WILDSUN-K25



WILDSUN-K25 AUTOMATED LUMINAIRES

A new-generation moving head luminaire unequalled on the market. In collaboration with cinematographers and operators specialized in the video production of major sporting events, AYRTONTM dedicated over two years developing and perfecting this marvel of technology, innovation, and light. The WILDSUNTMK25 is the only LED luminaire capable of measuring up to the classic Fresnel HMI 4,000 and 6,000 lights in terms of pure output.



Editorial

Dear Reader,

After the successful launch of our RadicalTM series in 2014, Ayrton continues to push the boundaries of imagination and technology.

Our lines of Static and Automated Luminaires, Creative Solutions and Imaging Displays are highly innovative, bringing a real value to our clients. From our NandoBeamTM and IceColorTMseries to our RadicalTM series and WildSunTMK25, Ayrton offers a large variety of original lighting solutions to serve all kinds of application in today's demanding market.

As the first company in the world to use the new 60W RGBW LED from Osram, our technological advancement in the field of Stage and Entertainment Lighting is assured. Our development of the new 94 mm 4.5° optical collimator, designed to work in conjunction with this LED, has placed us firmly ahead of the rest. At Ayrton we continually aim for innovation, not imitation. We are not satisfied with following the wave, but are proud to be the constant initiators of new trends within our industry.

Entertainment lighting is the art of imagination, and to provide designers with new tools to create effects that have never been seen before is Ayrton's raison d'être. We would like to thank the lighting designers, programmers and technicians for sharing their thoughts with us which, in turn, help us invent new tools to fire their imaginations. In the following pages you will see some of the great work they have done using Ayrton fixtures.

Ayrton will continue to innovate again and again because it is the nature of our business.

Valère Huart.

International Sales Manager.

CONTACT US:

AYRTON

Le parc de l'Événement - Bâtiment H

1, allée d'Effiat

F91160 - Longjumeau

France

Tel.: 33 (0) 1 69 10 33 90 Fax: 33 (0) 1 69 10 33 91

GLOBAL INFORMATION: contact@ayrton.eu TECHNICAL SERVICE: technic@ayrton.eu SALES NETWORK: sales@ayrton.eu MARKETING: marketing@ayrton.eu PRESS OFFICER: julie@joolzharper.co.uk

Summary

AYRTON NEWS

- 4. Prolight + Sound 2015 report
- 5. Visionstage looks forward with Ayrton
- 5. Barn on the farm

AYRTON SOCIAL NELWORK

6. Facebook, Pinterest, Twitter, Vimeo

AYRTON EXHIBITION preview

8. Plasa & LDI preview

AYRTON Show report

- 10. Take That
- 11. Rock in Rio
- 12. Fnter Shikari
- 13. Dizzy Mizz Lizzy
- 14. Dave Grohl's Iron Throne
- 15. Verstehen Sie Spass
- 16. Maroon 5 V Tour
- 19. Interview with Leroy Bennett
- 22. The Nuit Fauve

AYRTON W Show report

26. Return to an unknown land

AYRTON COMPANY profile

32. LumenRadio... A Lighting Revolution

AYRTON bench test

38. MagicDot™R... Faster than its shadow













AYRTON CONTINUES TO INSPIRE AND INNOVATE AT PROLIGHT + SOUND 2015

True to form, French LED lighting manufacturer, Ayrton, surprised visitors and clients with the launch of no less than seven new products at Prolight + Sound 2015. The newest developments from these master innovators added three fixtures to Ayrton's Creative Solutions line, two unique specimens to its Imaging Displays portfolio and a further two additions to its Automated Luminaires range.

Heralded as the A61 Project prior to the show, Ayrton revealed a totally new technology that combines the first 94mm diameter narrow beam angle collimator with the latest generation high-power (40W or 60W) Osram multichip LED. Together these two elements create tighter beams with an unrivalled centre beam intensity that Ayrton has incorporated into three new Creative Solutions fixtures: MagicDotTMR, CosmoPixTMR and VersaPixTMRS.

Many of Ayrton's new products were presented on its Prolight + Sound stand in a spectacular Light Show designed by top French lighting designer, Laurent Chapot. "The Light Show this year was a big success," states Ayrton's Valère Huart. "We were required to play it almost continuously in order to satisfy the crowd waiting for it in front of the booth."

The popularity of Ayrton's stand was, once again, very evident. "We had an extremely busy show and enjoyed four fantastic days in Frankfurt," continues Huart. "Innovation is our DNA and the essence of our business at Ayrton. We continue to grow step by step and, without doubt, people in the lighting industry are very interested in all the innovations from Ayrton. However, even though the success of Ayrton is now worldwide, we are proud that we continue to have the same close relationship with our clients and partners, all of whom enjoy using and promoting our products as much as we enjoy designing and creating them."

VISIONSTAGE LOOKS FORWARD WITH AYRTON

Under the management of Michael Althaus, VISIONSTAGE has become a fast-growing distributor of Ayrton products, successfully servicing the German and Austrian markets. Initially appointed distributor for Germany, VISIONSTAGE's huge progress has recently led Ayrton to extend the company's exclusive distributorship to Austria.

"The success of Ayrton fixtures in Germany with VISIONSTAGE has been immediate," says Ayrton's Valère Huart-Gyors. "Hundreds of fixtures have been sold to a number of different companies from the day VISIONSTAGE opened in January 2015. We are extremely impressed with VISIONSTAGE's work."

The VISIONSTAGE team has expanded accordingly to meet with this success and currently consists of seven people: Michael Althaus leads the way as Managing Director, with Jürgen Nordhoff and Simon Gasch as Key Account Managers; Natalie Schnatmann is Sales Coordinator, with Adrian Raker as Technical Sales Manager and Herbert Bernstädt as Product Manager. Axel Schwakenberg as Online Marketing Manager rounds off the team.

"The German and Austrian markets are especially interesting to Ayrton because they consist of clients who are focused on technological innovation and quality which are two key characteristics of all Ayrton products," says Huart-Gyors.

"We are proud and thankful for the trust and task to introduce and represent a unique brand like AYRTON into our markets," says Althaus. "AYRTON is radically developing and changing today's lighting design and the response we get from the market is overwhelming. Together with our other brands, ETC and OXO, we have just the perfect match and quality of brands for our customers."

"Michael is a very experienced and well-respected member of the industry with a deep understanding of his market and an encyclopedic knowledge of his product lines. His team has great energy and commitment in their work and we are very excited with the results they have produced for Ayrton in Germany. With a pedigree like theirs, we have no doubt that this is only the beginning and that the success story will continue, both in Germany and, now, Austria too."



VISIONSTAGE team, from left to right: Jürgen Nordhoff (Key Account Manager), Adrian Raker (Technical Sales Manager), Michael Althaus (Managing Director), Natalie Schnatmann (Sales Coordinator), Axel Schwakenberg (Online Marketing Manager), Herbert Bernstädt (Product Manager), Simon Gasch (Key Account Manager)



AMBERSPHERE JOINS UP THE MAGICDOTS DOWN ON THE FARM

The Barn on the Farm is one of the growing number of independent events that now populate the UK summer festival calendar. Since 2010, the event has grown year on year and now presents a broad spectrum of up and coming artists on multiple stages with pro-audio systems and professional lighting rigs. Lighting designer, Bryan Leitch was approached to submit design proposals for all three stages.

"My design was originally produced with a narrow beam LED unit in mind but then, quite by chance, I saw the Ayrton MagicDotTMR fixtures in action online and decided to contact Ambersphere Solutions straight away for more information. Lee House from Technical Sales was my consistent point of contact from then on."

"The Festival's chosen vendor was Colour Sound Experiment," continues Leitch, "and between us we replaced my original choice with MagicDot-R units and it proved to be one of the best professional decisions ever. They made the whole design more dynamic and versatile — always a really important consideration with a multi-artist festival stage — the enhancement to the overall look was simply massive."

The MagicDot-R weighs in at only 5.3kg and is a highly compact unit, measuring less than 32cm in height. The fixture boasts continuous Pan and Tilt rotation with a uniform beam from the single multi-chip 60 Watt LED light source. It is the quality of that beam that most enthralled Leitch, "I'm generally not easily impressed but these little beasts emit a beam that is simply superb. I would happily include them in a design for everything from a small club to arena size stages — they really are that bright. Add to that, the seriously top-quality of manufacture — there was not a single glitch the whole weekend — and I genuinely cannot think of a single minus point."

"It is my intention to use these again just as soon as availability and design opportunity permits," concludes Leitch. "The quality of what can be produced in the right hands makes the MagicDot-R a wonderful integral part of any design. I tell everyone who will listen just how brilliant they are. I have to thank Lee and his team at Ambersphere who could not have done any more to make this happen for us - totally and genuinely appreciated by all involved at the festival."

The Festival organisers were impressed enough to have already confirmed the same team for 2016 and the MagicDot-R units will definitely be making a return visit.

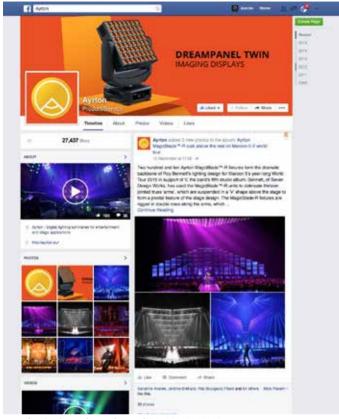
Ambersphere Solutions is Ayrton's exclusive UK distributor





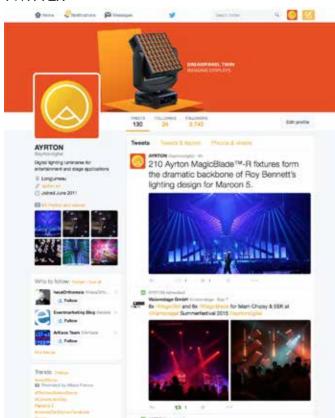
AYRTON SOCIAL Network

FACEBOOK



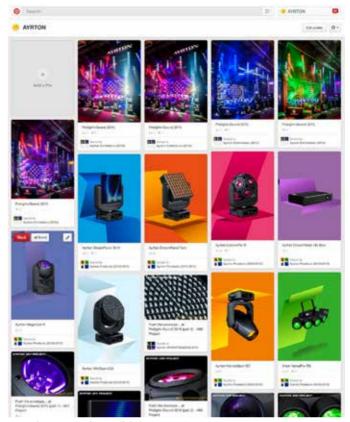
www.facebook.com/pages/ayrton/209728302396312

TWITTER



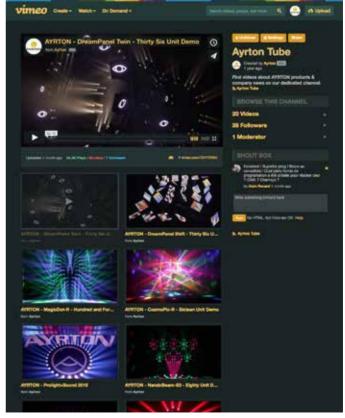
www.twitter.com/ayrtondigital

PINTEREST



www.pinterest.com/ayrtondigital

VIMEO



www.vimeo.com/channels/722996



COSMOPIX-R CREATIVE SOLUTIONS

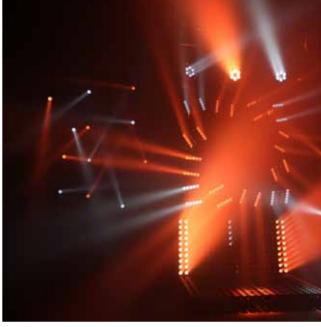
An entirely new luminaire based on the concept of the famous double-rotation spheres with PAR36 lamps, dating back to the early '80s. Using the latest technology and a variety of options for controlling the new multi-chip RGBW LED emitters, AYRTON™ has equipped this luminaire with new high-efficiency 94 mm optics and revamped this legendary product design, endowing it with a continuous combination of potential effects.



PLASA & LDI 2015 PREVIEW

With Ambersphere Solutions & Morpheus Lights





Ayrton, is proud to be supporting the Knight of Illumination Awards for the second year running. The glittering celebration of light will take place during PLASA London 2015 at the Troxy on Sunday 4 October. "The evening is an opportunity for Ayrton to show its support for the skill and talent of lighting designers and digital content designers who will be acknowledged and celebrated in true style," says Ayrton's Valère Huart-Gyors. The Ayrton team will be attending the Parnelli Awards in Las Vegas, which is supported by Morpheus Lights, where the MagicBladeTMR is a nominee for Indispensable Technology of the Year — Lighting category. Ayrton will be bringing six new products to PLASA London and LDI 2015, all which have been launched this year. MagicDotTMR and CosmoPixTMR were first shown in the UK at PLASA Leeds but now make their first appearance in London on the stand of Ayrton's exclusive UK distributor, Ambersphere Solutions (Plasa Stand B10) and will appear in North America with exclusive US distributor, Morpheus Lights (LDI Stand 1531).

MagicDotTMR and CosmoPixTMR are part of the Creative Solutions line, into which Ayrton has incorporated a totally new technology: the first 94mm diameter narrow beam angle collimator combined with the latest generation high-power (40W or 60W) Osram multichip LED to create tighter beams with an unrivalled centre beam intensity.

MagicDot™R

MagicDot-R has proved an unbelievable hit from the moment it was released and is currently appearing on the Foo Fighters international tour. The latest member of the RADICALTM series, MagicDotTMR is the first professional moving head LED luminaire with a single optical collimator. The new high-efficiency 94mm diameter optical system uses a brand new 60W RGBW multichip LED with a light-emitting surface of 8mm2 that delivers an intense 4.5° beam with a central beam intensity of 180,000 candelas.

Lightning fast and exhibiting the Creative Solutions' continuous pan and tilt rotation, MagicDot-R's totally round head fits within the diameter of its cylindrical base in all positions to allow bold new configurations with barely a centimeter of space between two luminaires. The entire unit weighs in at only 5.3kg.

CosmoPix™R

CosmoPix-R has sparked the imagination from dance halls to television shows. CosmoPixTMR is an entirely new luminaire based on the concept of the famous PAR36 double-rotation spheres that date back to the early '80s. Using the latest technology, Ayrton has revamped this legendary product design, and endowed it with a continuous combination of potential effects. This little powerhouse takes 12 of the highly efficient new 94mm optics and generates 12 shafts of coloured light that can be separately controlled in all directions and driven in continuous pan and tilt rotation to create exhilarating, original effects.

CosmoPix-R has extended series connectivity and can be controlled by DMX-RDM, Art-Net or with a wireless DMX-RDM link via a new generation TiMo module by Ayrton partner, LumenRadio.

VersaPix™RS

The third new member of the Creative solutions line, VersaPixTMRS will be shown for the first time in the UK. VersaPixTMRS puts Ayrton's new 94mm diameter optics in combination with a 4mm2 40W RGBW multichip to produce five 3.5° beams (the narrowest in Ayrton's portfolio) with a record-breaking central beam intensity of 200 candela per lumen. This makes the new VersaPix-RS three times more powerful than the original VersaPix, with a central beam intensity six times greater than before. Truly spectacular 3D volumetric effects can be achieved

AYRTON EXHIBITION PREVIEW

with this Ultra Radical development.

The cooling system for the three new products is also a wonder of technology: a new copper circuit board on the heat pipe along with a one-piece aluminium heat sink allows better, more efficient thermal conduction.

DreamPanelTMTwin's two sides are controlled completely separately - the video side through Ayrton's new HDMI DreamPanelTMHD-Box control system, and the MagicPanel by Art-Net or sACN through an Ethernet link.



PLASA London and LDI also mark both the UK and US premiere showings of DreamPanelTM Shift and DreamPanelTM Twin, two exciting new moving head fixtures developed from the inspiration behind Avrton's original innovative DreamPanel Series.

DreamPanel™Shift

DreamPanelTMShift is a 384 x 384mm video panel which uses 4,096 RGB LEDs on a pitch black background to provide prodigious contrast and definition. Mounted on a moving head, DreamPanel-Shift defines the magic blend of two technologies: the continuous pan-tilt rotation of Ayrton's MagicPanelTM with the new control system from the HDMI DreamPanelTMHD-Box. An innovative 48-circuit rotating connector enables the smooth, undisturbed transmission of video signals through pan and tilt rotation.

DreamPanel™Twin

DreamPanelTMTwin is a unique hybrid luminaire displaying an optimised MagicPanelTM on one side and the DreamPanelTMShift on the other. Incorporated into a motorised head capable of continuous double rotation on the pan and tilt axes, the DreamPanelTMTwin can alternate between displaying high-definition video images and 3D volumetric lighting effects. The DreamPanel-Shift side has 4,096 RGB LEDs on a pitch black background that provides extreme contrast for video rendering while the MagicPanel-R side has an improved resolution of 64 emitters (arranged in an 8x8 matrix) to produce finer detailed volumetric mapping effects. The 6mm pitch of the video side offers the perfect balance between the definition required to display video media on stage, the optimum screen size to enable full HD, and the greatest overall system brightness.

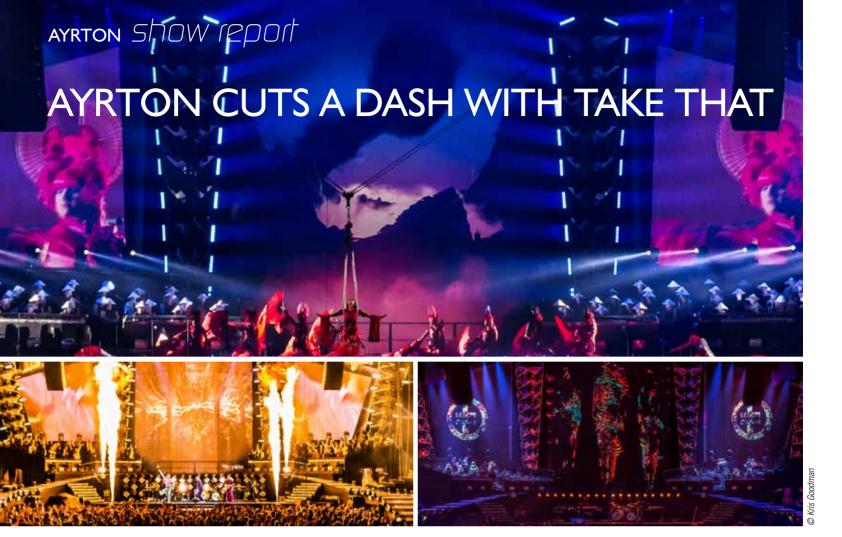
DreamPanel™HD-Box

Ayrton's DreamPanelTMHD-Box control system has been specially developed to drive the video panels in HDMI. The controller manages the image, the positioning of the panels, and the rotation between the media server layer, which generates the signal, and the display layer. It also resizes and positions the media in real-time in a matrix of video panels regardless of their orientation. DreamPanelTMHD-Box ensures each DreamPanel-Shift tile receives the entire HDMI 1080P image but displays only its allotted portion of the image. It is used with the DreamPanelTMManager, a PC-compatible software that lets the user configure a matrix, orientate the tiles individually with 1° accuracy, and adjust brightness.

Finally, Ayrton's Automated Luminaires range has been expanded to encompass the WildSunTMK25 which will be shown for the first time in the UK at PLASA London and in the US at LDI.

WildSun™K25

Designed as a replacement for conventional 4000W HMI Fresnel projectors, WildSunTMK25 is a new-generation moving head luminaire with no equal on the market. Working in collaboration with cinematographers and operators specialized in video production for major sporting events, Ayrton dedicated over two years to the development and perfection of this marvel of technology, innovation, and light. WildSun-K25 is the only LED luminaire capable of measuring up to the classic 4000W HMI Fresnel in terms of pure output, yet consumes only 2600W of power. With an output in excess of 100,000 lumens, a 10°-50° zoom and individually controlled rings to modulate the emission surface according to ceiling height, WildSun-K25 is perfectly created for sporting events in stadiums and large arenas.



Lighting designer, Tim Routledge, has employed a quantity of Ayrton MagicBlade-R and MagicPanel-R LED fixtures on Take That's Live 2015 tour, which is currently travelling the UK in promotion of their seventh studio album, III, before crossing to mainland Europe in the autumn.

One hundred and twenty-eight Ayrton MagicBlade-R LED fixtures and fifty-four MagicPanel-R units play a vital role in Routledge's design where they form an inherent part of the rig, delineating the outlines of production designer Misty Buckley's creative set design and providing a spectacular and versatile backdrop to the band centre stage.

Creative director, Kim Gavin, devised a show that exhibits a high degree of theatricality with artists performing across a large multi-level main stage that loops right out into the arena. Routledge's brief was to produce a very theatrical look in keeping with the design but overlaid with a huge 'pop punch'. 'The MagicBlades certainly gave me this," he says. MagicBlade-R is a unique linear fixture which presents seven individually controllable 15W RGBW LED emitters inline with a tight 4.5° beam and continuous double rotation on the pan and tilt axes. These combine to pack a powerful punch and some unique design possibilities.

Routledge outlined the outer edges of four bespoke scenic pylons — which act as upstage lighting trusses - with a total of 80 MagicBlade-R fixtures. At the top of the show these

throb into 'life', supposedly powered up by a performer on a bicycle. From then on in they are used heavily in many numbers, for example, the anthemic Get Ready for It, where the MagicBlade-R units move in unison in dramatic tumbling rotation. "I also used the MagicBlades to emphasise middle eight drop in certain numbers and created night sky sparkles and shooting stars on Rule the World to replicate the content on the central video screen," says Routledge.

A further 60 MagicBlade-R units are rigged around the inside edge of the undulating runway which loops out into the audience like a rollercoaster track. Routledge uses the MagicBlade-R fixtures like a light curtain, running travelling chases along them to add movement and enhance the impression of travel along this epic sized set.

Routledge first spotted the MagicBladeTMR fixtures at PLASA 2014 where, he says, their continuous pan and tilt capability set them ahead of anything else. "I trialled them on the Jonathan Ross show in November and again on Take That's promo show. They fitted the bill perfectly. They look so different from anything else and really have that 'wow' factor. "I find the MagicBlade-R produces very interesting effects and really gives something new," he continues. "The design possibilities they bring mean they have real longevity as a lighting tool. They are superbly reliable — for the kind of thing they do and the amount of work we put them through, it is amazing we have never had any problems with them!"

Forming a illuminated backdrop to the centre stage area are 54 MagicPanelTMR fixtures. MagicPanel-R is a panel of twenty-five 15W LED RGBW sources arranged in a 5 x 5 matrix, which also exhibits the continual pan and tilt capability for which Ayrton is renowned. Routledge positioned these behind the band in a curved wall, 3 units high by 18 wide, and mounted on the front of nine box lifts. These are used both as lighting fixtures and to run video content, where they act as audience blinders and provide interesting backdrops and undulating effects behind the band.

"I wanted to map video across the MagicPanel-R units to, for example, replicate the jellyfish content during Said It All from the video wall onto the LED emitters of the MagicPanel-Rs, and run the same video content across them all. I was able to achieve this quickly and easily using the GrandMA 2 running new VPU software. This made it really easy to use the MagicPanels as both lighting and video fixtures.

"The Ayrton MagicPanel-R and MagicBlade-R units were a very big deal for us because they were so new, but Ambersphere really got behind us with this and worked closely with Neg Earth on supplying and supporting this huge rig."

Tour Production Director for Take That Live Tour 2015 is Chris Vaughan and Technical Manager is Phil Broad.

ROCK IN RIO LAS VEGAS MagicDot™R makes its US debut







Ayrton MagicDotTMR, one of the latest products from innovative French LED lighting manufacturer, Ayrton, made its US debut with Bruno Mars at Rock In Rio Las Vegas in May. Lighting designer Cory FitzGerald of Seven Design Works used a huge configuration of 184 of the new fixtures on the singer's closing performance at this year's festival which was hosted for the first time in the US. FitzGerald's design also featured an array of 128 Ayrton IntelliPixTMR panels deployed as fascias fronting the stage-wide risers that backed Mars and his band.

MagicDotTMR is Ayrton's unique new professional moving head LED luminaire which features a single optical collimator in combination with Osram's new 60W Ostar RGBW multichip LED. MagicDotTMR delivers an intense uniform 4.5° beam with a high CRI and a palette of rich saturated and pastel colours.

FitzGerald has used Ayrton fixtures on several shows for Mars, including New Year shows at The Cosmopolitan, Las Vegas and NBC's Saturday Night Live. FitzGerald's lighting for Mars' one-off Rock in Rio set, however, was a unique evolution of his designs for the singer's previous shows. "I wanted to create a similar visual vibe to the SNL show but was looking for something very specific that would bring an almost retro look to the show. Our reference points were the old PAR can rigs of those classic rock bands like Queen and AC/DC so we were searching for a fixture that would look good in a large array and create a visual reminiscent of those original touring looks.

"I saw Ayrton's MagicDot-R in the video from Prolight + Sound in Frankfurt alongside a raft of their other new products and it was exactly what we were looking for. It has a unique look about it with a quality of light and a beam-look that is very reminiscent of an old ACL-style fixture. It produces an effect is rather like a PAR can — though its appearance more like R2D2! — with a tight pinspot, but has the advantage of being able to change position, give movement, change colour and strobe. It has a refreshing lack of multiple lenses and light sources which means all the magic comes from the cueing and colour changing."

FitzGerald used all 184 MagicDot-R fixtures in the air above the band, rigged on four staggered trusses mounted on variable speed motors. These allowed him to use the bank of MagicDot units in several configurations and positions above and behind the band throughout

the show. "We were able to create so many different effects this way and at one point had all four trusses moving in a song-length sinewave effect for the song Marry You," he says. "The MagicDot-R units added yet another dimension to the entire rig, using their continuous movement feature to create unique effects in the song Locked out of Heaven, as well as tight beamed 'laser like' effects during the song Gorilla."

FitzGerald is also a long-time user of Ayrton's IntelliPixTMR panels which he instituted to great effect on the SNL show. One hundred and twenty-eight IntelliPix-R panels were incorporated into the Rock in Rio design where FitzGerald used them as wrap-around fascias on the stepped risers behind the band. In addition, eight vertical trusses were installed upstage of the risers, each of which carried 5 more individual IntelliPix-R panels mounted at a 45° angle using the new IP-RTM mounting frame from Morpheus Lights. Fitzgerald used the IntelliPix-R to create background interest by running a series of unique chases across them.

"IntelliPix-R has a similar quality of light to the MagicDot-R and each of its 25 emitters is individually controllable so I can treat each one as a separate pixel or light in my design," he says. "I was able to extrapolate this feature into the MagicDots which essentially became moving versions of the bank of IntelliPix units below."

FitzGerald chose not to use any of IntelliPix-R's on-board macros but took advantage of the fixture's high degree of controllability. "It's a personal design choice that I treat each emitter as a separate light. It gives me total control over every aspect of the fixture and gives me the ability to create unique looks. Operating this way can be extensive on parameters and add to the programming time, but as a designer I give this some forethought and factor it in to my preparation. Once you get used to the quantity of lights and creating groups, you have a lot more options and access to so many unique effects. It's so worth taking a little time over this for the results I can get."

The MagicDot-R and IntelliPix-R proved their durability too: "Being solid state fixtures they are very robust and we were very happy with them," concludes FitzGerald. "I am now looking forward to trying out some of the sister products that Ayrton also released at Prolight!"

ENTER SHIKARI

MagicBlade[™]R makes its UK/European debut







Justine Trickett/Downl

Lighting Designer, Steve Bewley, is the first to tour the UK and Europe with Ayrton MagicBladeTMR fixtures, using over 100 units for British rock-band, Enter Shikari, in support of their new album, The Mindsweep.

Bewley has truss-mounted eighty-four MagicBladeTMR fixtures behind the band in a curved wall which splits horizontally to adapt his design to fit any size of venue.

"My initial concept was to create a kind of 'fence' housing an LED framework in emulation of a brain and the neuropaths within it to emphasise the idea of The Mindsweep," says Bewley. "The LED strip needed more to bring it to life, so I supplemented it with MagicBlades which have really made it zing!"

Ayrton's MagicBlade™R is a unique fixture which aligns seven individually controllable 15W RGBW LED emitters, each with a tight 4.5° beam, and provides continuous double rotation on the pan and tilt axes.

"For the first part of the year we used around 44 MagicBlades on a 3.8m high rolling framework which fitted the UK Academy venues," says Bewley. "It's like a floor package on steroids!

"We then added another 40 units on a flown truss to double the 'fence' to a height of 8m for this summer's larger UK and European festivals like Download, Glastonbury and Rock Werchter."

Bewley chose to use the pan/tilt and continuous pan/tilt features of MagicBlade-R fixtures copiously in his design, supplemented by a variety of static looks: "I opted to use the MagicBlades in many visually interesting positions and patterns, and employed the dimmer chase to emulate the music. The combination of MagicBlade's movement, colour, on-board macros and desk effects mean I can create something truly different, weird and unique that people haven't seen before. That is exactly what I want to discover in a new fixture."

Twenty-four more MagicBlade-R units line the stage's downstage edge to form a wall of light 'like one big MagicBlade' between the band and the audience.

"This groundrow acts like a huge curtain of light in the ambient haze and I use it to create big looks across the front," says Bewley. "The band plays with this, sticking their heads through the curtain of light, interacting with the crowd and with the light itself."

Bewley programmed the show using different layers and groups of MagicBlade-R fixtures. "We now have two or three different shows programmed to suit different sized venues. We use MagicBlade's RDM function to automatically address everything during set up which is fantastically time-saving time, and have a show which is fast and easy to adapt wherever we go."

Bewley discovered MagicBlade-R through Ayrton's UK distributor, Ambersphere, which kept him up to date with new product developments. "I've been watching Ayrton closely — they've produced a lot of excellent products - and as soon as I saw the MagicBlade-R I knew I wanted to use it for Enter Shikari. The fixture really suits the band: Enter Shikari's music is fast-paced with constantly high levels of energy. The MagicBlade is more than capable of keeping up with this in terms of LED, colours, speed of movement, and the continuous pan and tilt. Everything about it is really quick and does just what I hoped and needed it to do. I love the way I can create totally different looks with the MagicBlades — there is nothing else like it out there."

The MagicBlade-R fixtures are proving well up to the demands placed on them by the 40+date tour. "These units are bulletproof!" says Bewley. "We give them a good bashing every night: they are the main workhorses of the rig and are worked hard from load in, through rehearsal and on into the show, before being de-rigged and transported to another venue to do it all again. They just take it all. They are great fixtures — really solid and reliable."

DIZZY MIZZ LIZZY REVIVAL TOUR

MagicBlade[™]R rocks

Lighting designer, Kasper Lange, chose to work with Ayrton MagicBladeTMR fixtures for the current Dizzy Mizz Lizzy tour of Denmark which kicked off with six shows in April and May and continues to take in the majority of this summer's festivals. The vintage alternative rock band started life in 1988 and found huge success in Denmark and Japan.

Lange, amongst whose credits is the Eurovision Song Contest in Copenhagen in 2014, specified 65 MagicBlade-R units which were supplied by Ayrton's Danish distributor, Bico Professionel A/S, to LiteCom A/S, the contracted supplier of lighting and video for this revival tour.

Ayrton's MagicBladeTMR is a unique linear fixture which presents seven individually controllable 15W RGBW LED emitters in-line, each with a tight 4.5° beam, and continuous double rotation on the pan and tilt axes. These combine to pack a powerful punch and some unique design possibilities.

Kasper Lange explained why he chose to use the MagicBlade fixtures: "I have been following Ayrton for some years, as they are a company that always seem to make innovative and interesting lighting products, with a design factor that really makes them stand out. The MagicBlade-R is a unique product because it is powerful, yet slim and flexible to use in many ways. It also has an attractive price level making it possible to get a lot of fixtures for your production."

When asked how he used the fixtures he explained, "It is a simple design, with the MagicBlade-R fixed to vertical strings making for an enhanced Par Can effect instead of uniform LED style lighting - this is 'a less is more approach', which suits the band who started out in the grunge rock days.

"The product is discreet in design and volume, but when you want to unleash some power you have absolutely got it. With this design it is important to have a fixture with a bright impact, plus the surprising pan and tilt movement and 7 dots. It gives me a strong, set-design without having to bring in video/LED screens, which is extremely refreshing. With the limitations of 'normal' lighting fixtures this would not have been possible. MagicBlade-R takes the 'Par Can' effect to the next level, and I am really happy with the outcome."

When asked how the MagicBlade-R fixtures performed throughout the tour, Lange said, "it has been working flawlessly and it is a pretty long tour. Going from indoor jobs to the outdoor summer jobs, going up and down in dust, humidity and smoke, they operated perfectly - even with some rough handling."

When Emil Højmark at LiteCom was approached by Lange to provide lighting for this tour he contacted Kenneth Jakobsen at Bico and explained the very tight timeframe and deadlines. Højmark was impressed by the level of service from both Bico and Ayrton. He commented, "Every unit worked flawlessly straight out of the box and continued to do so for the whole tour without having to change one single fixture - that is almost unheard of."







DAVE GROHL'S IRON THRONE

Powered By Ayrton MagicDot™R







Foo Fighters front man, Dave Grohl, has famously reclaimed the stage for the band's Sonic Highways tour, mounted on his own 'Iron Throne' after breaking his leg in a fall from the stage in Gothenburg in June.

The throne is adorned with a corona of 12 Ayrton MagicDot™R LED moving lights which are used by lighting designer, Dan Hadley, both as feature lighting and for illumination of the charismatic singer.

MagicDot-R is one of Ayrton's newest fixtures and the first professional LED moving head to feature a single 60W 4.5° RGBW LED source. Its totally round head fits within the diameter of its cylindrical base in all positions, allowing bold new configurations with barely a centimeter of space between two luminaires.

"When Grohl came up with the napkin drawing of the throne I knew, from seeing Ayrton's demo video, that the MagicDots were exactly what the throne needed because they pack so many options into such a small space. They had all the colour, quickness, and smooth dimming that I knew from the MagicBlades, all of which would be useful in such a tight space prone to scrutiny," says Hadley. "I used the MagicDots mostly as eye candy, radiating out from the Throne and exuding the energy of Grohl's performance. But they do have a couple instances where they will bring it all down to lighting him for a quiet moment."

The Sonic Highways tour started in December 2014 with Hadley's original specification of 60 Ayrton MagicBladeTMR fixtures in the rig. VER's Lighting Division provided global service to the tour with two simultaneous rigs in North America and Europe to service the ongoing tour all across the world.

MagicBlade-R is a unique fixture which aligns seven 15W RGBW LED 4.5° sources in a row to produce a smooth curtain of light with some incredible manoeuvres, including a continuous pan and tilt feature. Hadley rigged his MagicBlade-R units upstage on custom frames, built by SGPS, alongside a series of video panels.

"The MagicBlades are used at first as mostly hidden sources," he explains. "As the show progresses, the video screen splits apart and the MagicBlades shoot from behind it, lighting the band in profile. Once the screen strips turn around to unveil the MagicBlades we really let them loose to do all the lovely eye-candy stuff they're so great at."

Despite the frequent changes in the Foo Fighters' set list Hadley has created a series of looks which can be adapted easily to keep pace with the changes. "One of my favourite looks is used most often during 'These Days'," he says. "I have the MagicBlades doing a slowly curving movement along with a colour fade that allows the individual sheets to blend together into gently sweeping curved shapes."

Hadley programmed the MagicBlade-R and MagicDot-R units using a GrandMA 2 but chose not to use any of the fixtures' on-board macros. "I chose the MagicBlades primarily for the unique sheet of light that they provide. It is different from the typical beam that you get from most fixtures. I also chose them for their versatility and unique features such as the infinite pan and tilt, which is also present in the MagicDot.

"I've been able to create different architectural looks that aren't achievable with conventional single-source fixtures. It's nice to get away from the conical or triangular shape that we are most familiar with. What other LED fixture is going to give you that lovely sheet look AND be able to do all the crazy eye-popping stuff? There are no substitutes for such unique fixtures."

The MagicBlade-R and MagicDot-R have proved very robust on tour — almost as much as the lead singer himself! "The MagicBlades have been great with very few issues - if any!" says Hadley. "And the MagicDots got completely soaked in a show-stopping storm in Quebec City; since they are hung in a circle, they got nailed from all angles and we didn't lose a single fixture."

So, having experienced Ayrton MagicBlade-R and MagicDot-R fixtures for the first time, would Hadley use them again? "Hell, yes!" he says. "They're great!"

The Foo Fighters Sonic Highways tour, which recommenced with the band's 20th Anniversary Blowout at RFK Stadium, Washington DC on 4 July 2015, will continue until November. The Throne, with its Ayrton MagicDot-R halo in attendance, will be used as long as Grohl needs it: "... or as long as he can manage to listen to the doctors." says Hadley.

With 32 locations around the world, VER features a large and growing inventory of the latest Ayrton products.

AYRTON UNDERSTANDS FUN

with Verstehen Sie Spass







Thomas Gerdon, lighting designer for one of Germany's most popular television shows, Verstehen sie Spass, used a substantial rig of Ayrton lighting fixtures to light the live broadcast from Munich's Bavaria Studios no 9 in April.

Verstehen sie Spass, a 'hidden camera' television series of two live and two recorded shows, features three musical acts within its format. The line up for this particular evening included vintage German rockers, The Scorpions, Germany's 2015 Eurovision representative, Ann Sophie, and baritone crooner, Marc Marshall.

Gerdon chose 24 Ayrton IntelliPixTMR panels, 24 Ayrton MagicPanelTMR fixtures, 16 Ayrton NandoBeamTMS3 moving heads and 6 giant Ayrton MagicRingTMR9 units to light the performances which were watched by some five million viewers.

For The Scorpions set, Gerdon mounted the MagicPanel-R fixtures on truss towers behind the band to form a 4-panel high by 6-panel wide matrix. These he used for both effect and scenic lighting, and also as a video surface, pixel-mapping and bitmapping the matrix to run video content across it. Gerdon also used MagicPanel-R's pan and tilt functions to animate the backdrop, adding movement for a further dimension of interest.

A riser composed of 24 Ayrton IntelliPix-R floorpanels was constructed for the lead singer to light him from below, while the MagicPanel-R matrix provided dramatic backlighting, focussing him in a pool of back- and floor-light both at the opening of the set and during the intro and outro of the songs. The IntelliPix-R floor was controlled as an extension of the pixel screen created by the MagicPanel-R units, mapped in one universal output. Six Ayrton NandoBeam-S3 units were embedded in the downstage edge of the riser where Gerdon used them for effect lighting through the low-lying fog onstage and into the audience.

Twenty-four more NandoBeam-S3 moving heads were floor-mounted in a moveable semicircle upstage of the band for floor level lighting.

Six of Ayrton's giant MagicRing-R9 fixtures were positioned on the front edge of the show stage and used to project big powerful beams of immense diameter, shooting flare effects into the steady cam and crane cam, and providing deep moody effects during the band's slower, dark numbers. "I didn't include the MagicRings in the pixel mapping but I did use most

of their on-board macros," says Gerdon. "The on-board effects are of a great quality so I use a lot of them by default."

For Ann Sophie's set, Gerdon chose to avoid theatrical or scenic lighting took a more minimalist approach. The NandoBeam-S3 units were moved to positions on the left and right hand edges of the showfloor, 12 per side, and used partly for side-lighting and floor lighting effects, but mainly for mid-air beam effects. Five custom-built halogen lighting fixtures were backed by the six MagicRing-R9 units which provided a strong blue backlight in support of the golden circles of halogen: "The contrast looked great behind the singer in the close up camera shots," says Gerdon.

Finally, Marc Marshall's '50s-style swing set called for a complete change in atmosphere: Gerdon created a backdrop by using the MagicPanel wall as one big matrix which delivered a swirling, twinkling effect in a warm white hue between two video walls inset with conventional bulbs. The same video content was streamed across all the fixtures.

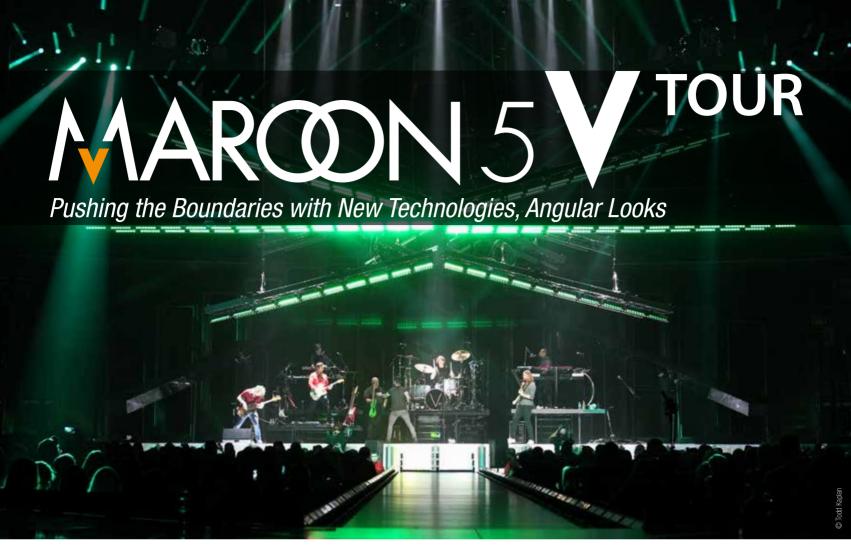
"Pixel mapping uses a lot of channels but the Ayrton software and channel set are very user-friendly which makes it easy to handle this quantity," says Gerdon. "The separation is very nice on the MagicPanel, MagicRing and IntelliPix fixtures which makes the switch from video server to pixel mapping very quick. This makes our setup time very fast so I have more time to spend on the important creative work."

To 'close' the picture Gerdon used MagicRing-R9 units positioned at the front of the stage and Nandobeam-S3 fixtures at floor level providing good covering for the cameras.

"In my view the Ayrton fixtures are astonishingly high quality," concludes Gerdon. "They are smooth in both slow and fast moves and have outstanding colour mixing — which is often not the case for LED sources — and this is especially important for television lighting."

The Technical Contractor for Verstehen Sie Spass was Cologne-based company, Cape Cross, with equipment provided by Motion Group from Fürth.

Ayrton is exclusively distributed by VisionStage in Germany and Austria and Gerdon comments: "Michael Althaus and his team at VisionStage have been as supportive and ever-present as always. They know the market, the designers' needs and are very project-orientated. They always get the job done. I like that!"



The whole idea of the show is essentially building from zero," says lighting programmer Jason Baeri. "It begins without giving anything away — just a simple stage. Then as the show unfolds, there's a little bit of Magic Blades, and then video, and then we lower the 'V' trussing, and then we push out to the B stage. It's a linear progression upwards and forward, expanding in the space as the songs go by."

Maroon 5's 2015 tour has completed its February-through-April North America leg already. This month, the band starts it all over again in Europe for a series of shows running through mid-June. They are supporting their album V, a reference to the Roman numeral that's already incorporated into the band's logo. It's also the band's fifth album, and the predominant shape of the show visuals on stage.

Lighting and production designer Roy Bennett, co-founder of Seven Design Works, took a unique approach, and concertgoers expecting a conventional arena rock show were no doubt mesmerized at the 17-song show's design, which made use of a deceptively simple set that seemed to be in motion constantly. "Every song is a radio hit that everybody knows, so the pressure is on not to let the energy ever lull," adds Baeri. "We push to make the whole thing grand, as alive and vibrant as possible."



Brian Jenkins is the lighting director out on the tour and programmed the show alongside Jason Baeri. It's his 13th year running consoles on the road, and his third working with Bennett. "Once again, I have nothing to complain about!" he laughs. "I'm blessed to get to work with the best and brightest. We all sit together and hang out in a room where there is no ego. Whether we're discussing ideas and/or programming, everybody has an equal say at the table. I've been in some not-so-welcome environments, where things are restrictive and run amok, but this is a fun and respectful environment. It's a dream!" The console of choice is a grandMA2, and Jenkins says while he's tried out others, for the kind of work a Bennett/ Maroon 5 commands, it's the best fit.

One of the eyebrow-raising aspects of this show is the number of new toys being used. "Every department has something new and cool," Jenkins says. "We have new panels, new proprietary fog systems, new products from Upstaging, Robe, Ayrton and Clay Paky ... even the audio department is working with the new EAW Anya system."

"Roy Bennett is an über creative who takes big risks, and it pays off big in this production," says John Huddleston of Upstaging, who supplied the lighting gear for the show. The challenge to the creative team is that with this band, every song had to be big. Huddleston says they've worked with Bennett on a few tours before, and this one resulted in the new Saber



Text: Kevin M.Mitchell Photos: Todd Kaplan from plsn.com

LED strip that's already out on several other tours, including Neil Diamond's just-launched world tour. "This is something that Roy envisioned, and so we took the concept and made it a reality," he says. They worked out the idea and took it to Aboutshow, a China-based manufacturing company with an office in Orlando. Upstaging next brought in U.K.-based Brompton Technology's processor, which he calls "elegant." He adds that "we had six weeks to go from concept to creating 600 sabers for the show. We made some extras, but it turns out we didn't need them, as they came right from China and worked perfectly with very few glitches."

Working in tandem with those to great effect are 216 Ayrton MagicBlade-R RGBW LEDs. Other new equipment includes 10 Robe BMFL Spots used for key lighting and 108 Clay Paky Mythos fixtures. "The Mythos are extremely bright — much brighter than anything else in that range of fixture," says Baeri. "The ability to use it as a beam, spot, or wash fixture makes a valuable, highly functional tool," he adds. "It's extremely quick for a fixture that size too."

Jenkins credits A.C.T Lighting's support for all the new Clay Paky gear they have out with them. "It can be a little edgy using fresh and new gear, but with great products from solid, reputable companies, it's not a problem," Jenkins says. "And everybody wants to support Roy and make sure things are perfect for him and the client."

"See-Through" Staging

Baeri, an independent lighting programmer, has been working with Bennett for the past four years. This is his first tour with Maroon 5. "Adam [Levine] and the guys wanted to get closer to the audience with this show, and the stage reflects that," says Baeri. The stage features a 120-foot thrust ending on a B stage shaped like a triangle, making the walkway resemble a giant arrow. "Adam gets right into the audience, just 20 feet away from FOH, and it's part of a whole staging concept Roy put together that really plays with your perception." The designer used more than 100 Robe Robin CycFX fixtures to line the runway.

The Tait-built stage does look remarkably clean, even "empty." Downstage, there's bassist Mickey Madden, Levine, and guitarist James Valentine; behind them on clear risers are drummer Matt Flynn flanked by keyboardists P.J. Morton and Jesse Carmichael.

The stage floor is also clear, with Clay Paky Sharpy Wash 330s uplighting the band. (The opening number actually has the band crawling out of a trap door in mist and fog to kick





the show off with current hit, "Animals.") Cupping the band are 19 simple Plexiglas pieces, the tallest being 20-feet in the center, and then nine each cascading down to three feet tall at 45° angles. "When you're looking at the band, they look like they are standing on an empty space. Then you shine light through the Plexiglas with Upstaging's Sabers mounted on it, and it becomes a really dynamic space," Baeri says. These hollow columns are filled with different amounts and different densities of fog throughout the show. The show starts with a clear, open frame, and goes through various configurations as it progresses. Combined with the various lights and video element, it becomes a constantly changing set.

To make it work, though, Pyrotek Special Effects had to not only get the fog into the chambers — but out as well. Pyrotek's Bob Ross says the creative team contacted him, and right away the challenge was extracting the fog from the panels and stage. "We had different types of projection and experimented with different smoke and hazes, and we started with a variety of high-powered evacuation fans similar to what would be used to extract smoke from a burning

building," he explains. But those were just too slow getting the fog out. The solution ended up going with Venturi valves, something typically used to put fresh air into sewer systems for maintenance workers. "We were looking to suck fog out operating at 1,500 PSI, with 15 Venturi valves placed into the upstage wall of the stage and controlled through Pyrotek's control system. It took less than 30 seconds to clear the stage." Realizing that they also had to inject fresh air into the chambers to balance the negative pressure being created, Pyrotek worked with Tait project managers in creating a unique special effect.

"It's always fun to be part of something new, and we appreciate Roy bringing us in and being able to contribute to something that is visually different," Ross says. The fog is a custom mixture of a new fluid and liquid Co2. They also used

Pyrotek's new proprietary extraction system, eight Le Maitre LSG units for the main stage and more than a dozen additional High End Systems FQ-100 foggers for the main stage and panels.

AYRTON Show report





Todd Kapik

Crew

Lighting/Production Designer: **Roy Bennett**

Lighting Programmer: **Jason Baeri**

Lighting Director: Brian Jenkins
Lighting Crew: Mike Green
(crew chief), Paul Mundrick,
Chris Dries, Thomas Walls,
Wade Cotton, Chris Keene

Lighting Co: Upstaging
Upstaging Rep:
John Huddleston

Video Co: **PRG Nocturne**Video Programmer:

Gear

Loren Barton

2 MA grandMA2 consoles 108 Clay Paky Mythos 24 Clay Paky Sharpy Wash 330s

10 Robe BMFL Spots
95 Robe Robin CycFX 8's
8 Robe Robin CycFX 4's
53 Vari*Lite VL3500 Wash FX's

216 Ayrton MagicBlade-R's 471 Saber 1000 1m LED strips

3 Saber 500 .5m LED strips

15 HES FQ-100 foggers 8 Le Maitre LSG hazers

4 DF50 hazers

2 Martin AF-1 DMX fans

2 Reel EFX RE II fans

19 Plexiglas columns (clear, fog-filled at times)

14 Truss pods

1 Tait Navigator system

4 Barco 40K projectors

4 Barco 26K projectors

Hovering above it all, moving in and out with dramatic flair, is a giant "V" made of special truss pods designed in specific widths. Each of the 14 truss pods is affixed with two rows of MagicBlades, and a Navigator System controls the motion on each one, says Baeri. "After the first five or six songs, the roof comes alive and pulls itself into the stage action, and it becomes this visual addition that suddenly makes the stage very full. It's a great look." A little more than halfway through the show, the rig lowers and straightens out, creating the effect of a roof over the band and suddenly making it seem as if the audience members are all in an intimate club. Various V shapes are formed over the course of the show.

Seamless

"We try to erase the line where lighting ends and video starts," says video programmer Loren Barton, who has been working with Bennett since 2011, handling video programming and assistant design for Seven Design Works. For this tour, he uses both the grandMA2 and Hippotizer v3 units to drive all of the different video elements, including Sabers, projection and the pixel-mapped MagicBlades. PRG Nocturne supplied two Barco 26K and four Barco 40K projectors for the panel projections. Two Barco 20K projectors were used for I-Mag. Working with Bennett and Seven's co-partner Tobias Rylander, Barton says the approach to this Maroon 5 tour was to incorporate aerial effects against the 19 Plexiglas columns.

"We pick out the parts of the song rhythms and specific sounds as motivation for visual elements however it seems it is best to do it, whether with video or lighting," Barton says. "Whatever brings out that part of the song — we tried to match the intensity of the sound with the visual impact of the lighting or video component so everything stays balanced."

Barton also speaks highly of the Sabers, with 92x2 pixels per meterlong Saber and half that for the half-meter-long units. This production uses them end-to-end to "create the LED outlines of the panels. They were easy to work with, very bright, and a key element to the show." He adds that in pre-production, the team developed a kind of library workbook of different ideas to apply to songs. "We stayed away from anything literal and did a lot of geometric and pattern treatment, and the way the Plexiglas columns were, we were able to create a prism element in light rays. We had a good time with that!"

These Sabers were crucial in creating the "Fishbowl" and thus a 3D LED effect, Barton continues. "The design called for the Sabers standing up vertically, arranged in a grid across the stage and front to back. We programmed some songs to take advantage of this and create different 3D shapes like a plane or a wave."

In explaining the philosophy behind the Seven Design Works approach, Barton says the goal is to create a performance environment that lets the music come alive, "As opposed to lighting music as a separate element and doing video as a separate element ... our whole goal is to make one big picture at all times that visually represents what the audience is hearing. We spend a lot of time looking at the way something feels, and programming accordingly. We work to make every performance as close to the previous one as possible, but still let the band have the freedom it needs to make each show unique. That's a big component to this tour, and something [Seven's third cofounder] Cory FitzGerald makes sure is incorporated in all his shows."

The seemingly bare set is a bit of sleight of hand, because it changes so much without scenic elements being wheeled on and off. From the shape of the Plexiglas to the various V-shapes the flying pods form, the stage continuously morphs into new forms of V. "Everything we do is right there," Barton says. "There's one piano lift, and that's it. Otherwise we're just morphing space and taking advantage of what is already there — and that's all Roy. Roy likes to push boundaries, like the irregular shape of the pods and how they fit into the V. That was fun to do because we had to work with different-sized pods."



LeRoy Bennett specializes in creating unique performance environments for artists within live concerts and stadium shows, and special events for film and television.

Bennett worked for 36 years as a lighting and production designer before founding Seven Design Works LLC in 2013, a 'foundry of creative design' which now includes Cory FitzGerald and Tobias Rylander as fellow designers.

"My conception of design initiates from a deep understanding and inspiration of each project," says Bennett. "The approach on design concepts has always come from a study and sympathy to the past history, present and future of the individuality of every project.

Bennett is renowned for the ingenuity and originality of each of his projects: "The innovative use of available resources, as well as creating new elements tailored for a project makes each design unique," he explains. "I strive to create an emotion that is abstract but moving to those experiencing it. We all experience the same moments at the same time differently from that of the next individual. It's the common thread of emotion and space that stimulates and moves those individuals to feel and experience something in tune but still discreet. It's through these directions and theories that my creative approach is driven."

Leroy Bennett, co-founder of Seven Design Works LLC, is the lighting and production designer for Maroon 5's current World Tour 2015, which is nearing the end of a yearlong transit in support of the band's fifth studio album, V.

We are very proud that Bennett is a great advocate of Ayrton lighting fixtures, having used them on numerous productions, and this tour is no exception. No less than two hundred and ten Ayrton MagicBlade^{TMR} fixtures form the dramatic backbone of Bennett's lighting design for this visually stunning tour: we talked to this excitingly original designer about his dramatic piece of work.

Julie Harper: The design of Maroon 5's World Tour 2015 is amazing! What was the inspiration behind it?

Bennett: I didn't know the band well but knew their music. I wanted to give them something very different from the video-heavy designs of their past tours - and create something that I haven't done before! My intention was to create a modern, clean look that was flexible enough to give multiple looks within the personality of the design. I like transparency, reflection and mirrors right now so I created a 'fishbowl' from a transparent stage and other elements based on the album artwork's V symbol. The set comprises an under-lit PLEXIGLAS® stage, an upstage wall of stepped, PLEXIGLAS® panels which can be filled with

smoke, and a ceiling of moveable arms etched out by $MagicBlade^{TM}R$ fixtures.

This gives the stage a volumetric feel below the band as if they are standing on another world, a backdrop that can be back-projected onto and a ceiling that I can use to change the look, feel, and shape of the stage throughout the show.

JH: So the MagicBlade-R units are rigged on a very mobile part of the set?

Bennett: I used the MagicBlade-R units to delineate thirteen jointed truss 'arms', which are suspended in a 'V' shape above the stage and form a pivotal feature of the stage design. The MagicBlades are rigged in double rows along the arms, which split along the centre line and move independently on a series of separate wire winches to shape and sculpt the stage from above. The MagicBlades are unique, not just because of their flat beams of light, but because of the appearance of the face of fixture which we can use to construct scenic looks.

JH: So the MagicBlade acts as both a source of illumination and as a building block in defining the show's visual appearance?

Bennett: Yes, that's right. The MagicBlades are great tools for constructing sculptural, architectural effects. I'm







able use them to accentuate the image of the 'V' and create a forced perspective in both horizontal and vertical planes. I can gear everything to an apex - in the air, on the ground and upstage - and use them as a mirror image of each other. At one point I even bring them in low and flat to compress the stage and top light the band.

JH: Your programmer, Jason Baeri, said he couldn't have foreseen the kind of effects we have been able to create with the MagicBlades in your design. What kind of effects does he mean?

Bennett: We can create defined spaces, like the outline of a triangle, then completely transform the look for the next song in an instant. We use the continuous pan and tilt, for example, to animate the effects and make dynamic use of the space: to see 40-foot wings of light descend over the audience with the MagicBlades spinning over their heads is incredible and truly unique!

JH: Aside from their physical appearance, are you able to make use of the MagicBlades in-built features?

Bennett: Occasionally we run content through the MagicBlades along with the other lighting elements on stage, but most of what we do is pre-programmed to take advantage of the MagicBlades' flexibility, and because everything is engineered to create specific architectural space.

JH: What do you use to program and control them?

Bennett: We use an MA2 console and, for the very intricate stuff, we used a Hippotizer media server to pixel-map complex shapes and direct video. Programming them is as easy or as complex as you want it to be. You can get some amazing looks with the 'blade' effect alone, which is very easy to do. But there's a great flexibility in what you can do with Ayrton lights because of the individually addressable LED emitters. It is not difficult to program each emitter independently and they add great simulation and texture.

JH: How have the MagicBlade units behaved on tour? A year is a long time to be on the road!

Bennett: Everything the MagicBlades are capable of doing, I have them doing on this show. I love to work that way - I put lights through their paces and push them to the max. I like to find out where their breaking point is...and then stop iust short of it!

But there's no doubt about the durability of the MagicBlades. I've seen these and other Ayrton fixtures really take a beating on tour and not even flinch!

JH: You first used Ayrton's MagicBlade-R in your design for the Japanese stadium tour of Korean K-Pop band, Big Bang, and were one of the first lighting designers in the USA to use Ayrton's MagicPanelTM602. Your design for Nine Inch Nails' 2013 Tension tour employed 126

MagicPanel 602 fixtures, and now, for Maroon 5's V tour, you've used another massive quantity of Ayrton lights with the 210 MagicBladeTMR units in the ceiling. Your love for large numbers of Ayrton fixtures is obvious! What is it about Ayrton that so inspires you?

Bennett: Ayrton fixtures always work well in a mass! I absolutely love Ayrton and am really impressed with the products. They are good, rock solid, bright and very dependable. They are not as 'mechanical' as some moving lights and they give you great flexibility in what you can do. Ayrton products bring something very unique to the market and Ayrton always comes up with new tools.

JH: Innovative fixtures are better supported by people who understand the needs of clients and end users. Is this the case with Ayrton and its exclusive US distributor Morpheus Lights?

Bennett: The level of support we get from Morpheus Lights in the US is unparalleled. Keith Bennett always keeps me up to date with each new product as it arrives. They are available to us 24-hours a day and, through them, we are in direct contact with Ayrton's product designers who truly listen to our feedback about what we want their products to do in future. It's a two-way conversation.

JH: Finally, a last word about the Maroon 5 tour?

Bennett: It was a fun show to do!

MAGICBLADE-R



MAGICBLADE-R CREATIVE SOLUTIONS

A new design that offers continuous double rotation on PAN/TILT axes. Its unique feature is the layout of its seven RGBW LED sources in-line, paired with the highly intensive angle of the optics, which allow the creation of light curtains with genuine overall consistency.

On stage, MAGICBLADE™R's very high centre beam intensity enables excellent visual perception of the beams in an environment saturated with light - vital in the creation of virtual décor.



At the Paris Zenith AYRTON LIGHTS UP **THE NUIT FAUVE**designed by All Access Design



All Access Design, a collective of French lighting and graphic designers, teamed up two years ago with Fauve (French for "Wild Beast"), another collective of musicians, authors, and film-makers, marking the start of a creative adventure that would sweep France's clubs and music festivals, and finally make it to the famous Zenith concert hall in Paris. The collaboration continues, as the group provides stage design, technical implementation, and lighting on a new tour this year.

It's a major challenge trying to provide lighting for low-profile musicians, who would rather highlight their music and visuals than their own smiling faces.

It's also a technical challenge in terms of stage design, and Fauve's video graphics artist has brought in a multitude of screens and projections.

We met with the members of All Access Design collective (AAD) backstage, before their single show at the Paris Zenith, for a group interview that reflects the team's philosophy – there's strength in numbers.

SLU: Guillaume, is there something special about this tour?

Guillaume: Yes, because there are three parts to it: first, a pre-Paris tour all around France, then, a whole slew of shows in Paris at a different size venue every day, and finally, the festivals. It's a real challenge. The gear was selected in consultation with DUSHOW [the French design and technical support company] to meet the Zenith's requirements, but we make adjustments accordingly.

SLU: You've managed to incorporate "real" light in addition to video. Was it a problem for the performers who didn't want direct lighting?

Guillaume: The first rig that Fauve agreed to, included 14 RollaPixTM, all controlled by pixel mapping or strobes so that the group didn't feel too exposed to the lights.

Then, when production suggested for us to change the set and

open up the visual space on stage for the big venues, we added projectors to have more impact on the whole stage.

SLU: Guillaume, you are officially the lighting designer for the tour, but what is Victorien's role? Who actually takes care of what?

Guillaume: We have two grandMA2 consoles on a network, but each has its own function. All the pre-Paris tour and festival gear is on my grandMA, and all the fixtures added on for the Zenith are programmed in on Victorien's console. If I take off for a festival tomorrow, I'll take along my console, and I have just the equipment I need without adding or removing anything. The idea was really to simplify the logistics of the tour.

Custom stage design

SLU: What sort of stage design have you thought up for this new tour?

Guillaume: We absolutely wanted to keep these three screens, even if they're a hassle, because they frame the stage.

Basically, we chose basic screens made of chains, but since we were losing too much video power, we doubled up the background screen with a rear cyclorama and tripled the density of the side chains.

SLU: Where did you find them?

sides.

Guillaume: I first saw them used at the Gotan Project a long time ago, and I wanted to get some. I found them in Belgium, at Epigone, a service provider that All Access works with a lot in stage design. They're whitened matte anodized aluminium. Ultimately, it has consistent output, and we don't see the cyc when projected. We can keep a certain degree of transparency on the

SLU: The effect totally works. It really dirties up the image!

Victorien: Especially since Fauve's videos come from different sources, using VHS effects, family archives or old stock recovered from the French Audiovisual institute (INA)... They're already grainy to start with, and they tell a story. Projecting onto this type of screen enhances the effect.

Is the light in Nuit Fauve true lighting?

SLU: Why have you chosen to use the Ayrton MagicBladeTMR? Guillaume: I also wanted to get a light-blade effect at the tip of the stage, so I opted for the MagicBlade-R (with eight on the floor). I'm very happy with them. The continuous rotation on pan/tilt is really great. All we need is a zoom, but the light shaft is beautiful.

Then again, the RollaPix luminaires have a zoom that works out well as a kind of wash.

They are staggered vertically, with eight on the front truss, and six









on the middle truss to really create an effect of depth.

Otherwise, for the ground lighting we use cathode ray tubes (CRTs).

CRT TVs – that's what different about the tour.

SLU: These old-fashioned CRT screens have a real presence on the stage. Can you tell us about how you found them? Guillaume: Coming up with 40 TVs from the '90s of the same model was not easy. After hunting around for a month, we found them at a clearance warehouse. We really needed CRT screens, even if they were heavy (at a total weight of 700kg), and hard to transport and package. We used custom-built trolleys, and ultimately the shipping and cases cost more than the TVs themselves (laughing)! But they really fit our original creative idea. They were

- The MadMapper interface used a lot of light output at the back of the stage with the Barco 26K video projectors projecting onto the chain screens, and Ayrton MagicBlade-R displaying vertically.
- 2. The Fauve group's onstage lighting package creatively includes CRT displays, that date from the '90s.
- 3. One of the side chain screens in matte anodised aluminium, a unique and almost-alive projection surface.
- Guillaume achieves a blade effect at the tip of the stage using the new Ayrton MagicBladeTMR.

All Access Design

We know what team spirit is, but how do you describe the AAD collective?



Guillaume: I am one of the founders, along with Victor Lagiewski, Émilien Grèzes, Pierre Bernard and Pierre Clause [who has since left the group1. Early on, we decided to do some development, and the tours that we've handled are 95% custom designed. Then there's the lighting and graphics design part we've developed, with the creation of video content. The company has grown, and there are now eight of us. We've made a big investment in IT to be able to work with light and video. We have three WYSIWYG licences so that we can do pre-encoding.

But the main thing is, All Access Design provides the magic that brings all these impassioned people together. It is this esprit de corps that fuels the company. We've made a break with the older generation of designers. We're don't have big egos, saying, "It's my creation". Emilien is the one who did the ceiling. Emmanuel, the art director, came up with the idea for the CRTs. And I thought up the chain screens. We did the encoding with Victorien. Even if I am the one who manages the project just so that the production can have a single contact person, I realise how much I owe to each and every one.





actually easy to install: We unpacked them and then pulled the RGBHV multicable. Finally, the most complicated part was to find a way to adapt the digital video signals to analogue. It took Victorien two months to design the whole system for control, signal distribution, etc.

They are fed by eight video streams, which require two powerful computers that output four streams each in SD that are distributed randomly. These TVs are handled as light sources, even used alone for certain scenes. Actually, the CRTs are very bright! The video, hand-picked by Fauve, brilliantly implemented by All Access Design.

SLU: Do you also show the video projection on the three main screens?

Guillaume: The video is a special deal because it's mixed live. We pick it up through our media servers, control the size, format, intensity and broadcast, but the Fauve videographer is the one who chooses the light emitter.

SLU: Is the link between video and light with the use of pixel mapping still part of the custom lighting concept?

Guillaume: We use MadMapper for pixel mapping, and since each pixel is analysed, you can get as many colours as there are pixels out of an RGBW LED projector, with all the shades. The colour and the image effect that comes out of a LED projector are really amazing.

SLU: To summarise, the RollaPix, MagicBlade-R and plus some Ayrton Arcaline[™]2 fixtures are pixel-mapped, plus you have three screens and the TV... How many media servers do you use to manage all the video streams?

Guillaume: We have seven running in parallel for this show: Resolumes, the MadMapper and the vvvv media servers, which we developed ourselves.

Victorien: The vvvv is graphical programming software that our developers customised for the applications we needed.

Guillaume: We capture the three HD streams from the videographer in real-time, which outputs into three other SCI stream. www is no-frills software with a pretty scary GUI, but since it can pretty much handle any signal and outputs into any format by creating interactions between signals, it's really useful.

For example, it was used for managing motors on a tour for Olivia Ruiz [a French pop singer]. It means a lot of programming time, obviously, but the result is well worth it!

SLU: I suppose there's an impressive amount of space set aside for the media server racks, and inputs and outputs?

Victorien: It's like Mission Control backstage. I have a rack with two media servers for the TVs, each with four HDMI outputs converted to Composite by digital-to-analogue converters, followed by composite splitters that transform one stream into eight. So I have 8x8 streams that I can send wherever I want. Everything is redistributed over a patch cable and sent back to the TV.

Then I have the rack of main media servers, with the videographer's Mac Pro that outputs three HDMI streams that I convert into SDI and pipe into another media server that redistributes the three outputs to the three video projectors.

And then I have a splitter behind the converters to send the stream to my MadMapper, so that each pixel-mapped LED projector gets its own specific part of the image and reproduces the colour in real time.



Lighting team:

Lighting Designer: Guillaume Fournier

Stage Designer: All Access Design

Technical Director: Charles Desforges

Network administrator and lighting assistant: **Victorien Cayzeele**

Victorien's high-security network

SLU: What about the network?

Victorien: The system functions so well because of the Art-Net network. All the streams are sent to the consoles via ArtNet and returned in the same way. I connect directly to the MagicBlade-R units via RJ45.

These new fixtures have a built-in ArtNet interface. It's much simpler this way, and I save on splitters and NPUs [MA Lighting Network Processing Units]. Everything is done in the luminaire: we input via ArtNet, and then it distributes the same DMX universe to the other fixtures.

With Fauve we have multiple networks: An ArtNet (general); a MA-Net (between consoles and NPU); a network dedicated to the video projector so that the video technicians can control them and position them from anywhere via Wi-Fi; a switch administration network, OSC (Open Sound Control) for me to sync with the TV media servers during three songs; and then a VNC network to control all the computers remotely from the main console.

So I have six "Active" VLANs through my switches, with everything linked by fibre optic. I decided to use Gigacore Luminex switches because I need for it to be stable and secure. Plus, I know Fabrice Gosnet [Product Manager at Luminex] and have total confidence in him.

In total, with seven media servers, the computers and the projectors, I use almost 70 IP addresses for this show. This ensures security and keeps the protocols separate with adequate bandwidth for each type of protocol. This is the easiest solution. I have it all at my fingertips, and since the beginning of the tour, have never, ever had any problems.

Conclusion

It was a real challenge trying to create a specific concept for Fauve using images and light. All the video for the group is handled by the designers' collective. Everything is designed for the benefit of the musicians. The whole system is reliable, and the job marvellously executed. It's a wonderful idea to use screens (the chains) and baroque ceiling lighting. The images are what count, and that's all you see; that's what the performers asked for. The smartly designed lighting does a spectacular job enhancing the stage using multiple installations. The overall intent is to have greater visual impact and, above all, to create a bond with the audience. The AAD group wanted to keep everything in the shadows, so they've used back lighting: strobes, rapid-fire projector beams that keep pace with the video guy's frenetic, highspeed images. Young and modern, these designers have chosen excellent equipment, including today's most powerful and innovative luminaires such as Ayrton's MagicBlade™R and RollaPix™. We love their imaginative use of pixel mapping to perfectly match the colour reproduction from the luminaires to the videos and then broadcast parts of the images with volume. This big project shows how the collective has masterfully made the "all-image" concept so dynamic, a rare accomplishment.

Behind the scenes are an abundance of new technology, multinetwork solutions and IT development, customised media servers, heavily secured data, RDM control, etc., all in keeping with the next-generation "Lumières 2" philosophy mixing technology, entertainment and design.

Excerpts from the paper published on the Soundlightup Webzine Text: Isabelle Elvira

More informations & photos: soundlightup.com

- 5. Ayrton ARCALINE 2 static luminaires shower the chain screens with beautiful colour, in the first part of the show.
- MagicBlade-R luminaires pixelmapped to the videos. Cleverly done and lovely to watch.
- 7. At the lighting desk, from left to right, Victorien and Guillaume, behind the two grandMA2 consoles from MA Lighting.

World debut of Ayrton's MAGICDOT™R "RETURN TO AN UNKNOWN LAND" with David Seligmann-Forest



"The Return to an Unknown Land", Frederick Lopez' hit French reality TV show, featuring a celebrity guest being taken to a far-off, uncharted land for a wild, unexpected, and unforgettable experience, is airing reruns of past adventures. Episodes offer highlights of the series' most emotion-packed, incredible and humorous moments involving famous French travellers.

he show, which sequels the original "Voyage" series, is shot in a studio in Plaine Saint Denis, near Paris, by David Seligmann-Forest. This impassioned, no-nonsense Director of Photography (DP) has decided on a rig that is almost exclusively composed of versatile and eco-friendly LED luminaires. We met with him in the studios along with long-time collaborator Stéphane Fleury, Associate Director of Impact Evénement, a

leading French audio-visual supplier, as the lighting system was being set up. Stéphane had added some impressive new equipment to his ultra-modern rig—mostly Ayrton LED fixtures. Both explained why they chose LEDs for television, and particularly the newly released Ayrton products like the MAGICDOTTMR. These magnificent little fixtures were not the only Ayrton products in the studio: we also saw some NANDOBEAMTMS3 and S6 wash lights, perfectly suited for camera and screen.

SLU: David, tell us about your "return to a familiar land" with the show being picked up. And how about the new lighting rig? **David Seligmann-Forest:** I've been doing the lighting for "Voyage to an Unknown Land" for two and a half years now. This is the big show. The crew returns to the original shooting location with the celebrity. This set is bigger than usual since there are

Text: Isabelle Elvira
Photos: Monique Cussigh
from soundlightup.com

more guests. We always do it with an audience, but it's not a live telecast. In terms of equipment, I need a few more fixtures than on the regular "Voyage" show, so I use an extra horizontal row almost exclusively of LED luminaires.

SLU: Why this choice?

David: I made that decision four years ago, and since then, I'll only use traditional lights if I have no other choice. Here, we're using just one set of Robert Juliat 714 SX2 profile spots to deal with a slight lighting problem on one part of the set that's tricky. I have to light it from above. It's an area where the audience is sitting all the way up to the top, and I can't get a good wash angle. If I hit them straight on, all their heads are over-lit in the first row. I tested the 1000W light unsuccessfully so I increased it to 2500W...

SLU: Do you have the same budget as before?

David: The deal I have here with the production office is actually to stay within the same budget. So with an extra row of fixtures, I have to be careful.

But when we looked at the rushes with the director (Richard Valverde), we thought that it was a good idea to fill it in a little. Since I am pretty close to Stéphane, he often shows me the new additions to his equipment, and we chose the Ayrton MAGICDOT-B.

SLU: It's still a pretty big stage for a television talk show, isn't it? Stéphane Fleury: We installed 123 MAGICDOT-R, 35 Nando-Beam S3, and 26 NandoBeam S6 luminaires in addition to traditional spots. And we have quite a few LED profile spots too: Juliat Aledin 634 SXs.

LEDs and movie cameras a healthy mix?

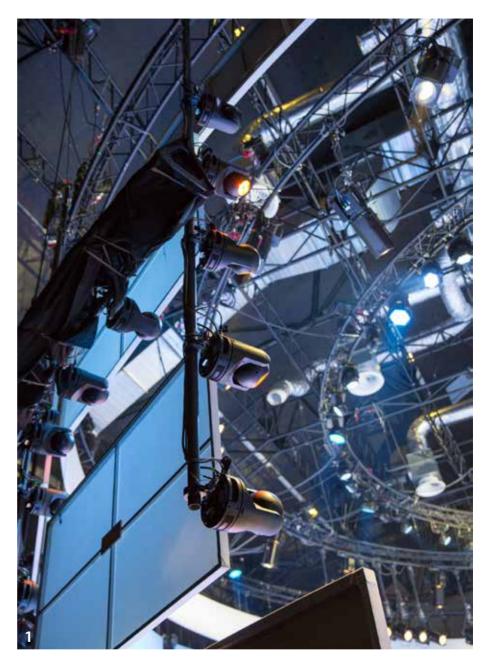
SLU: You've switched to Ayrton gear and dropped the Robe fixtures that you're used to?

David: It's true that before, I only used Robes on the set. Actually, I really like to work with a single brand on the set because it saves a lot of time when it comes to colour referencing, configuration, etc. It's really better.

Now I'm changing over to Ayrton products, which Stéphane [close and loyal collaborator despite a short hiatus] has been trying to sell me on for years! I tried out Moduled with holographic filters and some other things, until I found the fixtures that really brought me satisfaction, like the NANDOBEAMTM and the MAGICDOTTM. The fixtures have to be practical. I wouldn't use them just to do him a favour!

SLU: What are the advantages of the fixtures you're using here?

David: The NANDOBEAMTM wash lights have a particular qua-



lity that the competition just don't have, and it's for a very obvious reason: There's no light spill when you project it. Now that is really amazing.

I go out to live shows a lot, because I'm very curious and I'd like to work in that area that some day. I often see cases of stray light, and I think that's horrible. Lots of LED wash lights have that problem.

SLU: Why do you think that is?

David: You can see it in the actual design of the fixtures. When there is little or no masking around a convex lense you can't prevent light spill. With the Ayrton NANDOBEAMTM, the convex lens optics are surrounded by small anti-halo caps that eliminate bright spots and stray reflection. It's the best solution I've seen so far.

1. With a 200g collimator, the 60W RGBM multi-chip Ayrton MAGICDOT™-R luminaires have found their place (123 of them!) on this set.

AYRTON W Show report

David Seligmann-Forest

Director of Photography, Lighting Designer (LD)



DP since 1997, David Seligmann-Forest has been living and breathing lighting and entertainment for the last 33 vears: at first, freelance, then with Arpège and Vari*Lite, then in a group of lighting designers (Lightco), and today with his own company Lite4Life®. Starting in 1982 as an assistant electrician for fashion shows, he worked then as a stagehand at the Palais des Festivals in Cannes before returning to Paris to join Arpège as a rigger. There he met Laurent Chapot, Dimitri Vassiliu and also Ted Hall, his current console operator.

Seligmann-Forest's career took an unexpected twist in 1989, when he met the late DP Thierry Malaterre, who introduced him to Vari*Lite. This sudden turning point for David would define his future vocation of DP.

In 1992, with Thierry, he embarked on some of the biggest musical tours with Vari*Lite, first as console operator and then as replacement lighting designer.

It was his first job in television, on the set of "La Chance aux Chansons", operating his Vari*Lite fixtures. After two years at this job, he finally become DP. Collaborating in the 2000s with Jean-Philippe Bourdon, who he considers to be the best LD in European television, proved to be a rich learning experience. Ingenious and versatile David

Ingenious and versatile David is now part of the closed circle of DPs who give French TV its caché. He is always thinking of more eco-efficient designs for tours using LED technology.



This system gets rid of the "flare" issue in the camera lens that is such a pain for the TV production and camera crew. In this case, a crane can be positioned right next to the luminaires; and when you light one up, there's no flare.

Comparatively speaking, you get more stray light with the MAGICDOT™-R lit than with the S3 and S6 wash lights.

That's really what makes it such a quality luminaire, not to mention the Ayrton colours that are magnificent. The optics is well designed and totally effective.

The importance of colour reproduction

SLU: Actually, let's talk about hue and the colour reproduction in all these LED emitters...

David: The colours are superb, but, I'm especially able to get the white values that I'm used to. So I have my whole gamut of usual whites.

As you can see, I make a few small corrections for the LED profile spots that are at 5600K because their light output seems to lean more toward daylight than halogen. So I correct for that and always work at 4300K. I find this colour temperature ideal compared to the absolute white values. Then again, I could just stop working that way, since this is an old habit of mine from the automatic arc lamp days. We therefore had to correct our front lighting to 202, with the white values down to about 3900K (and never really at 4300K). So when we got a balance at 4000K on the set, the white on the automatic lights didn't completely go blue.

So if you work on a white balance with the automatic arc lights (and it's still valid with LEDs) starting at 3200K, when you hit the magenta, you immediately wind up with blue in the picture. But if you're at 4300K, you increase your range of violet, pink and magenta. In the same way, if you start with 5600K you also reduce

your range. This temperature choice at 4300K is a good compromise.

SLU: So what do you think about the small MAGICDOT™-R luminaires?

David: When I saw the MAGICDOTTM-R fixtures on a video with Stéphane, I loved their one, big single optical system, which eliminates the drawbacks of merged emitters.

On this set, I use them differently from what they're intended for, that is, as a high-speed stage light that's multi-purpose. It's fun. I'm using them in different way. I'm using them both as a beam and also for the audience, mainly against a blue background with amber-coloured spots — just what we want. For the background on the wide-angle shots, we want the people out of focus with just some hot spots, like a colour abstraction. And also this time, since I added more fixtures, I'm going move them around a little so that the audience background is a little more lively and the colours move around on the people.

So the rear MAGICDOTTM fixtures have been set up as beams and also as colour lighting.

With the centre ones, I only do typical "crow's feet", and when I get out the magnetos, we use a program that makes them move.

SLU: So you still make them move?

David: Remember: we're on a talk show, so you're not going to get what they showed off in Frankfurt at high speed! But I think that this is what also defines this fixture's qualities: ultra high-speed movement.

This is a real strong point. I also end up using this high-speed function because the bottom fixtures on this set light up the lower border of the décor, so I take advantage of their speed of placement to light them on the fly. The result is that we absolutely don't feel the movement because they're so quick!





SLU: If I understand you correctly, with no more flare, quick placement, and good colour reproduction the Digital Imaging Technician (DIT) must be delighted.

David: My DIT is always happy, because he's part of a crew I've been working with for a long time.

I am very loyal to the team. I have been collaborating with most of my technical people for at least 10 years. I've been working with Ted at the lighting desk since 1985. In fact, he's the one who taught me how to use my first Avab 2000 consoles, if that tells you anything.

SLU: I really wanted to talk about how happy you are to get no more lens flare!

David: Oh yeah. That really changed everything. it's so much better. Much easier for him to deal with.

Stéphane Fleury: I'll second that! On different sets where we put the S6s, we always hear the same comments from the production crew: "Now we can have a camera next to the fixtures without getting any bright spots". Plus, we even increased the number of S6s to 120.

SLU: And that was the challenge of using the LEDs on television? Was it the directors who asked for them?

David: I don't know if they actually made a formal request but we added them in. For instance, I mixed the LED wash fixture for soft front lighting with tighter wash lights from behind. Now that we use projectors like the NANDOBEAMTM, we have a wash light that can do both, and it gets a tighter beam with the 8° to 40° zoom.

What's next?

SLU: Now that you've found a wash light for doing television lighting, are you hoping for a LED spot?

David: Actually, there are plenty of benefits to using LEDs ... and plenty I don't care about. What I like about LED wash lights is that they're really versatile. I picked up on that when using the Robes.

I save an incredible amount of time because when I design an installation I don't worry about which fixture is going to serve what purpose.

What am I going to use from the front? From behind? How much power and with what effects?

With LED wash lights all you have to do is install them. And I know that if I want front lighting, or back lighting, or just décor lighting, I'll just use it accordingly. I like the versatility. You can't think along those lines with traditional equipment because you can't manoeuvre it the way you can a LED. And then there's the freedom to be creative; or instantly change what the director or the actor doesn't like. There's no more gelatine to replace...

But what I especially like — and this is strictly personal — is the ecological aspect of LEDs. Even if I know that, for the most part, these products are still hard to recycle, I still consume much less energy! I'm really delighted. You have no idea how much! I think, ultimately, the production people are aware of this. I don't

I think, ultimately, the production people are aware of this. I don't understand why people are so stubborn about giving up archaic lamp technology.

SLU: I haven't really noticed the TV production people becoming aware of this...

David: In any case, I can tell you that when they work with me and then take a look at their electric bill, they are happy.

But, weirdly enough, this doesn't actually motivate them to do anything about it.

If I were a producer, I'd force all my DPs to use LEDs. That makes for 80% less energy consumption!

And I expect a LED spot to consume 300W and produce

- 2. The set lit for the show. The audience is awash in colour with amber hot spots on a blue background.
- **3.** The small anti-halo caps of the NANDOBEAM™S6 that eliminate bright spots and mask stray light.
- **4.** The lighting team of David and Ted, who've been collaborating for 30 years.



Nestled in the décor, a line of Ayrton MAGICDOT™R luminaires project beams and colours.

AYRTON W Show report



5. The entire lighting crew at "Return to an Unknown Land". From left to right: Jordy Gayout (Chief Electrician), Stéphane Fleury (Associate Director Impact Evénement), David Seligmann-Forest (Lighting Designer and Director of Photography), Ted Hall (Console), Tonton (Lighting Technician, static), Yannick Morand (Lighting Technician, automatic).

1500W-worth of light! Here, for example, I get a good ratio: instead of a Fresnel with a 2000W lamp I use a LED wash light with less than 400W. For profile spots, I'm using a115W LED instead of what would normally be a 2500W lamp. The MAGICDOT™-R only uses 90W maximum...

SLU: Could it be the price of the diodes that turns off the TV producers?

David: Probably, but they should see the big picture. You're already going to reduce the size of the crew. With moving-head LEDs, you don't change gelatine or send the technicians up to readjust the fixtures. And when you choose a 2000W lamp and consider how much electricity it consumes, and everything you need to make it work (blocks, cabling, lamps, etc.), sure it costs you a little bit less than a wash light with LEDs, but you lose out in versatility. Otherwise, you just install the rig and don't change anything. Here, the only time I step in is to readjust the profile spots sometimes for position changes. That's about it. We do all the rest from the console.

SLU: But what's keeping the manufacturers from making moving-head profile spots?

David: They aren't interested in what I have to say[laughs]. There's a problem with the moving-head profile spots I've used and the manufacturers don't want to hear about it. Whether it's DLS Robe or Martin Performance spots, none of them does what we want on the shooting set, or even on the stage.

Look at what we do to a profile spot for television: We always put the frost on the transmitting lens. They have internal frost at the focal point, and that just doesn't work right. It can't work. It's impossible. You'd have to build an automatic profile spot with a frost system on the fixture's output, and that's pretty hard to develop.

Conclusion

David may be demanding, but he knows exactly what he wants when it comes to lighting.

We are impressed by his bold choice of using a single brand of equipment on the set, especially with his Ayrton lighting rig. A perfect choice.

This show has very few set changes, clearly because it's a talk show. The audience lighting is inventive and the overall ambiance is warm despite a heavy dose of LED emitters, which have the reputation of producing harsh light.

The DP, who knows everything there is to know about colour temperature and obtaining the perfect white level, is just as comfortable at a console as behind a TV camera, following a director's creative lead.

His strength is in selecting the luminaires that meet his needs, whether they are wash lights or profile spots (also mostly LEDs). You can feel the temperature on the set. It may be perfect in Kelvin, but in centigrade or Fahrenheit it's cold. (Try cutting the air conditioning for extra savings!).

This gear lives up to expectations as an effective, appropriate solution. The NANDOBEAMTM is a real alternative to lamp-powered wash lights with clearly impeccable optics.

The petite MAGICDOTTM-R luminaires (pardon the expression, but they are sexy) fit seamlessly into the décor, though we are only catching a glimpse of their potential. Considering their power-to-weight ratio and energy consumption it would be a mistake not to hang a least a hundred of them up.

Their price might be a drawback, but when you think that the lights in this studio consume almost 80% less energy that the rigs in the neighbourhood, you know the investment is well worth it.

Lighting team

 $\mathsf{DP} \text{: } \textbf{David Seligmann-Forest}$

GMA2 Operator: **Ted Hall**

Digital imaging technician: **David Macchia**

Chief electricians: Jordy Gayout and Marc Mengual

Electricians: Alex Kachintzeff, Jérôme Allard, Yannick Morand, Patrick Lelec

Lighting Contractor : Impact Evénement

Lighting Equipment

123 MagicDot R Ayrton 26 NandoBeam S6 Ayrton 35 NandoBeam S3 Ayrton

18 Robert Juliat 714-SX2

32 Aledin 634SX Profile

1 MA Lighting GrandMA2

DREAMPANEL SHIFT



DREAMPANEL SHIFT IMAGING DISPLAYS

The magic blend of two technologies: the continuous pan-tilt rotation of the MAGICPANELTM and the new control system from the HDMI DREAMPANELTMHD-BOX (patent pending). An innovative 48 circuit rotating connector has been developed to enable the smooth, undisturbed transmission of video signals through pan & tilt rotation.



LUMENRADIO

Sets the standard for reliability in DMX/RDM wireless connections









LumenRadio, the premier manufacturer of wireless DMX solutions since 2008, has just introduced TiMo, the world's smallest DMX-RDM receiver. The size of a fingernail, TiMo is designed to be incorporated into the surface-mount manufacturing process used for luminaires. It incorporates patented CRMX technology, which ensures a faultless link no matter how poor the environment. The CRMX chip earned LumenRadio a Gold Innovation Award at last year's PLASA show. This prize is only awarded for exceptional innovation, so it's clear why LumenRadio has gained the confidence of leaders in the entertainment lighting industry, like Ayrton.

der Hellström, CEO, who came on board a year ago to helm the fast-growing company.

As a young, eco-conscious Swedish scientist, Niclas Norlén chose a line of work in 2008 that enabled him to combine his skills and personal values with a passion for live entertainment. A product of pure inspiration, this company, which specialises in wireless control for entertainment lighting, has won numerous awards for innovation within the space of six years.

The origin of LumenRadio

SLU: Niclas, can you tell us the story of LumenRadio?

Niclas: It's a pretty long story! A few of us founded LumenRadio back in 2008. I had this passion for the entertainment industry, having worked for Wireless Solutions. I felt I needed to do something that I believed in. That is why I decided to start LumenRadio, together with some other people. We all had this passion to do something good for the entertainment business, something very solid. It was also very important to us to be there for the customers

le flew to Gothenburg, Sweden, Scandinavia's biggest port, to visit LumenRadio's headquarters, joined by Valère Huart, Ayton's International Sales Manager. Greeted by smiling faces, we were immediately treated to a Zodiac cruise through the archipelago at the mouth of the Göta älv river, which drains into the Kattegat sea...

In this unexpectedly sublime setting, we interviewed Niclas Norlén, the Founder of LumenRadio and its Director of R&D, and Alexan-

Text & photos:

Monique Cussigh
from
soundlightup.com

and provide technical support... something that is of the utmost importance in this business. It is not all about the technology. You can have great technology, but if you are not there to support the users, then you will fail. That was our fundamental idea when we created LumenRadio.

SLU: You now run the R&D department?

Niclas: Well, I'm everywhere in LumenRadio, but I do have a passion for technology. To tell the truth, technology can be quite boring, but my passion comes from seeing someone use it to solve a problem or do something that wasn't possible before... then technology is pure fun.

I try to communicate that feeling to the people at LumenRadio to inspire them. If you have the passion, I think you will create really great products that the customers will appreciate and use.

SLU: So, you created LumenRadio all alone?

Niclas: Actually, in the beginning I had a partner, but he left us. He decided he wanted to move on to new things, and I respect that decision. We parted on friendly terms.

I'm still here and so is the spirit of LumenRadio. The spirit of the company does not stem from me or from any one person. It is the product of teamwork by people with the same philosophy. This is what I strongly believe. Even if I were to leave, I would hope that the team spirit would remain.

SLU: How big is the team at LumenRadio?

Niclas: Currently, we are expanding. We are ten full-time employees, but from time to time, we also work with consultants, so we can have as many as 10 to 20 people, including consultants. It depends on what we're developing and what we're making.

Patented CRMX technology that guarantees a reliable Wi-Fi connection

SLU: What is different about your technology that makes it so reliable?

Niclas: What's important about LumenRadio is that we have built technology optimised for the entertainment business. From a technological perspective, there are two important requirements in the business: the technology needs to work reliably and it cannot interfere with other wireless systems. In the modern entertainment industry, there are so many radio-frequency systems operating in the same environment; wireless microphones, which are crucial to the show; wireless conference systems; and many other systems that you have to share the same frequency spectrum with.

SLU: What is the link between the old CRMX technology and the new TiMo?

Niclas: CRMX is the name of the technology for frequency prediction and frequency jumping, whereas TiMo is a newer and

smaller module. They both still do the same job. TiMo has some other features that make it more attractive: It handles DMX in a different way, which can be beneficial. From a technological perspective, TiMo can communicate with the old system — it's still CRMX. The benefit of using TiMo is that it is smaller and much more cost-effective for our customers to integrate. This is because there's no need for an extra connector. For instance, the TiMo module can be installed directly on the PCB. That is, by far, less expensive for the customer.

SLU: A lot of people don't want to use wireless transmission for their lights because they are afraid it will stop working during the show. Most of them say, "If I had only a few fixtures I would use it, but I have a large number and am worried about failure".

Niclas: There are many, many, systems available in the market. You could chose Chinese-made copies, and when you try them out in controlled conditions they may seem to work fine, but once you are in a critical situation, with thousands of people present, these systems can fail due to interference from the network and from the amount of cell phone activity in the audience. This is why I think it is so important for us to have the best possible technology. It really makes the difference.

We were recognised for this by the PLASA organization. We launched our first product in 2009 and, over the past six years, we have received four Innovation Awards from PLASA. Last year we received the "Gold Award" in recognition of outstanding achievement. I actually got to speak with the jury after the ceremony, and they told me, "When we saw this great technology in this CRMX chip used in TiMo, we looked at each other and knew that this was worthy of the Gold Award". For them, there was no doubt., Receiving that kind of recognition was a great achievement. At that point I thought to myself: We are really on the right track!

SLU: Without giving away any of your secrets, can you explain how your technology achieves superior reliability?

Niclas: It is not that much of a secret anymore how we do it, because we have a patent. I always compare what we do to weather forecasting. What our system tries to do is to examine the radio-frequency environment, predict the "approaching weather", and then make a decision about how to avoid problems that might occur in the next second or millisecond. An impending "thunderstorm" could be building due to the mass collection of Wi-Fi and Bluetooth transmissions originating from the audience. The system constantly calculates if and where it should shift, in the next millisecond, in order to avoid problems.

SLU: All of this in such a small device like TiMo?

Niclas: Yes. This was certainly a challenge.

SLU: What frequency range are you using?

Niclas: We are using the same band as Wi-Fi or Bluetooth – the harmonised ISM band at 2.45 GHz – though our transmission

- The LumenRadio offices have lots of charm
- 2. At Inission, the test bench developed by LumenRadio. When the product has passed OC testing, the label is printed with the serial number. Traceability is very important for maintaining quality control.
- 3. One of the pick and place machines that mount the surface-mount components.
- 4. At the LumenRadio offices, Dimitar Kolev final-tests each board prior to assembly, using a computer connected to the network at Inission



5. TiMo is delivered like this: on reels of components for surface mounting.



Atilla Akyildiz
Sales & Marketing Coordinator



Marcus Bengtsson International Sales Manager



Johan EnelingProduction Technician

- **6.** Rewards well deserved by this young Swedish company
- 7. On the left, the old CRMX receiver which required hand assembly, and on the right Timo.
- 8. The TiMo receiver, with its serial number, is ready to go into the surface-mounted device for the LumenRadio customers.
- 9. At Inission, from left to right, Rolf Siltala (Gothenburg Site Manager) Niclas Norlén (LumenRadio Founder & CTO), Alexander Hellström (LumenRadio CEO) and Valère Huart (Ayrton Sales Manager).



is clearly not Wi-Fi or Bluetooth. This band is so useful because it is available everywhere in the world. You might have seen the frequency allocation auctions for the large telecommunications operators — major bidding for 3G and 4G frequencies.

But the 2.4-GHz band is unique in that it remains free to use. Anyone can use it as long as they comply with the regulations. This is also part of the problem: if something is free to use, everyone will be using it. So you find Bluetooth and Wi-Fi operating at these frequencies. You'd be surprised how much. Even microwave ovens operate at these frequencies! That is why you see Wi-Fi systems get interrupted in kitchens when microwave ovens are turned on.

But, this is the frequency band where we need to operate... It is great for the customer, who doesn't need to pay for a license anywhere. The challenge is to get something to operate with 100% reliability in this frequency range because there's so much traffic on it.

We have a patent on the system we developed in order to avoid problems in this frequency range. At the beginning, it was very difficult to prove that this would work to the market, because everyone already had bad experiences with Wi-Fi systems and such.

Limits of the system?

SLU: How many DMX universes can you drive using your technology?

Niclas: I actually haven't seen any limit yet, during a show. If we had our frequency allocation patents on hand, it would be easy to tell. The benefit of our technology is that more and more universes can be added, and the frequencies will coordinate between them. The limit is determined by how many extraneous frequencies are present. As the spectrum fills up, it becomes more and more difficult to add additional systems, until there is no more space left in the radio spectrum. But in cases where there's only a LumenRadio system occupying the frequency band, I have not yet seen a limit, practically speaking. So far, no one has pushed it to the absolute maximum. I would actually love to see that. We can do tests in the laboratory to determine the theoretical maximum, but in the lab we can have perfect conditions, so that wouldn't be realistic.



SLU: What is the biggest event that your technology has been used at?

Niclas: The latest high-profile event I know of that used our technology was the Eurovision song contest. Of course, when a Eurovision executive decides on a technology, it has to be very reliable. Eurovision is not only a high-profile event, but it's also a show with a huge amount of wireless equipment operating simultaneously, along with a very big live audience and all of the Wi-Fi and Bluetooth that comes with it. It is a testament to the reliability of our system that they trusted using it in that environment.

SLU: You have formed strong relationships with a large number of customers...

Niclas: Clay Paky is using our systems... Robe is a long-time customer of our technology. There are others: SGM, DTS, Robert Juliat, GDS, Philips... We work with almost all of the brands, and I think we have really good, strong relationships with them. With Ayrton, it is all based on what we did when we helped them

With Ayrton, it is all based on what we did when we helped them out at the Paris Motor Show two years ago. Even though Ayrton was not our customer at that time, helping someone in need always contributes to a strong relationship.

SLU: Are you now the leader for the entertainment lighting market?

Niclas: I would say so. All the effort that we put into the technology and into customer support is paying off. Of course, in the early years it was a struggle. Now, in 2015, we are a really strong brand and we are expanding the company. I would say we are number one, both from a technology standpoint — I think we always have been — and also from a commercial one.

LumenRadio in full expansion

SLU: What is your turnover?

Niclas: This year I think it was €2.7 million, whereas last year it was €1.2 million. So we are expanding rapidly now. We more than doubled our revenue from 2013 to 2014, and we are making a really good profit, as well. We are seeing all our efforts, and what we believed in when we started, are now paying off. Our philosophy from the beginning has really worked out: tech-



nology, of course, and always supporting the customers. We will always be there for them, and no matter what happens we will always try to help.

SLU: In terms of quantity, how many transmitter and receiver systems do you produce in a year?

Niclas: With the radio systems we have now, we have reached 100,000 units a year, and we're expanding that. My objective, by 2018, is to produce 1 million units a year. We are well on our way to achieving that goal.

Clearly, that's mostly receivers, which are in the fixtures. And for every four or five receivers, we produce a transmitter... something like that.

SLU: Why did you choose to hire a CEO and stay in R&D?

Niclas: I have a passion for technology, but I founded the company and have always had the belief that you should surround yourself with people who are better than you. Some might think I'm crazy to say that, but it is my belief that if you are humble enough to do that, you will see your company grow. I have a great team who does a much better job than I would ever do in the technical and sales departments. Therefore my job is to uphold the LumenRadio spirit. This is important to me, much more so than just R&D and technology.

SLU: And for you, Alexander, as CEO, is it easy to be the surrogate for the owner of the company?

Alexander: That's a very good question, actually! I have to say yes, it is, because we share the same vision and agenda. We compliment each other in different ways. So it is easy. We have a lot of fun together. It's not like being the boss, I would say. It's more like working on how to do the best we can for our customers. We discuss this back and forth. I haven't been in any situation here where being the CEO has been awkward in the presence of the founder/owner. We trust each other and know what we want to achieve. We work in different ways, but at the end of the day we share the same goal. We have fun. As Richard Branson said, "If you have fun, the money will come."

SLU: How many people do you have in R&D?

Niclas: We have a new hire, who started last month, so there



are now five of us. So that makes five people full-time in R&D and five full-time in sales and marketing.

SLU: It is unusual to see half of the company in R&D...

Niclas: Our R&D department is not devoted purely to technology but also to applications. For instance, you will see our entire R&D department at ProLight+Sound in Frankfurt. It is mainly a commercial event, but it is essential for R&D to be present and meet the customers directly in order to understand the problems the customer face. That way they will produce great technology. So the five people in R&D are also all very customer-focused.

Mira Module to save energy everywhere

SLU: What is the next step? Are you are developing another phase?

Niclas: We are also looking into other wireless applications. Entertainment is the most important to us because it made us understand the challenges better than any other application. Meanwhile these applications represent the harshest of operating environments for wireless systems. If you have a product that proves reliable working in the entertainment business, then it will almost certainly work anywhere else, in any other application. What we see now is that we are taking the entertainment business into what is popularly called today "the Internet of things". For instance, there is lighting control for public and street lighting. Controlling those systems efficiently will save energy. We have the know-how to make that work. Also, we are looking into building automation for energy-saving applications. This is all based on the knowledge that we have gained from working on entertainment technology.

Since I founded LumenRadio, this has been one of my ambitions: applying the technology to other fields. For years, as I drove down the streets at night, I would notice that all of the streetlights are on 100% of the time, even when there are no cars, and I said to myself, "That's really stupid." Why are we wasting so much energy? In the entertainment lighting industry, we know so much about reliable lighting control. Why can't this be applied to other fields?

SLU: What's next?

Niclas: We always have some things in the works, but we have



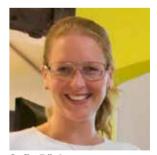
Alexander Hellström



Dimitar Kolev Senior Hardware Engineer



Niclas Norlén Founder & CTO



Sofia Rösberg Purchase & Supply Chain Manager



Niclas, stands by the screening machine, where solder paste is placed on circuit boards using a stencil.



The company offers optional IP 67 waterproof enclosures..

just released the Mira module, targeting the "Internet of Things", like building information and general lighting control. Also, our latest launch is the TiMo FX. This is the new version of the TiMo module. Inside this small package it gives extra flexibility to the customer, because it can be set as either a receiver unit or a transmitter unit. We never stop.

SLU: Is it possible to use this technology to control motors for the movement of different equipment and gear?

Niclas: Yes, our system is for DMX and RDM distribution, so it is possible to use it with hoist systems. Also, I would say that the new Mira system would be ideal for use with motorised systems, because it's command-based. You send it commands. With Mira, you can construct huge networks in a really reliable way...

Alexander: Mira is one of the gateways that can control thousands of nodes. It could be used in outdoor lighting, collecting sensor data to measure carbon dioxide levels in a city, and at the same time, control the lighting. So we combine measuring and controlling in this new design that can be used to create much larger networks.

SLU: What is the control protocol?

Alexander: It is based on IPV6, which is Internet protocol communications. If necessary, it can also "translate" control signals into DMX, but it is IP-based for communications in very big networks. We have a lot of sensors that we use to get our "Internet of Things" modules up and running and we can output DALI, DMX, or other protocols. They can measure pressure, acceleration, temperature, whatever. These sensors are third party — usually the customer will have his own sensors — and we provide the radio module for reliable connectivity.

It is a new way of thinking, because it's no longer about cue controlling, it's about programming events. For us this is also very exciting because we see these things coming together.

Production in Sweden

LumenRadio contracted Inission, one of the few electronics manufacturing services (EMS) in Sweden able to meet their requirements in terms of radio technology, to assemble the electronics in their transceivers.

We donned lab coats and shoes with antistatic soles to visit the production unit owned by this Swedish company that also has manufacturing facilities in Estonia and India.

Alexander: We have worked with quite a lot of EMS players on the market, but for the last couple of years we have been collaborating closely with Inission. Working with radio technology is quite difficult and they are one of the few that can keep up with our high quality and quality testing requirements. They can adapt and work along with us to deal with high demand.

SLU: Which parts are produced in Sweden and which are produced elsewhere?

Niclas: Since reliability is crucial, every PCB is produced here in Sweden. Inission is only five minutes away from our offices. This is important. It means that I can be at the production facility in five minutes, if there were to be a problem.

The next step is the final assembly, and that is done above this. Obviously, a large part of the PCBs are shipped directly to our customers, like Ayrton, who integrate them into their fixtures. But then, of course, finished products for end users are fully assembled with an enclosure with DMX connectors and everything. This final assembly is done at our facility. The critical part really is in the final assembly, because that's where the quality is established. It is very important that we control this step, because without the quality, there is no reliability and without reliability, we would have no customers.

Clearly many components come from other parts of the world, but we always maintain very strict quality control.

Every PCB is quality controlled and tested automatically, and then, after the final assembly, we have another rig that tests each unit for 24 hours. It is an absolute that we won't allow a faulty unit to leave the factory — it would be a disaster for our customers, and neither we nor our customers could afford that.

Machines for laying the RoHS-compliant solder paste (lead-free solder) on the stencil, machines to implant the surface mounted devices (SMDs) depending on their size and oven... LumenRadio circuits are then tested one at a time.

SLU: What kinds of tests are carried out here?

Niclas: We test all the radio tolerances, sensitivity and so on, before we ship it. The test procedure takes about a minute.

Alexander: We do that on a per-unit basis. The serial number for every item is recorded in our database so that we can keep track of all of the chips out there in the world. If there is a problem, we can go directly to it to see what the test result was when it was manufactured, and then we can go back and see if anything else could have happened when it left the factory, and so on.

Niclas: Our computer at LumenRadio headquarters is connected to this one on the test floor, so that if there is an issue, we can connect directly to this computer and see what's happening in real time.

SLU: Who developed this automated test method?

Niclas: This was created by LumenRadio. And it's built with shielding, because we are obviously not out to test the performance of the Wi-Fi in the building!

Conclusion

Besides superior technology, exemplary customer service, and an eco-conscious vision of the future, what makes this team so exciting is the pure pleasure the employees have in contributing to the success of this company. The team spirit and enthusiasm has quickly proven their success worldwide. Kudos!



VERSAPIX-RS CREATIVE SOLUTIONS

A contraction of versatile and pixel, VERSAPIXTMRS is a veritable fan of light. Brilliantly evolved from the VERSAPIXTM100 concept first introduced in 2012, the VERSAPIXTMRS is the first in the new ultra-radical "RS" product series. A new 40 Watt reduced-scale multi-chip RGBW LED emitter has been combined with innovative 94 mm diameter high-efficiency optics.



Automated in-line LED luminaire

THE AYRTON MAGICDOT™R

is faster than its shadow



Despite its minimalist appearance, the Ayrton MAGICDOTTMR luminaire is a powerhouse of light and technology. Equipped with next-generation LED emitter, optics, and cooling system, this moving head projector is ready to break all records. Ayrton put 144 of them into its fabulous online video demo. Bruno Mars' lighting designer, Cory FitzGerald, premiered 184 MAGICDOTTM-R luminaires live for the performer's festival-closing concert appearance at Rock in Rio - Las Vegas.

What's most striking when you first power up one of these single-optic fixtures is the quality of the intense, narrow shaft of light. [I confess, I can't help but associate its compact cylindrical form with those cute, yellow, characters in the animated « Minion » films.]

Text & Photos: **Stéphane Mocret** for Soundlightup
More photos & videos on the webzine **www.soundlightup.com**

History

Development of this fixture began more than two years ago — and it is the first to use the latest, state of the art, emitter technology from OSRAM - a 60W Ostar Compact LED package, which can be driven at four times as much power as previous Ostar chipsets. Each emitter has four 2mm² RGBW diodes, which makes the total luminous surface 8mm² (nearly double the previous 4.41mm²). Ayrton's first challenge was to develop a new collimator able to concentrate the four larger diodes into a 4.8° beam while still maintaining optimum colour mix. Given the LED's new surface/power ratio and increase in temperature, the French development team also had the daunting task of developing an effective cooling system that took advantage of the power while minimizing output derating due to heat. Ayrton certainly didn't make it any easier for themselves by designing such a compact head.

Mechanics

Here's a general overview of the fixture before we take a look inside. MAGICDOTTMR is divided into three parts: The stationary part of the luminaire is the circular, minimalist base, with the curved transport handles, power and data connectors. Two attachment points for quarter-turn fasteners on the bottom the base will mount a single Omega bracket, which is provided as standard equipment along with a safety cable. In addition, there are four threaded inserts that allow the fixture to be directly attached to a mounting plate or to scenery, without the need for pipe clamps. This option could be useful in fixed installations or touring equipment, where every centimetre counts. 5-pin XLR connectors with pass-through for RDM-compatible DMX input / output are provided. Next to the data ports, PowerCON TRUE1 connectors supply power to the fixture, and permit pass-through to other units in a "daisy chain".

Above this round base is the cylindrical body, which is also the yoke of the fixture, with a six-button user interface and the display. Pushing any buttons deactivates the pan motor and permits easy access to the control menu. The two yoke arms support the spherical head. Since no moving parts protrude beyond the footprint of the base, you can pack these luminaires incredibly close to each another. The head contains the huge 94mm diameter collimator that was specially designed, in

AYRTON DEACH TEST

collaboration with Gaggione, to couple with the 60-Watt LED emitters.

Following this introduction, we had a look inside with the help of Ayrton's chief software development engineer, Cyril Union. The new projector was easy to disassemble. Because of the fixtures compact design, special-sized fasteners are used, but all we needed was a screwdriver and an Allen wrench. Once we removed the matching head covers, we could see the new cooling system, the electronics that supports the LED emitter, and the collimator.

Couldn't be simpler! To cool the LED emitter, Ayrton uses the same tried-and-true recipe it has for years: a heat pipe system. Space has been left at the centre of the heat sink to accommodate the fan. The three advantages to this solution are: quicker cooling, better thermal conductivity across the heat sink, and a considerable amount of space saved.

Mounted to the aluminium alloy block, the single circuit board in the head has the LED and control electronics. The imposing 94mm-diameter collimator is mounted in front of the LED package, ready to create a beautiful light shaft. Carefully designed diffusion patterns on the surface improve colour mixing in the beam. Three mechanical systems align and centre the collimator in relation to the LED emitter: four locking pins on the base, an indexing pin, and a flange on the flared part. These ensure that the optics are positioned correctly with respect to the four LED diodes. The flange ensures alignment with the head via a metal retaining ring attached by six threadlocked screws.

The cover that protects the head is also attached to this metal ring. Perhaps, a diffusion filter could be mounted in front of the collimator to convert the beam into a wash light with more or less spread depending on the diffuser used, but this option is not available from the manufacturer. It might conceivably be added to the catalogue.

We then removed the two covers from the fixture body and yoke. One of them contains the User Interface electronics and colour LCD display.

One yoke arm houses the tilt drive, consisting of two pulleys and a dr ive belt. A three-phase hybrid stepper motor drives the lower pulley. The pan drive is in the horizontal part of the head box and the motor is in the second yoke arm. This also holds one of two slip ring assemblies that provide power and data connections between the elements in the base and the head and permit continuous, unlimited, rotation on pan and tilt.

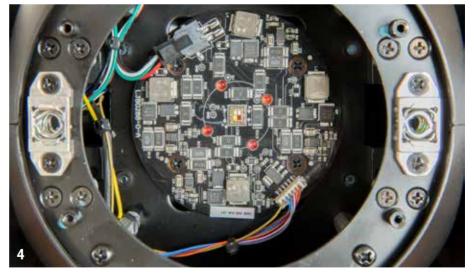
Going for a spin...

Under Cyril's watchful eye, I felt confident that once it was fully reassembled (with no parts left on the workbench), the fixture would be ready for a show. No need to comment on the control menu, which is similar on all Ayrton products. DMX addressing is straightforward. There are two modes: Basic, uses 14 channels, and Standard, which provides 16-bit control of DMX position, uses 16 channels.







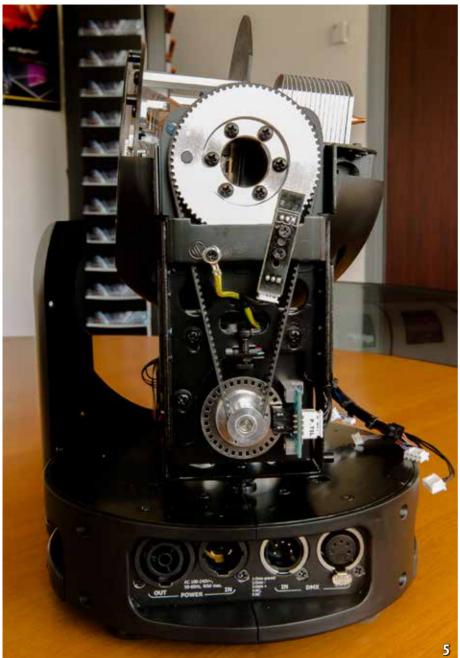


...Full speed ahead!

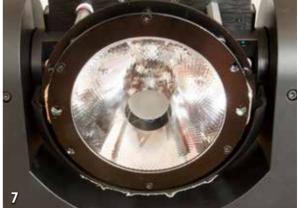
When I brought the dimmer and the four-colour LED to full, I was amazed by the light output. The beam was sharp, clean, and effective. With smoke, I could make out a slight halo close to the emitting lens but this didn't affect the visual impact. No issues with the dimmer — Ayrton perfected this long ago. The strobe

- 2. Under the cover: a collimator, the LED circuit board, and a heat pipe simple and effective
- **3.** The new cooling system developed for the LED emitter.
- **4.** The single circuit board in the head with the 60W RGBW LED in the centre.

AYRTON DENCH test









- The tilt system, which uses a threephase hybrid stepper motor, is behind the lower pulley.
- 6. The 94mm collimator
- 7. The retaining ring for the collimator.
- 8. The User Interface and display circuit board in one of the fixture body covers.

function was highly effective in regular or random mode. Ayrton has included a pulse effect. The three primary colours were deep and the white was striking. Whether instantaneous or continuous, colour transitions were impeccable. The colour mix of the projected field of MAGICDOTTMR, was less than ideal, but that is to be expected. Obtaining good field colour mixing with a single tight beam is not the objective. This fixture is all about the coloured beam traveling though space.

A lot of time and patience went into developing this new collimator, and colour mixing within the aerial beam is highly satisfactory, as witnessed in the product videos.

The colour Macro parameter allows fading between the defined colours at an increasing rate in continuous sequence. Another

parameter called "ColorPresets" replaces a colour wheel. The first six settings are white, ranging from 2700K to 8000K, followed by 15 attractive hues. This function's level is controlled by the "ColorPresetDimmer", which lets you combine the "ColorPresets" with three-colour mixing.

We then tested the pan and tilt movement. We fully expected the fixture to be quick considering its size, but the results were even more astonishing. It is amazingly fast! A 180° pan move took less than 1/6th of a second. More astonishing, a 180° tilt took less than 1/8th second. This is the quickest unit I have ever tested. What's more, the high-speed feature does not prevent slow moves. The luminaire passed the diagonal test with the greatest of ease. The final results were spectacular: movements were linear (without

Colours	relative %
White (RGBW)	100 %
Only Red (R)	13,60 %
Only Green (G)	35,20 %
Only Blue(B)	0,5 %
Only White (W)	54,88 %
Magenta	18,56 %
Dyan	39,68 %

DMX CHANNEL		
Modes	Basic (15 Channels)	Standard (17 Channels)
T	Pan	Pan
2	Tilt	Pan Fine
3	PositionSpeed	Tilt
4	Continuous Pan	Tilt Fine
5	Continuous Tilt	PositionSpeed
6	Red	Continuous Pan
Ż	Green	Continuous Tilt
8	Blue	Red
9	White	Green
10	Shutter	Blue
11	Dimmer	White
12	ColorMacro	Shutter
13	ColorPreset	Dimmer
14	ColorPreset Dimmer	ColorMacro
15	Control	ColorPreset
16		ColorPreset Dimmer
17		Control

Beam Diameter at I/2	0,42 m
Corresponding Angle at I/2	4,80°
Beam Diameter at I/10	0,96 m
Corresponding Angle at I/10	10,97°
Light Output at the Center after Densting	6110 lux
Light Output at the Center when Switching On	6460 lux
Rux After Derating	1300 lm
Flux when Switching On	1378 lm

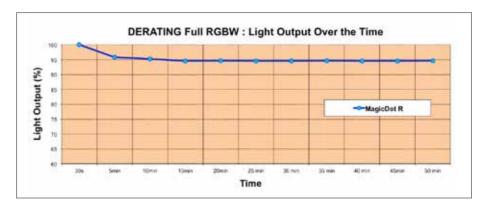
slowing down or accelerating) and deceleration crisp. Ayrton MAGICDOTTMR allows continuous pan and tilt movement, ideal for creating innovative effects. Finally, there is the reset, the last parameter in the DMX mode. Once again, the system is fast: a complete reset only took just under 20 seconds.

The figures

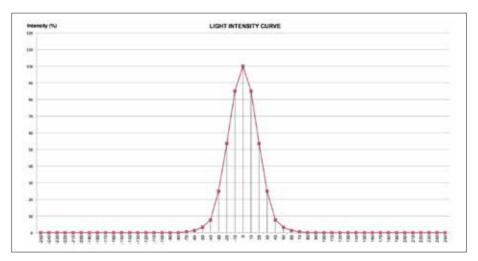
Derating

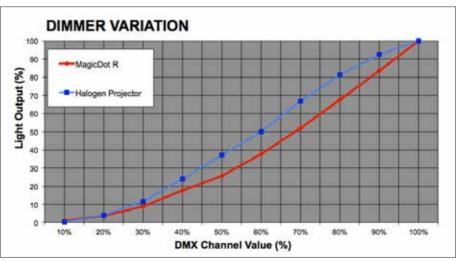
We start our photometric measurements with derating. Although it seems irrelevant when testing a special-effects luminaire like the Ayrton MAGICDOTTMR, the curve proves how much care Ayrton took in designing the cooling system for the LED package contained in this compact head. With all RGBW diodes at full power, illumination at the centre in "Auto" mode was stable with 6% attenuation after 10 minutes of heating. The head of the projector stayed cool.

In Stage mode, attenuation was slower but we obtained the same 6% value. Finally, in magenta, with just two colours at full power, the output merely dropped by 2% — further proof of Ayrton's expertise.









AYRTON DEACH test

Size and Weight	
Dismeter	210 mm
Height	318 mm
Weight	5.3 kg
Moterial	skeleton made of aluminium and steel metal plates, Covers in ABS
Colour	Black
Operating Manual	Yes
General Characteristics	
Type of projector	Lyre Beam
Voltage and power Consumption	Electronic supply with active PFC- 110 to 240 Volts - 50/60Hz - 90 Watt max
Protection class	IP20
Cooling System	Heatpipe and fan
Control	DMX512 - RDM
Number of DMX channels & DMX modes	Basic 15 Channels - Standard 17 Channels
Lamp type	Osram Ostar Compacte RGBW 60W
Optical system	94 mm collimator
Number of motors	2
Connectors	2x DMX 5 pins Male / Female -2x PowerCON TRUE1 in / Out
Control panel	Screen + 6 sensitives Keys
Software update	Yes
Fixing hooks	Omega 1/4 turn brackets
Locking pan and filt	No
Harides	Yes
Fastering point for safety cubie	Yes
Supplied accessories	Omega 1/4 turn + Safety cable
Functions	
Pan et Tit	Yes continuous
Zoom	No
Dimmer / Shutter	Yes
Colours	RGBW
Speed parameters	Yes
General measurements	
Highest temperature on the projector	47,6°C
Ambient noise	32 dB
Machine noise in operation @ 1 m.	34 dB Mode stage 33 dB Mode Auto
Loudest operating noise @ 1 m	43 dB
Speed and Time measurements	
Full reset time	19,48 s
Rapid movements	
Part 180°	0,16 s
Tit. 180°	0,12 s
Slow movements	
Fluidity of Pan & Tilt	Very good
Manufacturer	Ayrton France
Developed in	France
Assembled in	China



- The ratio Power/consumption
- The pan & tilt speed
- The tight beam
- Size ans weight



Lack of fade time on the color preset channel

Noise

Noise measured at 1m in "Auto" cooling mode is 33 dBA, which was 1 dBA higher than the ambient noise in the showroom and 1 dBA less than in "Stage" cooling mode, where we measured 34 dBA.

Photometric measurements

Illumination at start-up obtained 6460 lux at the centre, and this is a record for a 60W LED emitter. The flux reached 1378 lumens and we measured an angle of 4.8° at I/2, where the maximum amount of energy is produced creating a light shaft, and 11° at I/10 (where I=I) illumination at centre).

The uniform luminous intensity curve attests to the quality of the new collimator.







Finally, we measured the dimmer. The curve is rather "slow" from 0 to 60%, then perfectly linear up to 100%.

Off to a good start

Innovative and unique in the marketplace, the Ayrton MAGICDOTTMR is a concentration of new technology that heralds a next-generation of LED units. The luminaire's slow moves were well controlled, and the quick moves very impressive. I've never seen a moving head unit this fast. Small size, light weight, low energy consumption, quickness, and especially the intensity of its light shafts all make for an excellent special-effects luminaire that will meet the needs of lighting designers who are always anxious to create new designs using spectacular effects for stage and TV studio. The future of the Ayrton MAGICDOTTMR is looking bright!



MAGICDOT-R CREATIVE SOLUTIONS

A new member of the RADICALTM product line, MAGICDOTTMR is the first professional moving head LED luminaire with a single optical collimator. The new high-efficiency optical system measuring 94 mm in diameter and weighing over 200 grammes required more than two years of development and perfection. The result is an intense beam of less than 5° using a multi-chip RGBW LED with a light-emitting surface of 8 mm².



DREAMPANEL TWIN



DREAMPANEL TWIN IMAGING DISPLAYS

A hybrid luminaire with the MAGICPANEL™ on one side and the DREAMPANEL™SHIFT on the other. Capable of continuous double rotation on the pan and tilt axes, the DREAMPANEL™TWIN can alternate between displaying high-definition video images and 3D volumetric lighting effects. The 6 mm pitch of the video side offers the perfect balance of definition required to display video media on stage, of screen size for enabling full HD, and of overall system brightness.

