

# Eaton's emergency lighting and power solutions presentation

93PM UL 924 UPS launch



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# Agenda: Eaton's lighting and power solutions

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- Emergency lighting and power market overview
- 9x55-based product review
- 93PM-based product review
- Auxiliary lighting and power market overview
- Availability
- FAQs

# Value proposition

The Eaton emergency lighting and power portfolio offers customers dealing with emergency preparedness and regulatory compliance a reliable, certified and efficient solution to address the challenges they face while pushing to meet NFPA 101 (Life Safety Code) and other building standards.

Unlike competitors, our portfolio offers customers solutions that integrate with their existing facilities to create aesthetically appealing spaces, centralized methods to meeting regulatory requirements and the confidence that they are backed by Eaton's award-winning service and support organization as they grow.

# Market overview: Emergency lighting and power

**This market exists primarily outside the data center, including:**

- Any commercial building
- Any multi-residential building
- Any healthcare facility
- Also inside data centers (though not the primary vertical)



**The main requirement for this market is 90 minutes of runtime**

- Additional requirements for UL 924 testing
- Driven by need to comply with NFPA 101 (Life Safety Code)

# Top benefits of Eaton UL 924 solutions

## 1. Certified regulatory compliance

- Reduces regulatory compliance concerns
- Reduces environmental regulatory compliance when a generator is replaced

## 2. Ease of deployment

- Maximizes deployment flexibility by providing innovative thermal management options, optimized battery solutions and full-service access from the front
- Lowers CAPEX through internal modular scalability and internal redundancy
- Conserves valuable floor space with compact footprints
- Centralized location for all emergency lighting and power equipment to connect to

## 3. Ease of use

- Provides easier access to detailed status information through large, user-friendly LCD touchscreen interface
- Reduces staffing costs through centralized control of regulatory compliance testing
- Increases reliability through 24x7 remote monitoring and reporting capabilities



Eaton's entire line of emergency lighting UPSs meet the strict standards for UL 924 compliance



# 9x55-based solutions



## Power ratings:

- Single-phase, 277 Vac
  - 10/7.2, **15/9** kVA/kW
- Three-phase, 208/120 Vac
  - 10/8.5, **15/13.1**, 20/18, **30/24**, **30/27** kVA/kW

## Scalability

- Externally parallel up to four UPSs of the same frame size

# 93PM-based solutions

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## Power ratings:

- 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120 kW/kVA
- 1.0 output power factor
- Three-phase, 480/277 Vac
- 40 kW power modules
- Up to 120 capacity and 80+1 redundant configurations

## Scalability:

- Internally up to three power modules (120 frame)
- Externally parallel up to eight UPSs of the same frame size

# 93PM-based solutions: Smaller footprint



22"W

30-36"W  
with MBS



34"W



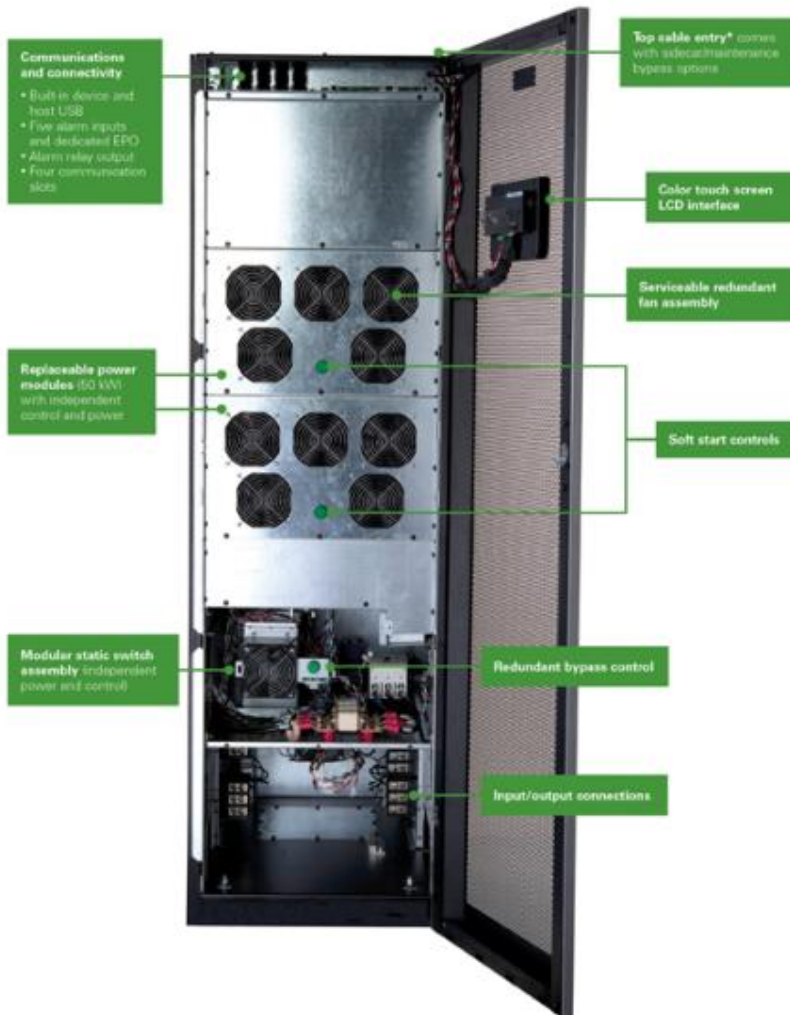
34"W

[ 1-4 battery cabinets ]

74"H and 42"D



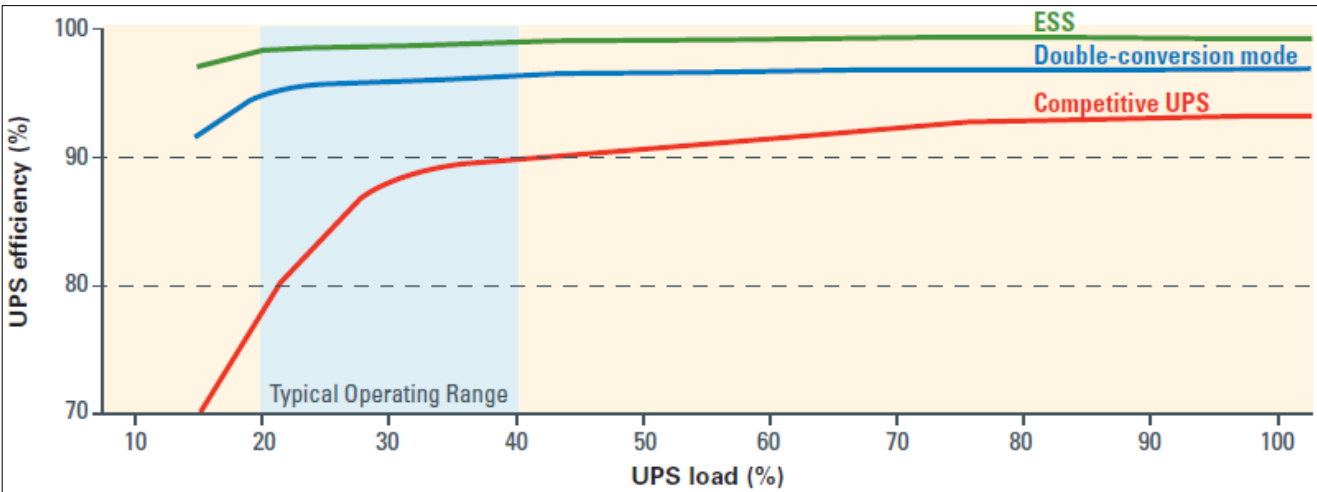
# 93PM-based solutions



- Launching Q2 2016
  - **April 1**
  - **June 1**
- Replaces 9390-based solutions
  - 9390-based solutions will EOL on **October 1, 2016**
  - More efficient, scalable and compact
  - UL 924 listed relay panels are in the pricebook
  - Extended power range
  - Similar pricing

# 93PM solutions: Industry-leading efficiency

93PM efficiency vs. leading competitor



Reduces power and cooling OPEX over the entire operating load range:

- Up to 99% efficient in ESS mode
- Up to 97% efficient in double-conversion mode

93PM cost savings vs. leading competitor

Load %	Leading competitor efficiency**	93PM ESS efficiency	93PM ESS annual savings (\$)*	93PM double-conversion efficiency	93PM double-conversion annual savings (\$)*
25.0%	84.0%	98.4%	\$27,470	95.8%	\$23,121
50.0%	90.6%	98.9%	\$29,212	96.8%	\$22,294
75.0%	92.5%	99.1%	\$34,059	97.0%	\$23,724
100.0%	93.0%	99.1%	\$41,746	96.8%	\$26,623

# ESS: How is it different than “eco” mode?

## ✓ **Fastest transfer times:**

- ESS offers <2 ms. transition times for an outage condition (vs. up to 12 ms. for eco mode or offline UPS systems)

## ✓ **Inherent surge protection:**

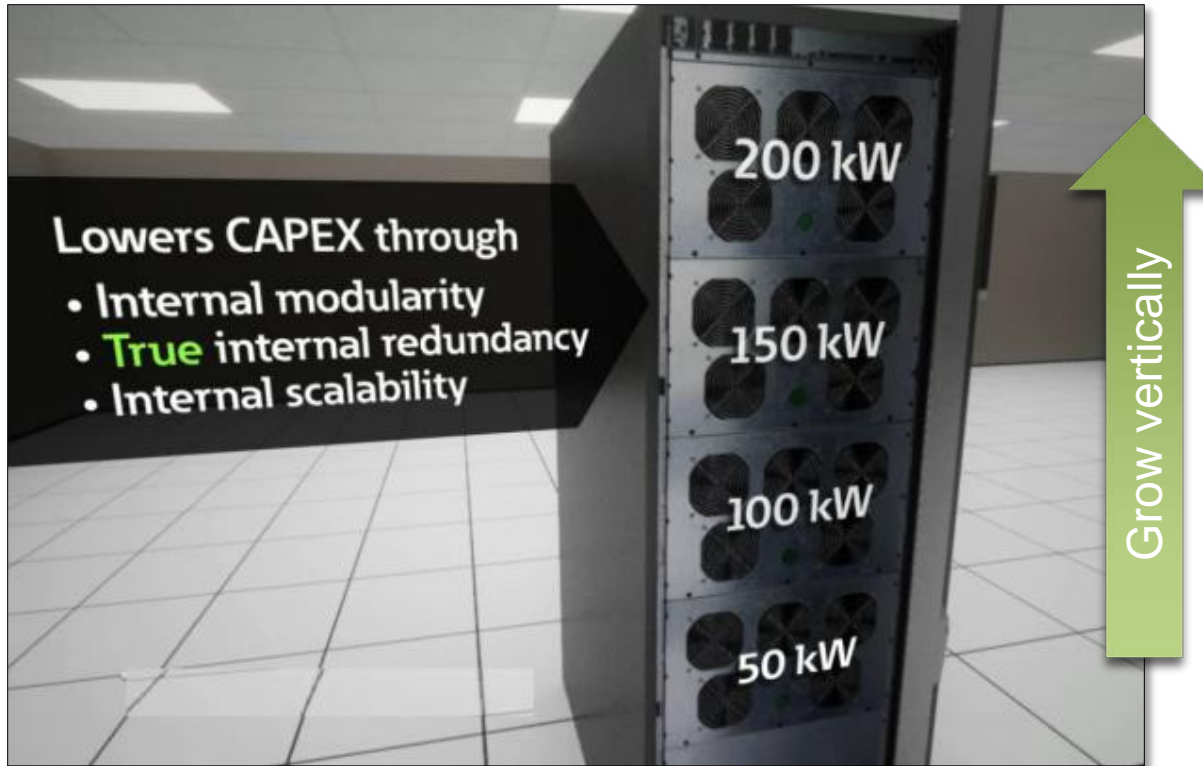
- Transformerless ESS topology offers non-degenerative filtering for lightning strikes

## ✓ **Load fault detection and clearing:**

- ESS determines if the fault is at the source or load
- For load faults, the UPS will maximize its fault clearing current by not only turning the inverter on, but also by leaving the source engaged with the critical load (providing the maximum fault clearing current)



# 93PM-based solutions: Scalability



- Scales in 40 kW increments
- Scale in hours, not days
- Allows for future growth without adding footprint

Lowers upfront capital expense without limiting future load needs

# Status, access and notification

- The **green**, **yellow** and **red** LED light-bars make system status visible from a distance
- Optional PXG-MS network cards provide global, 24/7 access and notification

**Green LEDs:**  
System online  
and normal

**Yellow LEDs:**  
System on battery  
or bypass

**Red LEDs:**  
System alarm



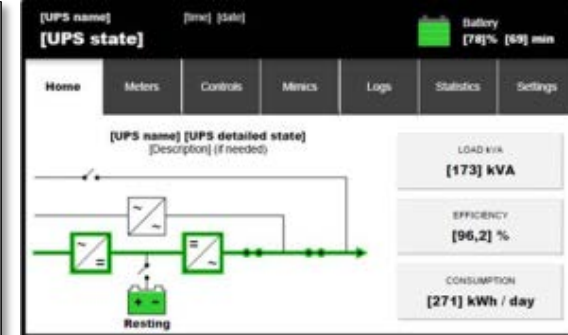
# 93PM-based solutions: Manageability

Provides easier access to detailed status information through its large, user-friendly LCD touchscreen interface



- Energy savings stats
- Battery time
- Outage tracking
- Load profiling
- Service due alerts
- Battery service alerts

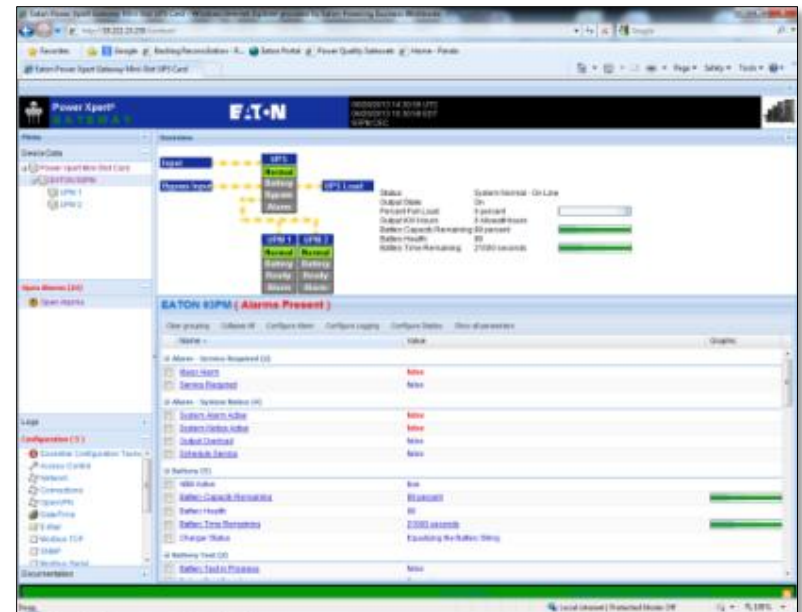
Manage service, system status and testing with easy-to-read service logs and customer load profiles





# Connectivity and monitoring

- Power Xpert Gateway Mini Slot (PXGMS)
  - Flexible, multi-module support, including SNMP, BACnet IP, Modbus TCP, Modbus RTU
- Industrial Relay Card
  - Integration into facility “normally off” emergency circuits
- Environmental Monitoring Probe (EMP)
- PredictPulse™ remote monitoring service



# A new market: Auxiliary lighting and power

- Also known as UL 924A
  - Officially “UL 924 auxiliary lighting and power”
- Required component when generators are used to satisfy NFPA 101, and:
  - The generator takes more than 10 seconds to power the load
- Recommended for use with lighting with long restrike times, such as HID
  - Stadium lights, outdoor lighting, etc.



**After the June 1 93PM models are released, Eaton will offer backup power protection for both emergency and auxiliary lighting and power markets**

# 93PM-based solutions for auxiliary market

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## Power ratings:

- 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200 kW/kVA
- 1.0 output power factor
- 480/277 Vac
- 50 kW power modules
- Up to 200 capacity and 150+1 redundant configurations

## Scalability:

- Internally up to four power modules (200 frame)
- Externally parallel up to eight UPSs of the same frame size

# Eaton emergency lighting solutions: Availability

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- 9x55-based solutions: **Available today!**
  - 480/277V solutions EOL **October 1, 2016**
- 93PM-based UL 924 solutions: Available **April 1**
  - 9390-based solutions EOL **October 1, 2016**
  - UL 924 auxiliary solutions: Available **June 1**
- Older solutions: Available by exception
- Pricing is similar to existing solution pricing

# Lighting and power solutions FAQs

## 1. Are UL 924 emergency runtimes besides 90 minutes offered?

No, not as a standard product. Additional runtimes may become available in the future, depending on the business opportunities you find!

## 2. Can I use a regular UPS in place of this system?

No, NFPA 101 requires an appropriately-listed (UL 924) UPS, generator or unit equipment be used for these applications.

## 3. Should I transition all customers from EOL solutions?

Existing customers currently using systems that will be transitioned to EOL status should be approached upon battery replacement.

## 4. Are UL 924 solutions OSHPD certified?

93PM based solutions will be OSHPD certified in Q4.

**See the FAQ document on Salesweb for more frequently asked questions and answers**

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