

The 22.5kW power shelf is a 10-slot chassis that receives 3-phase input power and provides stable DC output power (1800A at 12.5VDC). This 21-inch power shelf supports up to 10 high-power, hot-swappable Power Supply Units for 9+1 redundant operation.

Key Features

- Supplies power up to 22.5kW N+1
- 3 OU (OpenU) shelf accepts up to 10 hot-swappable 2.5kW Power Supply Units (PSUs) for 9+1 redundant operation
- 21-inch shelf with a height of 3 OU, 5.12 inches (130 mm)
- Supports 6x C13 outlets for external AC load
- Supports up to 3 sets of bus bars to deliver DC power to load
- Optional Power Shelf Controller provides remote on/off capability of PSUs along with real-time monitoring and control
- Communication with Li-ion Battery Backup System (BBS)



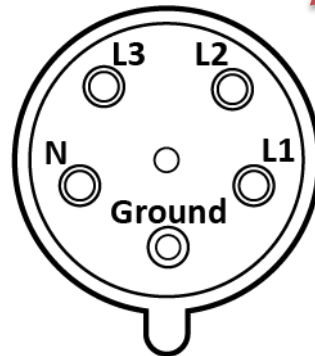
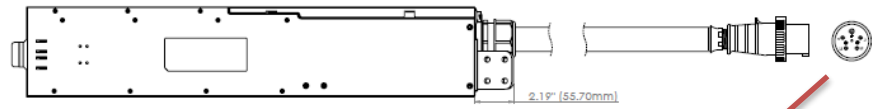
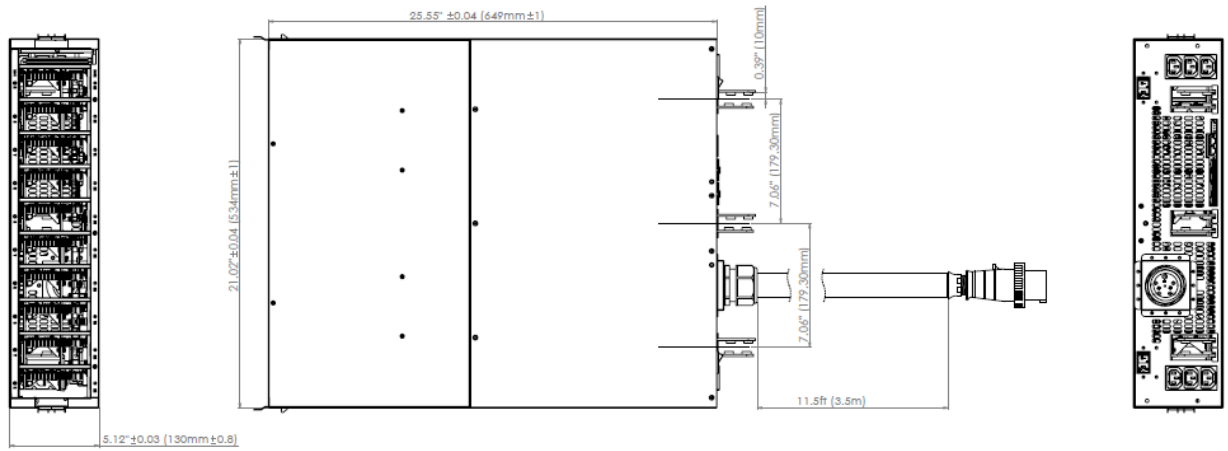
Specifications

Electrical	
Maximum Output Power	22.5kW
Input	3-phase, 5-wire 380 / 400 / 415VAC
Output	22.5kW (12.5VDC / 1800A)
Frequency	47Hz – 63Hz
Communications	CAN, PMBUS 1.2
EMI	Class A with minimum 4dB of margin
Physical	
Dimensions (H x W x D)	5.12" x 21.02" x 25.55" (130 mm x 534 mm x 649 mm)
Weight	56.66 lbs (25.7 kg) without PSUs
Form Factor	3U, 21" Rack Mount
Environment	
Temperature	Operating: -40°C – 85°C, Storage: -40°C – 85°C
Humidity	5% – 95% relative (non-condensing)
Altitude	Operating: 0 m – 3000 m
Acoustic	90.5dB at 1 m
General	
Approvals	IEC60950-1 International, GB4943, RoHS
Mounting Hardware	2 mounting brackets and 12 screws (included)
Warranty	3 Years

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Mechanical

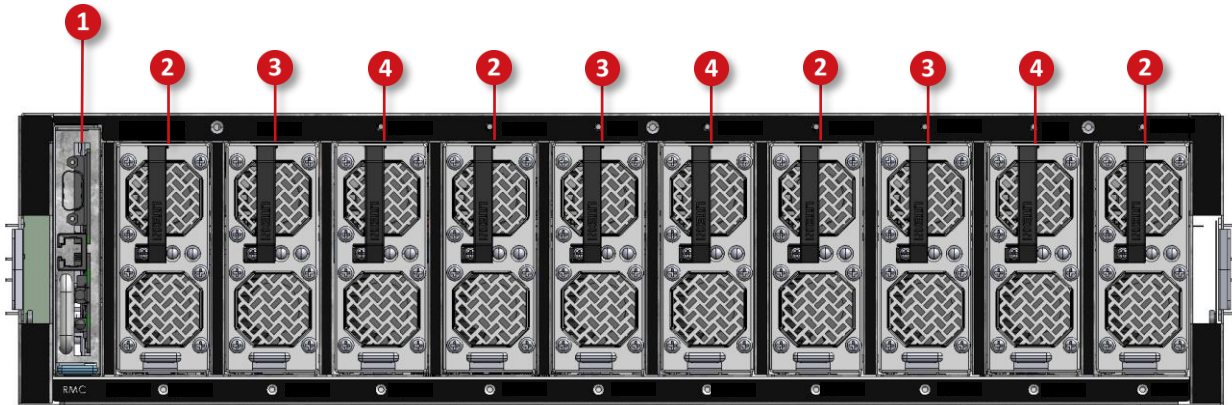


Front View

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Front Panel

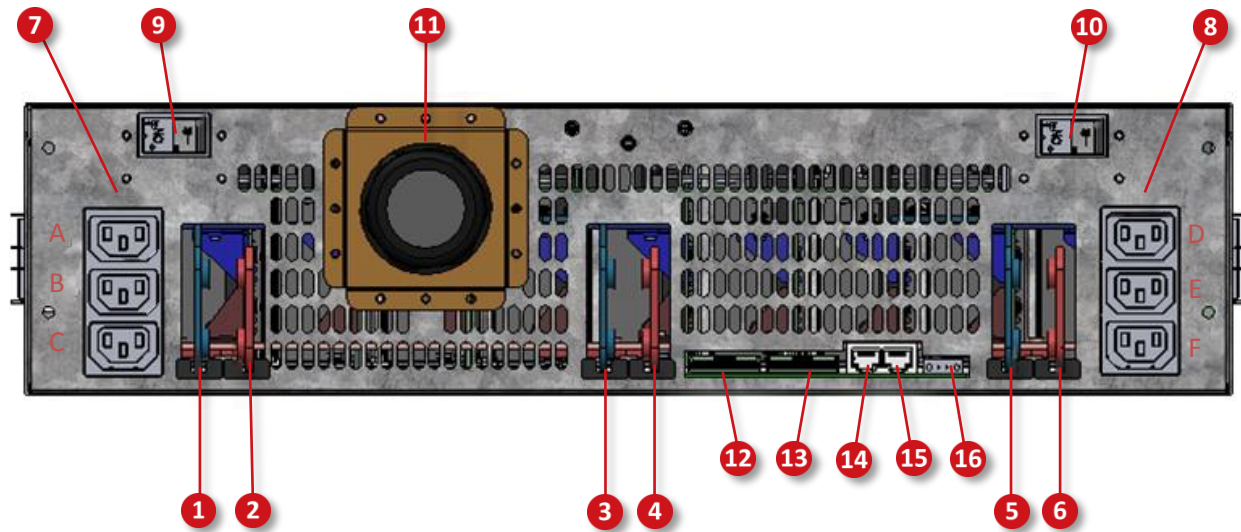


1	Power Shelf Controller Port	Supports optional Power Shelf Controller to enable communication with Power Shelf
2	Power Supply Units (phase R)	Single phase 220V to 240V Input / 12.5V, 200A Output for each Power Supply Unit
3	Power Supply Units (phase S)	Single phase 220V to 240V Input / 12.5V, 200A Output for each Power Supply Unit
4	Power Supply Units (phase T)	Single phase 220V to 240V Input / 12.5V, 200A Output for each Power Supply Unit

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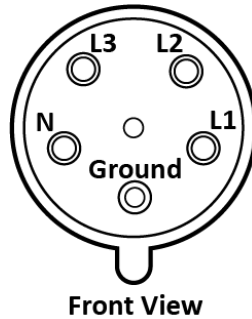
Rear Panel



1	BUSBAR for GND	Negative output voltage
2	BUSBAR for +12.5V	Positive output voltage
3	BUSBAR for GND	Negative output voltage
4	BUSBAR for +12.5V	Positive output voltage
5	BUSBAR for GND	Negative output voltage
6	BUSBAR for +12.5V	Positive output voltage
7	C13 Receptacle	Single-phase AC source outlet connect to phase S, AC Range 220 to 240VAC <ul style="list-style-type: none"> • Plug A_S output • Plug B_S output • Plug C_S output
8	C13 Receptacle	Single-phase AC source outlet connect to phase T, AC Range 220 to 240VAC <ul style="list-style-type: none"> • Plug D_T output • Plug E_T output • Plug F_T output
9	Phase S CIRCUIT BREAKER	20A CB for single-phase AC_S output (C13 receptacle)
10	Phase T CIRCUIT BREAKER	20A CB for single-phase AC_T output (C13 receptacle)
11	Input AC Connector	3-phase AC input including power line R, S, T, FG, N
12	COM1	Fan driver signal for rack
13	COM2	Fan driver signal for rack
14	RJ45 Port	Communication (Reserved for BBS)
15	RJ45 Port	Communication (Reserved for BBS)
16	Power	12V power to SMC

Power Input Connectors

The input cable plug contains AC power for L1, L2, L3, Frame Ground, and Neutral. The power shelf plug (shown below) is P/N C563P6W by HUBBELL.

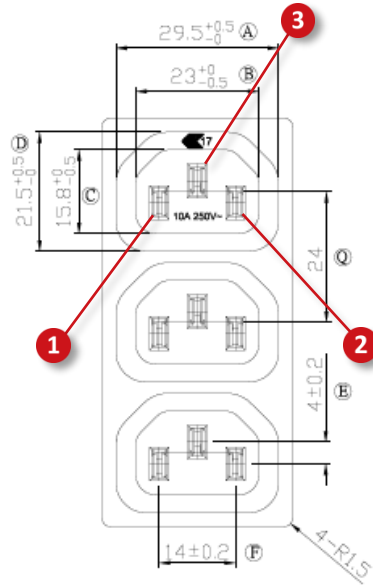


Description	L1 - L2	L2 - L3	L1 - L3	L – N
3PH-5Wire / With Neutral 380 / 400 / 415VAC	380 / 400 / 415 VAC	380 / 400 / 415 VAC	380 / 400 / 415 VAC	220 / 230 / 240 VAC

Single Phase AC Outlet

AC outlets C13 are connected to phase A and phase C respectively. Each single-phase AC outlet provides up to 2A. The output voltage range depends on the three-phase input source. The AC voltage range is 220 to 240 VAC.

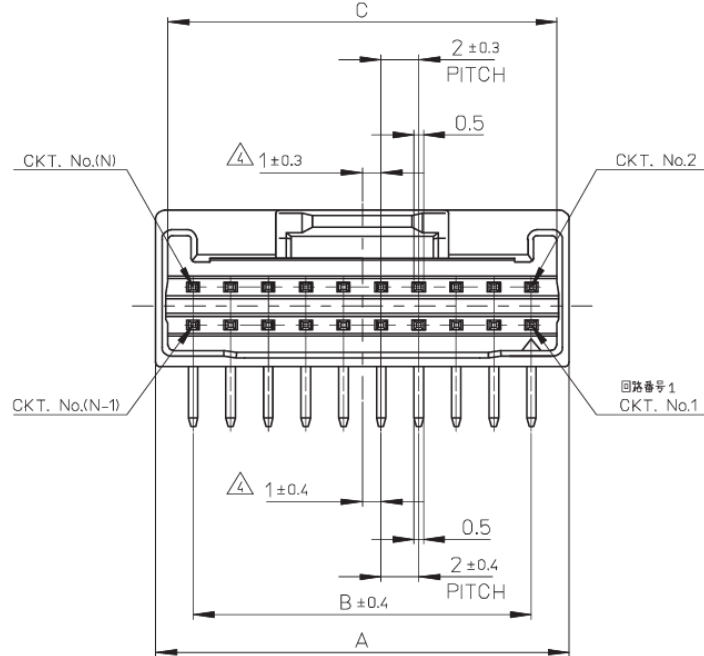
Input AC Description	Phase S, C13	Phase T, C13
3PH-5Wire with Neutral 380 / 400 / 415VAC	220 / 230 / 240 VAC	220 / 230 / 240 VAC



1	L	AC Line
2	N	AC Neutral
3	FG	Frame Ground

Fan Driver Signal Connector (COM1, COM2)

The Power Shelf can deliver logic driver signal for the fan to cool the rack. There are 30-pin connectors each in COM1 and COM2. The connector is part number 87833-3020 by Molex.



COM1			
PIN	Function	PIN	Function
2	SIGNAL_M1_1	1	SIGNAL_M3_1
4	SIGNAL_M1_2	3	SIGNAL_M3_2
6	SIGNAL_M1_3	5	SIGNAL_M3_3
8	SIGNAL_M1_4	7	SIGNAL_M3_4
10	SIGNAL_M1_5	9	SIGNAL_M3_5
12	SIGNAL_M1_6	11	SIGNAL_M3_6
14	SIGNAL_M2_1	13	SIGNAL_M4_1
16	SIGNAL_M2_2	15	SIGNAL_M4_2
18	SIGNAL_M2_3	17	SIGNAL_M4_3
20	SIGNAL_M2_4	19	SIGNAL_M4_4
22	SIGNAL_M2_5	21	SIGNAL_M4_5
24	SIGNAL_M2_6	23	SIGNAL_M4_6
26	SIGNAL_M5_1	25	SIGNAL_M5_4
28	SIGNAL_M5_2	27	SIGNAL_M5_5
30	SIGNAL_M5_3	29	SIGNAL_M5_6

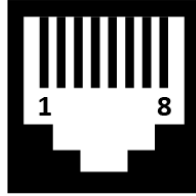
COM2			
PIN	Function	PIN	Function
2	SIGNAL_M6_1	1	SIGNAL_M8_1
4	SIGNAL_M6_2	3	SIGNAL_M8_2
6	SIGNAL_M6_3	5	SIGNAL_M8_3
8	SIGNAL_M6_4	7	SIGNAL_M8_4
10	SIGNAL_M6_5	9	SIGNAL_M8_5
12	SIGNAL_M6_6	11	SIGNAL_M8_6
14	SIGNAL_M7_1	13	SIGNAL_M9_1
16	SIGNAL_M7_2	15	SIGNAL_M9_2
18	SIGNAL_M7_3	17	SIGNAL_M9_3
20	SIGNAL_M7_4	19	SIGNAL_M9_4
22	SIGNAL_M7_5	21	SIGNAL_M9_5
24	SIGNAL_M7_6	23	SIGNAL_M9_6
26	SIGNAL_M10_1	25	SIGNAL_M10_4
28	SIGNAL_M10_2	27	SIGNAL_M10_5
30	SIGNAL_M10_3	29	SIGNAL_M10_6

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RJ45 Communication Port

The Power shelf can pass AC source and Bus voltage (12.5V) information to the Battery Backup System (BBS) through the RJ45 communication port and send an On/Off command to the BBS.



Pin 1	BBS_I2C_SCL	Serial Clock Line (SCL) in I2C
Pin 2	BBS_SGND	Signal Ground
Pin 3	BBS_I2C_SDA	Serial Data Line (SDA) in I2C
Pin 4	BBS_PRESENT	Low Level: no Battery Backup Unit (BBU) exists in shelf High Level: at least one BBU exists in shelf
Pin 5	BBS_ON	Low Level: BBU goes into online mode and output voltage discharge is 12VDC High Level: BBU goes into offline mode and output voltage discharge is 12.6VDC
Pin 6	Reserved	Reserved
Pin 7	BBS_AC_GOOD	Low Level: AC source is acceptable High Level: AC source is lost or unbalanced
Pin 8	BBS_PS_KILL	Low Level: battery charges in online or offline mode High Level: Idle mode; disables Battery Backup Shelf

Note: Low Level means voltage range is 0 to 0.8V; High Level means voltage range is 2.45 to 3.45V

Three Phase Power Shelf System Components

The system provides a comprehensive power management and battery backup capability based on existing building block with configuration flexibility to suit specific power, size, and run-time requirements. The table below provides additional information on the building block available to create a customized power solution. Please visit our website for more in-depth information or contact your local Lite-On PSS representative for support.

Component	Model Number	Description
Power Shelf	PF-2223-1L1M	22.5KW (9+1) 3U Power Shelf with ten power module slots and one Power Shelf Controller slot: <ul style="list-style-type: none"> • Power Module slots (10) • Power Shelf Controller slot (1)
Power Module	PS-2252-6L1U	2.5kW Hot-Swappable Power Module
Battery Backup System	BP-1702-01X	7kW 1U Battery Backup System (BBS) with 4 slots
Battery Backup Unit	BM-1172-01X	1.75kW Battery Backup Unit
Power Shelf Controller	CM-12CP-010U	Power shelf management and control
Site Management Controller	CP-13EC-010U	Rack management and control
21" OCP Rack	KT-2141-121	21-inch Open Frame Rack

