



# PLSN

Vol. 25.07  
August 2024

plsn.com

## PROJECTION LIGHTS & STAGING NEWS



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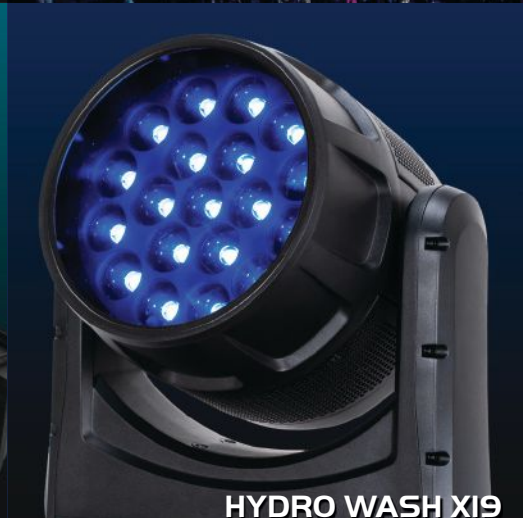
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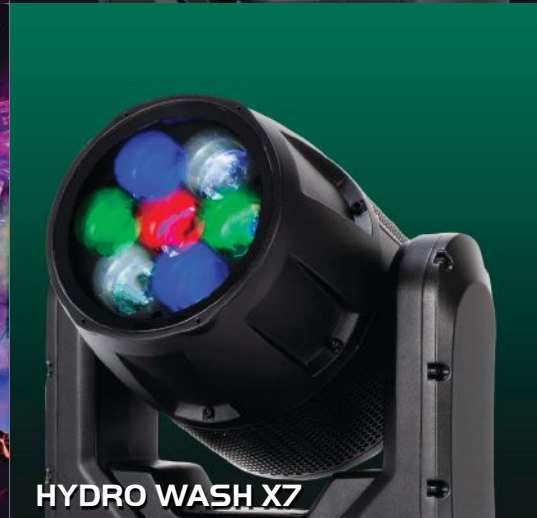
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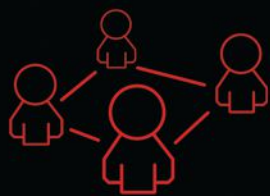
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### Control

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sACN, timecode),  
free design software,  
content cloud & mobile app.



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### FEATURES

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The creative studio, Raw Cereal have created a massive stadium-scale show for Morgan Wallen and *PLSN* shines the spotlight on the production details, speaking with Designer Cort Lawrence, as well as Screens Producer Aron Altmark and Production Manager Chad Guy. Plus there are Vendor Views from some of the supporting production companies.

#### 34 Behind the Design

Pearl Jam's *Dark Matter World Tour 2024* features a production design by Spike Brant of Nimblist, a lighting design by Kille Knobel, and video/screens production by Rob Sheridan. The three creatives share their thoughts with *PLSN*.



#### 38 Wide Focus

The Electric Forest Festival returned to the Double J Ranch in Rothbury, MI in late June. Production Director Hadden Hippsley worked with Lighting Designer Michael Smalley and Aaron Soriero of Music Matters Productions to transform the look of the acts on stage (and surrounding woodlands) with vibrant flourishes of lighting and projection.

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Girls Aloud are back on the road with a lively, edgy, pop-tastic tour, creatively directed by Beth Honan and lit by Peter Barnes. Lighting, video, automation and rigging equipment—including some new innovations—and crew are all supplied by PRG UK to Production North, playing UK and Irish arenas including five sold out nights at London's O2.

#### 42 Milestone

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Kevin M. Mitchell chats with Sarah Kufel, who got her foot in the live event industry's door in 2015 with a learn-on-the-job opportunity as a Merchandise Manager. Fast-forward to 2024, and she's garnered enough experience to be a sought-after Tour Manager.

#### 46 Industry Conversation

Adam Davis, Chief Executive Officer of TAIT, spoke with *PLSN* about the acquisition of a majority stake in the company by the Private Equity business at Goldman Sachs Alternatives. He also shares the vision for TAIT going forward as an industry leader.

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Eddie "Bones" Connell, a Parnelli winning Lighting Director, talks about his time as the longtime Lighting Director for the late country star Toby Keith and his career today, and he has some advice to share.



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Lighting the way for *Illinois*, an offbeat musical that hit the big time on Broadway with four Tony Award nominations, including Best Lighting Design for Brandon Stirling Baker's joyous lighting on his Broadway debut. Also a bit about the lighting at the award-winning Opera *Baltycka* in Gdańsk, Poland and for Wagner's *Ring Cycle* at the Finnish National Opera.

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#### 52 LD-at-Large

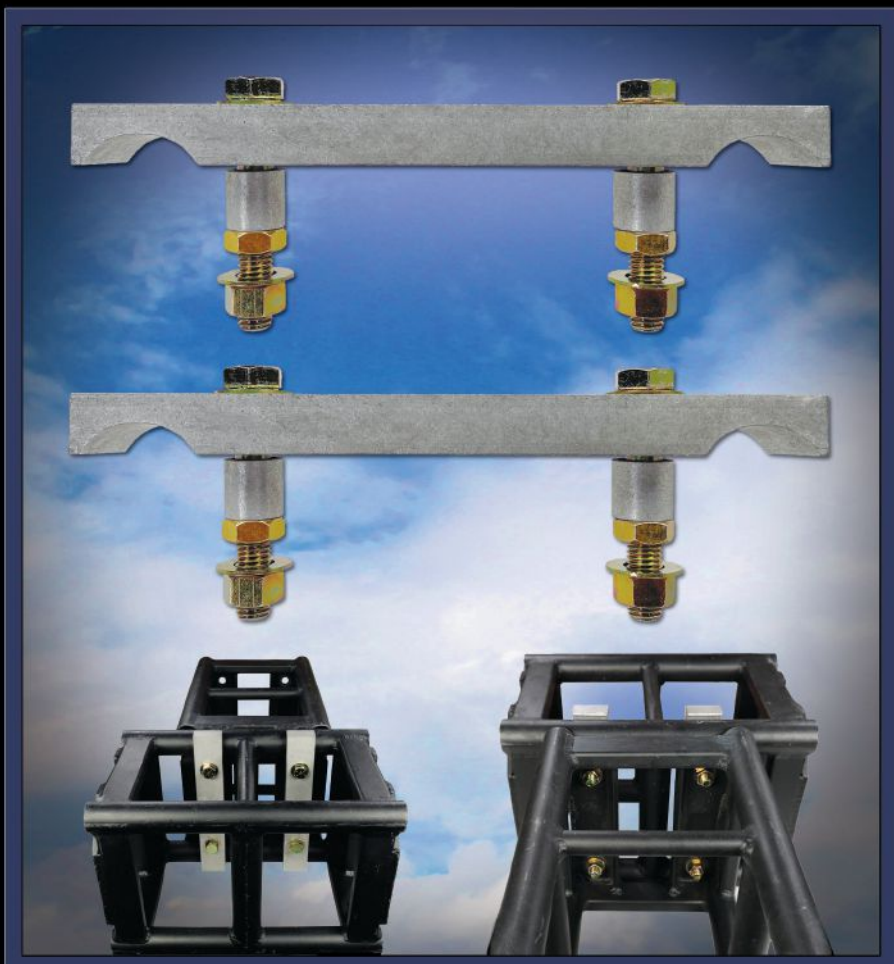
Chris Lose discusses the importance of instilling and nurturing confidence—in lighting providers, co-workers, visual technologies and ourselves. Don't do a trustfall without it.

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**Projection, Lights & Staging News** (ISSN: 1537-0046) Volume 25, Number 07, August 2024. Published monthly by Timeless Communications Corp. 6700 Via Austi Pkwy, Suite C, Las Vegas, NV 89119. It is distributed free to qualified individuals in the lighting and staging industries in the United States and Canada. Periodicals Postage paid at Las Vegas, NV and additional offices. **POSTMASTER:** Send all UAA to CFS. **NON-POSTAL AND MILITARY FACILITIES:** send address corrections to **Projection, Lights & Staging News**, P.O. Box 16655 North Hollywood, CA 91615. Mailed in Canada under Publications Mail Agreement Number 40033037, 1415 Janette Ave., Windsor, ON N8X 1Z1. Overseas subscriptions are available and can be obtained by calling 702.932.5585. Editorial submissions are encouraged, but must include a self-addressed stamped envelope to be returned. **Projection, Lights & Staging News** is a Registered Trademark. All Rights Reserved. Duplication, transmission by any method of this publication is strictly prohibited without permission of **Projection, Lights & Staging News**.

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# Spotlighting the Lighting Hometown Heroes



By Michael S. Eddy

Welcome to the August issue of *PLSN*. As the summer is half over and we are looking ahead to

fall, it's time to start thinking about the upcoming Parnelli Awards and the Hometown Hero Awards. The nominations process is



now open for the Hometown Hero Award, Lighting, which recognizes the vital work of regional, local

lighting production companies and rental houses. This is the chance for anyone in our industry to nominate the local companies and shops that are vital to making sure the show goes on. The Hometown Heroes are the companies that you work with on a regular basis or who when you were passing through saved your bacon. Through thick and thin, they're the ones as an industry are counted on for gear, service, and expendables. This award—from nominations to winners—is selected by you, the *PLSN* readers, because you truly know who the Hometown Heroes are in the industry. Let us know your favorites (and, yes, you CAN nominate your own company). Please note that nominations are due by August 23, 2024, at 5 p.m. PDT. To nominate a company, go to [bit.ly/PLSN\\_HHNoms](https://bit.ly/PLSN_HHNoms).

Many of those Hometown Heros are



Jelly Roll at Tampa's Dallas Bull

right in the thick of things as the moment, as it's been a busy summer for touring music, with many artists out on the road playing arenas, sheds, and stadiums. This month we take an in-depth look at the massive video system and production of Morgan Wallen's *One Night at a Time* tour that's touring stadiums across North America, with a design from creative and production studio Raw Cereal. Wallen has gone from his last tour being all sheds with one baseball park to now selling out NFL stadiums. Interestingly, Wallen had to cancel the second night of his Tampa, FL show due to being sick, but it turned into a Hometown Hero moment for ESI Productions, when opening act Jelly Roll found a local venue—Tampa's Dallas Bull, a 2,500 capacity country bar—to perform in that

evening. ESI within a couple of hours was able to get some additional gear over to the venue supplementing the house's rig and audio setup. With a projected Jelly Roll logo on screen, Jelly Roll gave some of his fans a show they won't soon forget.

We also speak with the design team on the latest Pearl Jam tour in support of their recent album, *Dark Matter*. Much of the album art is very visual and was created using light painting. This was the inspiration that led to Pearl Jam to using video content heavily on this tour, which was projected on a massive arena-width projection screen. We also have our usual run of columns, which we hope that you will enjoy and take away some new and positive information. Chris Lose looks at trust and confidence while Rachael Bronstein helps us better un-

derstand credit in relation to our financial well-being.

I also want to take a moment to note that it was with great sadness that I learned of the passing of television lighting legend, Bill Klages at the age of 97. Bill was a consummate professional who started out as an engineer in the early days of television and quickly moved into lighting for the medium. Not happy with the re-purposed theatrical lighting fixtures that were sold to television stations, Bill pushed for better lights that were used specifically in the film industry to create better lighting for TV. His list of credits over his more than six decades of lighting is impressive, as is his lengthy list EMMY nominations and awards. Personally I was fortunate to speak with Bill on several occasion of the years and he was always kind, entertaining and generous with his stories and knowledge. I enjoyed every conversations with him and will miss his insight and anecdotes. We have more about Bill Klages' life in an In Memoriam on page 14.

We should all have as full a career, rich with wonderful experiences and stories in this industry. And I will happily share them all in *PLSN*. So, as ever, please feel free to reach out to me with feedback, story suggestions and what you'd like to see covered in the pages of *PLSN* magazine at [meddy@timelesscom.com](mailto:meddy@timelesscom.com) **PLSN**

**Michael S. Eddy**  
Editor, *Projection, Lights & Staging News*

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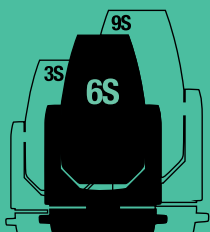
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## Hometown Hero Nominations Open

Each year, PLSN honors regional lighting production companies with our Hometown Hero award. This award honors the best regional lighting production company in six regions across North America: the Northeast, Southeast, Midwest, Northwest, Southwest, and Canada. This award—from nominations to winners—is selected by you, the PLSN readers, because you truly know who the Hometown Heroes are in the industry. Let us know your favorites (and, yes, you CAN nominate your own company). We want to know the top companies in YOUR region. Nominations are due by August 23, 2024, at 5 p.m. PDT. To nominate a company, go to [bit.ly/PLSN\\_HHNoms](https://bit.ly/PLSN_HHNoms)

## ISE 2025 Innovation Park

Integrated Systems Europe (ISE) trade show has announced a brand-new Innovation Park for ISE 2025. Centrally located in Congress Square, this dynamic initiative is set to take place on every show day from February 4-7, 2025 and promises to be an unmissable opportunity for startups to showcase breakthrough business ideas and connect with industry leaders. Innovation Park will include a dedicated Investors Lounge, an exhibition area, as well as a Pitching Stage programmed on all four days of the show by start-up venture capital experts Plug & Play. Applications to take part in Innovation Park are now open at [bit.ly/ISE2025\\_InnovationPark](https://bit.ly/ISE2025_InnovationPark)

## BTS 2024 Holiday Cards

The 2024 Behind the Scenes Holiday Cards are now available for purchase

online at the BTS Boutique. This year's collection features six different designs created by Ola Krasz-pulska, Rick Martin, Robert Mendoza, and Court Watson. BTS Holiday Cards are available in a variety of options in

both print and electronic file formats. Orders for printed cards will only be taken until September 26, 2024 so don't wait! All orders will arrive by late November. Electronic card orders will be taken until December 13th. View and order cards at [bit.ly/BTS\\_HolidayCards2024](https://bit.ly/BTS_HolidayCards2024)



## Raw Cereal Brings True Color to Lainey Wilson

Design Studio Raw Cereal trust Elation fixtures on Lainey Wilson tour

Cort Lawrence and Anders Rahm are the team known as Raw Cereal studio and one of their hottest clients is country music's Lainey Wilson, a star who is clearly on a steep upward trajectory. She's out on extensive tours with video-rich designs by Raw Cereal, with Elation lighting playing a complementing role in the visual look. "We're happy to be using some great lights as support in this design," Lawrence remarks. "They really help us bring the show to life by capturing the essence of the music and creating custom looks for each song, which makes for a more captivating experience for the audience."

The 2023 American Country Music Awards Entertainer of the Year and 2024 GRAMMY Award-winner, Wilson opened her massive 2024 headlining tour with back-to-back sold-out shows at Nashville's Ascend Amphitheater. A shooting star in country music, the singer/songwriter has toured Australia, Europe, and the U.S., all in just a few months. "Lainey is a whirlwind of energy that has really caught the world's attention," Lawrence



stated of the country singer's quick rise to fame. "She is hard working, has great music and a great band and we are proud to have been brought on as Creative Producer, Lighting Designer and Show Director for her latest *Country is Cool Again* U.S. tour."

Lawrence uses what he calls the "tried and true" combination of PROTEUS RAYZOR BLADE L and RAYZOR series fixtures as part of a larger lighting package provided by Fuse. "On Lainey, we again turned to the PROTEUS RAYZOR BLADE L and PROTEUS RAYZOR 760, but added in the PROTEUS RAYZOR 1960 with its larger face and greater power for big pops of color and wash across the stage." Lainey's set features an orange pickup truck center

stage that rotates on a TAIT rotator and high-lighted using PROTEUS RAYZOR 760s. The PROTEUS RAYZOR 1960's populate two horizontal truss on each side of the stage. "I think they're the most beneficial light in the show," Lawrence says of the 1960s. "Everything in the center is focused around the video wall but the negative space on the sides gives the 1960s room to breathe. They pop and with the dark background they really show their true colors." The linear PROTEUS RAYZOR BLADE L lights line a top truss with more units tucked below the video wall just behind the truck. More RAYZOR BLADE units work at ground level from each side of the stage.

The Lainey Wilson production is a collaborative team effort, and Elation is proud to play an important role. In conclusion, Lawrence reflects, "Elation has changed immensely over the last many years and now they have some of the best products on the road. We choose Elation because they are innovative and continue to push the boundaries and that fits in well with the Raw Cereal philosophy."

## Woodroffe Bassett Accents AC/DC 'Power Up' Tour

On September 20, 2016, AC/DC wrapped up the final show of their iconic *Rock or Bust* tour at Philadelphia's Wells Fargo Center. The band never appeared on the concert stage again... that is until they kicked off their *Power Up* tour on May 17th in Gelsenkirchen, Germany. For fans who packed the Veltins-Arena, it was well worth the 2,796-day wait. This much was readily apparent, the moment the arena lights went down and nine massive, raked video screens, supplied by Screen Works, roared to life with a fiercely intense intro video, the sellout crowd was ready to embark on a super charged musical journey. This was exactly the kind of atmosphere that Patrick Woodroffe and Terry Cook of Woodroffe Bassett Design hoped to engender when they worked on the production design for this widely anticipated tour.

"We wanted the stage lighting and video to work together and feel as one," said Cook, who is the Lighting Designer for the tour, whilst Woodroffe serves as its Creative Director. "We knew from the start that we would have screens that opened to allow the look of the show to grow. We wanted the stage to grow, which why the video screens split and open – and realign for one big picture." Run by LD Cosmo Wilson, the light works hand-in-hand with the impressive video presence. Key to the lighting rig is a collection of 210 CHAUVET Professional fixtures supplied by Neg Earth. The color palette created with the lights was selected to coordinate with the video. "The color choices created by Cosmo and myself were made to bring video and lighting together," said Cook. "We see video as often acting like light in this show, so we treat it with the look color. We have video frames around the stage pods that often are controlled by the lighting system, so it reacts as one and we can match the color, the look and the mood. Cosmo does a great job with colors."

Helping to weave together this multi-faceted visual panorama and connect the band to the crowd are 78 of CHAUVET Professional's Color STRIKE M motorized wash-strobes, 108 STRIKE 1 blinders, and 24



Woodroffe Bassett Design select Chauvet to balance lighting and video on AC/DC

STRIKE 4 units. "We are using the Color STRIKE Ms on the front and IMAG trusses," said Cook. "They are wonderful for color hits and big strobe moments. We also have them on the ladders at FOH and between the screens. Having the tilt function on a vertical position like this is very useful. The 108 STRIKE 1s are arranged in an end-to-end run, top rigged on the front truss. The design I wanted was all about large, faced fixtures. AC/DC is a big and bold band—and the Strike 1 has an old PAR can feel about them, so they really are a statement look when we turn them on." Lastly, noted Cook, the Strike 4 units, "get to the far corners of the venue to make sure we really can light up the audience." There is a cue in the show called "let there be light." That is when the rig is turn up all the way... 100-percent. It's a moment that the band and audience love."



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# GLP Helps Maktive Bring MACROdose Stage to Life

In recent months, turnkey production design studio and rental company Maktive has invested heavily in GLP's new impression X5 IP platform—sensing both the potential for deployment in the arduous weather conditions of the outdoor season and that the common chipset will guarantee uniform, homogenous color. As a result, when it collaborated with fellow design company DoLaB to present its unique MACROdose dance music stage for the first time at this year's Coachella Valley Music and Arts Festival in Indio, CA, they were able to integrate large quantities of its recently acquired impression X5 IP Bar 1000s, X5 IP Maxx and much-coveted JDC2 IP to animate a series of 'fabric mushroom' sculptures which looked like they had just sprouted out of the desert grass.

Maktive director Bryan McClanahan, who



MACROdose dance music stage at Coachella

co-founded the partnership with Patrick Randall, explains that the two companies had collaborated on avant garde art projects in the past: "For Coachella we were asked whether we could come up with a couple of different

scenarios with different lighting configurations. The goal was to keep as many lights hidden as possible, but obviously some fixtures needed to be unobstructed." Those that they chose to reveal included FUSION by GLP Exo Beam 10 and JDC2 IPs. Meanwhile, up inside each of the mushroom type shapes were the X5 IP Bar and also the X5 IP Maxx – part of a burgeoning fleet of GLP new generation solutions in its rental inventory. But it is the new JDC2 IP, offering more power and creativity than its predecessor, which has excited the company the most. Significantly, it offers the ability to create unique digital effects with an individually controllable pixel matrix. A powerful built-in dual-Cortex CPU with graphic processing offers over 100 GLP DigiFX, giving an eye-watering range of digital content. "At Coachella they really got to shine."



Arcadia launched its amazing new "Dragonfly" using Robe

## Arcadia Lights Up Glastonbury 2024

Flames, lasers, and lights fired up the night sky at the 2024 Glastonbury Festival of Contemporary Performing Arts in the UK as Arcadia launched its amazing new "Dragonfly" spectacular concept—a sculptural installation, performance arena, a live show and a complete world of visual, aural and sensory experience, taking the art of imagining recycled industrial and military scrap metal to new and different levels. Lighting included six of Robe's new iBOLTS, a laser-source searchlight style moving light, and 12 iPointe65s – an IP65 version of Robe's MegaPointe moving light – fixtures stood out from over 200 lights illuminating the Arcadia Arena.

Originated and designed by Arcadia's Pip Rush (creative director) and Bert Cole (technical director), the 30-meter-long 8.5-meter-high biomechanical Dragonfly is built from an ex Royal Navy Sea King helicopter, and it was at the heart of a 70,000-capacity evolved geometric space at the festival. The Dragonfly's production lighting design was by Dave Cohen of creative lighting studio MIRRAD, with technical production manager Katie Davies overseeing all related production elements on site throughout the two-week build and 3-day run periods, including coordinating 47 core crew and technicians. Davies commented, "The iBOLTS were fantastic as a powerful and dynamic light source seen from all over the site, while the iPointe65s were perfect for ensuring the bull-rush podiums stood out during the show." Lighting for the show was operated by Sam Werrett, also from MIRRAD, using an Avolites D9 console.

## Equity Investment in TAIT Announced

TAIT recently announced that the Private Equity business at Goldman Sachs Alternatives will acquire a majority stake in the company from affiliates of Providence Equity Partners, subject to obtaining customary regulatory approvals. Financial details of the transaction were not disclosed. Leonard Seevers, Partner in Private Equity at Goldman Sachs Alternatives, commented, "We have been incredibly impressed with TAIT's differentiated solutions, passionate employees and long track record as a leading player in enabling live entertainment and experiences across the world. We are excited to partner with Adam [Davis, CEO TAIT] and his team on their next phase of growth." Simon Kubies, Managing Director at Goldman Sachs Alternatives, added, "We believe that TAIT is exceptionally well-positioned to benefit from secular tailwinds as the entertainment space continues to grow in scale and complexity, and see tremendous value creation opportunities for TAIT as the company continues to broaden its technology offering and market coverage." [Read our interview this month with TAIT CEO Adam Davis on pg. 46]

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# UNRIVALLED PLAYBACK PERFORMANCE

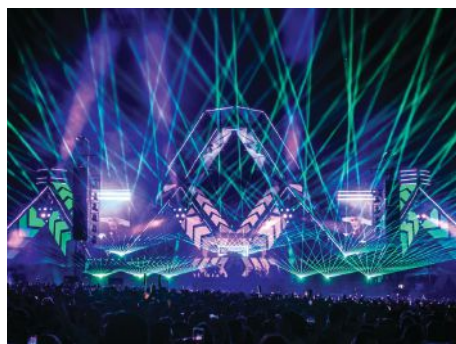
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The Spanish open-air festival series I Love Reggaeton

## Pyramids of Light at the I Love Reggaeton Festival

The Spanish open-air festival series I Love Reggaeton, held in Valencia and Madrid, played to a crowd of nearly 30,000 spectators on the impressive main stage, which provided the perfect platform for an equally spectacular lighting design thanks to its sharp, pyramid-shaped truss structures. The star of the lighting rig was the Cameo PIXBAR 400 IP G2 LED bar. 236 PIXBAR 400 IP G2s were required to trace the contours of the stage measuring approximately 50 meters in width and up to 20 meters in height. “The purpose of the festival is to offer a comprehensive audiovisual experience,” explains Efrain Andrade from Spanish rental service provider Fluge Audiovisuales. “This meant the lighting design had to be an absolute eye-catcher. With the PIXBAR 400 IP G2, we were able to frame the entire stage.” Eduardo Valverde and his company Experiencias Visuales were responsible for the lighting and stage design. The design also used the Cameo ZENIT W600 Outdoor LED Wash Lights to bathe the stage and artists in changing colored light.

## visualprime Party at Fairground Festival

Cologne-based motion design and show development studio, visualprime, is used to doing things on a large scale, and Hannover’s Fairground Festival of electronic music is no exception. The second iteration of this relatively new festival—already classed as Germany’s third-largest indoor festival – took place in the cavernous spaces of the Hannover exhibition halls hosting 40,000 party-goers over two remarkable days. visualprime lighting designer, Tobias Reinartz, employed over 100 Ayrton fixtures to inject dynamism, color and striking linear arrays across the stage and dance floor, choosing 84 laser-sourced Cobra fixtures rigged overhead throughout the hall for dramatic beam effects, and 20 Ayrton Khamsin fixtures as a floor package for the acts.

“I chose Khamsin for the floor package as we needed a bright spot with gobos that do nice aerial looks even in narrow beam angles,” explains Reinartz. “We also needed a beam light with fantastic color mixing that was also



visualprime went large scale at Hannover's Fairground Festival with Ayrton

capable of powerful gobo and prism effects onto the audience. Cobra could do all of this, but it was the sheer power of the Cobra beam that was the main decider. We were able to create multiple beam looks throughout the whole 120m x 120m arena from a height of approximately 8m. They looked amazing on stage, and despite the throw distances, we

were never in danger of running out of power, no matter what ideas we put into being. I believe there is pretty much no alternative to Cobra—it’s impossible to think of more variations and combinations you can do without them. I am witless happy!” The Cobra and Khamsin fixtures were supplied by Czech-based High Light Touring.

### News in Brief

**Solotech** expanded its UK operations with a new, state-of-the-art facility in Manchester. Imperial 76, the new premises located in the Kingsway Business Park, will serve as a hub for Solotech’s Sales and Systems Integration Division, as well as support Live Productions operations. With 76,000 sq. ft. of floor space, the facility features eight truck bays, six level loading bays, as well as a centralized hub for stock supporting the company’s sales and systems integration plans.

**Unilumin Group** held a grand opening ceremony for its new showroom in Mexico City. This strategic initiative aims to better serve local customers by providing localized, one-stop pre-sales and after-sales LED application solutions. The showroom features a variety of Unilumin’s popular LED products and created a strong bonding moment, allowing local clients to experience the friendly appeal of the Unilumin brand.

**FRABA Group** has announced the opening of a new business unit in China. The new company, named the FRABA Industrial Automation (Shanghai) Company, Limited, will serve the rapidly expanding Chinese industrial automation market. For the initial launch, the company’s focus will be on enabling domestic sales transactions and reducing delivery times. The new company will also be authorized to resolve issues with customers.



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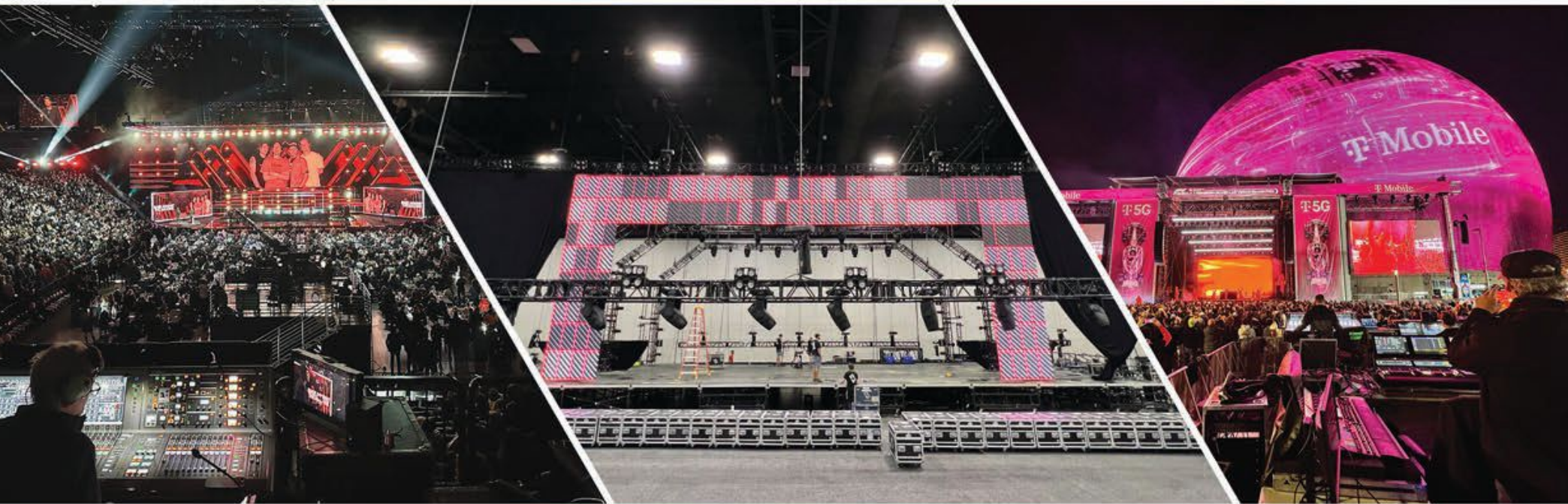
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# Illuminating Royalty at King's Day Celebration

Every year, the Netherlands celebrates 'Koningsdag' (King's Day) on the birthday of their reigning monarch, which has been April 27th since 2014 after the coronation of Willem-Alexander. The day is marked throughout the country, however, the focus of the celebrations each year is on the one town or city at which the king attends the festivities in person. The organizers of the Koningsdag Emmen Festival prioritized the use of local vendors to deliver the event and PLDS Showtechniek, a rental company based in the town, was given the honor and challenge of delivering all the technical production for the main stage. Knowing that the eyes of his country would all be on this event, the company's Director, Bernard Boumans, and his experienced team pulled out all the stops to deliver an impressive stage and flawless technical support, despite the perfor-



ADJ helps the Netherlands celebrate 'Koningsdag'

mance schedule only being finalized less than a month before the big day.

A variety of ADJ luminaires—including the new multifunctional IP65 rated Jolt Panel FXIP and flagship Focus Spot 7Z moving head spot—were utilized by local production

company PLDS Showtechniek for the official King's Day celebration in Emmen, the Netherlands. Throughout the day of celebrations, the ADJ-illuminated main stage featured a variety of musical performances from live bands, DJs and an orchestra, as well as an official ap-

pearance by King Willem-Alexander, much of which was broadcast on national TV. A large stage was constructed in Raadhuisplein plaza, which featured a huge custom-designed curved façade decorated in the colors of the Dutch flag and trimmed in orange. This was illuminated by the PLDS team using ADJ's IP65-rated and LED-powered Encore LP71P LED par fixtures. Additional units were also rigged to each side of a pair of delay towers and used to wash the crowd in a variety of vibrant colors synchronized with the stage lighting rig. Utilizing a variety of ADJ fixtures to serve numerous functions, Bernard and his team—including Lighting Designer, Ruben Vaartjes, Lighting Operators William Horstink & Nick Unij, and System Engineer, Laurens Meppelink—flawlessly delivered production worthy of this royal celebration.



Date: Sep 1-3, 2024  
Booth: B32





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 Email: [sales@unilumin.com](mailto:sales@unilumin.com)





Blackmagic Design workflow used at Coachella and Stagecoach

## Media Stream Wave brings workflow to festivals

Chicago-based production company Media Stream Wave used a Blackmagic Design workflow comprised of 40 Blackmagic URSA Broadcast G2 cameras, 14 ATEM Constellation 8K live production switchers and more as part of its work for the 2024 Coachella and Stagecoach music festivals, produced by Springboard Productions. Media Stream Wave's Principal Azuolas Sinkevicius supplied two production trucks equipped with Blackmagic Design gear, which serviced all eight stages at Coachella and four stages at Stagecoach with IMAG and broadcasting to streaming and social media platforms.

"Our client base wants to see a more cinematic result for these live shows, so that's what we've been moving toward with the help of Blackmagic Design gear," said Sinkevicius. "We've been able to spearhead that initiative with Coachella, and we're very happy with the Blackmagic Design workflow we've built because it's such a solid system, from beautiful images to low latency to extreme reliability during these high stakes productions. It's amazing that I can put the Blackmagic Design gear in high intensity, mission critical situations like these festivals, where there's 100-degree weather, they're in the sun for 10 hours, and I still have zero drop-outs. Coachella is like the Super Bowl of music with so much going on, and it's an incredible feat to offer equipment that works as well as it does to support the amount of production that goes into these festivals."

While the workflow for each stage varied depending on size and location, Media Stream Wave utilized multiple fiber workflows for its work on both festivals, consisting of the URSA Broadcast G2s equipped with Blackmagic Camera Fiber Converters and Blackmagic Studio Fiber Converters using SMPTE cabling for video, audio, power, talkback, and tally over long distances. The cameras fed into the ATEM Constellation 8Ks, with ATEM Camera Control Panels used for shading. Two ATEM 4 M/E Advanced Panels, six ATEM 2 M/E Advanced Panels, and an ATEM 1 M/E Advanced Panel were used to control all the ATEM Constellation 8Ks.

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In Memoriam

Bill Klages, Television Lighting Designer, 97

Bill Klages died on Sunday, July 7, 2024. He was a pioneer in television lighting and had a career that spanned over six decades. In all, Klages' credits list carries more than 300 projects amassed over a 60+-year career that began in the days of live black-and-white television dramas and continued into the 21st century, even working on the broadcast lighting facilities of Joel Osteen's 16,000-seat Lakewood Church sanctuary in Houston and, lighting for the George W. Bush Presidential Library in Dallas. Those credits have garnered seven Primetime Emmy Awards, for shows like *Dance in America: Baryshnikov* by Tharp (1985) and the Kennedy Center Honors (1984), and 23 nominations. In 2012 Klages was inducted



designer overall

His very long list of credits includes award shows such as the Primetime Emmys, Tonys, Grammys, and Golden Globes, as well as specials for such entertainment luminaries as Barbra Streisand, Bob Hope, Liza Minnelli, Bette Midler, Barry Manilow, and Mikhail Barysh-

nikov. Working from the earliest days of television in the late 1940s, through the big variety shows of the 1950s and 1960s, then onward to major events like Atlanta Olympic Games, The Grammy Awards, The Tony Awards, The Republican National Conventions, The Los Angeles Olympics Closing Ceremonies, The Statue of Liberty Celebration, The Country Music Awards, The Emmy Awards, The Kennedy Center Honors, the inaugural galas for Presidents John F. Kennedy and George H.W. Bush and so much more. His work also includes movies, working on the live scenes of 2004's *Ray*, as well as broadcast lighting consultant when the 21,000-seat LDS Conference Center in Salt Lake City was opened in 2000.

Klages intended a career in electronics; he earned a Bachelor of Science degree from Rensselaer Polytechnic Institute and a Master of Science degree from Columbia University, and was a licensed professional engineer. Born in Long Beach, NY, to a salesman father and schoolteacher mother, his first job was in research electronics in Nutley, NJ. NBC was looking for people with advanced engineering degrees for a training program in television. Klages was accepted in November 1948, working as a video maintenance engineer. He was then promoted to video engineer, working on *Your Hit Parade*. His career was interrupted by a summons for a two-year stint in the U.S. Navy, after which he returned to NBC.

Klages stayed at NBC until 1970, when he became one of a group of freelance lighting designers working in New York, and then Los Angeles at Imero Fiorentino Associates. He would go on to form his own firm, The Klages Group, in 1983. He sold the company to the other partners in the mid-1990's but continued to work on various projects under the banner of The New Klages Group, consulting on television facilities design as well as lighting. Klages, while continuing to design, also lectured and conducted seminars later in his career.

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PHOTO BY NATHAN ZUCKER (@NATHANZUCKER)

On the Move



Harrison Reilly



Riley Rowan

**Bandit Lites** announced the hiring of Harrison Reilly and Riley Rowan as Integration Specialists, one of Bandit's fastest growing departments. They will provide support to project managers in the office, work on site during installation and programming phases of both architectural and performance systems as well as assist clients with any troubleshooting and further education opportunities.



Marisa Abbott

**Inner Circle Distribution** announced that Marisa Abbott has joined the ICD Family as Specifications Manager. With a decade of experience, Abbott brings a wealth of knowledge and expertise to the ICD team. In this role, Abbott will help bring architectural lighting projects to life. Her background includes working with SGM as Specifications Manager and Western Regional Sales Manager, as well as a degree in Theatre Design & Technology from UW-Stevens Point and years of design work throughout Wisconsin, during that time, she also worked with Electronic Theatre Controls in Project Management.



Matt DeLong

**Imperial Pyro & Special Effects** announced the appointment of Matt DeLong as COO. DeLong brings more than 25 years of experience to Imperial, and has a distinguished track record in Special Effects, Pyro and working within Themed Environments. With his beginnings in theater as a Lighting Designer DeLong established himself in the industry with a foundation in design, technical direction, and touring. Prior to Imperial Pyro & Special Effects Matt worked as a Product Manager at CITC FX and Rosco Laboratories in both effects and lighting equipment categories.

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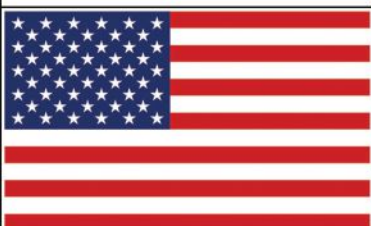




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**Ayrton: Rivale Wash**

The IP65 rated Rivale Wash includes a new 170mm Fresnel lens, giving a 4° beam, created for use with framing shutters, along with geometric gobos, or ovalization lenses. The Fresnel lens also improves color mixing and delivers 10% more light. It's equipped with a new 430W high-efficiency sealed monoblock LED module calibrated at 6,500K, offering 28,000 lumens with optimum positioning on the black body to achieve perfect light neutrality. Features include four individually positionable barn doors; zoom ratio of 14:1 (4° to 57°); progressive CMY color mixing system; 7 position color wheel; variable color temperature from 2,700K to 6,500K; indexable, rotating gobo wheel with 7 adjustable-speed rotating gobos; CMY/RGB graphic effects wheel; 15-blade iris; variable linear frost; and a dimmer/strobe. It weighs 65.47 lbs.



[www.ayrton.eu](http://www.ayrton.eu)

**Environmental Lights: Cove Wash – Dual Bend**

Cove Wash – Dual Bend products simplify cove light installations by flexing effortlessly on both horizontal and vertical axes, providing the ability to bend seamlessly around curves and contours. This product supports 10-meter run lengths across all variations, with each five-meter piece sporting side exiting wires that allow units to be installed flush against each other. Cutting increments of 3.3" further allows Cove Wash – Dual Bend to be customized to fit each unique application. The Cove Wash – Dual Bend line comes in three main varieties: monochrome, 4-in-1, and 4-in-1 PixelControl. Monochrome provides white in color temperatures of 2,700K, 3,000K, or 6,500K. 4-in-1 refers to each node containing RGBW diodes. 4-in-1 PixelControl provides maximum control for the creation of smooth color gradients and dynamic effects.



[www.environmentallights.com](http://www.environmentallights.com)

**Christie: Jazz Series Laser Projectors**

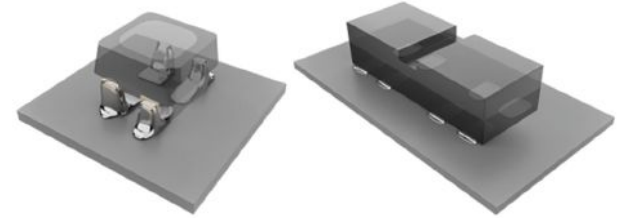
The Jazz Series of 1DLP® laser projectors include two models: the DWU2400-JS and DWU1800-JS. Both feature WUXGA resolution in a lightweight, compact form factor, delivering 23,750 and 17,800 lumens respectively. They use Texas Instruments' 0.8" HEP (High Efficiency Pixel) DMD for improved color and contrast and a more efficient cooling system design. The projectors weigh only 64.8 lbs. Both include active 3D support, and built-in warping and blending with Christie Twist™. Complimentary Christie Mystique™ Lite software works with an inexpensive camera to warp and blend up to three Christie projectors in a single horizontal array with the click of a button. The projectors are compatible with seven of the HS Series lenses as well as two new Jazz Series lenses, including an ultra-short throw option.



[www.christiedigital.com](http://www.christiedigital.com)

**INFILED: ArmorLED Technology**

INFILED's ArmorLED Technology is designed to improve the durability and reliability of LED screens. This technology boasts 3-5 times the thrust of standard LEDs, effectively mitigating the risks of damage during operation, installation, or transportation. ArmorLED Technology achieves this through four key techniques, including the M2/M4 LED, GOE Process, SMT Process, and optimized PCB Pad, culminating in a more resilient display solution. Traditional LEDs typically feature a 4-pin configuration, INFILED's ArmorLED leverages the M2 and M4 packaging designs, increasing the number of pins to 8 or more. This enhancement enlarges the soldering area, dramatically improving welding strength and boosting thrust by double. INFILED also uses its GOE (Glue-On Electronics) Process for robust bonding ensuring heightened protection and maintains exceptional display quality.



[www.infiled.com](http://www.infiled.com)

**Claypaky HY B-Eye K15 Aqua**

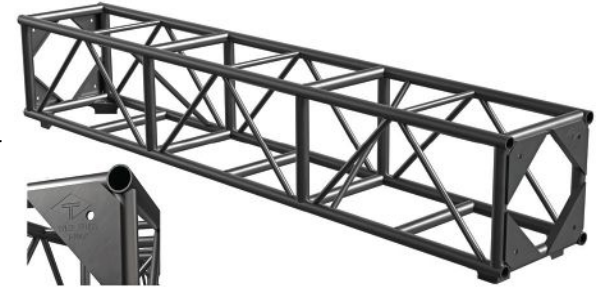
The HY B-Eye K15 Aqua, with 19 40W RGBW LEDs, has an IP66 rating so its water and dustproof, ensuring reduced maintenance costs and hassle-free operation. Features include a zoom range of 4°-60°; along with three operating modes: wash, beam, FX (Kaleido effects); bi-directional rotating front lens; digital wash-beam framing effect; beam edge softening control (in Wash mode); pixel patterning macros with enhanced control; white CT Emulation 2,500K-8,000K; automatic adjustment of RGBW mixing to simulate light sources with color temperatures; tungsten lamp emulation; and control of each single LED (Pixel Mapping). Its Advanced Layer Management system seamlessly blends three different layers. In addition to its internal built-in sequences, you can bring in external video content to mix and match with the different layers.



[www.claypaky.it](http://www.claypaky.it)

**Tyler Truss: T-Max 20.5x20.5, Bolting Truss**

With its new T-Max 20.5x20.5, Bolting Truss, Tyler Truss increases the 20.5 load capacity thanks to cutting-edge design changes. Now you can get 30% higher load capacity across 40' with no noticeable change in appearance. T-Max on a 40' span/UDL= 3,600 lbs. vs standard MD = 2,760 lbs. Customers asked for more load capacity, and Tyler listened. To help end-users, rental shops, and production houses, both in-house and on location to differentiate from Tyler's standard MD truss, they added the diamond-shaped bolt plate [See detail in product photo]. Features include 3/16" Chord; stacking blocks are optional; mill or powder coat finish; identical chord, horizontal, and diagonal pattern as standard 20.5. This new load capacity improvement is also available on Tyler Truss' 12x12 AV Plus T-Max truss.



[www.tylertruss.com](http://www.tylertruss.com)

**Elation: SIX+ BAR Series LED Batten**

The IP65-rated SIX+ BAR is equipped with 20W RG-B+Lime+Amber+UV LEDs. Its engineered optical system ensures even light distribution, and the proprietary RGBLA+UV engine delivers high-fidelity whites and intense primaries with no color fringing. Extra-large 50mm lenses allow for direct view applications paired with individual cell control. The meter-long SIX+ BAR L houses 12 RGBLA+UV LEDs and produces 7,000+ lumens, while the half-meter-long SIX+ BAR S houses 6 RGBLA+UV LEDs and produces 4,000+ lumens. It includes variable color temperature adjustment (2,400K – 8,500K), CMY emulation, and a virtual gel library. The integrated accessory slot accommodates included frost filter, with optional ND filters and other optics available. Controllable via DMX/RDM, Art-Net, sACN, and KlingNet protocols, it also features proprietary Aria x2 wireless device management.



[www.elationlighting.com](http://www.elationlighting.com)

**Uniview: AM Series Transparent LED Panel**

The AM Series from Uniview delivers innovation with its transparent LED display. It boasts a high brightness of up to 6,000 NITs, a refresh rate exceeding 3,840 Hz, and an IP65 rating for the front and IP54 for the rear use in exterior projects. Additionally, it offers a 40% transparency rate allowing for greater creativity in stage design with blowing through lighting as well as lowering wind resistance. The AM Series transparent screen has undergone comprehensive tension testing to achieve exceptional load-bearing capacity, where a 7.9kg cabinet can withstand forces of up to 1,800kg. The AM Series offers a 160° super-wide viewing angle to ensure better audience coverage. The panels are designed with corner protection to fully protect the panel from damage during transportation and installation.



[www.univiewled.com](http://www.univiewled.com)

# Elation Proteus Radius Beam FX Luminaire

By Kevin Lawson

Elation's Proteus Radius brings a 100W Solid State Phosphor Converted (SSPC) LED Light Engine to the beam light party. It shares many of its evolutionary predecessor's best qualities: it produces a beam that is surprisingly intense for its tiny size. It is quite compact; the base is about 14" x 16" and has a height of only 20". It weighs just over 40 lbs. and is easily movable by one person. It is IP66 rated for outdoor use as well.

## Tight and Bright

Proteus Radius's beam is a bright 2,700 Lumens at a tight 0.9° beam angle. The engine is native 6,000K color temperature, in open white it feels just like the beams we are used to from arc fixtures. With its small fixture size, you can fit them almost anywhere you would like. Unlike those early days of the 2010s it is much harder to burn holes in curtains, drum kits, and humans with the LED source. Which may be a pro or a con depending on your disposition—and if your drummer is annoying.

It is also worth noting that many of Radius' beamy contemporaries are evolving to using laser source engines requiring safety variances. This traditional LED light sourced beam requires no special safety considerations, at a tradeoff of intensity of course. But you can decide if the intensity of the Radius is enough for your application based on need.

Another critical element to beam lights is speed. Radius' movement is very fast, and it has continuous 360° pan and tilt movement. It is also very smooth at slow speeds. Focus seems dependable returning to preset positions after spinning at high speeds.

## But what else does it do?

The Radius uses several features to keep it from being a one-trick pony. Starting with color. It has a fixed color wheel with 25 selections (and spin). Radius also has CMY color mixing, which is impressively almost as fast as the fixed wheel. The colors in both options have great range, and the light still produces a punchy beam in all but the most saturated colors. Building effects with either the wheel or mixing are equally satisfying.

Proteus Radius is not a hybrid spot/beam fixture—it does not zoom. It is all beam—but it does have a nice set of beam shaping features to deploy. There are four prism options on two separate wheels. The four prisms are divided between dual overlapping planes to split beams into many different combinations. They rotate and the two wheels can be used simultaneously, giving a wide selection of very nice options. Prism macros are included for ease of programming.

There are two gobo wheels. A rotating wheel with 13 gobos and fixed with 24. Dots, lines, squiggles, fans, and all the shapes you would need, generally for aerial effects. Combining the gobos and prisms, with excellent rotation speeds and shakes can make a myriad of fun aerial effects. Naturally, as more beam shaping options and colors are deployed the output diminishes, but that's just physics. There are also two frost options when you want to take the edge off. And its digital shutter strobes strobily... strobely...? It strobes well.



Elation Proteus Radius

### PROS

- Tight and Bright Beam
- Compact and Fast
- Great Beam Shaping Options
- Fast Color Mixing

### CONS

- No Zoom
- Loses Intensity when multiple features engaged (Color, Prisms, Gobos)
- These names... (Not just an Elation problem)

### SPECS

**Fixture Type:** Beam  
**Source:** 100W Solid State Phosphor-Converted (SSPC) Light Engine  
**Output:** 2,700 Lumens  
**Color Temperature:** 6,000K, CRI 70  
**Beam Angle:** 0.9°  
**Zoom:** N/A  
**Color System:** Full CMY Color Mixing  
**Color Wheel:** 25 Position Color Wheel  
**Gobo Wheels:** 2 Gobo Wheels: 13 Interchangeable-Rotating / Indexing Metal Gobos; 24 Static-Stamped Metal Gobos  
**Frost:** Dual Frost  
**Prisms:** 4 Prisms on Dual Planes  
**Focus:** Motorized  
**Macros:** CMY Color, Gobo, Prism Macros  
**Strobe:** Digital Shutter and Strobe  
**Control:** DMX, RDM, Art-Net, and sACN Protocol Support  
**DMX Channel Modes:** Two  
**On-Board Control:** (6) Button Touch Panel. Full Color 180° Reversible LCD Menu Display; NFC Support  
**Input Range:** AC 100-240V 50/60Hz  
**Power Consumption (Max):** 300W  
**Connectors:** IP65 5pin DMX In/Out; IP65 RJ45 Ethernet In/Out; IP65 Locking Power In  
**Operating Temp:** -4°F to 113°F (-20°C to 45°C)  
**IP Rating:** IP66  
**Approvals:** CE | cETLus | FCC  
**Dimensions:** 15.6" L x 13.5" W x 20" H  
**Weight:** 41.9 lbs. (19kg)

### MANUFACTURER:

Elation

### MORE INFO:

[www.elationlighting.com/proteus-radius](http://www.elationlighting.com/proteus-radius)

## Conclusion

A designer I work with often muses "I resent having to learn all these names". The Elation Proteus Radius has a name that is almost as big as the fixture itself and doesn't exactly roll off the tongue. It is however a great addition to the Beam category. It scratches that sharp(y) itch, with a bright beam and fun shaping options to give it variety. **PLSN**



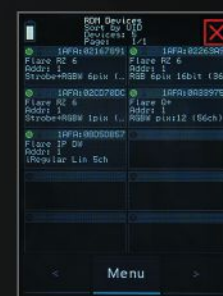
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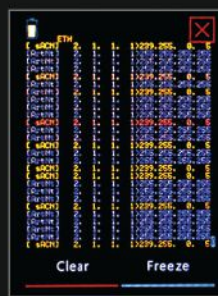
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A member of the ProPlex® family of Data Distribution Cables and Devices, the IQ Tester LV is a hand-held portable network tester for entertainment staging and production technicians, performing many essential and useful functions for setting up and troubleshooting today's show networking systems. A selection of some of its features includes, for Ethernet networks: Wireshark-type analysis of any Ethernet protocol, plus network troubleshooting; PoE testing, a DHCP Toolkit and LLDP. For DMX: Multi-fixture RDM management, DMX control, testing and signal analysis including packet listing, and also a bidirectional Ethernet-DMX gateway. Finally, the IQ Tester includes an SMPTE LTC receiver/analyzer and generator. A true all-in-one device, the compact, rugged, rechargeable ProPlex IQ Tester goes anywhere. An available belt pouch includes LTC XLR-converters. The ProPlex IQ Tester is the winner of three prestigious product awards LDI Debuting Product, PLASA Innovation, and Cine Gear Expo Technical Achievement.

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dustry professionals. Extremely powerful and full featured, but with simple and straightforward user interfaces to keep things simple, ProPlex Devices' standard features include shock-mounted circuitry and advanced thermal management. They are available in rack mount, portable mount, mini, micro, DIN rail, and IP rated formats of various sizes. ProPlex data cables are a world-renowned leader, combining unparalleled data integrity and easy handling with extreme durability.

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## GATOR

**GATOR CASES**

**G-Tour Flight Cases**

Using Gator G-Tour Flight Cases, you can transport your lighting fixtures with confidence. This case, with 3/8" plywood construction, is designed to hold two 250-style moving head lighting fixtures. Its lined interior with custom foam padding ensures your fixtures will arrive intact. It also features a removable lid with four latches, two of which are lockable. Transporting this case is effortless, thanks to two recessed spring-loaded handles on the lid, four recessed on the body; and four Penn-Elcom swivel casters, two of which are lockable. The GTOURMH250 case measures 26.00" long x 14.60" wide x 11.80" high. Protect your gear properly with a Gator G-Tour Flight Case.

Gator Cases was founded in 2000, initially launching with a small offering of molded plastic guitar cases at the Summer NAMM show in Nashville, TN. From there, they expanded the product line to include case and bag solutions for pro audio, lighting, IT, audio visual, general utility, band instrument, and percussion. The line now consists of over 2,000 different solutions that are made from vacuum-formed plastics, rotational-molded plastics, wood, sewn, and EVA materials. Gator Cases is dedicated to producing the highest quality cases, bags and accessories. They back up that commitment with a Limited Lifetime Warranty on any manufacturing defects in material and workmanship.

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With over 40 years of event experience, MTN is the one-stop e-commerce shop for all your entertainment rigging needs. From helmets and harnesses to road cases and tower lifts, they provide global coverage for gear across their four sites with locations in Wilkes-Barre, PA; Dublin, Ireland; Berlin, Germany, and Aberdeen, Scotland. In addition to their product portfolio of over 200 industry-leading brands, they have also curated their own line of MTN brand products, designed from their extensive experience working on more than 18,000 events. Whether you require a road case in the form of the MTN BOX, chain hoist accessories

like MTN Chain Sliders and Chain Bags, or support structures like the MTN Chain Hoist Stand, at MTN, they offer the highest quality essential items for every entertainment professional.

[www.shopmtn.com](http://www.shopmtn.com)

## Concert Shop

**CONCERT SHOP**

Concert Shop specializes in providing high quality hand tools, personal safety products, work lights, and workwear every event production professional should have in their pack... and they carry the pack too. They are the leading supplier of the best Scaffold Podger Wrench and mini bolt cutters on the market. If you build scaffolding, stages, rig, or simply want to look cool onsite, these are the tools you want. Concert Shop also donates to the Behind the Scenes Foundation with every Blaklader Workwear purchase. Blaklader Workwear is the leading provider of workwear on and off the stage. When you buy from them, you are supporting those that need it most.

[www.concertshop.store](http://www.concertshop.store)

**THE OLDER TOUR/LIZZY MCALPINE**

**Lighting & Video Company:** Fuse Technical Group  
**Venue:** Tour



**PRODUCTION TEAM**  
**Production Manager:** Mike McAcree  
**Tour Manager:** Mackenzie Dunster  
**Production / Lighting Design:** Black Lantern Creative  
**Lighting Director:** Amy Melia  
**Lighting Programmers:** Julien Reux, Amy Melia  
**L2/Lighting Crew Chief:** Andrew Ferrara  
**Video Director/I-Mag:** Michael Newman  
**Camera Direction/Video Assist:** Paola Bernardini  
**Stage Manager/Set Carpenter:** Justin Trotta  
**Production Coordinator:** Anna Griffin  
**Creative/Tour Director:** Vinnie Ferra

**VENDORS**

**Scenic:** Dark Moon Designs

**GEAR**

*Lighting*  
 grandMA3 Light Console  
 20 ACME Pixel Line  
 12 ARRI L10 Fresnel  
 6 ARRI L7 Fresnel  
 12 Robe Footsie1  
 8 Generic Practical Lightbulbs on Dimmers  
 Custom LED Tape for the Scenic Molding

*Video*  
 Blackmagic Design URSA Mini  
 G2 Camera  
 8 Blackmagic Design Micro G2 Camera  
 2 Sony a7 IV Camera  
 Video Screens hired locally

**EVENT DETAILS**

Black Lantern Creative recently provided the production and lighting design for singer-songwriter Lizzy McAlpine's *The Older* Tour. This is the ongoing second concert tour by McAlpine in support of her album, *Older*. The began on April 21, 2024, in San Diego, and is scheduled to conclude at the end of October, in Dublin, Ireland. The set is designed to look like the cabin-like recording studio where she and the band recorded *Older*.

**SOUTHERN SURF SLAM**

**Lighting Company:** Music Matters Productions  
**Venue:** Lake Lanier Olympic Park, Gainesville, GA



**PRODUCTION TEAM**

**Production Manager:** Jon Summers  
**Lighting Director:** Brian Taneyhill  
**L2:** Travis Lindstaedt  
**SL260 Stage Technician:** Jon Kenner

**VENDORS**

**Special Effects, Staging/Rigging:**  
 Music Matters Productions

**GEAR**

*Lighting*  
 1 grandMA3 light Console  
 24 Elation Proteus Rayzor 760 IP  
 4 Elation DTW Blinder 700 IP  
 6 LED PAR IP65

*Atmospherics*  
 2 hazebase Base Hazer Pro

*Staging/Rigging*  
 1 Stageline SL260 Mobile Stage

8 12" Box Truss, 10'  
 2 12" Box Truss, 8'  
 10 CM 1-Ton Motor  
 1 Motion Labs 32-Way Motor Distro

**EVENT DETAILS**

MMP spent a weekend at the lake welcoming Surf ATL to the area, capped off with a concert featuring Kevn Kinney. Lighting, staging, and audio provided by Music Matters Productions.

**STYX AND FOREIGNER'S RENEGADES & JUKE BOX HEROES 2024 TOUR**

**Special FX Company:** Showlive SFX  
**Venue:** Tour

**PRODUCTION TEAM**

**Production Manager:** Brian Wong  
**Tour Manager:** Tracey Weideman  
**Styx Lighting Director:** Libby Gray  
**Lighting Crew Chief:** Chris Edrington  
**Lighting Techs:**  
 Mark "Paint" Liatos, Mike Mundrick, Evan Brittain  
**Special Effects Programmer:** Hayden Hale  
**Special Effects Operator:** Nate Jenkins

**VENDORS**

**Lighting:** Premier Global Production

**GEAR**

*Lighting*  
 1 grandMA3

*Special Effects*  
 2 42W Kvant Laser  
 4 30W Unity Laser  
 Pangolin Laser Software  
 Laptop Control  
 7 Showven Sonic Boom



**EVENT DETAILS**

For their 2024 tour with Foreigner, Styx brought in Showlive SFX for lasers and effects to make their already energetic performances that much more, while working alongside PGP for lighting.



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# Environmental Lights™

## REVI Downlight System

The high ceilings found in house of worship spaces require powerful lights to provide even coverage over large spaces. Traditional high-output lighting fixtures give off excess heat, burn out often, and are costly to run and maintain. Low voltage downlighting transforms house of worship spaces by providing improved light performance, dependable longevity and up to an 85% reduction in electricity usage. The time and cost savings from simplified installation, less frequent maintenance, and reduced electricity usage alone provide a quick return on investment. Environmental Lights, a leading provider of high-quality, low voltage lighting solutions, has provided exceptional results in house of worship spaces for years.

Environmental Lights' (EL) Remote Voltage Illumination (REVI) System enhances lighting in large areas while saving end-users time and money. Atlanta, GA-based AVL systems integrators, Strata relies on the REVI system for their house of worship projects to deliver architectural lighting to their clients with results that exceed expectations. The REVI Low Voltage Lighting System is fully configurable and made up of two main components: rack-mounted power supplies and driverless fixtures.

The REVI Low Voltage Lighting System provides Class-2, low voltage illumination to meet the unique needs of large auditorium spaces. REVI XL downlights deliver up to 9,300 lumens from a single fixture, ensuring bright and even coverage across your entire auditorium. REVI fixtures feature smooth dimming down to 0.1% and offer monochrome, tunable white, and RGBW functionality, enabling you to transform your environment in an instant. The REVI system is fully DMX controllable and enables control synchronization of house lighting with stage lighting, so both can be easily managed from a single platform.

### ■ Ease of installation

Ease of installation and maintenance is another key differentiator between Environmental Lights' lighting solutions and traditional alternatives. The REVI system features driverless fixtures and centrally located, rack-mounted power supplies to extend the longevity of the lighting system. Not only do driverless fixtures greatly reduce the amount of heat given off by downlights, but they also allow users to host power supplies in a climate-controlled utility room that can be accessed without the use of a scissor lift to reach the ceiling.

Environmental Lights offers a wide variety of mounting hardware that is compatible with REVI XL downlight fixtures. They offer stems, surface mounts, and cables that let you achieve the optimal appearance in your auditorium. These mounts can accommodate both flat and slanted ceilings. Recessed fixtures are also available.

### ■ Energy Savings

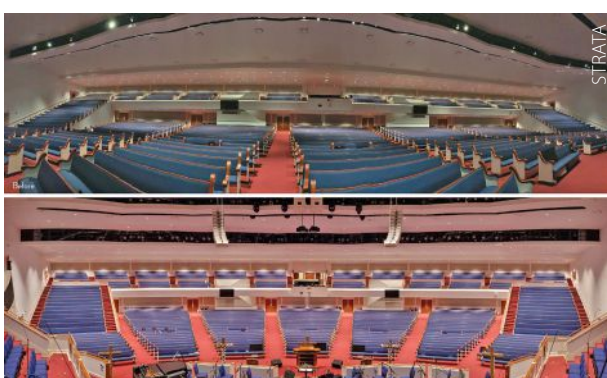
Environmental Lights prides itself on the quality of light, but also on the energy savings they provide for auditorium spaces. The REVI System is an efficient solution that guarantees significant savings and a rapid return on investment. In the case of Cross Pointe Church in Gwinnett County, GA, REVI enhanced overall light coverage while simultaneously reducing power utilization by a whopping 85%. In the case of Easley, SC's Rock Springs Baptist Church, a 3,500-seat auditorium, after installing the REVI system in place of their previous lighting, they were able to reduce the necessary power load from 50 20A circuits, down to 8 20A circuits. Meanwhile, their light coverage went from an uneven 10-15 foot-candles (FC) of light to an average of 35FC of evenly dispersed light across the entire auditorium. Both installations were Strata projects.

### Strata Systems Integrators

The AVL systems integration firm Strata designs and installs



Cross Pointe Church in Gwinnett County, GA



Rock Springs Baptist Church in Easley, SC

audio, video, and lighting for houses of worship and performance spaces. They are a REVI Certified Platinum Dealer, who have worked extensively with Environmental Lights and completed numerous REVI low voltage lighting installations. The Strata team tells us in their own words about their choice of using the REVI systems that they've installed in a range of HOW projects.

### On why the REVI downlight system is the right choice for Strata's HOW projects

Strata was one of the first AVL system integrators in the U.S. to adopt Environmental Lights' REVI system. When REVI was introduced to us, we quickly realized the potential to offer our clients superior quality architectural lighting at a very competitive price. Once you understand how REVI works, you easily see that it's a better way to light. Even coverage, excellent color rendering, high output, low power consumption, exceptional reliability, easy maintenance, and low installation costs are all part of the equation.

Worship centers and sanctuaries routinely have ceiling heights in the 25'-to-40' range and the architecture of most of these spaces makes servicing traditional high-voltage fixtures a time consuming, expensive, and sometimes dangerous affair. REVI downlight and pendant fixtures contain only an LED emitter, a heat sink, and a reflector—no electronics. The fixtures are powered by multi-channel power supplies (drivers) installed in a remotely located equipment rack. All serviceable parts are in the power supplies, not the fixtures. Imagine never having to rent a lift to access a light!

The fixtures are very well-built and reliable. Strata has surpassed two dozen REVI installations nationwide, which collectively represent well over 2,000 fixtures, and we have yet to see a failure from an installed light. Of course, the inherent low power requirements and low heat generation of LED fixtures apply here. Resultant power and HVAC savings can provide a relatively quick ROI, which makes the facilities and accounting folks who measure those parameters very happy.

### On key features of the REVI downlight system that Strata finds are a benefit on projects

Our Lighting Designer, Michael Scott, coined the term

'affordably bright' for our REVI installations because photo-metrically, the coverage is exceptional, and REVI lights have an output of up to nearly 10,000 lumens each. That means it's easy to cover large spaces with fewer fixtures than with most other lighting products. And where in halogen fixture days it was prohibitively expensive to light a large space to a level of more than 20FC, all our installations achieve a minimum of 30FC with many approaching 50FC.

Strata also finds the REVI acquisition and installation costs are much lower than high-voltage lighting. High voltage and DMX runs are all concentrated in the centralized power supply racks. No high voltage is required by individual fixtures, so no electricians are needed to install the lights. Our install crews handle the lights and low voltage, 16-gauge 2-conductor cabling from the power supplies to each fixture at a lower cost than traditional electricians.

The output quality from REVI fixtures is absolutely beautiful. CRI ratings of 92+ tell part of the story, but we believe there is some secret sauce Environmental adds because they look even better than that. Clients routinely comment on how nice the light makes their room feel. Color temperatures can be specified as a fixed color of 3,000K to 5,000K, variable/tunable white, and RGBW. The power supplies are the unsung heroes of the REVI system. Located in a rack on a catwalk or in an equipment room, they provide low voltage power to the lights, smooth dimming down to 0.1%, emulations that create the traditional on/off ramp of incandescent lights, and even strobe effects, and DMX control over each output channel. Per channel DMX control means our clients have full control of every light in their installation—no more zones, unless they want to create them. Nearly all our clients do some level of video production and REVI power supplies provide constant current power to the lights (no PWM), which means they have no refresh rate and thus no flicker to interfere with camera images.

### On working with Environmental Lights

We love working with Environmental Lights. They are more than a manufacturer, they are partners. They seem to feel the same about Strata because they recently named us as their very first REVI Certified Platinum Dealer. This recognition is for Strata's contributions in advancing REVI product development through numerous installations and collaboration on product enhancements. Environmental's engineering team has been especially open to feedback we provide from the field and our work together has surfaced in several product enhancements that have come to market. That cooperative mindset explains how Environmental constantly innovates and adapts to market needs. Environmental Lights is one of the early innovators in LED lighting. Their years of industry experience has a resulted in a seemingly endless array of products. Those options are challenging us to think outside of normal architectural lighting and create designs that include more specialty lighting in our upcoming projects. **PLSN**

# LOW VOLTAGE DOWNLIGHTING

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**FEATURED LISTING** Applied Electronics: Power Distribution Rack

Applied is proud to offer power distribution, dimmer, and chain hoist control systems for both portable and permanent installation applications. From small breakout boxes to full 400A lighting distribution racks, custom is their specialty. Systems can be configured with industry standard cam or twist inputs and 19-pin, twist, powerCON, and Edison outlet connectors in quantities to meet your specification. Racks can also be built to accommodate their motor control system in 7-pin, P-14, and dual twist configurations. The battle tested Applied SA series of rack mount dimmers are available as standalone systems or as a component in an "all in one rack" package for tighter truck packs and more room backstage.



Applied Electronics racks are manufactured in the USA with over 40 years of entertainment industry experience. Their electronics and truss manufacturing teams are committed to building quality products that last for national tours, schools, churches, and every size of rental & production company in between. They're proud to put their customers first and provide solutions based on your needs, budget, and show date. Please give them a call to discuss how they can turn your needs into road ready gear.

[www.appliednn.com](http://www.appliednn.com)

**ETC: R12 LED Driver**

The F-Drive R12 LED Driver from ETC provides a modular, centralized approach for controlling installed LED luminaires. It works with ETC fixtures, plus third-party manufacturers, making it an ideal solution for driving LED tape light, linear fixtures, cove lighting, recessed downlights, and more. You now have access to ETC's legendary reliability for LED drivers. Options include constant current or 24V DC constant voltage for third party LED luminaires, plus more advanced color and dimming options for ETC fixtures. The F-Drive R12 has the capacity to control up to 48 luminaires in just 3 units of rack space. With its innovative design, the F-Drive R12 simplifies installation and makes it easy to service and modify critical components from the convenience of an electrical room or cabinet.



[www.etconnect.com](http://www.etconnect.com)

**Environmental Lights: Dual-Mode Universal Dimming Driver**

Dual-Mode Universal (DMU) Dimming Drivers from Environmental Lights are highly versatile, full-capacity drivers that accept universal input dimming signals compatible with all major control systems. They feature a toggle that allows users to easily switch between Constant Voltage Reduction (CVR) and Pulse Width Modulation (PWM) output modes. PWM output can be used for loads within 25' of the power supply, while CVR should be used for any runs beyond that. DMU Dimming Drivers enable seamless integration and precise control of LED lighting, regardless of the size and layout of an installation. [The DMU-24-3x96, Dual-Mode Universal Dimming Driver – 24 VDC – 3x96W is pictured.]



[www.EnvironmentalLights.com](http://www.EnvironmentalLights.com)

**ADB by Claypaky: Eurodim Twintech**

TwinTech by ADB is a professional installation dimmer using cost effective Thyristor technology with its proven track record, now featured in the versatile DimSwitch module. The innovative Eurodim TwinTech concept allows for plug-in modules of any type or rating to be freely mixed and moved in any configuration within a universal cabinet. Modules are instantly recognized by the automatic module identification function in the cabinet's central electronics. For example, it allows empty cabinets to be installed on site, while the modules can be specified and plugged in later. Eurodim TwinTech offers the exciting benefits of ADB's pioneering DimSwitch technology.



[www.claypaky.it](http://www.claypaky.it)

**GENERICO: Multi\*Show Power Distro Racks**

GENERICO Power Distribution products are designed by professionals for professionals. Currently, they offer two racks—a 24-channel and 48-channel rack with 120V and 208V outputs. The 24 channel rack includes 3 L21-30 three phase 30A outputs; 3 20A duplex receptacles; and a 200A main breaker. The 48 channel rack includes 6 L21-30 three phase 30A outputs; 6 20A duplex receptacles, and a 400A main breaker. Both models include 6 LED indicators per Soca19; 6 Edison duplex w/breakers; Cam Lok in/out; hinged Cam Lok covers; volt and ammeter functions; work lights front and back; rugged aluminum frame; stacking cups; and ETL Listed. Custom logos can be cut into the covers.



[www.genericoep.com](http://www.genericoep.com)

**ADJ/Accu-Cable: Power Bone Distribution Boxes**

The Power Bone series from ADJ's Accu-Cable brand is designed to provide reliable power distribution. Three models are available, each with a different type of output connection; all feature the same unique bone-shaped design, four outputs, additional input and thru connections, two USB outputs, and an Omega bracket for mounting. With tough powder-coated metal construction, the Power Bone Series has a distinctive shape to provide protection to the sockets with input on one end, thru on the other, and two outputs on each side—allowing for neat cable runs. Power indicator LEDs are located on both sides and the end of the unit to provide visual indication of power being received. IP20 rated, they're cETLus, FCC, and CE approved, and weigh less than 4lbs.



[www.adj.com](http://www.adj.com)

**Lex Products: Presidential PowerRACK™**

The Presidential PowerRACK™ from Lex Products is a touring power distribution rolling rack; 400A 120/208Y 3Ø VAC; (1) Set of (5) 16 series cam-type, single pole males (inlets) with feed thru to (8) 120VAC and (8) 208VAC LSC19 19-pin receptacles, (6) NEMA L21-30 locking receptacles and (6) NEMA 5-20 (Edison) straight blade duplex receptacles; 100% rated electronic main and hydraulic/magnetic branch circuit breakers; LED voltage/ampere meter per phase; LED power indicators and work lights; extruded aluminum with high density polyethylene (HDPE) panel framing; removable front and rear rack doors; It's rated for NEMA 1 indoor use.



[www.lexproducts.com](http://www.lexproducts.com)

**City Theatrical LLC: QolorFLEX® 25x3A Dimmer**

City Theatrical's QolorFLEX® 25x3A Dimmer (P/N 5811) is a low voltage, constant voltage, dimmer that is designed for large installations of LED tape. This dimmer has 25 channels of control and accommodates five-channel LED tapes easily, to create efficiencies in installation time and wiring. This dimmer is fully DMX and RDM compatible and offers standalone functions. The power connection is one removable Terminal Block Connector, Eight Pin, Male (P/N 6614) for DC Input. This dimmer also includes five removable Terminal Block Connectors, Seven Pin, Female (P/N 6617) for LED output connections. These 6617 seven-pin connectors include two V+ commons, which allows users to spread the load of multiple LED tapes over the two positive outputs and achieve a maximum current load per channel of 4A.



[www.citytheatrical.com](http://www.citytheatrical.com)

**Motion Laboratories, Inc: 1300-200A-12-2-37**

Motion Labs 1300-200A-12-2-37 Rolling Rack 24 way, Dual Voltage Power Distribution unit with 5 wire Cam In & Through (bussed for 400A), 200A main breaker, power meter, (6) Edison duplex outlets and laser engraved customer logo on front. Rear side includes (4) 6 circuit 110V and (4) 6 circuit 208V, P19 heads. 12 RU tall with a heavy duty, shock mounted, steel liner and ETL listing. There are more than 300 connector/breaker panels to choose from as well as ground fault, surge suppression, and depending on size, is available as single sided, double sided, and double wide versions.



[www.motionlabs.com](http://www.motionlabs.com)



## Swisson: XSD-S3 Sine Wave Dimmer

The XSD-S3 is a portable, RDM-enabled single channel sine wave dimmer, having many advantages over conventional phase control dimming. It doesn't produce any filament sing or electrical disturbances that affects audio or video equipment. Output voltage and current are electronically regulated, ensuring a stable and safe output to a wide range of different loads. This also enables the dimmer to compensate for fluctuations in the mains supply and detect short circuits, operating with a very high efficiency. It can be controlled via DMX in 8- or 16-bit mode, 0-10V analog input, and manually with the encoder knob on the device. DMX and device specific settings, such as dimmer curves or output response time, can be changed over RDM as well as directly on the dimmer.



[www.swisson.com](http://www.swisson.com)

## Vari-Lite: RigSwitch+

RigSwitch+ is a family of installation, customizable all-in-one power control solutions, offering affordable and scalable rig and architectural (DALI & 0-10V) power. RigSwitch+ provides 4 to 52 channels of relay switching with onboard current monitoring, configurable propagation delay and is available in branch-fed and 120V/277V and 230V mains-fed wiring variants. Easily controlled by DMX, RDM & VisionNet. 'Performance' variants add sACN, Art-Net, Vision.Net, OSC, web, REST API, and 1 universe Ethernet-to-DMX gateway. RigSwitch+ can automatically adjust to environmental changes without user interaction with support for daylight and occupancy sensors, DMX/RDM signal detection, optional integrated timeclock, and emergency alert response.



[www.vari-lite.com](http://www.vari-lite.com)

## TMB: ProPower RPD

ProPower RPD is a customizable Rack Panel Distribution system. Customers can specify their own configuration from over 100 panels and choose each panel location within the flight case. ProPower RPD is a fully UL Listed flight case power distribution system. The RPD features meticulous craftsmanship right down to the smallest detail using the finest components. ProPower RPD systems can be configured with integrated ProPlex Data Distribution devices and drives giving users a unique combination of power and data distribution built right into your configuration and fully UL Listed. The RPD systems also include a UL approved 19-pin "Pin Out" indicator display; visibly indicates which circuits are hot, how each pin is wired, and if it's 120V or 240V. No more damaged lights or breakout confusion.



[www.tmb.com](http://www.tmb.com)

## Whirlwind: PL-PM1RJ Power Meter

Whirlwind's UL-listed PL-PM-1RJ power meter is designed for remote monitoring voltage, current, and frequency on 3 phase Y power with three 120V AC legs or single-phase AC with two 120V legs. You can monitor your power from a laptop, tablet, or any smart phone through any Ethernet LAN and via the Internet. This allows real time power distribution monitoring from any location or multiple locations simultaneously. Features include IP addressing to integrate easily into existing LANs, and unit naming to identify individual monitoring locations. Simply connect the PL-PM1RJ to your network and monitor from any connected device, even wirelessly.



[www.whirlwindusa.com](http://www.whirlwindusa.com)

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- 6 x Edison Duplex w/Breakers
- Cam Lok in/out
- Hinged Cam Lok Covers
- Volt & Ammeter Functions
- 200 Amp Main Breaker
- Work-Lights Front & Back
- Rugged Aluminum Frame
- Custom Logos included\*
- Stacking cups included
- ETL Listed

### Specifications

- 48- Channels 120V & 208V Outputs
- 6-L21-30 Three Phase 30A Outputs
- 6-20 Amp Duplex Receptacles
- 6 Indicator LED's per Soco19
- 6 x Edison Duplex w/Breakers
- Cam Lok in/out
- Hinged Cam Lok Covers
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# 4Wall Entertainment Supported Feature Film *Daddio*

4Wall Entertainment played a vital role in supporting the production of the feature film *Daddio*, written and directed by Christy Hall and starring Dakota Johnson and Sean Penn. 4Wall built a virtual production studio to create a realistic backdrop of New York City streets, recreating a drive in a taxicab where the film takes place. This innovative approach enabled an efficient and visually stunning production, allowing the entire shoot to be completed in just 16 days.

Christy Hall, the visionary behind *Daddio*, expressed her amazement at the expertise and ingenuity of the 4Wall team in leveraging this technology, "I've done Q&As at Telluride and TIFF where audiences audibly gasped when I told them every single interior shot inside the cab was done on a soundstage," she explained. "They couldn't believe it looked so real. My film probably would not have been producible without this technology."

Ben Danielowski, 4Wall VP of Special Projects, notes, "I think it's important when bringing this technology to a production to make everybody feel comfortable. Although this is new, it's not scary, it's just another tool in the tool bag." 4Wall VP of Special Projects Mathew Leland detailed the technical setup, commenting, "No DP shoots the same and they don't use the same tools, and so oftentimes you're dealing with a very bespoke process. What we often try to do is figure out what parts of our actual tools can get put in the hands of the people who already know how to create with them. That is one of the benefits of the Disguise media server platform. It is very well integrated with DMX, streaming ACN, Art-Net, all the different things that we use for lighting control. We have the lighting console, the traditional sort of programming route from the gaffer and the programmer, and then our color information that's being mapped from the video. What ultimately happens is we can send color information to the lighting fixtures for some movement and variance in light as the cars are passing, then we can give them back control of the overall intensity. So it's like the best of both worlds. Both have the control they want."

Leland continues, "We knew we wanted a large hero wall, so we utilized a 52-foot LED wall to create the illusion of a traffic jam. From there, we added two roaming walls and reflective panels flown above the vehicle." The project required innovative solutions to overcome the challenges of shooting in a confined space. Julian Sarmiento, Virtual Production Supervisor for *Daddio* says, "We knew from day one that the goal was to capture final picks. What we were seeing on the screens most likely was going to be pretty close to final, and that's actually where the setup from 4Wall really came together. Usually when we work in virtual production, the walls tend to be fixed. For this, it was a little different because the whole entire cell was modular. We no longer had to think about the environment or the sequence. We can focus just on the shot and we all, were constantly communicating, let's move the wall, let's increase the brightness, let's change the content. So if you think about it, there's about three or



four things happening simultaneously, and that's actually where magic happens, and this shows a perfect representation of what that looks like."

## Technology Fueled Creativity

Essentially the use of VP technology added to the creative process. Hall points out from a directorial viewpoint, "This technology creates an immersive environment for the cast. When Sean was driving, he kept almost being afraid he was going to hit pedestrians because there were people crisscrossing and he was like, oh, right, it's not real. Though the footage is real. We shot the drive on an array car with nine cameras and then projected the drive. So what you're seeing is real. When Dakota looks out the window and cars are whizzing by she can actually see the street lamps and everything. They're engaging with a real sense of time and place."

Danielowski explains, "A large part of this production is also the reflections that we're seeing in the car inside. We've got the divider and all the reflections that we're seeing there. So whether it's from our hero wall or from our ROE CB3 panels that are in the ceiling, we also are using them on rover stands, and that allows additional light to come and fill in as needed." He continues, "It really allows us to utilize these surfaces as not just a light, not just a piece of gear, but as a part of the story. I think that's the most important part of what we do, is we're here at 4Wall to make everybody else's life a little bit easier." And on using plates captured by Plate Pros, "Choosing the driving plates felt like creating another char-

acter for the film," he said. "Christy came to the table with a solid direction, and we were able to bring it to life with precision."

Hall describes, "I'm at the monitor and I can see what it's actually going to look like, not what I think it's going to look like later, what it actually looks like in real time. So then I could work with 4Wall on even being extremely intentional about what you saw outside the windows. Phedon Papamichael, my incredible cinematographer, could also engage with the environment. So for example, we're on Sean, a car whizzes by his window. As soon as the car passes, Phedon would hit him with some red light from the taillights of that car. So then suddenly we're all playing in the sandbox together and we're all able to offer more and more details to lend itself to the feeling of reality. I've had people say every single detail feel so intentional, and I'm like, I'm so glad you feel that way, because it is, it's gut wrenchingly intentional."

4Wall's Wayne Romanowski, VP of LED Services, says, "This particular shoot, we found the Absen PL2.5 tile with 1/8th scan rate tile to be really useful. It's high resolution at 200 pixels by 200 pixels per tile, helps in the tight confines to avoid moire on this camera. The other great thing about this tile, they're driven by Brompton processing. Brompton has made huge strides in serving the needs of the film community and the specifics of virtual production." 4Wall's grasp of this technology and having the gear to capitalize on Brompton Technology's Puretone and Dynacal, together with Absen PL2.5 tile with 1/8th scan rate, and Disguise's process workflow ensured high accuracy in color at low light levels. "We use Disguise as our media server playback," explained Leland. "What that does is gives us the entire canvas, so although we have these individual screens it's all within one media server. It allows us to map however we want. Whether we want perspective sizing, we can really kind of change what's being reprojected onto those screens. Having the Absen

PL2.5 tile with 1/8th scan rate tiles running on the Brompton processing, that really allows us to get very accurate color on these screens. And at low light levels so that we can really capture the very specific drive from JFK airport to Hell's Kitchen in the dark realistically."

## Traditional Non-Starter

Hall emphasized the importance of this technology for her film's success. "*Daddio* proves that this technology offers flexibility to filmmakers, making the impossible possible. We had 16 days to shoot, with 13 of those days on a soundstage for the interior cab scenes. I had two incredible legendary actors and I wanted to really protect their performances. It's just the two of them. Not just in one scene, it's the entire movie. So, I wanted to give them what they needed to really leave it all out on the field. That was really important. And it's New York, on a very distinctive drive. New Yorkers know that drive and so it was really important that we got it right. The idea of throwing them in a cab with grip gear and cameras hanging off the side and trailing them, the continuity would have been a huge issue and we couldn't predict weather."

Danielowski agrees that the more traditional trailer shoot driving the route would have been an extremely difficult. "It's not repeatable to do that. It's not fun for anybody involved and to do that for 16 days would just be brutal. Inside the studio we have a controlled environment, the plates are the same each take, it's repeatable. Additionally you can't drive half of a car down a highway and that's what we're doing in this film. We have half a car for our driver and half a car for our passenger. That allows the camera crew to get inside there with a little bit of space to work and do their magic."

Hall concludes with how pleased she was with 4Wall. "What 4Wall gave us looked gorgeous but it was extremely cost effective. The end result is incredible, and I am so grateful for this new frontier in filmmaking." Learn more about 4Wall Entertainment at [www.4wall.com](http://www.4wall.com).

## Brompton Technology Fuels Distortion Studios

Supported with funding from Creative UK and in partnership with iMAG Displays, Bristol-based Distortion Studios is the first permanent Virtual Production studio in the South West of England. The innovative 200m<sup>2</sup> facility is part of Distortion Creative Group Limited, which includes Studio Giggle and Distortion Productions. Utilizing industry gold standard Brompton LED processing to power its impressive ROE Visual LED volume, Distortion Studios sets a new benchmark in virtual production in the region.

Distortion Creative Group's has a long-standing partnership with iMAG. Together, they have delivered various projects for clients such as OVO Energy and CVC Capital Partners. "When the group decided to launch a specialist virtual production studio, which is the only one in Bristol and the only permanent setup available west of Reading, we approached iMAG to partner with us on the project to supply the LED wall and Brompton Technology LED processing for the studio," says Distortion Studios Managing Director, Jonathan Brigden. "We believe their expertise in LED is unparalleled, so we had full confidence they would be an excellent partner for this project."

iMAG's MD and Technical Director, Alex Strachan, worked closely with Brigden and Nick Diacre, Distortion Studios' Technical Director, choosing the combination of ROE Visual and Brompton Technology primarily due to its proven reliability. "We knew it would work consistently," Strachan notes and adds that "the level of control this combination offers surpasses other products in the market!" Diacre emphasizes that both solutions are perfect for studio use, offering "unprecedented color control through Brompton's Tessera software. This capability, along with their support and widespread use of Brompton and ROE, has been immensely beneficial to our production. Color management is a standout feature, and having absolute control is crucial"



Distortion Studios' setup features a Brompton 4K Tessera SX40 LED processor and two Tessera 10G data distribution units, with the team considering adding a second SX40 to accommodate the growing demand for high-speed commercial shooting. The Brompton LED processing drives an impressive 11m x 4m curved LED Volume comprising ROE Black Pearl 2 V2 LED panels and two 2x3m mobile LED panels. Additionally, the studio boasts two Stype RedSpy tracking systems and Stage Precision as part of its equipment lineup.

"Our unique and long term partnership with iMAG and their wonderful team of trusted experts is key to the ongoing success of our business," Brigden explains. "We rely on their knowledge and skill with specialist equipment to ensure that

every single event, production or installation is reliable, high quality and, most importantly, has a supportive and collaborative team. The iMAG team are second to none."

Patrick Goodden, Technical Sales Manager (UK and Ireland) at Brompton Technology concludes, "We are thrilled that Distortion Studios is opening doors to new possibilities for companies in the South West region, offering top-tier VP technology for diverse creative content, from filmmaking and documentaries to TV series and commercial projects. It's also fantastic to see iMAG supporting the studio with a high-end LED setup that includes our Tessera SX40 LED processing. We can't wait to see all the great projects that the team will undertake in the future." Learn more about Brompton Technology at [www.bromptontech.com](http://www.bromptontech.com).



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# X3D Studio Sets New Benchmark with INFiLED LED Walls



The grand opening of X3D Studio has set a new benchmark in virtual production, unveiling Southeast Asia's largest LED volume. Spanning an impressive 40,000 square feet, this cutting-edge facility is revolutionizing the industry with its state-of-the-art technology and innovative features. Located in a refurbished power station, X3D Studio benefits from the high ceilings and expansive space necessary for virtual production. The studio's development took a year and a half, with meticulous attention to integrating cutting-edge technology and rigorous collaboration with ARRI.

At the heart of X3D Studio's virtual production space is an awe-inspiring 18m x 6m (108 sqm) LED canvas from INFiLED, comprised of

432 DB1.9 Mark-2 panels equipped with CBSF technology. Boasting a 1.95mm pixel pitch and a resolution of 9216 x 3072 pixels, the screen delivers unmatched detail, vibrant color, and consistent brightness across all viewing angles. The 16-bit color depth and HDR10 video standard further enhance the visual experience, making it one of the highest-resolution screens in Asia. Complementing this is an 8m x 8m (64 sqm) LED ceiling panel from INFiLED, perfect for dynamic lighting effects and immersive overhead visuals.

The INFiLED LED walls are the world's first ARRI-accredited displays for virtual production. ARRI Stage Accreditation is an international program delivered by ARRI Solutions. It utilizes ARRI's deep expertise in image quality, efficient studio design, and reliable workflows to set the benchmark for best-in-class virtual production environments. Bertrand Dauphant, President & CEO of ARRI Asia-Pacific, praised the collaboration, noting, "It was a long process to achieve accreditation. X3D Studio worked closely with our engineers in Germany to meet the stringent standards. These include but are not limited to installation workmanship, the color accuracy, contrast, and brightness of the LED walls."

"ARRI is a leader in color management," said Ivan Tymoshenko, Head of VP Operations at X3D Studio. "The LED walls are crucial in virtual production, and ARRI's accreditation underscores the high standards we've achieved. What this essentially means is that there will be color consistency throughout the whole system starting with the signal to the LED Wall to the final outcome of the production. This makes the whole process seamless with less work required at the post-production stage because of the color uniformity achieved during production."

Susan Hoe, Regional Sales Director (Malaysia & Singapore) of INFiLED commented, "We are pleased and privileged that our INFiLED LED walls are the first to have achieved ARRI accreditation globally. It shows the ever-evolving work put in by our R&D department to ensure that our displays are of high quality and standard. We are confident that those who use X3D Studio will appreciate how our LED walls help their productions attain the feel and look they want."

The studio also features real-time motion capture using OptiTrack's PrimeX 41 and PrimeX 22 motion picture cameras, along with the CinePuck tracking tool for 3D accuracy. X3D Studio's camera arsenal includes the renowned ARRI Alexa 35, celebrated for its superior image quality and dynamic range. Adding to the versatility is a Scorpio 45' telescopic crane, providing precise camera movements and extensive reach for creative shots.

In space-constrained Singapore, X3D Studio offers a game-changing solution for creative productions. "We have a dedicated Brain Bar team for real-time collaboration between directors, VFX artists, and the entire production team," added Tymoshenko. "This further optimizes workflow and ensures a seamless production process." X3D Studio is not just a production house but also aims to be an educational hub. It plans to partner with educational institutes to provide courses in virtual production and upskill freelancers, fostering new opportunities in this burgeoning field. Learn more about INFiLED LED walls at [www.infiled.com](http://www.infiled.com).



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VIDEO



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on a successful World Tour!  
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incredible production.***

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# MORGAN WALLEN

ALL PHOTOS RAW CEREAL

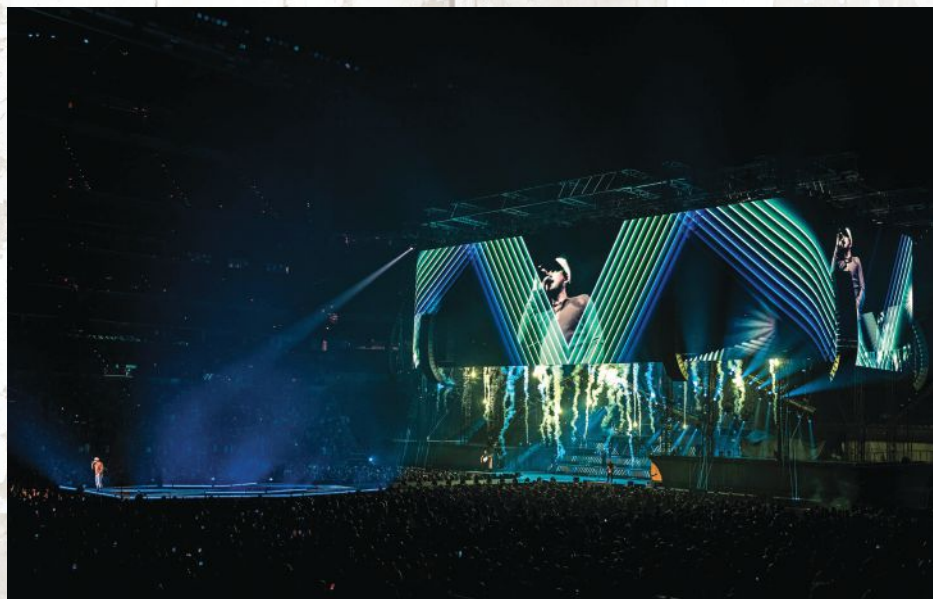
By Michael S. Eddy

Country performer, Morgan Wallen continues his meteoric rise and has scaled up his tour to a stadium filling stage with a truly massive video header. For Wallen's *One Night at a Time* Tour the team from the Raw Cereal, the creative production and design studio led by Cort Lawrence and Anders Rahm, have designed a visual experience that highlights Wallen and his music harmoniously. Show Designer Lawrence, along with Screens Producer Aron Altmark and Production Manager Chad Guy spoke with *PLSN* as we shine the spotlight on this incredible production. We also have Vendor Views from some of the production companies supporting this tour to get a bit more insight.

**CORT LAWRENCE**  
Show Designer / Director, Raw Cereal

Having previously worked on Wallen's last tour, which was almost all sheds, the Raw Cereal team knew they needed to think much bigger for his *One Night at a Time* Tour hitting stadiums. Lawrence and Rahm conceived a visually-forward stage design that would fill the space yet keep focus on the artist. "When we started the process about a year ago, we knew we needed to create something unique and spectacular for Morgan and his audiences. We wanted to come up with something that people have never seen before," explains Lawrence. "That's what Raw Cereal does best; being on cutting-edge of finding something that's new yet do-able. Because we can all think about the coolest stuff we want to see on the show, but you have to come up with something that's going to load-in and -out easily, be friendly to the crew—both touring and local, but also give audiences something that's just an amazing journey throughout the show. For this design, the video header is that, it is the main staple of the show; a 270° view of Morgan. That was one of the selling points of this tour, having more audience incorporated around the sides."

In keeping with the large, wrap-around audience plan, the designers wanted to keep sight lines open through the stage house and give



some large open runways. "We really needed to create a production that was open," says Lawrence. "We had the video header above to see all the details of the stage, and then created an open floor plan to give the audiences straight site lines and not have a video wall in their way. The video header, if you were to flatten it out, is 235' long. The main, front portion is 126' wide by 33'-10" high, then you have the sides, each coming in at 57' wide. The unique part of this screen is the curved corners as it wraps; we spent a lot of time engineering those corners."

The creative team chose to go with a 5mm pixel pitch LED screen for the best possible picture. They worked closely with Nighthawk Video, who supplied their Saco A5 5mm LED video panels along with Nighthawk's Touring Fast-Frames. "The team at Nighthawk Video has been absolutely amazing," notes Lawrence.

"We went with a higher res tile and chose their A5 product because we wanted the content to be really immersive. When people are far in the back, they're seeing a level of detail that is just indescribable. Most of the content was created in-house, as we have a great team on staff creating 2D and 3D content. We acted as the sole creators and producers of this show from top to bottom because we could then control everything. We really wanted to have the music drive the show and not worry about how the lighting is going to mix with the video; and how's video going to mix with the lasers. The stage looks like a giant cake because you have a video header up top, you have lights in between, and then you have the band and production down below along with further staging. We also have two B-Stages. All these layers from top to bottom add more value and more experience to

the audience. Nobody gets bored during the show; it's quite a journey."

## All in the Details

The creative and production team spent a lot of time engineering the stage and production elements to ensure safety. "The stage is holding a million other things like lights, lasers, automation, and pyro," states Lawrence. "We built the production with the video header first and then really worked around everything else. It's all the small details. Having a stage this big, we had to focus on the smallest inches. Everything in this design is placed specifically because we had to build with the stage in mind. We worked closely with G2 Structures on understanding their stage and really creating a new stage. That's the beauty of G2, they have a lot of designers asking, 'how can we orientate your stage to function with this design?' Placing everything around the stage and having to put everything within inches, that was the most time-consuming process. However, the final product is stunning because everything has been placed perfectly, perfectly for the band, perfectly for the production elements like the lasers, and you still have the trusses moving very closely together. You have a video wall moving in and out as well. We have all these things that are within a matter of inches. We also had to be considerate of pyro regulations to make sure we comply with as well as making sure the lasers are hitting at the perfect spot."

With a show this technically precise, it took a lot of players to make it all happen, points out Lawrence. "Of course, key is Anders Rahm, my business partner, as well as Creative and Show Director for this show. We collaborate on all our projects because our experiences are different from each other's, and having a partner like that allows us to really put our heads together, but also lead different teams on the show. That's what we needed. It was a dual headed snake to tackle this massive production. The Raw Cereal team also had a dozen amazing people on this project from content animators to producers to other creators to technical people to

make it happen. Our technical drafting team was All Clear Visuals, led by Matthew Geasey. We worked very closely with Chad [Guy, PM] on the engineering, especially the video wall and header because there's a lot of safety elements that went into it—wind bracing, weight and wind studies. Also, Patrick "Murph" Murphy the Technical Director; having those two guys guide us through what they needed from us, and us showing them the creative needs, really brought forth a mind-blowing show. That collaboration just worked so well!"

### Layering I-Mag with Content

The video itself for the show is a mix of affected I-Mag and content. There are no separate I-Mag screens. "The big point of this screen is of course we wanted the audience to see Morgan up close," says Lawrence, "so we spent a lot of time incorporating Morgan with the content, using background removal, using Notch effects, and using a lot of camera tricks as well. This show has an amazing amount of cameras because we wanted to capture every moment from different angles. That let us really show Morgan with the content at the same time. The screen has so many things going on at once, and we've created a lot of picture-in-picture moments. We're using Notch and different effects to have I-Mag inside the content."

Raw Cereal brought back Aron Altmark, Founder of Visual Endeavors Inc. to serve as Screens Producer, overseeing and coordinating the complicated video set up for the tour. "We worked with Aron last tour, and we wanted him to be a part of it this year as he has a great eye for technology and for visuals," explains Lawrence. "Having him integrated into our ecosystem again, allows for more conversations upfront and more flexibility and capabilities that put together something new. Aron is the same as us, in terms of asking 'what can we do differently? What can we do better? What can we do that's new?' He's been a huge proponent of pushing technology and pushing capabilities. This system on the road is one of the most technically advanced systems out there because of the way we're driving content, the way the cameras are integrated, and the minimal frame delay. Working closely with Aron and Nighthawk, let us foolproof the system and give the audience a show that, though they don't know all these technicalities, when they see it, they know it's a really well-done show."

### Flames, Lasers and Wristbands

Unlike a lot of country acts, this show had a lot of pyro and used quite a few lasers to extend the energy of this show. Raw Cereal worked closely with FFP Effects on the flames and pyro, and Strictly FX for the lasers on this show. "FFP and Strictly FX are two of the industry's best special effects vendors," comments Lawrence. "We wanted to boost the flames this year and put flames more out in the audience; really spread these massive 60' tall LFG Flames around the sides and top of the stage, surrounding it. We tried to spread out every production element within the stage space and have pyro be focused around the stadium. Then we have lasers around the stadium—60W lasers out on the FOH tower shooting back at the stage, and then almost 80 of the [Kvant] Burstberry Lasers that shoot down from inside the lower lip of the video header. Those create a mask around the stage, which adds a unique look when the haze is just right. By bringing the production to the audience with these effects we gave them an immersive experience."

For another element to immerse fans, the



creative team brought in PixMob to provide LED, wristbands. "I will say the biggest win for us this year has been the use of PixMob," Lawrence says. "The wristbands have been a huge hit with the audience and a huge hit for Morgan himself and the band because they finally get to see that musicality in our programming. When they're on stage and they're looking out at a crowd of 60,000 and they see all those wristbands moving to their music, it's such a feeling for them and a connection with the audience."



**ARON ALTMARK**  
Screens Producer, Visual Endeavors

With over 150 minutes of 12K content, and a full 4K camera system married to a massive LED video screen with a 5mm pixel pitch, you're going to need a Screens Producer who can take a broad overview of this complex touring video system. As Lawrence said, that was Visual Endeavors' Aron Altmark. As to his approach, Altmark explains, "We've been trying to bring screens producing as an art form back to the live world. I'm very much a fan of the Laura Frank school of screens producing. We've been working with several clients, including Raw Cereal, who want someone sitting in this role, having a 30,000' view of the content creative process; how to cleanly integrate from content ideation to delivery and getting it on screen. Cort and Anders approached me to work on the original Morgan tour, since we were trying to do some wild stuff with Unreal Engine, BlackTrax, really cool things. This year it's a stadium tour with a massive 12K raster, a 4K camera package, and realtime Notch effects. There's just a lot going on and I came in to this role of looking over everything. Knowing enough of the pieces and parts of every discipline that we could help translate between Disguise and engineering and control, as well as camera shading and camera direction; things like that."

### 12K Video Raster

Morgan Wallen is a big, A-list country star now playing big stadium shows, with very large audiences and Altmark knows that when an artist plays stadiums, the audience still wants to see the artist, "to have an intimate experience with the artist," points out Altmark. "I think I-Mag does that for a lot of people on this show but we're really trying to find ways to do I-Mag in different ways. We found some fun ways to embed it in different mortises and arrangements as well as come up with some clever Notch treatments and integrate those also. One of my biggest focuses was that we are running 5mm LED on a stadium tour, with a total raster of 12K x 2K for just the header, not including the other LED screens and LED risers. Also, we had 4K

cameras from Nighthawk on this job. As soon as I learned that there were 4K cameras, I told Cort we should run them at full 4K; 'it'll look great.' He wanted to know if we had the performance for it, which I didn't know at first, but knew we could always go backwards."

Altmark interfaced with the Nighthawk team, especially on the engineering side, to see what was possible. "We did a fair bit of science projecting with Iain Donham [Lead System Engineer] from Nighthawk, who is an amazing engineer. We talked through the whole thing. A lot about delay and making sure we weren't introducing latency with the creative choices we were making. I think using a 4K camera chain native and using cameras going through Disguise media servers straight to the LED is beautiful. I have not seen sharp I-Mag like that in a while. It's really nice. The Disguise GX 3s were beastly, but they took it well. We were trying to do a lot. Most camera chains are still HD, since for most concerts there's no reason to do a 4K camera chain; it's expensive on the engineering side. Nighthawk does have a really nice setup though."

On that point about vendor support, Altmark comments that, "Nighthawk was great. They were really a pleasure to work with. Iain was great and he really tied into the idea of let's make this look as good as we can; let's spend the time to figure out all the bits and bobs, and the ins and outs. Part of what I do a lot in screens producing, and Notch technical producing role, is I come in and put up a chart and sit there with everybody just looking at latency and at color; really trying to make the I-Mag look smooth in person. Nighthawk was totally down for doing that, which is really nice. We were all looking into the Disguise side and trying to figure out what other handles we could push and pull to get things looking better and better."

### Distributed Render Farm

The video team for this tour did run into some technical challenges. One of the biggest was trying to render a show with 150 minutes of content at 12K. "It was no small feat," says Altmark. "A lot of people are starting to run into things like The Sphere, so we were asked to figure out how to render all this content. My colleague, Scott Millar, who has a company MDLR Technologies, came up with basically a distributed render farm solution across the country. We used some Pixel Cansons that my company VE builds and then other machines that we connected over the Internet. Raw Cereal had animators all working over a distributed cloud solution to work on source files. Then we were rendering all that, getting it sucked down and putting it into servers; a pretty beastly endeavor."

## PRODUCTION TEAM

**Production Manager:** Chad Guy  
**Technical Director:** Patrick "Murph" Murphy  
**Stage Manager:** Donnie Floyd  
**Show Director & Creative Director:** Anders Rahm  
**Show Designer, Show Director, Creative Director:** Cort Lawrence  
**Screens Producer:** Aron Altmark  
**Lighting Operator:** Zac Coren  
**Lighting Programmer:** Tyler Santangelo  
**Content Creative Director:** Natalie Hall  
**Content Producers:** Liv Krusinski, Vanessa Johnson  
**Content Technical Director:** Scott Millar  
**Video Director:** Adam Cline  
**Video Crew Chief:** Michael Sienkiewicz  
**Lead System Engineer/ Shader #1** Iain Donham  
**Engineer/ Shader #2:** Fred Fournier  
**Engineering Assistant/ Robo Op:** Santi Torres  
**Disguise Programmer/ Operator:** Jonathan Laosy  
**Lead LED Technician:** David Klann  
**LED Assist/ Climbers:** John Dolderer, Kenny Ramseur, Jabari Bolden, Rob Brewer  
**LED Floor Technician:** Bryan Keyes  
**LED Assist/ Long Lens Camera Ops:** Don McKim, Gabe Vomfell  
**LED Assist/ Handheld Camera Ops:** Mike Walker, Cody Moore  
**Furio Camera Op:** Elliott Roll  
**Steadicam Op:** Andrew Cora  
**Steadicam Assist:** Travis Krajewski  
**Nighthawk Technical Director:** Leon Roll  
**Nighthawk Director of Engineering:** Bryan Venhorst  
**Laser Crew Chief / Operator:** Shane Davis  
**Laser Tech:** James Irby, Trae Howard  
**Laser Programmer:** Doug Cenko

## VENDORS

**Video:** Nighthawk Video  
**Content:** Hidden Road, Raw Cereal  
**Lighting:** Christie Lites  
**Lasers:** Strictly FX  
**Flames/Pyro:** FFP Effects  
**Staging:** G2 Structures  
**Automation:** TAIT  
**Scenic:** Gallagher Staging, TAIT  
**Barriers:** Guardian Barrier Services  
**LED Wristbands:** PixMob  
**Technical Direction:** Clear All Visuals  
**Trucking:** Averitt/On Tour Logistics

## GEAR

**Video**  
**4,280** Modules of SACO A5 5mm LED Saco Nano 4K Processing  
 Disguise GX 3 Media Servers  
 Nighthawk Video Touring Fast-Frames  
 Nighthawk 4K UHD HDR Grass Valley Flypack System  
**1** Grass Valley 4K Korona 2ME+ Switcher  
 Ross Ultrix Routing and Terminal Gear  
**10** 4K Grass Valley LDX150 Camera  
**3** 4K Grass Valley 4K LDX135C Camera  
**13** Fujinon Lenses  
**6** Panasonic 4K PTZ Robotic Camera  
**2** 4K DreamChip 16 Mini Cameras  
**1** Furio Robotic Tracking Dolly System  
**1** SteadiCam GPI Rig  
**Lasers**  
**71** Kvant Burstberry RGB Laser  
**6** Kolo 60W Lasers  
**2** Strictly FX Custom-Built Tube Hazer  
**3** hazebase Touring Stadium Hazer  
**PixMob LED Wristbands**  
**2** PixMob MVT  
**8** PixMob Moving Head  
**36** PixMob Wash

If Altmark were speaking with another screens producer, someone who really understands this level of video, he would tell them to “pay attention to how crisp everything looks. If you know what you’re looking for, you’ll really appreciate how good it looks. We did some tests because we knew it was going to take a long time to render content, so we rendered the tests at 6K. We accidentally rendered something at 12K and put it up there and we were like, ‘Holy crap, now we have to render everything at 12K because it looks so good.’ The 4K cameras really just showed. I said, ‘well, is the juice worth the squeeze?’ We all agreed that it was absolutely worth the squeeze. It really shows what you can do with an involved team where everyone knows the what the tools can do and what they’re capable of. From the Nighthawk team to our media server programmer and tech, everyone was able to just really ring everything out and squeeze every absolute last good-looking pixel out of it.”

**CHAD GUY**  
Production Manager

Production Manager, Chad Guy has been working for the Morgan Wallen camp since June of 2022 and has seen the meteoric rise of Wallen. “Everything has happened so fast for Morgan,” Guy says. “Some call it an overnight success, even though he’s been at it for years, but we literally went from sheds the first summer to stadiums the next. The biggest challenge



overall, I think, was really just having to scale up production appropriately with the pace of his career. It’s been an absolute rocket ship; a fun and creative challenge for sure. It’s a big show, this tour, with so many different and interesting production elements. Morgan is not just a country artist, which I think is one of the most interesting parts—we’re not tied to one genre. He crosses genres and we’re able to do different things. To me, this is a big rock tour more than anything when it comes to production. Bringing in the automation elements, really leaning into special effects—pyro and lasers, and all that kind of stuff has been a lot of fun and really

plays so well into his music and his live show as a whole.”

Since it is a big production there’s a production day built in before the first show of each stop, but they are show-ready in about eight hours. “We always get the band in for a sound-check the night of that production day to get it up and out of the way,” explains Guy. “We’ve got an incredible team of vendors this year, and our staff is just second to none. I’m so proud of the team that we’ve built and there’s so many different layers to the onion. Our Technical Director, Patrick Murphy and our Stage Manager, Donnie Floyd, are incredible about coordinating the ‘dance’, as we call it. There’s seven different layers that have to all lay on top of each other and flow into sections. And the vendor teams and our crew overall has just been so great at coordinating all that; making it as smooth as can be for 30 trucks. We have 10 steel trucks from G2 Structures and 30 production trucks. I don’t think we’re doing anything groundbreaking in terms of what’s available, but people are certainly taken aback by what we’ve been able to build and accomplish within 30 trucks; effectively move that around the country, and around the world. The conversations that I have with other production managers, just more than anything, are about the team and what we’ve built in terms of the synergy and the collaboration that we have within that team and the vendors themselves.”

■ Vendor Support

Speaking of vendors, for Guy much of it goes back to long-term relationships he’s built up over the course of his career. “We lean heavily into the video obviously on this one,” comments Guy. “Nighthawk is a long-term relationship for me, going back to KISS and other acts. We know we can really lean into their service; they always look after us. The video header is the largest and most impressive piece of the production itself, and we went heavy on the camera package to support that. We’ve had a great Video Director in Adam Cline with Nighthawk. Again, that’s a long-term relationship with him and I’m absolutely thrilled to have Nighthawk on board this year. They really brought their A team to the table, and we couldn’t do this one without them.”

TAIT is another big contributor to this year’s Morgan Wallen tour, and Guy is pleased with their work as well. “TAIT has supplied us with all of the set and automation for this tour, including: all automated lighting trusses in the rig; a custom band riser that includes three lifts; a custom breakaway door that lives under the drum lift for our show intro; two elevated B-Stage performance areas (SL & SR) on the main stage, with our tech bunkers built in underneath. We created very specific vignette performance mo-

ments for each B-Stage area. On Stage Right we have a custom-built “Mamaw’s House” set piece, that is a recreation of Morgan’s Mamaw’s actual home. Mamaw’s house set was built by Gallagher Staging. On Stage Left, we’ve created a baseball theme, with custom stadium bleachers and stadium lights to pay homage to his love of baseball. There’s a C-Stage performance deck and piano lift that we use at the back of the stadium floor, to bring Morgan right out to his fans at the back of the venue for a four song set. TAIT also supplied a 3D Nav Cam system for our video team to capture incredible camera angles around our custom “MW” video thrust.”

G2 Structures, which did one stadium show at the ballpark in Arlington, TX last year with one of their standard K2 stages for Wallen, is back for the stadium tour. Guy states, “We had such a great experience with those guys and a great working relationship right off the bat that when I knew we were going into stadiums for this year, they were the first call that I made. More than anything, it’s just the ease that that system goes together. We are using a custom K2i system this year. This is complete and custom for our show, and they dove in right away. There were certainly engineering concerns with 97,000 lbs. of video in the air with that massive header, but their engineering team is second to none. They’re never about what they can’t do, but always what’s possible, which I really appreciate. They came to the table with some great solutions for us to pull this off, where we didn’t need a steel structure that takes days of crane time. Our cranes are in the room for only three hours on this build. The speed at which this system comes together has really been cost effective and has allowed us to streamline things overall. It also helps that Guardian Barriers is part of the one big family. It just streamlines things for us top to bottom in terms of the logistics of moving gear around. They look after us as one big package.” When it came to lasers, Guy called on Strictly FX. “Strictly is a new vendor for us this year. I’m a good friend of Chris Roberts, who has been doing some work with Strictly FX, and we decided to make the move for lasers with them this year. They have such a long history of great work, and it is no different on this one. They’ve done an incredible job for us this year.”

■ Creative / Production Collaboration

Guy particularly appreciates having a great working relationship with both Lawrence and Rahm. “It is a real collaborative effort,” says Guy. “We spent the better part of six months on multiple Zoom calls a week and really diving into Morgan’s creative vision and what he wanted to see. I think it’s a great partnership. The communication’s incredible, and we really work well with each other and support each other’s ideas. They’re incredibly talented young guys and we couldn’t be happier with how it’s all come together. They truly understand not only Morgan’s vision, but they’re great about working with us to really make it streamlined and as easy as possible on the logistics side. They’ve done some remarkable work, and it is no surprise that their client list is growing by the day. The entire Raw Cereal team did an absolutely great job representing Morgan and his diverse catalog of music. Their content and visual representations of his music are stunning. They truly capture him, and his music beautifully. I think the scale of what we’ve built video-wise, and the overall production is breathtaking. It certainly puts people back on their heels a little bit when they first see it. We’re all super proud of how it all came together and the team it took to do it.” **PLSN**

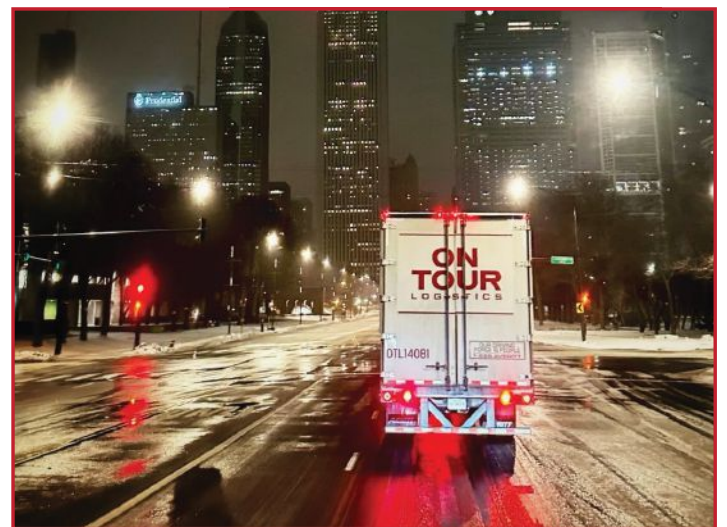
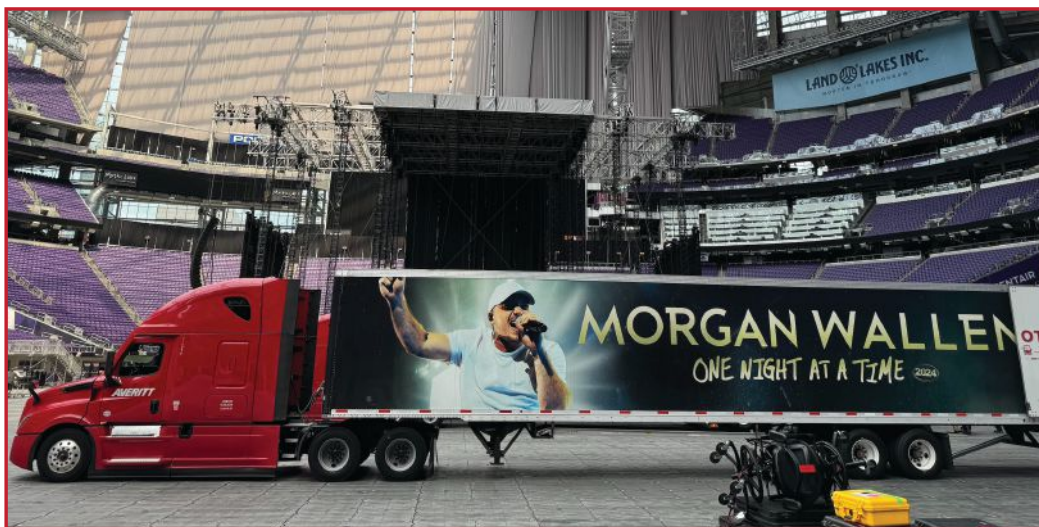
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**PIXMOB**



# PROUD TO KEEP THE MUSIC ROLLING.



All of us at On Tour Logistics would like to congratulate our good friend **Morgan Wallen** for his spotlight in this issue of *Projection, Lights & Staging News*. As the proud logistics partner for your **One Night At A Time Tour**, we've enjoyed every minute of the ride. Here's to many more nights of incredible music and unforgettable memories!

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**NIGHTHAWK VIDEO**

*Bryan Venhorst, Director of Engineering & Todd LePere, Sales Director*

**On the solutions Nighthawk Video supplied**

We pushed the envelope in visual effects and scale by utilizing multiple UHD/4K canvases, leveraging the power of Disguise and Notch effects. This combination allowed us to display a visually stunning show that seamlessly blended high-resolution imagery with dynamic, real-time graphics. By artistically integrating our Grass Valley cameras, Cobalt/AJA color management and the Disguise GX3 Media Servers, we created a mesmerizing visual experience that set a new standard in the industry, showcasing unparalleled clarity and creativity. Our Touring Fast Frame System and brand-new custom wind-bracing solution really help simplify and streamline our LED build and integration with G2 Structures. We also designed a matching custom curved corner frame that allows us to seamlessly round the downstage corners.

**On why Nighthawk Video was the right vendor**

Our incredibly skilled crew have proven to be the best qualified to execute a show of this size. Also our teams prior experience with stadium level productions was a big reason Production Manager Chad Guy trusted us to provide the best solution for the massive LED header using our new Saco A5 5mm LED utilizing our Touring Fast Frame system. It allows us to load-in and load-out quickly and efficiently every day. I also want to say that we love working with Cort Lawrence and the team at Raw Cereal, they are always looking to push the creative and technical boundaries with video and design, and we love helping them execute their visions.

**STRICTLY FX**

*Shane Davis, Laser Crew Chief / Operator*

**On the solutions Strictly FX provided**

The biggest challenge with this show, from a laser standpoint, is the size and scale of it. We're independently controlling a total of 77 laser fixtures, which requires an enormous amount of data. It requires us to operate from multiple computers across a few different VLANs. For a laser rig, that's uncommon, and there aren't a lot of programmers or operators who know how to do it. I knew going into this tour that we were going to have to approach it with a different mindset. This isn't a throw-and-go setup with a dozen or so lasers. It required a lot more forethought and planning. We spent several weeks mapping out diagrams and network schedules, and I've done everything I can to make sure that things stay in the correct place and order. Getting 77 lasers loaded in and out each day is rather cumbersome, because lasers are usually treated like stand-alone fixtures. We knew that if we approached this with that mentality, it would take forever to load in and out, and time would be an issue, not only for us, but for the rest of the production. We settled on adopting a similar technique to what lighting companies do. The lasers are affixed, three each to 10' pipes. At the end of the night, instead of disassembling the rig and stowing each fixture in its case, production helped us build a set of meat-rack style set carts that the laser pipe assemblies can ride in safely, fully assembled. This significantly cuts down on our load in time.

**On supporting the team for this tour**

Both creative and production were adamant about one thing when we began designing: "This isn't an EDM show", and we knew exactly what they meant. With lasers, it's a tough balance. Lasers, by design, are bright, visible, and striking. If they weren't, you'd just use regular lights instead. The trouble is that you can start to make them look artificial and obtrusive if you're not careful. For a loud, upbeat EDM festival, striking and obtrusive is perfect, but for a country ballad, it feels out of place and detracts from the show. Cort and Anders used the same word again and again throughout rehearsals: "cohesive". Our Programmer, Doug Cenko, was really presented with a challenging task. How do we make the lasers visually stand out, but simultaneously make them *feel* like they blend in? Through the use of complex fades and brightness effects, I think Doug did a phenomenal job of finding that balance.

**On why Strictly FX was the right vendor**

This was a complex one. I honestly don't know that any one of us could have done it by ourselves. Between prepping the gear, building the control racks, networking and configuring the rig, programming, advancing, permitting, and actually running the

**THE VENDOR VIEWS**



show, we all play critical roles. Strictly has given me the support system I need, and we're such a diverse group of people from different backgrounds and with different skillsets, that I know, together, we can do anything. We're special effects for a reason. When something seems unorthodox or hasn't been tried before, we have the ambition and the audacity to make it happen.

**G2 STRUCTURES**

*Greg Hareld, Managing Director; Cliff Ward, GM; and Josh Bashaw, Project Lead*

**On the solutions G2 Structures provided**

Production Manager Chad Guy and the creative team at Raw Cereal, led by Cort Lawrence, expressed a desire for a stage design that would stand out from traditional configurations. He wanted to focus on a visually impactful set yet maintain an intimate and personal atmosphere. We were confident in our ability to deliver a design that would honor the vision, collaborating closely with Brock Mearig at TAIT for the design and fabrication of the set. Additionally, Matt Geasey of All Clear Visuals played a pivotal role in coordinating all the elements from the assorted vendors into a unified CAD design. One of the key challenges we initially encountered was meeting the logistical demands. A significant aspect of this production was the massive video wall supplied by Nighthawk Video. Leveraging the modular design of our K2i system, we collaborated with Clark Reder Engineering to create a customized stage that could support the scale of the tour. Through the addition of four towers plus an additional five feet of trim height to the standard K2i system, we were able to deliver a stage that met the specific requirements.

**On supporting the team for this tour**

During the production rehearsals conducted at Rock Lititz, an obstacle arose regarding the proper bracing for the video wall on the stage. While the indoor rehearsals progressed smoothly, there was concern about the upcoming outdoor shows, just one month away. To address this issue promptly, a team comprising of Ben Bickel, the tour's Head Rigger; Patrick Murphy, Morgan Wallen's Technical Director; Leon Roll from Nighthawk Video; and ourselves from G2 Structures, collaborated to find a suitable and safe solution that met the needs of all departments involved. Chad Guy meticulously worked with all departments to refine the show over several months. Weekly Zoom meetings were held to

ensure seamless collaboration with careful attention to detail. The teamwork and unity among colleagues to create a cohesive and enjoyable work environment was a delightful experience.

**GUARDIAN BARRIER SERVICES**

*Pat Cordova, Driver/Tech*

**On the challenges Guardian solved**

The first challenge was logistical in nature. Given the high costs associated with freight, we needed to identify a cost-efficient method for transporting barrier and cable ramps, along with a technician, to multiple cities. Guardian's solution to send a technician, who is also a truck driver, was beneficial because it ensured a consistent point of contact for each show stop, effectively merging logistics with production. The second challenge was implementing the barrier layout to safely accommodate the 120' thrust while adding a section for seating and a general admission pit. The barrier needed to split in three different directions, could not have any pinch points, and required sufficient blowouts for egress. Our solution utilized Guardian's specialty barrier pieces, including vario, fixed, and flexible corner pieces, to create angles as needed. Additionally, we installed gates of various sizes to effectively manage patron flow and cable access. Pinch points are always a big concern with barrier builds. Guardian alleviates hard negative angles on the barrier line by using the specialty corner pieces to smooth out angles, making them gradual and safe. The Morgan Wallen camp has been nothing but stellar. At times, barrier techs are overlooked, but the Morgan Wallen camp assures they are supported in every way.

**On why Guardian was the right vendor**

This tour necessitated a complex barrier construction with highly specific requirements. Guardian Barrier Services successfully met these requirements by utilizing our extensive inventory of specialty pieces, while ensuring that the barrier construction was both visually appealing and compliant with safety standards. Guardian has created a strong internal network to make touring possible. A well-equipped warehouse staff, planning manager, logistics team, and upper management at the headquarters in Mount Joy, PA assure that each Driver/Tech is supported through every step, and every tour stop.

**PIXMOB**

*Hila Aviran, Director of Tours & Entertainment*

**On the solutions PixMob supplied**

One of the big focuses was how to make this stadium tour feel like a massive stadium show, to achieve that we brought in the PixMob Infrared Moving head system to paint moving effects on the crowd that sync to the rest of the show. PixMob wearables are dynamic in how flexible they are in terms of effects and reaction times, but the "MH" as we call them, bring dimension and depth to the visuals in the audience in a way that extends the creative from the stage onto 50,000 people in a split second.

**On supporting the team for this tour**

Our first contact was with the very talented creative director, Anders Rahm, from Raw Cereal. Anders is a flawless communicator and can paint the picture of an artist's vision in a way that you can quickly envision and start building around. Communication is always key, but on stadium tours where there's just more of everything - gear, people, visuals - then great communication is the magic ingredient that makes for delivering a seamless stadium tour. Both the creative and production teams were pros at being quick, responsive, and fully focused on delivering the biggest show possible.

**On why PixMob was the right vendor**

Anybody can turn on a wearable LED and flash it on and off, but with generic wearable LEDs you tend to get generic shows. Because we have a team of engineers that builds technology that can be morphed and customized to individual artists, we're able to go beyond lighting up an LED and flashing it on and off. Our goal is to make every show unique to its artist and in order to do that, we constantly push our effect capabilities. When you go to a Morgan Wallen show and sit in the crowd, you'll see Morgan Wallen visuals on the stage and everywhere around you. You become the shapes, waves, chases, that sync perfectly to every song. Generic is the thief of creativity, and we steer away from it every time we program a tour. I think our robust technology and stadium experienced team is why we were the right vendor for this tour. **PLSN**

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# PEARL JAM

## Dark Matter World Tour

By Michael S. Eddy

**P**earl Jam is back on the road with its Dark Matter World Tour 2024 with a production design by Spike Brant of Nimblst, lighting design by Kille Knobel, and video/screens production by Rob Sheridan. The three creatives shared their thoughts with PLSN on this engaging production which brings more video to the band's performance while still remaining true to Pearl Jam concert. Each of them speaking about working on this very organic production to take us behind the design, sharing their insights in their own words.

**SPIKE BRANT**  
Production Designer/Technical Producer, Nimblst

Kille and I have worked together on Pearl Jam's design for over ten years. Eddie [Vedder] made a connection with Rob Sheridan, so they they developed the high level creative direction focused on the look and feel of the projected video content. It was important to the band for the existing team to work in collaboration with Rob, which has been key to the success of the design. The band desired a minimalist, stripped down approach, bringing video to the forefront...They focused on having a clean stage — something they've been working toward over the last few years. As a result, we have our very first custom TAIT stage, allowing us to hide the monitors underneath the stage.

### Video-centric

There is a strong visual design element associated with the new record, *Dark Matter*, which is a big change. The band released a visualizer as part of the album to go along with the music. For many years, Pearl Jam



has played 360° shows, but with this video-forward design, the onsale was adjusted to go 180° straight across the upstage edge. Ed wanted the audience to have a clear view

of the screens; he didn't want to compromise this experience for the sake of selling more tickets.

The band wanted a large, immersive can-

vas, and so we had conversations about the pros and cons of LED vs projection. Since the band is very organic, a big LED wall just didn't make sense, so that pushed us towards using projection on a giant canvas. A lot of really practical elements drove the shape of the screen based on a study of multiple venues. We came up with a fixed shape for the backdrop that would work in almost all the arenas. Even with our goal of minimalism for the show, we still ended up with 140 points of rigging, including hanging a massive projection surface extending over the seats. Initially, we were leaning towards a leno-filled scrim, but it wasn't an option for the massive size we needed. In the end, we ended up with a 150' wide seamless gray muslin plus legs. It's 35' high in the center and tapers down to 20' high at the edges. The drop was built by Sew What? Inc.

The trick is to fly it as one piece, so SGPS took their triangle track truss and made a custom hinge that folds upwards like an F-14 plane on an aircraft carrier. You build the three pieces, put the drop on the carriers just on the center section. When you take it up to trim, it's flat, so that you can pull it straight, stretch it from the top, and then put pipes in the bottom and tag it off. Once it's up, it stretches out quickly, never having to drag the drops over the seats. It gets loaded and struck from the center. For projection, we went with three sets of triple-stacked 40K projectors. We do all the convergence inside the projectors and the blending is in the Disguise media servers. With the gray fabric, the black levels were on point and the images look great.

### Blending Lighting and Video

The lighting is super-efficient, minimal,



## PRODUCTION TEAM

**Production Manager:** John Lafferty  
**Production Designer/Technical Producer:** Spike Brant, Nimblist  
**Lighting Designer/Director:** Kille Knobel  
**Lighting Programmers:** Will Flavin, Mark Humphrey, Eric Marchwinski  
**Creative Director:** Rob Sheridan, Rob Sheridan Productions  
**Video Director:** Blue Leach  
**Screens Director/Programmer:** Grant McDonald  
**Notch Programming:** Andy Babin, Hayden Katz  
**Video Engineer:** Jack Hunter  
**Projectionist:** Ed Moore  
**Video Crew Chief:** Robert Behounek  
**Server Tech/Op:** Brittany Mena  
**FOH Lighting Tech:** Dallas Sisson  
**Lighting Crew Chief:** Mike Green  
**Lighting Crew:** Brendan Langord, Adam Morrison, Zachary Boebel, Luke Dobson, Emilio Aguilar, Maya Hughes  
**Head Carpenter:** Michael Gomez  
**Head Rigger:** Davy McCready

## VENDORS

**Lighting:** Upstaging  
**Video:** Fuse Technical Group  
**Content:** Rob Sheridan Productions, Joy Bird Studios, Warm & Fuzzy Studios  
**Soft Goods:** Sew What?  
**Staging/Set:** TAIT

## GEAR

### Lighting

- 68 ACME Thunderbolt
- 38 ACME Thunderbolt Barndoor
- 28 ACME XA-1200 BW Sunrise
- 1 ACME XP-550 Scorpius
- 14 Ayrton Domino-S
- 5 Ayrton Domino-LT
- 18 CHAUVET Color STRIKE M
- 38 Elation Proteus Maximus 2.0
- 15 Elation KL Panel XL
- 6 Martin MAC Aura XIP
- 10 Martin MAC One
- 8 Mole Richardson 2kW Nook Light
- 1 Follow-Me System Remote Followspot System
- 2 MA Lighting grandMA3 full-size
- 2 MA Lighting grandMA3 Extension Wing

### Video

- 9 Panasonic 40K Laser Projector
- Disguise Media Server
- Sony FS7 Camera

### Atmospherics

- 2 Master FX Mystic 2 Hazer
- 2 MDG Atmosphere HO Hazer
- 4 Elation Magma Fan 1
- 6 Reel FX RE Fan 2
- 4 22" Half Mirror Balls

and utilitarian. We wanted to be able to control the audience lighting because of the projection. From the moment the doors open, the venue house lights are off. We're carrying over 250 ft of 12 inch truss with ACME Thunderbolts in the front of house, that we're using as house lights giving us complete control. All these ingredients play nicely together and make for beautiful images. The projection has a very soft organic feel, which is exactly what the band was looking for. The projection is very easy on the eyes and the lighting doesn't blow it out as much as one might have thought it would. The content appears soft and gives you the opposite effect of LED where everything is sharp. It's very forgiving from a content perspective. The *Dark Matter* album was foundational to Rob Sheridan's content. He created pieces as fully composed videos with minimal support lighting. The projectors act as a key light with everything blending together.

## A Show in Five Chapters

The band wanted to tell a story in five chapters, beginning with a faded red velvet curtain projected on the screen when doors open. The curtain stays for the opening act, where their logos are projected onto the curtain. When Pearl Jam is ready to go on, the 'house lights' go out and the curtain 'opens,' as the band walks onstage. The first chapter is super minimal and restrained: no video, just a simple hemisphere of light across the back, classic Pearl Jam. They start low key and play in silhouette. Transitioning to the next chapter, five old-school Mole Richardson 2kW Nook lights cast shadows of the band on the backdrop.

The second chapter is a section of *Dark Matter* songs. The lights are barely on, just supporting key light, little accents letting the content drive the visual story. Very minimal I-Mag as well. For the third chapter, we're into old-school Pearl Jam, which is very lighting-forward. Blue Leach's cameras come in strong, and we're using the backdrop like an old school cyc with solid colors, gradients and even some gobos. Here, the lighting takes lead along with Blue's cameras. Chapter 4 dives back into *Dark Matter* songs and now cameras are integrated with the content and the lighting is a little stronger. The last chapter before the encore is bigger and less constrained. Who knows what they're going to throw into the set list at this point. They come back for the encore and the actual venue house lights come on and everything is stripped away with the large camera feed on the upstage screen. The whole show is a journey, and it's constantly evolving and changing.

## Vendor Support

Upstaging was a great partner as always. Dan Curley [Senior Project Manager] and the Upstaging team understand how to package a show for touring. Our Lighting Crew Chief was Mike Green, one of my all-time favorite crew chiefs.

Ben Johnson at Fuse let us test our proof of concept at their shop in Vegas. Sew What? Inc had the resources to get us exactly what we wanted, and Andrea Fraser was a patient shepherd during the design process.

From the Nimblist team, our Technical Designer Jonathan Hollinger coordinated with every department to make sure each had their needs addressed with solutions incorporated into the drawing to make it as accurate as possible. He produced a drawing set for almost every single venue. There's a lot of work involved figuring out how to fit everything with all the audience rigging. Nimblist's Andy Philpo created all the detailed visualizations and renderings. To get all the programming done, we had three great programmers—Eric Marchwinski set it up, with Will Flavin taking over, and then Mark Humphrey joining for a week at the end to get it all finished up. It is a fantastic show, collaborative and one that keeps evolving; in other words, very Pearl Jam.

**KILLE KNOBEL**  
 Lighting Designer/Director

In terms of the design aesthetic I was going for, I would say—simplicity. Obviously, because of the projection screen I had to design a rig that was all in one plane except for some floor lights. That was challenging but an exciting thing to be faced with as well. In the past, Pearl Jam played a different set list every night, and they also changed things on the fly and cycled a lot of different songs through. Most of the show is different night to night, even though going into this, they really wanted to emphasize the new album. So, I knew they were going to play the new album consistently. Also, they've never been a band that's visually aggressive; never a super flashy show with a lot of visual noise. They've always liked an inherent simplicity. Their whole philosophy is music first, let the music stand on its own. When all's said and done, I'll have anywhere from 60 to 80 songs in the desk, to navigate the scope of what they play.

I take a little bit of a different approach to busking, I prefer to use songs that I've programmed to busk with because they're more visually composed. In the past, there was a lot of visual diversity in the shows by just relying on simple things like moving trusses. I could do simple moves with the truss and create a totally different environment. Going into this

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show, I couldn't depend on any of those old sorts of tricks, now there's this whole new element in the show. I knew the show was going to be predominantly projection forward and we wanted to make it very cohesive and integrated. It was a relief in some ways—projection in some songs is going to take the lead, and lighting in some songs is going to take the lead. I did have to think, 'How am I going to design a show that feels different when everything's just all at one trim level essentially?' So, I have a lot of different paintbrushes in terms of fixture choices.

■ **Key Gear Choices**

A lot of it I knew would come from just how I choose to use the rig. When I thought about the fixture choices I wanted for the show, I chose lights that either could do a lot of things or were powerful non-sourcey wash lights. The band wanted washes, just nice color or washes. I didn't want to do traditional wash light, which is why I used ACME Thunderbolts in the rig, both for all the audience lighting, as well as stage lighting. Spec'ing the [Elation] KL Panels worked out great. I wanted a light box effect from them, similar to something you would do on a film set to create very dispersed light. They are a gorgeous source with some of the best mixed color I have come across. Those KL Panels really ended up being

a great tool to give the band what they wanted in terms of washes. There's no song where all the fixture types are on at once. When it's a very projection-forward song, the lighting's incredibly minimal, like for most of the new material. I don't turn the rig on at all except for key light and I light everything from the floor. I'm using Follow-Me for the remote followspots, which I'm a big fan of. Upstaging has been behind Follow-Me for years. Upstaging, I think, is second to none in terms of supporting that product and the level of expertise they have in-house. Because of them I was an early adopter of Follow-Me and we've done some complicated things with it in the past. Upstaging's ability to support that product has been excellent over all the years.

■ **Vendor Support**

Upstaging has been our vendor for years, and they've always been outstanding. The gear is always pristine and well cared for; Upstaging does not cut corners on the details. If we try to MacGyver some solution with Gaff tape, pipe, and a Cheeseborough, they'll say 'no, we can build something for that.' They don't want to have any janky solutions out on tour. I've had a long relationship with John Huddleston, and now Dan Curley as our Project Manager; nothing is ever an issue. We couldn't be happier with the support we get

from them.

And I have to say, Upstaging always sends out a top-notch crew. And what an incredible crew we had this time. It's always hard between runs, because we don't go out for very long, so it's hard to pull crews together for four or six weeks. So, to Upstaging's credit, they still managed to pull these A-teams together when we have these unconventionally scheduled tours. The crew for this last leg was just outstanding; every one of them got along personally and professionally, and they worked tirelessly. I cannot take credit for the success of this tour without acknowledging I'm only as good as the sum total of the crew that Upstaging sent out. My Front of House Tech, Dallas Sisson has just been a gamechanger for me in terms of managing the complexity of this show and keeping everything organized. Plus, we had three all star programmers for this one—Eric Marchwinski, Will Flavin, and Mark Humphreys. Eric has programmed Pearl Jam with me for 13 years, on and off. It's a very unique show file in terms of how I punt, so building the architecture for that is complex; it's a real throwback to how I used to punt on the Icon console. Just a big shout out to the crew.

■ **Cohesive Collaboration**

Spike and I have been working and collaborating together for years, we're pals but as well as colleagues. We are always pushing each other to be better designers. While we respect each other's autonomy in our respective areas of expertise, we both have our hands in all aspects of the design growing it from a cohesive place. The internal vetting process we put our decisions through can be exhaustive and at times comical to witness I am told because we both have the "sweat every detail" kind of personalities. Having Rob Sheridan involved as a new collaborator on this tour has been so invigorating and exciting to our process. Stepping into a long-established camp has to be so daunting, but Rob should teach a master class on it. The band was heavily involved in the planning of the design and Rob's ability as a total newcomer to interpret their input and vision was uncanny. He's a wildly talented artist with a delicate touch. The band could not have found someone more perfect to lead us down the path of integrating content for the

first time into a Pearl Jam tour.



Pearl Jam had never had video content before, so when I joined this team that had been defining the lighting look of Pearl Jam's shows for years, the most important question for me was, "How do we bring video art into a Pearl Jam show tastefully, without taking anything away from what a Pearl Jam show is?" This is one of the best live rock bands of our generation, and the experience of seeing them play is a very strong human connection. I didn't want video to overtake the band or become the central focus of the show; it had to strike a balance.

When I first started talking with the band, they had this new album, *Dark Matter*, which had a lot of cosmic themes accented by some beautiful album art created with long-exposure light painting. You could really feel the energy of how enthusiastic they were about this album, and they wanted to present it live in a different way that framed it as something special. So after spending some time with the band and the music, I proposed a vision of conceptual, organic visuals jumping off from the album's cosmic undercurrents into an abstract world of elemental light. Pearl Jam really embraced my avant-garde approach of non-literal imagery and non-linear storytelling that would bring another layer to the new album and allow the band to play sections of it together, as a presentation. I began creating video art pieces that formed the core of the "Dark Matter" presentation, and peripheral content bleeding off of it that could become textures for other parts of the show with live cameras blended in.

■ **Adding in the Video Content**

On top of the conceptual challenges of bringing video into Pearl Jam's show, there was the very practical production challenge of transforming a long-running 360° stage format into a more traditional 180° setup. Kille and Spike had to go back to the drawing board, everything had to start from scratch. Kille had to rebuild all her cues and she and Spike had to look very differently at how to light the band and present them. But having to wipe the slate clean in that way really helped make it easier for us to integrate this

new video element holistically, as a team. Spike and Kille have been fantastic to work with. They really understood the unusual vision of video being a very organic presence in the room that sets the stage for the band. It's not a big spectacle to surround them and overtake them, it's more about creating a beautiful set for them to perform in. A big part of that was using projection to bring analog softness and a real tactile feeling to the backdrops. When I think of Pearl Jam, I don't think of big, bright, cold LED screens; I think of warm incandescent light. It's not super common to have a big front projection screen at an arena rock show these days, but it felt very Pearl Jam to me. Spike was up for that challenge, and it was cool to have so much enthusiasm from the whole creative team. On lighting, you simply don't want anybody other than Kille for Pearl Jam; she's the heart of the show and knows all their songs intimately. Plus, you have [Video Director] Blue Leach who's been doing Pearl Jam's live cameras for years. On previous tours, Blue's footage was displayed on traditional dual I-Mag screens that were disparate elements from the stage. For the *Dark Matter* tour, we centered the production by disposing of I-Mag screens and incorporating live footage directly into the imagery on our backdrop screen.

Bringing the live feeds into our main canvas gave us the freedom to design where live cameras appear on the screen, when they come in and out, how they're stylized, and how clearly the band is featured versus when the band becomes more a part of the background texture. We put together an extensive toolkit of masks, blend modes, and real-time video effects to make the cameras a dynamic part of the creative vision that make every set piece completely unique every night. And crucially, the live cameras help us strike that balance we were all seeking between a conceptual visual presentation and a show that is first and foremost about an incredible live band connecting with their audience. For certain songs, we have carefully designed video art pieces that are more immersive for the audience to get lost in a conceptual experience; then other times we just have a gradient of light as a backdrop and big live camera feeds where the audience can really see and feel the band's performance, and also often see themselves - to heighten the live human experience. Blue's directing is key to how the cameras form that connective tissue, he's been extremely involved in that integration. The whole production has been a unique collision of creative elements from several different directions, which has made for a visual canvas as diverse as Pearl Jam's set lists.

### ■ Experimental Filmmaking

For the creation of the original video art pieces, I proposed an unusual approach that the band was very supportive of. Rather than rigidly define a set number of precise "content pieces," I wanted to be able to spend time following inspiration and amassing a large library of textural elements that the video pieces could emerge from. We set up a laboratory of experimental filmmaking with a very lean crew for a few months here in Tacoma. We used a cutting-edge 1000 frames per second (developed by local company Freely Systems) and macro lenses to capture organic interactions of liquids, chemical reactions, light refractions, and other elemental worlds invisible to the naked eye. We then brought those real filmed elements together to create unique

abstract art pieces for each song, with very minimal use of CG, that felt right for Pearl Jam; very analog, tactile, oldschool. The slow-motion camera allowed us to sit in these spaces of light or water or fire and just gradually discover all these slow, elegant moments unfolding within them.

After we finished principal photography, I spent two full days sitting with Ed [Vedder] and Jeff [Ament] looking through the video pieces, seeing what directions inspired them, talking about which visuals might go with which songs. They were thrilled and inspired and phenomenal to collaborate with. There was one piece I showed them, of a very slowly moving ocean wave, which I'd turned upside down so the wave warped the surface of the water in such a surreal way that you don't even really understand you're looking at an ocean until this huge wave crashes across the screen. Ed saw that clip and said "play 'Wreckage' over that." We hit play on the song as the video clip played, it wasn't aligned at all but it just happened that the big crashing wave landed perfectly with the music. The timing was so perfect, Ed and Jeff said "that's it, that's 'Wreckage.'" So that became one of my favorite parts of the show, this one long still clip that plays without any cuts. It's a real slow-burn tension and release kind of thing, a very avant-garde way to present a new rock single at an arena concert, but it works so well, and it came out of a true spark of inspiration with the band.

### ■ Teamwork

I made all the video content with a very lean team and thankfully my producer Stephanie Sheridan, who is also my wife, did an incredible job putting all the filming, materials and crew together locally at our studio. It's been fantastic working on this tour; it's an incredible team, the band, Spike, Kille, Blue; everyone involved is just really passionate. Everything was very holistic, hand-crafted, and organic in the way it was approached. You couldn't ask for a better situation to go into, with people who are devoted to their craft, to the art that we're all producing musically and visually, just top tier on every level. **PLSN**

## VENDOR VIEW

### UPSTAGING

Dan Curley, Project Manager



#### On the challenges/solutions for this production and how Upstaging addressed them

One solution we were tasked with was how to cram a lot of lights into five clusters. Luckily, we have a lot of pods at Upstaging, and we were able to utilize some 4'x10' pods for this purpose. Designers Spike Brant and Kille Knobel came back to us with lights jammed in them, sticking out the sides of them and even poking up out the top. Another challenge, but something that we are used to, was that since there was going to be a large rear projection surface running from the 200 level balcony across to the other balcony side, every cable in the air had to go up and over the screen to backstage. This required a lot of choreography and coordination, especially since we were providing rigging for all departments as well.

Also, Kille and Spike requested the ability to get a little more spread out of the ACME Thunderbolt LED strobe/wash lights. They were going to use them to light the entire arena, from walk-in to walk-out (no house lights on this one), and all the audience looks in between. Trying to frost an LED wash is a challenge, but we settled on a film made by Rosco to get the spread to 60°. The arena ends up being evenly and well-lit with not as many fixtures as one would think it would take to achieve that.

#### On supporting the creative team for this tour

This is a great camp to work with and we are proud to be partners with them over the years. Kille is the momma bear of the lighting team, and we love her for being just that. We started this process off by hosting a fixture shootout in Los Angeles for Kille to see a range of fixtures. Elation's Proteus Maximus, KL Panel XL, and ACME Sunrise Beam Wash for the stage, and the ACME Thunderbolt to light the audience were the winners from it. Truck space was also a major driving factor in how big the system could be. We were able to use our proprietary truck pack program to show Spike that we could fit all that they had drawn into the allotted trucks for lighting and rigging.

#### On why Upstaging was the right vendor for this production

This Pearl Jam tour is a great example of how knowing your clients is the key to success, for both them and for us. Knowing the designer's quirks, what they like and don't like to see, we are then able to correct things in the shop before it can even get to a punch list of fixes at rehearsals. At Upstaging we listen to our clients to understand what they want and we pay attention to the smallest details so there are no surprises when it leaves the shop.

## Pearl Jam - "Dark Matter" Tour 2024

photos by Bob Sheridan and Dallas Sisson

# UPSTAGING

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Spike Brant — Production Designer  
Kille Knobel — Lighting Designer  
John Lafferty — Production Manager

# ELECTRIC FOREST FESTIVAL

By Mike Wharton

Electric Forest, held in Rothbury, MI at the Double J Ranch, is a three-day, four-night gathering that hosts over 30 bands and artists performing while fans step across the threshold of the mundane world into the magic of light created on stage and throughout the woods. Lambda Productions Inc., under the helm of Production Director Hadden Hipsley, is the production company that stages the event for AEG and Insomniac but, "It is a team effort working with AEG, and all of our vendors to produce this one of a kind event," Hipsley says. He brought in Michael Smalley as the lighting designer, who then introduced Hipsley to Aaron Soriero and Music Matters Productions (MMP).

"I can't say enough about the Lambda crew," says Soriero. "Especially the stage managers Joe Gordon for Ranch [stage] and Sami Slovy for Carousel Club [stage]. They're very involved with everything in the event from the advance and working with all the artists. There's a lot of audibles with the weather and stage conditions and any schedule fluctuations. They are just super helpful working with us as a team." To which Hipsley responds, "We have worked with Aaron and his [MMP] team at several other festivals and corporate events over the years. We've been very impressed with their staff and their equipment. What we are most impressed with is the level of detail and attention with the prep. Their gear and teams arrive with the systems labeled, loomed, and prepped as though they were on a tour. They collaborate well with the artists to adjust gear to try to meet their exact needs as much as possible."

## Ranch Arena

Michael Smalley of PHNTM has been the lighting/production designer for the festival for the past eight years and his client The String Cheese Incident are predominant headliners. He "grew up" with the festival in that he has worked it consistently since its first year when he was the lighting crew chief. Over the years several different lighting vendors have supported his designs for the various main stages including Ranch Arena and Carousel Club, as well as two other equally unique stages throughout the grounds.

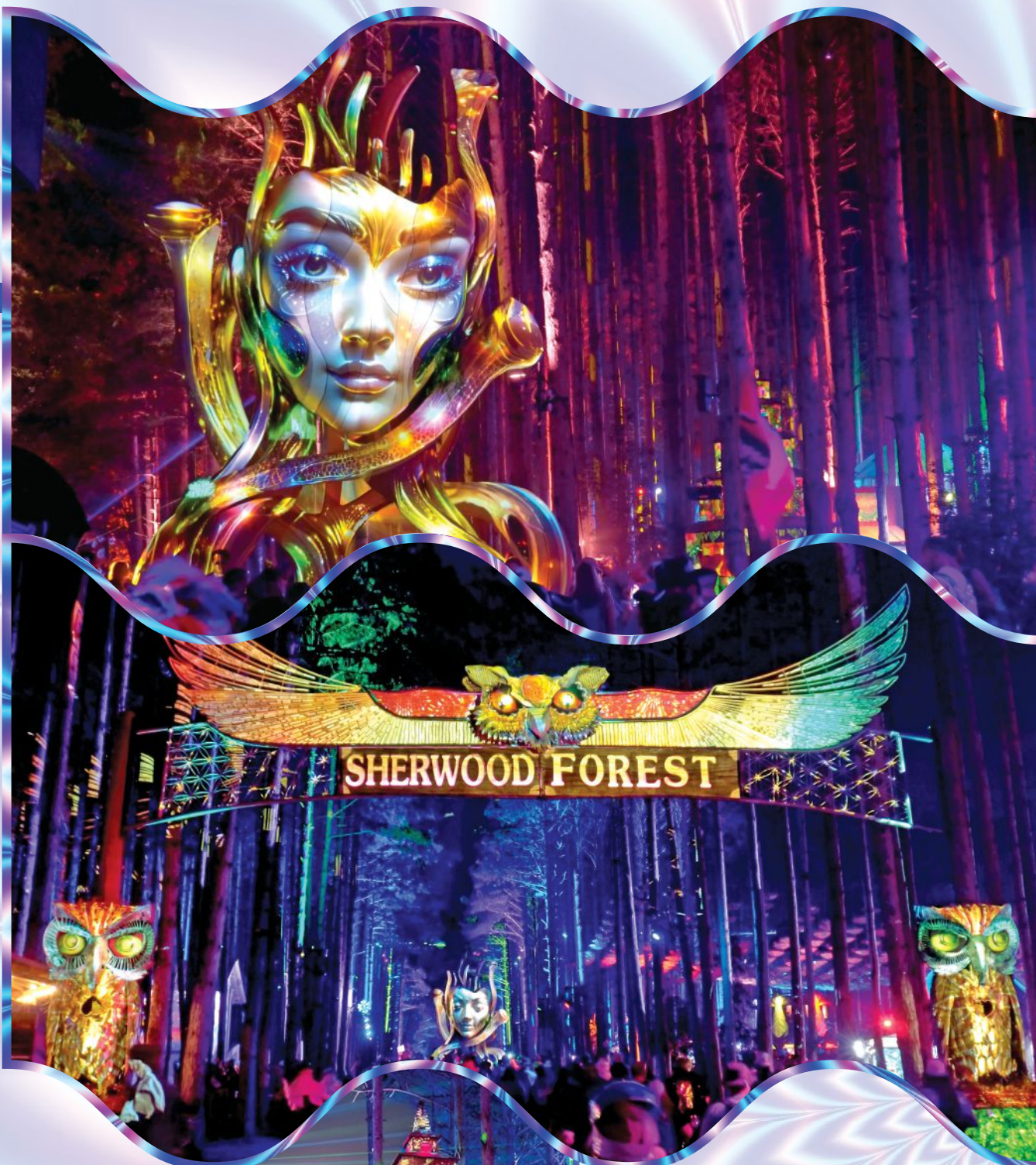
Consequently, a lot of trust has been built regarding his skill set, vision and intuition as to the essence of what Electric Forest is all about. "Nova Han is the creative director for the festival. She manages much of the approvals on the scenic elements," explains Smalley. "What happens is each stage has a scenic design that will evolve slightly over the years. Those stages give me shape language, theme, look and feel. I integrate that shape language and aesthetic into the design of the lighting rig. Additionally we are just jazzing up the proscenium and lighting the elements around the proscenium."

Ranch Arena is the main stage and one of two for which MMP provides a lighting system. Along with String Cheese Incident headlining, a lot of world class artists perform there. This stage is heavily populated with Martin technology. "We went with a bunch of MAC Ultra Performances which are my new favorite light. I use them on everything now. We had a bunch of the new MAC Ones running on a P3 network. We were able to send video content to the back lens for the eye candy part," Smalley comments. "Beyond all the sweet features of P3, it provides a lot of flexibility and ease to how the system is controlled."

Smalley also specced the Robe MegaPointes for the Ranch rig as "they work well with the EDM acts scheduled on that stage. I really like the Chauvet Color STRIKE M's. They were especially helpful due to their IP65 rating as both stages got poured on with rain one night. I've been using profiles for my downstage wash for a few years now and the [Elation] Proteus Maximus with its IP rating saved us during those rainfalls as well. We used Cuepix panels to create a diamond in the sky which mimicked some of the scenic."

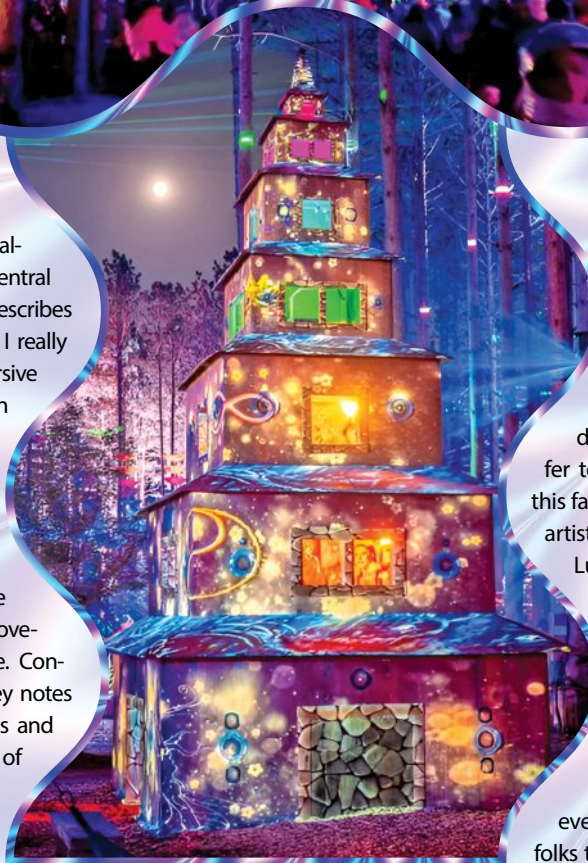
## Carousel Club

For the Carousel Club stage, which is actually a large tent, this year Smalley expanded on the Glow Motion technology available. Previous years featured Glow Motion orbs, which operate on a winch. "Last year we also worked with Glow Motion and got these



tiny little pixels that look like little space invader type things that happened, but it's always been like a little central chandelier. This year," describes Smalley, "Nova Han and I really wanted a more immersive experience." Glow Motion provided LED Bars 54's that, when activated, perform almost like icicles. These are on winches, which lined the roof to create a whole array constantly in movement over the audience. Controlled by Madrix, Smalley notes that "house LD operators and staff really did a great job of mixing in that constantly evolving magic. The coolest part I saw, honestly, was in between bands, when the whole audience is just lying on the grass in there and staring up. This way you can have those be something that's entertaining and keeps people in the space and kind of builds energy towards the performance. That was exciting for us. Martin MAC Viper Profiles, Martin MAC Auras and Martin Axiom Hybrids fleshed out the rig to give the space a total nightclub vibe."

As for challenges, Smalley notes one that is the common denominator for all festivals. "The biggest challenge is how to ride this line between the wants and needs of all the different incoming LDs and how to keep the festival's brand or proprietary identification cohesive. With Carousel it is not such a big issue as it's a club vibe and the more ethereal bands play this nightclub setup.



On the Ranch stage, where the international big name bands play, there is a lot more give and take. I have multiple conversations with the incoming band creatives about their own visual dynamic, their approach."

From Day One, Electric Forest was all about playing into the uniqueness of the festival aesthetic. Smalley points out, "We determined that all artists invited to play defer to the concept of keeping everybody inside this fantasy world. At the same time allowing every artist the opportunity to put on their best show. Luckily, a lot of the headliners' lighting and production designer people are friends whom I have worked with and networked with a long time. It all goes back to the trust factor." Music Matters Productions has been awarded the contract for the past two years and that trust factor is a key to the relationship. "This is the first year I didn't even come in for the build," says Smalley. "I had folks that we trusted to implement and make sure everything was good from the get-go. My Associate

Designer/Technical Director Chris Ruppel does an excellent job on all things advancing and ensuring my designs are done right. Plus, I mean, honestly working with Music Matters, there's a level of trust with those guys. Not just Aaron himself, but all the project managers and the techs, and every single person that I interface with. I know they're going to do it right for me and that if I come in and something's not right, they're gonna do whatever has to happen to fix it and make it right. Aaron has taken the company to superstar levels. So yeah, for me, it's very exciting to see this company that Aaron and I started in his garage 25 years ago on Electric Forest. I don't have anxiety. I'm surrounded by all these people that want me to succeed, you know?" **PLSN**





## Content Creation View

### JASPER MOSHER

Projection Mapping Visionaire

#### How has your vision shaped or enhanced the look and feel of the event?

I like to believe it is the spirit of the event and the characteristics of the individual installations that guide our team's visions for the projected results. The EF art directors do an incredible job of curating wildly talented artists from all over the world to create the attractions that are put on display during the fest. We like to think of our process as creating a projected soul for each of the sculptures that the original artists have already brought to life with their unique creativity and stellar craftsmanship.

#### What tools do you use to accomplish this?

Our team exclusively uses Epson brand projectors for every project we take on. We find that Epson's projected colors to be much more vibrant than anything else on the market. This makes a huge difference in the overall quality of our projected art's final product. We used 14 Epson laser projectors, and 5 custom built media servers to activate all the installations. The Resolume software is used to accomplish all of the projection mapping and many of the special effects. We probably use a combination of roughly 15 different software models to create the content that is displayed, but Resolume is by far the most useful and versatile digital tool in our arsenal.

#### Tell us about doing the projection mapping for a stage, four large art installations, and the Daniel Popper centerpiece.

Daniel Popper's "Roots" installation was an absolute privilege to work on this year. The piece stood roughly 30' tall and towered over the land as the main centerpiece of this year's entire production. We used four large laser projectors to create a 360° fully mapped attraction. We quickly learned that the nature of Popper's elegant and detailed sculpture lent itself to certain content creation methods that exceeded our wildest expectations. The process was not an easy one, but the end results were nothing short of spectacular. In addition to the centerpiece, we animated the northern portal artwork created by Carey Thompson who is a legend for creating huge and intricate laser cut attractions. We were also able to create a 360° mapping on a pagoda structure, animate the southern portal entrance, and operated live projection mapping on the Good Life stage for the duration of the event.

#### Talk about signal control over that large expanse of area.

Resolume is the software that makes the entire process possible. Each individual installation is run by a media server encased in a hand crafted weatherproof wooden case. Each media server would use this software to automatically trigger completely different scenes and add new effects to an ever-evolving stream of visual content. This system allowed us to lock the boxes and leave the area with full confidence that these massive attractions would continue to run flawlessly for the duration of the event. Some of our permanent installations at other venues have been running this same configuration every night without incident for over the past decade of continued use.

#### What is the timeline like for the installation?

The setup itself is an absolute rollercoaster. If projection mapping were a video game, EF would be the super hard expert advanced settings mode. The event is held in the forest with no pre-existing infrastructure. Between the far northern latitude and the annual timing of coinciding with the summer solstice, the MI nights are the shortest spurts of darkness I have ever experienced while setting up a production. Each night is a race to accomplish as much as possible before the sunrise comes to end your short-lived creative session. If that isn't enough, the lake effect weather from Lake Michigan kept us on our toes. I must say that while this is no easy task, once you do overcome the obstacles and defy the mission impossible timeline, the final product feels nothing short of triumphant.

I would like to take this opportunity to thank our entire team that made this production possible. On top of producing copious amounts of jaw dropping content, this crew was an absolute riot to work with. The laughs never stopped, and the collaboration shattered any expectations I may have had.



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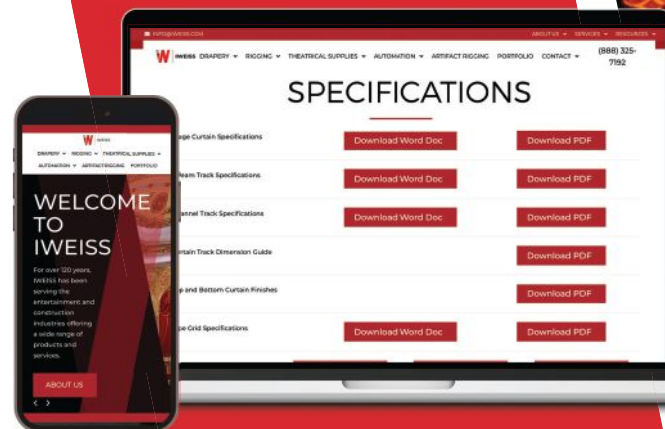
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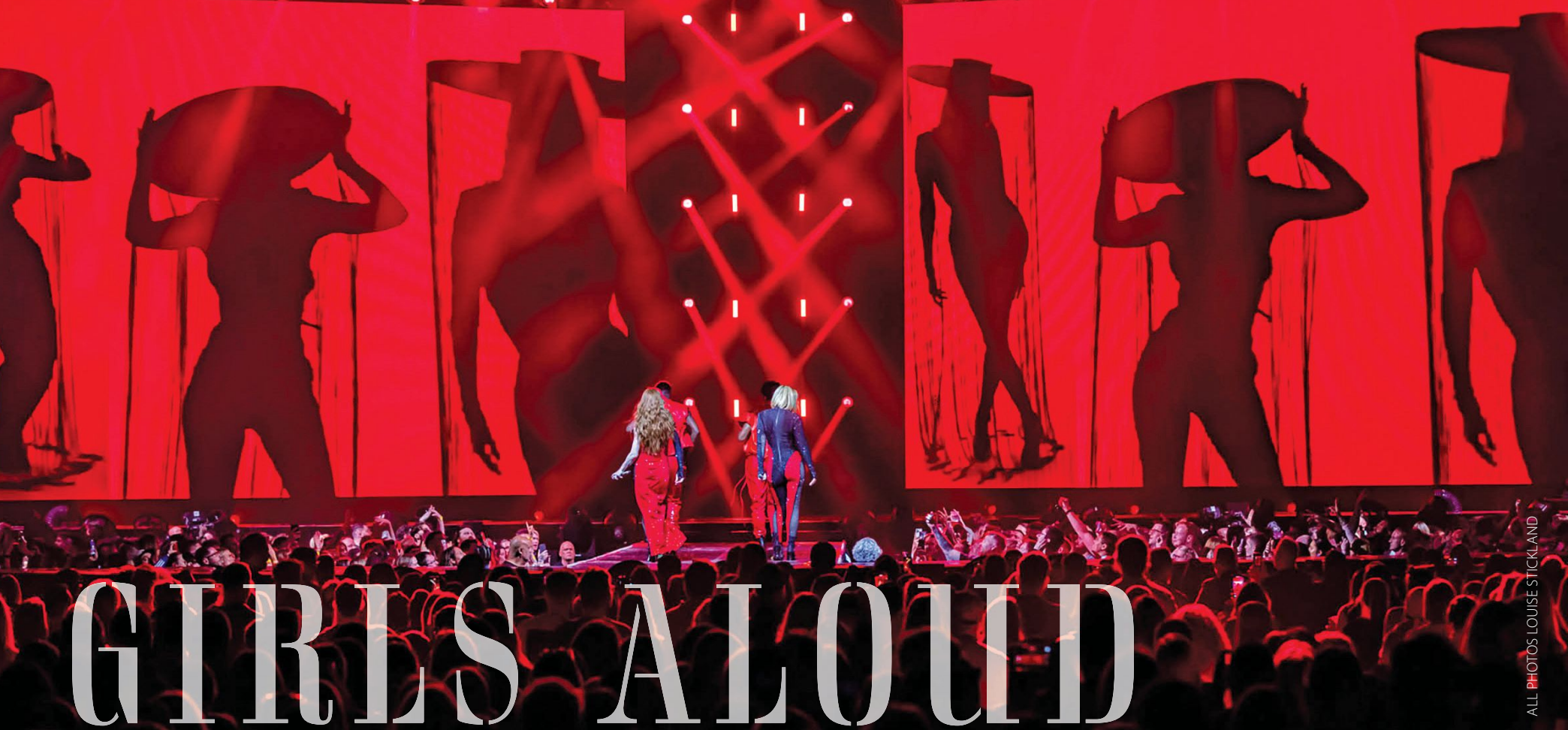
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ALL PHOTOS LOUISE STICKLAND

# GIRLS ALOUD

**G**irls Aloud are back on the road for the first time in 11 years, with their *Girls Aloud Show* tour, a lively, edgy, pop-tastic collage of foot tapping hits, creatively directed by Beth Honan and lit by Peter Barnes. Lighting, video, automation and rigging equipment—including some new innovations—and crew are all supplied by PRG UK to Production North, whose unfazable Iain Whitehead is overseeing all related technical production elements for the first leg of the tour that plays UK and Irish arenas including five sold out nights at London's O2.

## ■ Lighting & Design

Lighting Designer Peter Barnes has plenty of experience in lighting slick, glossy, hi-energy pop shows and helping capture all the nuance, drama, and dynamics unique to this performance genre and getting it radiating around the venue. He first worked with Girls Aloud in 2005, also lit the last *Ten: The Hits* tour in 2013 and has worked with Creative Director Honan on a variety of other projects over several years. Honan, also responsible for the tight and highly effective choreography, already had some clear ideas about how the stage should look, explained Barnes. She wanted a clean, modern space with an epic widescreen presence and a nod to fashion show aesthetics in the form of a thrust and a B-stage to get the Girls physically out amongst their fans.

Honan envisioned the two large video screens with a bold strip of light striking through the runway area, the latter translating into two spine trusses flown above the thrust. Barnes used the two 10.8-meter-wide by 7.2-meter-high onstage screens and the 30-meter-long thrust as the starting points for the production lighting design. The challenge, with this scenography in place, was in getting more overhead lighting positions. The 25 meters of Roll-Cat tracking truss—a PRG proprietary product manufactured by Moveket—rigged centrally, running the length of the thrust, and utilized for a hi-impact motorbike flying stunt at the start of the show's second section meant that nothing apart from the two exiting spine trusses could be added here. Upstage center, in the gap be-



tween the two onstage screens, are four trussing towers that continue the line of lighting positions. At the offstage edges of these two onstage screens are two more trussing towers, and these 6 architectural elements offer some excellent lighting positions for creating effects and looks as well as for the practical purpose of lighting the stage and artists.

The towers are also newly purchased by PRG, coming in 1 and 2 meter sections, and pack down into dollies for travel, which is expedient on truck space in Lighting's three fully packed trucks. Above and upstage of the main screens each side Barnes persuaded Honan that a double array of standard trussing runs should be added to assist in lighting the 60ft wide stage as doing this just from a 10' wide central spine would have been extremely challenging. Both front and back rails on these trusses are used for over and under-slung lighting fixtures which accentuates the depth, adding some optical magic and giving the impression that there are many more lights up there. All these trusses are rigged with PRG's proprietary Icon Edge multi-functional moving light fixtures, which are the workhorses of this design.

Mirroring the thrust 'spine' trusses in far offstage stage positions are two (left and right) trusses, also rigged with Icon Edges together with some Robe Spider LED wash fixtures to assist in key lighting along the runway positions and for blasting out into the audience for the interactive moments. A short advance truss in

front of the end of the runway is rigged with five Vari-Lite VL3600s all running on four PRG GroundControl remote followspot systems. The VL3600 is the latest fixture now supported by the GroundControl platform. The GroundControl base stations are located stage right and operated by four of the tour's 12 truck drivers. GroundControl is also Lighting Director / Operator Chris Scott's first choice for remote followspot control for several reasons including the physicality of the control 'paddles' which offer similar arm positions to operating a classical followspot.

All the metalwork is black or masked in keeping with the streamlined aesthetic. The floor is left relatively clear of lights apart from a row of VL3600s and an array of Solaris strobe / floods right along the back. The Icon Edges are dotted all over the trusses, up the center double towers and the outside screen framing towers, on the back array trusses, on the spine trusses above the runway and the side trusses, a total of 68 luminaires. They are the backbone of all the big production looks and are used judiciously and smartly, enabling Barnes and programmer Jake Humphries to construct a diverse range of scenes and effects that keep the pace pumping throughout the 90-minute set.

The fixture choice also included 20 Robe Spiders for the side trusses, 22 GLP X4 LED battens on the back trusses and 16 VL3600s including the five followspots. Seventy 3-meter ACME Pixel Line LED battens are used highly effectively

to create pixel-mappable vertical lines of light shooting up the back towers and along the length of the runway trusses, with a double row framing the top of the main screens and a single row running down their outer edges. These are programmed to bring another layer of fluid and dramatic kinetic movement to the action, while 18 ROXX 4-lite blinders grace the side trusses for additional audience and runway highlighting. While not a vast number of lights for a show of this stature and scale, used intelligently and judiciously, they go a long way as the lighting eye-popping moments keep coming until the final chords of the set.

Barnes and his team spent five days of concentrated pre-viz at Zeal Live in Basingstoke followed by five days of full production rehearsals on the George Lucas Stage at Elstree, where they were joined by Scott and together finessed the initial building blocks, developed the show and programmed the grandMA3 full-size console which is running in full MA3 mode. The show is a balance of perfect key lighting, lots of dramatic effects and big, sumptuous looks rich with color and movement that blends effortlessly with the video content, show narrative and impeccable choreography. In addition to lighting the Girls and their 10 dancers, there is constantly something interesting happening back of shot for the I-Mag mix. When it comes to challenges, Barnes and Scott both echo an often-heard comment for lighting popular artists in the 2020s—as well as lighting for enthusiastic fans in a big venue, it also has to be lit so images snapped on mobile phones and posted can also look amazing, which is a constant pressure. It also reinforces the importance of good key lighting.

It is Scott's first time working with Barnes after being recommended for the job by Donnelly Smith at PRG where he worked full time for many years in the events department. Scott has been running in all grandMA3 mode for a couple of years now and loves the flexibility and power of features like Recipes, which are used extensively on this show. They are very straightforward to edit, change and update. The lighting control network is made up of PRG SuperNodes and Lumicore LumiNodes.



Scott is enjoying the calm and friendly tour vibes and working with “a brilliant team” including PRG Lighting Crew Chief Alex Peters, Colm Robinson who is looking after dimmers and lighting techs Dominic White and Stuart Wright. Like Scott, Lighting Crew Chief Peters is also now freelancing after working full time for PRG for 12 years, and for him the most galvanizing task is coordinating the daily logistics of getting the show in and ensuring the build runs smoothly and efficiently.

PRG UK’s Account Manager Yvonne Donnelly Smith understands that one of the many advantages of working with a full visual production specialist like PRG is the simplicity of dealing with one company covering all visual departments, with all associated communication, logistical and economic benefits. Added to that, PRG offers proper and comprehensive worldwide support and continuity for any production. Donnelly Smith stated, “It’s been an absolute pleasure collaborating with Iain and Production North as well as the creative team again on this groundbreaking tour for PRG, showcasing our newly developed RollCat tracking system alongside some of our tried and tested proprietary Icon range, and with GroundControl® running our newly developed VL3600 followspots. A team effort, beautifully realized, to create a show greater than the sum of its parts.”

#### Automation

The length of the central spine means trusses must be constructed in a specific order which consumes all floorspace in an average sized arena, putting lighting ‘in front’ of the automation and video departments, requiring serious coordination so everyone can work simultaneously and without encroachment. A few shows into the tour, and the process was down to a fine art, allowing the stage to be rolled in at around midday. The central spine trusses also have to line up perfectly to be picked up and flown on the mother grid, which facilitates 112 hanging points across all departments for the largest shows on the itinerary. The Head Rigger is Zack Wade.

Automation is still on-trend for live shows and a key is not to over-use it as a vehicle for theatrical performance, and The Girls Aloud Show is a great example. Another recent PRG investment has been into substantial amounts of new Moveket automation equipment, some of which was out on this tour, including the Roll-Cat tracking truss, all overseen on the road by Peter MacDonald.

PRG’s Mark Wade dealt with the tour’s original automation requirements and specified the system which is based around Moveket i-Motion winches—the VMS-S 125-3-30—which is rated for up to 125kg, fits into standard 52cm trussing and is SIL3 certified for people flying. The main motorbike flying stunt happens as

the Girls go into “Wake Me Up”, carefully masked by lighting and smoke, they suddenly pop up at the back of the stage on the bikes, each one picked up by 3 winches.

Positioned 5 meters apart, the four bikes are tracked 25 meters down to the end of the runway where they soft-land on the stage and the girls alight, with audiences going crazy for this WOW moment. The 12 Moveket winches are positioned in trussing in the roof with their drive units all upstage on the floor. As the travel distances allowed this to happen, it made sense to have the brains of the system fully accessible. The decision to go with winches as opposed to chain hoists was a creative one, driven by winch wires being a lot less visible. The winches are also used for flying four platforms on which the Girls start the show rising up from the floor, and again to fly the Hologauze curtain for the encore projections.

All the automation cues are run via a Moveket i-Motion Expert III console, with Barnes commenting that the front end is “very practical and user-friendly,” particularly regarding safety, where different levels of safety can be programmed into each cue stack as required, e.g. a cue for dropping in wires will not require the same levels of safety as a cue for people flying. To ensure that nothing is left to chance, as the Girls are getting into position on the bikes, two spotters onstage have eyes on everything, while others are involved with clipping them se-



curely into their harnesses. Synchronous safety is also inbuilt into the winch drives so they all have to track as one object which keeps everything moving together. Some show cues are run manually, and others are timecode triggered from the audio track. The biggest challenge for Barnes and his team—comprising Will Gallegos and Thijs Verplaetse who came from PRG Belgium with the Moveket system—is making sure that everything is rigged and ready in the available time.

#### Video

The video department is headed up by Stevie Marr and includes Video Tech Izzie Everatt, who has been working full time at PRG for the last five years and in the video department—which she loves—for two and a half of those. The screens are all made up from new INFILED products, part of another recent larger purchase of LED screen assets by PRG. The two center ones are made up from INFILED’s TITAN-X 8.3 mm product, and they are flanked by the two portrait I-Mag screens at 7 meters tall by 4 meters wide, built from INFILED AR P4. The screens are crucial to both the physical scenography and the show narrative with a mix of playback content—stored on two new Pixera media servers—and I-Mag footage.

The eye-catching content brings a true 3D reality to the performance and helps maintain the pace and excitement. It was created by Neil

Harris, Caspar Wain and Jos Taylor from motion design specialists, SHOP, working closely with Honan. Everatt programmed the servers during rehearsals together with PRG’s James Hancock, and now she is teching them on the road. All the playback content is timecode cued from the audio backing track. It includes extensive footage of fifth Girls Aloud member, the late Sarah Harding, who sadly passed away in 2021, leaving a lasting impact on the band and fans and triggering several emotional moments during the set.

A four-camera package of Sony HXC 300s were utilized for a fast cool-styled mix cut by Ivan Youlden using a Blackmagic Design ATEM Constellation 4 M/E switcher. Two of the cameras were positioned in the pit, fitted with wide angle lenses, and two at FOH for long shots. During the encore, a Hologauze drops in across the stage. Girls Aloud stand behind this with projections beamed onto the front from a Barco UDM 4K30 projector fitted with a UDX 9.38 90-degree (periscope) lens which nicely covers the 4 meter ultra-wide throw to the surface. The projector—teched by Mike Dorrie—pops up from a trap door to the side of one of the B stage walkways, helping to bring the spectacular show to a memorable theatrical close. **PLSN**

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Robe fixtures at the Black Pumas concert at The Salt Shed in Chicago in 2024.

DEREK SMITH



Tetra2s used so dramatically for dance / contemporary ballet show FULL FRONTAL designed by Yaron Abulafia.

Robe is based in the Czech Republic and has wholly-owned subsidiaries in six key markets—the U.S., U.K., Middle East, Singapore (Asia Pacific), France and Germany as well as a talented regional sales management team which helps oversee and coordinate the worldwide distribution network covering over 100 countries. Robe's moving and LED lights are working and installed on stages, in concert halls, and all types of other venues; lighting all genres of performance from music to TV to drama and opera; appearing on a myriad of diverse events as well as at theme park attractions and entering the specialist worlds of architectural and environmental illumination. On the occasion of Robe's 30th Anniversary CEO & Co-founder, Josef Valchar shared with *PLSN* a bit of history and insight into one of the most innovative and dynamic manufacturers in the industry.

**Tell us a bit about the start of Robe.**

It was a mix of music, business and opportunity timing. Ladislav Petrek and I first met in 1992—via another company—and there was an immediate synergy between us. Ladislav was a DJ who had started importing lighting effects from other European countries, which had only recently become possible. Until 1989, the Czech Republic had been a part of the Eastern European block of countries and was strongly influenced by the then USSR. Only after that communist regime collapsed was a modern 'market economy' introduced. Looking closer inside some of the lighting units that were available back in the early nineties, we knew that they could be designed and produced to far higher standards locally. The Czech Republic has always had a reputation for good engineers and technical skills.

I was fresh out of studying engineering at university; I really enjoyed being a communicator, had a special interest in sales, technology, and marketing, and was keen for a challenge. Ladislav and I thought about the idea of designing and producing high quality effects and lighting products that would be practical, robust, well-engineered and proudly 'Made in the Czech Republic'. Everyone was dreaming big back then. We had a clear vision, lots of energy and the talent to make all this happen was right on our doorstep.

One of the main early challenges was getting our name out there and proving ourselves—as is often the case with start-ups. Robe was initially set up and gained some OEM manufacturing contracts for some very well-known and respected brands of the day—Steinigke in Germany, Coemar, TAS and Sagitter in Italy,

# ROBE®

## 30th ANNIVERSARY



Movitec in Holland, Starway in France, Elation in the USA. 'Mr Scan' was the first ever product sold, as a SCAN 250 via a German OEM customer in 1994. By 2002, we had the experience and the knowledge, and the manufacturing facilities and processes were all in place and running smoothly and efficiently. We also saw the success of our products being sold under other names and getting popular for their reliability and good engineering. We felt it was the right moment to move the operation—and the dream—forward. It was the next logical step to establish ourselves as a brand in our own right.

**Where does the name 'Robe' come from?**

RO—means the city of Roznov pod Radhostem (I grew up in this town), but also a river of the name BECVA which runs through the town. BE—comes from PROSTREDNI BECVA, which is the small village where Ladislav grew up. I am now living in Prostredni Becva and Ladislav in Roznov pod Radhostem, so we have switched.

**What were a few milestones for Robe in the last 30 years that were pivotal to Robe's growth in the industry?**

For products, in 1999 the Spot 250 XT; in 2000 the Spot 575 XT; in 2003 the ColorSpot 1200E AT; in 2007 the ColorSpot 700E AT; and then in 2010 the LEDWash 600. The launch of the LEDWash 600 in 2010 was a 'watershed'. It wasn't the first LED wash light, BUT hand on

heart, I can say it was the best. That really was a transitional moment for Robe. We corrected many of the issues that had been present in the first generation of moving LED wash lights released by others. We waited and were patient.

In 2013 the Pointe was also a big landmark—it was the first truly multifunctional moving light that performed all the different functions / modes really well. It kicked open numerous doors and still does today. Then in 2014 the BMFL series. This was a real defining and game-changing moment for Robe. BMFL became our signature 'bright multi-functional luminaire' and most powerful light source. We had been thinking about the design and development of this luminaire for three years, we had listened exhaustively to what end-users said they wanted and endeavored to incorporate all of this into one incredible light. Launching a range of products like BMFL definitely put us further on the map as a global brand, and fundamentally assisted in 'cracking' the North American market.

The DL7 Series was launched in 2015 and this started the development of theatre and performance-dedicated LED luminaires with incredible color mixing, super smooth dimming and quiet operation—all critical factors for this discipline. Then in 2016 the Spider was the next generation of LED wash / wash beam. Followed by the MegaPointe in 2017. That has become our single best-selling product ever to date—so much so, we had to purchase, kit-out and

open a whole new factory and production facility to keep up with the demand. It was—and still is—THE light that everyone wants, and even though the discharge lamp tech is rapidly becoming obsolete, you'll find people worldwide who absolutely love MegaPointes and could not contemplate drawing up a design without them. In 2018 the T1 was the first luminaire in the current T-series of fixtures—available in Profile, Fresnel and PC versions—and perfect for theatre, performance, television, broadcast, and events, but specifically developed for theatre and the arts. With all the features designers working in these sectors had been requesting.

The RoboSpot remote followspot system was also launched in 2017 and this is proving a seismic shift in the substance and essence of followspotting, allowing all involved in the production process—from the designer to the director, the production manager to the prompter—massive benefits and more flexibility to the core tasks of followspotting and key lighting in all environments.

In 2019 the TE TRANSFERRABLE ENGINE technology has been another complete game-changer in the world of LEDs. The hardware will outlast the light source as we already know, and now we have developed a 'transferable' or replaceable LED engine. Not only can this be used to replace LED light sources at the end of their lifespan, and therefore boost the investment value of the fixture hardware but different light engines with different characteristics can be swapped in and out—simply and straightforwardly—for light sources with different characteristics, e.g. high CRI, HCF, etc.. Making this an interchangeable element of our ranges—FORTE, ESPRITE, PAINTE—is groundbreaking.

The first of Robe's brand-new FORTE series was launched in 2021 for mid to large scale applications, touring, and stadium shows. As Robe's brightest LED moving head, it is also a contemporary equivalent of the flagship BMFL, hugely powerful, environmentally friendly—now available in iSeries versions and with different TEs—FORTE has a beautiful, flat field fat beam coming out the front. In 2022 came the iSeries with all the major / popular Robe product ranges are now available in fully IP rated versions for all environments and weathers. The fixtures are identical in features and near-identical in physical size and weight, so rigs of the standard luminaires and the iSeries ones can easily be matched together.

2023 saw the launch of the iFORTE LTX, which is the brightest LED moving head luminaire on the market right now and is rapidly becoming a new industry standard fixture for



Lado Bizovicar illuminated by Robe fixtures at the Slovenska Muska

concert touring, rental, and staging sectors as well as popular for larger theaters and concert halls. And recently in 2024 the iBOLT has been launched. It's a new mega-bright laser-source 'searchlight style' fixture for stadium shows and outdoor spectaculars, with a whole range of effects—very cool, and quite unique.

In terms of projects, really there have been so many thousands over the years, all of them memorable for different reasons, so it's hard to recall. There was an amazing show with Robbie Williams in Dubai in 2006 with Robe kit flown in from the UK—at the time that was such a big moment for us; our kit was used on three unique Israeli Opera productions in the middle of the Masada Desert at the Dead Sea; the first fully inaugural show for BMFLs in 2014 was the Opening Ceremony of the Commonwealth Games in Glasgow, where LD Tim Routledge had the faith to use our brand new luminaire on such a high profile event. Our equipment is and has been on tour with some of the highest profile artists recently like Taylor Swift and P!nk, on U2's shows at The Sphere, classics like AC/DC, The Rolling Stones, Metallica, and other huge music stars and influencers like Lady Gaga and Bruno Mars.

There have also been some amazing Armin Van Buren shows plus other major EDM movers-and-shakers like David Guetta, Martin Garrix, global dance events like Tomorrowland and ULTRA, iconic festivals like Glastonbury, Reading & Leeds, Coachella, EDC—there's far too many to mention, but you name them, and pretty much all over Europe and further worldwide our products can be found lighting up stages on these events and appearing on the lighting rigs of so many artists. On the more 'alternative' performance front, we've seen Tetra2s used so dramatically for dance / contemporary ballet shows like FULL FRONTAL designed by lighting master craftsman Yaron Abulafia, and uber-cool installations created by light artists like Christopher Bauder of Dark Matter / WHITEVoid.

Not to mention the numerous major broadcast events including successive Eurovision Song Contests which will usually feature Robe fixtures and RoboSpot systems. Music TV shows like The Voice, Idol, Strictly and their international rollouts and versions, plus star-spangled awards shows like MTV's VMAs, iHeartRadio's Fiesta Latina ... again too many to mention. And let's not forget Opening & Closing ceremonies for major sporting events—where often Robe will have a significant presence. And our T-Series continues to gain traction and some notable installations include The Paris Opera, The Vienna State Opera, The Hungarian State Opera, the Baltic Opera in

Gdansk, Poland, the Czech National Theatre just to name a few. All of these—and so many more—are all special in their own way.

#### How do the acquisitions of other industry leading brands fit into the Robe family?

Well for a start, there are some very talented and smart people working for all of those companies we have acquired in the last 2 years, all with fantastic knowledge and experience in their own specific fields of professional lighting. There is a great synergy between all of our brands, and the acquisitions solidify our capacity to provide full turnkey lighting control and design solutions for all clients.

Anolis, our architectural LED lighting brand was founded in 2005. We were ahead of the curve in anticipating the potential of LED lighting and how it would play into issues of sustainability and concern to preserve our environment. We were already manufacturing robust and practical LED products way before it became trendy.

Artistic License was the first in the recent run of new 'Robe business' brands, that was September 2022. It brings many clever networking and control products and gizmos to the table, complete with patents and considerable experience. Networked control is the way it's all going, so you can see the logic in this move.

Avolites was a major shift into lighting control. The brand has a fantastic name, a great heritage, some cool people—and an established community which is very loyal. We believe that their newest products—and future ideas—have massive potential and will be super-competitive backed by the resources and energy of Robe, so stand-by for a few surprises.

LSC is another very solid brand with a great name and reputation in the power distribution and control universe plus an outstanding set of current products, bubbling with ideas for the future. The company is imaginative and well run, and enjoys the culture of working hard that we have always embraced at Robe. Additionally, we think it will be brilliant to have some of that great Australian pragmatism, creativity ... and sense of humor. Apart from anything else, I think it's time that competition in these areas increases.

#### How do you see Robe's position in the industry today?

I see Robe as a market leader. Among the top brands / manufacturers in professional entertainment lighting, known as an innovator and a major influencer in our sphere of business. We have a strong identity, a great team and a very distinctive approach to business.



The Swedish play *Så som i himmelen* featured Robe lighting for dramatic effect.

#### Why do you think Robe's products are so valued by customers?

Originality, we have currently over 120 patents pending or issued, they cover the USA, EU, and Chinese territories. Innovation, we have become a true leader in the innovation and development of new technical solutions which are used smartly in our products. The iSeries, T-Series and all the TE fixtures are good examples here—replete with these original new technologies, which are changing the way we design products, enhancing their flexibility and usage potential to benefit everyone's creativity.

Range, we have a good range of fixtures to suit different applications in diverse markets including theatres, concert halls and opera houses, television, concert touring, festivals, rental and staging, clubs and multipurpose venues, etc. There are some cross-overs of course, but I can honestly say that depending on the size and the complexity of the project, Robe has a very good choice for all aspects of lighting.

And reliability, time and time again over the years, our products have proved their reliability and robustness, usually lasting well past their expected lifetimes and providing outstanding ROI.

#### What are three key innovations that have helped differentiate Robe over the years?

There are so many key innovations we have brought to the market, and I can only name a few of these. Each of them is proprietary to Robe and patented in US, EU and China. The hotspot control in the luminaires using discharge lamps. The zoom optical system for multi-chip LEDs. The Multi-Level prism system, which is now massively copied and can be found in almost every product. MCFE—Multi Colored Flower effect which is an essential part of our all LED wash lights. Plano4 framing shutters used in all our profile fixtures. The 4Door internal barn doors and RotaScrim—graduated scrim control, which both are integral features in all our wash fixtures. MSL—Multi Spectral Light Source—used in our T-series products. TE-technology, Robe's Transferable LED Engines, powering all of our white LED luminaires. RAINS groundbreaking technology that not only prevents ingress, but actively manages a fixture's micro-climate. iBOLT technology covered by 6 new international patents. Sorry, that's more than three isn't it, but honestly, I could not limit it to three.

#### What do you hope that people in the industry, and readers of PLSN, understand about Robe today?

We are a privately owned company with all

manufacturing in the European Union in the Czech Republic. We can make decisions quickly and efficiently on all levels which helps our general agility as a business entity. Over the years, this independence has assisted in periods of rapid growth, and combined with carefully structured financing—and not taking on potentially crippling financial packages—this has helped us survive and even thrive through unprecedented external circumstances like the pandemic. People matter. We are an investor in people and believe that different personalities and experiences are enriching to our overall business culture. We are proud of helping to build, and being part of, a community. Robe is one of the most important employers in our region of the Czech Republic, with a reputation for offering good, sought-after jobs and being a desirable company to work for which can offer career paths and opportunities. In terms of the industry, we are perceived—and I believe respected—as an innovator, and think some of our technologies have become standard-bearing. We are also in the process of developing an international educational program that will support infrastructure and systems training the next generations of production and lighting industry professionals. For the Robe brand, building a viable future from which others can benefit is a core principle.

#### Are there any concluding thoughts about Robe as it celebrates its 30th Anniversary?

To meet changing global environmental challenges, many improvements have been made to our factory as part of our Green Initiative. These include solar panels—creating 1.2MW peak of power—a fleet of electrical vehicles, the installation of charging stations across all Robe facilities, new eco-friendly packaging for all our products, and a dramatic reduction in printed brochures and catalogues. We are proud to announce that Robe has been awarded a prestigious sustainable Company Certification which recognizes our commitment to environmental sustainability and responsible working and production practices. In addition, all our products are certified according to Environmental Product Declaration (EPD) which is an ISO type III Environmental Declaration acc. ISO 14025 standard. We are the only lighting manufacturer to achieve this certification and be listed on the EPD database. We are looking towards the future, so here is to the next 30 years. I hope they are as interesting, productive, positive and fun as the first 30 have been. **PLSN**



# Sarah Kufel Tour Manager



“Growing up, I was one of those really bossy kids. I would organize play time.”

— Sarah Kufel

By Kevin M. Mitchell

At one point, when going through the dizzying array of acts she's worked for so far, Sarah Kufel says, "...so I just jumped in and met everybody." She's talking about how in 2022 alone she handled tour manager or assistant tour manager duties for Julia Wolf, Palace, the Aces, Ashnikko, Blackbear, Joshua Bassett, and Eric Nam. "It was kind of an everyone-knew-everyone situation, and my name got thrown around a lot."

After spending some time with Kufel, it's easy to see why her name got 'thrown around.' Starting out in merch, she's risen to tour managing quickly, fueled by her organizational and networking skills and her ability to work with people. When we spoke, she was preparing to head out on another Palace tour while also working with Vans Warped Tour Founder Kevin Lyman on new acts going out this summer.

## Holding the Door Open

Kufel grew up in Toledo, OH, and while she played piano through her senior year of high school, becoming quite good at reading and theory, "I realized I did not have an ear for it, and it became frustrating for me," she says. Meanwhile, leadership skills were developed when she was on the student council, the yearbook committee, and school fundraising events. There was also her church, First Apostolic, where she helped band and drama groups.

While she realized she had a love for live entertainment and putting on shows, she took a detour: a Bachelor of Science in Bioengineering from the University of Toledo as "it's not really known that you can make money in the music industry," she says with a shrug. "Often when you're fresh out of high school, [live events] is not really a career choice that is presented to you." She got jobs in her degree field, but she realized that it wasn't a good fit. Evenings would find her at Bogart's in Cincinnati, which she describes as a "shady little punk rock bar that has a dog that hangs out in the back." Going to shows there, she says she quickly realized it was easy to get into the show for free "just by offering to hold the door open [for bands]." She also started paying attention, and when a group didn't have anyone to sell their T-shirts, she'd volunteer. That's when she spotted the path to a career.

It happened quickly. In 2015, she was just trying to meet any band that she could possi-

bly work with and help in any way she could. The following year she spotted an opportunity on a job site—the Dolan Twins, a teen brother comedy duo, were looking for a Merchandise Manager for their 4OU tour. "I had no experience. I had no resume. I just thought I'd apply and give it a shot." At the first show, she was the only seller, and the bounty one night was \$20,000. "My laptop broke that night, I was so in over my head; yet I remember being like, 'oh my gosh, I could be good at this.'" She eventually also became the teen duo's personal assistant. It was then she started learning about Tour Managing, especially on the overseas part of their tour.

## Connections and Bigger Tours

Singer Alex Aiono was the duo's intermission performer, and before that year ended, he hired Kufel for his next tour. While duties initially included being a Merch Manager, Production Assistant, and VIP Coordinator, she would eventually become his full-time Tour Manager. "I'm grateful that he gave me that opportunity," she says. "I got to learn a lot, as we had a lot of sit-down talks about how to make the tour better." Another key connection she made working with him was becoming friends with Eric Loux, his FOH Engineer, who was also his original Tour Manager. "Eric really took me under his wing and is still one of my best mentors today. And he just is always around for anything I need."

Next up was the O.A.R. 2017 tour, where she worked again as Production Assistant, Merch Manager, and VIP Coordinator. She had similar roles with Natasha Bedingfield, Maddie & Tae, and Johnnyswim. "I like merch—I was good at it and could have stayed there. But I saw a lot of growth in the tour managing area." Though she did take one curious detour: In 2018 she was Events Manager and Assistant Producer of the 2018 North American *The Price Is Right Live*™ tour. "That was probably my most random [tour]. I don't even know how I got that one either. It's crazy what jobs get posted on the internet." But it was a good experience because it was more theater style than a music tour, and she learned an important lesson—that she should stick with music. She would relocate to Brooklyn and since 2018, she's also picked up work at 237 Global, a company serving artists in fan engagement and direct-to-consumer opportunities, where she still does VIP duties when not on the road.

## In the Ring

In 2019, she went out with Jon Bellion's *Glory Sound Prep* as Assistant Tour Manager going to Europe, Australia, and New Zealand. Loux was again the connection to that gig. "The assistant he had on the first part of the tour had to leave, and he asked me to do the international legs and I jumped at that," she says. "I think that was the first time also working for an artist that I personally listened to and really enjoyed. His band is phenomenal, and he's a genius producer in the industry, so much so that now he doesn't go on tour, but he writes every pop hit that's on the radio right now." But she admits that it was also "nerve wracking" as the pressure was on to get it all done right.

Chelsea Cutler followed in 2020, and Kufel's pretty much maintained Tour Manager status since Cutler's *How to be Human* tour. She handled two more tours with her over the next couple of years in addition to handling manager duties with other acts.

During the pandemic she kept afloat by working at coffee shops, walking dogs, and channeling her pent-up energy by training as a Muay Thai fighter, even participating in some 'smokers'—"non official ring fights that don't go on your record. That was my little pandemic thing. I know everyone had something they got obsessive with and mine was that gym."

With just a few exceptions, the many acts she's worked with so far have mostly been single tours, which she says has its pros and cons. "Obviously working with the same artist and building a crew is nice, but that is rare now. Unfortunately, it seems that the more I've worked specifically in the pop genre, I see that there's a lot of flash-in-the-pan one-hit wonders that pop up for a year who don't tour again the next year, so they can't keep a consistent crew." On the one hand, she says working with someone new you haven't worked with before is enjoyable on several levels. "There are no expectations, and so you get to set those. And then there's the part where you're forming new relationships and meeting new people—that's always exciting to me." But on the other hand, there's the consistency of a returning crew. "I've been lucky early on with Alex [Aiono] and really appreciated being able to build something over several tours." Her other longstanding client is Palace. "That's a great crew and is the easiest tour I've done because it's so well-run. So, I enjoy both situations."

## One of Those Bossy Kids

As to being a Tour Manager, in hindsight, it all makes sense to her. "Growing up, I was one of those really bossy kids," she laughs. "I would organize play time—when I was seven, I would schedule what we were playing from one hour to the next. I was always very schedule oriented."

Kufel is aware that there aren't many women in Tour Manager positions, but says she is pleased that the number is increasing. She says the increase is in part because women artists are requesting them. Plus... maybe they are better suited for that gig? "My hot take is that women make better Tour Managers, because part of the job involves caring for people. We must make sure everyone's comfortable, and I find that a lot of the women in the industry really have that nailed down when it comes to creating the hospitality aspect of it." She adds that crew members are in an uncomfortable position by being away from loved ones and family members for long periods of time, and women can be especially empathetic about that. It's critical to this job. "We need to make sure everyone's mental health is still rocking so we can put on a good show in the first place."

She acknowledges that there are crew members who might be frustrated, even jaded over time, as the road can be a grind. "I've been there, but there's nothing I'd rather be doing. I love putting on an event for fans and seeing how excited everyone is. No one's mad at a concert. Everyone is having a good time, and that provides a good feeling at the end of the day." The bus breaks down, the whole production skids off track, and assorted problems inevitably happen, but then "the show happens, and everyone is happy. The fans don't know the difference." And then there is camaraderie of building close relationships with the crew, which she says she finds tremendously fulfilling.

Advice on how to start? "This industry is all about trust, not necessarily about if you went to school for any of this. There obviously are these like specialty schools, and you can get a management degree; but it's really about earning trust—personally, professionally, and financially. Be able to make things go smoothly so the artist has a good time—along with everyone else."

As for the future, "I want to keep going," she says without hesitating. "My overall goal is I want to try to hit every level: the clubs, theaters, amphitheaters, arenas, and stadiums. Then I want to see which level I like best." **PLSN**

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By Michael S. Eddy

**T**AIT recently announced that the Private Equity business at Goldman Sachs Alternatives will acquire a majority stake in the company from affiliates of Providence Equity Partners, subject to obtaining customary regulatory approvals. Upon this announcement, *PLSN* reached out to Adam Davis, CEO of TAIT to discuss their place in the industry, where he sees the industry moving forward, and why clients so value TAIT.

## TAIT is established as a leader in the live entertainment market. How do you see TAIT's position in the industry today?

I think what we've done at TAIT, over the last 48 years, has transitioned from a company that, I would argue, put the roll in rock 'n' roll and was there at the beginning of it all, to one that really has become a true strategic partner across live experiences. Over the last decade plus, we've put a lot of energy into assembling the puzzle pieces that is TAIT today. We really set out to do a few things. Be number one anywhere we're playing and to do the best work—not the most work—across all live experiences. We've built out—both organically and through acquisitions and partnerships over the years—the end-to-end capabilities to sit with our clients and really help them think through strategy and business plans. And then the ideation and storytelling that's necessary to go deliver that business plan. Then our small army of engineers turn that into a reality that can we deploy and operate. Though we're known for the most complicated, and, I guess you could argue, the highest production-value live concert tours in the world, we're also doing it in a similar vein across theme parks, cruise ships, opera houses, and brand experiences.

Internally, the way we think about and operate the business today is as an army of joy makers. Many people have never heard of us, but we're probably entertaining more audience members than any other company in the world. And that's in the live experience market that we're known for, the concert tours, festivals, one-offs where we're everything from being a production partner like we are for a Taylor Swift or a Beyoncé to a full-service OEM provider, enabling from beginning to end those productions to happen. That's a role we play on MDL-BEAST Soundstorm and many other projects.

Next to the live experience, we have the location-based experience. That's theme parks and immersive attractions. In the live world, if you look at the 20 highest grossing shows of all times, we've been there on every one of them. When you get into the themed experience, you're going to find, we might be 16 out of 20. We bring a similar level of experience to where we're able to now work with location-based experience partners. TAIT is able to take their ideas from beginning to end and execute on their behalf.

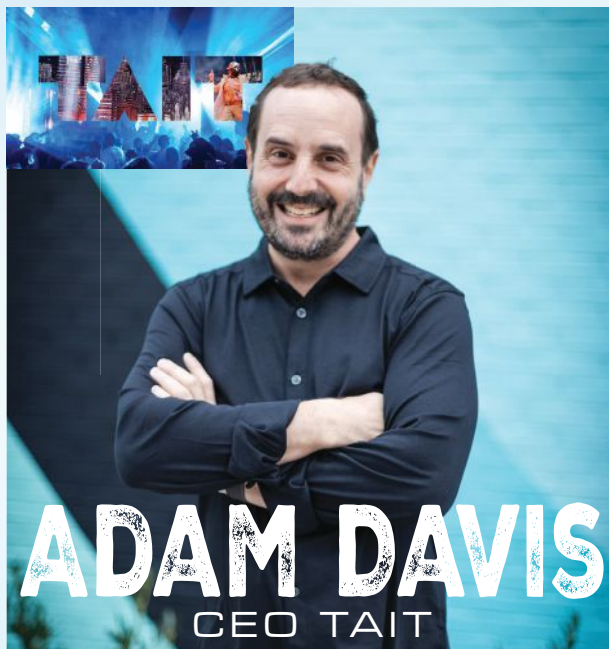
Then adjacent to that, we have placemaking, which is really using our skillset and our technology to get people off their phones and into the real world to help our clients drive their core businesses. That could be casinos, arenas, stadiums, venues like opera houses and theaters, corporate lobbies, corporate event centers. For us, it's a huge end market because the scale of the total addressable market globally is just gigantic. We're seeing more and more a need for our core skillset of technology-enabled storytelling in those places.

Then last, but not least for us, is the brand experience where we help our clients deliver their culture or their marketing message, both internally and externally. All these markets, they all play off each other because we're able to help our brand clients celebrate their culture, but we also end up building out their corporate centers for them.

We've found the more diverse we've gotten, the more value that we're able to offer to all our clients as we partner with them. We've seen over the years, this high production-value world that we live in just gets more and more complicated. So, the more seats that we're able to take at the table as TAIT to help our clients, the more we're able to assure for them that with the spectacle they get delivered they will also be getting the reliability, the safety, the quality, and the schedule, scope, and budget delivered with the professionalism that they need and expect.

## What's the vision for TAIT going forward?

I would start in the past with that question. We've been following the same strategy for over 15 years. It really is adding more capabilities so that we can better serve our clients, growing our geographical footprint so that we can help our clients grow geographically, and continuing to build experience up in adjacent



markets. At TAIT, as we build out more skill sets and capabilities, it allows us to better serve our clients.

Our intention is to continue to do that, and to continue to grow geographically. We see this almost insatiable demand for high production-value entertainment just growing at an unclipped rate globally. We want to be there to serve and help our clients be part of that growth. We see an opportunity to continue to grow the skill sets and capabilities that we're using to stitch together service offerings for our clients.

Of course, underlying all this is technology. We've started to refer to our technology platform as TXP, as the TAIT eXperience Platform and have been building this out now for years. The path that we're on is guided by knowing that we need an operating system that lets us in a realtime, deterministic, safe, and secure way, connect together the data world and the physical world, but do it in an individualized way. In the future, the experience that you have might be different than the experience someone else has, even though you're together at the World's Fair for instance. We're always working to connect together the storytelling that's happening in the data world with the storytelling that's happening in the physical world, in an individualized way.

That's a path we've been on for a while now. And if you look at the capabilities that we've built up as a company from strategy and ideation, along with the deep domain expertise in engineering, and then real world physical delivery, it's all the pieces you need to go deliver that vision. We have found that it's one thing to have a vision on the technology and have the ability to execute the technology, but you also need to have the storytellers that see the future. It's like if you're living in a world with radio and you're trying to explain television, it's really hard unless you can go show it to them. That's what is fun to me. That we are ideating and delivering the strategy and the ideation on that technology vision; on projects that are a decade out while we build the pieces that we need to go deliver it. That I think is going to enable us to take the entertainment that was in the proscenium, in the stadiums and arenas, and being bringing it into the real physical world. Today it's closed ecosystems. It tends to be ticketed environments like a theme park or a cruise ship. But I think over time you're going to see that extend. You're starting to see airports, hotels, and eventually into all kinds of public places as we get people off their phones into the real world.

That to me is one of the things that wakes up this army of joy makers every day. It's asking how do we go deliver that technology vision and enable storytelling to exist in a wider scale than just what started as live events and has now morphed into live experiences. I think those live experiences are going to become public experiences, everywhere over a period of time.

## How will Goldman Sachs play a role in that vision?

For us, every chapter of the business has needed a different partner to help us achieve that strategy. Providence has been an exceptional partner. Now, as we look forward, we are thrilled to partner with Goldman Sachs. This collaboration will unlock new opportunities and reinforce TAIT's position as an industry leader. TAIT has always partnered with clients across the globe. Goldman Sachs' network and expertise will enable us to grow our global footprint and offerings. We're the leadership team that's been here, we've been practicing this craft and this mastery now for a long time. What we want from a partner is for them to say,

'what can we do to help?' What Goldman brings is an extended reach. Their advisor pool and relationship network are top-notch, bar none.

As we grow globally, I think you're going to see this high production-value demand. We're starting to see it in India, we're starting to see it in Africa. We're obviously highly concentrated right now in the Middle East. We've got offices in Riyadh, Dubai, and Abu Dhabi. So, those relationships are valuable both on the technology side as we continue to build out the strategy and the vision that I've just laid out, as well as on the global reach side. For TAIT, our goal is to really be in long-term partnerships with our clients. It's to build a company that is an enabler to the media and communications ecosystem. How can we help Disney deliver their core business? How can we help Universal? How can we help Live Nation? How can we help AEG deliver their core business? In the long run, moving to long-term partnerships so that we can be even more strategically aligned with what we're trying to achieve, and what they're trying to achieve; to better serve both companies. That's something that Goldman Sachs are uniquely situated to help us with as we continue to pioneer and explore how to go do that."

## Why do you think TAIT is so valued by your clients?

I will say we've built the company by doing what we say we're going to do and serving our clients and their clients. If you look at the tenure of the company, we do a pretty good job of retaining our clients, serving them over and over again. And always adding more and keeping them. I think it comes from a mindset that the client comes first. We're here to serve and serving them sometimes is helping them see things that they might not have even seen. It's helping them see that they might be asking the wrong question. We say, 'What about this?' If you ask this question, you can offer a different strategy that might help the client be more successful. And very importantly, we deliver. We do what we say we're going to do, end stop. I can give you a thousand examples of trying to do everything we can to make it happen.

I also think we're unique in putting a flag in the ground and saying, we've done projects on all seven continents, outer space, and in every ocean at this point. That doesn't come without every day there being obstacles, but in some ways it's an insurance policy dealing with those obstacles. Because we know everyday, there's going to be a live experience today and it's going to have the spectacle that's necessary to deliver the value that we're talking about. And we make sure it's also going to come with safety and reliability and operational savings and all the thought process we put behind it. We're going to make sure that it runs as smoothly as possible and it's going to be practical from a business perspective. We're here on behalf of our clients to help them not only realize their artistic vision, but maybe even push the artistic vision to deliver a business plan that's rational, profitable and successful for them.

## Is there anything else you'd like to mention about TAIT moving into the future?

On any given day, I think 'how lucky are we?' We're getting to work with clients who are so passionate about what they do and are so talented. We've managed to create, as a company, a culture now that attracts the best talent in the world. Really, the trick is creating a culture where anybody's idea could be the best idea. We've created a culture where we're able to bring together a software programmer and a sculptor and a story writer and an illustrator and a physicist and put a challenge on the table and collectively solve that problem in a way that is exploring what's impossible. That's the secret sauce to it all. In so many ways, it goes back to Michael Tait and his genius brain of we're not shooting for 99%, we're shooting for 100%, and that last 1% is unachievable. So, that idea that we're just constantly trying to explore and innovate and over time we don't really invent things, it's about constantly making incremental improvements. We're just constantly not satisfied with what we've done, what's out there, we are always trying to improve. That is how innovation happens. It's fun to be part of, to see. It's fun to pull back and watch the army of joy makers around the world delivering.

Michael Tait really put that idea across the company of working to achieve the last 1% and Winky [Fairorth] has really put the idea across the company of building relationships and treating those relationships like partners. Doing the right thing by people. It is that simple. It's not about making the last dollar or squeezing the margin; it's just about doing the right thing by everybody so that we want to come back together and do it again. When you put that all together, you get a really positive outcome. **PLSN**



# EDDIE "BONES" CONNELL

Lighting Director / Designer

By Michael S. Eddy

**E**ddie "Bones" Connell is best known for his 27 years as Lighting Director for Toby Keith. He is also the man responsible in many ways for there being a Lighting Director of the Year Parnelli Award, having lobbied for that role to be recognized. He, quite deservedly, has been also a recipient of that award as well. Since the sad and untimely passing of Toby Keith, Bones has been working various gigs in a range of roles and is open to new opportunities in the industry.

## How did you get into the industry?

Long story or real story? I was skating back in '82, roller skating, and they had an airband contest. The judges were the actual live band set to play the next night after the airband contest. They picked us to win and they said, 'Hey, we're having auditions for somebody to run followspot and to basically be a roadie.' There were three of us who said we would be there, but I was the only one that showed up, so I got the job. I made \$45 a week working for the band Eclipse. We did a few gigs around Jacksonville, where I'm from, and we did a gig at Daytona Beach Spring Break on the Pier. That was for eight weeks, so to say the least, I was hooked. That's how I got into it and just started learning and doing lights from there.

## What was your next step?

Well, I got booted for asking for a raise basically. I worked with a few different club bands and finally got with this band called Stiff. They were doing Top 40 Metal Rock around the whole country. Three of those guys ended up getting a record deal through a guy named Stevie Blaze who was the lead guitar with Lillian Axe. They were an '80s Glam Band and I went with them a few years. After that I went to Pantera. My good friend Sonny Satterfield, he used to be my followspot operator back in the day, and he got out with Pantera and he asked me to come out. So I left Lillian Axe and went and did that for a few years, and then the Toby Keith opportunity came up. I was torn because I didn't really like country music, but it was a gig, Pantera took a year off, so I had to find a job. So I took it and everybody was fantastic and Toby was great. We rode the bus with him the first year or two until he hit it big. He basically said, 'I'm a very loyal person if you're loyal. Take care of me and I'll take care of you.' And that's basically how it went for 27 years. I never looked back.

I never worked for a real lighting company until I lived in Dallas, and that was at Samuelson's. And the only thing I did there was when we built the *Steel Wheels* tour for the Rolling Stones, for which I was basically stuck in the paint shop. Then when Samuelson's got bought out, Vari-Lite offered us a gig over there to be on their line and learn all their lighting stuff. But I was in the touring world, and that's what I wanted to do. I got really lucky with Toby Keith.



Eddie "Bones" Connell with Toby Keith

Now I'm out with Brent Clark as lighting tech on Alison Krauss and Robert Plant. And last year I was front of house camera for the All American Rejects. That was fun actually. I absolutely loved running the camera. It was a completely different thing because when you're running lights, you're used to tapping your foot. You can't do that on the camera platform. It was definitely different and a lot of fun.

## Were there moments or jobs that you think really set you on the course of your career?

I would think being with Lillian Axe and then of course, Pantera. Those guys were so fantastic to work for. And when I got the job opportunity with Toby, Sonny said, 'you should do that.' I'm glad to see Pantera is back out now and kicking ass; with Sonny back out there with 'em. He's enjoying the hell out of it and he's doing a fantastic job.

## What's been a memorable experience you've had over the course of working?

I don't really have one thing, so to speak. As far as one tour or the other tour, they were all fantastic. On Toby Keith, we had a big budget for a long time when we were with Ford Trucks, and we had different variations of trucks on the stage. We had a transformer truck that opened

up and we had a big, huge drum riser as a truck. Toby would come flying out of there, out of the back and stuff like that. There were different variations of it, I mean, working with those guys was cool. And working with Seth Jackson, we were together a long time with Toby up until the end. He and Nate Alves were the designers pretty much the whole time for Toby Keith. It was mostly Seth I worked with mainly.

## Who were some of your mentors?

I think it was really people that I looked up to, not so much mentors exactly. There were some guys early on that I really watched. Like LeRoy Bennett from his work with Prince; I just thought that was amazing. And I watched him for years. Patrick Woodroffe, Cosmo Wilson, absolutely. What Cosmo's been able to do. It seems like he's worked with every metal band that's ever been out. I'm so jealous of that. Just watching their work. Brent [Clark] has been a big inspiration this last tour; what he is doing with what he's got. It's hard to explain, but it's not a 'smoke and lights just flying everywhere' show. It's a layered, scenic theatrical type show Brent has designed, which has really impressed me. The one other thing I would mention are all the lighting techs that have been out with me over the years with Toby Keith. Alex Gagnon and Carter Hopkins, both fantastic to work with and at their jobs.

## What's the best piece of advice you got and that you would share with others?

Learn as much as you can about everything and be nice. I mean it, learn everything you can. I think that was one of my downfalls. I didn't learn everything I could, because I was in a luxury situation that with Toby, and we didn't tour a lot. We would do like 45 shows, but he paid us for the year. So, I would go home and play softball and pickleball. I didn't go out and try to do other jobs and that's got me to where I am right now. Honestly, I thought we were going to be like Willie Nelson and continue on until we're all 90. So, yeah, learn everything and be ready for whatever happens. If you're that motivated to get into it, learn it, learn it deep down. The other thing is you won't know the answer unless you ask. I've told people that for years, if you don't ask for something, you're not going to get it. You need to ask for help or advice. When you are out there on the road you have got all these different people, with all different experiences to learn from if you ask. Some people have attitudes, but some people are fantastic and they become your lifelong friends. You may not see each other again for 10 years but then when we see each other, it's like no time has passed. That is what I love about this business and what I love about touring. **PLSN**

# ETC Electrifies the Wonders of *Illinoise* on Broadway

Broadway's offbeat sweetheart is *Illinoise*, an awe-inspiring dance musical derived from the 2006 Sufjan Stevens album of the same name. The four-time Tony nominated show, created by choreographer Justin Peck (who won *Illinoise* the Tony for Best Choreography), is lit by Peck's longtime collaborator Brandon Stirling Baker. *Illinoise* runs on an Eos Ti, programmed by Jeff Englander. Stirling Baker's joyous lighting design earned him a Tony nomination for his Broadway debut.

It's a production over a decade in the making. Peck and Stirling Baker's long-running artistic partnership began with *Year of the Rabbit* at the New York City Ballet, a performance set to the music of Sufjan Stevens' 2001 album *Enjoy Your Rabbit*. The pair quickly bonded over a shared love of Stevens' music, the *Illinoise* album in particular. "We both grew up listening to this album," says Brandon Stirling Baker. "Justin and I have been geeking out over *Illinoise* as a project for 14 years now."

After years of incubation, *Illinoise* first took physical shape at Bard Summerscape in 2022. "It was a very abstract piece," says Stirling Baker. "It was extremely weird, but we loved it. We were very into creating a so-called musical without following the traditional jukebox structure." From there, the show landed at the Chicago Shakespeare Theatre. "I think the show really found itself in Chicago," programmer Jeff Englander says—fitting for a production whose best-known number is named after the city. After a month in Chicago, *Illinoise* plowed ahead to the Park Avenue Armory in New York City. "The Armory is one of the coolest spaces in America," says Stirling Baker. "It's 400 feet deep, 80 feet tall — It has the feeling of a football stadium, but for the arts, you know? It has always been a bucket list venue for Justin and me because you can really do anything in there."

## ■ Venue Change

Moving an ever-evolving musical between wildly different venues on a tight schedule could have been a programming nightmare without the right tools. Luckily, Englander's extensive use of Augment3d made transfers a breeze: "Thank God for 3D visualizing! Augment3d was extremely important to how I transferred the show from one venue to the next. The 3D makes the focus nearly perfect, so all we had to do was mess with the beam parameters a bit to make things look good."

After the news arrived that *Illinoise* was heading to Broadway, opening night came only three weeks later. "Justin and I come from the world of ballet, where we'll do tech in the morning, dress rehearsal in the afternoon, and open that night, which is very normal for us. This was like doing a Broadway musical on a dance schedule," Stirling Baker jokes.

Englander was in the middle of another job when the transfer was to take place, so he entrusted his show file to David Arch to transfer to the St. James Theatre. "I was the program-



MATTHEW MURPHY



MATTHEW MURPHY

mer on the first Broadway show that Brandon worked on as an assistant, and now this is his first Broadway show as a designer, so it was very full circle," says Arch. "Jeff did a great job, so it was really just a matter of me refining it and working in the new equipment."

When questions arose about upgrading certain equipment in the transfer, the team opted to keep things simple. "We come from very humble beginnings and the show only got smaller and nimbler as we went along," says Stirling Baker. "We're just a show with music, dance and light, and I'm very proud that that was enough. Our very first iteration of the show at Bard had a bigger light plot than the Broadway version."

From Bard to Broadway, Eos Ti remained the console of choice. "I love that the Ti has a row of programmable hard keys that are horizontal. Because as it turns out, my hands happen to be horizontal as well," says Englander. Arch puts it simply: "Sitting at the Ti feels like coming home."

"What's really exciting is that even with so much electric energy and light, the cueing is very simple. For me, it was super important that the choreography dictated how the lighting cues would happen. For every song in the show, a lot of the cues and lighting ideas in general are inspired by the choreography," says Stirling Baker.

## ■ Supporting the Storytelling

The show is structured around a circle of storytellers, with each song telling its own unique tale. Each number was an opportunity for Stirling Baker to create a fully contained world with its own lighting logic: from the graphic, Lichtenstein-inspired colors of "The Man of Metropolis" to the stark, Hitchcockian shadows of "John Wayne Gacy, Jr." All this dynamism was accommodated by High End Systems' SolaFrame Theatre fixtures. With a 15,000 lumen output, fixed and indexing gobo wheels, animation effects, and a wide zoom range, SolaFrame Theatre makes

for a dynamic, feature-packed fixture—all with the silent operation that a theatrical environment requires.

An important facet of the show's lighting design comes from the last place that one would expect. "As a lighting person, the first thing that you notice when you walk on stage is that the entire floor is bright yellow. My immediate thought was how on earth do you deal with a yellow floor?" says Arch. "Brandon used it as a giant bounce. He would take a light and hit that yellow floor and it would illuminate the entire cast. It blew me away."

This result is a culmination of lots of experimentation from Stirling Baker. "I'm a huge fan of playing with the way that light reflects off the floor and the way it can light a full stage. When people see the show, it's a cool surprise that a lot of the light that we see, even on the dancers, is very indirect. In my opinion it's more interesting, it feels less typical." The perfect vessel to deliver this effect was the show's trusty Source Four LED Series 2 fixtures with the Lustr array. "Our four Series 2s are the huge workhorse for all of our reflected light," he says. "They're beautiful lights, and so reliable."

Stirling Baker closes *Illinoise* with a lighting cue that he considers an offering to the audience, one that inspires viewers to tell stories of their own. "I think there's something really beautiful about a light cue, a lighting image, that can feel like an offering to its audience." For Stirling Baker, the offering that turned him into the designer he is today came in the form of an ETC console. "I was first introduced to the world of lighting when I was 13 years old, and ETC equipment was there from the very beginning. ETC has always been a part of a designer's introduction to light, not only for myself, but for so many people who are coming up behind me."

## Robe Makes a Positive Impression at the Baltic Opera Gdansk

KRZYSZTOF WYSTKOWSKI



The award-winning Opera Bałtycka (Baltic Opera) in Gdansk, on Poland's stunning north coast, has invested in new Robe lighting fixtures with the purchase of 18 TX1 PosiProfiles and four PAINTES which have been installed into its current building. The opera house has a colorful and varied history and was originally built and opened as an equestrian sports hall in 1915. It went through various other iterations, and the first opera was performed there in 1950, and since then the building has undergone several renovations. While the cozy 476-seat capacity makes it Poland's smallest opera hall, The Baltic Opera has a formidable reputation for excellence, high production values and world class performances.

Lighting Specialist Marek Lebida has been working full time at the Opera since the Robe fixtures arrived last year, supplied by Robe's Polish distributor Prolight, and delivered via their local partner, Gdansk-based Grupa Profit. Lebida was inspired to make entertainment his career by his father who worked as a lighting master at this same Opera House, however he started on the other side of the stage as a ballet dancer. He used to dance in the Opera House when at school, so joining the team was like a homecoming. Immediately before then, he worked on shows and live events for a local rental company and as a freelance lighting designer and director.

Baltic Opera is a producing house with its own company (opera singers and ballet dancers) and orchestra, staging around 10 shows a month, primarily opera and ballet, of which four will usually be new works and the rest revivals. They also stage special performances for occasions like New Year.

### Move to Reliability

Before the new Robe luminaires arrived, there were other moving lights in the house, explained Baltic Opera's Head of Technical, Krzysztof Materny, but these were getting old and unreliable. During Covid, they started thinking about ways to reduce power consumption—with a goal of using 20-30% less—part of which would be achieved by steadily transitioning to more LED lighting fixtures in the house rig. The decision to purchase the Robe luminaires followed a demonstration by Prolight and consultations with some of their regular lighting designers including Lebida, as he had specified Robe regularly for multiple projects as a freelance LD. Several others working at the

Opera had also used Robe when they rented in additional fixtures as needed for shows, so all were aware that their own lighting needed to be updated and the time was right for a change.

The TX1 Posi Profile's CRI was crucial in the choice, stated Lebida, to get those nice natural flesh tones. "We set up real-life stage tests and compared the skin tones of the TX1s with some other products including the Opera's existing profile moving lights, and the TX1 just killed it." "There was really no comparison. So, after that everyone was convinced, we were making the right decision," confirmed Lebida. He noted that even the more traditional 'tungsten warrior' lighting professionals working at the opera... saw that these LED fixtures looked fantastic.

Lebida admits that on one show he was watching where he saw the light source but not the device and thought it must be a tungsten fixture, so authentic is the emulation. The decision to purchase was made by a team of five including Materny and Baltic Opera Technical Director, Magda Zablotny. In addition to all the creative and technical reasons for choosing Robe, they were also reassured by Warsaw-based Prolight's great industry-wide reputation, so were confident that the all-important support would be there whenever needed.

### Confined Solution

Designed to operate as a full moving head or a static but repositionable profile, the TX1 Posi-Profile can also function in extremely confined spaces where crew access is problematic or where movement options are limited or not required as it doesn't physically move during pre-use calibration. With the TX1s now installed on four house bars over the stage with two on the floor, it has made a massive difference to how shows can be lit, bringing a new vibrance and vitality to the stage and dramatically increasing the audience experience for all productions.

Lighting for most of the opera productions is designed by in-house LD Maciej Kaczerski, and Marek Lebida lights all the special shows, concerts and one offs.

The four PAINTES are fitted into two recesses either side of the auditorium and are used for front cross lighting, replacing the previous spot moving lights in the same positions. They are seriously quieter than the old fixtures, which is always a bonus for opera and ballet performances where audiences tend to be extremely conscious of ambient noise... which they rarely tolerate.

## Claypaky Xtylos Wrap Up Wagner's Ring Cycle for the Finnish National Opera

Designer Mikki Kunttu brought Richard Wagner's epic *Der Ring des Nibelungen*, also known as the Ring cycle, to a breathtaking conclusion at the Finnish National Opera with the performance of the monumental, nearly six-hour-long *Götterdämmerung* featuring Claypaky Xtylos, the laser-based beam lighting fixture. The first installment of the Ring cycle, *Das Rheingold*, was performed at the Finnish National Opera in August and September 2019. The Covid pandemic delayed the second opera, *Die Walküre*, until autumn 2022, with performances of *Siegfried* following in March and April 2023.

The Ring's lighting, sets and visuals were designed by Kunttu. He has worked mainly in the field of dance, but also in theater, popular music, opera, television and industrial arts. Kunttu has partnered with many prominent dance artists and groups from Finland and abroad and has collaborated repeatedly with the Finnish National Opera and Ballet, Norwegian National Ballet, Royal Danish Ballet and The Boston Ballet.

Kunttu chose Claypaky Xtylos fixtures for their unique laser light source. "Xtylos deliv-



COURTESY CLAYPAKY

ered the laser-type light beam that I wanted for visual effects," he says. The Xtylos was first shown in the U.S. at LDI 2019 and has generated a lot of excitement in the entertainment lighting world. The compact, light-weight fixture produces dense, ultra-concentrated light beams in any color desired, offers instant color changing, additive color mixing and superior pan/tilt speed—features designed to provide lighting designers, lighting directors and creative stage teams with unique looks for special shows, such as the Ring. For *Götterdämmerung*, Kunttu positioned the Xtylos on dollies on the floor where they proved to be "excellent fixtures for this application," he reports. The Xtylos were provided by rental company Woodlite Sweden AB.

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# Let's Talk Credit

By Rachael Bronstein



You're working a show this weekend and after load-in, during a bit of downtime, you spot an eye-catching deal on noise-canceling headphones—perfect for those long flights or bus rides between cities. Tempting, right? You buy them on impulse. But later, as the excitement settles, you start to wonder, "Will I be able to pay for them?" This scenario reminded me of a chat with one of my tour managers during Amazon Prime Day. He called, excitedly talking about his purchases, caught up in the thrill of the deals. When I casually asked, "Can you cover these purchases comfortably?," his hesitant, "I don't know" reflected a moment we've probably all experienced. It's easy to get swept up and find ourselves navigating the tricky waters of credit without even realizing it.

time payment is a positive mark that builds up your financial reputation, and over time, your score. If you run into a rough patch and miss a payment, your score might dip, but getting back on schedule with your payments can help recover those points gradually.

## |||| Understanding Credit

Credit, in its simplest form, is the ability to borrow money or access goods and services now and pay for them later. Whether it's for buying a home, a car, or an expensive piece of equipment, credit often makes these large purchases possible. However, banks and lenders need to assess our ability to repay these borrowed funds, and this is where our credit score comes into play.

A credit score is a numerical representation of your creditworthiness and your ability to repay debt. Did you know that you have multiple credit scores? These scores are derived from the information in your credit reports, which are compiled by the three main credit bureaus: Experian, Equifax, and TransUnion. The two most common models for calculating credit scores are FICO and VantageScore, with FICO being the most widely used by lenders.

Adding to the complexity, not all lenders report your payment history to all three credit bureaus. The credit score you check before applying for a loan may not be the same one that a lender uses, because not all credit scores are created from data from all three bureaus. So, which score is the most reliable?

The truth is, there isn't a single "most reliable" score. Tip: Instead of trying to pin down one perfect score, it's more productive to focus on the factors that affect your credit scores and work on trending your score up over time.

## |||| Navigating The Credit Landscape:

So, let's dive into the factors that play a significant role in shaping your credit score.

- **Paying your bills on time (35%):** Keeping up with your bill payments is like giving your credit score a regular boost. Each on-



- **Credit usage (30%):** Have you ever heard someone talking about keeping their credit utilization low? It's a fancy term for a simple idea: Use only a small portion of your available credit. Ideally, you want to use less than 30% of your available credit. If you are considering applying for a loan, it's a good idea to keep your credit utilization even lower, ideally under 10%.

- **Credit History Length (15%):** Lenders look at the age of your oldest and newest accounts, the average age of all your accounts, and how recently you've used them. Opening new accounts might lower your score temporarily because it reduces the average age of your accounts. However, you can offset this by keeping your credit utilization low. Tip: It's beneficial to keep your oldest credit account open, even if you don't use it much. This can help maintain the length of your credit history.

- **Credit Mix (10%):** Managing a variety of credit types, such as revolving accounts (like credit cards) and installment loans (like student loans), shows you can juggle different kinds of financial responsibilities. While diversifying your credit mix is helpful, remember it's just a small part of your overall score—so there is no need to take on extra debt just for this purpose. Tip: Take a look at whose name is on your credit accounts. If you're sharing finances with a spouse and all the credit is in their name, consider building credit in your name. It's good for your financial health and can help in the future.

- **Recent Credit (10%):** Have you ever played the game where you apply for a credit card just to snag those 100,000 bonus miles after spending a certain amount? It feels fun, almost adventurous, like your next vacation is practically paid for. But here's the catch: while signing up might feel like a win, it can temporarily dip your credit score. It may also encourage you to spend beyond what you would have, leading you to stretch your budget more than intended.

Imagine that on top of the vacation bug, you're also looking to finance a new car and perhaps even eyeing a new home. Each application might seem like a step toward big dreams, but multiple applications paint a different picture to lenders. However, if you

manage to keep all your big loan inquiries—like those for the car or home—within a 14-day period, credit bureaus see it as you shopping smart, not getting credit-happy. They count those inquiries as just one, softening the blow to your credit score.

## |||| Debunking Myths About Credit

While many of us are busy figuring out ways to improve our credit scores, it's just as crucial to clear up some common misconceptions. Let's tackle a few myths you might have thought were true. Understanding these can really change the way you manage your credit and might even make maintaining a good score a bit easier.

- **Myth #1: Paying Off My Balance in Full Each Month Helps My Credit Utilization.**

You might think that clearing your credit card balance every month means you're all set, right? I actually did for a long time. However, the credit bureaus look at the balance on your statement closing date. So, even if you're diligent about paying off the bill in full each month, if you consistently charge more than 30% of your available credit, it still looks like you're using a significant portion of your credit limit. Quick Fix: Try making a payment just before your statement closes. This way, a lower balance gets reported, helping you keep that credit utilization in check.

- **Myth #2: I Should Keep a Small Balance on My Credit Card.**

This came up on my most recent trip to Nashville, and no, you do not need to keep a balance on your card. Keeping a balance just means you're paying extra in interest. Always aim to pay off your credit card balance in full each month.

- **Myth #3: Closing Old Credit Cards Boosts My Score.**

Actually, it's quite the opposite. Older accounts boost your credit history, which can help your score. Closing a card means you lose that credit limit, which can increase your credit utilization ratio. Tip: If you're not using the card and it's free, you might just want to cut it up but keep the account open. However, if it's costing you a hefty annual fee and you're not using the perks, then it might make sense to close it. Just try not to close any accounts when you're about to apply for a loan.

- **Myth #4: Checking My Credit Score Will Lower It.**

Have you ever hesitated to check your credit score because you heard it might drop? Checking your own credit score is a soft inquiry and doesn't affect your score. But beware of your favorite retail store's pitch to save 20% by opening a store card—that's a hard pull on your credit and can indeed ding your score. Store cards often have high interest rates, and if you don't use them much, they could even be closed due to inactivity, forcing you to reapply later which may entail another hard pull. And, if you don't charge often, it's easy to forget a payment, sometimes wiping out the initial 20% savings you received.

If any of these myths have caught you off guard, you're not alone. I recently led a workshop where the whole group had a lightbulb moment—and a good laugh—over the myths they'd believed all their lives.

## |||| Your Credit Report

We've touched on how your actions influence your credit score, but it's crucial not to overlook the credit report itself. This document is the backbone of your credit score, containing all the vital data that shapes it. In the past, you could request a free credit report from each of the three bureaus once per year, but since the pandemic, the rules have changed. Now, you can request your reports once a week for free at [www.annualcreditreport.com](http://www.annualcreditreport.com). While you probably won't need to check weekly, having the option is beneficial. Tip: Download each report as a PDF so you can review it thoroughly at your convenience. Pay close attention to the details—accounts listed, any negative marks, soft and hard inquiries, and personal information. It's essential to download reports from all three bureaus, as they might not all have the same information. If you spot any errors, make sure to report them to the bureau involved.

## |||| Freezing Your Credit

We've checked our credit scores and ensured everything in our annual reports is correct. We're all set, right? Not quite. There's one more protective measure to consider: freezing your credit. Before I started coaching three years ago with HerMoney and personal finance expert Jean Chatzky, whom I admire greatly, I hadn't considered this step either. But here's why I love it: freezing your credit is straightforward. Simply visit my website at [www.lifesjam.com/resources](http://www.lifesjam.com/resources) and download the guide on How to Freeze Your Credit. You'll create a login for each of the three major credit bureaus and then it's as simple as clicking a "Freeze" button. When you need to lift the freeze, just log in and click "Unfreeze." You can even set a future date for it to automatically refreeze. This setup not only protects you from identity theft but can also act as a safeguard against impulsive decisions, like applying for that store credit card on a whim. The primary time you might want to avoid having your credit frozen is when you're applying for a loan. Otherwise, it's a handy tool to have. And don't forget, you can freeze your children's credit too—there are a few extra steps for those under 18, but these are clearly outlined on the bureau websites.

## |||| Summary

In my experience working with people on their finances, credit usually comes up somewhere in the middle—it's important, but it's not everything. Try not to obsess over your credit score. It's a useful tool that can help you save money and build wealth, but it doesn't define who you are. My take? Build your credit before you think you'll need it. It's one less thing to worry about when you do. **PLSN**



# Lighting Todd Rundgren; Limp Bizkit, Foos, Roots and More



By Debi Moen

Todd Rundgren's *Me/We Tour* entertained across the U.S. from April to July 3. Designer

**Hans Shoop** says his involvement with the artist's visual production has been "increasing geometrically" over the last 15 years. "This time the music set the pace."

Perusing through his informal notes, he cites his "brief and cryptic" keywords and phrases for the 30-song set list, such as: Atmospherics, Footlights, Beamy, "each song needs to have a unique look," and "not just a concert, not just a series of songs, but a whole production."

Shoop explains, "TR's directing style is more subtractive in nature, so I get a lot of latitude to do what I wish, until I hit the invisible fence. His notes are much as in the recording studio: 'let's try less of that,' or 'more of this.' He has also been a champ in enduring uncomplainingly some very uncomfortable (blinding for him) moments to get a dramatic look with floor lights. I am quite grateful."

He adds, "Haze and footlights were words I had not expected to hear, after having edicts against them for so long. That is another story. Video has been a major element in Todd's shows for the last seven-plus years. There were no moments that specifically needed video in this show, so, just to mix things up, we cut all video from the show. It was refreshing to 'focus' only on lighting."

The designer explains that the team wanted to achieve a level of consistency to the design aesthetic that usually only exists in much larger shows. "The vast variety of equipment, and layout between house rigs of various venues is near infinite. We needed to find how little we could carry, to bring all we need to do a show. Without alteration, we can do our whole show with only a level 40' x 30' stage surface with 20' of open fly space, and 70 amps 3 phase electric service. The whole rig is ground supported so as not to be limited by available hang points, and the



Each Rundgren song needed a unique look.

design is modular enough to be scaled down to fit in more intimate venues when the need arises. Carrying an enormous floor package of 60 fixtures makes for a long day, but the results have been worth it."

Shoop and the Rundgren team will be back on the road on tour this fall.

## ■ Limp Bizkit

**Justin Wade** kicked off a run as designer, director and programmer with Limp Bizkit's tour. "It's a show built with a lot of surprises throughout, and first time the band has toured at this scale in years. They're a very high energy band that came in with a unique vision," he notes. The band is on the road from July 16- Aug. 24, with Bones, N8NO-FACE, and Corey Feldman supporting. "Looking forward to a great summer," he adds.

## ■ Norah, St Vincent, Foos, Garbage

**Tess Falcone** reports in: "LXFC has had a busy few months, working primarily with kick-ass women, with some rock legends in the mix as well, of course! **Dan Hadley** and I designed the new Norah Jones tour, and then touring LD **Brooke Kimple** and I programmed it. Dan and I then shifted to take on the new St Vincent touring design, which I programmed and operated. Dan then

designed and kicked off a fresh stadium tour with the Foo Fighters after programming it, with the help of **Eli Suarez**. I then went straight into programming and operating a lighting design for the band Garbage, designed by **Kerstin Hovland** and **Emery Martin** of Electronic Countermeasures. It's been a whirlwind!"

## ■ Roots

**Madi Adams** checks in saying she's filling in on The Roots tour for LD **Robert Bloom** for a few shows through July and August. While there's a bit of a construction hold on the Conchy Joe's tiki install in Florida, "I've brought my friend **Ruben Mehan** on board—great systems engineer here in NYC and currently out with Jelly Roll—to help me with the project." She's open for more fall design, operating and programming work, she adds.

## ■ Myles & More To Go

**Myles Mangino** and **Alban Sardzinski**'s Hight PDS Studios has had a busy schedule from their New York base. Among their many projects, they designed composer Joe Hisaichi's three-night run at Madison Square Garden with a 180-piece symphony and choir featuring the music of Hayao Miyazaki of

Studio Ghibli films. They also lit the red carpet, screening and after party for HBO's *House of Dragons* season 2 premier. There was also the DNC's annual LGBTQ+ Gala, two rallies for FLOTUS, The LadyLand Festival, Head In The Clouds K-pop Festival, a Fashion Show for KZ\_K Studios, Stars network screening and launch of *Ghost* series, and the Billion \$ Ball at the New York Stock Exchange.

## ■ New Cues

• **Carter Adams** says he's "finally" heading out with country artist Allen Stone again August through October. He's the designer, director and programmer for this new fall production. "It's our first headlining tour since Covid shut us down in March 2020," he notes.

• **Graham Rolak** says this summer he's working on a few things. "The ones I can tell you about are: I am designing and sending off AFI as main support for 30 Seconds to Mars tour, and also doing the Incubus arena run for the 20th anniversary of their album, *Morning View*."

• **Gregg Maltby** will globe-trot for a few weeks in October lighting Paul Anka. "When **Alvin "Tiny" Butler**—Paul's longtime LD—does Eric Clapton, I fill in for him. Last year I went [with Anka] to Japan, Macau, China, Singapore, Bangkok, and the Philippines," he notes. "In October, it's Santiago, Chile, and some East Coast dates."

• **Marc Janowitz** of **E26 Design** recently re-launched Trey Anastasio and the Classic TAB's tour (the four piece version of the Trey Anastasio Band) with **Patrick Hayes** serving as lighting director. Janowitz also designed the production and lighting for Nate Bargatze's Netflix special filmed in Phoenix.

• **Nathaniel Beckett** is back out as designer, programmer and operator with New Found Glory for the *Catalyst: 20 Years Later Tour*. He says the pop punk band will be in the U.S. August through October, also performing at Riot Fest and When We Were Young Festival. **PLSN**

Share your news with [dmoen@plsn.com](mailto:dmoen@plsn.com)

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# In Confidence We Trust



By Chris Lose

Confidence is not just a positive trait but the cornerstone of our industry. The mega-stages that thrill our audiences are not only built with steel and aluminum, but they are also built with trust. Trust takes time to cultivate, nurture, and flourish. Confidence in our own abilities and others can only be obtained after trust has been formed. For better or worse, confidence is built on an unstable foundation. A single mishap, or lapse in better judgement is all that it takes to crumple years of accumulated confidence. The longer I am in this industry, the more often I witness examples of this hard truth. When I was younger, I used to give trust until trust was no longer deserved. As my beard turns greyer, my list of prerequisites for giving trust has become stricter.

## ■ The Nook Story

In 2013, I took a side gig as an Account Rep for Morpheus Lights. Part of my gig was reaching out to designers and letting them know what Morpheus Lights was up to. I had the pleasure of running into Nook Schoenfeld at a corporate event in Las Vegas. This was long before he became my dear friend and mentor. I let him know that I took a gig with Morpheus and without hesitation, he launched into a lengthy diatribe about how much he loved the fixtures, but he would never use Morpheus Lights again. According to Nook's recollection, somewhere around the late 80s, or early 90s, Nook had done some work for Morpheus Lights, and they took over three months to pay him. This one bad experience was enough for Nook, a prolific designer, to cancel the future use of any products that are even associated with the Morpheus brand. I started to let him know that Morpheus Lights had changed a lot since the early 90s, but that did not matter even one bit. None of the people responsible for Nook's late payment were even at the company any longer, but because the check was supposed to come from Morpheus Lights, his confidence in the brand was demolished. No amount of reasoning or pleading would change his mind. Even after more than three decades, that memory had not faded, and his confidence had not been restored.

## ■ Lighting Providers

Fast forward several years, and the topic still comes up often. Just today, I got off a Zoom call and we are looking for a large amount of gear. We were brainstorming potential providers. I threw out the name of Generic Lighting Company. My suggestion did not go over well. Our Production Manager was very clear that he would be fine with using any gear from

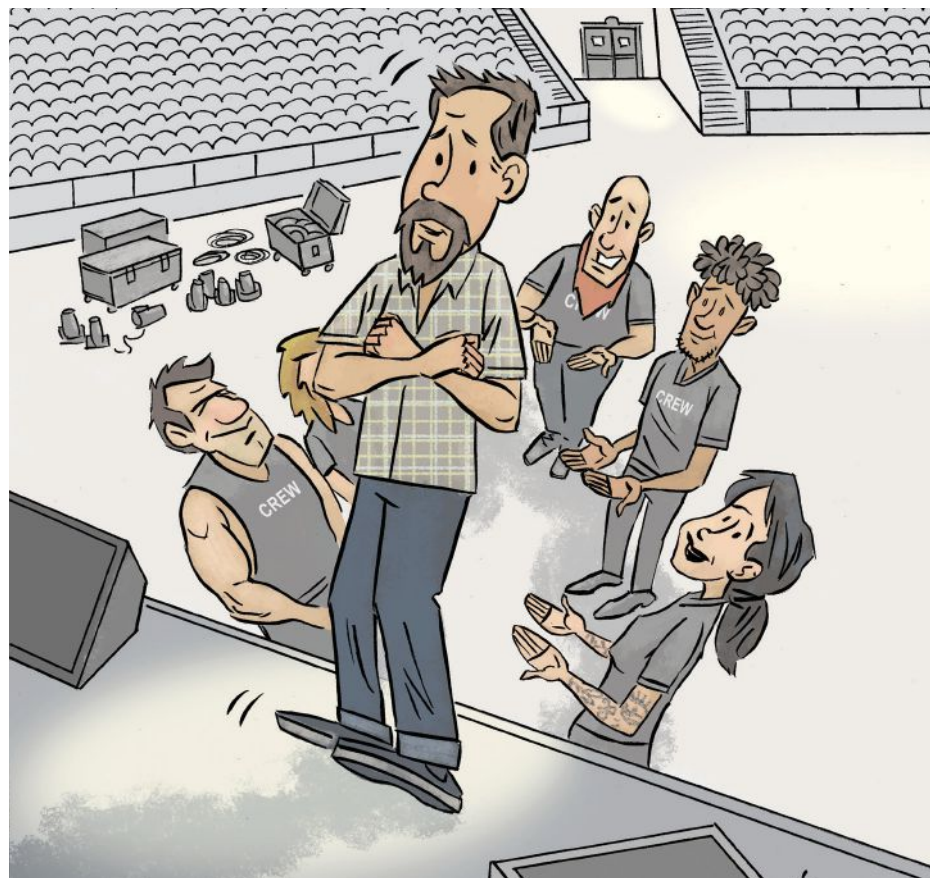


ILLUSTRATION BY JOHN SAUER/JOHNSAUER.COM

Generic, but we would have to find a crew from a different company because last summer he had hired a Generic crew member, and they made a mistake that delayed the show. Without being overly specific, this crew member was not a popular addition to the team. Even though Generic was not directly at fault for this system failure, the mere fact that this crew member had a Generic logo on their work shirt was enough to shatter any confidence that our Production Manager had in Generic. This crew member was the sole representative for Generic onsite and the reputation of Generic rested completely upon their shoulders. This crew member could have had a hundred successful previous shows, but as I have heard many times, "You are only as good as your last show." This show cost them not only this gig, but it cost the rest of the Generic crew the privilege of being held in high confidence by a very busy Production Manager.

## ■ Work/Play

When it comes to other people, I'm like a puppy dog. I love everyone. I find most people to be fun to be around and I enjoy listening to their stories from the road. That being said, I have had to harden my heart out on the road. I generally want to work with all the people that I like the most. Unfortunately, some of the people that I like to hang out with are not always the best suited for the positions that need to be filled. Some of the people that I enjoyed hanging out with on the bus, were also the ones that may have spent too much time partying on the bus. I'm just old enough to remember when partying until load-in and then working a full 16-hour day was a badge of honor. Our industry has changed. Even though we are not doctors, or air traffic controllers, our job can be dangerous, and lives can be on the line. We are hanging a lot of cack over the heads of the rich and famous. One mistake can be the end of the livelihood for busloads of hard-working people. Without confidence, no one walks onto a stage. Without confidence, no one goes under the thousand pounds of hanging gear that has been provided by the lowest bidder. Being sociable on the tour bus used to be enough to solidify future gigs, but

with modern mega-structures, and increasingly complex networking systems, a winning attitude is only enough to get you a spot on the bus. A lifetime of building confidence is the only thing that can keep your spot.

## ■ Confidence in Technology

Confidence does not only apply to humans. Confidence extends to objects as well. No matter what the sales reps might want us to believe, many products are over-hyped and will not produce the effect that they have been marketed to provide. Designers tend to stick to the products that they have confidence in. This makes it difficult for newer products to break into the market. Why would they try a new product, when the VL3500 Wash FX has been providing them with everything that they wanted for over two decades? The VL3500 Wash FX had to fight for that confidence, and it will take a lot of effort from a competing brand to build up the rapport. I have seen many fixtures come and go. At one time, the VL5 was the reigning king of the wash lights. No other light on the market was as dependable and as versatile as the VL5. It took an LED revolution to knock the VL5 off the pedestal. As soon as MAC Auras and Elation Impressions flooded the market, VL5s were relegated to just a few loyal clients. In 2024, personally, I have more confidence in most LED fixtures over a filament lamp nine days out of ten. I'm confident that an LED source is more reliable, will last longer, and provide me with the looks that I need for a successful show.

## ■ Confidence in Ourselves

Building confidence is a daily task. We need to under-promote and over-deliver whenever possible. We need to prove that we can do what we say we can do. The only way that we can get other people to have confidence in us is to have confidence in ourselves without overstepping into cockiness. Self-confidence cultivates a positive mindset, fueling perseverance and collaboration. Confidence is the fuel that propels us to seize opportunities, overcome obstacles, and achieve our full potential. **PLSN**

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PLSN's LD@Large Chris Lose has been interviewing top live production professionals discussing their careers, telling war stories and giving out advice on their craft. Early on in this series, Lose conducted some podcast interviews right on the NAMM 2020 show floor. To hear his discussions with designers Susan Rose, Chris Lisle and Rob Koenig, all just weeks before the Covid-19 pandemic shut everything down in March 2020, go to [plsn.me/Podcast-NAMM2020](https://plsn.me/Podcast-NAMM2020).

For more from the Podcast archives and LD@Large articles, check this link out: [plsn.com/podcasts](https://plsn.com/podcasts).

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