Tucker
AUTO-MATION
DRIVEN

PHOTOLUMINESCENT EXIT SIGNS

TUCKER AUTO-MATION IN PARTNERSHIP WITH LUMAWARE

Zero **Energy EXIT Signs**

No batteries, electricity, bulbs, maintenance or testing.

When power is out and backup systems fail, you are left in the dark. The safety of your facility's occupants depends on a well-planned egress (exit) plan and clear escape route markings.

As our products are designed by firefighters for firefighters and those we protect; we've taken the knowledge we've learned from firefighting practices to make your buildings safer and better.

Tucker Auto-Mation in partneship with Lumaware, offers innovative, flexible and UL listed and certified comprehensive solutions for integrating photoluminescence into your egress systems. These solutions are ideal for use in industrial and environmental settings, commercial or residential buildings, theme parks, stadiums and even underground mines.

Save Energy, Save Money, Save Lives with Tucker Auto-Mation

Our products are easy-to-install, durable and provide a long reliable photoluminescent afterglow,ranging from a self-leveling easy to apply stair edging/nosing. Our Safety & Egress products range from a self-leveling easy to apply stair edging to permanent railing covers to a wide range of illuminating signage.

Contact us for more information about our Safety & Egress products or request a complimentary safety analysis..

Tucker AUTO-MATION DRIVEN

LUMAWARE™ BRINGING SAFETY TO LIGHT

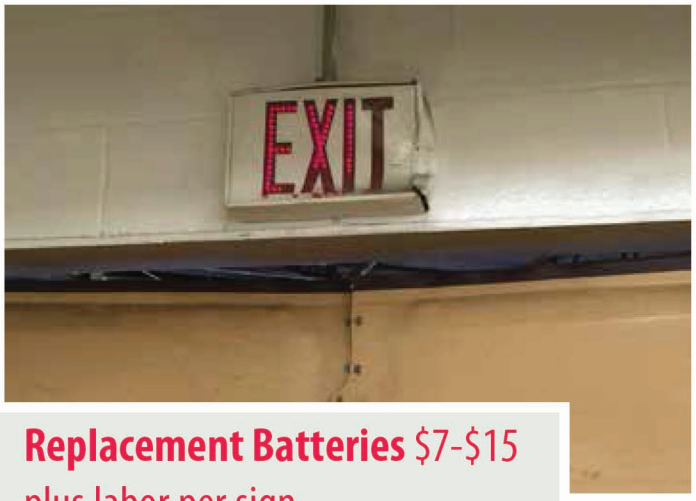
Toll Free: 1-855-8 TUCKER
Tel: 412-823-2537
Email: sales@tuckerauto-mation.com

Warehouse - Industrial EXIT Signs

Traditional Signs vs. Photoluminescent Signs

ENERGY EFFICIENT

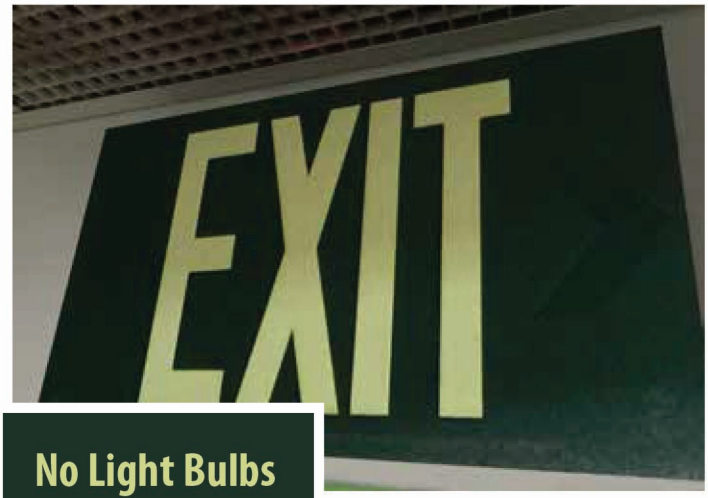
SAVE MONEY ON EXIT SIGNS!
Call: 412-823-2537



Replacement Batteries $7-$15
plus labor per sign

No Batteries

Replacement Bulbs $9 - $36
plus labor per sign



No Light Bulbs

Periodic Testing $20-$40 per sign per year

Operating Costs/Electric $4-$28
per sign per year

No Testing

No Electricity

Customer / Public Area EXIT Signs

How much money are you spending on each EXIT sign?

ENERGY EFFICIENT

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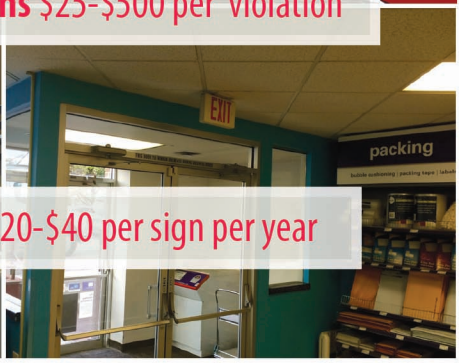
Replacement Batteries $7-$15
plus labor per sign

Fire Code Violations $25-$500 per violation

Replacement Bulbs $5 -$10
plus labor per sign



Periodic Testing $20-$40 per sign per year

Operating Costs/Electric $5 - $7
per sign per year

Eliminate these costs with Tucker Auto-Mation's photoluminescent EXIT signs.

in light

in darkness

Maintenance Free

- *No batteries to test or install*
- *No bulbs to replace*
- *No electricity required*
- *Lasts for decades*

Average 10 year savings $2,000,000*

****per 1,000 locations with 4 EXIT signs per location***

UL Listed

$300-$450 new installation cost savings per sign. No electrical conduit, wiring or labor required.

in light

in darkness

Compliance Certification

ENERGY EFFICIENT

CERTIFICATE OF COMPLIANCE

Certificate Number	20150401- E363520
Report Reference	E363520-20150331
Issue Date	2015-April-01
Issued to:	EVP INTERNATIONAL, LLC DBA MN8-FOXFIRE 10179 Wayne AVE Cincinnati OH 45215
This is to certify that representative samples of	EXIT SIGNS, SELF-LUMINOUS AND PHOTOLUMINESCENT "See Addendum page"
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	"See Addendum page"
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Assistant Chief Engineer, Global Inspection and Field Services

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus

Safety Analysis Summary

Tucker AUTO-MATION DRIVEN & LUMAWARE BRINGING SAFETY TO LIGHT

ENERGY STAR

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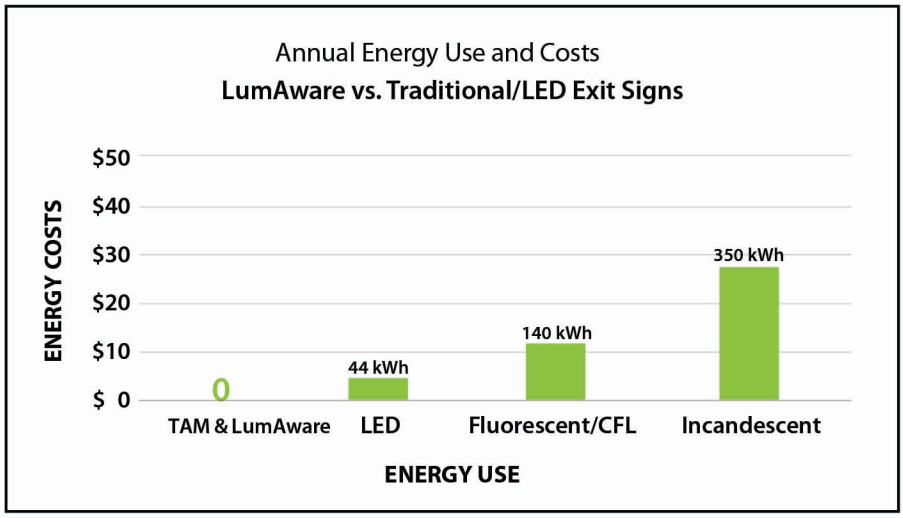
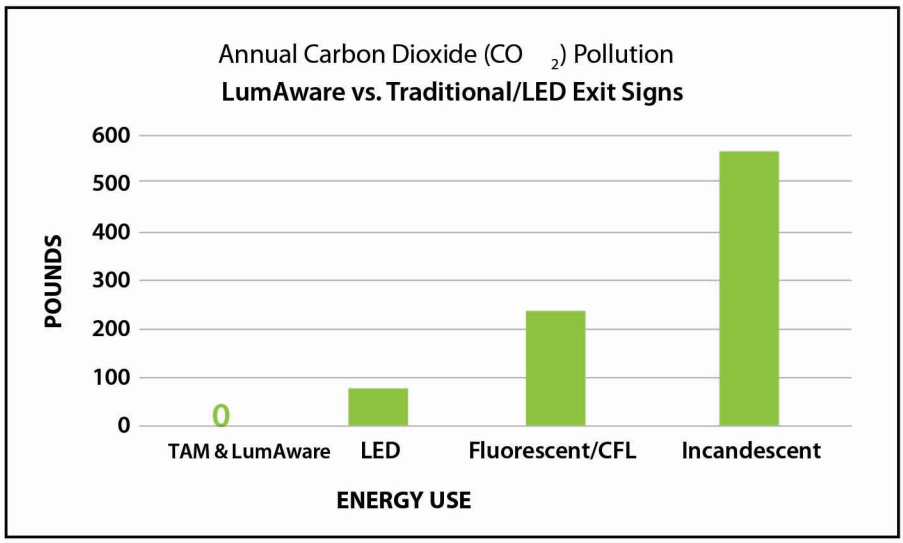
Exit Sign Energy Use by the Numbers

Exit Sign Lighting Technology	Annual Energy Use	Annual Energy Costs	Lamp Service Life	Annual Carbon Dioxide (CO_2) Pollution
TAM & LumAware Photoluminescent	0 kWh	$0	Not Applicable	0 Pounds
LED	44 kWh	$4	10+ Years	72 Pounds
Fluorescent/CFL	140 kWh	$11	10.8 Months	230 Pounds
Incandescent	350 kWh	$28	2.8 Months	574 Pounds

Table from www.energystar.gov and modified to include LumAware Photoluminescent.





Safety Analysis Summary

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Assumptions

It is widely believed that it costs between $200 and $500 for the sign cost and installation of a traditional or LED exit sign. For purposes of our analysis we have chosen costs in the low range at $280.

We have estimated the annual operating cost of LED, fluorescent and incandescent signs to be $57, $71 and $88 respectively. The TAM & LumAware exit sign has no annual operating costs.

Our analysis includes replacing each LED exit sign when they go bad at a cost of $40 ($30 for sign and $10 for labor).

In our analysis of existing locations, we have increased the cost of installation by $10 to remove the existing exit sign and cap the electricity.

ASSUMPTIONS

	TAM & LumAware	LED	Fluorescent	Incandescent
INSTALL				
Sign Cost	$120	$ 30	$ 25	$ 20
Labor	10	250	250	250
	$130	$280	$275	$270
ANNUAL COST				
Batteries	$ -	$ 15	$ 15	$ 15
Bulbs	-	-	15	15
Periodic Testing	-	30	30	30
Electricity	-	4	11	28
Replacement Sign *($30 ea x 20%)*	-	6	-	-
Replacement Labor *($10 ea x 20%)*	-	2	-	-
	$ -	$ 57	$ 71	$ 88

Annual Cost SAVINGS of $50-$85+ dollars per year per sign

Monthly inspections – According to NFPA101, electric exit signs must undergo a 30-second test every month.

NO ANNUAL TESTING REQUIRED WITH TAM & LUMAWARE SIGNS

NFPA

Yearly inspections – NFPA101 also requires that electric exit signs simulate being on battery backup for 90 minutes every year.

Safety Analysis Summary

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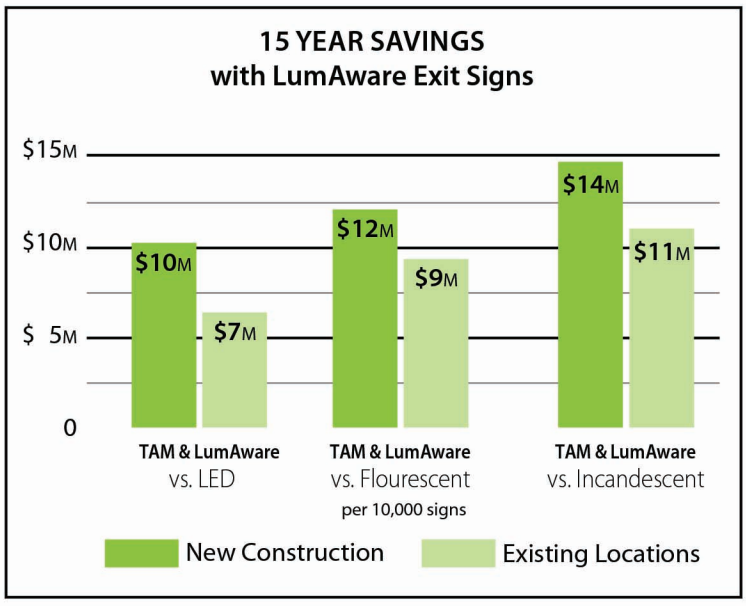
Tucker Auto-Mation & LumAware Safety Exit Sign Savings per 10,000 Signs

	TAM & LumAware vs. LED	TAM & LumAware vs. Flourescent	TAM & LumAware vs. Incandescent
NEW CONSTRUCTION			
Immediate Install Savings	$ 1,500,000	$ 1,450,000	$ 1,400,000
15 Year Savings	$10,050,000	$12,100,000	$14,600,000

EXISTING LOCATIONS			
Initial Investment	$ 1,500,000	$ 1,500,000	$ 1,500,000
ROI	570 %	710 %	880 %
Total Savings (15 Years)	$ 7,050,000	$ 9,150,000	$11,700,000
Payback in Years	2.6	2.1	1.7
IRR	38 %	47 %	59 %

ROI - Return on Investment IRR - Internal Rate of Return



$7-14+ million dollar SAVINGS per 10,000 signs

Safety Analysis Summary

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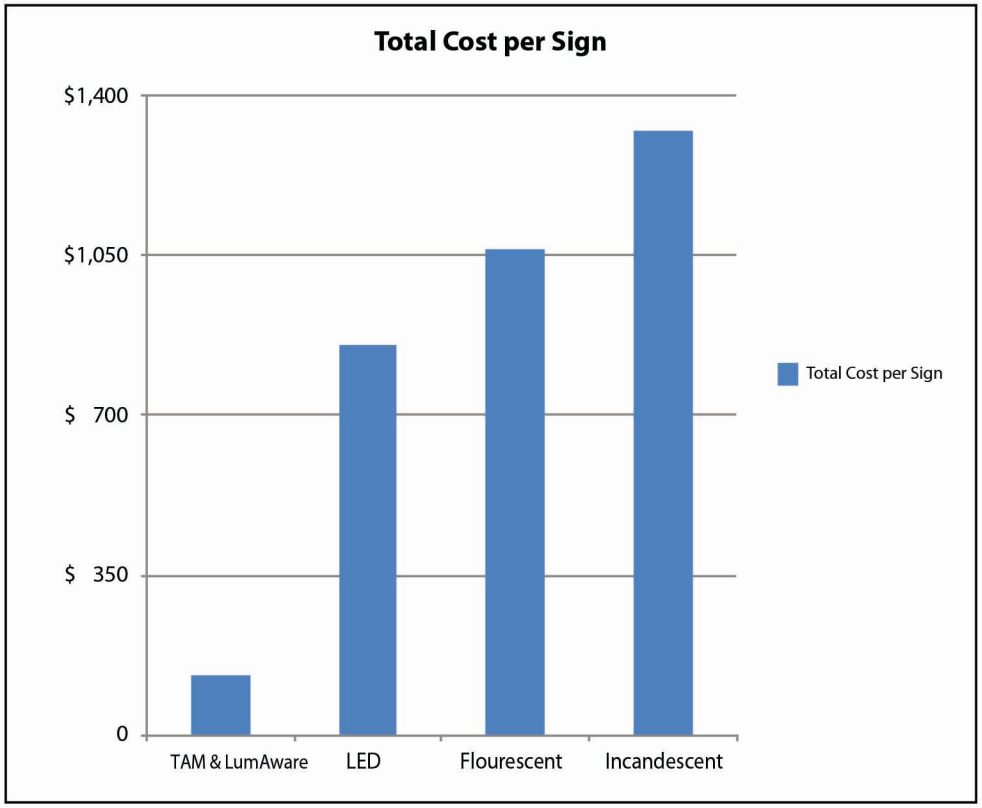
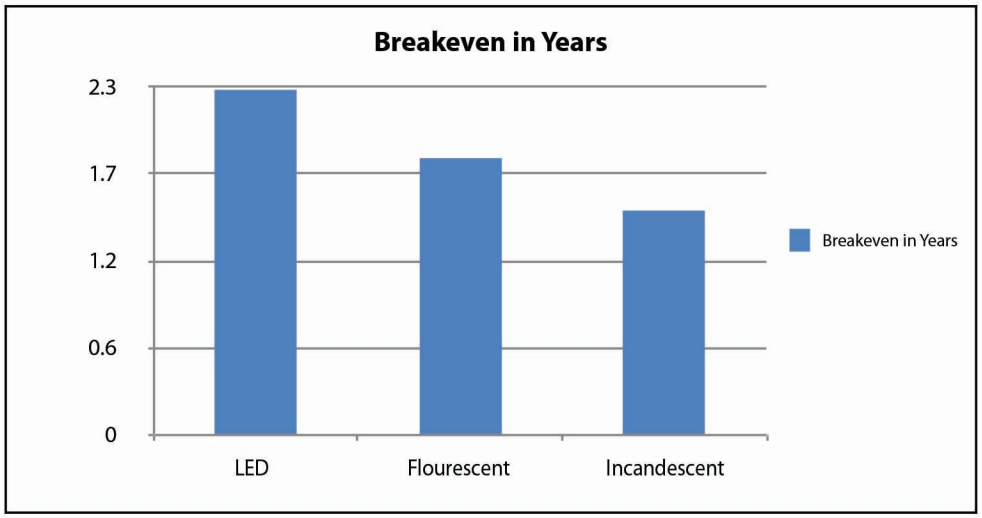
Total 15 Year Costs – Existing Locations



Breakeven in Years – Existing Locations



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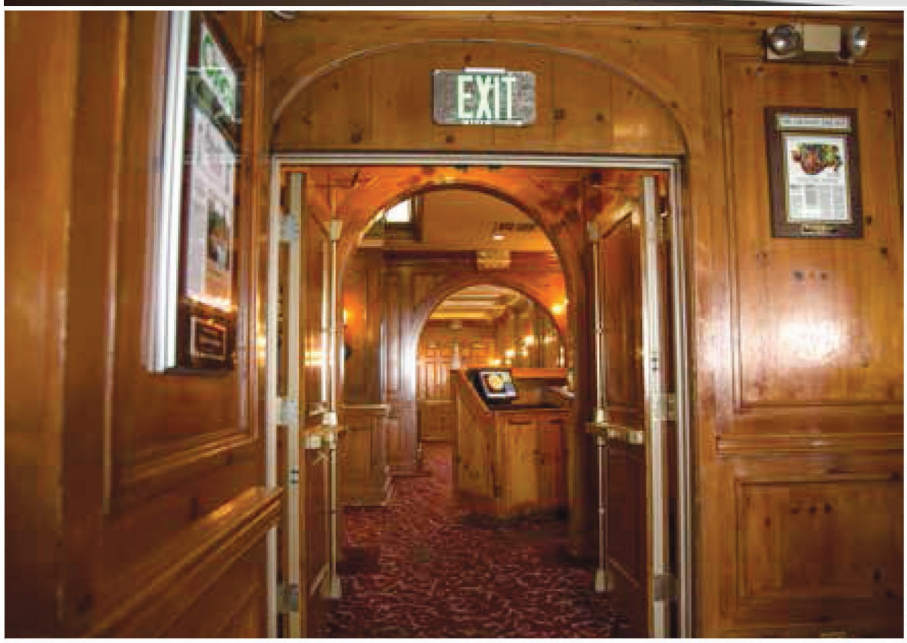

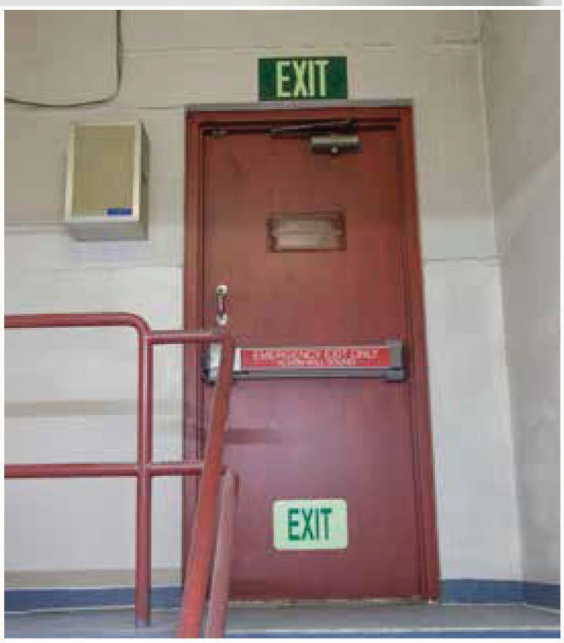

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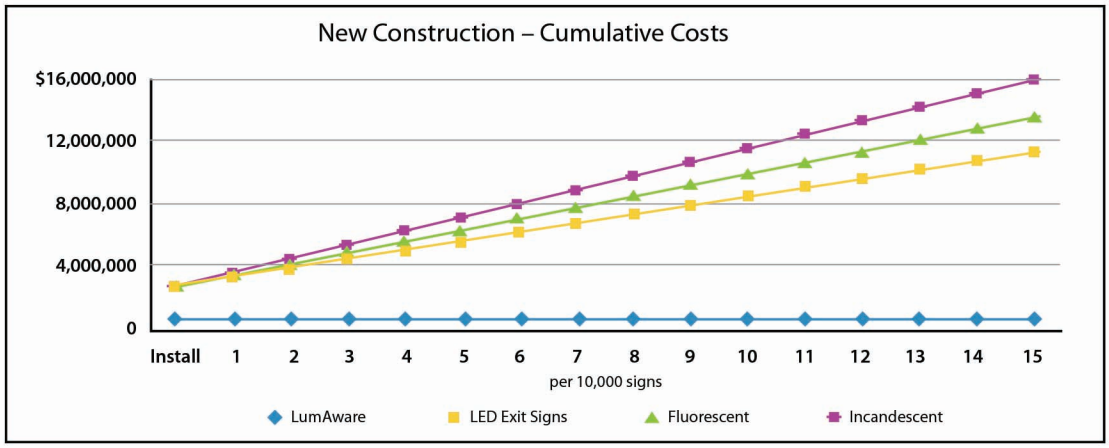

Maintenance Free

Never have to replace another exit sign.

Our products are durable, easy-to-install and provide a long, reliable photoluminescent afterglow.

UL listed to meet the NFPA standard for EXIT signs — UL Listed

Safety Analysis Summary

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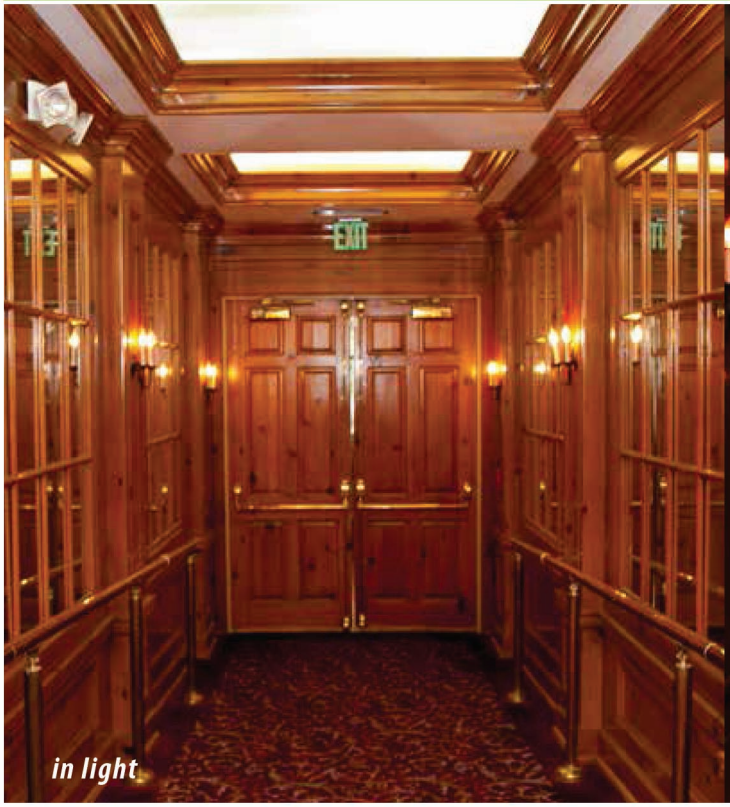
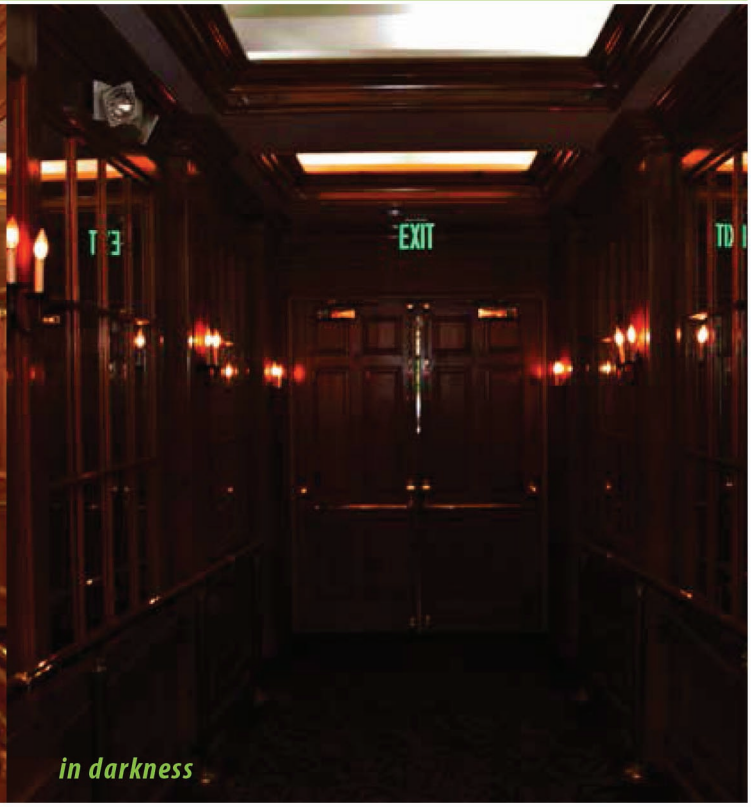


in light



in darkness

Safety & Egress

Illuminating the Way!

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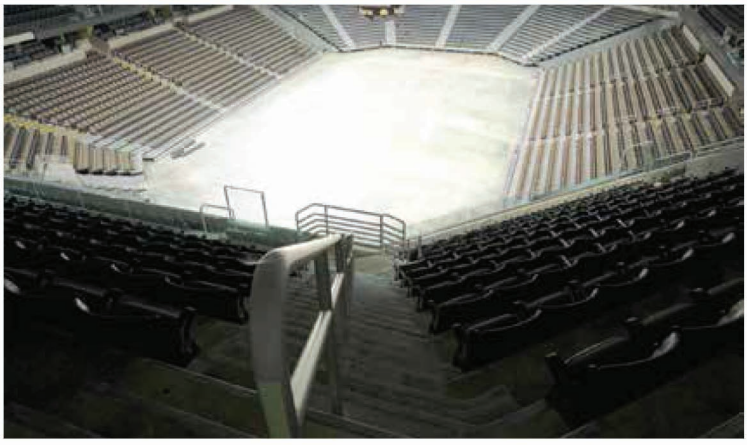

TAM & LUMAWARE SAFETY

Bringing Safety to Light

Tucker AUTO-MATION DRIVEN & LUMAWARE BRINGING SAFETY TO LIGHT

Illuminating Floors, Signs and More

LumAware offers innovative, flexible and comprehensive solutions for integrating photoluminescence into your egress systems. These solutions are ideal for use in industrial and environmental settings, commercial or residential buildings, stadiums and auditoriums and even underground mines and tunnels.

The Advanced Photoluminescent Technology® featured in LumAware's photoluminescent safety signage is extended to LumAware's unique photoluminescent epoxy products. These include an easy-to-use patented illuminating epoxy delivery system for line striping and stair edges. Floors, stairs, pathways and line striping can be easily coated with LumAware's illuminating epoxy. LumAware illuminating safety signage and illuminating peel and stick – railing covers are inexpensive and effective ways to increase the visibility of hand rails and meet the IBC/ASTM standards for egress.

LumAware products are easy-to-install, durable and provide a long, reliable photoluminescent afterglow.

What is Photoluminescent Technology?

Photoluminescent technology involves mixing suspended photoluminescent (light storing) crystals into materials. Photoluminescent crystals possess the unique capacity to absorb and store energy from ambient light during normal conditions. When a room is darkened, the pigments emit a glow by releasing the stored light energy. Products sold by LumAware have been tested to emit "afterglow" for up to 80 hours in laboratory testing. More important is the functional time. The functional time for LumAware products will last much longer than it takes for everyone to exit a large stadium. LumAware products only take a few minutes of light source exposure to fully recharge.

Photoluminescent technology has been used for industrial safety and egress applications in Europe for a number of years. However, it was not readily used in the United States until after the 1993 World Trade Center truck bombing. Due to thousands of people becoming disoriented in the stairwells with no electricity or lights, New York City began using photoluminescent technology in its buildings. As a result, when attacks occurred on September 11, 2001, photoluminescent technology effectively led almost 20,000 civilians to safety (building occupants attested that photoluminescent markings helped them quickly navigate and orient themselves). This life saving technology was mentioned multiple times in the official 9/11 Commission Report. Studies of the 9/11 World Trade Center events led New York, Connecticut, California, Florida and Tennessee municipalities to require photoluminescent markings in their commercial buildings to aid in emergency evacuations.

In 2009, the International Code Council adopted International Building Code Section 1024 and International Fire Code, 4604.23, mandating that all nonresidential buildings, new and existing, over 75 feet in height must install photoluminescent exit path markings in all enclosed emergency stairwells and low level exit signs.

Benefits:

- No batteries to test or replace
- No electricity required
- Energy cost savings
- No maintenance
- Durable
- Low flammability
- Non-toxic, non-radioactive
- Lasts for decades
- Fail-safe system
- Meets or exceeds:
  - ~ New York City Local Law 26 Emergency Action Plan
  - ~ ASTME 2072
  - ~ Chapter 10 (Luminous Egress Path Markings) of International Building Code (IBC) & International Fire Code (IFC)

TAM & LUMAWARE SAFETY

Bringing Safety to Light

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Why Integrate Photoluminescence Into Your Egress Systems?

Despite meeting local codes, most buildings and structures have insufficient emergency lighting. During smoke conditions, emergency signage lit by electricity is frequently obscured. Even back-up electrical systems can fail during an emergency situation due to water or heat damage. During some situations (such as the 9/11 Pentagon attack), back-up power was actually turned off to prevent firefighters and others from being electrocuted.

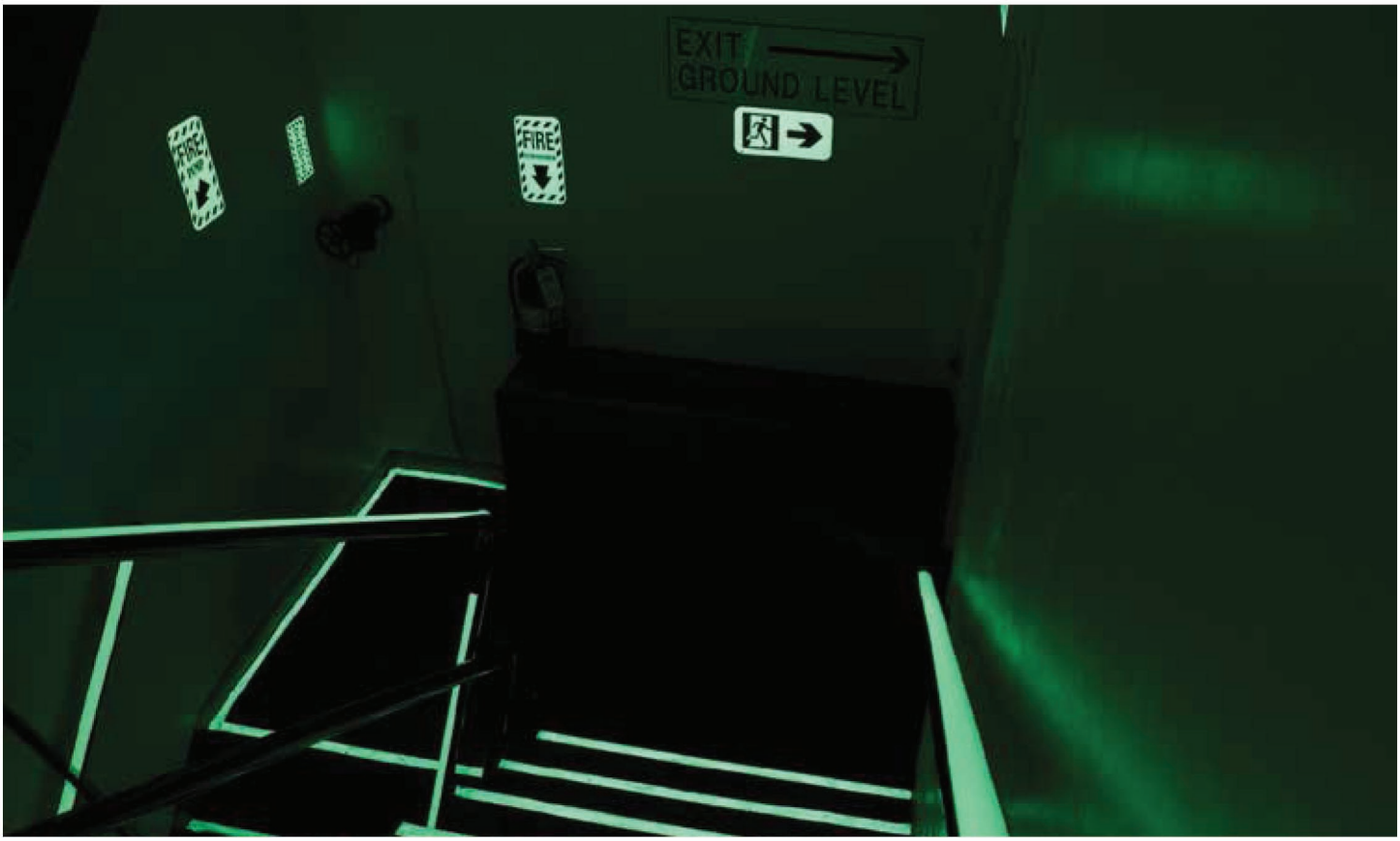
LumAware photoluminescent egress products don't rely on external power. They can provide reliable life-saving exit guidance in any conditions. LumAware products can also save time and money. Instead of replacing expensive egress systems, LumAware photoluminescent products are maintenance free and long lasting. With the use of LumAware photoluminescent egress products you will eliminate the operational costs of electrical run signage; saving significant energy costs every year.

Exceeding Building Codes

The International Code Council (IBC/IFC) and many jurisdictions now require exit path markings. The International Code Council adopted into the 2009 International Building Code Section 1024 and International Fire Code, 4604.23, mandating that all nonresidential buildings, new and existing, over 75 feet in height must install photoluminescent exit path markings in all enclosed emergency stairwells.

The International Building Code, published every three years, is in use in every state in the United States of America. Most states are in the process of adopting the 2009 I-codes into their jurisdictions.

We recommend LumAware to be used in addition to fire and building codes, not to replace. Simply stated, our products exceed building codes requiring photoluminescent exit path markings. Using our experience as a firefighter owned company and the knowledge of the hundreds of firefighters who helped develop our products, we go above and beyond in our measures to help you get your building occupants out safely and efficiently, when an evacuation is required.



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Following are some of the U.S. building codes that require photoluminescent exit path markings. Check with your local authorities for specifics in your area.

- 2009 International Building Code, 403.16 & 1024, a requirement that all non-residential buildings Groups A, B, E, I, M, and R-1 for new construction over 75 feet in height must install Photoluminescent Exit Path Markings in all enclosed emergency exit stairwells.
- 2009 International Fire Code. Section 4604, requirement that all non-residential buildings Groups A, B, E, I, M, and R-1 for existing construction over 75 feet in height must install Photoluminescent Exit Path Markings in all enclosed emergency exit stairwells.
- NFPA 101 and 5000 Section 7.2.2.5.5. Exit Stair Path Markings All Buildings. Effective January 2009.
- State of California Building Code, Chapter 10, Means of Egress requires in Group A, E, I, R-1, R-2 and R-3 Occupancies, in Exit corridors leading to Emergency Exit stairwells. Effective January 2008.
- State of Connecticut requires in Group A, B, E, I-1, I-2, R-1 and R-2 occupancies, in Exit corridors leading to Emergency Exit stairwells. Effective January 2008.
- New York City Building Code Reference Standard RS 6-1 requires in all enclosed Emergency Exit stairwells. Effective July 2008 for all non-residential structures.
- General Services Administration requires Photoluminescent Exit Path Markings in all new and existing buildings. Effective January 2009.

Uses:

- Exit/egress markings
- Line-striping systems
- Stair edging/noses
- Flooring/pathways
- Hallways
- Stairwells
- Door frames
- Door knobs
- Light switches
- Windows
- Fire Extinguishers
- And more

TAM & LUMAWARE SAFETY

Bringing Safety to Light

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Low Level EXIT signs

Remember those fire safety talks as a little kid? They told you to stay down low and crawl when you encounter smoke. Smoke rises and tends to increase in volume and intensity near doors and exits. Then why are traditional EXIT signs high above the door and ceilings.

Why do most codes require they be located near the ceiling when smoke would obscure them and render them useless?

The answer is simple – Tombstone Regulations.

Tombstone Regulations are basically waiting for people to die before requiring improvements in codes and regulations. One of the worst fires in the history of Las Vegas occurred when an out of control kitchen fire spread to the ventilation system of the famed MGM Grand Hotel. Smoke quickly filled the hallways and obscured most of the lights and EXIT signs. Panicked people did not know which way to egress and exit the building. eighty seven people never found the way to safety and perished.

Las Vegas learned from this tragedy and eventually required all hotels to require low level exit signage. If you walk down any hallway in Las Vegas you can see the results of these *tombstone regulations. Why are virtually no other buildings outside of Las Vegas not following their lead?*

It's great that low-level EXIT signs are installed but traditional electric EXIT signs do have some drawbacks.

One of the main problems with traditional plastic EXIT signs placed down low is that they are frequently damaged by luggage carts, vacuum cleaners and people accidently kicking them. Additionally, they can be costly to install and maintain. Electric EXIT signs need to be tested monthly (as required by the NFPA) and are expensive to maintain because of electricity,

replacement batteries and light bulbs. There is a better alternative…MN8 LumAware UL listed EXIT signs and photoluminescent wayfinding solutions.

LumAware's PL (photoluminescent) EXIT signs are a superior alternative as they are maintenance free, very durable and cost almost nothing to install. In addition to the benefits LumAware's 35+ different styles of PL EXIT signs, LumAware also has a patented stairwell illumination system that has been tested by UL to meet the ASTM E2072/3 standards of the IBC, IFC, ICC codes. This stairwell illumination system can help people find their way down stairwells in the event of a fire or electrical failure that would normally leave them in complete darkness.

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LumAware and LEED

EA Credit #1
Energy and Atmosphere:
Optimizing Energy Performance

To qualify for this LEED V2.2 Credit [worth up to 10 points] a building project must demonstrate improvement in the proposed building energy performance compared to a baseline criteria specified in ASHRAE/IESNA Standard 90.1, or comply with prescriptive measures of ASHRAE 'Advanced Energy Design Guide for Small Office Buildings', or comply with the 'Basis Criteria and Prescriptive Measures' of the Advanced Buildings Benchmark. More points are awarded to building projects using less energy than "baseline" guidelines prescribed by ASHRAE or the Advanced Buildings Benchmark.

With respect to exit signs, these guidelines are formulated on the basis of installing modern LED exit signs which use about 5 watts of power. Although the impact of a few exit signs using 5 watts is not significant, larger facilities can employ thousands of exit signs in high and low applications. Recognizing that electrically powered exit signs must be energized 24 hours/day x 365 days/year, a typical large building project with 500 LED exit signs, each using 5 watts of power, burns nearly 22,000 kwh of electricity annually, costing about $3000 at $.14/kwh.

Since LumAware Exit Signs are charged from nearby area lighting and require no direct power, there is no related electricity cost. Consequently, MN8 LumAware® Exit Signs will positively contribute to the calculations that determine the energy efficiency of a building project. Depending upon the number of exit signs in your building, this additional energy savings can be significant in obtaining points toward EA Credit #1

MR Credit #4
Materials and Resources:
Recycled Content

MR Credit #4 requires that 10% of the dollar value of permanently installed project materials consist of recycled content. The recycled content value of a material is determined by its adjusted recycled weight [=100% post consumer component weight + 50% pre-consumer component weight] multiplied by the total dollar value of the assembly.

Since several MN8 LumAware® Exit Signs are made primarily of metal with a high recycled content, these exit signs will contribute greatly toward this credit.

As an example, for a typical $89.95 aluminum wall mount Photoluminescent Exit Sign that weighs approx. 12.8 ounces:

- Post-consumer recycled content component weight = 5.9 ounces
- Pre-consumer recycled content component weight = 2.5 ounces
- Non-recycled component weight = 4.4 ounces

Recycled content value = [100% x [5.9/12.8 + .5 x 2.5/12.8]] x $89.95 Of one exit sign = $49

ID Credit #1.1
Innovation in Design:
Significant Environmental Benefits

There are two avenues available to obtain Innovation in Design points. Using MN8 LumAware® Exit Signs works best with the avenue whereby the project team demonstrates a comprehensive approach toward employing a product or technology that has significant environmental benefits not addressed or credited in other LEED categories. The comprehensive approach targets optimizing the benefits and trade-offs of an innovation proposal throughout its life cycle phases: design, procurement, construction, operational and decommissioning. The advantages of MN8 LumAware® Exit Signs span all the life cycle phases with the following environmental benefits:

- Fewer Building Materials Required
- Energy Efficient
- High Percentage of Recycled and Recyclable Materials
- No Hazardous Materials or Wastes
- Longer Lifespan
- Less Maintenance

U.S. GREEN BUILDING COUNCIL LEED USGBC

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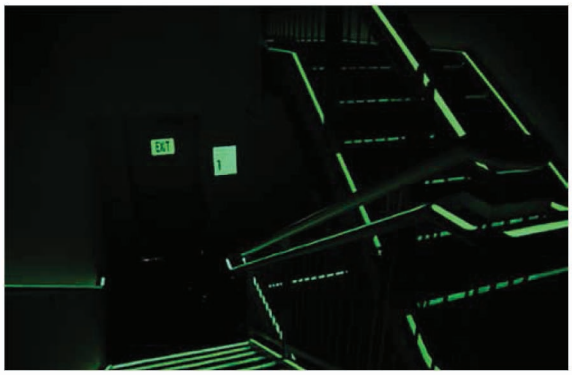


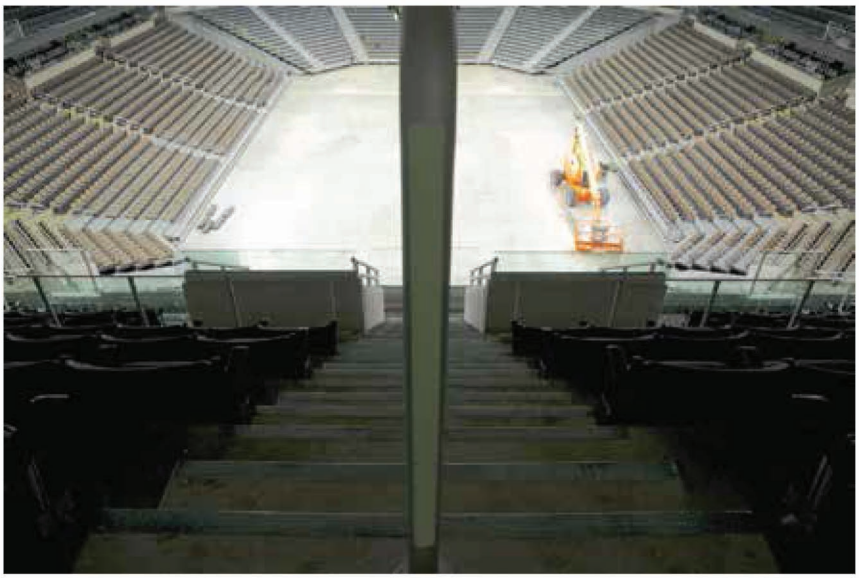
> *"Average American experiences 214 minutes of blackout per year."*
>
> – **History Channel**
> "Crumbling of America" episode

> *"We are very pleased with the results of our LumAware egress installation. When the lights are on, the LumAware products are practically invisible and don't take over the venue. However, if the lights go out the product is going to safely lead people out. It's a fool proof safety enhancement."*
>
> – **Bill Kashatus**
> Director of Operations,
> BB & T Center

Arena Solutions

Back-up generators are inherently unreliable because they rely on multiple factors to function. Additionally, there is often a time delay before back-up generators are fully operational, causing building occupants to experience complete darkness. In Feb. of 2013, one of the largest sporting events in the world experienced not only a power outage but a generator failure in New Orleans.

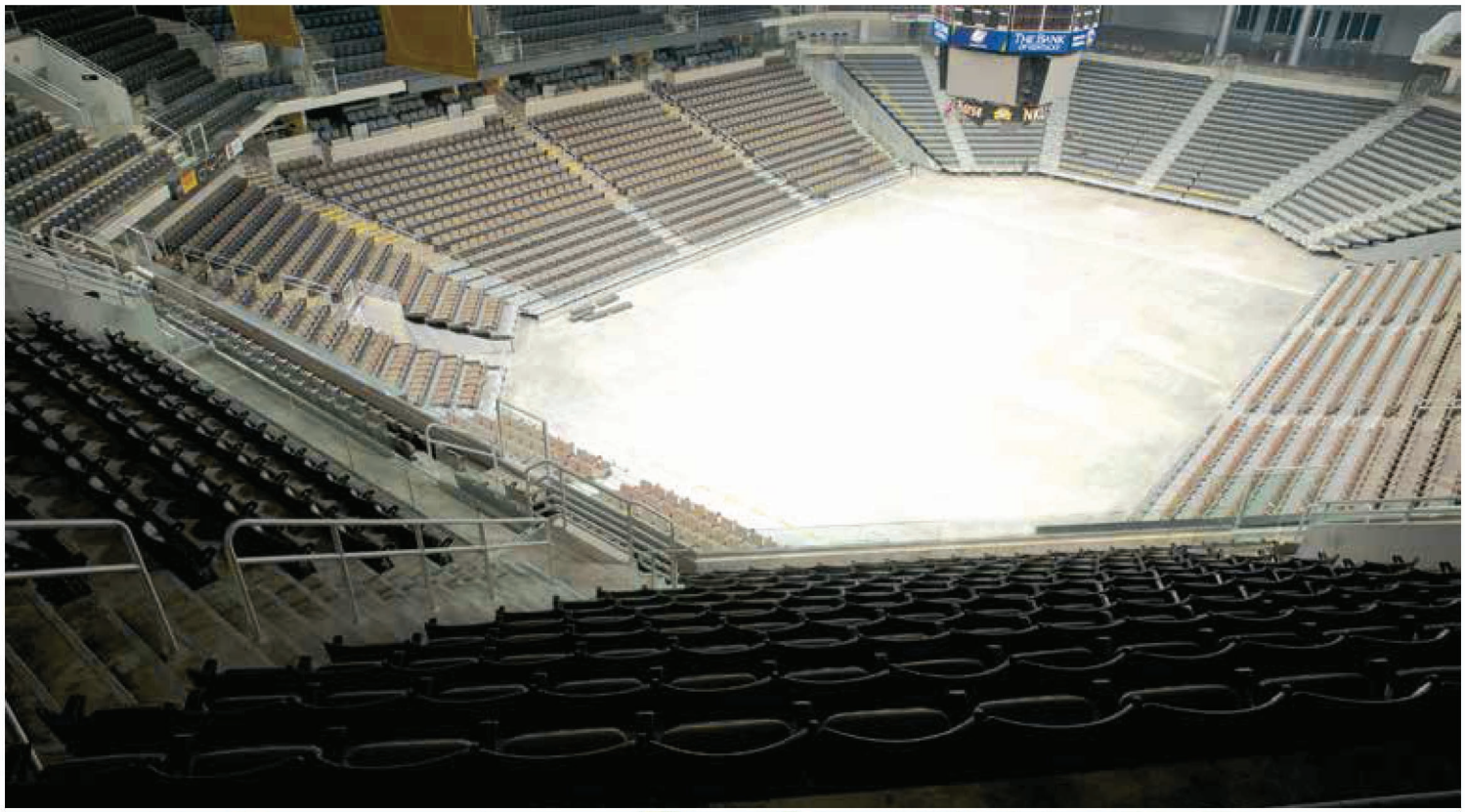
If you are concerned whether your egress routes, hallways and stairs will be visible and prominent during a power outage, please contact a LumAware representative to receive a complimentary in-person safety analysis.



TAM & LUMAWARE SAFETY

Bringing Safety to Light

Tucker AUTO-MATION DRIVEN & LUMAWARE BRINGING SAFETY TO LIGHT



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