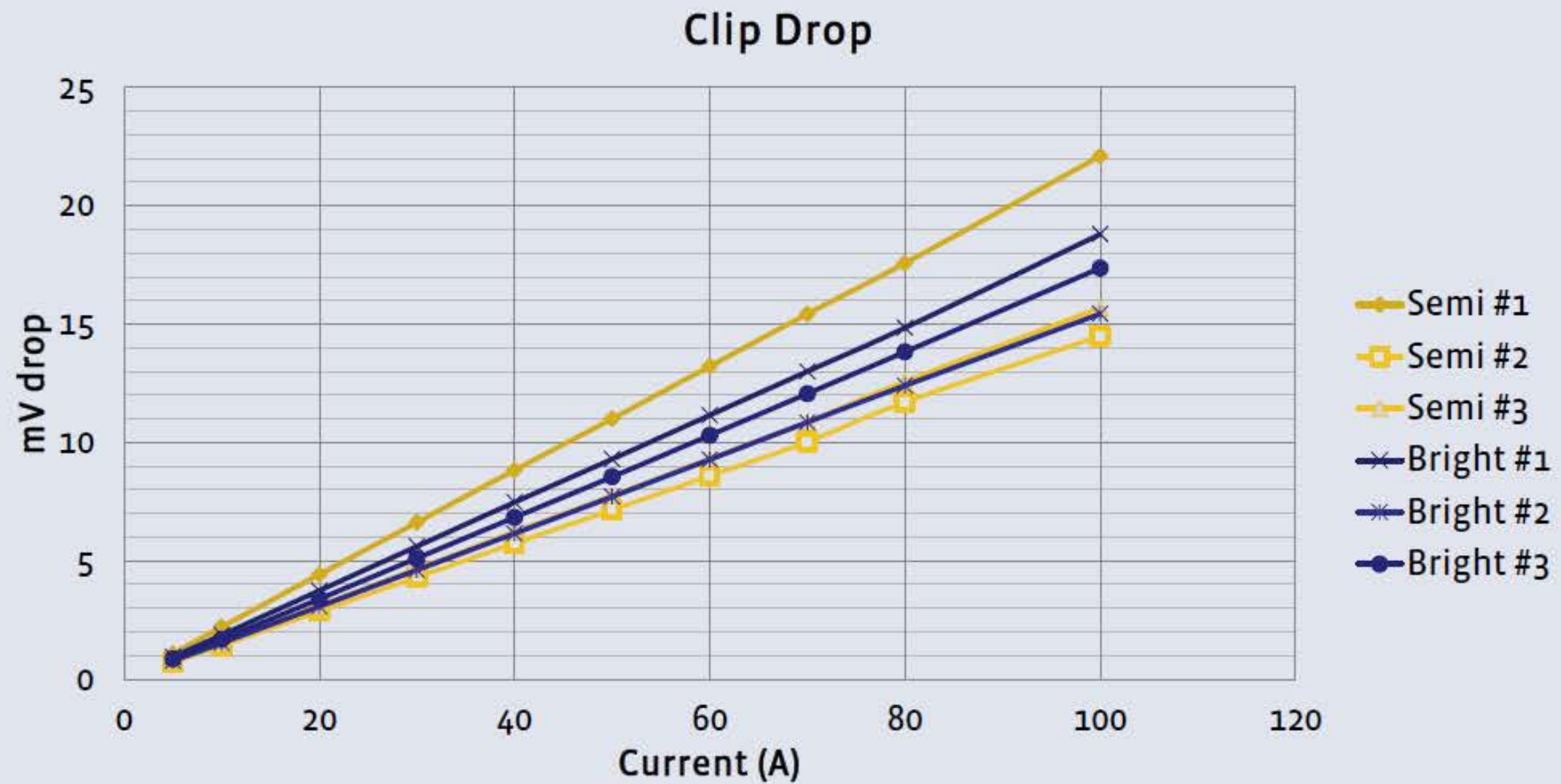


Alignment Pin catches
between the busbar

Float +/- 4mm horizontal
Float +/- 3mm vertical



Clip Efficiency



Busbar Efficiency

