

Open Rack Wide (ORW): Progress, Validation, and What's Next

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Agenda

- What’s ORW?
- One Year On — the ORW journey
- Specification status
- Key Specs
- ORW Design evolution
- IT Rail updates
- Validation results
- Accessories ecosystem
- Production & deployment readiness
- Call to action

What’s ORW?



Double-Width Frame

Large form factor rack frame based on the ORv3 HPR feature set.

Next-Gen AI Ready

Developed to support larger mass and physical footprint of multi-generation AI platforms.

High Power Capacity

Capable of higher overall power capacity using liquid cooled busbars (>700 kW).

Flexible Architecture

Designed to support many different possible power architectures seamlessly.

One Year On — the ORW journey

Oct 14, 2025

v0.9.0 Spec

Preliminary specification shared with the community at OCP Global 2025.

Shared

Mar 11, 2026

v0.9.5 Spec

Contribution presentation delivered

Rack & Power OCP Monthly Call

Apr 28, 2026

v1.0.0 Release

Base Spec & Meta Design Spec officially published.

OCP EMEA 2026

Oct, 2026

ORW Updates - OCP Global Summit

ORW status updates, one year after contribution

Shared

Next

PVT Production & Validation → MP Ramp

Production ramp is actively underway.

In Progress

Specification status

BASE SPEC

ORW Base Spec

IT-equipment interfaces for the new wider form factor, busbar mounting interfaces, and OU/RU position requirements.

Scope Exclusion

Deliberately excludes overall size, payload, and base geometry — kept open for implementers.

META DESIGN

ORW Meta Spec

Adds frame size (W×D×H), max payload, and base geometry including forklift channels/supports.

- Optional crane lift & floor-bolt points
- Cable grommets and routing management
- Accessory and bracket options

Meta Design Collateral v1.0.0
Includes 3D CAD models, 2D technical drawings, and Bill of Materials (BOM)

IT Gear Design Guide
v0.1 preliminary specification

Key Specs — a quick comparison

ORv3 HPR

Reference Standard

Payload & Rails

- Max gear payload: 1,400 kg
- Tool-less rack rails: 80 kg IT gear

Frame Dimensions

- Width: 600 mm
- Height: 2286 mm
- Depth: 1219 mm

ORW

Next-Gen Specs

Payload & Rails

- Max gear payload: **4,700 kg** (increased from 3,500 kg - OCP 2025)
- Tool-less rack rails: **125 kg** IT gear (new rail)

Frame Dimensions & Features

- Width: **1200 mm (2x wider!)**
- Height: **2386 mm** (+100 mm)
- Depth: **1219 mm** (unchanged)
- **New:** movable horizontal frame supports, top lift points

Retained & Inherited Features

✓ 48 V support | ✓ Power shelves in any slot | ✓ Single power zone | ✓ 44 OU / 47 RU gear support



ORW Design evolution

How the ORW frame matured:

Three engineering build phases — in PVT today. Every geometry change tracked build-to-build against a defined CAD freeze, with explicit in/out scope per hardware sample.



Structural stiffness

Base welded across multiple horizontal planes; mid-base assembly simplified and strengthened. Normal-mode FE analysis confirms the improvement.



Dimensional control

Rack parts redesigned to datum key components into position. Replacing manual build loops for tight, repeatable squareness



Built for volume

Part commonization, opened jig and weld access, paint relief and drainage, and molded-in ID features so ORW is never confused with ORv3 on the line.

Takeaway: stiffer, squarer, and built for volume

IT Rail updates

Precise ORv3 alignment

- Shifted ORW rail bottom-of-flange datum ~0.5 mm and trimmed IT-gear stepped land (44.7 → 44.2 mm).
- Assembly datums & depth setting: Utilizes rack-interface outside face + hook bottom face; rear hard-stop flange sets IT-gear depth.

Higher-load, tool-less rail

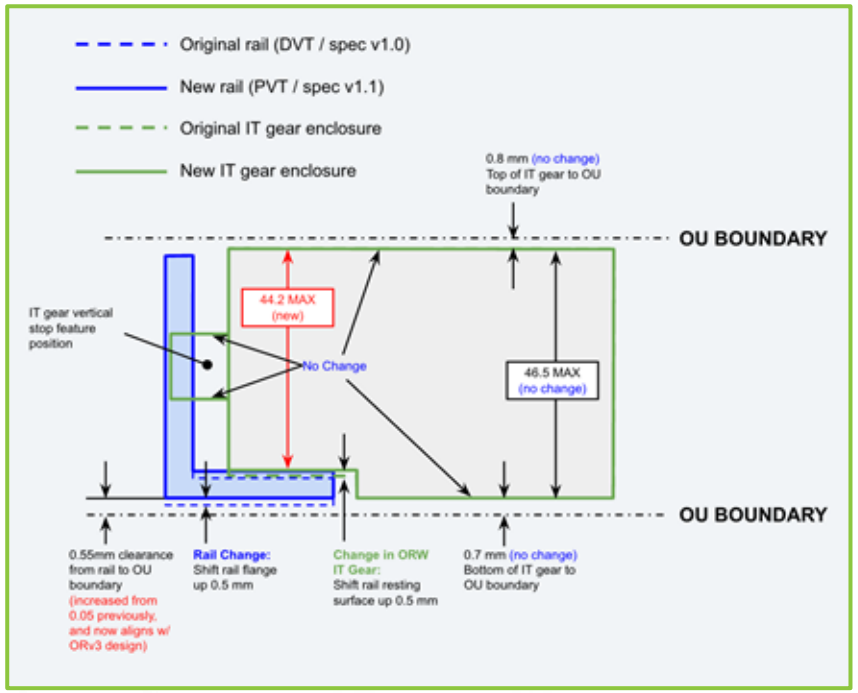
- Supports 125 kg IT gear, a significant upgrade from 80 kg on ORv3 HPR.

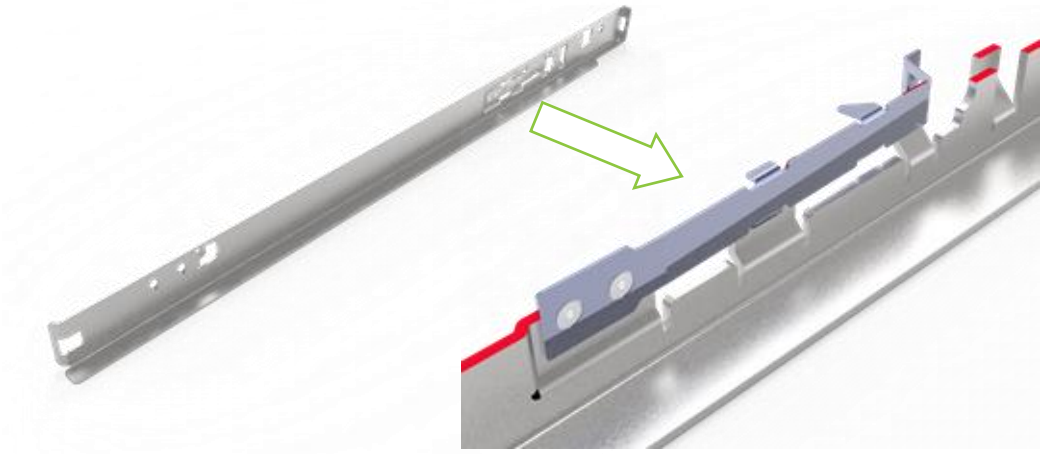
Riveted rail clip

- Clip now riveted to the rail (previously snap-in) for increased stiffness and consistent engagement.

Requalified latch mechanism

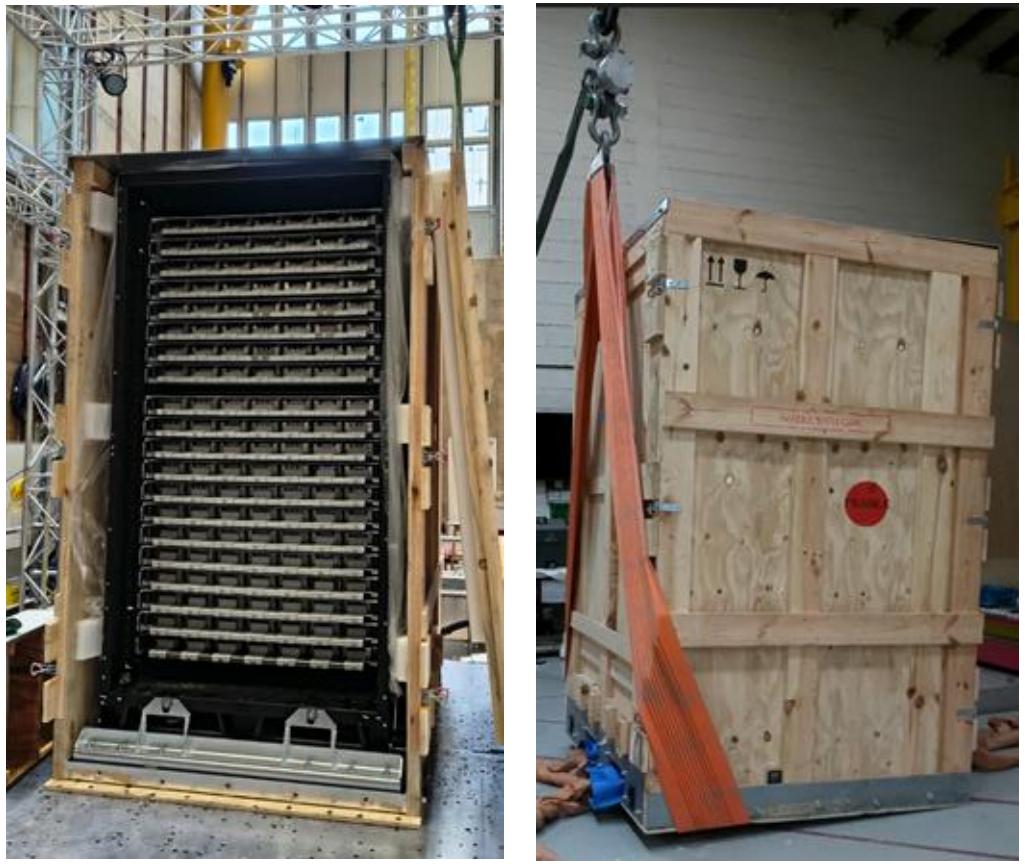
- 625 N pull-out target, selected after evaluation of different design concepts





Validation results

- **Test Scope**
  - The rack was tested with a payload of 4,700kg (using dummy weights)
- **Testing Procedures**
  - **Vibration:**
    - Random vibration
  - **Drop Tests:**
    - Rotational flat and edge drops
    - Flat Drop
  - **Tilt Testing:**
    - Four 17-degree tilt tests.
- **Performance:**
  - No visual damage was observed on the crate or the rack following any of the tests
  - Structural squareness remained within the required tolerance throughout all post-test measurements.
- **Results:**
  - All tests **PASSED**. Paired with a full crate, ORW rack demonstrated structural robustness and successfully met all defined qualitative and quantitative pass criteria



Testing Setup @ DVT Stage

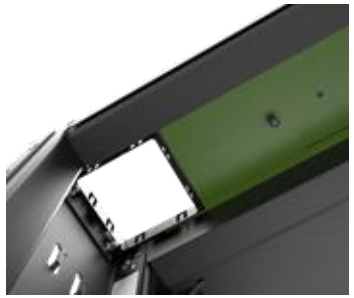
Accessories ecosystem

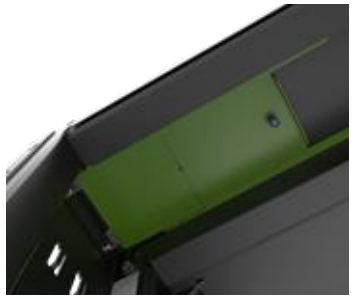


Side panels
"fill-in" between vertical members; lockable to frame; single-person install; welded sheet-metal

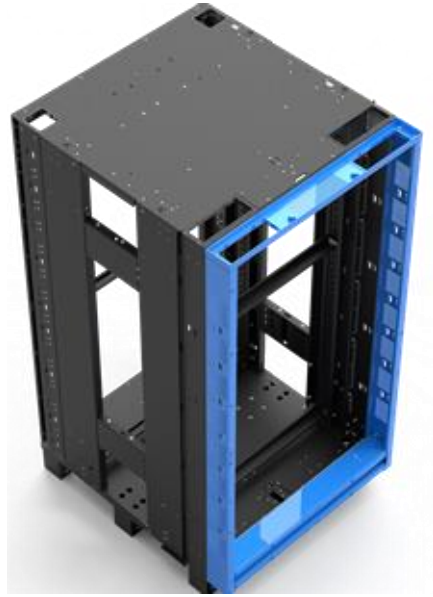


Security Doors
vertically split front and rear; 4-point locking; perforated for airflow; standard or locking handle options

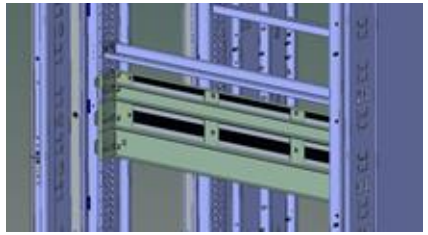




Cable openings
fixed grommets or closable, adjustable louvers



Rear extension frame
bolt-on, movable base member (2 positions), perforated sides, 145 mm depth







Blanking Panels
Front assembly air blockers (1 OU and 2 OU options, with and without brush openings)

Production & deployment readiness

MP Start

November 2026

Fully Manual Assembly Line

Semi Automated Assembly Line.

Fully Automated Assembly Line



DVT to PVT



Additional Lance Features
Gives additional flexibility and control over cable management



DVT to PVT



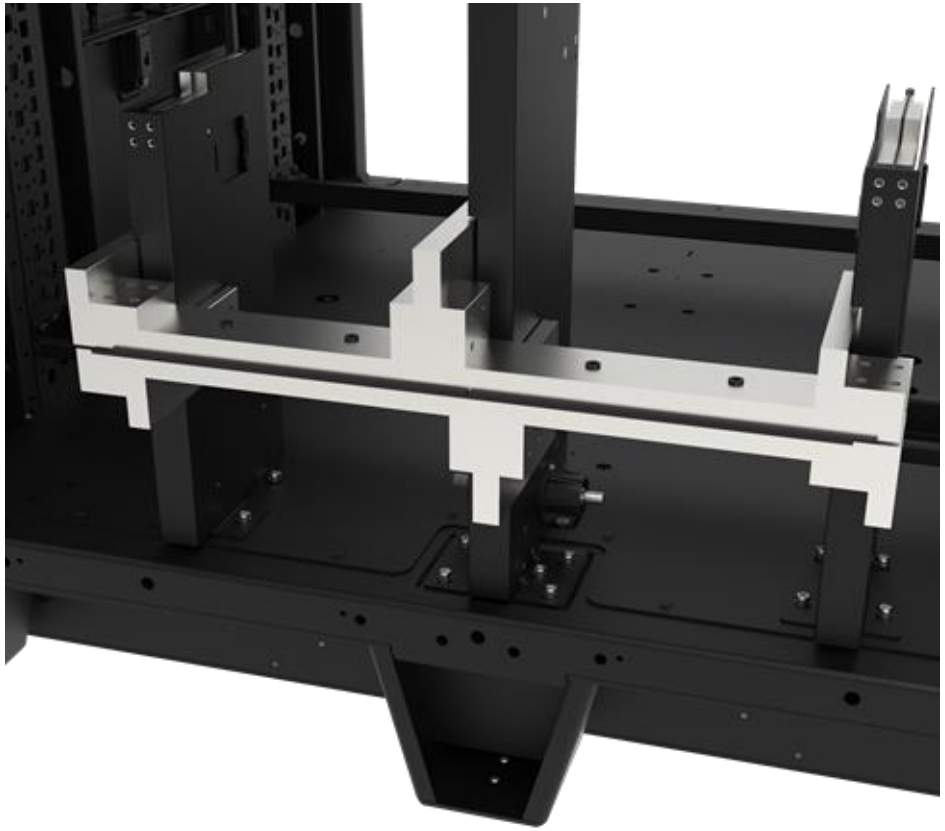


Additional M8 fixing points
Adds support to rear extension mounting

DVT to PVT

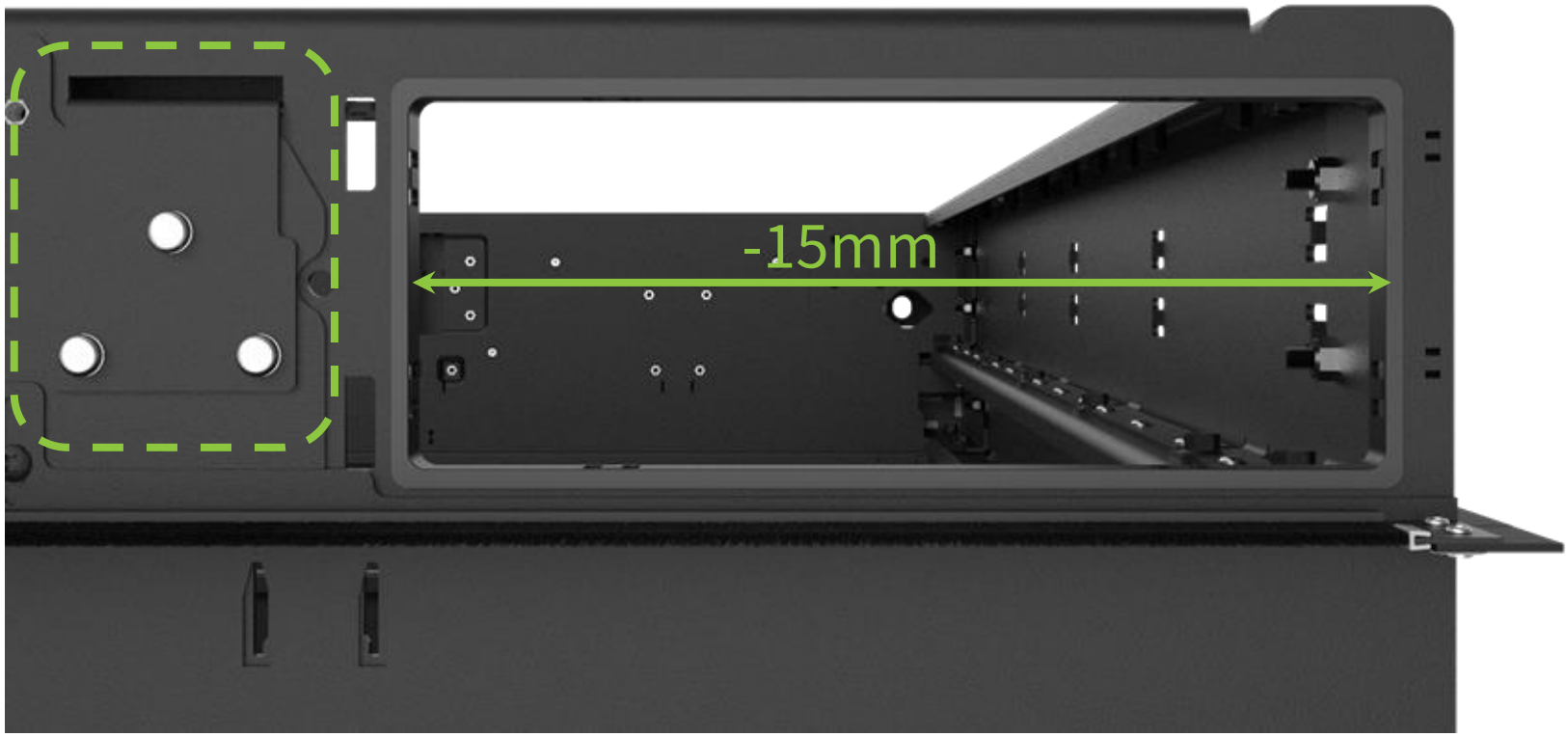


Additional Busbar Mounting Features
Allows multiple positions for busbar(s)
Supports deployment of complex busbar solutions



DVT to PVT

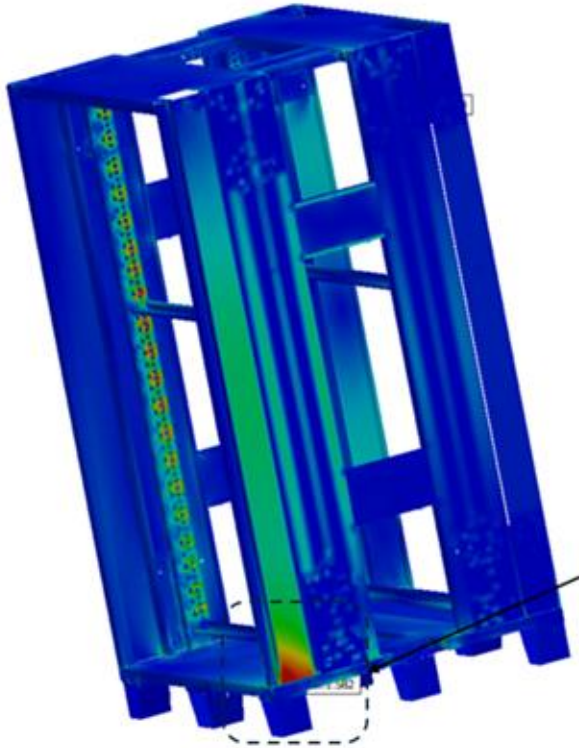
- Reduced rear grommet opening 15mm in width
- Required to support more complex busbars
- Cable entry reduced from 31,058mm² to 29,468mm²

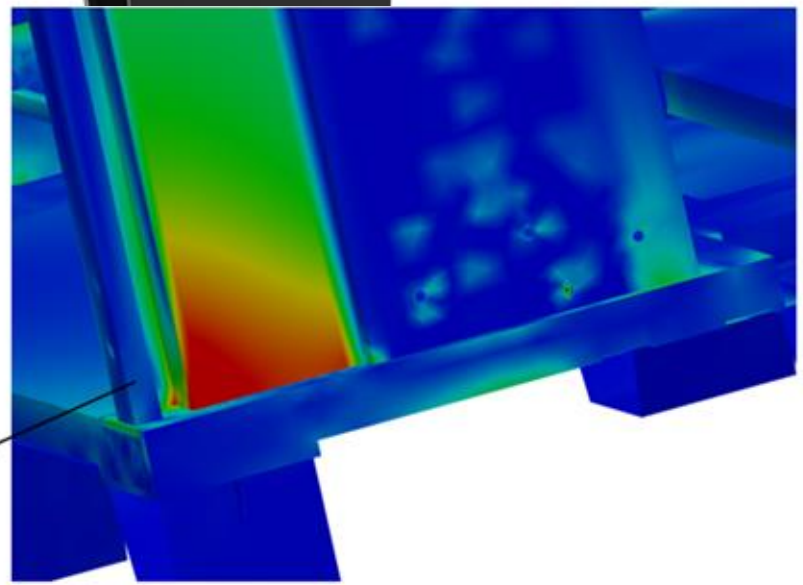


DVT to PVT

- DFM/DFA updates:
  - Component commonization
- Performance improvements:
  - Material gauge increases







Call to Action

- Let's create a rack frame specification to support next generation AI platforms
- How to get involved in the project/sub-project community:

Learn more about the Rack & Power Project:

Join the mailing list:

Rack & Power Project Group

ORW Base Specification (v1.0.1)

ORW Meta Design Specification (v1.0.1)

ORW Meta Design Collateral (3D CAD, 2D Drawings, BOM) (v1.0.1)

ORW IT Gear Design Guide (v0.1 Preliminary)

ORW Specifications

Thank You!

