AEC

ONLINE UPS · LITHIUM · RACK / TOWER · 120 V

LUMINA 1–3 kVA

Quick Installation Guide

From delivery to normal operation. The branch circuit is installed by a qualified electrician. Read every safety message.

LUMINA 1K | LUMINA 1.5K | LUMINA 2K | LUMINA 2.2K | LUMINA 3K

AEC-QG-LUM-US · REV. A · NOVEMBER 2026



1 Safety first

Read these messages before you start. The complete safety chapter is in the user manual, section *Safety*.

⚠ WARNING

IMPORTANT SAFETY INSTRUCTIONS — SAVE THESE INSTRUCTIONS. This guide and the user manual contain important instructions for the LUMINA 1–3 kVA UPS that must be followed during installation, operation and maintenance.

⚠ DANGER

Hazardous voltage. The input and output of the UPS carry lethal voltage. Contact can cause death or serious injury. Only qualified, authorized personnel may remove covers or open the UPS. Do not work on the UPS, its input or its output during a lightning storm.

⚠ WARNING

Lithium battery. LUMINA has an internal lithium iron phosphate (LiFePO4) battery. Do not open, crush, puncture or modify it, and do not dispose of it in fire. Never touch the contacts of the battery port or of the battery connector. If the UPS is damaged, swollen, unusually hot, or gives off smoke or an odor: do not touch it, unplug it only if this is safe, keep people away and call AEC service.

⚠ WARNING

High leakage current. The UPS must be grounded before any electrical connection is made. Plug it only into a grounded receptacle.

⚠ CAUTION

Installation and wiring must be done by qualified personnel. The branch circuit and receptacle must meet the National Electrical Code (NFPA 70) and local codes.

⚠ WARNING

Do not connect unbalanced loads, half-wave rectifier loads or inductive loads to the UPS output — for example air conditioners, blowers, motor starters, power drills, motors or fluorescent lamps.

2 Check the delivery and the site

1. Inspect the unit for shipping damage. Report any damage to the carrier immediately.

2. Check the accessories against the packing list: the power cord (1K, 1.5K, 2K, 2.2K), the battery connector, the rack mounting parts and the tower stands. Report anything missing or wrong to your AEC dealer.
3. Keep the carton and the packing: the UPS contains a lithium battery and must travel in its original packaging.

> **⚠ CAUTION**
>
> The 2.2K weighs 42.1 lb (19.1 kg) and the 3K 37.7 lb (17.1 kg). Lift them with two people, especially when sliding them into a rack.

TABLE 2-1 Models, size and weight

Model	Rating	W × D × H	Net weight
LUMINA 1K	1,000 VA / 900 W	17.2 × 16.5 × 3.4 in (438 × 420 × 87 mm)	19.6 lb (8.9 kg)
LUMINA 1.5K	1,500 VA / 1,350 W	17.2 × 22.4 × 3.4 in (438 × 570 × 87 mm)	29.5 lb (13.4 kg)
LUMINA 2K	2,000 VA / 1,800 W	17.2 × 22.4 × 3.4 in (438 × 570 × 87 mm)	30.0 lb (13.6 kg)
LUMINA 2.2K	2,200 VA / 1,980 W	17.2 × 24.2 × 3.4 in (438 × 615 × 87 mm)	42.1 lb (19.1 kg)
LUMINA 3K	3,000 VA / 2,700 W	17.2 × 22.4 × 3.4 in (438 × 570 × 87 mm)	37.7 lb (17.1 kg)

The site (Figure 2-1):

- A flat, level surface or a 19-inch rack — never a sloped or uneven surface.
- 12–20 in (300–500 mm) of free space around the UPS and 20 in (500 mm) above it; vents clear; a well-ventilated room.
- 32–104 °F (0–40 °C) for full output (best battery life at about 68 °F / 20 °C); relative humidity 0–95 %, non-condensing; up to 6,560 ft (2,000 m) at full output.
- Out of direct sunlight, rain and damp locations; no corrosive gases, no conductive (metallic) dust; away from fire and from equipment that can produce sparks.
- A grounded receptacle on its own branch circuit near the UPS, easy to reach (Step 4). Neutral-to-ground voltage below 5 V.

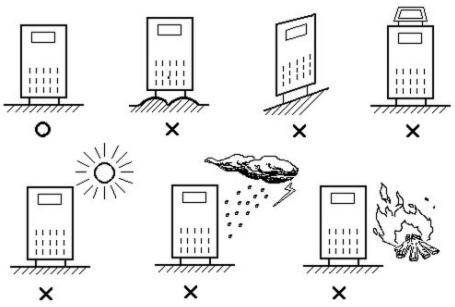


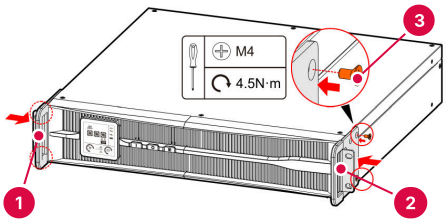
FIGURE 2-1 Installation do's (o) and don'ts (×)

3 Mount the UPS

All LUMINA ratings mount the same way; the pictures show the LUMINA 1K. Choose rack or tower.

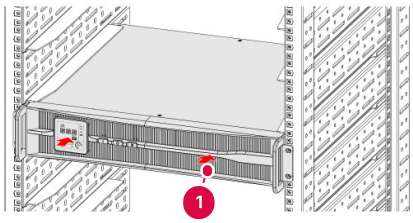
Rack mounting

1. Fit the two mounting brackets to the sides of the UPS, at the front, with four M4 × 8 screws (Figure 3-1).
2. With a second person, slide the UPS into the rack (Figure 3-2).
3. Secure the brackets to the rack posts with screws (Figure 3-3).



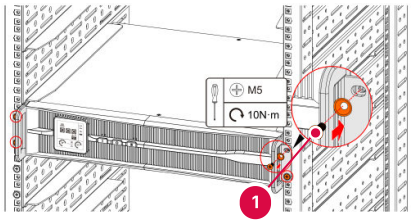
1. Mounting bracket, left
2. Mounting bracket, right
3. M4 × 8 screws, two per bracket — 4.5 N·m (40 lbf·in)

FIGURE 3-1 Rack step 1 — fit the mounting brackets



1. Push the UPS in at the front

FIGURE 3-2 Rack step 2 — slide the UPS into the rack

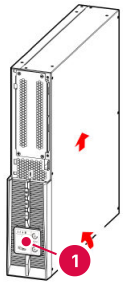


1. Rack screws, two each side — M5, 10 N·m (89 lbf·in)

FIGURE 3-3 Rack step 3 — screw the brackets to the rack

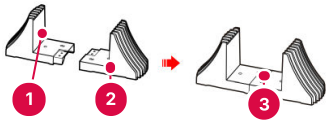
Tower mounting

1. Stand the UPS upright, with the battery side at the top and the operation panel at the bottom (Figure 3-4).
2. Join the two halves of each stand (Figure 3-5).
3. Fix the two stands to the UPS with two M4 × 10 screws (Figure 3-6).
4. Set the UPS on its stands (Figure 3-7). After the first start, set the LCD to tower orientation (TWR) — Step 7.



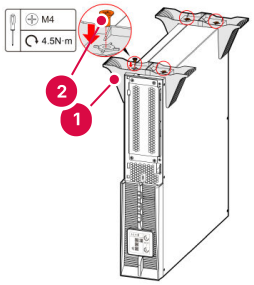
1. Operation panel at the bottom

FIGURE 3-4 Tower step 1 — stand the UPS upright



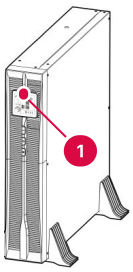
1. Stand half
2. Stand half
3. Assembled stand

FIGURE 3-5 Tower step 2 — join the two halves of each stand



1. Stand
2. M4 × 10 screw, 4.5 N·m (40 lbf·in)

FIGURE 3-6 Tower step 3 — fix the stands



1. Operation panel: set the LCD to TWR

FIGURE 3-7 Tower step 4 — UPS on its stands

4 Wire the power

LUMINA is a plug-in UPS: the input is the power cord to a utility receptacle, the outputs are receptacles on the rear panel.

Branch circuit. Plug the UPS into a grounded receptacle on its own branch circuit. The breaker of that circuit has the same rating as the plug of the UPS (Table 4-1) and is never larger: NEC 210.21(B) requires the receptacle to match the rating of the branch circuit. The maximum input current in the table is the factory value at low input voltage, full load and full battery recharge; it is not a continuous current.

- Use a breaker without ground-fault (GFCI) or leakage protection: it could trip unnecessarily.
- Do not use an extension cord or a power strip on the UPS input.
- Use copper conductors rated 75 °C (167 °F) and terminations rated 75 °C (NEC 110.14(C)).

TABLE 4-1 Input current and branch circuit

Model	UPS input	Max. input current (factory data)	Building breaker, 1-pole	Receptacle	Branch conductor, Cu (NEC 240.4(D))
LUMINA 1K	IEC C14 inlet, power cord supplied	12 A	15 A	NEMA 5-15R	14 AWG
LUMINA 1.5K	IEC C14 inlet, power cord with NEMA 5-15P plug supplied	17.5 A	15 A	NEMA 5-15R	14 AWG
LUMINA 2K	IEC C20 inlet, power cord with NEMA 5-20P plug supplied	24 A	20 A	NEMA 5-20R	12 AWG
LUMINA 2.2K	IEC C20 inlet, power cord with NEMA 5-20P plug supplied	26 A	20 A	NEMA 5-20R	12 AWG
LUMINA 3K	Attached cord, NEMA L5-30P plug	36 A	30 A	NEMA L5-30R	10 AWG

⚠ WARNING

Breaker = plug rating. The maximum input current is reached only for short periods, at low input voltage with full load while the battery recharges; the breaker that matches the plug carries it. Do not install a larger breaker and do not change or adapt the plug.

⚠ CAUTION

The utility receptacle must be installed near the UPS and be easily accessible: unplugging the UPS is the way to disconnect it from the utility.

Connect the input and the loads

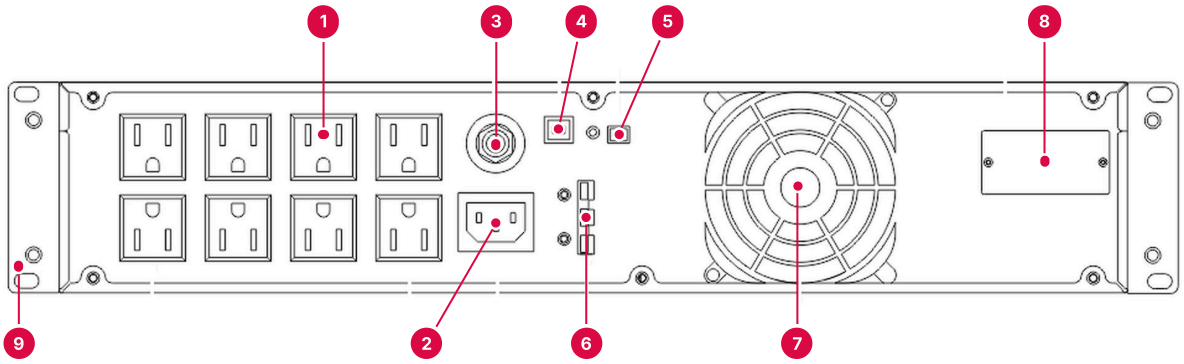
All connections are on the rear panel (Figure 4-1); the numbers below are those of Figure 4-2 to Figure 4-4.



1. Rear panel: all connections
2. Output receptacles
3. Intelligent slot

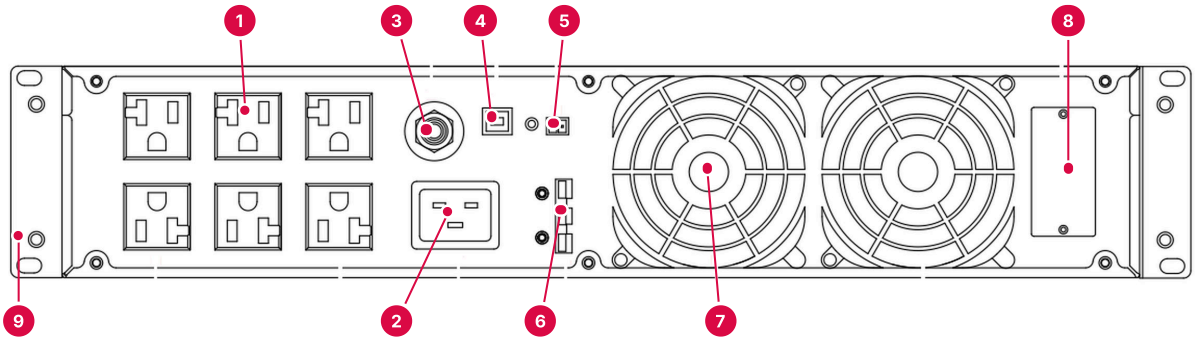
FIGURE 4-1 The rear panel, seen from the rear left — render of the LUMINA 2K

1. Check that the branch circuit and receptacle match Table 4-1.
2. 1K, 1.5K, 2K and 2.2K: plug the power cord into the AC INPUT inlet of the UPS (item 2 in Figure 4-2 and Figure 4-3). Do not plug it into the utility receptacle yet — that is the first step of Step 6.
3. Switch the loads off, then plug them into the output receptacles (item 1). Keep each receptacle, and the total of all of them, within Table 4-2.
4. Optional: connect the USB cable to the computer that runs the power-management software, and the EPO switch (normally open; shorting the two terminals shuts the output down).



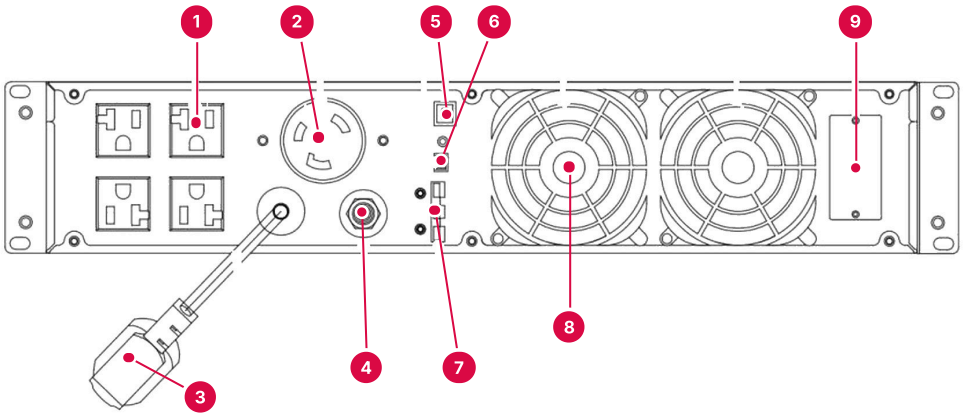
1. Output receptacles, 8 × NEMA 5-15R (15 A)
2. AC INPUT inlet, IEC C14 (power cord supplied)
3. CIRCUIT PROTECTOR — input over-current protector
4. USB port (type B)
5. EPO connector, 2 terminals
6. DC INPUT — battery connector, shipped unplugged
7. Cooling fan
8. INTELLIGENT SLOT — cover, or optional card
9. Rack-mount bracket

FIGURE 4-2 Rear panel — LUMINA 1K



1. Output receptacles, 6 × NEMA 5-20R (20 A)
2. AC INPUT inlet, IEC C20 (power cord with NEMA 5-20P plug supplied)
3. CIRCUIT PROTECTOR — input over-current protector
4. USB port (type B)
5. EPO connector, 2 terminals
6. DC INPUT — battery connector, shipped unplugged
7. Cooling fans
8. INTELLIGENT SLOT — cover, or optional card
9. Rack-mount bracket

FIGURE 4-3 Rear panel — LUMINA 2K and LUMINA 2.2K



1. Output receptacles, 4 × NEMA 5-20R (20 A)
2. Output receptacle, 1 × NEMA L5-30R twist-lock (30 A)
3. AC INPUT — attached cord with NEMA L5-30P twist-lock plug
4. CIRCUIT PROTECTOR — input over-current protector
5. USB port (type B)
6. EPO connector, 2 terminals
7. DC INPUT — battery connector, shipped unplugged
8. Cooling fans
9. INTELLIGENT SLOT — cover, or optional card

FIGURE 4-4 Rear panel — LUMINA 3K

i **NOTE** **LUMINA 1.5K.** Its rear panel is the 2K panel (Figure 4-3) with two differences: the AC INPUT is an IEC C14 inlet, for the power cord with NEMA 5-15P plug supplied, and the output receptacles are 6 × NEMA 5-15R (15 A).

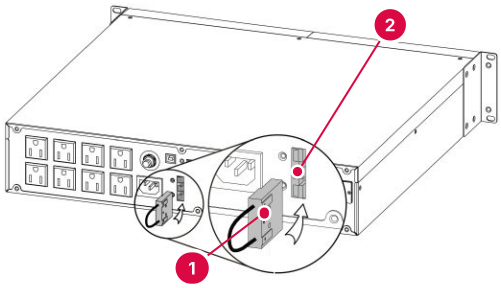
TABLE 4-2 Output receptacle limits

Model	Output receptacles	Max. current per receptacle	Max. total output current
LUMINA 1K	8 × NEMA 5-15R	15 A	9 A
LUMINA 1.5K	6 × NEMA 5-15R	15 A	13.7 A
LUMINA 2K	6 × NEMA 5-20R	20 A	18 A
LUMINA 2.2K	6 × NEMA 5-20R	20 A	20 A
LUMINA 3K	4 × NEMA 5-20R + 1 × NEMA L5-30R	20 A (L5-30R: 30 A)	27 A

5 Connect the battery

For shipping, the battery connector is left unplugged so that the UPS cannot be switched on by accident.

1. Check that the UPS is switched off and unplugged.
2. Take the battery connector out of the packaging.
3. Plug it into the battery port marked DC INPUT on the rear panel (Figure 5-1; item 6 in Figure 4-2 and Figure 4-3, item 7 in Figure 4-4). Push it fully home.



1. Battery connector
2. Battery port DC INPUT

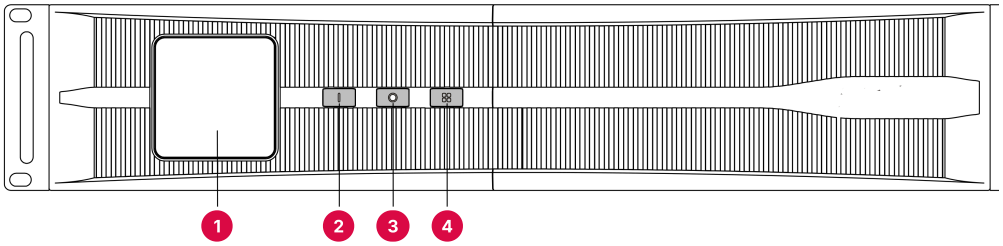
FIGURE 5-1 Plugging in the battery connector (LUMINA 1K shown; all ratings connect the same way)

> **WARNING**
>
> Never touch the contacts of the battery port or of the connector. Plug in the connector only with the UPS switched off and unplugged.

6 Start the UPS

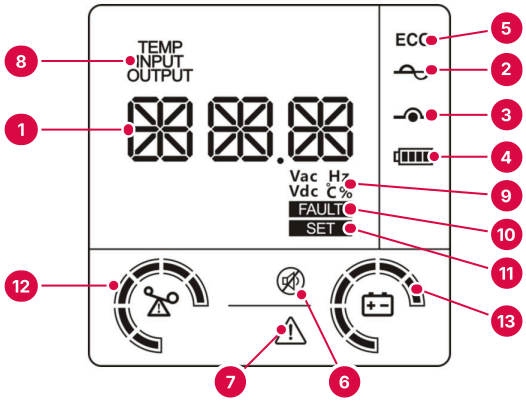
Before you start, check that the input and output are connected correctly, the output has no short circuit, the load does not exceed the UPS rating, the loads are switched off and the battery connector is plugged in.

1. Plug the UPS into the utility receptacle.
2. Press and hold **ON** for 1 s (Figure 6-1, item 2).
   You see: the UPS starts and the LCD lights.
3. Wait about 10 s.
   You see: the utility-mode symbol (Figure 6-2, item 2), no FAULT.
4. Switch on the loads, the largest first and the smallest last, so that starting a large load does not trigger the overload protection.
5. Check the load: press **SELECT** until % lights (Figure 6-2, item 9).



1. LCD
2. **ON** key — symbol: vertical bar
3. **OFF** key — symbol: circle
4. **SELECT** key — symbol: four squares

FIGURE 6-1 Operation panel



1	Digits: the reading, a fault code or a setting
2	Utility mode: the load runs on the inverter, fed from the utility
3	Bypass mode: the load runs on the utility through the bypass
4	Battery mode: the load runs on the battery
5	ECO mode
6	Buzzer silenced
7	UPS fault
8	What the digits show: TEMP, INPUT or OUTPUT
9	Unit of the reading: Vac, Vdc, Hz, °C or %
10	FAULT: the digits show a fault code
11	SET: the settings are open
12	Load level bars (all flash on overload)
13	Battery level bars (frame flashes when nearly exhausted)

FIGURE 6-2 LCD, rack orientation, all segments shown

7 Set and check

Three settings can be changed from the front panel: ECO / INV (operating mode), RCK / TWR (LCD orientation) and the output voltage (110 or 120 V).

1. Press and hold SELECT for 5 s.
   You see: SET lights (Figure 6-2, item 11) and the settings open.
2. Press SELECT to move to the setting you want. Its three letters flash.
3. Press and hold ON for more than 1 s to confirm. The setting is saved and the UPS leaves the settings.
4. To leave without changing anything, do nothing: the UPS leaves the settings after 20 s.

TABLE 7-1 Settings at the first start

Setting	Choose
RCK / TWR	**TWR** for a tower installation (Figure 7-2); **RCK** (default) for a rack (Figure 7-1).
Output voltage	**110 V** or **120 V** — the digits show the voltage while it flashes. Then press SELECT until OUTPUT and Vac light, and check it.
INV / ECO	**INV** (normal online operation) for critical loads (Figure 7-3). In **ECO** (Figure 7-4) the load runs on the bypass while the utility is good: efficiency is higher, but the load is not protected from disturbances.

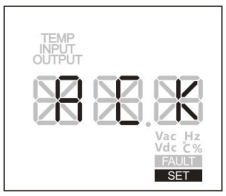


FIGURE 7-1 RCK (rack) display

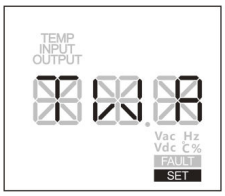


FIGURE 7-2 TWR (tower) display

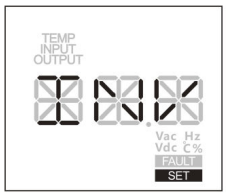


FIGURE 7-3 INV selected

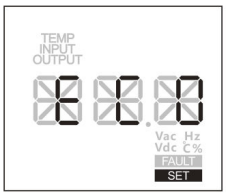


FIGURE 7-4 ECO selected

Check that the UPS is in normal mode

- The utility-mode symbol is lit (Figure 6-2, item 2) and FAULT is off. If FAULT lights, press SELECT until the code shows and look it up in the user manual, section *Fault codes*.
- Press SELECT to step through the readings: output voltage and frequency, input voltage and frequency, battery voltage, internal temperature, load %.
- The load is within the rating; the output receptacles are within Table 4-2.
- Optional battery test: in utility mode, press and hold ON for 3 s. The battery-mode symbol lights while the UPS runs briefly on the battery, then the utility-mode symbol returns.

i NOTE **First start.** The battery may not be fully charged after shipping and storage. Leave the UPS on utility power for at least 5 hours before relying on the full runtime (11 min at full load; 23 min for the 2.2K). You can use the UPS meanwhile.

8 Turn the UPS off

1. Switch off the loads and let the UPS run with no load for about 10 minutes to cool down.
2. Press and hold OFF for 1 s (Figure 6-1, item 3). The UPS shuts down.
3. Unplug the UPS from the utility receptacle.

- **Silence the buzzer** in battery mode: press and hold ON for 3 s; the buzzer-silenced symbol lights (Figure 6-2, item 6). Hold ON 3 s again to turn the buzzer back on.
- **Long utility failure:** at the end of discharge the UPS shuts down and restarts by itself when utility power returns. If utility power stays off, press OFF rather than letting the battery discharge for a long time, and recharge it within 24 hours.
- **Out of service:** recharge the battery every 3 months — plug in the UPS and leave it on utility power for at least 5 hours.

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Settings, fault codes, maintenance and every detail: **LUMINA 1–3 kVA User Manual, AEC-UM-LUM-US** (aecups.com · AEC app › Support › Downloads).