

Outdoor PowerRACK™ User Manual



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Important:

This manual contains information critical to the proper operation of the Lex Products Outdoor PowerRACK™. Be certain to read and understand all instructions prior to installation and operation.

Note: This manual is furnished exclusively to support installation and operation of the Lex Products Outdoor PowerRACK. All concepts and ideas are the sole property of Lex Products and are not to be duplicated or utilized in any manner without written permission.

TECHNICAL SUPPORT

Lex Products is available to help answer any installation or operation inquiries. For any questions or technical advice, please call Technical Services 24 hours per day, 7 days per week at 800.643.4460 or email INFO@lexproducts.com.

INTRODUCTION

This manual details the installation and use of the Lex Products Outdoor PowerRACK Distribution. Please review this manual prior to operating the Outdoor PowerRACK. Store this manual in a safe location for future reference.

SHIPMENT: UNPACKING AND INSPECTION

Check the shipment carefully to confirm it arrived complete and undamaged

1. Unpack the shipment and check the contents against the packing list to ensure the order is
2. complete
3. Check the unit for loose or broken components, which might have resulted from shipping
 - a. Inspect for signs of damage to wiring devices, device covers or circuit breakers
 - b. Open and close the hinged breaker windows to ensure that they open and close properly
 - c. If there is any damage to the Outdoor PowerRACK, contact Lex Products Technical Services toll free at 800.643.4460 or email info@lexproducts.com

Outdoor PowerRACK™ Distribution Components (Typical)



Receptacles

- Wiring device type varies by configuration
- Circuit breakers provide overcurrent protection
- Used to draw power from enclosure

Power Inlet

- Wiring device type varies by configuration
- Introduces power into the enclosure

FeedThru (optional)

- Wiring device type matches inlet
- No Overcurrent Protection
- Used to pass thru power to additional distribution units

Stackable

- In storage, use and truck transport
- Do not lift while stacked
- Skid plates on top of rack for proper stacking

Enclosure

- Heavy-duty aluminium panels with integrated side handles designed for hand or strap lift
- Recessed hardware and aluminum frame
- Front and Back panels are recessed for added protection during transport and storage



Breakers

- All circuit breakers are located under self-closing hinged windows
- Tighten twist knobs to secure closed

Outdoor Rack Base

- Skid base elevates receptacles above the ground while permitting secure lifting via forklift

SETTING UP THE OUTDOOR POWER DISTRIBUTION UNIT (PDU)

Set up of the Lex Products Outdoor Power Distribution Rack is to be performed by qualified personnel only

Step 1: Placement and Inspection of the Outdoor PowerRACK PDU

1. The Lex Products Outdoor PowerRACK is cULus Listed NEMA Type 3R for outdoor use
2. Place the Outdoor PowerRACK on a level location with a dry and firm foundation within proximity of the power source and the location requiring power
3. The base of the unit elevates live electrical components above ground level with skids. Ensure the surface is level and capable of supporting the weight of the PowerRACK
4. The PowerRACK can be stacked in use, storage and vehicle transit
 - a. DO NOT STACK WHEN LIFTING
5. Transport: The rack can be moved by Forklift, Strap lift, Casters/Cart (specific units), and two-man portable
 - a. When moving the Outdoor PowerRACK, use the lifting handles on the sides of the rack to lift by hand or with straps
 - b. Skids and a fork strap are located on the bottom of the rack for lifting

Step 2: Prepare For Connection

1. Ensure Main Circuit Breaker for the rack is in the 'O/OFF' position
2. Ensure all Receptacle Circuit Breakers on the rack are in the 'O/OFF' position



WARNING: Before making connections to the Outdoor PowerRACK PDU, make sure the power source feeding the box is OFF



WARNING: DO NOT exceed the voltage rating of the device as identified on the label attached to the enclosure



WARNING: Both sets of Cam extensions feeding the input must come from the same power source

NOTE: If using the feed thru feature, connect the feed thru BEFORE the input connection is made

Step 3: Making and Breaking Connections on Outdoor PowerRACK

NOTE: Best practices dictate that load connections, (power output), are completed prior to power inlet connections. This ensures connections are not made while the circuits are energized or 'live', limiting the potential for shock or damage to personnel or loads

Single-pole Cam-Type Connections

When **MAKING** the connection, begin with the GREEN ground connection, then the WHITE neutral connection and finish with the remaining HOT connections

- a. Align the screw on the Cam facing up
- b. Firmly insert Cam device into panel mounted Cam
- c. Rotate clockwise until fully engaged and locked

When **BREAKING** the connection, begin with the HOT connections, then the WHITE neutral connection and finish with the GREEN ground connection.

NEMA Locking Connections

1. Fully insert the male plug into the female receptacle
2. Turn the plug clockwise until it is fully locked, ensuring it is properly seated in its receptacle

NEMA Straight Blade Connections

1. Fully insert the male plug into the female receptacle, ensuring it is properly seated

Pin & Sleeve Connections

1. Align the pins on the male plug to the female receptacle
2. Fully insert the plug into the receptacle
3. Turn the locking ring on the plug clockwise until it is fully locked

Step 4: Powering Up Outdoor PowerRACK

Best practices dictate that loads are applied gradually the first time the system is set up

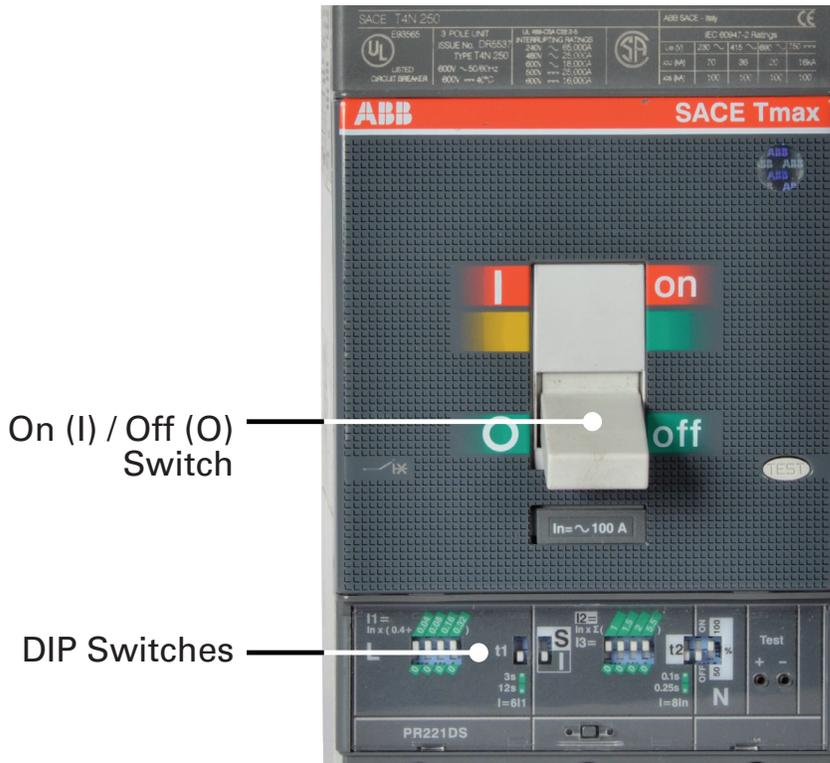
1. Turn on the power source
2. Beginning with the PDU closest to the power source, move the first individual circuit breaker to the 'I/ON' position
3. Ensure the devices fed by that circuit are ON, tracing the electrical path to the final device fed by that circuit
4. Repeat steps 2 and 3 for the remaining circuit breakers

NOTE: If the circuit breaker cannot be energized or trips, check the system for continuity, short circuits and overload. Make the necessary corrections before proceeding

Adjusting the Circuit Breakers

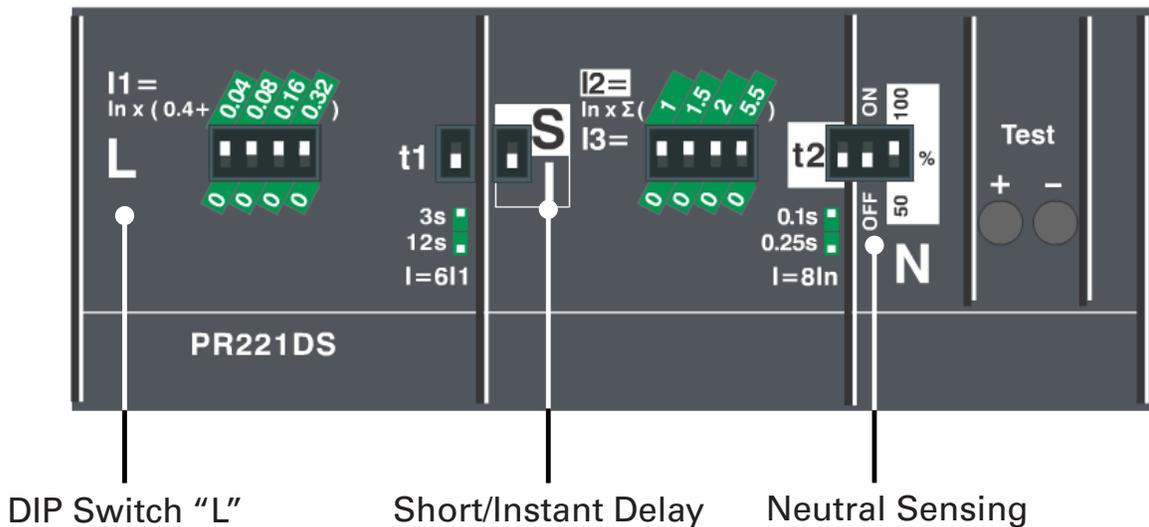
All Load Master products have adjustable breakers for the Cam outputs. The Current level of the circuit breakers is adjustable to match the load of the output receptacles. The circuit breakers are adjusted with dip switches located under a clear cover on each circuit breaker.

Figure 3.1: Circuit Breaker



Breaker must be in the **OPEN / OFF** position before being adjusted.

Figure 3.2: DIP Switches



DIP Switch "L"

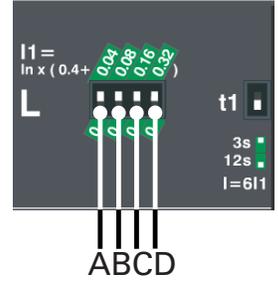
Short/Instant Delay

Neutral Sensing

Adjusting the Circuit Breakers

240-600 Amp Circuit Breaker- DIP Switch Settings

1. Ensure the breaker is in the OPEN / OFF position
2. Set the DIP switches on the circuit breaker to the closest level indicated in the table below with the set level greater than the actual load
 - a. Only adjust the DIP switch labeled "L"
 - b. To adjust the circuit breaker, open the clear cover over the DIP switch using a small flathead screw driver
 - c. Move each switch (A, B, C, D) into the up or down position based on the table below to achieve the desired output current rating
 - d. Close the clear cover over the DIP switch

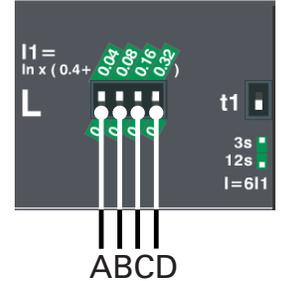


| 240-600 Amp Circuit Breaker Adjustment Settings | | | |
|---|-------------------------|----------|-------------------------|
| Amps | Dipswitch Configuration | Amps | Dipswitch Configuration |
| 240 Amps | UP DOWN | 432 Amps | UP DOWN |
| 264 Amps | UP DOWN | 456 Amps | UP DOWN |
| 288 Amps | UP DOWN | 480 Amps | UP DOWN |
| 312 Amps | UP DOWN | 504 Amps | UP DOWN |
| 336 Amps | UP DOWN | 528 Amps | UP DOWN |
| 360 Amps | UP DOWN | 552 Amps | UP DOWN |
| 384 Amps | UP DOWN | 576 Amps | UP DOWN |
| 408 Amps | UP DOWN | 600 Amps | UP DOWN |

Adjusting the Circuit Breakers

160-400 Amp Circuit Breaker- DIP Switch Settings

1. Ensure the breaker is in the OPEN / OFF position
2. Set the DIP switches on the circuit breaker to the closest level indicated in the table below with the set level greater than the actual load
 - a. Only adjust the DIP switch labeled "L"
 - b. To adjust the circuit breaker, open the clear cover over the DIP switch using a small flathead screw driver
 - c. Move each switch (A, B, C, D) into the up or down position based on the table below to achieve the desired output current rating
 - d. Close the clear cover over the DIP switch



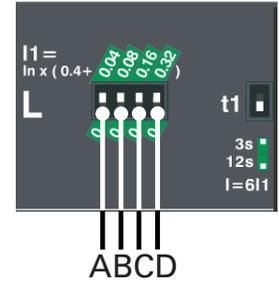
| 160-400 Amp Circuit Breaker Adjustment Settings | | | |
|---|-------------------------|----------|-------------------------|
| Amps | Dipswitch Configuration | Amps | Dipswitch Configuration |
| 160 Amps | UP DOWN | 288 Amps | UP DOWN |
| 176 Amps | UP DOWN | 304 Amps | UP DOWN |
| 192 Amps | UP DOWN | 320 Amps | UP DOWN |
| 208 Amps | UP DOWN | 336 Amps | UP DOWN |
| 224 Amps | UP DOWN | 352 Amps | UP DOWN |
| 240 Amps | UP DOWN | 368 Amps | UP DOWN |
| 256 Amps | UP DOWN | 384 Amps | UP DOWN |
| 272 Amps | UP DOWN | 400 Amps | UP DOWN |

100 - 250 Amperage Circuit Breaker

Adjusting the Circuit Breakers

100-250 Amp Circuit Breaker- DIP Switch Settings

1. Ensure the breaker is in the OPEN / OFF position
2. Set the DIP switches on the circuit breaker to the closest level indicated in the table below with the set level greater than the actual load
 - a. Only adjust the DIP switch labeled "L"
 - b. To adjust the circuit breaker, open the clear cover over the DIP switch using a small flathead screw driver
 - c. Move each switch (A, B, C, D) into the up or down position based on the table below to achieve the desired output current rating
 - d. Close the clear cover over the DIP switch

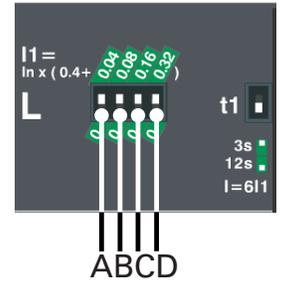


| 100-250 Amp Circuit Breaker Adjustment Settings | | | |
|---|-------------------------|----------|-------------------------|
| Amps | Dipswitch Configuration | Amps | Dipswitch Configuration |
| 100 Amps | UP DOWN | 180 Amps | UP DOWN |
| 110 Amps | UP DOWN | 190 Amps | UP DOWN |
| 120 Amps | UP DOWN | 200 Amps | UP DOWN |
| 130 Amps | UP DOWN | 210 Amps | UP DOWN |
| 140 Amps | UP DOWN | 220 Amps | UP DOWN |
| 150 Amps | UP DOWN | 230 Amps | UP DOWN |
| 160 Amps | UP DOWN | 240 Amps | UP DOWN |
| 170 Amps | UP DOWN | 250 Amps | UP DOWN |

Adjusting the Circuit Breakers

60-150 Amp Circuit Breaker- DIP Switch Settings

1. Ensure the breaker is in the OPEN / OFF position
2. Set the DIP switches on the circuit breaker to the closest level indicated in the table below with the set level greater than the actual load
 - a. Only adjust the DIP switch labeled "L"
 - b. To adjust the circuit breaker, open the clear cover over the DIP switch using a small flathead screw driver
 - c. Move each switch (A, B, C, D) into the up or down position based on the table below to achieve the desired output current rating
 - d. Close the clear cover over the DIP switch



| 60-150 Amp Circuit Breaker Adjustment Settings | | | |
|--|--|----------|--|
| Amps | Dipswitch Configuration | Amps | Dipswitch Configuration |
| 60 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] | 108 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] |
| 66 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] | 114 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] |
| 72 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] | 120 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] |
| 78 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] | 126 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] |
| 84 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] | 132 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] |
| 90 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] | 138 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] |
| 86 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] | 144 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] |
| 102 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] | 150 Amps | UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D] |

TROUBLESHOOTING GUIDE

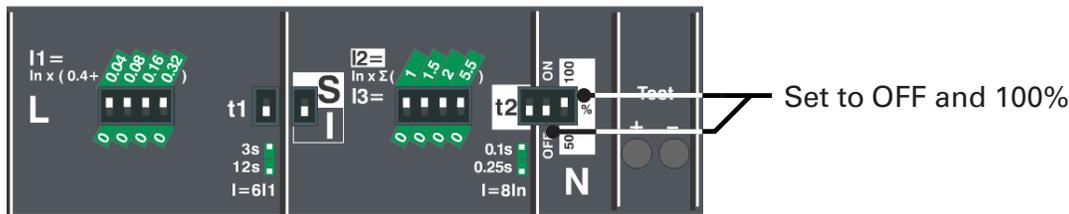
In the case that interior of the Outdoor PowerRACK needs to be accessed, do not open the top of the rack. **All internal access is to be from the side panels. To maintain cULus Listing, contact Lex Products before opening the unit.**

Circuit Breaker Tripping During Normal Operation

To help determine what has caused a circuit breaker to trip, it is important to configure the simplest possible power distribution system set-up under which the problem still occurs. The loads connected to the system might exceed the circuit breaker rating, in which case a larger power distribution unit would be needed.

Verify whether circuit breaker long delay settings are set as needed

- a. Ensure the N setting is at 100% and the ON/OFF functionality next to the N is set to OFF
 - b. These dip switches are intended for specialized single phase applications and do not apply to the Load Master series under normal operation
2. Retry turning on the circuit after adjustments are made



3. If a large inductive load such as an air conditioner was turned on when the circuit breaker tripped, raise inrush settings or increase the trip time delay
 - a. The inrush settings can be adjusted by turning on the dip switches for I3.
 - b. All dip switches up will result in the maximum inrush tolerance of ten times the circuit breaker rating



Circuit Breaker Tripping When Powering Up

1. Follow the steps outlined for circuit breakers tripping during normal operation
2. If the issue persists, disconnect the output connections from the circuit breaker that is tripping
3. Turn on all circuit breakers
 - a. If the circuit breaker trips, contact Lex Products for technical assistance
 - b. If the circuit breaker does not trip proceed to the next step
4. Connect the cable to the corresponding circuit breaker outlets and turn off all attached loads
5. Turn on the circuit breaker
 - a. If the circuit breaker trips, disconnect cabling used and check for short circuits
 - b. Turn off all circuit breakers, check the cabling connected to the Outdoor PowerRACK, and check connected loads for shorts circuits

How to Check an Outdoor Rack for Short Circuits

1. Disconnect incoming power from the Outdoor Rack
2. Turn on circuit breaker(s) for the circuit(s) to be tested
3. Using a continuity meter or a multimeter, set to continuity/resistance mode and connect one probe to the input ground (green) Cam-type connector brass
4. Take the other probe of the meter and check if there is continuity between each Cam-type connector and ground
5. If there is continuity ($R < 1 \text{ k}\Omega$, or the meter lights up or beeps), there is short circuit present
 - a. Contact Lex Products Technical Services department
6. If there is no continuity, repeat step 3 and 4 checking if there is continuity between the neutral (white) Cam-type connector and the other Cam-type connectors
7. If continuity is detected, there is a short circuit present
 - a. Contact Lex Products if a short circuit is detected

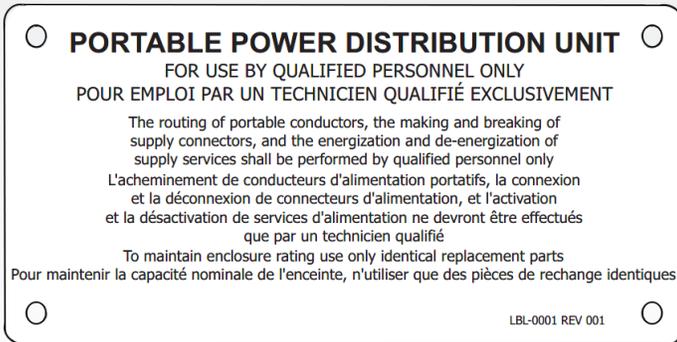
No Power at Receptacles:

1. Ensure that connections are in place and tight
2. Ensure that power source is live
 - a. Activate if not on
3. Ensure that circuit breakers are 'I/ON'
4. If a circuit breaker trips, identify source of short circuit or overload and correct before resetting circuit breaker
 - a. Check to see if the circuit is overloaded and reduce loads as needed
 - b. Check for short circuits in the cabling or load device and correct as needed
5. For those receptacles that include a GFCIs:
 - a. Ensure the GFCIs are set by pressing the 'RESET' button
6. If a GFCI trips, identify source of current leakage and correct before resetting the GFCI
 - a. Check to see if the circuit is overloaded and reduce loads as needed
 - b. Check for short circuits in the cabling or load device and correct as needed
7. If there is still no power at receptacles:
 - a. Remove PDU from use
 - b. Contact Lex Products for next course of action

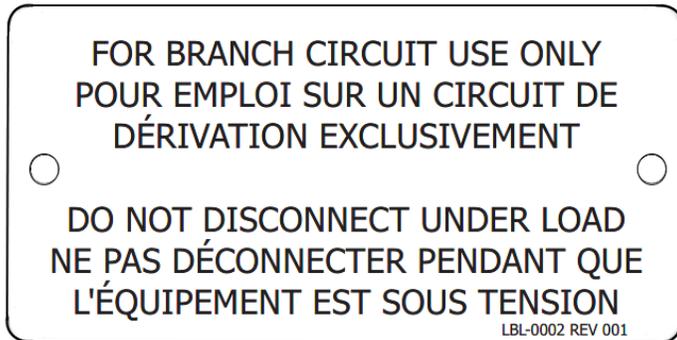
Replacement Labels

Below are replacement labels that are consistent across various Outdoor Rack configurations. For input, output and breaker label replacements, contact your Lex representative with the part number and serial number of the Outdoor Rack requiring replacement labels.

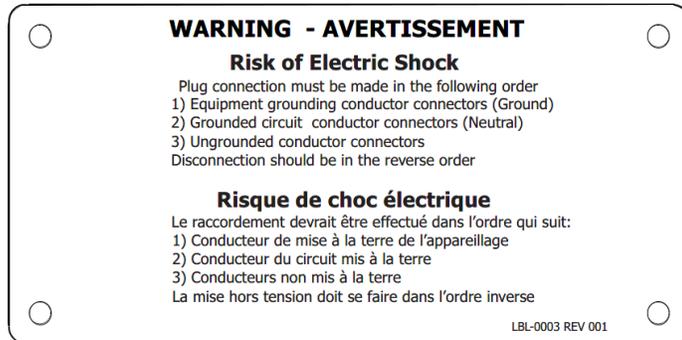
PN: LBL-0001



PN: LBL-0002



PN: LBL-0003



PN: FORKLIFT-1



PN: FORKLIFT-2



LEX Products
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Phone: (203) 274-8287 – Fax: 203-363-3742

DECLARES THAT
THE OUTDOOR POWERRACK POWER DISTRIBUTION UNITS:

| | |
|----------------------|--|
| Model: | Lex Outdoor PowerRACK Distribution Units (part numbers vary by configuration) |
| Weight: | up to 500 lbs. |
| Year of Development: | 2023 |

The Lex Products Outdoor PowerRACK units can be lifted by crane or fork lift.

Crane Lift

- Only lift using (4) straps, (2) per side handlebar, for any crane lift
- Ensure the load is free to move
- Begin lifting slowly assuring that the load is correctly balanced and avoid wrenching or tugging
- Avoid swinging of load
- Do not overload - Lift (1) Outdoor PowerRACK at a time
- Do not leave load hanging and unmanned
- Do not expose hook to welding heat

Fork Lift

- Fork Pocket Size: Width – 508mm, Height – 77mm, Material Thickness – 3.4mm, Pocket Centers (Min – Max) – N/A.
- Only use with forklift prongs that fit within fork lift pocket

Before every use pay particular attention to the presence of eventual incisions, crushing, and deformation to the surface of the Outdoor PowerRACK handles / Fork Pockets.

General Dimensions

Lex Products Outdoor PowerRACK (4) standard sizes:

Unit Size 60:

H: 22.587 in. x W: 30.50 in. x D: 20.00 in.

Unit Size 100:

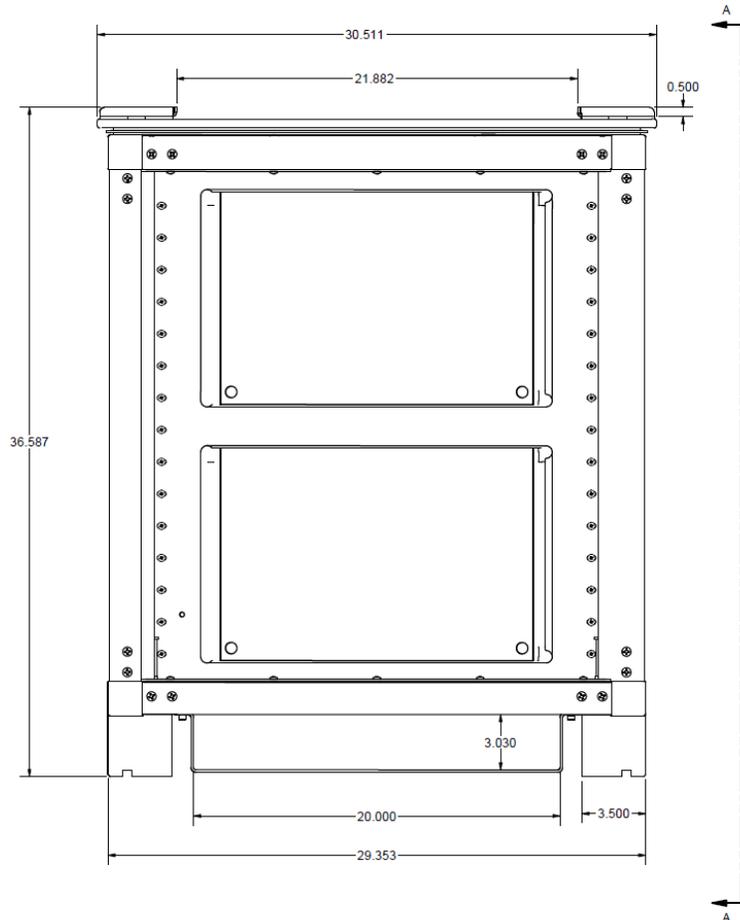
H: 27.712 in. x W: 30.50 in. x D: 31.50 in.

Unit Size 200:

H: 36.587 in. x W: 30.50 in. x D: 31.50 in.

Unit Size 400:

H: 45.337 in. x W: 30.50 in. x D: 31.50 in.



TECHNICAL SUPPORT

Lex Products is available to help answer any installation or operation inquiries. For any questions or technical advice, please call Technical Services 24 hours per day, 7 days per week at 800.643.4460 or email INFO@lexproducts.com.



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