AEC

ONLINE UPS · LITHIUM · RACK / TOWER

LUMINA

1–3 kVA

Single-phase online double-conversion UPS with a built-in **LiFePO4 lithium** battery. Two rack units for a 19-inch cabinet, or standing as a tower.

LiFePO4 LITHIUM INSIDE



LUMINA · TOWER ON TOP, RACK BELOW · 2U

LiFePO4
Lithium battery built into the UPS

5 years
Warranty on the whole unit: UPS and lithium battery

92.6%
AC/AC efficiency, highest on the 2.2 kVA model

3×
Runtime vs a VRLA UPS in the same 2U

Product Overview
LUMINA 1–3 kVA

Single-phase online double-conversion UPS for 120 V loads with its **lithium** iron phosphate battery inside, 1 to 3 kVA, in one 2U chassis for the 19-inch rack or standing as a tower.

THE RANGE · power, backup with the built-in battery, weight and depth

1 kVA	1.5 kVA	2 kVA	2.2 kVA	3 kVA
900 W	1,350 W	1,800 W	1,980 W	2,700 W
11 min at full load	11 min at full load	11 min at full load	23 min at full load	11 min at full load
19.6 lb · 16.5 in deep	29.5 lb · 22.4 in deep	30 lb · 22.4 in deep	42.1 lb · 24.2 in deep	37.7 lb · 22.4 in deep

Main Features

LiFePO4
lithium battery inside: 12–15 years, 3,000 cycles

5 years
warranty on the whole unit, UPS and battery

≤ 5 h
back to full charge after an outage

2U
every rating, rack or tower; rail kit included

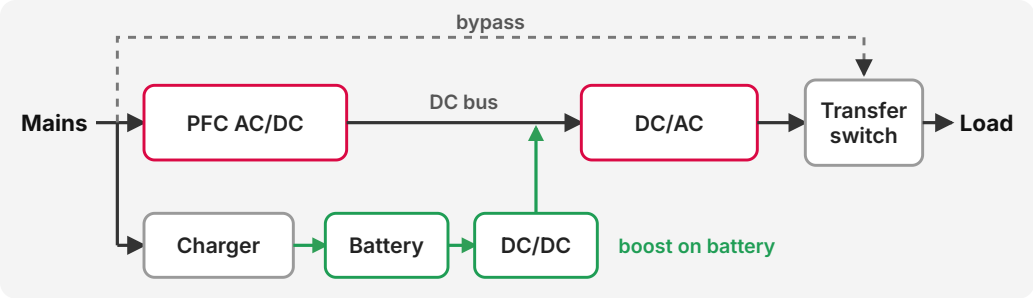
0 ms
online double conversion: no transfer time

92.6 %
highest AC/AC efficiency of the range

140 °F
highest operating temperature; full power to 104 °F

UL 1778
ETL listed; CSA; battery UN38.3 tested

How It Works



On mains
The PFC rectifier makes a steady DC bus; the inverter rebuilds 110 / 120 V and the charger keeps the battery full.

On battery
The DC/DC boosts the battery onto the same bus: the inverter never stops, 0 ms.

On bypass
Overload or inverter fault: the transfer switch puts the load on the mains.

Key Data

Input	88–148 V AC at full load; 50 / 60 Hz ±10 %
Output	110 / 120 V ±1 %, sine wave, THD < 3 %, PF 0.9
Battery	LiFePO4 lithium inside, 12–15 years
Recharge	≤ 5 h; no battery pack to add

Size, W × H	17.2 × 3.4 in (2U), 16.5–24.2 in deep
Communication	USB; slot for SNMP-L or RS485 + dry contacts; EPO
Standards	ETL listed UL 1778, CSA, UN38.3
Warranty	5 years, UPS and battery

LUMINA · FRONT VIEW

Front View
LUMINA 1–3 kVA

The 2U front of every LUMINA rating: the LCD, three keys and the rack ears. The same chassis stands as a tower on two stands.



1 LCD
blue LCD: output, input, battery, load, mode, fault code; rack or tower reading

2 ON key
1 s: on. On mains, 3 s: battery test. On battery, 3 s: buzzer off

3 OFF key
1 s: the UPS turns off

4 SELECT key
scrolls the readings; held 5 s it opens the settings

5 Rack ears and handles
19-inch rack, 2- or 4-post; rail kit included

6 Front grille
cooling air in at the front, out at the back



Rack or Tower

R In the rack
2U, 19-inch, ears and handles on the front; the telescopic rail kit for 2- or 4-post racks (up to 100 lb) is included.

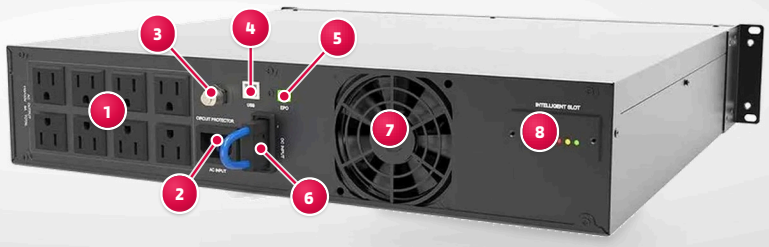
T As a tower
the same unit upright on its two stands; the LCD switches to the tower reading (TWR) from the settings.

S Space and room
11.8–19.7 in (300–500 mm) around the UPS, 19.7 in (500 mm) above it; 32–104 °F (0–40 °C) at full power, 0–95 % RH.

Rear View
LUMINA 1–3 kVA

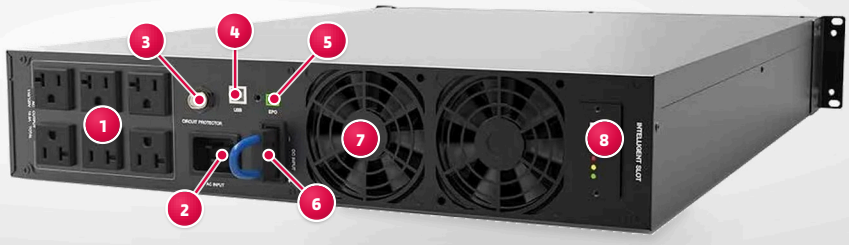
1 kVA

OUTLETS	8 × NEMA 5-15R
INPUT	IEC C14 inlet
COOLING	one fan
CURRENT	9 A total



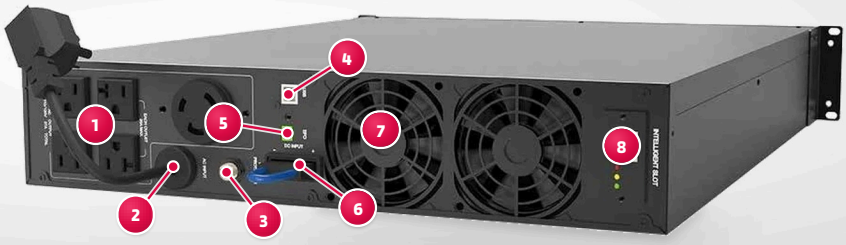
1.5 · 2 · 2.2 kVA

OUTLETS	6 × NEMA 5-20R
INPUT	IEC C20 inlet
COOLING	two fans
CURRENT	18 A (1.5 · 2 kVA) · 20 A (2.2 kVA)



3 kVA

OUTLETS	4 × NEMA 5-20R + 1 × L5-30R
INPUT	attached cord, twist-lock plug
COOLING	two fans
CURRENT	27 A total



1 Output sockets
NEMA receptacles for the loads; each 5-15R up to 15 A, each 5-20R up to 20 A, the L5-30R up to 30 A.

2 Input
IEC inlet with its cord, or the attached cord and plug of the 3 kVA, to a mains socket near the UPS.

3 Over-current protector
resettable protector on the input, part of the over-current protection of the UPS.

4 USB port
standard: status and readings on the computer, remote on and off with the UPS software.

5 EPO connector
its two pins joined: the UPS closes its output. Opened again and the UPS restarted: output back.

6 Battery connector
shipped unplugged for the journey; plugged into the battery port once the UPS is installed.

7 Cooling fans
one on the 1 kVA, two on the others; air out at the back, so keep the rear clear.

8 Intelligent slot
SNMP card: input, output and load over the network, remote on and off; or RS485 + dry contacts.

Display and Controls
LUMINA 1–3 kVA

The blue LCD of LUMINA and the three keys that run the UPS and its settings.



1. **Reading**
   TEMP, INPUT or OUTPUT: what the digits show
2. **Digits**
   voltage, frequency, battery voltage, load %, temperature or fault code
3. **Units**
   Vac, Hz, V DC, °C, %
4. **FAULT · SET**
   a fault code is shown; the settings page is open
5. **Mode icons**
   ECO, mains (lit in normal operation), bypass, battery
6. **Load ring**
   the load, in eight steps
7. **Mute · failure**
   buzzer silenced; UPS failure
8. **Battery ring**
   the battery level, in eight steps

Keys

Key	Function
ON	1 s: on · 3 s on mains: battery test · 3 s on battery: buzzer off, again 3 s to cancel
OFF	1 s: off
SELECT	press: next reading · 5 s: settings, scrolled with SELECT, confirmed with ON

Readings, Scrolled with SELECT

- Output voltage
- Output frequency
- Input voltage
- Input frequency
- Battery voltage
- Inner temperature
- Load %
- Fault information

Settings, SELECT Held 5 s

ECO · INV	operating mode
RCK · TWR	rack (default) or tower reading
110 · 120 V	output voltage

Fault Codes on the LCD

EPO
emergency power off: both outputs closed

BUS
DC bus voltage fault

TMP
over-temperature: check fans and vents

OUT
output short circuit or load too large

MIF
five inverter faults in five minutes

BAT
battery voltage too low or too high

FAN
fan fault: rapid beep, output about to stop

Load ring flashing
overload: rapid beep, reduce the load

Lithium Battery Technology
LUMINA 1–3 kVA

LUMINA with its built-in **lithium** iron phosphate battery against FERRUS RT, the online rack UPS of the same ratings with lead-acid batteries, and which one to choose.

BACKUP TIME, BUILT-IN BATTERY · 1, 2 AND 3 kVA

LUMINA lithium LFP vs FERRUS RT VRLA



Typical values at 77 °F (25 °C) with new batteries. Same values for LUMINA 1, 1.5, 2 and 3 kVA and FERRUS RT 1, 2 and 3 kVA; LUMINA 2.2 kVA: 23 and 46 min, FERRUS RT 1.5 kVA: 6 and 14.3 min. Full load is 900 W for LUMINA 1 kVA (PF 0.9), 1,000 W for FERRUS RT 1 kVA (PF 1).

LUMINA alone vs FERRUS RT with battery pack: 2U vs 4U

For about 25 minutes at half load, FERRUS RT 1 kVA needs its 2U battery pack (23.7 min). LUMINA 1 kVA does it alone (27 min).

LEAD-ACID · UPS + BATTERY PACK — 4U



4U rack space

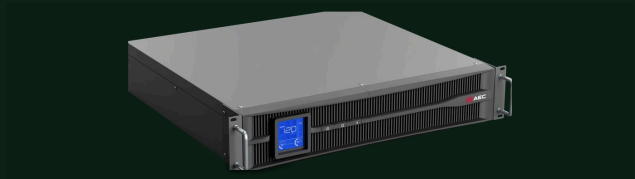
77.2 lb 1 kVA + pack

23.7 min half load

Choose FERRUS or FERRUS RT

- Unity power factor: 1, 2 or 3 kW on the label.
- Runtime per site: one to four cabinets or packs.
- Lead-acid blocks any service team knows.

LITHIUM LFP · LUMINA ALONE — 2U



−50 % rack space

−75 % weight, 19.6 lb

27 min half load

Choose LUMINA

- ×3 the full-load backup, with no battery pack.
- A battery that lasts as long as the UPS.
- Back to full in 5 hours or less.

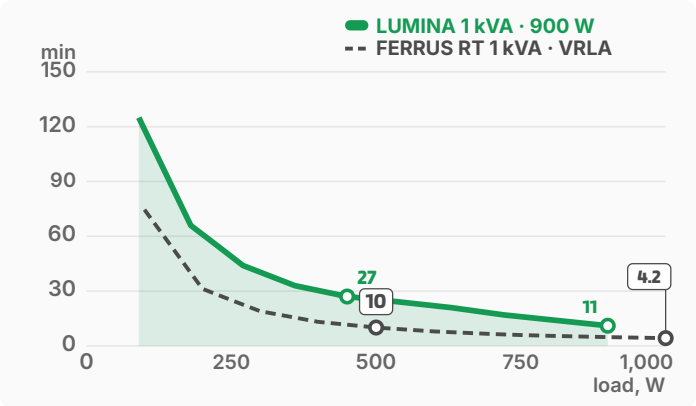
	LUMINA · lithium LFP	FERRUS RT · lead-acid rack UPS
Battery chemistry	**LiFePO4: stable, cobalt-free cells**	Lead-acid VRLA, 12 V 9 Ah blocks
Battery life · sets in 10 years	**12–15 years, 3,000 cycles · 1 set**	3–5 years · 2 to 4 sets, changed by qualified personnel
Recharge · first charge	**5 h or less · 10 h before first use**	12 h or more · at least 12 h
Operating temperature	**32–140 °F (0–60 °C), full power to 104 °F**	32–104 °F (0–40 °C); battery best at 68–77 °F, 57–77 °F allowed
Weight, 1 kVA · 3 kVA	**19.6 lb · 37.7 lb**	41.8 lb · 61.7 lb
Warranty	**5 years, UPS and battery**	3 years UPS · 2 years batteries
Standards	**ETL listed UL 1778 · CSA · UN38.3 tested**	UL 1778 standard

Battery and Runtime
LUMINA 1–3 kVA

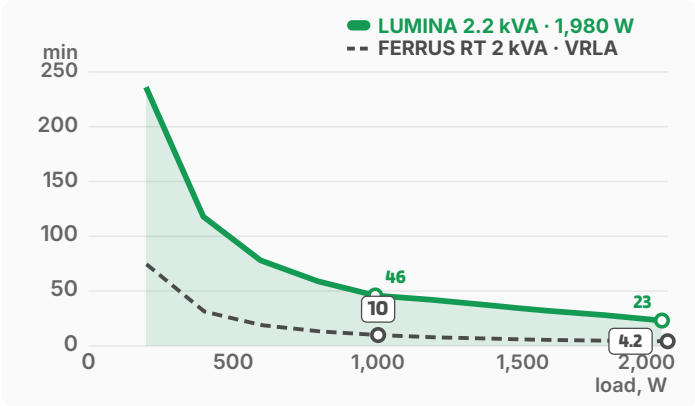
Each bubble is the backup of one model at one load, in minutes: larger bubble, longer backup. No battery pack to add.

	100 % load	75 % load	50 % load	25 % load	10 % load
LUMINA 1 kVA 900 W · 24 V DC	11	19	27	55	2 h 05
LUMINA 1.5 kVA 1,350 W · 48 V DC	11	19	27	55	2 h 05
LUMINA 2 kVA 1,800 W · 48 V DC	11	19	27	55	2 h 05
LUMINA 2.2 kVA 1,980 W · 72 V DC	23	34.5	46	98	3 h 56
LUMINA 3 kVA 2,700 W · 72 V DC	11	19	27	55	2 h 05

1 · 1.5 · 2 · 3 kVA



2.2 kVA, the long-backup model



Battery care, built into the UPS

Battery kept full
On the mains down to 88 V at full load, 77 V to 75 % and 60 V to 50 %: a weak grid does not cycle the battery.

From the panel
On mains, ON held 3 s tests the battery; a failed test, or a voltage out of range, shows the code BAT.

Under- and over-voltage
A discharge ends before the battery is harmed; over-voltage protection reacts to a charger fault.

Low-battery warning
The battery ring on the LCD; when it is empty and flashes, a rapid beep: time to save data.

In service and stored
Discharge and recharge every 4–6 months (2 in hot areas); stored at 32–104 °F; in storage longer than six months, recharge every 3 months.

Technical Specifications
LUMINA 1–3 kVA

Model	1 kVA	1.5 kVA	2 kVA	2.2 kVA	3 kVA
Power (VA / W)	1,000 / 900	1,500 / 1,350	2,000 / 1,800	2,200 / 1,980	3,000 / 2,700
INPUT					
Voltage range	88–148 V AC above 75 % load · 77–88 V AC 50–75 % · 60–77 V AC below 50 %				
Frequency · connection	50 / 60 Hz ±10 %, self-adapting · single-phase, three-wire				
Input	IEC C14 inlet	IEC C20 inlet			cord, twist-lock plug
OUTPUT					
Voltage · frequency	110 / 120 V ±1 %, set from the panel · 50 / 60 Hz ±0.2 % on battery				
Waveform · distortion · PF	sine wave · THD < 3 % (linear load) · 0.9				
Transfer time	0 ms, mains to battery				
Overload	100–130 % 1 min · 130–150 % 1 s · above 150 % 200 ms				
AC/AC efficiency, up to	91.7 %	92.5 %		92.6 %	92.5 %
Outlets	8× 5-15R	6× 5-20R			4× 5-20R + 1× L5-30R
BATTERY					
Type	LiFePO4 lithium, internal · 12–15 year life (3,000 cycles)				
DC voltage	24 V DC	48 V DC		72 V DC	
Backup at 50 % · 100 % load	27 min · 11 min			46 min · 23 min	27 min · 11 min
Recharge time	≤ 5 h				
GENERAL					
Communication	USB standard · intelligent slot: SNMP card or RS485 + dry-contact card (optional) · EPO				
Display	LCD, rack (RCK) or tower (TWR) reading				
Protection	battery under-voltage, overload, short circuit, over-temperature, input over-voltage				
Noise · environment	< 55 dB · 32–140 °F (0–60 °C), full power to 104 °F (40 °C) · 0–95 % RH non-condensing				
W × D × H in	17.2 × 16.5 × 3.4	17.2 × 22.4 × 3.4		17.2 × 24.2 × 3.4	17.2 × 22.4 × 3.4
W × D × H mm	438 × 420 × 87	438 × 570 × 87		438 × 615 × 87	438 × 570 × 87
Weight	19.6 lb (8.9 kg)	29.5 lb (13.4 kg)	30 lb (13.6 kg)	42.1 lb (19.1 kg)	37.7 lb (17.1 kg)
Standards	ETL listed UL 1778, CSA, UN38.3				
Warranty	5 years on the whole unit, UPS and lithium battery				

Runtimes with new batteries. Specifications are subject to change without notice.



SIZES

LUMINA 1–3 kVA

1 kVA	17.2 × 16.5 × 3.4 in 438 × 420 × 87 mm	19.6 lb
1.5 · 2 · 3 kVA	17.2 × 22.4 × 3.4 in 438 × 570 × 87 mm	29.5–37.7 lb
2.2 kVA	17.2 × 24.2 × 3.4 in 438 × 615 × 87 mm	42.1 lb

One 2U chassis, 17.2 in wide, 3.4 in high; four depths. W × D × H.

Ordering Information
LUMINA 1–3 kVA

LUM 1000 RT -2U -LI -NC

series: LUMINA	rating in VA	rack / tower	2U chassis	lithium battery inside	SNMP card fitted

EXAMPLES

LUM1000RT-2U-LI
LUMINA 1 kVA

LUM3000RT-2U-LI-NC
LUMINA 3 kVA with the SNMP card fitted

Code	Description
LUM1000RT-2U-LI	LUMINA 1 kVA online UPS, 2U rack / tower, built-in LiFePO4 battery; rail kit included **LUM1000RT-2U-LI-NC**: the same with the SNMP card fitted
LUM1500RT-2U-LI	LUMINA 1.5 kVA online UPS, 2U rack / tower, built-in LiFePO4 battery; rail kit included **LUM1500RT-2U-LI-NC**: the same with the SNMP card fitted
LUM2000RT-2U-LI	LUMINA 2 kVA online UPS, 2U rack / tower, built-in LiFePO4 battery; rail kit included **LUM2000RT-2U-LI-NC**: the same with the SNMP card fitted
LUM2200RT-2U-LI	LUMINA 2.2 kVA online UPS, 2U rack / tower, built-in LiFePO4 battery; extended runtime; rail kit included **LUM2200RT-2U-LI-NC**: the same with the SNMP card fitted
LUM3000RT-2U-LI	LUMINA 3 kVA online UPS, 2U rack / tower, built-in LiFePO4 battery; rail kit included **LUM3000RT-2U-LI-NC**: the same with the SNMP card fitted
SNMP-L	SNMP-L network card: web pages, SNMP v1/v2c/v3 and Modbus TCP/IP; e-mail alarms; for LUMINA, ETHERNO, AUREON and INFINITE
DRYCNT	Dry-contact relay card: mains failure, battery low, UPS fault, bypass; all AEC UPS series

Included with Every LUMINA

Rail kit: telescopic rails for 2- or 4-post 19-inch racks, up to 100 lb, in the box with every code. **Built-in battery:** nothing else to order for the standard backup.

Options

SNMP-L

Network card
SNMP-L in the intelligent slot: web pages, SNMP v1/v2c/v3 and Modbus TCP/IP; e-mail alarms.

DRYCNT

Dry-contact card
Relay outputs: mains failure, battery low, UPS fault, bypass; plug-in, intelligent slot.



LUMINA: rack or tower, every code