COMPARISON SHEET

Inverters.
Old technology, at twice the cost.

A central lighting inverter is centralized like Sage. That's where the similarity ends. On the same building, Sage installs for 49% less on day one and runs the decade at 7× lower upkeep. No crossover, ever.

49% lower	7× lower	28 → 0
DAY ONE	DECADE UPKEEP	UL 924 ALCRS

THE SETUP

The inverter got one thing right. Centralize the power source.

Credit where due: a central lighting inverter consolidates emergency power in one serviceable location, it can back any load type, its automatic test and reporting package is standard equipment, and every electrical engineer in the country has specified one. Those are real virtues. They are the same virtues Sage is built on.

Everything around those virtues is legacy architecture. An inverter must carry every connected fixture at 100% of its normal wattage, so it is sized far beyond what egress actually needs. It double-converts power: AC to DC to AC, and then every LED driver converts it back to DC again. It feeds fixtures through rigid conduit at line voltage. And on every dimmed or switched circuit, code demands a UL 924 bypass device to force the lights up when the power fails. All of that is purchased, installed, and maintained for capability the building never uses.

DAY ONE

The inverter's install ledger, itemized.

Worked on our reference design: a 42,000 sq ft school with 87 emergency fixtures and 24 exit signs. Every line is market pricing a specifier can check.

CENTRAL LIGHTING INVERTER · DAY ONE	
Central lighting inverter Sized for the building's emergency load, with factory start-up	$29,947
UL 924 dimming-bypass devices (ALCR) 28 controlled circuits × $150	$4,200

Exit signs 24 × $250	$6,000
MATERIAL	**$40,147**
Rigid conduit rough-in ~2,600 ft @ 5 hr/100 ft = 130 hr × $95/hr	$12,350
Inverter set + start-up labor	$1,500
ALCR installation 28 × 30 min × $95/hr	$1,330
INSTALLATION	**$15,180**
DAY-ONE TOTAL	**$55,327**

SAGE CENTRAL BATTERY · SAME BUILDING

49% lower

INSTALLED, DAY ONE, SAME FIXTURES, SAME CODE

- **Sized to egress, not the building**
  The relay switches each fixture to its emergency level, so the battery carries egress watts only, not 100% of every connected fixture.
- **Zero UL 924 ALCRs**
  All 28 bypass devices disappear: $4,200 of hardware plus the labor to set them.
- **46 labor hours, not 130**
  Class-2 low-voltage cable pulls at 2 hr/100 ft where rigid conduit takes 5, roughly a third of the rough-in labor on comparable footage.
- **Native 24 VDC**
  One conversion at the charger. No AC→DC→AC round trip, no wasted electronics between the battery and the LED.

THE MECHANISM

Why the ALCRs disappear.

An inverter feeds fixtures through their normal controls. When a circuit is dimmed to 10% and the power fails, code requires those lights at full emergency output, so every controlled circuit needs a UL 924 device to bypass the dimming signal. On this design, that's 28 devices bought, wired, and maintained.

The Sage Relay wires downstream of the LED driver. In an emergency it switches the LED load directly onto the central battery's 24 VDC. The dimming signal never reaches the emergency path: there is nothing to bypass, so there is no bypass device. The entire ALCR line item, hardware and labor, vanishes from the project.

> This isn't a workaround; it's the architecture doing the code's job by construction. **Emergency power that never passes through normal controls cannot be dimmed off by them.** The same principle governs Europe's EN 50171 central-battery systems, the dominant egress architecture there for decades.

THE DECADE

Proprietary batteries are where inverters get expensive.

The inverter's battery cabinet holds **16 proprietary batteries at $250 each**, replaced on a five-year cycle with electrician labor at $95/hr. Two replacement cycles land inside the decade: $4,760 per event, $9,520 total.

Sage's cabinet uses **4 commodity 12 V batteries** (~$150 each) on the same cycle, a 2-hour change-out your own facilities staff performs at $36/hr. Low-voltage work needs no electrician. **That is the whole 7× difference.**

TEN-YEAR COST OF OWNERSHIP	
Inverter · day one	$55,327
Inverter · battery sets ×2 (16 × $250 + labor, each)	$9,520
INVERTER · TEN-YEAR TOTAL	**$64,847**
SAGE · TEN-YEAR POSITION	Ahead day one. Further ahead every year.

Battery packs at least win the day-one line before losing the decade. **The inverter never leads at all:** behind on day one, and the gap widens every year after. There is no crossover point.

SIDE BY SIDE

Two centralized systems. One modern architecture.

	Central lighting inverter	Sage Central Battery
Sizing basis	⚠ 100% of connected fixture wattage — the inverter carries every fixture at full output	✓ Egress load only — the relay switches each fixture to its emergency level
Power path	⚠ AC → DC → AC double conversion, then back to DC inside every LED driver	✓ Native 24 VDC from the battery to the fixture — one conversion, once
UL 924 dimming bypass (ALCR)	⚠ One per controlled circuit — 28 devices at $150 each, plus installation	✓ Zero — the relay wires downstream of the driver, so there is no dimming signal to bypass
Wiring method	⚠ Rigid conduit, ~2,600 ft at 5 hr/100 ft — 130 labor hours	✓ Class-2 low-voltage cable, ~2,300 ft at 2 hr/100 ft — 46 labor hours
Batteries over the decade	⚠ 16 proprietary batteries at $250 each, replaced on a 5-year cycle with electrician labor	✓ 4 commodity 12 V batteries (~$150 each), a 2-hour in-house change-out
Automatic testing + reporting	✓ Standard equipment on modern inverters	✓ Standard with the system — Sage Live™
Day-one installed cost	$$$ $55,327 on the reference design	$ 49% lower on the same building
Ten-year upkeep	$$$ $9,520 in battery-set replacements	$ 7× lower

THE BASIS

Worked figures, not marketing math.

Every number on this page comes from one worked reference design: a 42,000 sq ft school with 87 emergency fixtures, 24 exit signs, and 28 controlled circuits, priced at defensible mid-market rates: contractor labor $95/hr, in-house maintenance $36/hr, UL 924 devices $150 each. Hardware at wholesale/trade pricing on both columns; labor at prevailing market rates.

Challenge any unit price. We'll gladly re-run the model on your numbers. **The architecture wins on any honest inputs.**