

VERTIV Smart Row 2 Infrastructure Solution



VERTIV Smart Row 2 Infrastructure Solution Instruction Manual

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VERTIV Smart Row 2 Infrastructure Solution



Specifications

- **Row IT Load Capacity:** 20 kW
- **Power Redundancy UPS:** Yes
- **Power Redundancy rPDU:** Yes
- **Cooling Redundancy:** Yes
- **Dimensions:**
 - **Length:** 13.78 ft
 - **Depth:** 4.6 ft
 - **Height:** 7.38 ft

Product Usage Instructions

Installation and Setup

Before starting the installation, ensure you have all the necessary components mentioned in the submittal drawings.

Unpacking and Placement

Unpack the SmartRowTM 2 Infrastructure Solution components carefully and place them in the desired location following the provided layout visuals.

Assembly

Assemble the VertivTM MSR2 IT Rack and Power Management Cabinet as per the provided isometric views.

Wiring and Connections

Refer to the wiring diagrams for proper installation of the Power Management Units, Cable Trays, Monitoring Systems, and other components.

Configuration

Configure the system based on your power requirements using the Maximum Power Configuration Schematic Diagrams.

Testing

After installation and configuration, test the system to ensure all components are functioning correctly.

Frequently Asked Questions (FAQ)

How can I resolve installation or operational issues with the product?

Check the relevant sections of the manual for outlined procedures. For additional assistance, visit [Vertiv Technical Support Site](#).

INTRODUCTION

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Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit <https://www.vertiv.com/en-us/support/> for additional assistance.

Submittal Drawings

SmartRow™ 2 Site Planning Datasheet (208V, 3 phase, 4 wire + PE)

Configuration Number	Part Number	Max Row Capacity (kW)	IT Racks per Row	Capacity per Rack (kW)	Cooling Units per Row	pdu count	Main Input Breaker Size ⁶	Per Condenser Breaker Size	Per Condenser Dry Weight kg (lbs)	Row Dimensions (L x H x D) mm (in) ⁷	Row Weight kg (lbs)	Min. Staging Area m ² (ft ²)
1	SR2N02010NAA1	10	2	5	1	2	100A	N/A ⁵	60 (132.3)	2100 (82.7) x 2271 (107) x 1400 (55.2)	1463 (3227)	14.41 (155.2)
2	SR2N02010PAA1	10	2	5	1	4	100A	N/A ⁵	60 (132.3)	2100 (82.7) x 2271 (107) x 1400 (55.2)	1491 (3288)	14.99 (161.4)
3	SR2N02010FAA1	10	2	5	2	4	100A	N/A ⁵	60 (132.3)	2400 (94.5) x 2271 (107) x 1400 (55.2)	2112 (4656)	17.67 (190.2)
4	SR2N03010NAA1	10	3	3	1	3	100A	N/A ⁵	60 (132.3)	2700 (106.3) x 2271 (107) x 1400 (55.2)	1633 (3601)	15.76 (169.7)
5	SR2N03010PAA1	10	3	3	1	6	100A	N/A ⁵	60 (132.3)	2700 (106.3) x 2271 (107) x 1400 (55.2)	1675 (3694)	16.34 (175.9)
6	SR2N03010FAA1	10	3	3	2	6	100A	N/A ⁵	60 (132.3)	3000 (118.2) x 2271 (107) x 1400 (55.2)	2296 (5061)	19.02 (204.8)
7	SR2N03020NAA1	20	3	6	1	3	175A	15A	118 (260.2)	2700 (106.3) x 2271 (107) x 1400 (55.2)	1863 (4108)	18.46 (198.8)
8	SR2N03020PAA1	20	3	6	1	6	175A	15A	118 (260.2)	2700 (106.3) x 2271 (107) x 1400 (55.2)	1905 (4201)	20.51 (220.8)
9	SR2N03020FAA1	20	3	6	2	6	175A	15A	118 (260.2)	3000 (118.2) x 2271 (107) x 1400 (55.2)	2526 (5568)	24.42 (262.9)
10	SR2N04020NAA1	20	4	5	1	4	175A	15A	118 (260.2)	3300 (130) x 2271 (107) x 1400 (55.2)	2033 (4483)	19.81 (213.3)
11	SR2N04020PAA1	20	4	5	1	8	175A	15A	118 (260.2)	3300 (130) x 2271 (107) x 1400 (55.2)	2089 (4607)	21.86 (235.3)
12	SR2N04020FAA1	20	4	5	2	8	175A	15A	118 (260.2)	3600 (141.8) x 2271 (107) x 1400 (55.2)	2710 (5974)	25.77 (277.4)
13	SR2N05020NAA1	20	5	4	1	5	175A	15A	118 (260.2)	3900 (153.6) x 2271 (107) x 1400 (55.2)	2203 (4858)	21.16 (227.8)
14	SR2N05020PAA1	20	5	4	1	10	175A	15A	118 (260.2)	3900 (153.6) x 2271 (107) x 1400 (55.2)	2273 (5012)	23.21 (249.9)
15	SR2N05020FAA1	20	5	4	2	10	175A	15A	118 (260.2)	4200 (165.4) x 2271 (107) x 1400 (55.2)	2894 (6380)	27.12 (292)

Notes:

1. System Environmental Conditions: Indoors, 41 °F to 104 °F (5 °C to 40 °C), RH to 80% with Max dew point of 82.4 °F (28 °C)
2. Floor surface must be level and continuous (expansion joints sealed, raised floor tile gaps sealed, no floor drains, etc).
3. No building sprinkler head should be within 19.7 in (0.5 m).
4. Install in accordance with national and local electrical codes
5. 10kW condenser power is sourced from the indoor unit
6. Cable Sizing: 100A = 3 AWG ; 175A = 2/0 AWG
7. Row Dimensions do not include necessary space needed for access including per ADA or local codes.

SmartRow™ 2 Solution Layout Visual

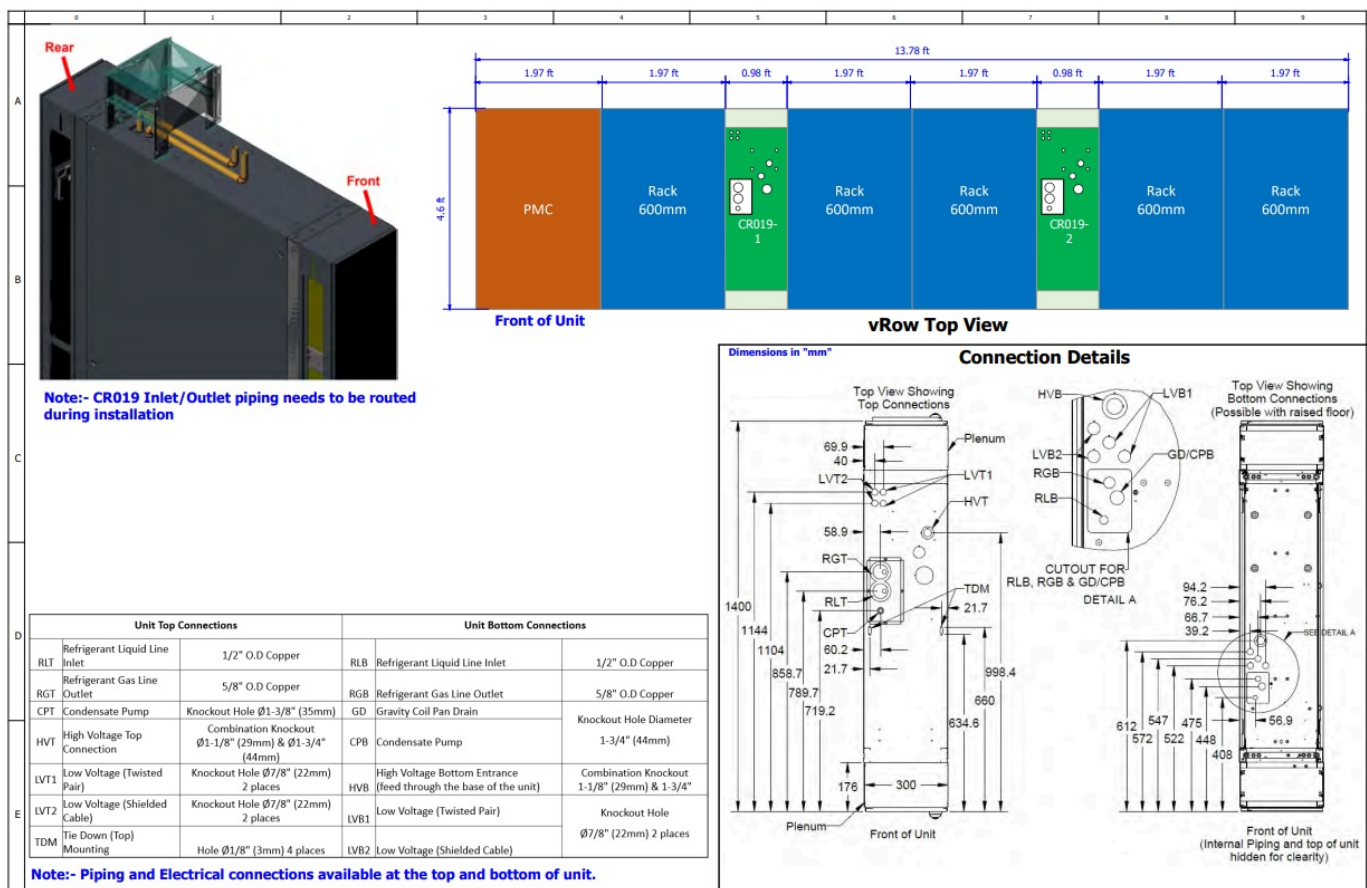
"Vertiv™ SmartRow™ 2": 5x IT Rack 20kW



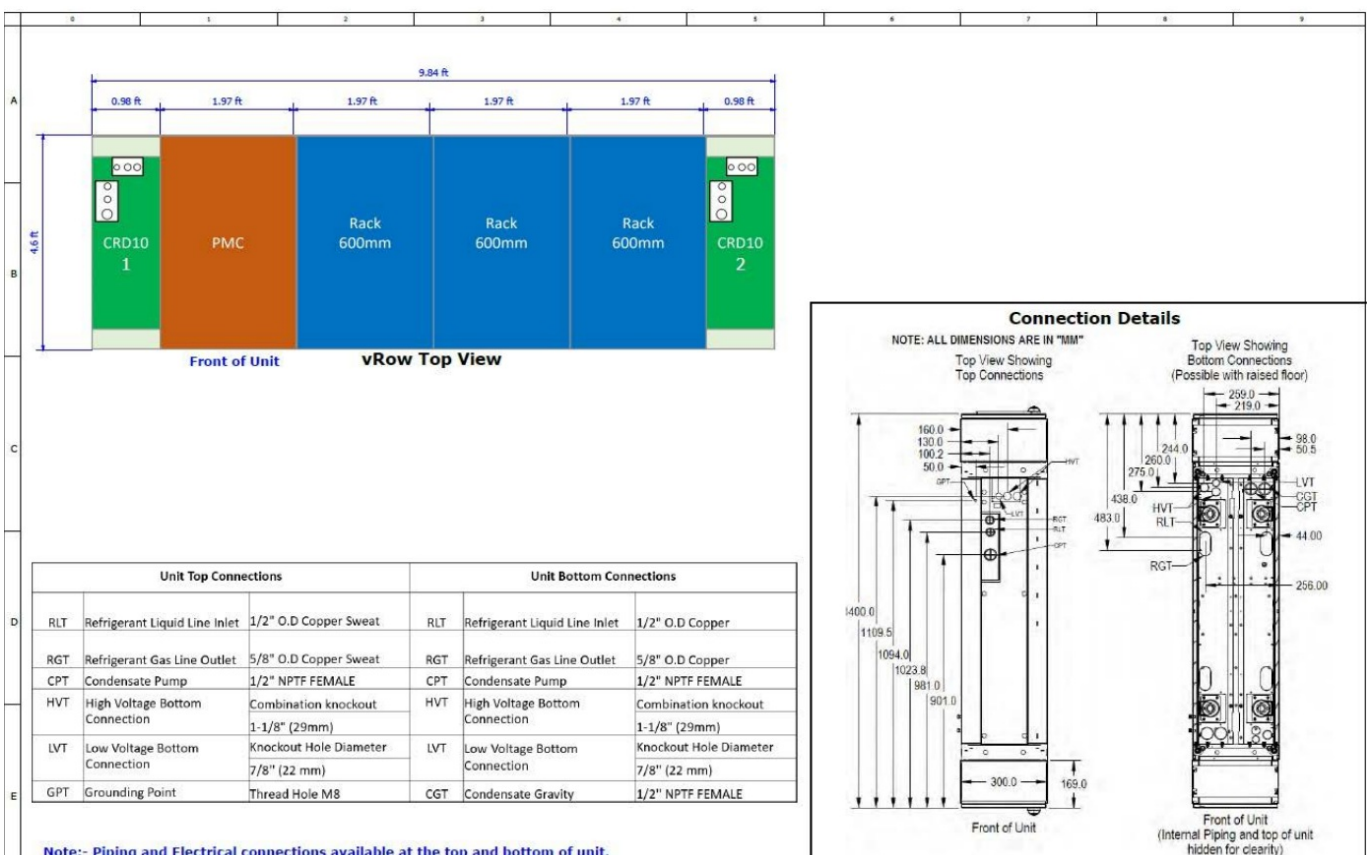
Row IT Load Capacity: 20 kW
Power Redundancy UPS: Yes
Power Redundancy rPDU: Yes
Cooling Redundancy: Yes
Dimensions:
Length: 13.78 ft
Depth: 4.6 ft
Height: 7.38 ft

NOTE: This is only a representative picture. The layout and appearance will vary depending on the row configuration. For specific layout images, please refer to the submittal packages.

Vertiv™ Liebert® CR019 In-Row Cooling System – Piping and Electrical Connections



Vertiv™ Liebert® CRD10 In-Row Cooling System – Piping and Electrical Connections



SmartRow™ 2 Main Components

SR2 Main Components

9-inch Touchscreen Panel:
User-friendly display enables easy access to system running status & condition.

Centralized Infrastructure Management:
Enables central management of all intelligent equipment and IT devices within the system. Reading & data are consolidated into single platform.

Racks with Containment:
EIA310 19-inch rack system coupled with tempered glass door enables fully enclosed system design. Allows focused cooling in IT environment.

Precision Cooling:
Row-based solution designed to provide maximum cooling in a compact footprint. Cooling modulation enables cooling on demand and quickly adapts to load fluctuation.

Electronic Lock:
Enables rack level security and access log is recorded intelligently. Supports local & remote door authorization.

Power Management & Distribution:
Pre-assembled & pre-integrated switchboard with surge protection.

Power Protection:
On-line double conversion UPS with unity power factor ensures clean power feeding to critical IT equipment.

- Power Management & Protection
- Thermal Management
- Management & Monitoring

Emergency Ventilation:
Activates automatically in the event of overheating or cooling unit failure.

Environmental Sensor:
Report critical environmental information and alarm notification. Ensure IT equipment is kept in desired condition.

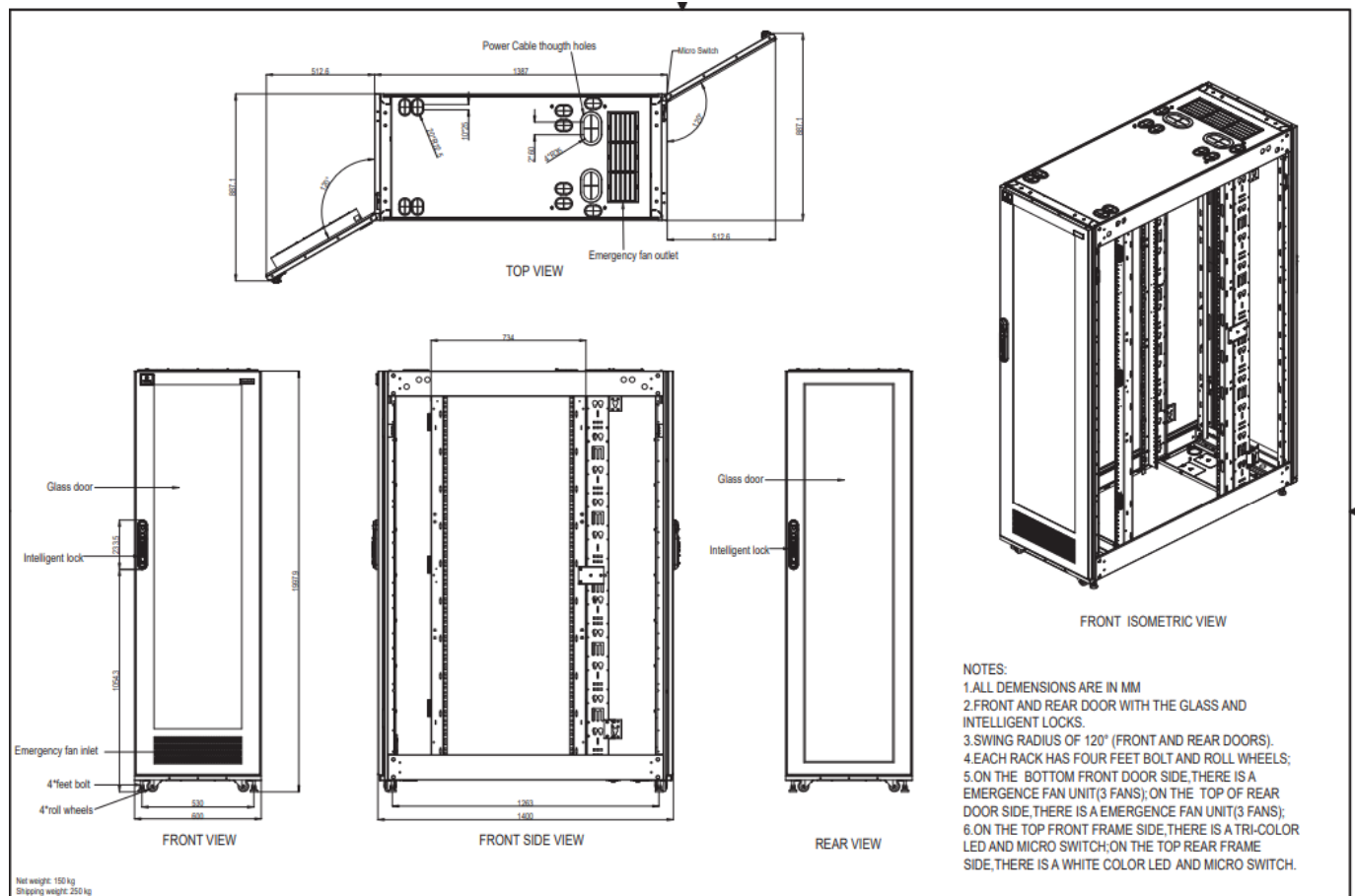
Explanation of terms:

- FU Emergency Fan Control Unit
- FDS Front Door Switch
- RDS Rear Door Switch
- FDL Front Door Lock Handle
- RDL Rear Door Lock Handle
- DC_PS DC Power Supply

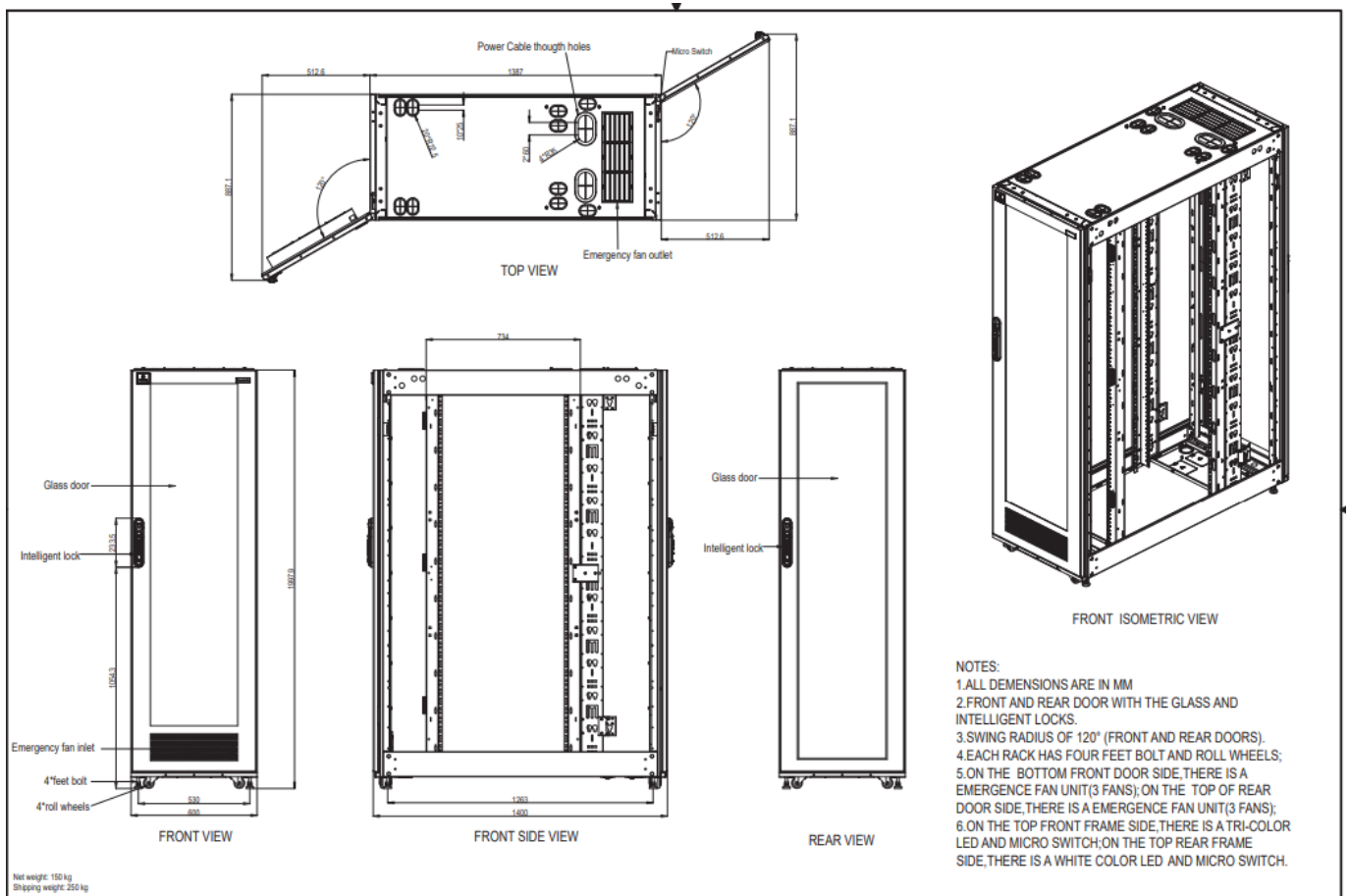


Link to Vertiv SmartRow™ 2

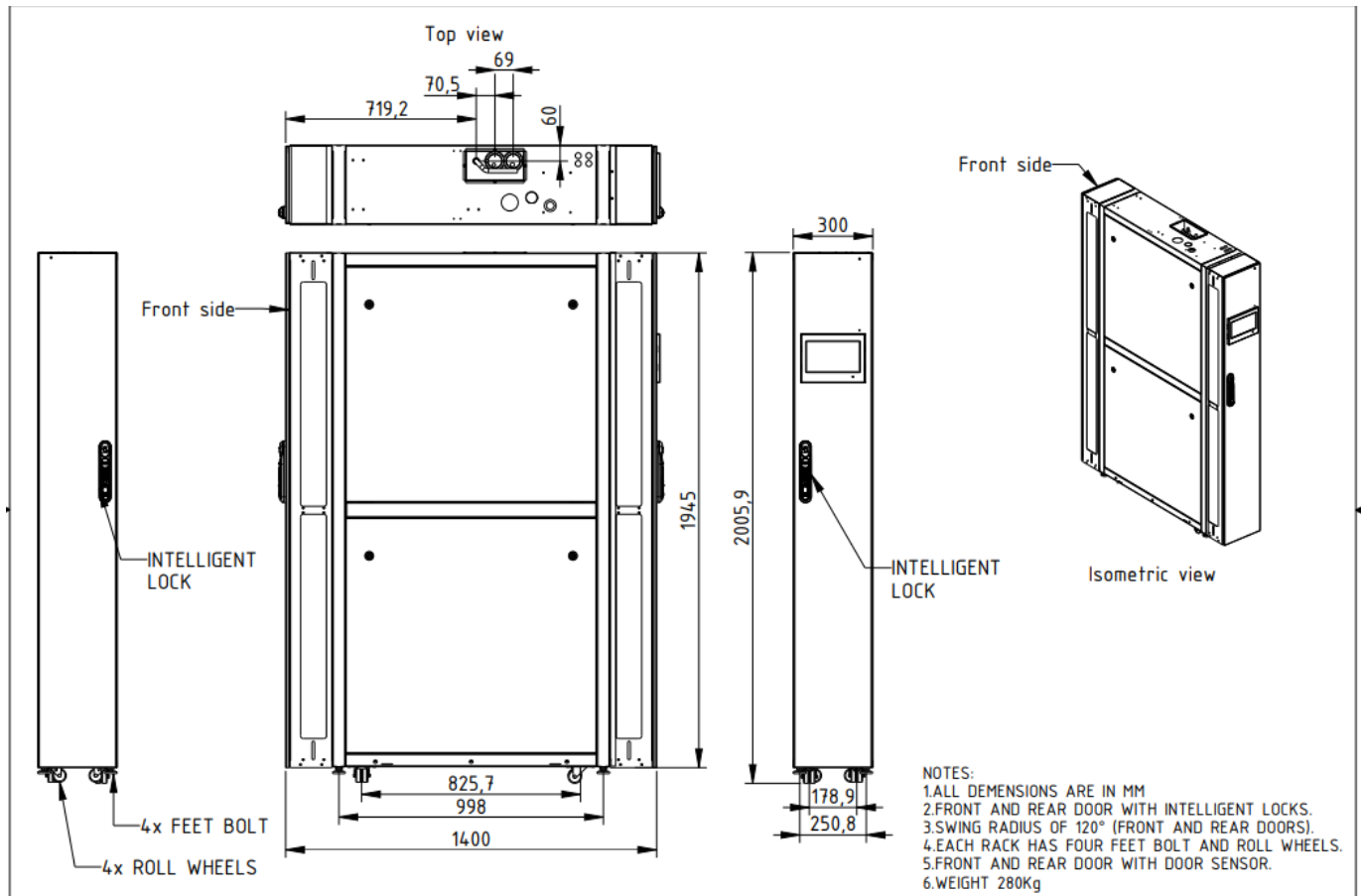
Vertiv™ MSR2 600mm IT Rack – Isometric View



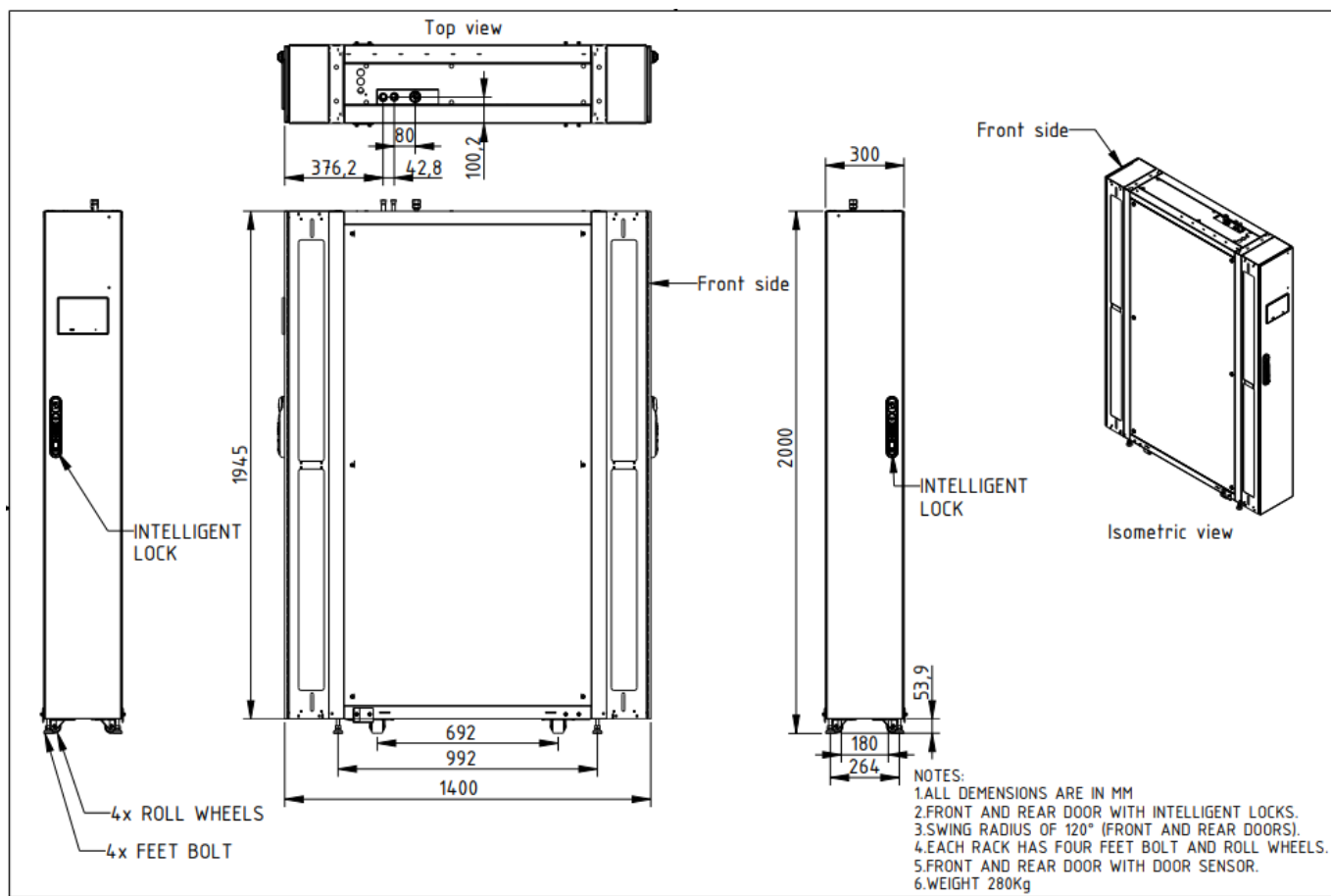
Vertiv™ MSR2 Power Management Cabinet (PMC) – Isometric View



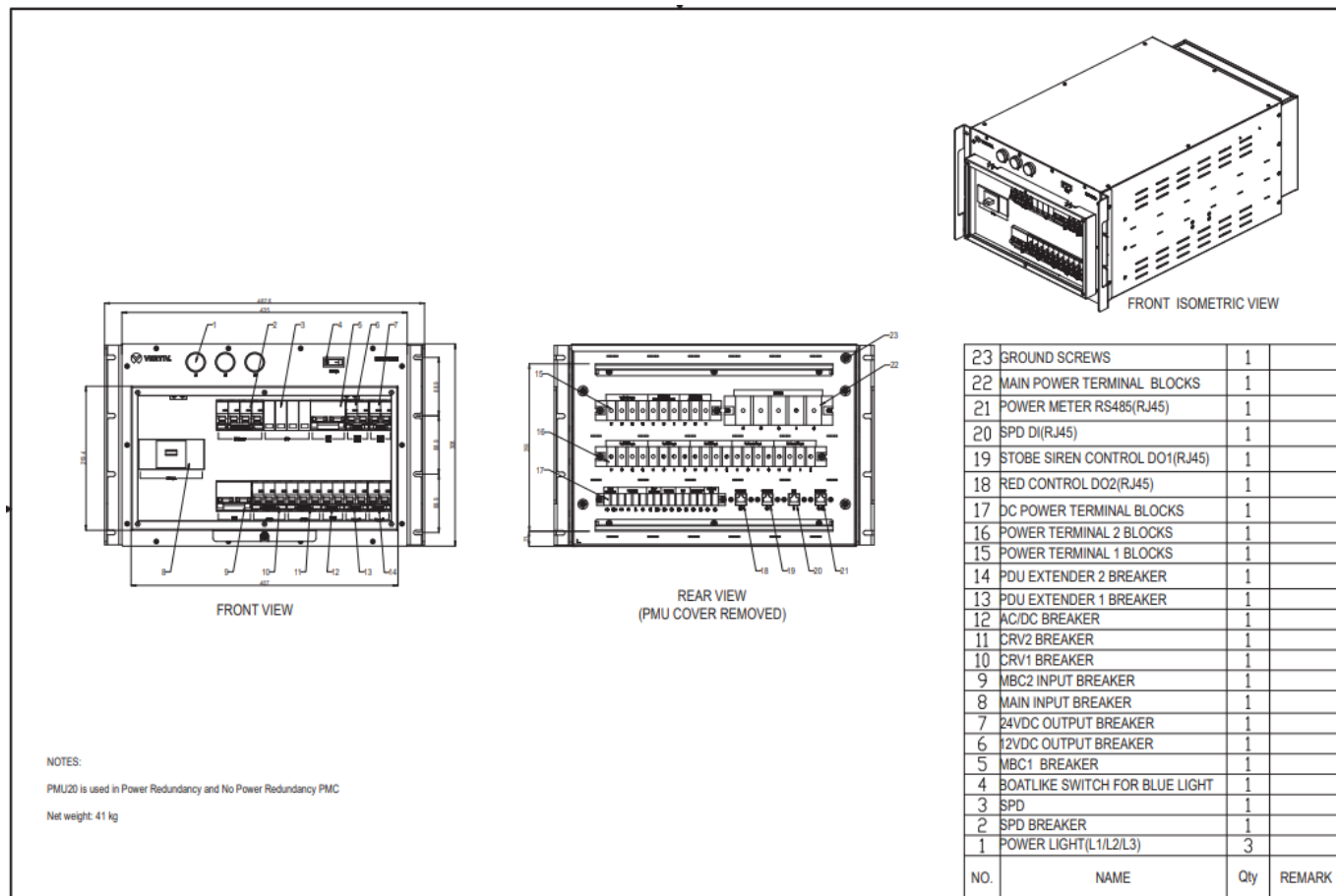
Vertiv™ Liebert® CR019 with Plenums – Dimensions



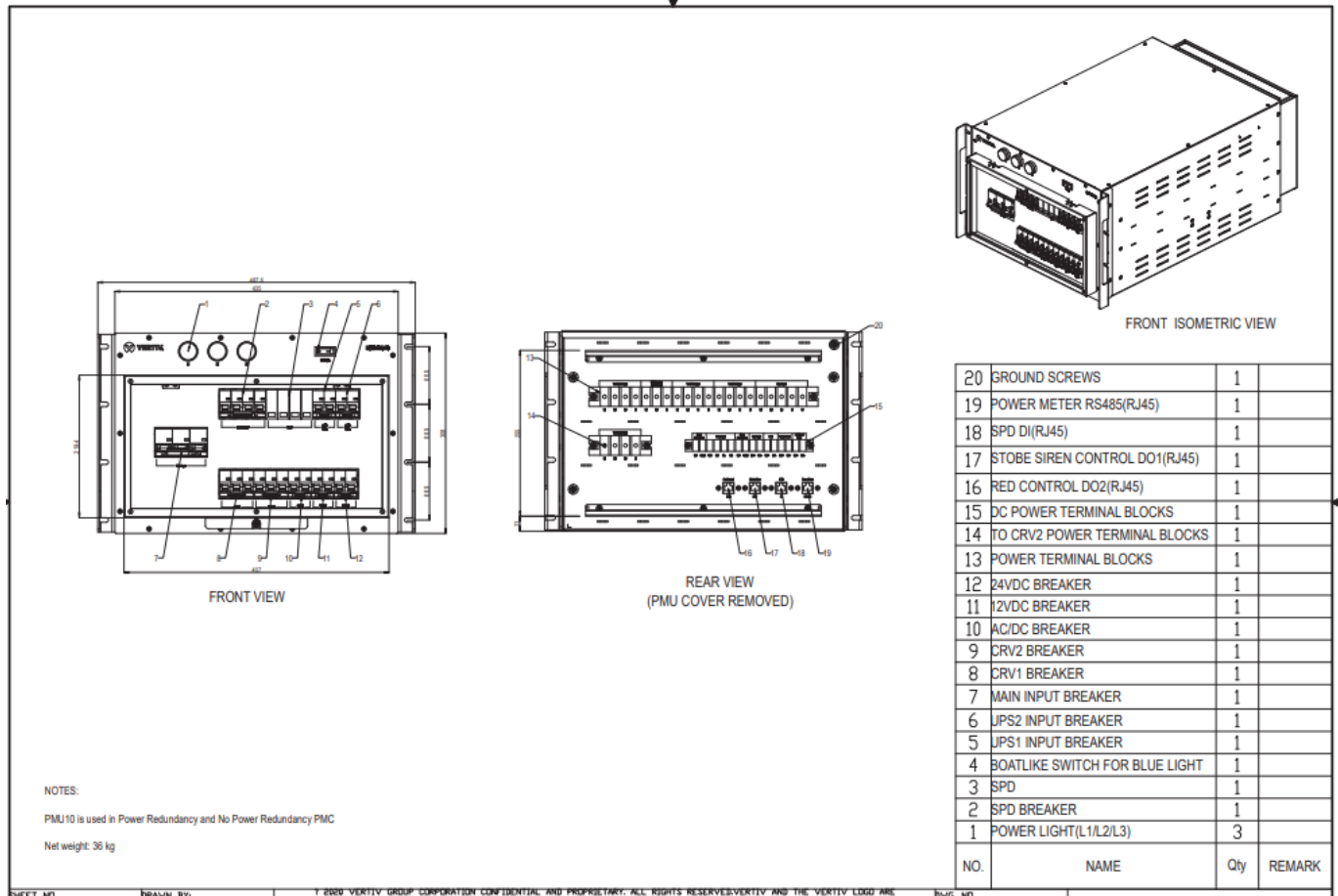
Vertiv™ Liebert® CRD10 with Plenums – Dimensions



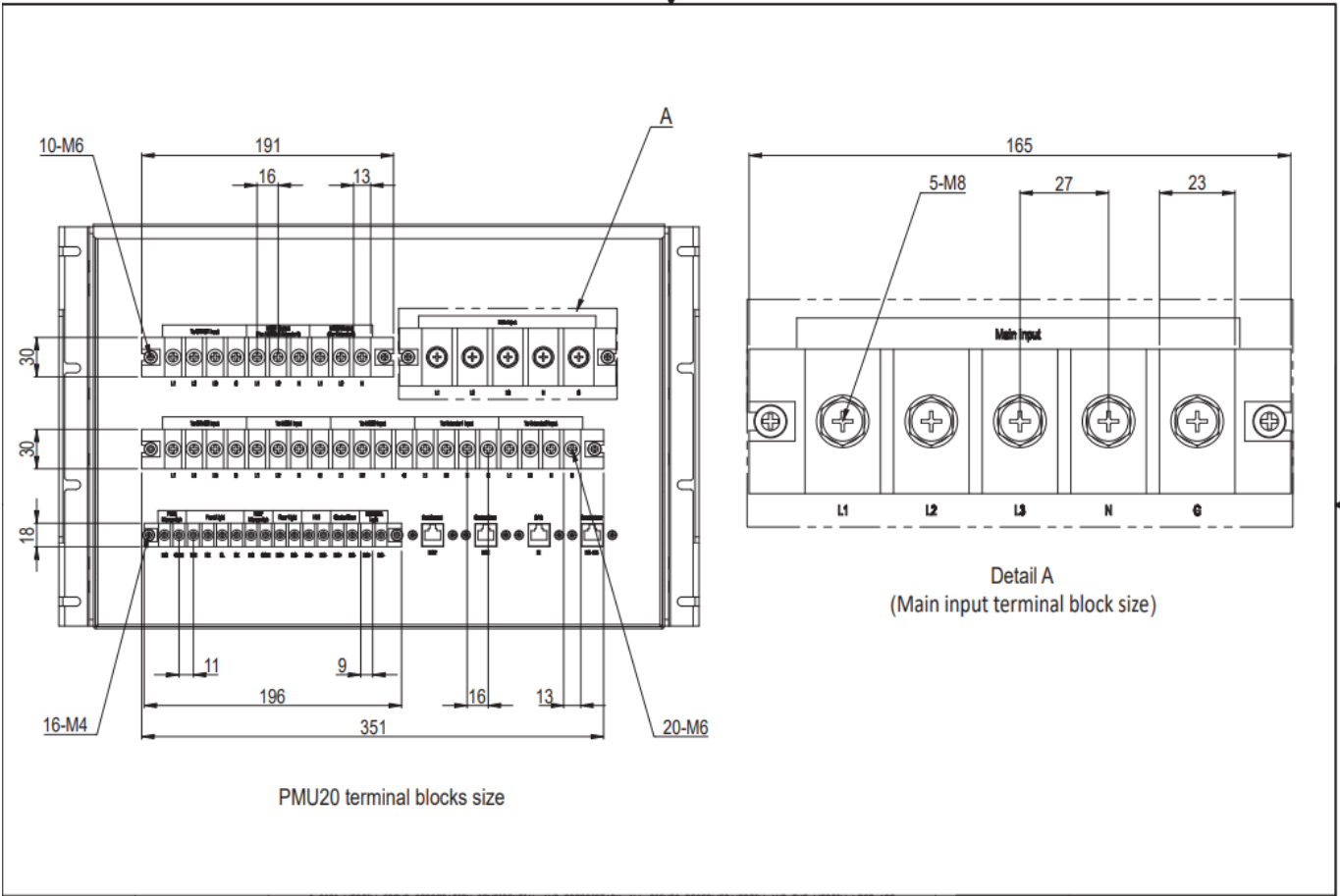
Power Management Unit – 20kW (PMU20)



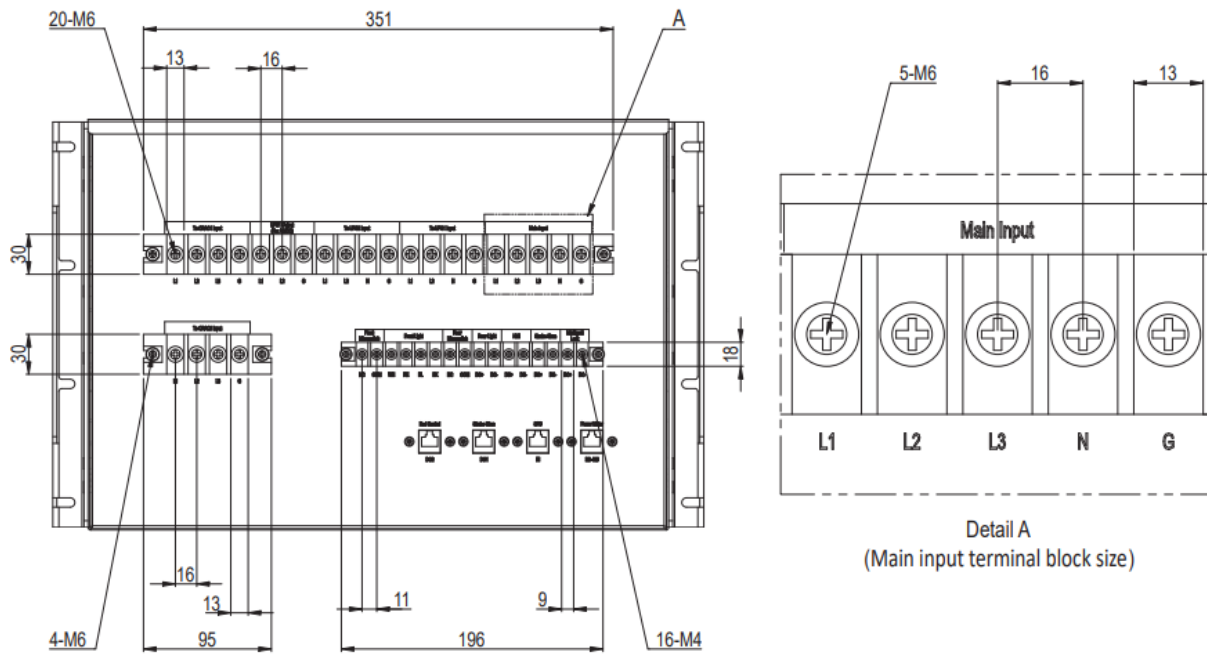
Power Management Unit – 10kW (PMU10)



PMU20 Terminal Blocks Size

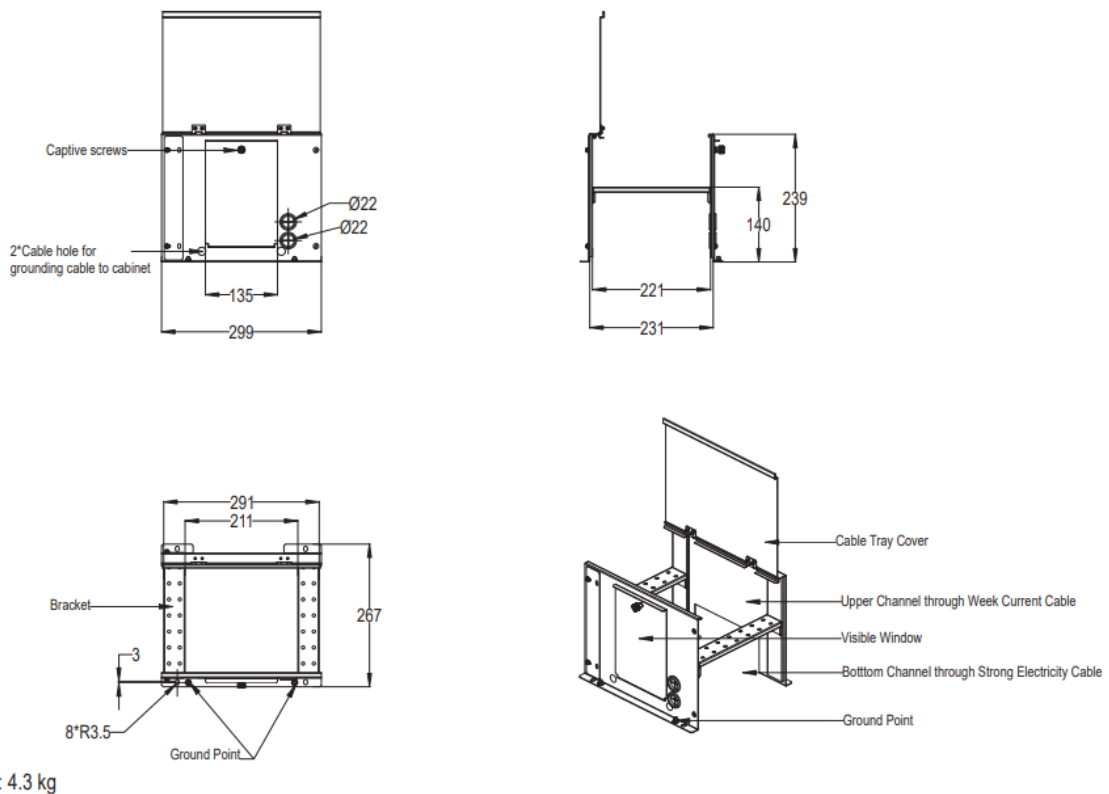


PMU10 Terminal Blocks Size

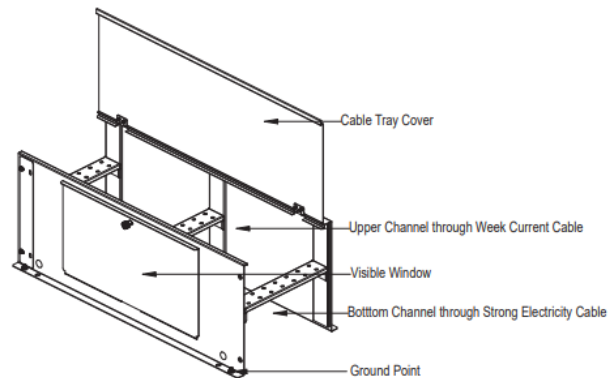
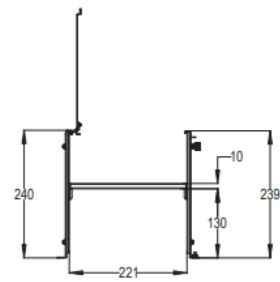
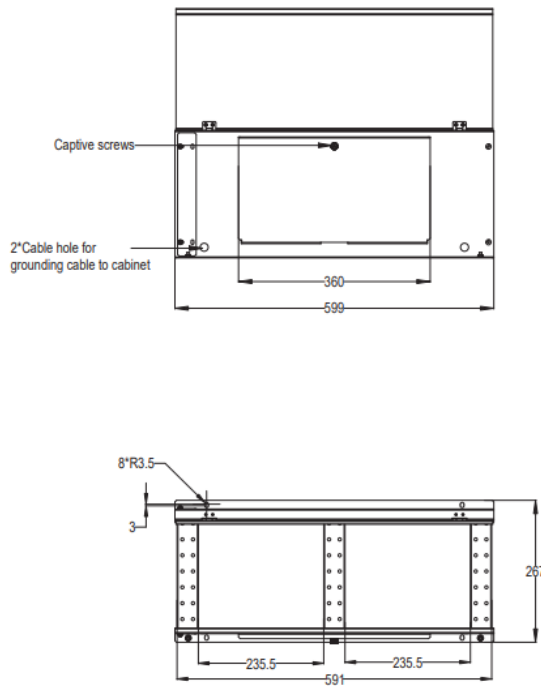


PMU10 terminal blocks size

Vertiv™ MSR2 – CT300 Cable Tray 300mm

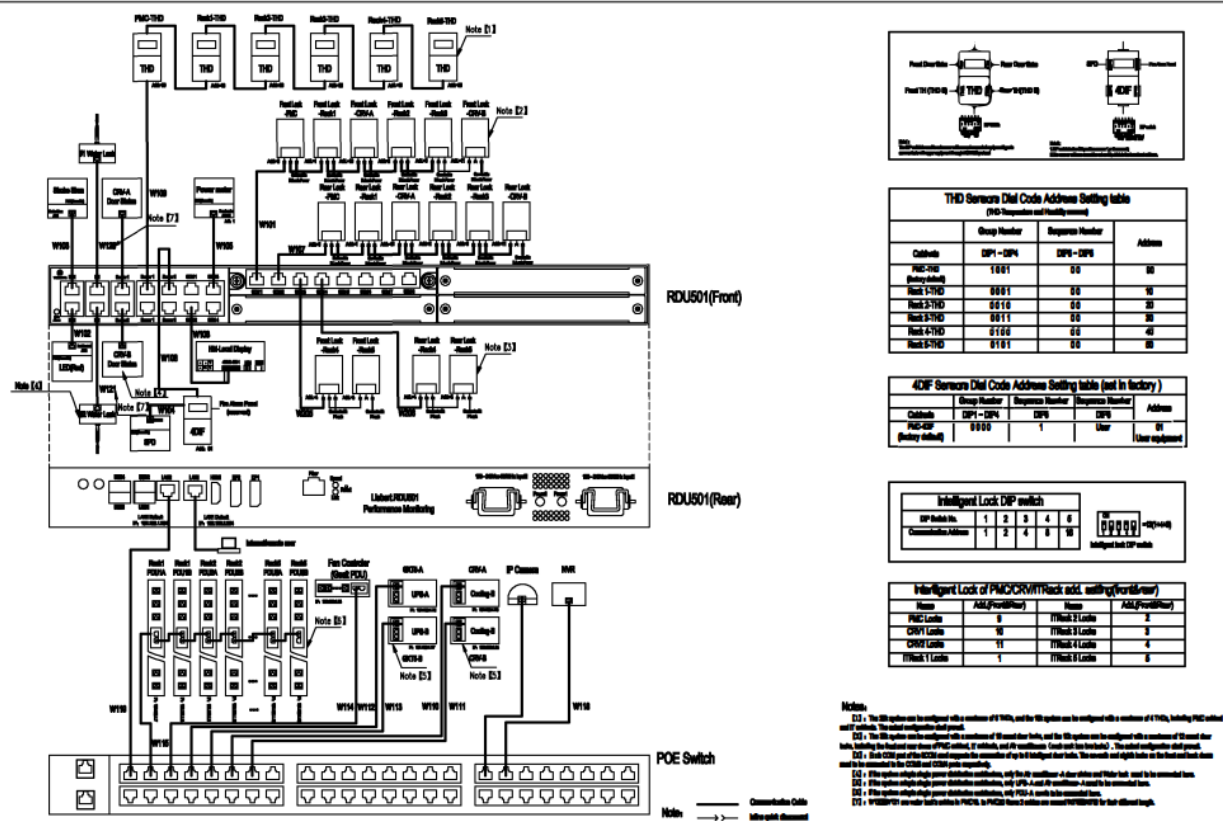


Vertiv™ MSR2 – CT600 Cable Tray 600mm

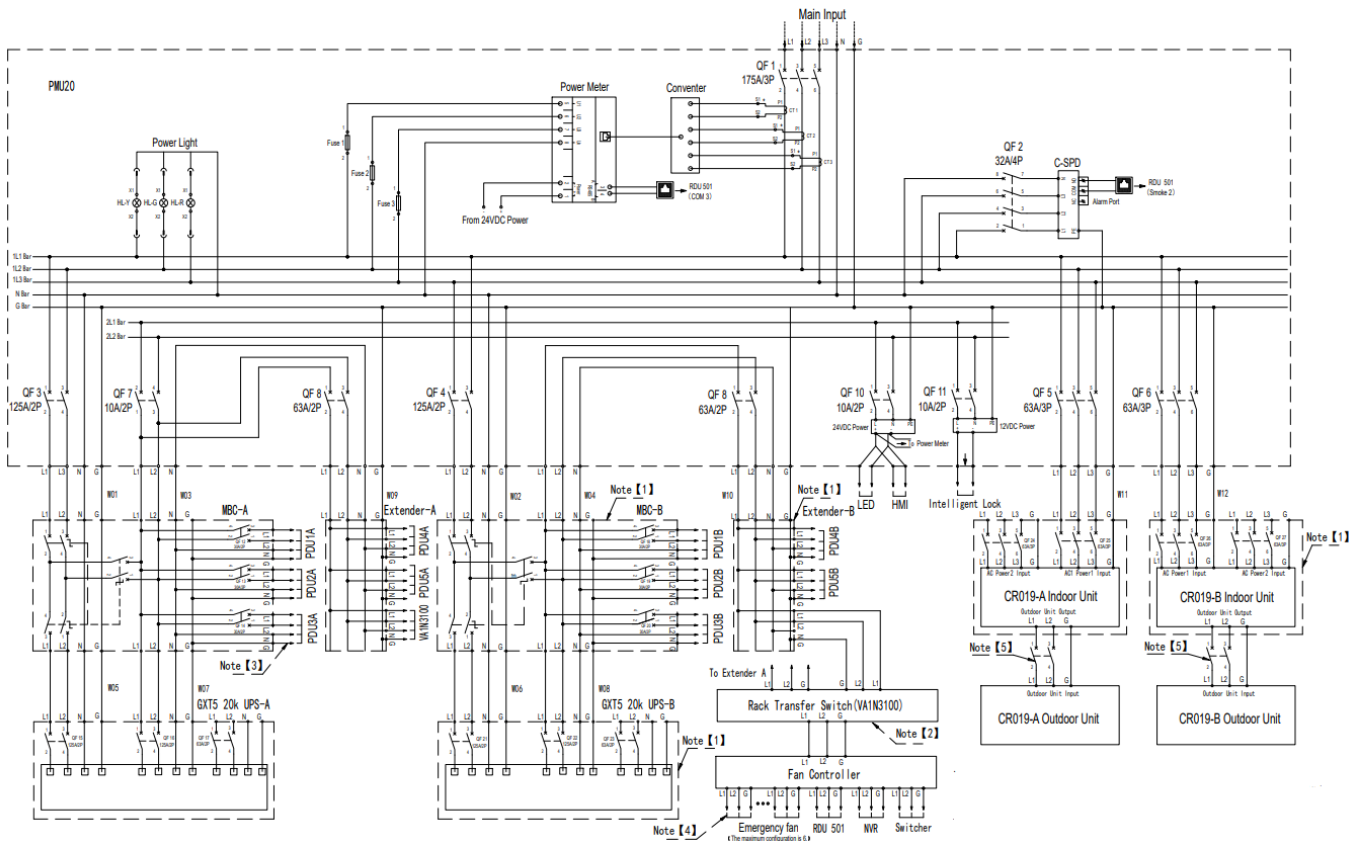


Net weight: 6 kg
Shipping weight: 8.5 kg

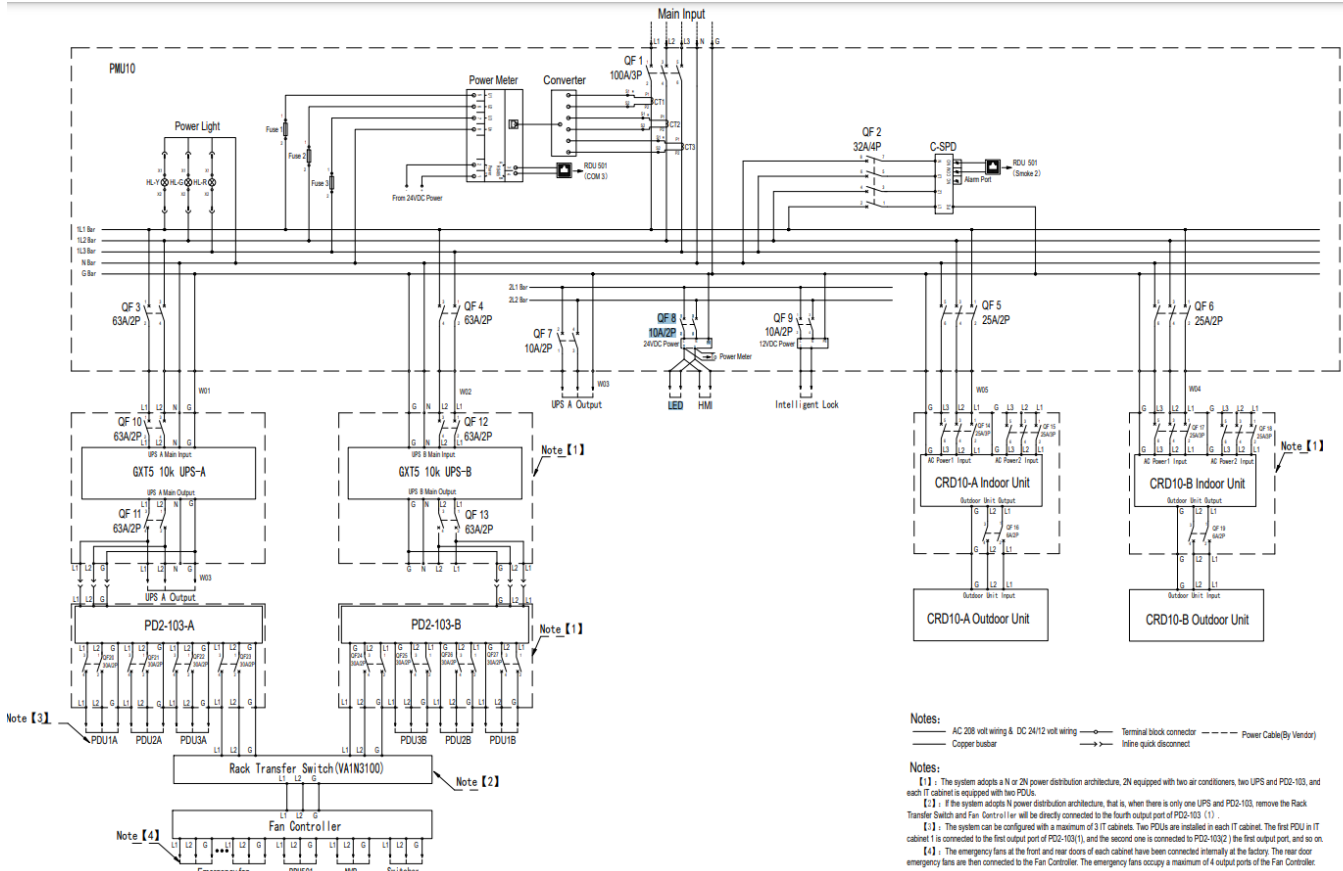
Monitoring System Diagram



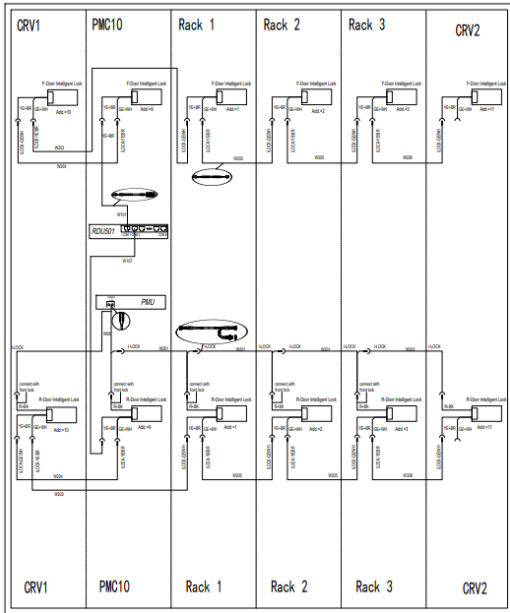
20kW System Wiring Diagram



10kW System Wiring Diagram

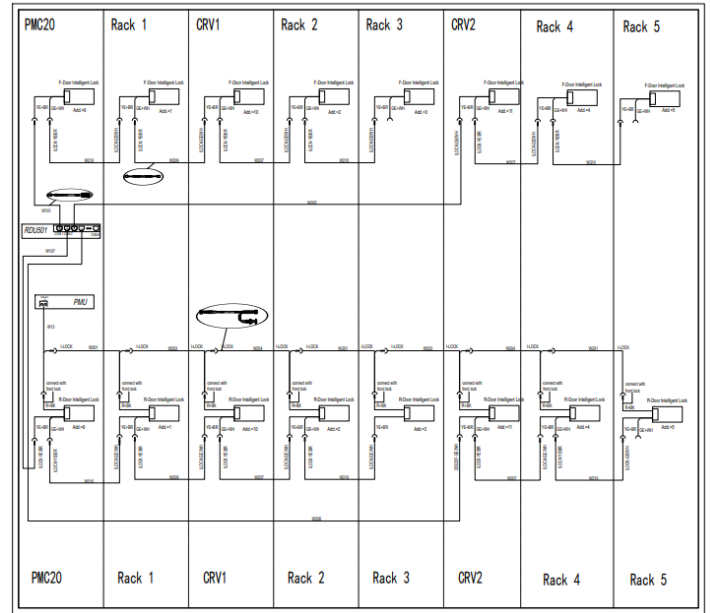


Intelligent Wiring Diagram



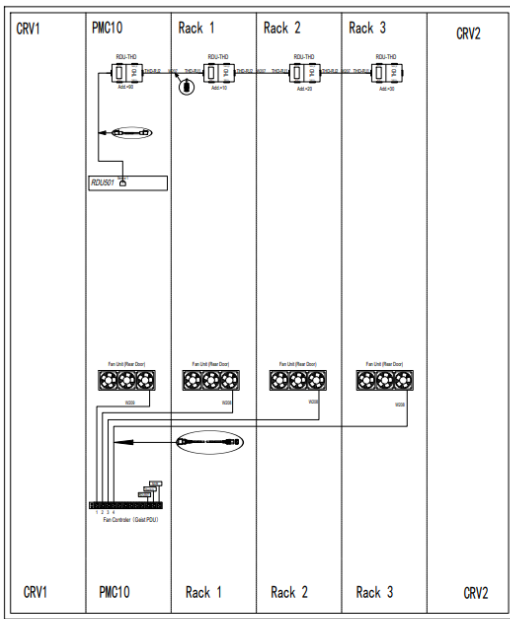
Interelligent Locks -SR2 for 10K(Max 3*1TRack)

———— Factory connection cable
 ———— Connection cable on site



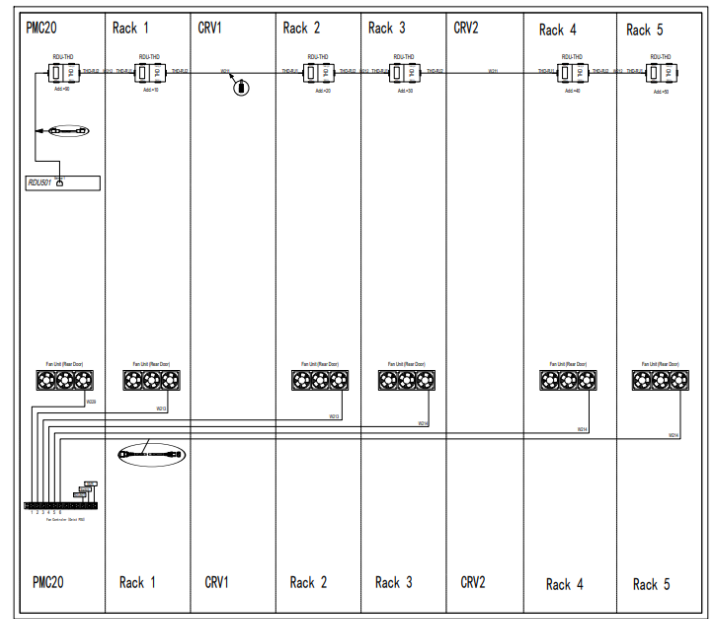
Interelligent Locks -SR2 for 20K(Max 5*1TRack)

THD Sensor and Emergency Fan Wiring Diagram



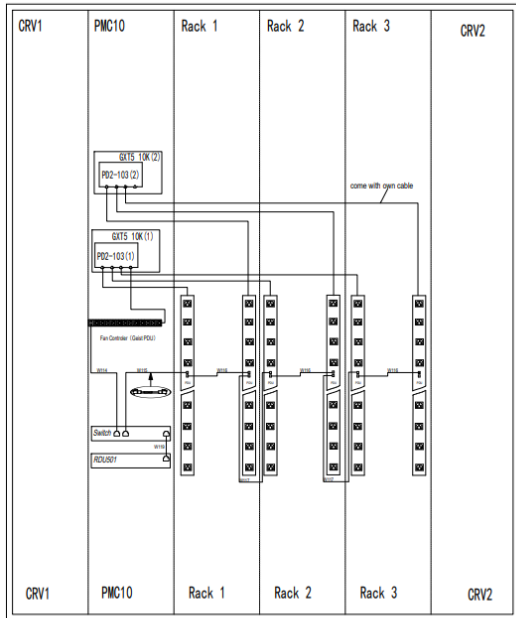
Fans & THDs -SR2 for 10K(Max 3*1TRack)

———— Factory connection cable
 ———— Connection cable on site



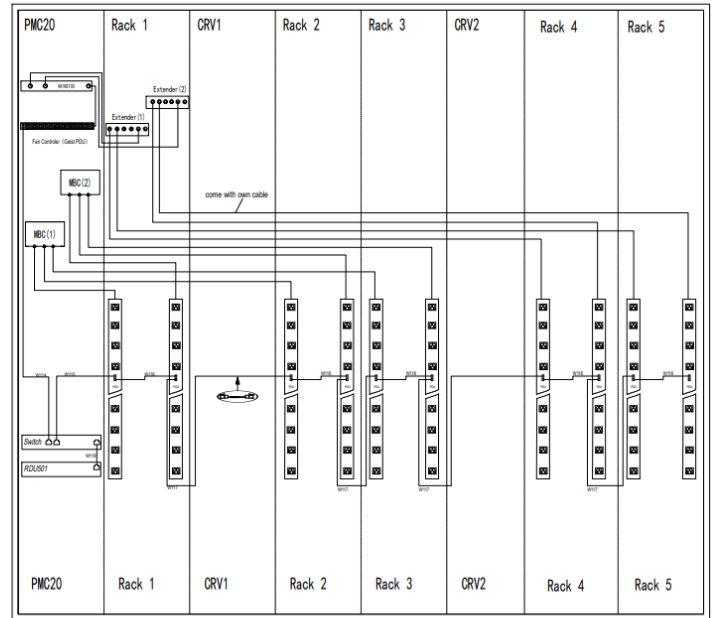
Fans & THDs -SR2 for 20K(Max 5*1TRack)

Rack PDU Wiring Diagram



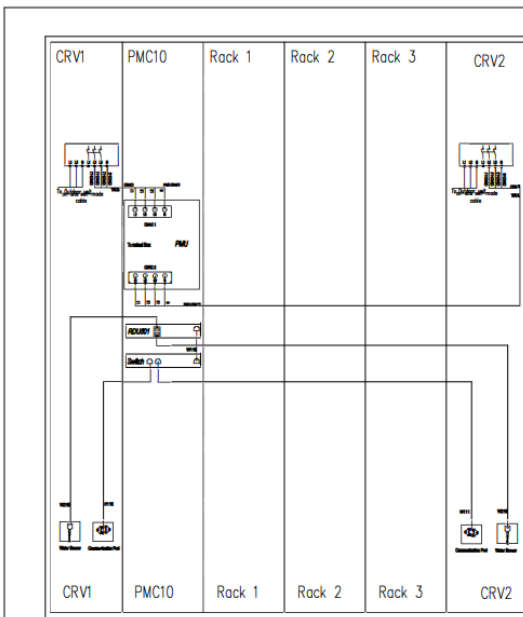
FC & Geist PDUs -SR2 for 10K(Max 3*ITRack)

—— Factory connection cable
 —— Connection cable on site



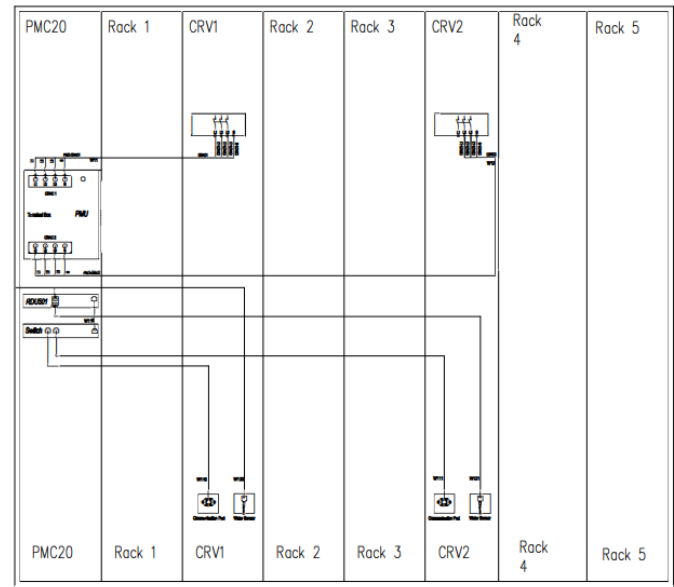
FC & Geist PDUs -SR2 for 20K(Max 5*ITRack)

Air Conditioner Wiring Diagram



CRVs(CRD10)-SR2 for 10K(Max 3*ITRack)

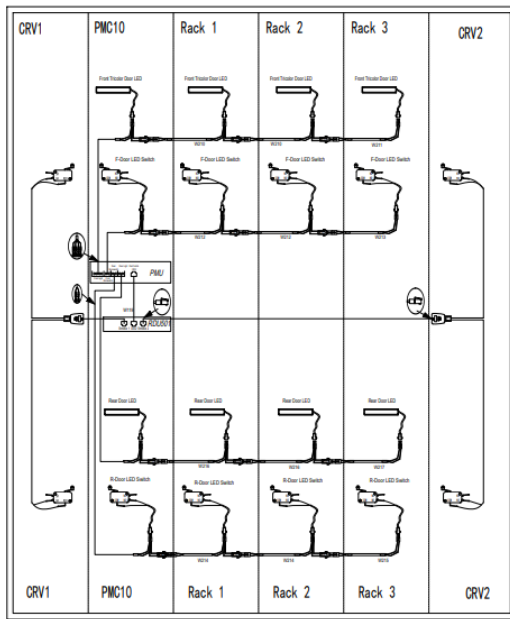
—— Factory connection cable
 —— Connection cable on site



CRVs(CR019)-SR2 for 20K(Max 5*ITRack)

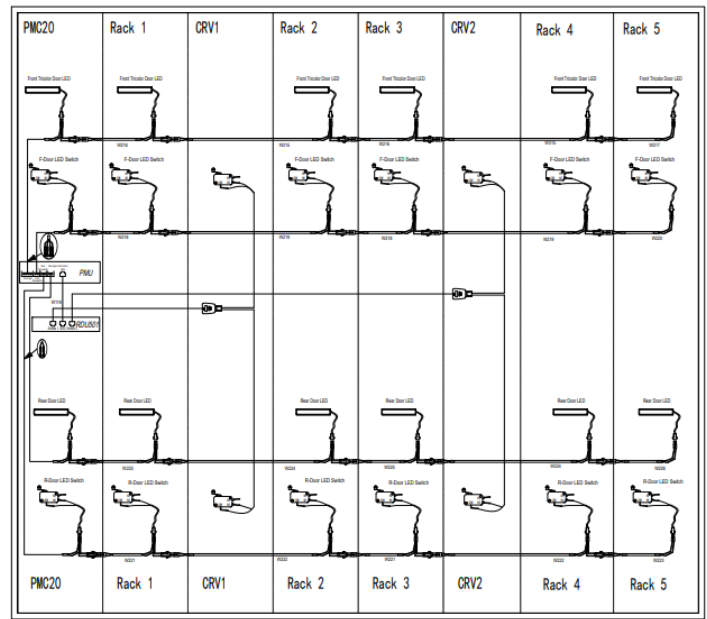
10kW Maximum Power Configuration Schematic Diagram

LED and Micro-Switch Wiring Diagram



LED & LED Switch -SR2 for 10K(Max 3*ITRack)

—— Factory connection cable
—— Connection cable on site



LED & LED Switch -SR2 for 20K(Max 5*ITRack)

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Documents / Resources



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Smart Row 2 Infrastructure Solution, Smart Row 2, Infrastructure Solution, Solution

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