

MOVE

The magazine for show technology **02|2023**

SPOOK IN THE FRONT YARD
Tips for Halloween decoration
around the house



Hey, Mr. DJ!
Not all DJs are the
same

IP ATMO BLINDER

IP ATMO BLINDER
by EUROLITE: 3in1
- blinder, strobe and
atmo light

Festival for everyone!
Accessibility in the
event industry

Spot on, ARRHH!
Lighting designer Kristof
Schlößler sets the stage for
the band Storm Seeker



 **STEINIGKE**
SHOWTECHNIC



NOW ALSO AVAILABLE IN WHITE

The popular CAT-80 mirror roller effect by EUROLITE is now also available in white. The light-intensive effect impresses with its high brightness and offers enormous variety in projection: Nine colored gobos, a mirror roller and a rotating faceted mirror shape, color and multiply the light generated by an 80-watt LED in cold white. At the same time, the device itself is extremely compact: with dimensions of only 31 cm in height and 29 cm in width, the small effect is perfectly suited for use at weddings.



EUROLITE LED CAT-80 Beam Effect white

LED Beam Effect with 80 W COB LED in cold white and gobo wheel



Dear readers,

Well, that was the first “real” festival and tour summer after COVID. The technical equipment has been stored in its cases, the trusses have been stowed away in the warehouse, only the memories of many great concerts and events remain tangible in our minds.

Now, autumn and winter are coming and with them the time for spooky Halloween parties, which will be followed almost seamlessly by Christmas and winter markets. That is why in this issue we have rounded up the best decorating tips for your Halloween in the front yard, while also taking a look at planning Christmas markets.

Of course, this issue is also full of exciting new products and reference projects, interviews and reports. Among other things, we mentally accompany lighting designer Kristof Schlößer to the tour of the band Storm Seeker, which he supervised last summer. Our author Andi Zöllner dares to try his hand at lighting design with the help of AI. And finally, we shed light on the topic of accessibility in the event industry.

In addition, we continue the popular category “Apprenticeships in the event industry” and also clarify what the job of a rigger includes. All this and much more do you hold in your hands with this issue: Enough reading material for windy autumn and cold winter days. We hope you enjoy reading and leafing through it!

Your MOVE editorial team

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Look deep into my... LED rings!



FUTURELIGHT
PRO Slim Strobe SMD 840

Available in
COLD WHITE
or
WARM WHITE



Frost filter



Clear - frosty - clear: frost filter at the click of a button

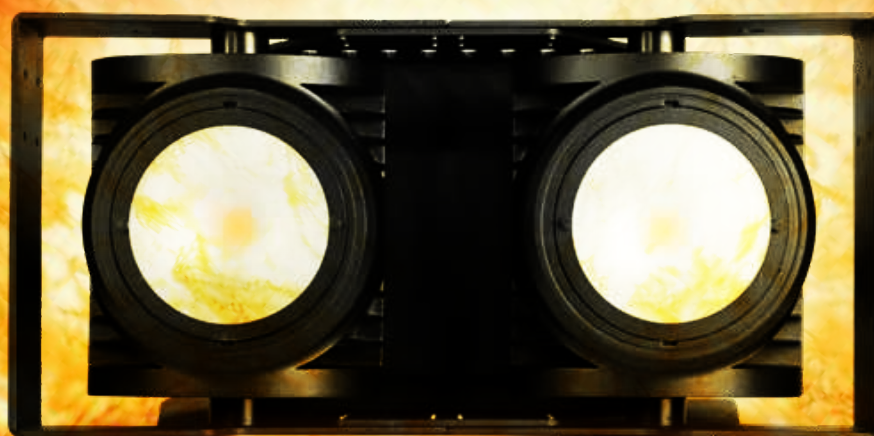
An electronic frost filter enables the **PRO Slim Strobe** to switch a soft frost effect on or off. This opens up completely new possibilities for lighting design: By switching from a clear light image to soft, diffuse light at the “push of a button” or DMX command. Due to the rings effects, this variation creates yet another completely new effect. This versatility makes the **FUTURELIGHT PRO Slim Strobe SMD 840** an extremely flexible tool.

Hypnotic effects thanks to LED rings

The 16 separately controllable LED rings are a particularly eye-catching feature. Each ring can be controlled individually, creating fascinating movements and patterns. The hypnotic effect of this feature captivates the audience and creates unforgettable lighting scenarios. With this extraordinary effect, the spotlight opens up impressive possibilities for creative lighting design and produces hypnotic pulsating effects – whether with continuous light or in stroboscopic mode.

High-quality equipment

In addition to these highlights, the **FUTURELIGHT PRO Slim Strobe SMD 840** offers a variety of other features. The powerful 840 SMD LEDs provide an impressive light output. The spotlight can be operated in six different DMX modes and can be controlled with DMX, but also used in stand-alone mode. The spot comes in a very high-quality metal housing that can easily withstand the toughest road use. The power connections are via P-Con input and output, while DMX is supplied by 3-pin sockets. In addition, the devices have a USB port for wireless DMX operation. Thus, the fixture can be integrated in seconds either into **EUROLITE**'s own **QuickDMX** system or into the **CRMX** system from **Wireless-Solution**.



IP AUDIENCE BLINDER

2X100W LED COB WW OR RGBWW

BY EUROLITE

Available in warm white and RGBWW versions



Attachable frost filters

EUROLITE IP Audience Blinder **2x100W LED COB RGB+WW**

Weatherproof Audience Blinder with 2x 100W LED COB in RGB+warm white

EUROLITE IP Audience Blinder **2x100W LED COB WW**

Weatherproof Audience Blinder with 2x 100W LED COB in warm white

Power consumption:	170W (WW)/180 W (RGBWW)
IP classification:	IP65
LED:	2 x COB (chip-on-board) warm white (WW) 2 x 100 W COB (chip-on-board) 4in1 QCL RGB/WW
Color temperature:	3100K (WW)
Flash rate:	1 - 25 Hz
Cooling:	Fan temperature controlled
Beam angle (1/2 peak):	28°
Beam angle (1/10 peak):	75°
Dimensions (WxDxH):	40.3 cm x 19.5 cm x 29.8 cm
Weight:	8 kg



Dazzling in their appearances, these are the new IP Audience Blinders from EUROLITE: Both lights are suitable for outdoor stages thanks to IP 65 outdoor housing. Each of the “eyes” is fired by a very effective 100 W COB LED. Both spotlights produce warm white light; in the WW variant this is the sole LED color, in the RGB+WW variant it is red, green, blue and warm white. Thus, a multitude of color tones can then be mixed, but also warm white light or mixed white light can be created.

The two LEDs can be controlled either together or individually. The blinders have an inherent beam angle of 28° in the 1/2 peak measurement and 75° in the 1/10 peak measurement. However, the scope of delivery also includes attachable frost filters that make the light of the individual eyes even wider and softer. The connections are realized via weatherproof T-Con power inputs and outputs as well as via weatherproof 3-pin XLR connectors.

ROBUST SPOTS FOR INDOORS AND OUTDOORS

The proven and robust LED spots called **Tourlight 200** by EUROLITE are now also available in a new version with a rechargeable battery, which gives you the freedom of wireless operation. These new models can operate up to 20 hours on battery power, making them perfect for use in locations without access to power sources or for mobile outdoor applications.

Like their wired colleagues, the AKKU Tourlight 200 LED spotlights also comply with protection class IP65 and are, thus, excellently protected against dust and water jets. Thus, they are equally suitable for indoor and outdoor use and defy even adverse weather conditions.

The connections, including T-Con for the power supply and IP-XLR for the DMX signal, are weatherproofed on all models in the Tourlight series. The new models also feature a wireless DMX receiver for the EUROLITE QuickDMX system to enable wireless control as well. The scope of delivery also includes a practical IR remote control for easy adjustment of the spotlights.

EXTERIOR

The rugged housing of all Tourlight 200 LED spotlights has been carefully designed to withstand the rigors of touring. A double bracket allows the spotlights to be used in either a hanging or standing position. A permanently attached eyelet provides additional security and protects the spotlights from falling and theft.

INNER VALUES

The inner values of the new models are just as impressive as those of their predecessors: a high-intensity COB LED in combination with a reflector provides a beautiful retro look and, at the same time, the advantages of state-of-the-art LED technology. With a beam angle of 30 degrees, the spotlights are suitable for a wide range of applications. They also operate without a fan, which ensures noise-free performance in particularly sensitive environments.

DIFFERENCES

The versions continue to differ in their light source. The IP Tourlight 200 WW (with or without battery) produces warm white light with a very high color rendering index (CRI), making it ideal for pure white architectural lighting or as a front light for concerts and performances. The RGB+WW version, on the other hand, offers different LED colors (red, green, blue and warm white), allowing for a variety of color mixes as well as warm white light of high quality.

Optional
barn doors
available



EUROLITE AKKU IP Tourlight 200 RGB+WW

Silent IP65 battery powered spotlight with RGB+WW color mixture, QuickDMX, CRI >90



EUROLITE AKKU IP Tourlight 200 WW

Silent IP65 battery powered spotlight with warm white 200W LED, QuickDMX, CRI >90



EUROLITE LED IP TOURLIGHT 200 RGB+WW
**NOW ALSO WITH A
RECHARGEABLE BATTERY!**



EUROLITE's Tourlights are perfect fixtures for colorful and white lighting indoors and outdoors, whether for events or architectural applications. With the new battery models you now have even more flexibility to implement your lighting ideas wirelessly and to illuminate outdoor areas effectively.



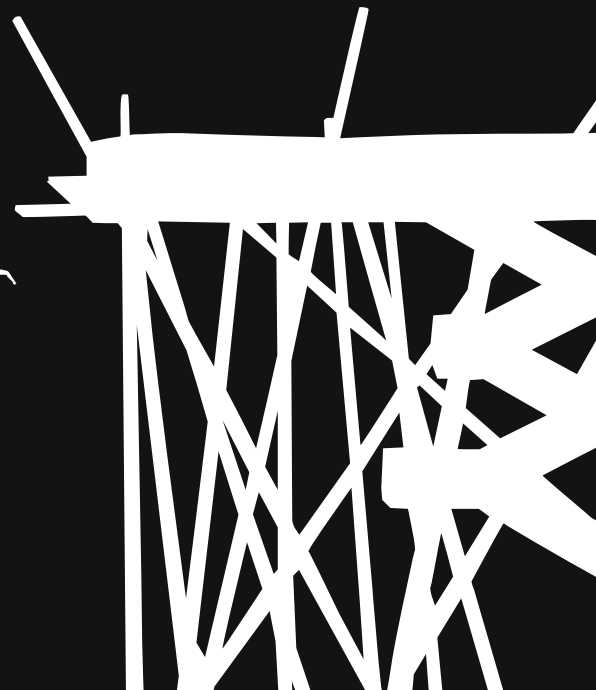
FUTURELIGHT IP PLH-420
Moving-Head Spot/Beam

Weatherproof Beam-/Spot
Moving-Head (IP65) with
420 W discharge lamp &
CRMX wireless receiver



CHILL & JUMP // LAKE ACHENSEE

In August 2023, the popular event "CHILL & JUMP" took place at Lake Achensee in Tyrol, where the best cliff divers and free runners in Europe met to dare spectacular jumps into Lake Achensee. To present the nocturnal show of the cliff divers in the best light, the company **Eventus Veranstaltungstechnik** based in Volders, managed by Manfred Zach, realized an impressive lighting system. Ten PLB-280 moving heads and twelve PLB-130 moving heads were used, as well as two weatherproof PLH-420 hybrid moving heads by FUTURELIGHT, four IP Multifloods and twelve AKKU LED spots by EUROLITE.



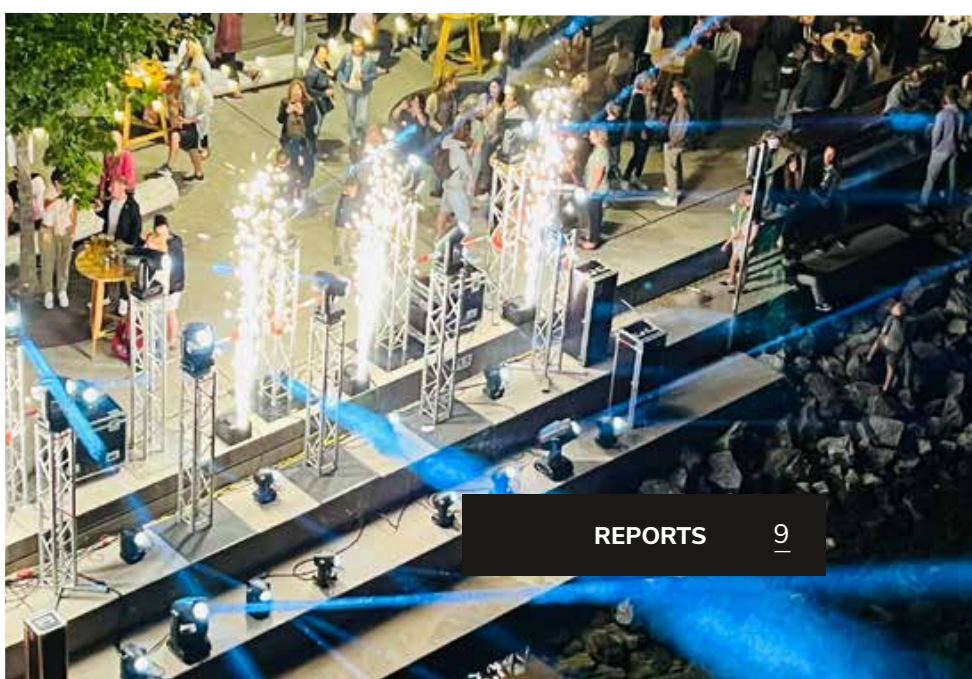
FUTURELIGHT IP PLB-420 Moving Head beam

Weatherproof beam moving-head (IP65) with 420 W discharge lamp & CRMX wireless receiver



EUROLITE Multiflood Pro IP SMD RGBW Strobe/Wash

Weatherproof (IP65) 3in1 LED effect light with RGBW color mixing



IP ATMO BLINDER 9



The LED IP Atmo Blinder 9 from EUROLITE is a cluster of 3 x 3 powerful WW/CW COB LEDs, each of which sits in a reflector. Each of the nine COB LEDs is surrounded by two RGB segments for atmospheric light: One RGB LED segment is directed towards the front, one towards the reflector. Each RGB segment can be controlled individually.

EYE-CATCHING EFFECT

Thanks to this innovative configuration, the Atmo Blinder 9 can be used in different ways: Of course, it meets the requirements of a classic, white-emitting blinder. But it can also be used as an eye-catching, colorful pixel effect in the stage background or as a soft, atmospheric light.

REFLECTOR

20 x 0,2 W SMD 3528 3in1 TCL RGB (homogenous color mix)

RING

20 x 0,2 W SMD 3528 3in1 TCL RGB (homogenous color mix)

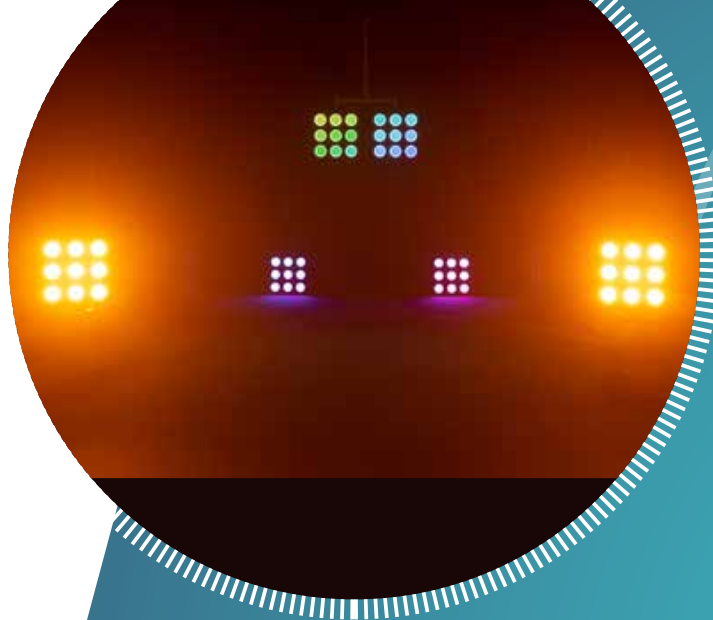
BLINDER

24 W COB (Chip-on-board) CW/WW (homogenous color mix)

SPECIFICATIONS

Power consumption:	330 W
Color temperature:	1800K - 6000K adjustable
DMX channels:	13; 18; 72; 85
Cooling:	Low-noise cooling fan
Beam angle:	20°
Dimensions (WxDxH):	37.7 cm x 20.5 cm x 38.4 cm
Weight:	14.00 kg





CONNECTIONS

Power IN/OUT via IP T-Con
2 x 3-pol XLR IP IN/OUT
2 x RJ-45 IP

CONTROL

Since each LED can be controlled individually, the Atmo Blinder 9 can be controlled via DMX as well as via ArtNet. For larger installations with pixel effects, the manufacturer recommends using MADRIX for control.

ROBUST & WEATHERPROOF

The IP Atmo Blinder 9 has a robust housing, which makes it suitable for touring as well as outdoor use. The Blinder is best suited for festival and concert stages.





IP ATMO BAR 10

Also weatherproof and with individually controllable LEDs: the EUROLITE LED IP ATMO Bar 10 features ten powerful white COB LEDs in its ten lenses, providing a homogeneous color mix of cool and warm white, and a total of 200 RGB LEDs that bathe the reflectors in colored light for atmospheric illumination.

The bar can be used as a classic, white-beam blinder, as well as a colorful pixel effect or soft backlight. The beam angle is 28°. It can be controlled flexibly via DMX, ArtNet or also via the Light Captain app. Thanks to its robust housing and IP65 protection class, the LED IP ATMO Bar 10 is suitable for outdoor use and for festival and concert stages. The possibility to operate up to four devices in a row opens up even more creative design possibilities.

SPECIFICATIONS

Power supply:	100-240 V AC, 50/60 Hz
Power consumption:	315 W
IP classification:	IP65
LED:	10 x 24 W COB CW/WW (homogenous color mix) 200 x 0.2 W SMD 3528 3in1 TCL RGB (homogenous color mix)
Color temperature:	1800K - 6000K adjustable
DMX channels:	10; 14; 20; 50; 59
DMX input:	3-pin XLR (M) mounting version IP
DMX output:	3-pin XLR (F) mounting version IP
Beam angle:	28°
Dimensions (LxDxH):	1.01 m x 12.5 cm x 24 cm
Weight:	12.60 kg



CONNECTIONS

Power IN/OUT via IP T-Con
2 x 3-pol XLR IP IN/OUT
2 x RJ-45 IP




MADRIX

LIGHTING CONTROL



Welcome
to the
amazing world
of creative
LED lighting



Made in Germany

www.madrix.com

The family of PLL fixtures by EUROLITE is growing steadily. These area lights are becoming increasingly popular, not only in photo and video studios but also on theater and event stages. Here we present the three new models:

The **PLL 384** is available in two different versions. Both versions are characterized by compact but robust housing, which persuades with professional equipment. Both versions have P-Con inputs and outputs for power connection and linking. Control is via DMX, the display or two rotary controls. The DMX connection is via 3-pin sockets and, for the RGB/WW device, 5-pin sockets as well. Both versions are also equipped with a special USB port for wireless DMX transmission. As a receiver, a USB stick for Eurolite's Quick DMX system or a USB stick from FUTURE-LIGHT based on the professional CRMX standard from Lumenradio can optionally be used.

The light from both variants achieves an extremely wide and soft beam angle of 120°. In addition, both devices are whisper-quiet, which enables their use even in noise-sensitive environments such as theaters.

The CW/WW version is based on 192 cold white and warm white LEDs each, which produce an exceptionally bright light in this

size class. The color temperature can be continuously adjusted from 2.700 to 5.700 Kelvin and offers an excellent color rendering index (CRI) of over 90 at every setting, enabling the spotlight to meet the requirements of even professional lighting tasks.

The RGB/WW variant is based on 80 LEDs each in red, green and blue and 144 LEDs in warm white. This not only enables countless color possibilities but also delivers outstanding white light quality. The color rendering index (CRI) here is 96. In terms of brightness, this spotlight is also surprising for its size. It is ideal for theaters, other stages, as well as video and photo studios that require both colored and white light.



CRI > 90

EUROLITE LED PLL-384 RGB/WW Panel

DMX-controlled surface light with RGB/WW color mixing, QuickDMX port, frost filter and barn doors

Family Addition: NEW SURFACE LIGHTS BY EUROLITE

The **PLL 576** differs from other PLL spotlights primarily in its housing shape. Its rather elongated light front also allows it to be used as a spotlight standing at an angle on the floor. Four rubber feet ensure a secure stand while the spotlight shines diagonally upwards. Of course, it can just as easily be mounted on a tripod or used as a hanging spotlight.

The light of the PLL 576 comes from a total of 576 high-intensity SMD LEDs, half of which are warm white and half cold white light sources. The color temperature can be continuously adjusted from 3.000 to 6.000 Kelvin, and the color rendering index (CRI) is above 90 over the entire range. Operation is also via DMX, the display or two rotary controls. The settings can also be transferred in master-slave mode via the menu or the rotary controls. This means that one PLL 576 can control other identical fixtures. Thanks to this function and its shape, the PLL 576 is ideal for trade fair stands, for example. By attaching several of these spotlights, the stand is brightly illuminated, and one spotlight can be used to control all the others to set the appropriate color temperature.

CRI > 90



EUROLITE LED PLL-576 CW/WW Panel

DMX-controlled surface light with 576 white LEDs, QuickDMX port, diffuser and barn doors



CRI > 90



EUROLITE LED PLL-384 CW/WW Panel

DMX-controlled surface light with 384 white LEDs, QuickDMX port, diffuser and barn doors

KESSELHAUS // AUGSBURG



EUROLITE TMH XB-280 Moving-Head-Beam

Bright, narrow beam with OSD 10 280W discharge lamp, color wheel, gobos and prisms





Kesselhaus Augsburg in a new light

The discotheque Kesselhaus Augsburg got a new look in early summer 2023: Among other things, the club invested in 34 EUROLITE TMH XB-280 Moving Head Beams, 34 EUROLITE IP PAR 3x8W QCL spots and mirror balls in different sizes. The elaborate installation was realized by the company JM Light&Sound based in Fischach.



EUROLITE Mirror Ball 30/40/50 cm

Safety mirror ball with a second eyelet



EUROLITE LED IP PAR 3x8W QCL Spot

Weatherproof (IP65) spotlight with 3 x 3in1 LED and RGBW color mixing



NEW



SHOWS

FOR THE EUROLITE EASY SHOW

Already 12 colors and 24 shows are fully pre-programmed

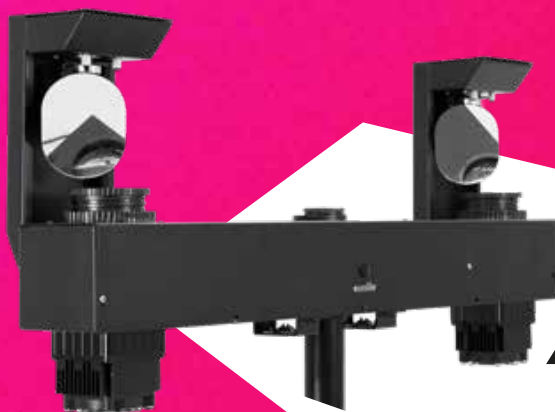


EUROLITE LED KLS SCAN NEXT FX



With the EUROLITE Easy Show, you can easily conjure up impressive light shows and moods without having to program yourself. This works for over 200 different spotlights from EUROLITE. From the list of these 200 fixtures, you can put together any combination of your choice.

Since the introduction of the Easy Show, however, many effect spotlights have been added to the EUROLITE range that were not shown in the previous shows. But there is now a solution for this: Two new shows, in which, in addition to classics, many new EUROLITE spotlights are included. For example, the **KLS Scan** and **KLS Scan Pro** and the **Twin Scan Bar**, but also the popular **TMH-90** series fixtures and the **-H240** can now be operated with the Easy Show. The shows can be downloaded free of charge from the homepage of the manufacturer EUROLITE (www.eurolite.de) and are very easy to upload via a USB stick.



EUROLITE LED TWIN SCAN BAR



EUROLITE LED TMH-H240

THINGS TO KNOW ABOUT LED LIGHT

For some, working with LED spotlights is now the most normal thing in the world, but others are just starting. That is why we are going to take a trip into the basics: What do you have to consider with LED spotlights? How do they behave differently than halogen lights? What should you look out for when buying one? We have put together some important facts about LED spotlights and how they differ from halogen light.

AN LED SPOTLIGHT IS SIGNIFICANTLY FASTER



When you dim a halogen spotlight, everything happens with some delay. The filaments need time to change their state. Thus, if you pull down the dimmer control for a halogen spotlight abruptly, the light does not go dark immediately. LED technology is much faster here. This can be an advantage, for example, for abrupt blackouts or even if you want to use the spotlight for stroboscopic applications. But it also has disadvantages. When dimming, the fader command is transmitted directly, and an unsteady hand can be seen directly in the light image. Also, very slow, automated fade times can look jerky with the LED because the 256 steps of the DMX channel are still too coarse for a clean dimming. Therefore, many LED fixtures have different dimmer settings that soften the dimming somewhat, bringing it closer to the dimming behavior of halogen. High-quality fixtures sometimes also offer the option of 16-bit dimming, which makes automated dimming runs much smoother and less jerky.

DIM TO WARM



The halogen lamp has a special effect when it is dimmed: The darker the light becomes, the warmer it seems. The color temperature decreases. The warm white light, thus, becomes more and more of an orange-gold light as it is dimmed. This effect can be used specifically to create very special lighting moods, for example when using blinders or ACL spotlights. Some LED spotlights, therefore, try to imitate this effect: this is called Dim-to-Warm. However, the effect can also be distracting. If, for example, halogen spotlights are used to illuminate a stage and less brightness is required, the light becomes increasingly orange as it is dimmed, and the color representation deteriorates. In this case, LED spotlights have an advantage because their color temperature is not lost with dimming.

AN LED CAN FLICKER

Since the incandescent lamp is so inert, it does not pose any danger to camera shots. This is different with the LED. An LED goes on and off all the time, too fast for our eye, but for cameras, which also have a frequency with which they record their images, this can cause a problem. The result is blinking shots or streaks running through the image. It usually gets even worse when the LED is then also dimmed or a color mix with dimmed colors comes into play. This is because the LED does not lower its brightness for dimming, but leads us around by the nose a bit. Most LED spotlights can only do one brightness, and if we want it to appear darker, we simply change the ratio of the on and off phases of the LED so that they are more off than on. This is interpreted by our eye as darker, and cameras then also display the light as darker, unless their frequency collides with the frequency of the spotlights. However, modern LED spotlights already have much higher frequencies than in the early days, and many spotlights even offer the option of adjusting the frequency to avoid any such problems with this.



THE INCANDESCENT LAMP IS THE IDEAL

... at least when it comes to displaying colors under warm white light. Incandescent light has shaped humans here, and anything that deviates from this light is perceived by us as unnatural. The same is true for cold white light, where natural light in the wild is considered the optimum. There is a value that expresses the naturalness of light, the so-called color rendering index (CRI). This has been given the optimum value of 100 for natural light, i.e., cold white light, and for incandescent light, i.e., warm white light. LEDs are still said to produce unnatural light and, for example, make people look greenish, grayish or simply unhealthy. This is due precisely to this CRI value, which was not particularly high in the early days of the LED and for many LED types true to this day. Also, the statement that you can create a white from the red, green and blue light of the LED is true, but again, the color rendering index is very poor, and the result is also not as good. Meanwhile, the LED can also produce white light. If a CRI value of over 90 is specified, it is called professional. This is achieved by many specialized LED spotlights today.



THE LED DOES NOT LIKE HEAT

While it is perfectly normal for the incandescent lamp to get very hot, the LED is very squeamish about it. Although it generates much less heat itself, it still needs to be cooled much better, as temperatures as low as 80 to 100 degrees can damage the LED. This cooling is often done by fans. And the smaller a package is and the higher the LED power, the more difficult it is to cool the LED effectively enough. As a result, especially with small and inexpensive spotlights, the fans are often clearly audible. Thus, if you want to switch to LED in noise-sensitive environments, you should find out beforehand whether the spotlight is fan-cooled and how loud this fan is. If you try this yourself, you should first run the spotlight at full power for a good 30 minutes, because the fans often only start up when a certain temperature is reached.



THE LED POWER SAYS NOTHING ABOUT YOUR BRIGHTNESS.



Many manufacturers specify an LED power for their spotlights. However, this power is not the actual power at which the spotlight is started up, but first only the LED type. An LED is always started with less power than specified to protect it and, thus, extend its service life. In addition, it can still make sense to install a 10 watt LED and start it with only 4 watts, because it is still brighter than a 5 watt LED that is started with 4 watts. In addition, the start-up LED power is often a variable process. For example, in a spotlight with RGBW color mixing, red alone can be driven with a maximum of 8 watts, but red and green together can only be driven with 6 watts per color. If blue is added, perhaps only at 5 watts per color, and if all 4 colors are used, then it may be only 4 watts per color. So it is often not possible to give an exact LED power. But all this does not matter much anyway, because LED power is not the same as light output. You are comparing apples to oranges here, and an 80 watt LED spotlight may produce significantly more light than another spotlight with 120 watts of LED power. Decisive for the light output is, on the one hand, the efficiency of the LED, and, on the other hand, factors such as beam angle and optical components.

AN LED LIVES FOREVER



In the early days of LEDs, they were often quoted as having a lifetime of 50.000, 100.000 or more hours. Even completely utopian data in the million range could be found. Nowadays, you can find such information only in household lamps or very dubious suppliers. The problem is that the service life of an LED depends on so many factors that it is simply not possible to make a serious statement. These include ambient temperature and humidity, but also whether a spotlight runs very often at full power or is only activated for short period of time or with reduced power. But even if an LED only lives 10.000-20.000 hours, that is still just under 4-8 years if it is used 8 hours a day. And very few show lights are used for 8 hours every day.

AN LED SPOTLIGHT REPLACES A HALOGEN SPOTLIGHT 1:1.



This is true if the LED spotlight in question offers the same functions as the halogen spotlight. The situation is different if the spotlight is primarily used for colored light: Here, an LED spotlight with color mixing replaces several color-filtered halogen spots.

Antari
FOG MACHINE

*Remember the moment,
Antari, the atmospheric creator*



ADD A LITTLE LIME TO THE MIX

LED IP PAR 7x10W RGBL Spot with Lime in Color Mixing

With the LED IP PAR 7x10W RGBL Spot, EUROLITE presents a powerful IP65 spotlight for outdoor use. The weatherproof spotlight is protection class IP65 and, thus, also equipped against water jets, for example a heavy thunderstorm rain. The special feature of this spotlight is the seven powerful 10 W 4in1 QCL RGBL LEDs with homogeneous color mixing, where the "L" stands for the color "Lime". Lime is a greenish yellow that is currently very trendy because it closes the optically critical gap between red and green. The result is much more natural colors in the orange and yellow range, but also in white shades.

Thanks to the homogeneous color mixing of the LEDs, the spotlight produces first-class, harmonious mixed colors. The spotlight has a relatively narrow beam angle of 10° out of the box. However, two diffuser discs are included in the scope of delivery, which widen the beam to 15° or 20°.

The device can be operated in various ways, for example in stand-alone mode, with sound control, via DMX or with the remote control included in the scope of delivery. The remote control not only allows the most important functions to be set, but it also contains three freely assignable buttons: Any color mixes that

the user requires more frequently can be assigned to these buttons, allowing them to be called up again and again very quickly. Five different dimming simulations are available for dimming. If the spotlight is controlled via DMX, you can tell it what to do in the event of a control signal failure. In the stand-alone programs, in addition to the usual colorful party programs, there are also 31 more atmospheric color programs that alternate between only one color and blackout or two colors. This can be done either abruptly or with smooth fading.

The construction of the LED IP PAR Spot is robust and optimized for outdoor use. The IP PAR 7x10W RGBL is fanless, operates completely silent. Power connections feature Seetronic T-Con input and output, whereas DMX uses 3-pin IP XLR connectors. The spotlight is equipped with a pressure equalization plug to prevent the formation of moisture inside. It also offers a double bracket that allows flexible mounting. The anti-theft KENSINGTON-LOCK system ensures that the fixture remains protected from unwanted access. The EUROLITE LED IP PAR 7x10W RGBL Spot is a robust and flexible spotlight for outdoor use, which scores with an impressive color mix and numerous application possibilities.



equipped with
SEETRONIC



NEW EDITION: FUTURELIGHT EYE 740 MK2

FUTURELIGHT now offers the popular **EYE-740 as MK2 version** in a new design. Even though the weight of the spotlight has been significantly reduced – **it now weighs only 7.5 kg** –, the brightness is even higher than in the original version. **Seven extremely bright 40 watt Osram LEDs with RGBW color mixing** are used as light sources. The **zoom range** is extremely large and extends from **1° to 48°**. This makes the moving head ideal for use both as a beam and as a surface light.

The Eye 740 MK2 is suitable for any type of stage: **Its whisper-quiet operation** makes it a popular spotlight even on theater stages and other noise-sensitive locations. Its precision, speed, excellent color mixing and very high brightness also make it an absolute all-rounder.

Even demanding users will be happy with the control. Dimmer and color brightness can be controlled in **high-resolution 16-bit mode**. The individual LEDs can be controlled individually or in two segments if desired, but pixel effects can also be created via **macros** and foreground and background colors can be set without pixel control. And, of course, the LED frequency as well as different dimmer modes can be set. A special **dim-to-warm function** even simulates the dimming of halogen lamps.

For the connections, FUTURELIGHT also relies on **Seetronic T-Con** for this model, which are becoming increasingly popular in the professional sector. The DMX connections are both 3-pin and 5-pin. In addition, the Eye 740 MK2 has a special USB socket for wireless DMX operation, for this there are USB DMX receivers either for the **EUROLITE QuickDMX system** or **FUTURELIGHT's WDR system**, which is based on Lumenradio CRMX, the new standard in professional event technology. It is also possible to retrofit an optionally available built-in board for wireless DMX (WDR) reception.



SPECIFICATIONS

Power supply:	100-240 V AC, 50/60 Hz
Power consumption:	210 W
Power output:	IP T-Con (F) mounting version
LED:	7 x 40 W 4in1 QCL RGBW (homogenous color mix)
Color temperature:	2800K - 10000K adjustable
Max. TILT movement:	210° Exact positioning (16 bit resolution) Auto position correction (feedback)
Max. PAN movement:	540° Exact positioning (16 bit resolution) Auto position correction (feedback)
Flash rate:	1 - 30 Hz
Equipment:	Zoom motor-driven
Beam angle:	1° - 48°
Beam angle (1/2 peak):	1 - 32°
Beam angle (1/10 peak):	5 - 48°
Dimensions: (WxDxH)	28.6 cm x 24.5 cm x 37.2 cm
Weight:	7.40 kg



OSRAM

lumenradio
Creating Connections for Stage Lighting

(optional)
WirelessDMX

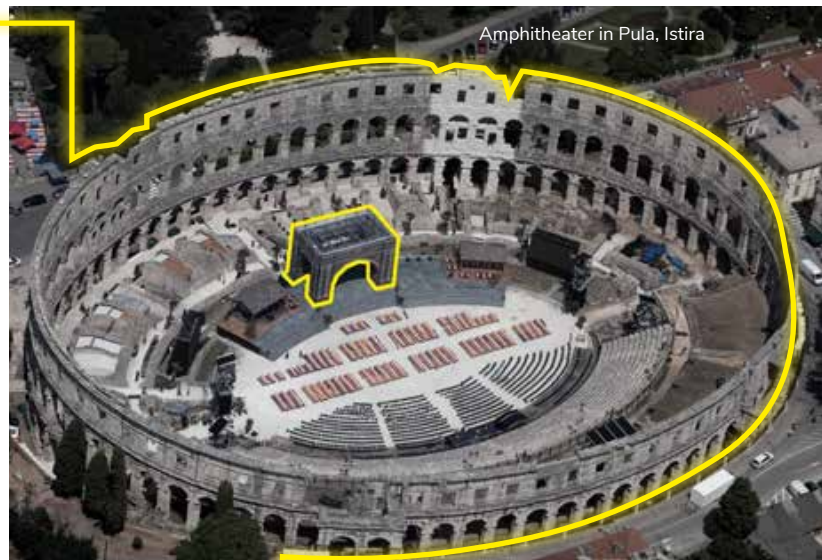
HOW THE LIGHT CAME ON STAGE

The evolution of theater and innovations in stage technology go hand in hand. The theater has served, and continues to serve, as the perfect place to try out new techniques – whether artistic or supporting technology. These innovations are first tested in the theater before being used on festival stages, in clubs or at private parties.

In this “MOVE” issue, we take a look at the impressive developments in lighting technology and its control over the centuries. These developments have made it an indispensable part of event technology. Today, it is impossible to imagine events without stage technology and it plays a crucial role in the design of events.

In the beginning, there was sunlight

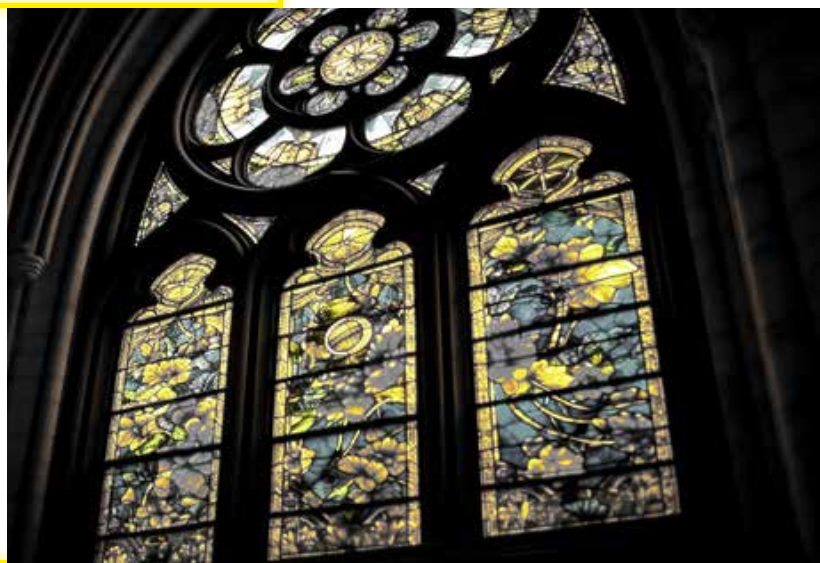
The roots of Western theater culture lay with the ancient Greeks. Not only did they create the literary foundations of theater, but they also laid the foundations for performance venues. Open-air theaters were built for the presentation of Greek tragedies, which allowed the audience to easily see what was happening on stage, even from a distance. Interestingly, the plays took place during the day and not in the dark. Daylight served as a source of illumination. The position of the sun and the angle at which it shone into the theater provided the appropriate lighting mood for the play. Thus, when locating and building an amphitheater, the course of the sun in the sky had to be taken into account.



Amphitheater in Pula, Istria

The window to the light

In the Middle Ages, theater performances also took place indoors. Churches in particular became venues for performances, which often had the goal of consolidating the secular power of the ecclesiastical authorities. In addition to torches and the play with shadows, the colored windows of a church also played an important role. The effect of light through these windows created various colored lighting moods inside the church, which created a special atmosphere in the nave and had an effect on the faithful.



The use of light in the Middle Ages was not only for illumination but also had symbolic meaning. For example, when candlelight shone, it symbolized purity and divinity. The extinguishing of light, on the other hand, stood for death and danger.



Photo: Globe Theatre, Tohma, CC BY-SA 4.0, via Wikimedia Commons (fig. 1).



Photo: Fire at Covent Garden Theatre, London, on March 5, 1856; Illustrated Times, March 15, 1856. Unsigned, Public domain, via Wikimedia Commons (fig. 2).

Playing with fire

In the 16th century, European culture was increasingly shaped by various influences, which also had a positive effect on the development of lighting control in the theater. With the advent of science, there were also innovations in the theater.

The theater as a place of performance changed. Instead of churches, plays were now performed in purpose-built theaters that adorned European cities. A well-known example is the Globe Theatre in London (Fig. 1), which opened in 1599 to stage William Shakespeare's famous plays. It was the most successful theater of its day. The productions were grandiose, but many props were not used. Something the Globe Theatre lacked was a roof over the interior. Therefore, in the 1600s, daylight had to be sufficient for the productions to create lighting moods – similar to the ancient open-air theaters.

About two centuries later, the lighting in the Vienna “Hofburg Theater” looked quite different. At that time, the theater stage was lit with candles, with 500 candles on the stage and 300 candles in the auditorium for each performance. The audience of that time was thrilled by this lighting. Today's audiences, however, would prob-

ably find fault with some of the lighting on the stage. Despite the many candles, the stage was not very bright and the light seemed static. At the same time, those responsible for the lighting experimented with reflectors, mirrors, colored glasses, and shadows to create specific lighting moods. However, there was also a danger that constantly accompanied the theater at that time. Because of the many candles, torches and oil lamps, it was not uncommon for a theater to catch fire (Fig2).

The introduction of ramp lighting brought little improvement to the lighting situation. The lighting, mostly consisting of oil lamps, was installed along the front edge of the stage, the so called ramp, and maintained, lit and cleaned by lighting technicians. The ramp light shone on the actors from the front and below, often leaving their faces in shadow and distorted into grimaces. The actors, therefore, literally fought for a place in the spotlight so that they could at least be recognized by the audience. However, this situation also brought with it another danger: The costumes were easily ignitable and could catch fire due to the spotlight.

HOW THE LIGHT CAME ON STAGE



Photo: The Salle Le Peletier during the cloister scene of Meyerbeer's opera "Robert, le diable". fig. 3



Photo: Kecko, CC BY 2.0, via Wikimedia Commons, Festival Hall, Bregenz

Lighting innovations

Industrialization not only brought economic, social and political changes to Europe, but it also had a rapid impact on the performing arts such as music, literature and art. Plays with socially critical content were increasingly performed on stage, and at the same time, the innovation of gas lighting made its way into European theaters.

The gas used for lighting was derived from oil gas or hard coal and became increasingly popular on European stages from 1810. As early as the 1820s, London's Drury Lane Theatre used footlights consisting of 80 gas-powered lamps. However, gas lighting had some limitations: Because the gas was burned with an open flame, the luminosity was limited, but it contributed noticeably to the heating of the theater. Attempts were made to make the light brighter by adding carbon particles, but this produced soot that affected the air quality in the theater. Depending on the quality of the gas, hydrogen sulfide was burned, making it smell like rotten eggs.

Despite some challenges, the use of gas lamps for lighting a theater prevailed. The ability to manually control the gas supply made it possible to specifically influence the lighting mood on stage. A notable example of the aesthetic use of this technology was the ghostly ballet of nuns in Giacomo Meyerbeer's opera "Robert, le Diable," which was presented in moonlight in 1831 (fig. 3). In the Paris Opera, before this scene, the footlights and the burning chandelier in the auditorium were dimmed by opera staff to create the desired atmosphere. Thus, with the help of gas lighting, the production was able to create a fascinating effect and transport the audience into a magical world. The possibi-

ties of gas lighting, thus, opened up new creative avenues for the theatrical performances of the time.

In the middle of the 19th century, the so-called "limelight" found its way into theaters. This lighting was incredibly bright. Unlike ramp lighting, "limelight" could be used further away from the stage, which encouraged the development of spotlights. These no longer had to be attached directly to the ramp but could be directed at the actors by a lighting technician like a follow spot.

This made it possible to use light or its absence in a targeted manner to create certain effects. The theater in Covent Garden, a London district, relied on this innovative technology as early as 1837, paving the way for modern lighting technology in theaters.

Under power

The patenting of the light bulb by the American Thomas Alva Edison in 1880 marked the end of gas lighting. With the introduction and expansion of electrification in cities, theaters were also gradually equipped with modern, electrically powered lighting. Electric floodlights were installed in theaters just a few years after the commercialization of the light bulb.

Electric lighting brought a revolution to the theater world, as it not only allowed for brighter lighting but also allowed for easier control of lighting mood and effects on stage. Theaters could now effortlessly switch between different

In modern times, the function of light in theaters changed. Although light, for example from candles or torches, had previously been used mostly as a prop or scenery element, actors, showmen and writers increasingly began to perceive light as creating illusion and enhancing mood. They used it in their plays to create an atmosphere and convey emotion. In Germany, Joseph Furttenbach (1591-1667) contributed to the further development of modern lighting control. For example, he used mirrors in the lighting to prevent the audience from being blinded.

light sources and intensities, resulting in stunning productions and captivating performances. This electric lighting laid the foundation for modern lighting technology, which is still used in theaters around the world today. These new electric spotlights allowed lighting technicians to selectively illuminate actors on stage with light. One innovative feature was the use of liquid resistors, which made it possible for the first time to regulate different levels of brightness by limiting the flow of current. This allowed lighting operators to target light according to stage directions, thus, supporting the atmosphere and mood of a play.

The "Residenztheater" in Munich was one of the first houses in Germany to be equipped with this electric lighting. This represented a significant advance for the theater industry, as productions could now be realized with precise and versatile lighting that had not been possible before. Electric lighting revolutionized the theater world and contributed significantly to the development of modern lighting technology in theaters.

Another significant innovation was the combination of several spotlights into a group and their connection to a mechanical interlocking system via wire ropes or load cables. With such an interlocking system, a single lighting operator could move or dim several spotlights. This innovative interlocking system acted as an interface between the ideas of people, such as the director, and the executing technology. Shortly thereafter, another change occurred: Variable resistors were replaced by variable transformers. Instead of regulating the power supply to limit the brightness of the lamps, the transformers now took over. This made lighting control even more efficient and precise.

These technical advances brought an enormous improvement in lighting design and control in theaters. Lighting technicians could now work much more flexibly and design productions with even greater precision and variety. The further development of interlocking systems and variable transformers played a major role in making modern lighting technology an indispensable art form in theaters.

In the course of the technical development of lighting control in theaters, the so-called Bordoni dimmer is worth mentioning. It was developed by the Italian Bordoni in 1929 and

represented a significant innovation. It made it possible to regulate the current draw using so-called control slides, which were connected to control levers by wire ropes. These levers could be moved individually or together with a gear roller. The position of the control slides determined the secondary voltage of the control transformer and thus the brightness of the respective spotlight.

A Bordoni dimmer had the impressive ability to control up to 64 circuits. The "Festspielhaus Bregenz" relied on such an interlocking to control the lighting in the theater until 1957. Smaller playhouses also continued to use this type of lighting control until the mid-1990s. The Bordoni dimmer was another step in the evolution of lighting technology and allowed for even more precise and versatile lighting design on stage. With this technology, lighting effects and moods could be even better controlled and used in theatrical performances. Over time, this mechanical lighting control has been replaced by an advanced method that uses analog data transmission. In this process, control information is sent as voltages between 0 and 10 volts to a dimmer. This then converts the control signal into a voltage – and the brightness of the spotlight is regulated accordingly.

This system of analog data transmission by using voltages brought some advantages. The length of the transmission line no longer mattered, and resistors were no longer needed for regulation. However, each spotlight to be controlled required its own line to be connected to the lighting control desk. This method allowed for more flexible and precise lighting control on stage. Lighting technicians could now control different spotlights individually and simultaneously to create impressive lighting effects and moods. The lighting control system greatly simplified the work of lighting technicians and helped lighting technology in theaters become more complex and capable.

HOW THE LIGHT CAME ON STAGE



Upheaval in lighting technology

In the second half of the 20th century, innovation in lighting technology took off and led to impressive results such as grandiose light shows with show lasers, LED projections and much more. A crucial role in this development was played by the Digital Multiplex (DMX) communication protocol. This protocol was standardized by the United States Institute for Theatre Technology (USITT) in 1986 and revised again in 1990.

The advantage of DMX as an industry standard was that comprehensive DMX networks could be set up in which, for example, a controller could communicate with various devices from different manufacturers without encountering major problems. The introduction of DMX as the main means of lighting control changed the way lighting was controlled in theaters, on large stages or at festivals.

In the beginning, the focus was mainly on dimming spotlights. However, with the development of moving lights or LEDs, the communication between the lighting control desk and the spotlights via DMX changed. It was now possible to change the direction of movement or color of a fixture with a simple push of a button. This eliminated the need for

many different cables or a large pool of fixtures. Lighting control became more efficient, more flexible and enabled impressive lighting effects that were previously unthinkable. The evolution of lighting technology has continued to gain momentum with the introduction of Ethernet-based protocols such as ArtNet. ArtNet enables advanced control of lighting controllers, fixtures and other devices through the use of Ethernet networks. Similar to DMX, ArtNet is an open protocol that allows communication and information exchange between products from different manufacturers. By using Ethernet, data can be transferred faster and more efficiently, resulting in improved and more precise lighting control.

With the introduction of ArtNet and other Ethernet-based protocols, lighting control has become even more flexible and powerful. Theaters, large stages and festivals now have even more options available to create stunning visual experiences and further unleash the creativity of lighting designers. Lighting technology has continuously evolved and will continue to offer innovative solutions to create fascinating lighting productions.

AI-based lighting control – A glimpse into the future?

Event technology, especially lighting control, is once again facing a significant upheaval due to the possible arrival of artificial intelligence (AI). AI will likely revolutionize the way light is "made" and controlled in the future, opening up new avenues and opportunities for the industry.

An AI-based lighting control system could assist a lighting designer by suggesting a light show tailored to the script of a stage play, for example. With the help of AI algorithms that can develop a better understanding of the emotions and moods in the play, it would be possible to create precisely fitting lighting scenes for specific scenes.

AI can expand the creative potential of lighting designers and help them create even more impressive and impactful lighting productions. By better understanding the emotional aspects of a play or event, AI can provide lighting effects and moods that further immerse the audience in the story and enhance the overall production.

The future of AI-based lighting control promises exciting possibilities to fundamentally change event technology. One exciting prospect is a real-time response to what is happening on stage. When delays or spontaneous changes occur in the stage flow, an AI-based program could respond instantly and automatically, without the need for manual operator intervention. This improves the flexibility and adaptability of lighting control and can ensure seamless transitions in lighting staging.

In addition, AI could observe and analyze audience reactions to different lighting scenes. By better understanding the audience's reactions to light, the lighting could be tailored to the audience to optimize their experience and perception of a play, concert or other event. This would help to further immerse the audience in the production and provide a more immersive and engaging experience.

AI-based lighting control has the potential to not only make the job of lighting designers easier but also to enhance the overall live performance and make the artistic vision even more expressive. Technological advances in this area will undoubtedly push the boundaries of what is possible in event technology, taking us on a fascinating journey into the future of lighting design.



In addition, AI-based lighting control can bring significant improvements in terms of sustainability. By adapting the light show to on-site conditions in real time, such as the time of day, the occupancy of the audience area or the influx of natural light, energy consumption can be optimized and energy requirements reduced. This leads not only to cost savings but also to a more environmentally friendly use of resources.

Additionally, AI could monitor maintenance needs and the need for maintenance work, which also contributes to cost savings and increases operational reliability. By performing maintenance work in a targeted and timely manner, the service life of technical equipment can be extended.

However, it remains to be said that despite technological advances, one thing remains irreplaceable: the creativity and intuition of an experienced lighting designer and operator. AI can provide valuable support and facilitate technical tasks, but it cannot replace the artistic vision and design power of a human expert. The unique creative signature of a lighting designer plays a major role in making a theatrical production or event a special and unique experience.

Overall, the future of lighting control lies in a successful combination of artificial intelligence and human creativity to create stunning, sustainable and captivating productions. The right balance between technology and art will pave the way for an exciting and promising future in event technology.



A HAUNTING FRONT YARD

Creative ideas for Halloween decoration

Why do we decorate our front yard with carved pumpkins and creepy monsters on Halloween? According to old legends, they have the task of keeping evil spirits away from the house and its inhabitants, because, on the evening before All Saints' Day, the barrier between this world and the next is supposed to be surmountable for the dead. Nowadays, however, they are also a sign for all Halloween enthusiasts that the inhabitants of this house are prepared for visitors and have a sweet little something ready for dressed-up children.



EUROPALMS Halloween Witch, white

UV light can make hidden patterns and elements visible. For example, the whitish robes of ghosts or witches become shimmering veils that seem to float in the dark. This phenomenon creates a kind of magic that should not be missing from any Halloween decoration.



EUROLITE LED SLS-12 UV Floor



EUROPALMS Halloween Pumpkin, 25cm

The scarier the carving looks, the better.

HALLOWEEN



EUROPALMS Silhouette Metal
Ghost Tree, 150cm

The front yard/entrance area is the first thing visitors see before they enter a property or house, making it the perfect stage for an impressive Halloween decoration. By combining decorative elements with lighting and stage effects, you can create a complete-

ly spooky backdrop that can be perfectly staged, especially at dusk or in the dark. We have collected some tips for the perfect Halloween decoration in the front yard. Here we go:

EUROPALMS Halloween Figure
Witch Hunchback, animated, 145cm

The hunchbacked witch is already green with rage and ready to bewitch your guests.

SPOOKY GOING-ONS IN FRONT OF THE HOUSE

With the metal silhouettes from EUROPALMS, you can create a perfect base of Halloween decoration. They are processed in very high quality and the included earth spikes for assembly are made of metal and can be screwed on in a few simple steps. The selection of motifs ranges from small ghosts to witches with caldrons to zombies, which with their implied tattered clothes give the impression of having just risen from the grave and staggering toward their victims.



EUROPALMS Metal witch with spoon



EUROPALMS Metal witch pot



EUROPALMS Silhouette metal witch

Witches' round dance in the garden: Themed designs can also be perfectly implemented with the metal silhouettes from EUROPALMS – such as the witches' dance around the magic cesspool.

EUROLITE LED Outdoor Spot 15W RGBW with Stake

At dusk, silhouettes look even more eerie when illuminated. The weatherproof outdoor spots by EUROLITE are perfect for this purpose. Using the included stake, the spots can be easily mounted.



EUROPALMS lantern

As an ideal complement, there are matching metal lanterns with Halloween motifs, which can either light the way for the witches (hooks for attachment are already included with two witches) or be placed in the entrance area on the steps.



Incorporated holder for a tea light



Silhouette made of Styrofoam

The "lightweights" made of Styrofoam are suitable not only as display stands – they also fit perfectly as hanging elements in the decoration.



*For example suitable for
EUROLITE LED TMH-S60
Moving Head Spot

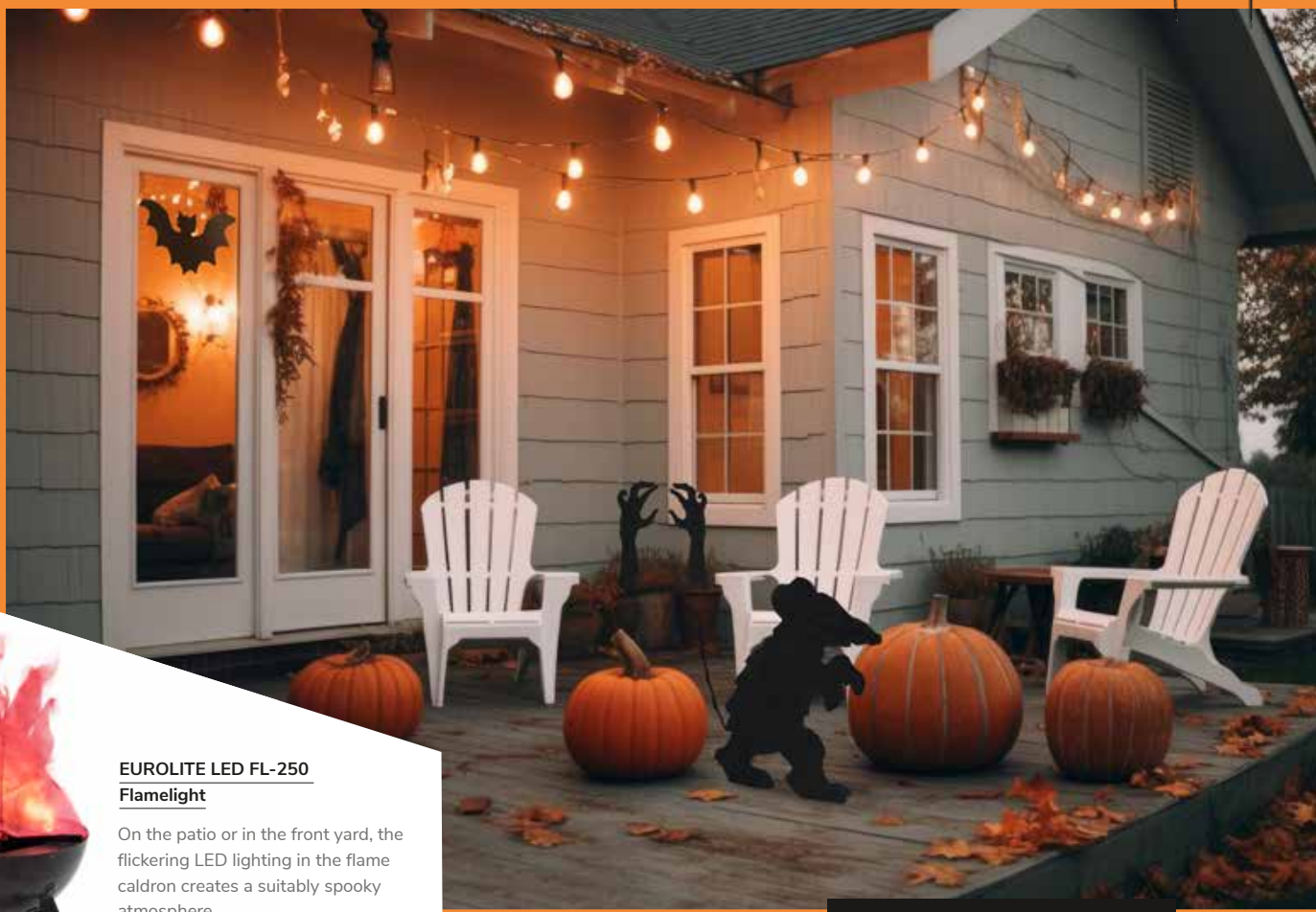


EUROLITE Gobo Set B*

With the Halloween gobo motifs for moving heads you can project effective images.

EUROPALMS Silhouette Metal Zombie

The morbid and eerie nature of zombies creates immediate goosebumps and fits perfectly as a Halloween decoration. With a height of approx. 135 cm, the zombies from EUROPALMS teach you to be afraid.



EUROLITE LED FL-250 Flamelight

On the patio or in the front yard, the flickering LED lighting in the flame caldron creates a suitably spooky atmosphere.

EERIE CEMETERY IN THE GARDEN

Skeletal creatures, mummies and zombies come to life as mysterious clouds of mist rise between ancient tombstones. Many captivating horror movies begin with these scenes, sending chills down the audience's spine. Even your garden can be transformed into the scene of a spooky Halloween spectacle with the appropriate Halloween decorations. There are no limits to your imagination and creativity.

Zombies: They come from the forgotten tombs.



EUROPALMS Halloween Groundbreaker
Skeleton Monster, 45cm



EUROPALMS Halloween Zombie,
animated, 43cm



EUROPALMS Halloween Figure Death
Man, 68cm



EUROPALMS Halloween
Skeleton

Draped with spider webs and autumnal foliage – it gives the impression that the skeleton is just rising from the grave.

EUROPALMS
Halloween
pumpkin
illuminated





**EUROLITE Dynamic Fog
600 Fog Machine**

The use of fog additionally creates a mysterious and eerie atmosphere.



EUROPALMS Halloween Tombstone Set

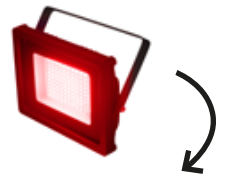
Outdoors, the tombstones can be easily arranged in lawns using spikes to form a cemetery. This can then form the basis of your spooky creepy scenery with spiders, spider webs, pumpkins and many other creepy fellows.



EUROPALMS Halloween Skeleton, multipart

EUROLITE LED IP FL-50 SMD

Eerie light and shadow effects enhance the creepy factor.



Mummies and undead rise from their coffins to ambush their victims.

**EUROPALMS Halloween
Ghost Coffin**



**EUROPALMS Halloween Figure Mummy,
animated, 160cm**



**EUROPALMS
Halloween spider
web**



**EUROPALMS
Halloween Skull**

SPOT ON, HARR!



Frankfurt, Jahrhunderthalle

INTERVIEW

Kristof SchlöBer,
Lighting designer

**“Light is and always
will be a supporting
element of a show.”**

Hello Kristof, thank you for taking the time to talk to us. Can you introduce yourself to our readers?

Hello! My name is Kristof SchlöBer, born in 1994, and I currently live near Cologne. I graduated from the University of Applied Sciences in Düsseldorf with a bachelor's degree in media technology and finished my master's degree in media informatics during Covid. Currently, I am on the road as a lighting designer in Germany, Austria and Switzerland, working on musicals, TV productions, conventions and bands. Additionally, I produce documentaries and music videos.

You write on your homepage that a friend invited you to visit a Storm Seeker concert. At the time, you were not sure if you liked the music. Now you were part of the band's tour as a lighting designer. What has changed? How did it come about?

When I listened to the first concert of Storm Seeker in a club in Oberhausen, I just thought to myself – “Oh dear! – What have you gotten yourself into”. At the time, I went home with a queasy feeling, not knowing where the road would lead me. However, while pre-programming our show, I learned to appreciate the music. Similar to a musical, many moments can be picked up and accentuated by the lighting. The music can completely change from one beat to the next, giving me many design options as a lighting designer.

How would you describe your job as a lighting designer? Do you differ from other lighting designers in the industry in the way you work?

That is a difficult question. I do not think there is a classic way of working as a lighting designer. My way of programming is very much influenced by my work

Photos: Lara Trenz



Leipzig, Haus Auensee

EUROLITE LED Strobe
SMD PRO 864 DMX RGB
 3in1 LED effect light with
 RGB color mixing



in TV and musicals. However, I am also a child of the “busking” school and like to have faders and buttons “on hand” that are operated live away from the timecoded show. I like still images that open with a slow movement. Moving lights do not necessarily always have to circle or make a tilt motion. In the Storm Seeker show, there are many moments where fans slowly pull up positions over 30 seconds. This combined with slight dimmer effects is an essential part of the tour design for me. The second important component in Metal are the kicks. To me, a kick sensibly represents a change in intensity – and sometimes color shift. You could colloquially also say highlight to it. These not only have to be on point but should also differ in brightness. During the show, I used a total of sixteen kicks. I distinguish between conventional blinder kicks, which are much slower due to their response behavior, and LED kicks. On the “Monolinc. Ravenblack” tour, we were severely limited in the number of effect lamps. Therefore, the GLP X5 Wash moving lights were used in the front light truss as both spotlights and effect lights. This allowed me to build very large images that were only visible from row 15 but included the front rows of the audience.

How did you approach the planning of the lighting design for this tour? On what did you place particular emphasis in in the conception of the stage lighting?

On a support tour, you do not have a say in the lighting design. Only by bringing our own floor set could we bring in our detail for our show. However, the premise applied here as well: Easy and fast set-up as well as dismantling! The change-over times between the bands were only ten minutes. Therefore, I quickly decided to build almost all the spotlights on four tripods. They should pick up the mast optics of a ship by their different heights. In addition, a blinder was placed centrally in front of the drum set as a direct backlight for Timo, our lead singer, as well as an LED floodlight behind the drum set as lighting for the backdrop. The staggered heights created an appealing image that made the 3.5-meter-deep stage look bigger than it was. To allow for quick setup and dismantling, I built a 16A DMX and power distribution rack. With this, we supplied not only our sound rack but also all the lights using hybrid cables from a DMX/powercon splitter. For the data feed, we used ArtNet, which we placed in the IP address space of the Mono Inc. production.



Leipzig, Haus Auensee



Cologne, Carlswerk Victoria



Frankfurt, Jahrhunderthalle

With your lighting design, you contribute significantly to the atmosphere of the concert. Which colors, moods and effects did you use and why?

Absolutely! Light is and remains a supporting element of a show. In terms of color, we have positioned the current tour in the design language of the current album "Nautic Force". From cyan to sea green, everything is there. This is combined with the accent colors red, orange, warm white and cold white.

For the effects, I used a lot of what I already knew, such as flyouts, circle, tilt, dim chases, etc. However, the new step engine of the Grand MA3 also made it possible for me to create new effects on top of that. A color gradient that "snaps" to white in the last step was simply not feasible in the MA2. I also liked the Pixel Engine of the EUROLITE LED Strobe SMD Pro 864 and used it playfully. It allowed me to put textures into the very angular look of the LED floodlight in standing scenes. For me, the biggest challenge remains to build up a show dramatically. I do not mean to go "full throttle" with every song, but also to create quiet moments, maybe even very small ones, which then open up and support the mood by the music. Not in every song section something must necessarily move. Sometimes it is enough to stop all effects and just build up a little tension with light textures for what is to come. Sometimes a well-placed blackout also makes sense. Also, the color development of the setlist is always a big concern for me. There are no big jumps. One of my favorite moments is during the song "The Longing". At the beginning, Fabi plays our Hurdy Gurdy in Black and stands in a red backlight. On a single beat, all the blinders go on 100% to be replaced by a strobe on the LED floodlights. Afterwards, the scene sinks back into a red backlight.

What kind of controls did you use?

On the Storm Seeker support tour, I used a GrandMA3 ComandWing. For pre-programming, I used the "Depence3" software from Synchronorm. The complete show is pre-pro-



Stuttgart, Porsche Arena



Cologne, Carlswerk Victoria

grammed to timecode. Single hits and executors as well as the white light are controlled by hand.

The keywords are timing and precision: How did you master this challenge during the shows? What did you attach importance to here?

In Metal, precise timing is enormously important. A musical tee has to come right on time, just like breaks or double bass entries. That is why we decided very early on to set up the entire show as a timecode project. The newly structured graphical GrandMA3 timecode environment made working here much easier compared to the previous software. Next to a cue list, which contains the basic structure of the song, effects and kicks are triggered directly by executors. This opens up good change management in the changing locations. In total, we have an average of a hundred lighting cues per song. We would never have been able to realize this level of detail with a manually pressed show.

During the programming process, Marius Bornfleth, the drummer and producer of Storm Seeker, placed a lot of emphasis on accurate timing. It should not just be a "blink" but it should start and stop at the right beat. Thanks to the new "Measure Attribute" in the GrandMA3 effects engine, we were able to time this precisely for each song. I also attached great importance to giving the audience moments of calm during the set to match the setlist. If three songs caught fire, so to speak, the following ones were laid out more subtly and quietly, often without a floor set, so that the eye had time to relax.

You are also part of Klanggebilde. Together with Nils Steinkamp you offer sound, planning, lighting and editing for events etc. What exactly do you do and how do the different "structures" fit together?

That is a good question, to which there is currently no correct answer. Klanggebilde has set itself the task of eliminating the strict separation of trades in productions. Rather, we are interested in working in a solution-oriented and efficient manner

– across all trades. We currently advise our customers on the design of their work processes and optimize them in collaboration with them, help with the technical planning and realization of events, produce and promote art and music projects, and create documentaries and music videos. It is a structure that grows with every project.

What are your next projects?

The musical season continues in autumn, which brings with it several dates. There are also two larger TV and conference orders coming up. We will not be playing any shows with Storm Seeker in the fall/winter, but preparations for the "Nautic Force" headline tour in March will begin in December.

Kristof, thank you very much for the interview! We wish you all the best for the future.

Apprenticeships in the event industry:

stage designer/stage painter and sculptor

Without this occupational group, going to the theater would only be half as impressive: Stage designers, stage painters and stage sculptors ensure that the scenery of a play transports the audience directly into the action being portrayed. In addition to skill and talent, this profession usually requires at least three years of training. Let's take a closer look at the profession.

The apprenticeship transforming you into a stage designer is referred to as "stage painter" and "sculptor." The training is dual;

this means that there is a school-based part and a practical part. The

theory is taught at a vocational school, while a training company (usually a theater, studio or film studio)

takes care of the practice. In the third year of training, students specialize in a particular field: painting or sculpture. Stage painters focus their work on color design, painting scenery and drawing scenes and characters, while stage sculptors are responsible for the 3D landscape on stage: They build and design scenery from wood, plastic, fabric and other materials.

The exam at the end of train-

ing as a stage painter and sculptor is standardized and administered by the Chamber of Industry and Commerce. It requires not only proof of the theoretical knowledge acquired but also a successful practical project. After graduating from the training, you can work in theater workshops, for example. As a rule, there is a stage designer who, as the designer of the stage set, so to speak, dictates what the stage painters and sculptors implement. Often, however, the work goes hand in hand. Those who have gained enough professional experience and have acquired the conceptual thinking of a set designer can then work as such.

But there are other ways to become a stage designer: For example, you can also become a stage designer with a completed, professionally appropriate

degree at an art or theater academy and a traineeship at the theater. What is important here is not only a basic understanding of

the effects of colors, shapes, light and shadow, but also the ability to think three-dimensionally and to use both imagination and manual dexterity.



Dual education



Specialization sculpture



Set designers are responsible for the entire backdrop of a show, film or theatrical performance. They work closely with other trades in the theater or studio, such as lighting designers, directors, costume designers and actors. It is their job to use a script to come up with ideas and suggestions for the set

or scenery and to implement them after consulting with the other trades. In addition to text comprehension, imagination, three-dimensional thinking and an understanding of the processes in theater and film, set designers must, therefore, also have good communication and organizational skills.

**cooperation with
other trades**



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SELF-EXPERIMENT

LIGHTING DESIGN WITH THE HELP OF AI

Artificial intelligence is a hot topic everywhere at the moment. Is an AI able to develop a light show? Lighting designer and product specialist Andi Zöllner put it to the test asking ChatGPT for help. Here, he tells us how his self-experiment went:

My first question to OpenAI: "Do you know anything about lighting design?" The artificial intelligence answers me confidently: "Yes, I have basic knowledge of lighting design. How can I be of help to you?" I would like to get started right away and ask for suitable colors for a rock love song. And indeed, the AI first suggests the color red as an association for love. I fully agree with that. The other suggestions with black and dark gray, which do not even exist as light colors, to emphasize the rock character and orange or violet to highlight an energetic atmosphere, however, do not convince me as much. I try to be more specific and ask ChatGPT how it would illuminate the song.

The answer:

"To light up a rock song about love, different lighting effects could be used to enhance the mood and character of the song. Here are some ideas:

1. Spotlights: Use spotlights to focus on the singer or band members and highlight their energy and passion.
 2. Color changes: Use dynamic lighting effects to emphasize the different moods in the song. For example, bold colors like red and orange could be used during the energetic passages, while softer colors like blue or purple could be used during the quieter moments.
 3. Strobe lights: To emphasize the rocking character of the song, strobe lights could be used to create fast, pulsating effects.
 4. Stage fog: Use stage fog to create a mysterious and atmospheric mood that matches the rocking ambiance of the song.
 5. Moving light: Use moving light effects like moving heads or moving lights to support the dynamics of the song and create a visual variety.
- Of course, the exact lighting will depend on factors such as stage size, budget, and desired atmosphere. It is always advisable to work with a professional lighting designer to create the best possible lighting for the song."

This is a bit too general for me. Therefore, I ask for a concrete suggestion.

This question is answered several times with "something went wrong". Questions about possible headlight positions differently phrased also lead to this error message. The AI seems to be overwhelmed by this. Thus, I return to a more simply put question and ask for suitable colors for various themes. Here, too, I often get the answer "Something went wrong", but also a detailed answer with color suggestions as well as suitable explanations why this is so. Here, the AI can be of help.

Next, I asked specifically for well-known pieces of music history and matching light colors. The interesting thing for me here was that I did identical experiments a few weeks apart. For example, the first time the AI suggested very inappropriate colors for "Yellow Submarine" by the Beatles, but a few weeks later the answer was: "Since "Yellow Submarine" is a song about a yellow submarine, it would be appropriate to light the song in different shades of yellow. Yellow can convey a happy and lively mood that fits well with the atmosphere of the song. Additionally, other colors could be used to represent the underwater world, such as blue for the water or green for algae



Andi Zöllner,
lighting designer and product specialist

“The possibilities are growing all the time.”

and plants. Ultimately, however, the choice of lighting colors depends on individual preferences and creative interpretations. It is important to create an atmosphere that reflects the mood of the song and transports the audience into the magical world of the yellow submarine.” My basic idea here would have been no different. Furthermore, the results were spot-on for “Lady in Red” and “Purple Rain”.

Since I had to provide lighting design for a musical gala myself, I asked AI to help me with the lighting design here as well. The first thing to do was research the individual pieces which were to be performed. Here, artificial intelligence was supportive in many aspects. Within a very short time, I received information about the content of the musicals and the individual pieces. The people, places and moods involved could also be determined quickly and in detail. Previously, this was not as simple. At least in most cases. However, the artificial intelligence did not know some plays and musicals and claimed, for ex-

ample, that the piece “Wer kann schon ohne Liebe sein” (“Who can be without love”) is by Udo Jürgens, which is not wrong to begin with. When asked if there is not also a piece with this title in a musical, the AI answers that this is not the case. Only if you specifically ask whether the piece may be part of the musical “The Three Musketeers”, the AI recognizes its mistake and provides background information. However, if you do not ask persistently, you get the wrong information.

But is it possible for the AI now to suggest matching colors to these pieces? Again, I made the same requests a few weeks apart and the difference in results was huge. While the responses were mostly very similar and superficial the first time, they improved greatly within a few weeks. There were often multiple suggestions available, including specific explanations as to why certain colors were suggested. With some pieces, however, the already familiar response “something went wrong” came up again.

Overall, it can be said that AI can also be a great help in the field of lighting design and the possibilities are constantly growing. Currently, artificial intelligence offers great help in research and provides good clues when asked about possible colors. However, one should still critically question whether the information is correct. At least ChatGPT cannot yet provide concrete lighting positions and concepts, but the learning curve of artificial intelligence is frighteningly steep. This can be seen in other areas, such as artificial image creation, where an incredible amount is already possible.

Andi conducted this self-experiment in May 2023.

Powerful wind for impressive effects

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AF-180 Stage Fan DMX

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Creating Connectivity for a Better Tomorrow

New by EUROLITE: The AF-180 is a powerful, DMX-controllable wind machine that creates impressive effects. This wind machine is ideal for use with fog, snow and bubble machines to make the created effects even more intense and vivid.

The output volume of the AF-180 is adjustable, to specifically direct the airflow. In addition, the air outlet angle of wind machine can be changed to direct the airflow specifically.

The EUROLITE AF-180 is flexible in its control: It can be operated in stand-alone mode or controlled via wired DMX,

QuickDMX via USB, W-DMX by Wireless Solution or CRMX by LumenRadio via USB. This allows the wind machine to fit seamlessly into existing lighting and effects control systems for easy integration into various stage and event setups.

Mounting the AF-180 is quick and easy thanks to the Omega brackets with Quick-Lock connectors, which also allow for quick truss mounting. The sturdy metal housing ensures a robust and reliable construction that meets the high demands of professional use. A sturdy carrying handle facilitates transport and allows for easy setup at various locations.

OVERVIEW OF DIFFERENT TYPES OF DJS.



Despite the ubiquity of streaming services, the DJ still holds a high profile at private events, bars, festivals and clubs worldwide. But not all DJs are the same: Different types of events call for different DJs who specialize in a particular field of application. These are mainly characterized by their music genre, personality, experience and of course their equipment.

Not every mobile DJ can make a full club shake. On the other hand, not

every club DJ can accompany a wedding or company party and entertain the party guests well. As different as the areas of application of the DJs are, as different are their demands on the technology.

Therefore, we introduce you to different types of DJs and show you what you as a technician should pay attention to when selecting and positioning the DJ equipment and how you can best coordinate with the DJ.



MOBILE DJ / WEDDING DJ

WHO?

Mobile DJs are the perfect companions for a birthday party, company party or a wedding. Their musical repertoire is wide. At a wedding, it is important to persuade guests of all ages to celebrate – with the right kind of music.

HOW?

A mobile DJ usually brings his sound and lighting equipment to the location and is often the musical companion for the most important day in the life of the bride and groom. To save storage costs and setup time of the required equipment, some mobile DJs also enter into permanent cooperation with event and rental companies. The entire technology is then set up on-site by the responsible event technician. The DJ can, thus, concentrate only on the musical part of the event.

WHAT?

On the sound side, it is important to clarify the size of the location and the number of guests in advance with the organizer or the client, because this determines the size and performance of the sound system used.

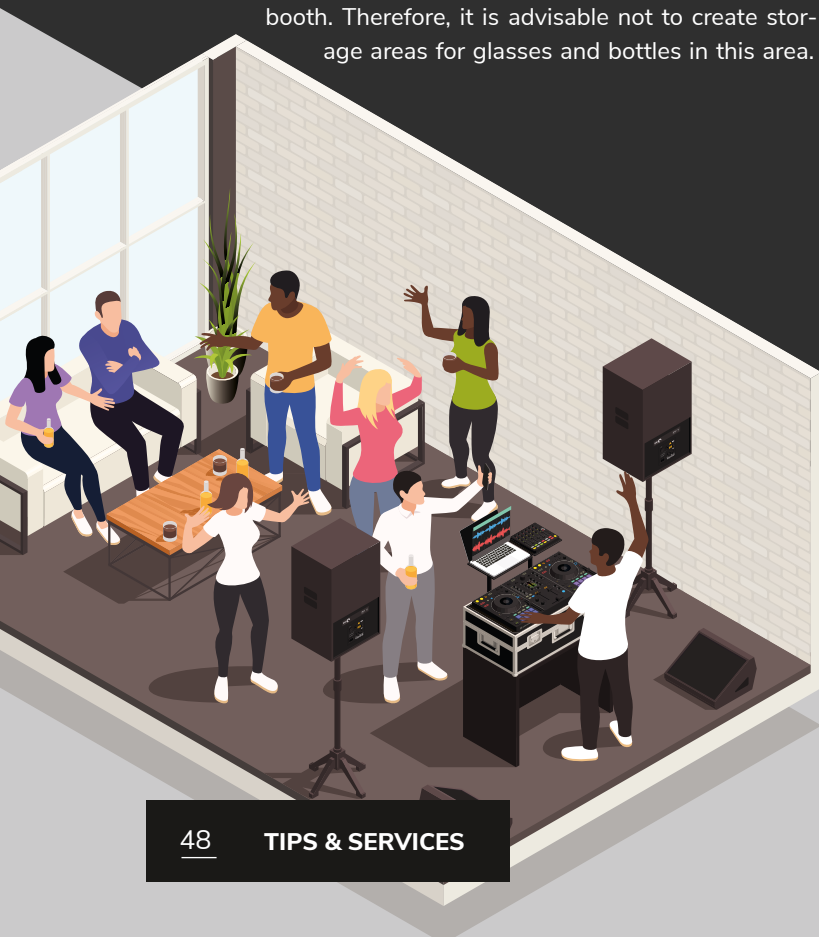
The DJ booth should have the right height: A height of about 1 meter is a good guideline here. In addition, there should be enough space on it so that the DJ can place his brought technology and feel comfortable at his workplace. At private events, guests often have very easy access to the DJ booth. Therefore, it is advisable not to create storage areas for glasses and bottles in this area.

Most mobile DJs bring their DJ controller to the gig. But here again, the exception proves the rule: It can also happen that the DJ brings two CD players or orders them from you because he appears at the location with several CD cases. Another DJ might play classic vinyl and need two direct-drive turntables. Also, the choice of the DJ mixer is not to be neglected: Here, most DJs also have their own preferences. This is comparable to a guitarist who always performs with his favorite guitar. An active monitor box, which is positioned at the DJ booth, makes it easier for the DJ to mix and listen to his set.

For the lighting technology, a simple lighting control system should be used, which the DJ can operate without much prior knowledge. At best, common lighting programs and lighting moods are already programmed, which can be easily called up. Another solution is to run the light set via a sound-to-light solution. Some DJs use light controllers that are coupled with their DJ software. Here, the technician should ask in advance what precautions need to be taken on the light setup.

GOOD TO KNOW:

The subject of fog is a difficult one, especially in public buildings, foyers, or party locations. You should therefore contact the janitor or the location beforehand and clarify whether the use of fog machines is permitted. The booked DJ will certainly be very grateful if he is informed in advance about the technical equipment and possible special features of the equipment and the location.



OMNITRONIC Large Mobile DJ Stand incl. Cover

Portable XL DJ table (1.8 m) with cover for mobile applications.



CLUB DJ

WHO?

The most common genres in the club are electronic and urban. Also, theme parties like a “Ballermann party,” a “90s” party, etc., take place regularly in some clubs. Therefore, you will also meet a wide variety of DJs.

HOW?

In a club, a distinction is made between a resident DJ and a booking DJ. The resident DJ plays regularly in the same club. Therefore, he knows the regular audience and their musical preferences very well. Often, he acts as a support for the booking DJ. The booking DJ, as the name suggests, usually comes from a booking agency, or is arranged and booked through it. He is responsible for the prime time of the evening and usually has a higher profile than the resident DJ. The booking DJ is the figurehead and the face of the evening. Usually, his set takes place around 00:30 a.m. to 3:30 a.m. At techno events, the main act can also start his set at 4 a.m.

In this case, possible changeover times for the technology must also be taken into account. Of course, without disturbing the music or the flow in the club too much.

WHAT?

In most cases, a club DJ uses the club’s technology. He might bring his effect unit or his DJ mixer. The required equipment is provided, set up and wired by the club technician. It is important to clarify in advance whether turntables, CD players, or own DJ controllers will be used in the evening.

At the DJ

booth, there should be enough space for a laptop, a record bag and drinks. These points sound banal at first, but they are very important for the DJ during a long and stressful party night.

The cleanliness of the booth and the maintenance of the equipment is immensely important. The motors, pitch and contacts of the turntables should be serviced frequently. The CD players should be regularly checked for functionality and connectivity and maintained in the form of updates. Just small things like the lack of a network cable, can significantly disrupt the workflow of a DJ set or even make it impossible.

Since in a club all speakers are directed to the dance floor, good “monitoring” is essential. The DJ should always be able to regulate the volume of the monitors himself via the mixer.

In many discotheques, several hundreds to thousands of guests are partying in one night. To sound this amount of people properly, large sound systems with a lot of power are necessary. Therefore, a limiter is immensely important for the protection of the PA, as well as for the protection of the guests. An attached DB display in the DJ booth is also an important tool to keep an eye on the volume throughout the evening.

OMNITRONIC TRM-422 4-Channel Rotary Mixer

4-channel rotary mixer with 3-band frequency isolator and filter section for DJs.



GOOD TO KNOW:

Lighting control in the club is usually done by a light jockey. This person controls the strobes, moving heads, LED bars, lasers and fog machines in real-time through a lighting console or lighting software. The light is, thus, tuned live to the music. The light jockey needs a deep understanding of lighting control and also enthusiasm and a certain feeling for the music.



FESTIVAL DJ

WHO?

Festival DJs often play in front of thousands or hundreds of thousands of people. On huge stages equipped with LED walls, light, sound and pyrotechnics, the festival visitor is offered a breathtaking experience.

Often DJs who play big festivals come from the field of electronic music. In the case of EDM DJs, the set resembles a spectacular show in which all the senses of the festival visitors should be stimulated. In most cases, EDM DJs are also music producers. With their gigs, they present their hits to the audience. These are accompanied by an elaborate show that uses all the technology on stage.

HOW?

Since dozens of acts perform on the same stage on one day at a festival, the DJ's playing times usually range between one and two hours.

WHAT?

Similar to a club environment, CD players, turntables or even DJ controllers are used. The DJ booth at a festival is usually larger than in a club and, therefore, offers more space for backup equipment or a second DJ set. Thus, switching between DJs is easy, fast and seamless.

The control of the lights, LED walls and pyrotechnics is done by lighting technicians who react live to the music. This requires a high degree of flexibility, creativity and understanding of their craft from everyone involved.

Alternatively, the lighting technology and pyro effects can be synced to the time code of the music. The DJ set is then coordinated in advance with the technicians and is only set off, so to speak. This of course limits the EDM DJ in the creativity and spontaneity of his DJ set; however, this way of working allows for a breathtaking show for all festival-visitors. Some DJ mixers also output the sync signal for the further signal chain.

To provide sound for 30.000 to 50.000 people, large line array systems must be used. Therefore, the monitor speakers in the DJ booth at a festival are larger. Thus, large speakers are placed to the left and right of the DJ, which are located

on the floor and not directly on the DJ booth. In many cases, these have casters so that the DJ can reposition the monitors if necessary.

GOOD TO KNOW:

The use of CO₂ guns, confetti cannons and the like are often part of the show. This should be clarified in advance with the DJ or management for safety reasons.

TCM FX CO₂ Gun

Creates fog bursts up to eight meters wide, held with hands



LIVE ACT

WHO?

The Live Act is not a DJ in the conventional sense but is often mistakenly titled as such. Especially in the electronic field, performances of a live act are very popular. This is a producer who presents his tracks to the audience. Here, elements of the music are faded in and out, sampled, remixed live or played live.

HOW?

Often mixing consoles with many input channels, effect devices, midi controllers, samplers and synthesizers are used.

WHAT?

Technicians should plan enough space for all the equipment, place the keyboard and equipment stand correctly, and provide advice and assistance with the cabling of all the equipment. Also, in this case, a well-placed monitoring system is very important for the artist.

GOOD TO KNOW

For most live acts, accurate and habitual placement of the various pieces of equipment is essential. Only in this way is the workflow during live sets a given and the results authentic.



OMNITRONIC KEY-288+ MIDI Controller

USB MIDI controller with OLED display, 25 buttons, 8 pads, 4 controls and faders each, for musicians, producers and DJs

Now you have a rough overview of the different types of DJs you may run across in the event industry. Despite all the differences, one thing remains the same: whether you are providing tech to a wedding DJ, managing a club DJ, supporting a festival DJ, or working with a live act: Never forget to pack enough multiple sockets!



EM MIXER

OMNITRONIC is expanding its EM mixer series with three new rack-mount models.

The new EM-280, EM-550B MK2 and EM-650 MK2 models complete the series of popular entertainment mixers in a practical 19" design. Precise tone control and versatile features make the EM mixers an optimal choice for those looking for flexible control in their racks. Whether in clubs, bars, restaurants or event venues – OMNITRONIC's EM mixer series has the solution.

EM-280



The **EM-280** model is an 8-channel stereo mixer with two adjustable zone outputs. It has an additional XLR microphone input with level control in channel 1 and allows switching the input level between +4 dBu and -10 dBV. Each channel is equipped with signal and

overload indicators, while the 4-digit stereo level meters in both output buses provide clear control over audio levels. With its compact 1U size, the EM-280 fits perfectly into any rack.

EM-550 | MK2



The **EM-550B MK2** is a multifunctional 5+2 channel installation mixer available in stylish black. It features two microphones and five input channels with recessed preamp gain controls on the rear panel, signal LEDs and smooth channel faders on the front. Additionally, it offers the ability to audition the input

channels and master sum via the adjustable head-telephone output, including a cue mix/split function. With two adjustable master outputs, a 3-band EQ and a 10-digit stereo LED level meter, the EM-550B MK2 allows for precise sound adjustment and is also available in 19" 2U construction.

EM-650 | MK2



The third new model, the **EM-650B MK2**, is a multifunctional 5+2 channel mixer with three zones and is also available in black. Similar to the EM550B MK2, it offers five input channels with recessed pre-gain controls on the back, signal LEDs and smooth channel faders on the front. Beyond that, however, it offers three adjustable master outputs, each with a 3-band

EQ and a 10-digit stereo LED level meter. All input channels as well as the two microphone channels can be freely routed to these three master outputs. This feature allows flexible sound control in different zones, ideal for complex audio applications. The EM-650B MK2 is also available in a space-saving 19" format with 2 U.



In the world of audio engineering, audio mixers play a central role: They are the heart of any professional audio system and allow you to mix, amplify and modify various audio signals. However, not all mixers are the same! For newcomers to audio technology, we will explain the biggest differences.

ANALOG MIXER

Basically, mixers can be divided into analog and digital mixers according to the way they process signals: ANALOG MIXERS are the oldest and most traditional type of mixers. They use analog circuits and components to mix and modify multiple audio signals. With physical knobs and controls, they are often easier to use and provide a “warm” and “natural” sound. They are often used in live sound environments and in studios where ease of use and an “analog” sound are desired. Effects such as reverb, compressor, or gate must be looped into the console in an analog fashion, here using external effects units. This ensures that analog setups take up more space and require more cabling than their digital counterparts.

DIGITAL MIXER

This contrasts with DIGITAL MIXERS, which first convert the analog audio signal into a digital signal and then perform all mixing operations digitally. Effects such as reverb, compressor or gate are also already present in a digital mixer or can be installed as third-party plug-ins. As a result, digital mixers usually offer more features and flexibility in less space than analog mixers but can be more complex to operate. They are, therefore, often used in professional recording studios and large live events where high flexibility and control are needed.



OMNITRONIC LMC-3242FX USB Mixing Console

PRO audio mixer with British-style EQ, compressor, effect unit and USB interface

ALL MIXERS, OR WHAT?

Different types of audio mixers and their application

POWER MIXER

In addition, mixers can also be classified according to their field of application and purpose: For example, POWER MIXERS are a special type of mixer that have built-in amplifiers. They are ideal for live sound applications where ease of setup and minimal space requirements are important. They are often used in live sound environments, where mobile PA systems are utilized, and at smaller events.

RACK MIXER

RACK MIXERS are mixers designed to be mounted in a 19-inch rack or enclosure. This type of mixer is mainly used in professional audio setups for stage applications in studios and installation environments where space-saving and compact solutions are required. Rack mixers typically offer a variety of audio inputs and outputs accessible through connectors on the back of the mixer. They are often designed to mix and process multiple audio signals together, with various functions such as preamplification, equalization, effects, routing and level control.

One advantage of rack mixers is their modularity: Since they are rack-mounted, they can be easily combined with other audio devices such as amplifiers, effects processors, equalizers, and more.

AUDIO MIXER AND DIGITAL AMPLIFIER IN ONE



OMNITRONIC RM-1422FXA USB Rack-Power-Mixer

19" powered mixer, 2 x 400 W, with 12 channels, DSP FX unit and MP3 player

Rack mixers are ideal for environments where space is limited, or for applications where a compact and portable solution is required. They are often used for live applications, studios, recording studios, conference rooms, theaters, and fixed installations.

Rack mixers can be either analog or digital in design. Analog rack mixers often offer a classic, warm sound character and are known for their ease of use and direct signal processing. Digital rack mixers, on the other hand, use digital signal processing technologies where audio signals are converted to digital data for processing. This data is then processed internally and eventually converted back into analog signals as they come out of the mixer's outputs. They usually offer advanced features like preset storage, effects processing, remote control capabilities, and more. They are often capable of handling a larger number of input channels and effects than their analog counterparts.



OMNITRONIC TRM-422 4-Channel Rotary Mixer 4-channel rotary mixer with 3-band frequency isolator and filter section for DJs

DJ MIXERS

Finally, we have the DJ MIXERS, which are designed specifically for the needs of DJs. They have customized features like crossfader for seamless crossfading between tracks and are usually limited to line signals. They are used by DJs to mix and crossfade music, often in live performances or club environments. DJ mixers can be analog or digital in their setup. Digital mixers offer the DJ an integrated sound card as well as on-board effects at the touch of a button, and because of their digital operation, they are now available in a very compact form factor despite their large feature set. Analog mixers require more “manual work” from the DJ but offer a very unique sound. The choice between digital and analog mixers is ultimately made by each DJ according to his or her own preference and musical style. Each type of mixer has its strengths and weaknesses, and the best choice often depends on the specific requirements of the situation. In the world of audio engineering, there is no “one size fits all” – every tool has its place and its function. What is equally true for all mixers: The progress of technology does not stop here either. Digital mixers in particular are combining more and more functions in less and less space. Some models, for example, can be integrated into a network via LAN or WLAN and then controlled remotely via apps, which makes them particularly popular with small bands that mix their sound by themselves. With analog mixers, the motto is often “back to the roots.” Here, retro charm is exactly the effect achieved.

Künstler-Magazin

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mini OMNITRONIC FAS SERIES

The FAS series by OMNITRONIC presents a versatile and extremely compact wireless microphone system designed for flexibility and reliability. In addition to the 2-channel wireless receiver FAS TWO, the series includes a wide range of accessories for different applications. The entire system operates in the frequency range of 660-690 MHz.

The 2-channel radio receiver FAS TWO is at the heart of the series and impresses with its reliable signal transmission, compact dimensions and easy handling. Its frequency range of 660-690 MHz provides a stable connection for stage performances, presentations and similar applications. The FAS series offers various microphone options, including discrete lavalier microphones as well as standard headsets and sports headsets, which are particularly suitable for active applications.

Specialized microphones are available for musicians, including models for acoustic guitars, wind instruments and electric guitars. The included bodypack transmitter allows wireless freedom of movement during performance.

OMNITRONIC's FAS microphone system operates in the license-free frequency range, which means it can be used in Germany and many European countries without special registration. The series features a balanced price-performance ratio and offers high-quality technology at an affordable price.



**OMNITRONIC FAS Dynamic Wireless
Microphone, 660-690MHz**

Dynamic hand-held microphone
for FAS-TWO receiver

**OMNITRONIC FAS TWO 2-Channel Wireless
Receiver 660-690MHz**

License-free miniature wireless microphone
system, digital modulation, high ease of use



OMNITRONIC FAS Violin
Instrument Microphone for
Bodypack Transmitter



OMNITRONIC FAS
Lavalier Microphone for
Bodypack Transmitter



OMNITRONIC FAS
Bodypack 660-690MHz



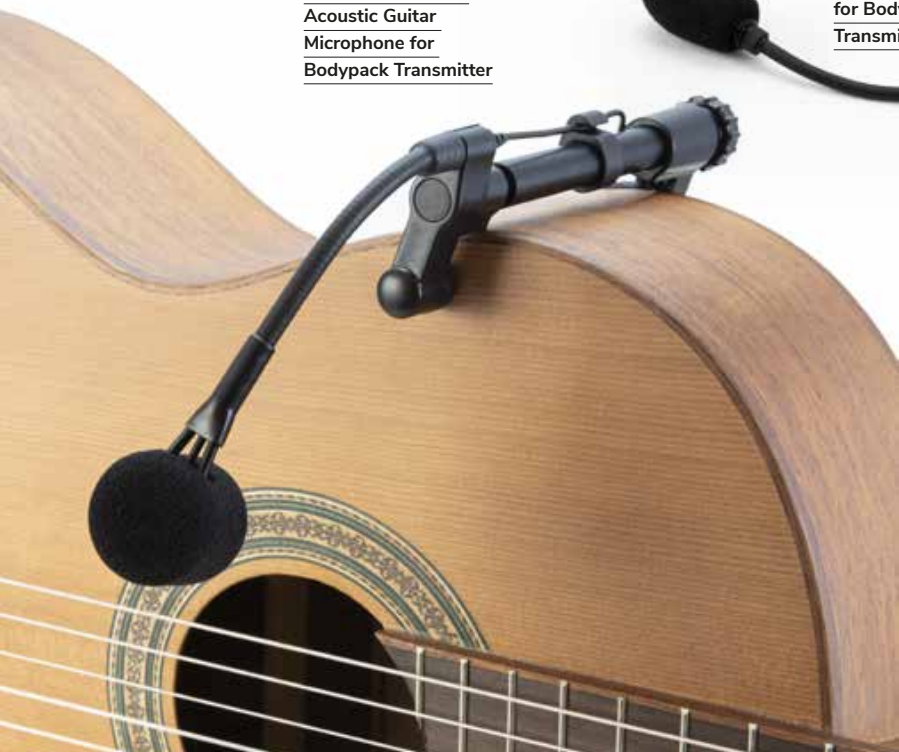
OMNITRONIC FAS
Headset for Bodypack
Transmitter



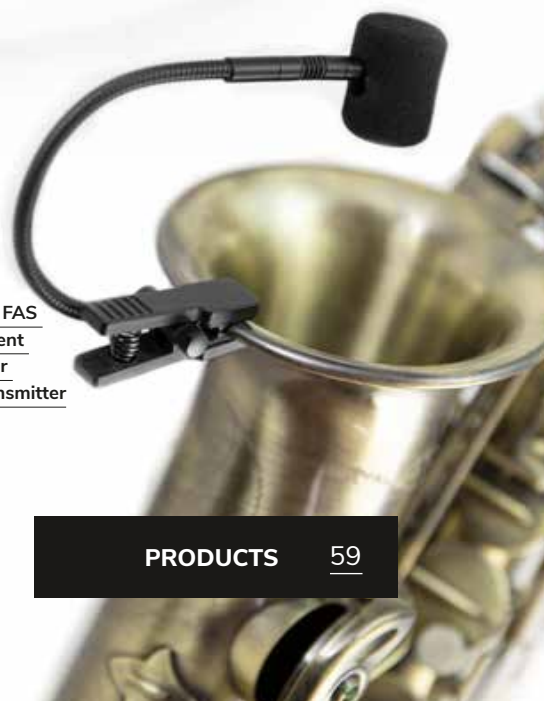
OMNITRONIC FAS
Electronic Guitar
Adaptor Cable for
Bodypack Transmitter



OMNITRONIC FAS
Sport Headset
for Bodypack
Transmitter



OMNITRONIC FAS
Acoustic Guitar
Microphone for
Bodypack Transmitter



OMNITRONIC FAS
Wind Instrument
Microphone for
Bodypack Transmitter

STREET PERFORMER

PORTY Mobile PA System by OMNITRONIC

PORTY by **OMNITRONIC** is an ultra-compact yet powerful PA system designed specifically for mobile use. With a maximum **sound pressure level (SPL) of 114 dB**, it offers impressive sound quality, making it the ideal choice as a primary music system, stage monitor or practice amplifier.

PORTY is equipped with a full-featured 4-channel mixer that provides **120 W RMS** of power. It features built-in **Bluetooth** audio streaming for wireless music enjoyment. In addition, the Stereo Bluetooth link enables wireless stereo operation via two linked systems. Thanks to the **integrated UHF radio receiver** with a matching handheld microphone, announcements are also no problem.

The system is equipped with a **96kHz, 24-bit digital signal processor (DSP)** and offers presets such as FLAT, DJ and LIVE for various sound options.

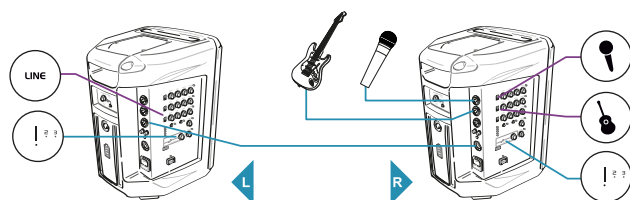
The **PORTY** is housed in a light-weight plastic case that is both rugged and easy to transport. It comes with a tablet holder and a double flange for stand mounting.



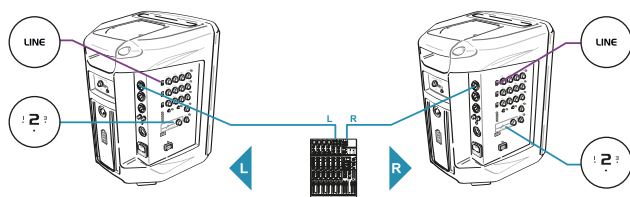
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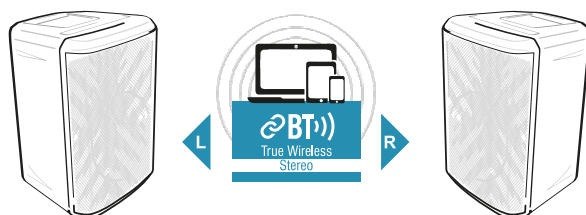
Microphone and guitar



Mixer



Bluetooth



Freestanding



Stand 0°



Stand 7,5°



Stage monitor



Folding bracket



OPTIONAL ACCESSORIES FOR THE PARTY:

Handheld microphone
Pocket transmitter + lavalier microphone
Pocket transmitter + headset
Softbag



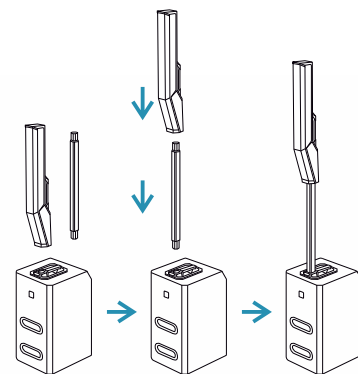
PEN ONE

PORTABLE
ENTERTAINMENT
SYSTEM

THE BEST OF BOTH WORLDS: POWERFUL AND PORTABLE

The PEN ONE by OMNITRONIC is a new, mobile column PA system that impresses with a power output of 550 watts. The transport-friendly PA system offers high sound quality and a wide range suitable for a variety of applications.

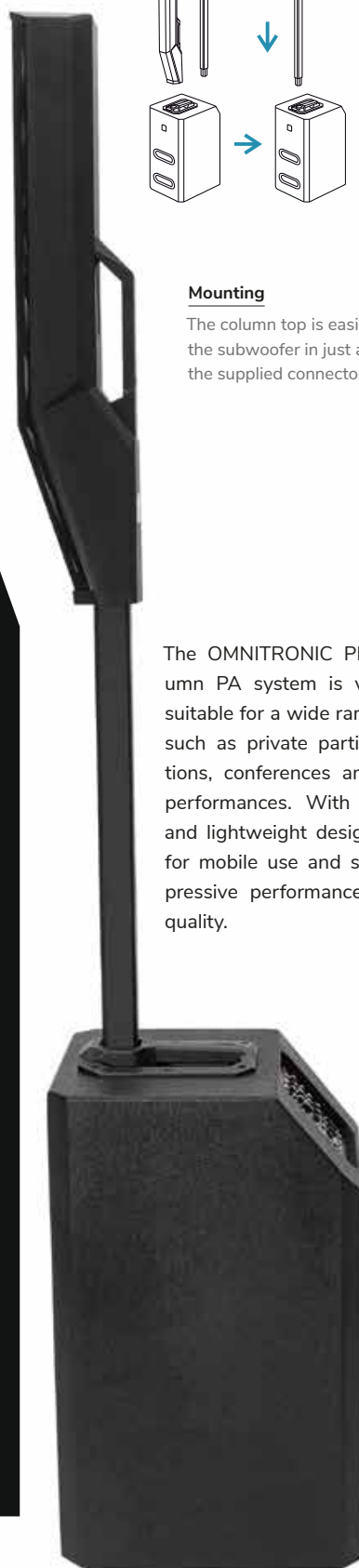
The PEN ONE is a real powerhouse and yet can be transported effortlessly. With a power of 550 watts, the system delivers a clear and powerful sound that fills even large rooms without any problems. Whether at live performances, presentations or outdoor events – the PEN ONE convinces with a powerful performance.



Mounting

The column top is easily mounted on the subwoofer in just a few steps using the supplied connector.

The OMNITRONIC PEN ONE column PA system is versatile and suitable for a wide range of events such as private parties, presentations, conferences and small live performances. With its compact and lightweight design, it is ideal for mobile use and still offers impressive performance and sound quality.



The PEN ONE consists of a powerful 12" bass reflex subwoofer with Class D amplifiers (350 W + 200 W) and a column speaker with 8 x 3" drivers. These powerful components provide a balanced sound with clear highs and powerful bass. Whether music, vocals or speech – the PEN ONE brings the sound clearly to the audience.

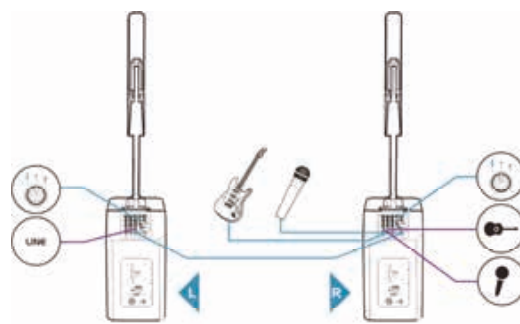


The integrated 4-channel digital mixer allows individual adjustment of the sound settings to adapt the sound to the respective requirements. In this way, music and speech can be optimally mixed. This makes the PEN ONE a versatile companion for a wide range of applications.

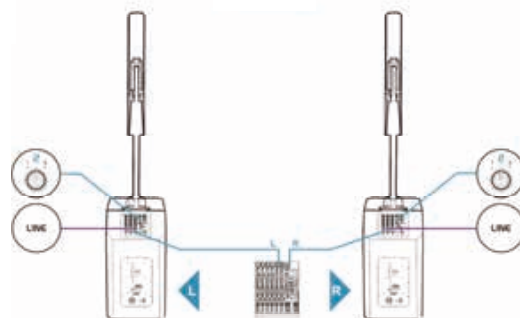
Thanks to the integrated Bluetooth streaming function, you can wirelessly stream music from compatible devices and wow the audience with your favorite music. In addition, the stereo Bluetooth link offers the possibility to connect two PEN ONE systems and, thus, create a harmonious stereo sound.



Microphone and guitar



Mixer



Bluetooth



Another highlight is the 96 kHz, 24-bit digital signal processor, which allows precise sound adjustment. Three DSP presets (FLAT, DJ, LIVE) are available to adjust the sound as needed. This allows for optimal tuning to the event in question and ensures first-class sound quality.



ACCESSIBILITY IN THE EVENT AREA

Going to concerts and events, enjoying shows and performances, and celebrating together with lots of other people: These are the reasons why events are so popular – and why our industry, the event sector, exists in the first place. It is a basic human need to come together and experience something as part of a group; whether it is the concert of your favorite artist or the big anniversary party of your sports club. But to ensure that everyone can share this experience, an event must meet certain conditions: The aspect of accessibility plays a major role here. In the quest for the greatest possible inclusion, various starting points can be used to make events more barrier-free. We will take a look at some of them together here.

Venue accessibility

Let's start at the very beginning of the event experience: First of all, access to the event should be guaranteed for people with mobility impairments. In practice, this means that there are sufficiently wide parking spaces, aisles and walkways, restrooms, ramps, and elevators where even larger wheelchairs can move and turn around. Admission control should also be designed in such a way that people with disabilities can pass through it comfortably and, if necessary, get help from the staff. For this, it is important that not only the structural conditions are adapted, but also that the staff on site is trained for the special requirements and challenges of visitors with disabilities. In addition, the signage should be designed in such a way that people with vision and reading impairments can also find their way – i.e., at least with the largest possible font and high contrast, but even better with clear symbols or pictograms. So-called tactile signs, i.e., signs in Braille, supplement the signs that can only be perceived visually for even greater accessibili-

IMPORTANT!

According to the Ordinance on Places of Assembly (Versammlungsstättenverordnung), 1% of the visitor seats, but at least two seats on level standing areas, must be available for wheelchair users in seated assembly rooms with up to 5.000 seats. These spaces must also be shown in the seating and escape route plans. At least one per twelve of the required restrooms must be barrier-free.





ty. Incidentally, designated assistance dogs are inseparable from “their” human and must therefore be granted access to public events in Germany. It is irrelevant for what reason the assistance dog accompanies the person – “guide dogs” are just as much a part of this as “diabetes dogs”, for example, even if the person’s impairment is not immediately apparent.

Seating and standing arrangement

At concerts in particular, fans not only want to hear their stars but also to be able to see them live for once. For people who are dependent on a wheelchair, there should, therefore, be extra stands at “standing room only” concerts, onto which they can comfortably drive up a ramp. In this way, they get a somewhat elevated seat from which they can easily see the stage. If the event is a performance at which seating is allocated, the special requirements of people with mobility impairments should be taken into account at the planning stage: In addition to the normally seated rows, there should also be areas where wheelchairs, walkers and accompanying persons can be accommodated.

Hearing systems, assistive technology and sign language interpreters

In a best-case scenario, these specially equipped areas are also located in such a way that hearing systems and assistive technologies can be used there, for example, to perceive the spoken word from the stage via one’s hearing aid. This is made possible, for example, by inductive hearing systems: Ring loops installed in the walls or floor of the theater, for example, allow hearing impaired persons to connect to the system with their hearing aids and, thus, hear the acoustic signal clearly and without interference. Such systems can be recognized by signs in the form of a blue or yellow square with a stylized ear and the letter “T”. Other options for technical hearing assistance are based on radio or infrared technology, for example.

Another service for all participants with hearing impairments is the use of sign language interpreters. In some European countries, for instance, it is now completely normal for the news on television to be simultaneously translated into sign language so that hearing-impaired people can follow the program without any problems. So why should not songs at concerts also be translated, so that visitors with little or no



residual hearing can understand the lyrics and mood of the song? Especially at large concerts, music is perceived not only through the ears but just as strongly through the body. Announcements between the individual pieces of music can also be translated into sign language and, thus, reach all visitors equally.



Clear communication

Some people are particularly sensitive to noise, flashing lights, crowds and unpredictable movements. At rock concerts, you can assume that all of these things will occur. With theater performances, readings, choir concerts or club festivals, on the other hand, this is not so explicit. Therefore, it is a real service for people with such impairments to avoid “show effects” either with consideration for the visitors or to announce them already on the invitation, the posters or, latest, at the entrance to the event and to formulate them as clearly as possible. The short “Attention: At our choir concert, light effects and laser equipment will be used after the intermission” costs the organizer only a few seconds of work, but may save one or the other visitor unpleasant consequences. Providing special, low-stimulus retreats or quiet rooms also allows people who feel overwhelmed by too much hustle and bustle to still stay at festivals or larger events. If necessary, they can retreat with a companion and find peace without having to abandon the experience altogether.

In recent years, awareness of accessibility at events has already increased significantly. Legislators are now also taking organizers and planners to task: In Germany, for example, the BGG (Disability Equality Act) requires that the needs of people with disabilities be taken into account in the design of events and their communication. Advancing technology is also mak-

ing it possible for more and more people to participate in joint events. Nevertheless, there is still a long way to go before true inclusion is achieved. The most important step here is an awareness of the special requirements for event venues and processes. Ideally, therefore, an expert or a knowledgeable person with disabilities is already involved in the planning of an event, accompanying the event planning with special attention to accessibility.

More information is also available at:

<https://www.bundesfachstelle-barrierefreiheit.de/>
(German)



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Space requirement

The tops can be fixed to the subwoofer with a strap to save space and secure for transport.

MAXX IMMUM FLEXXI BILITY

The OMNITRONIC MAXX series has been expanded by another high-quality 2.1 active system: It consists of a 12" active subwoofer and two 6.5" 2-way tops. The powerful system offers a total output of 450 watts RMS. The individual components are perfectly matched and deliver the best sound for various applications: Whether in small clubs, cafes, restaurants, schools or other venues.

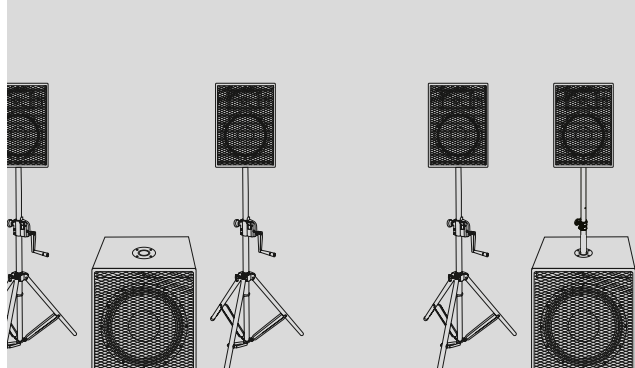
The MAXX-1206 2-way tops are each equipped with a 6.5" bass-midrange driver and a 1" titanium compression driver. Thanks to the passive 2-way crossover including PTC tweeter protection, the tops provide a clear and balanced sound. The tops are equipped with flying points and robust carrying handles and can be used standing or flying, as a monitor or on a tripod.

The MAXX-1206DSP 2.1 Active Subwoofer features a powerful 12" subwoofer with a Class D amplifier in a bass reflex cabinet. The amplifier delivers a power of 250 W RMS for the subwoofer and 100 W RMS each for the two satellite speakers. The satellites are connected via a balanced signal input XLR/6.3 mm jack L/R or via the additional stereo RCA input with level adjustment.



Practical handles on the tops facilitate carrying.





Setup

The tops are equipped with flying points as well as robust carrying handles and can be used both standing and flying, as a monitor or on a tripod.



Sub

Power consumption:	500W
Power:	Nominal: 250W RMS LF Nominal: 2x 100W RMS HF
Frequency range:	38 - 250 Hz
Sensitivity:	97 dB
Max. SPL:	119 dB
DSP:	Digital Signal Processor
DSP presets:	FLAT; DJ; LIVE
Circuitry:	Class D
Controls:	Limiter
Speaker:	1 x woofer (12") approx. 30 cm with ferrite magnet
Type of Construction:	Bass reflex
Transport aid:	Rubber feet
Material:	MDF (medium density fiberboard), 16 mm
Dimensions (WxDxH):	38.4 x 47.4 x 45.8 cm
Weight:	18.60 kg

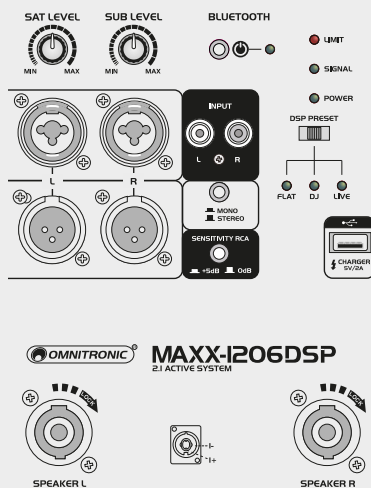
Tops

Power:	Program: 200W Nominal: 100W RMS
Frequency range:	100 - 17000 Hz
Sensitivity:	91 dB
Max. SPL:	115 dB
Dispersion angle:	90° x 60
Impedance:	4 Ohm
Pickup system: flange:	Ø 35mm
Flying points:	3 x M8 thread
Speaker:	1 x woofer (6.5") ca. 17 cm 1 x compression driver tweeter (1") ca. 2.5 cm
Material:	MDF (medium density fiberboard)
Dimensions (WxDxH):	20.4 x 19 x 36.2 cm
Weight:	11.30 kg

Housing

The sturdy cabinet of the speakers is covered with a black metal grille and acoustic foam, ensuring a long life and an attractive appearance. The MAXX-1206 is available in black and white.

ALSO AVAILABLE IN WHITE



A highlight of the MAXX-1206DSP is the integrated Bluetooth function, which allows wireless music streaming. The volume for the subwoofer and satellites can be adjusted separately, and thanks to the digital signal processor (DSP), various presets such as FLAT, DJ and LIVE are available.

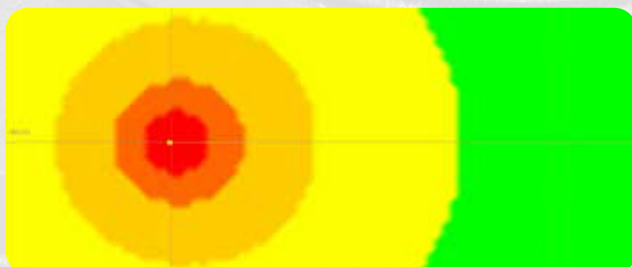
It's all in the technology:

Different subwoofer setups

From dry physics to real-life applications in event technology

They are indispensable at concerts and in clubs: subwoofers, i.e., bass speakers, are responsible for the rumble in the belly and round off the sound image downwards. What does this have to do with dry physics? Quite a lot, because without a basic understanding of the physics behind the concert experience, the sound can suffer quite a bit. Let's take a look at the background together.

Due to their low reproduction frequencies, subwoofers have a nearly spherical sound dispersion by default. This means that the sound around the subwoofer spreads out evenly in all directions like a sphere, no matter in which direction the actual diaphragm is pointing. (1)



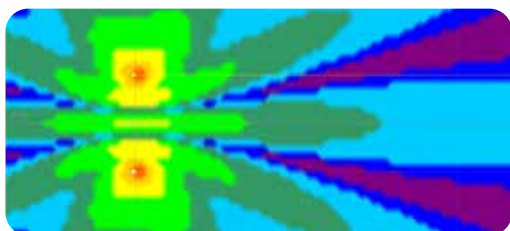
(1) Single Sub

For many applications, however, this spherical dispersion is a disadvantage – to make the best use of the bass speaker's energy, you would have to place the subwoofer in the center of the audience. To get around this problem, you can use the physical effects of wave theory when using multiple subwoofers and direct the sound exactly where it is needed. Now, what does this mean in practice? The following advantages can result from a targeted placement of subwoofers:

- + Less sound reaches the stage, which reduces the risk of feedback and the mix for bands is cleaner due to less diffuse sound.
- + More sound reaches the audience with the same amount of speakers.
- + The sound reaches further with the same amount of material, i.e., larger areas can be played on.
- + If necessary, certain zones outside the audience area can be specifically made quieter, for example, in order not to exceed existing volume limits for nearby residents, on other stages or in the nearby medical tent.

The following placement options are used in practice:

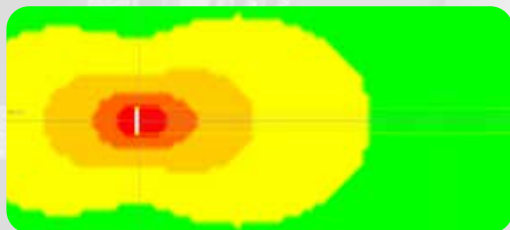
For the various arrangements to work ideally, only identical subwoofers should be used. The radiation behavior can also change significantly depending on local conditions (walls, humidity, temperature). Therefore, it should always be checked on-site whether the actual results match the expectations and the previously undertaken calculations.



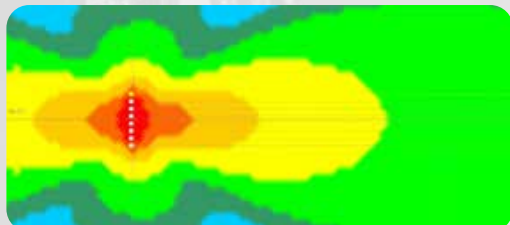
(2) Stereo Sub

Left-right placement

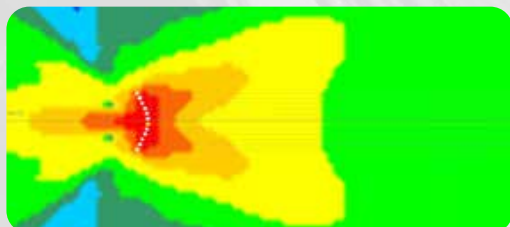
In the simulation, it becomes clear that the typical and often used left-right positioning of the subwoofers next to the stage is not ideal. There are large areas in the audience space where significantly less sound pressure arrives (shown here in purple). In addition, there is no real attenuation to the rear, i.e., there is a similar sound pressure on the stage as in the audience area.



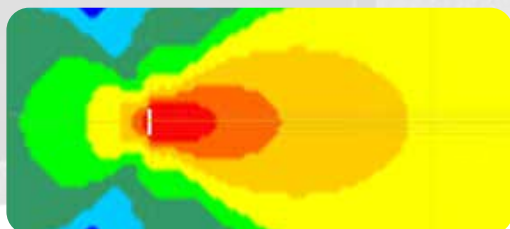
(3) Mono Stack



(4) Gradient Array



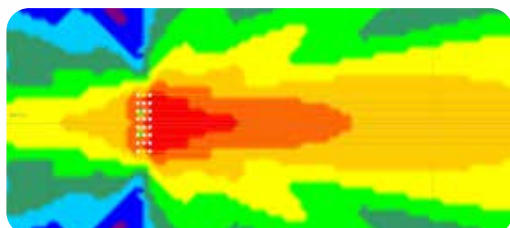
(5) Curved Row Gap



(6) CSA Mono Stack



(7) CSA Gradient Array



(8) End Fire Array

Mono stack

As an alternative, a mono stack can usually be realized without much effort instead of the left-right arrangement. For this purpose, all existing subwoofers are placed together as one large stack in front of the stage. Depending on the number of subwoofers, this results in a low directivity and very uniform radiation. Even with this setup, however, a large amount of sound is still emitted to the rear.

Gradient Array

In a gradient array, the subwoofers are placed at some distance from each other, ideally distributed over the entire width of the stage. This results in an even level distribution in the listening room and good damping to the sides. The distance between the individual subwoofers must not exceed half the wavelength of the highest reproduction frequency, otherwise, interference effects and cancellations will occur. Thus, if the subwoofers are to play frequencies up to 100 Hz, the distance from speaker center point to speaker center point must be a maximum of approx. 1.7 m. (4) To allow the sound to radiate more widely, the loudspeaker array can also be physically "curved", i.e., set up in a slight arc. (5)

CSA or Cardioid Subwoofer Array

To effectively attenuate the bass to the rear, the CSA is often used. In this case, 2-3 subwoofers directed to the front and one sub rotated by 180° to the rear are always used in combination. The rotated subwoofer is inverted in its phase and delayed by the distance between the speaker cones. Thus, the rotated subwoofer effectively cancels out the sound radiated to the rear. However, this setup requires at least 2 controller/DSP channels to process the signal for the rotated subwoofers separately. (6) For an even stronger bundling, this setup can be combined with the gradient array, for example. (7)

EFA or End Fire Array

In the so-called End Fire Array, at least two subwoofers or two rows of subwoofers are placed one behind the other. The distance between the speakers is ideally $\frac{1}{4}$ of the wavelength of the average frequency. The rearmost row emits the sound first, and the row in front is delayed by the distance and time of flight of the sound. This results in very precise directivity and extremely good attenuation to the rear. This type of arrangement is very effective, but also costly to implement. Also, for this arrangement, at least two controller channels are needed.



WHAT DOES A RIGGER ACTUALLY DO?

When we think of exciting events and spectacular shows, we often think of the blinding lights, pulsating music and breathtaking stage setups. But what lies behind it all? Who is responsible for artists to float from the ceiling, for moving heads to shine from the depths of the stage, and sound to spread ideally over the crowd of visitors? This is where the rigger comes in.

The word “rigger” comes from the English language and is derived from the verb “to rig,” which means to equip or outfit. In the context of the stage and event industry, the word refers to the person responsible for setting up, installing and securing stage elements and equipment. So, a rigger is a professional who specializes in rigging - the technique of safely setting up and installing stage elements and stage equipment. They are the experts who make sure the stage is stable and secure, that the lights are hanging in the right place, and that the line array is not only properly placed but also attached in a crash-proof manner. Without professional riggers, concerts, theater performances, festivals and other events would not be possible.

The rigger works closely with the event organizer, stage designer and technical team to understand the requirements of the event and develop the best solutions. They consider factors such as the size of the stage, the type of performance, the weight of the el-

ements and safety standards. Arguably the most important aspect of a rigger's job is safety. They must be able to calculate the loads, or at least understand the existing structural calculations, and ensure the load-bearing capacity of the rigging structures. They must use proper lifting and securing techniques to avoid accidents. Safety is always the top priority.

THE WORD “RIGGER” COMES FROM THE ENGLISH AND IS DERIVED FROM THE VERB “TO RIG”, WHICH MEANS “TO EQUIP” OR “TO OUTFIT”. (...) PROBABLY THE MOST IMPORTANT ASPECT OF A RIGGER’S WORK IS SAFETY.

Once the planning is complete, it is down to the nitty-gritty. The rigger is responsible for setting up the rigging structures. This includes properly attaching trusses, platforms, suspension points and other stage elements. They need to make sure everything is tight. In rigging, the word “climb” refers to climbing or scrambling up stage structures or rigging systems to perform tasks re-

lated to the installation, maintenance or removal of equipment. Climbing is an important skill for riggers because they often have to work at lofty heights to install trusses, lighting equipment, speakers or projectors, for example.

Climbing allows them to get to their jobs safely and perform their tasks effectively. Special safety precautions such as personal protective equipment, climbing harnesses, and safety ropes are used to ensure riggers' safety. Climbing requires skill, physical fitness and a thorough knowledge of rigging safety policies and procedures.



Photo: APEX Rigging School

In addition, riggers are often experts in special techniques such as flying and automation. They are responsible for ensuring that elements such as stage sets, props or artists float or move safely and effectively in the air. This requires special knowledge, which can be acquired through additional training, and skills in handling mechanical systems and controls.

A rigger must not only be technically proficient but also have a high level of alertness, concentration and problem-solving skills. They must be able to work under pressure and react quickly to unforeseen situations. Their work requires good physical fitness, as they often have to lift heavy equipment and move safely to great heights.

All in all, the job of the rigger is crucial to the smooth running of events. They are the invisible heroes behind the scenes who make sure the show can go on. Their work requires expertise, skill and commitment to quality and safety.

HOW TO BECOME A RIGGER

In Germany, there is no state-mandated vocational training that requires a person to becoming a rigger. However, there is an obligation to prove one's qualification – for example, with the German certificates “Expert for Attachment Gear and Trussing” or “Expert for Event Rigging SQQ2”. Most riggers are, therefore, event technicians who have specialized in rigging and have acquired the necessary expertise through courses.

APEX Rigging School Würzburg

APEX Rigging School, headquartered in Würzburg, Germany, has been offering just such courses for over 20 years. Their goal is to provide their customers with the necessary rigging expertise, prepare them for the demands of event technology, promote awareness of safe and effective rigging, and train event technology professionals at the highest level.



Sabine Hössel



INTERVIEW

SABINE HÖSSEL, FOUNDER OF THE APEX RIGGING SCHOOL WÜRZBURG

Hello Sabine, thank you very much for being available for an interview! You run the APEX Rigging school based Würzburg and founded it 20 years ago. What tipped the scales back then for you to set up your rigging school?

As is often the case: This was not originally planned at all, but simply developed. The beginning was that during my job training I became aware of how challenging it is to find someone who can pass on their knowledge effectively and competently. During my time in Berlin and Hamburg, I was lucky enough to meet inspiring people who had mastered the art of sharing their knowledge with joy.

This led to me organizing seminars on rigging – initially for companies I knew. The need was there, but there was a lack of contacts. I was able to help with some of my contacts. In addition, I supported some trainees in the field of rigging during their exams. They all did extremely well. That was a lot of fun for me at the time. Thus, one thing led to another and ...bang! I had an educational institution. (laughs)

That sounds straightforward?

Well, it was not quite that simple after all. Of course, the path was not as uncomplicated as it might sound. Nevertheless, I think we managed it well. At this point, I would like to express my gratitude once again to our lecturers, as none of this would have been possible without their outstanding work. Many of them

have been with us from the beginning, but we are always joined by very competent lecturers. Each of them is an expert in his or her field.

What do you look for in your lecturers – and why?

Since we specialize exclusively in the sensitive and responsible field of rigging, we naturally attach great importance to the selection of our instructors. High professional competence and social skills are particularly important to us. We also attach great importance to our instructors' training and further education. In this way, we ensure that we have suitable instructors available for all areas of operation, whether in the field of theater, trade fair, tour or other facets of event technology.

All of our instructors are, of course, still active themselves, as we only hire instructors who are actively doing the job. Thus, our customers do not miss out, as the training reflects the current state of the technical knowledge. The feedback after the seminars is always extremely positive and gratifying.

The participants in your courses come from different areas of event technology. In which topics do you notice knowledge gaps?

This is almost impossible to say. You are right, our participants come from different areas of event technology, so their knowledge varies greatly. However, what is always needed in every area of event technology, is an expert for attachment gear and trussing.



Riggers, lighting, video, stage and sound technicians as well as booth builders rig day after day and, thus, must be qualified accordingly. In theaters, opera houses and philharmonic halls, these activities occur daily.

A seminar covering both topics discusses most areas and is also a very good preparation for exams, since, in our experience, these are exactly the topics that are subject to the exams of the specialists as well as the masters for event technology.

Are there any significant changes in the learning content in the area of rigging or safety in truss construction? Or is it enough, to put it bluntly, to have done the certificate once and then work as a rigger for twenty years? How important is it to stay current?

Let me start here with a quote by Charles Kettering, an American engineer: "If you do something the way you have been doing it for ten years, chances are pretty good that you are doing it wrong."

In this context, I can clearly say that it is not enough to rest on one's finished education. Progress in the field of technology is constant and subject to constant development. Regulations are constantly being adapted accordingly. It is, therefore, immensely important to always be up to date.

Within the scope of the expertise for event rigging as defined in the SQQ2 standard, it is even stipulated that regular further training is required within certain periods to maintain the qualification.

We also consider this to be extremely wise, not because we make money by teaching, but because in everyday professional life, mistakes can often creep in unnoticed or you simply miss out on changes and further developments. Many companies also book refresher courses to make their employees aware of potential dangers again.

Now a personal question: You recently celebrated your 20th anniversary and can look back on a very successful history. What are your wishes for the APEX Rigging school in the future?

My wish for the future of APEX Rigging school is that we continue to lead in providing expertise and practical skills in the field of rigging. It would be great if we could expand our reach even further to support even more people in the events industry and help them stay on top of the latest developments. I would also like to see us continue to attract top-notch instructors who inspire and impart valuable knowledge to our participants.

Last but not least, I hope that we can continue to help raise safety standards in the event industry and ensure that events run smoothly and safely.

Sabine, thank you very much for this short interview! We wish you even more success and inquiring participants.

Picture above right:
Seminar expert for slings and truss systems

Picture above left:
Seminar expert for event rigging according to SQQ2
Level 1-3 | Nuremberg



NEW: WEATHERPROOF COLUMN SPEAKERS FROM OMNITRONIC

The OMNITRONIC ODC speaker series offers the perfect solution for demanding outdoor sound experiences. Very good speech intelligibility and impressive music reproduction characterize the weatherproof sound columns in the aluminum profile housing of the OMNITRONIC ODC speakers. With a power of 65 W to 200 W RMS (depending on the model), these speakers offer powerful and clear sound quality.

The ODC speaker series includes different models to meet individual needs. One can choose between the model with 2 x 4" woofers for a compact size and the models with 4 x 4" woofers or 6 x 4" woofers for an even more impressive sound reproduction. Regardless of size, the ODC Series offers excellent speech intelligibility and music reproduction in all models.

The power switches on the speakers allow flexible adjustment to different requirements and room sizes. The choice of different power classes makes it possible to get optimal sound performance, whether for smaller garden parties or larger outdoor events. All ODC speakers feature a sturdy aluminum enclosure with a protective grille. They are available in elegant black or timeless white and come with a convenient mounting bracket for easy installation on, for example, a wall, column or trussing. Of course, all ODC speakers are suitable for outdoor use and certified according to the IP56 protection class. So whether the sun is shining or it is raining, these speakers will stand up to the elements.

ODC Series

ODC-224T with
2 x 4"- woofers
65W RMS

ODC-244T with
4 x 4"-woofers
130W RMS

ODC-264T with
6 x 4"-woofers
200 W RMS

All ODC loudspeakers
are suitable for outdoor
use and are certified to
IP56.

Mounting

The ODC boxes are supplied with practical mounting brackets (see also PCS Series). Swiveling wall brackets are optionally available (picture).



The weatherproof loudspeakers of the OMNITRONIC PCS series rely on the proven 100 V technology and are thus perfectly suited for sound reinforcement in the outdoor areas of cafés, restaurants or school facilities. The columns in the slim aluminum profile housing offer not only a high sound quality but also an excellent range.

The PCS speakers are characterized by their excellent speech intelligibility and good music reproduction. Thanks to the 2-way system, they deliver a clear and powerful sound. With IP44 protection rating, the PCS series speakers are well-equipped to withstand the challenges of the outdoor environment. They can also withstand rain showers for reliable performance in any weather condition.



PCS Series

PCS-280 80W RMS (100V ELA) 14 x woofer (2") approx. 5 cm and 1 x tweeter (1") approx. 2,5 cm

PCS-250 50W RMS (100V ELA) 10 x woofer (2") approx. 5 cm and 1 x tweeter (1") approx. 2,5 cm

PCS-230 30W RMS (100V ELA) and 4 x woofer (2") approx. 5 cm and 1 x tweeter (1") approx. 2,5 cm



Mounting

With the help of the practical mounting bracket, the installation of the PCS speakers is simple and flexible. They can be easily attached to walls, columns or trussing systems to ensure optimal positioning and to provide sound for the entire outdoor area.

INSTALLATION SPEAKERS AND AMPLIFIERS FROM **INTUSONIC**

Intuitive audio technology
at a professional level



The INTUSONIC brand has made it its mission to revolutionize the installation audio market with its range of products for small to medium-sized applications. The industry-experienced team, versed in all aspects of professional audio, brings the best sound to their commercial spaces, cafes, restaurants or community rooms with their easy-to-use speakers, amplifiers and distribution systems for installation, even for technical laymen.

Weatherproof outdoor speakers from INTUSONIC in a compact design:

INTUSONIC 4FP40R 4" 2-Way Outdoor Speaker

Weatherproof 4" background music speaker with mount 40W AES, 8 ohms + 100V

INTUSONIC 6FP80R 6" 2-Way Outdoor Speaker

Weatherproof 6" background music speaker with mount 65W AES, 8 ohms + 100V



Available in black and white

The INTUSONIC product range offers the right installation solution for every need: from compact and robust loudspeakers for outdoor use, such as the **6FP80R** and **4FP40R**, to versatile and visually unobtrusive loudspeakers for indoor use, to powerful amplifiers. All products have one thing in common. Once they have been installed by a company, control and operation are very simple and intuitive. This is ensured, for example, by clearly arranged and reduced control panels.

INTUSONIC products are available from Steinigke Showtechnik and selected specialist dealers throughout Europe.



Installation speakers from INTUSONIC for indoor installation:

INTUSONIC 4FW50T 4" Full-range Speaker

4" installation speaker for background music 20W AES, 16 Ohm

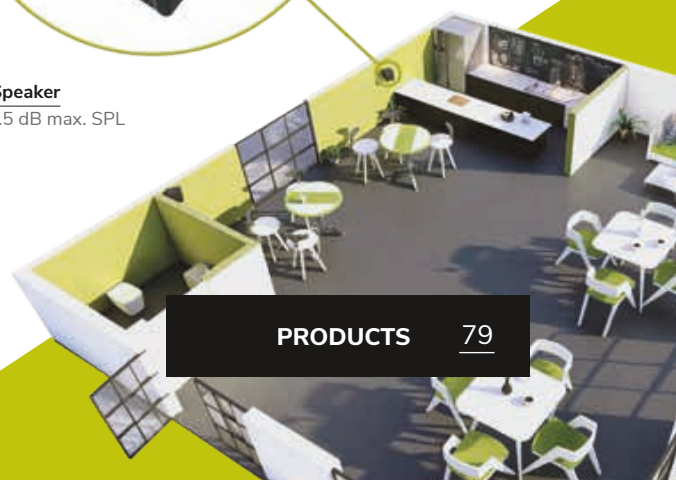
Available in black and white



INTUSONIC 6FP100T 6.5" 2-Way Full-range Speaker

6.5" installation speaker 80W AES, 8 Ohm, 116.5 dB max. SPL

Available in black and white



INTUSONIC 8SM300T 2x8" Subwoofer

2 x 8" installation subwoofer 2 x 150W AES,
2 x 8 Ohm

Available in black and white



Application Example "Conference Suit"

This sample installation in a 22-seat conference room uses a 2.1 audio system for premium sound quality. It consists of a pair of powerful 6FP100T loudspeakers and a compact 8SM300T subwoofer. A high-quality 4SDL160 four-channel amplifier with an integrated 2.1 mode and room tuning functions drives this system. In this way, high sound pressure levels are achieved for impressive sound in larger rooms, while ensuring clear reproduction at variable volumes, especially during conferences. The amplifier in this example is cleverly installed in the adjacent room, invisible to users in the conference room but easily accessible for technical adjustments.



A key element of this installation is the VLA42, which offers multiple audio inputs, a convenient IR remote control and the option to install above a false ceiling. Thanks to the included IR sensor extension, the remote control can be used effortlessly throughout the room without any restrictions on audio source control. A convenient patch panel on the console head facilitates straightforward connections of audio devices for smooth operation.

INTUSONIC VLA42 Remote Volume Controller 4-IN-1

Flexible volume control for 4 input sources, incl. IR remote control



INTUSONIC VRE11 Remote control panel

Built-in volume control, 4 zones, incl. IR remote control

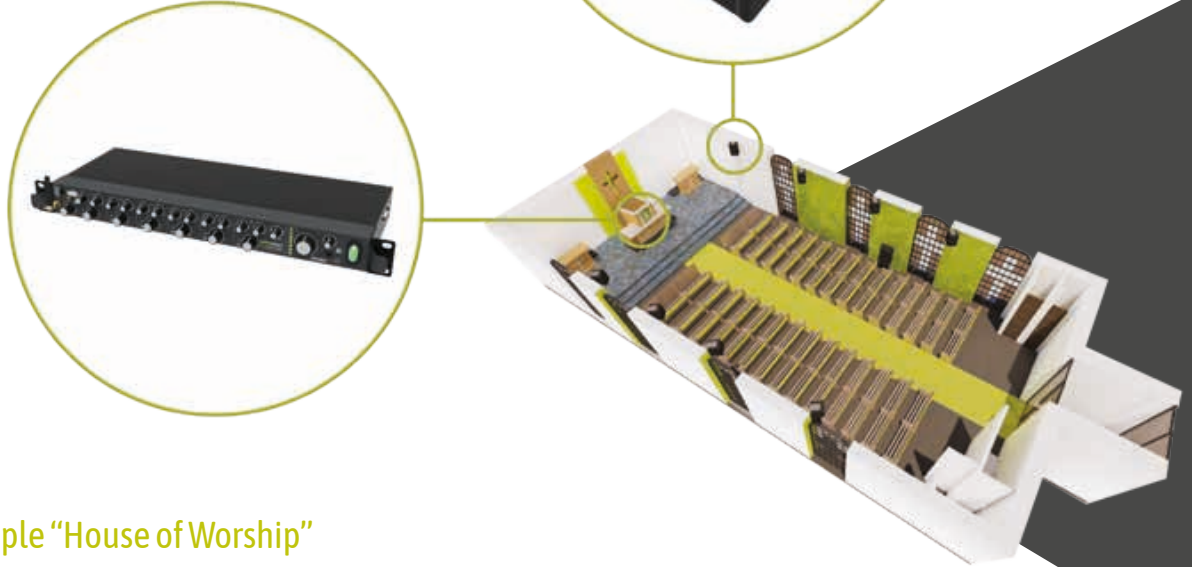
**INTUSONIC 6FP100T 6.5" 2-Way Full-range
Speaker, black**

6.5" installation speaker 80W AES, 8 Ohm,
116.5 dB max. SPL

Available in black and white

INTUSONIC PAA71 Microphone Line Mixer

Microphone line mixer, 7 channels



Application Example "House of Worship"

In this installation, the focus is on clear speech intelligibility and echo reduction. Eight 6FP100T loudspeakers are positioned evenly above the pews. This ensures even distribution of the audio signal, providing an advantage when operating at lower volumes. The desired area is optimally covered while disruptive ambient echoes are minimized.

In addition, two 8SM-300T subwoofers are added to enhance the lower frequencies, especially for those occasions when the church choir performs with male bass singers. These subwoofers are mounted on the wall so as not to block the passageway or detract from the architectural beauty of the building.

The control equipment is located at the front of the church

and includes the easy-to-use PAA71 line/microphone level mixer. Levels for media or microphones can be adjusted here as needed. The PAA71 has a dedicated auxiliary input that can be fed via a rear RCA connector, a front jack, or wireless audio streaming using the integrated Linkoustic technology. The mixer also offers five switchable inputs with a choice of line or mic level, as well as a dedicated mic input with a priority function for emergency transmissions. In addition, the REC output is used to record worship services locally on a PC. This makes it possible to capture important moments or lectures and listen to them again when needed.

Amplifier/Power Amplifier

INTUSONIC 2SDL70 Class-D Amplifier 2x65W

Stereo studio power amplifier, 2 x 65 W / 4 Ohm



INTUSONIC 2SDL160 Class-D Amplifier 2x150W

Stereo studio power amplifier, 2 x 150 W / 4 Ohm



INTUSONIC 4SDL160 Class-D Amplifier 4x150W

Multi-channel system amplifier, 4 x 150 W / 4 Ohm



HOW TO: CHRISTMAS MARKET

Scented clouds of gingerbread and mulled wine, glittering lights and shining children's eyes: During the Christmas season, a stroll through a Christmas market is simply a must. While for the visitors the wintry experience and pleasure are in the foreground, the operators behind the scenes usually have their hands full. Nevertheless, the Christmas market in one's town is, the highlight of the year for many. For all those who are considering organizing their own Christmas market next year, we provide some tips here:





CREATE A CONCEPT

First of all, you need a good concept. This should not only state in writing where, when and for how long the Christmas market is to take place, but also whether the whole market is to be held under a certain motto or in a special style (e.g., medieval Christmas market/ elf market/ steampunk etc.). The size, i.e., how many booths there will be and how far should the area extend, must also be clarified. Often, the intended location already dictates the size of the event, since a marketplace or town hall square, for example, provides natural boundaries.

Next, there needs to be a rough plan for the composition of the sales booths: A good mix of food and drinks, traditional crafts, regional specialties, toys and other things that make good gifts is attractive and pulls visitors. The vendors also benefit from this. In addition to the culinary and merchandise offerings, you should also think about an entertainment program: Choir performances, carousels and live music round out the experience.

Safety and escape routes should be included in the concept from the beginning. Although nowadays the lighting is mostly realized with LEDs and only little open fire is used, access for the fire department and rescue forces must remain free at all times. There must also be a sufficient number and width of escape routes (at least to two sides of the venue!) through

HOW TO: CHRISTMAS MARKET

✓ CREATE A CONCEPT

✓ OBTAIN PERMITS

✓ RECRUIT STALL AND BOOTH OPERATORS

✓ ADVERTISEMENT

✓ SET UP BOOTHS AND TECHNICAL INFRASTRUCTURE

✓ DECORATION AND AMBIENCE





**EUROLITE barrier system
with red belt**
Barrier system



which visitors can leave the market quickly and unhindered in an emergency. Since the attack on a Christmas market in Berlin in 2016, in which 13 people tragically lost their lives, a well thought-out security concept is also one of the issues that should be determined well before the event.

It is also necessary to think about the budget and the (re)financing of the Christmas market at the very beginning of the planning: Is there a fee for participating vendors and exhibitors? If so, how high should this be? Costs such as electricity, water, fees for registering the event and meeting official requirements should also be included. Finally, one must not forget the planning of the infrastructure and the technical equipment. Often, this concept goes hand in hand with initial ideas for the decoration: For example, should there be a large Christmas tree in the middle of the market? Should it be illuminated with fairy lights? How much electricity do the individual stalls and booths need? Where is the power supply located and how should the circuits be protected? Waste disposal should also be considered, as many different types of waste is produced at Christmas markets.

Last but not least, the necessary personnel must also be calculated – because not a single person alone can create an appealing Christmas market alone. But be courageous: Surely you will find some dedicated people who will have fun putting the idea into practice!

OBTAIN PERMITS

Special requirements and regulations apply to public events such as Christmas markets. Once you have created a viable concept, it is therefore important to obtain the necessary permits from the relevant administration (i.e., the local community or city council). The requirements vary in Germany depending on the federal state and are sometimes regionally limited. It, therefore, makes sense to contact the responsible authority as early as possible and to clarify in conjunction with the administration, which requirements must be met and which permits must be obtained to hold the event as planned.

RECRUIT STALL AND BOOTH OPERATORS

A concept has been developed and contact with the authorities has been established? Then it is time to put the plan into action and recruit various stall or booth operators. Perhaps some local artisans would like to participate? Such “local heroes” are often well-received by the public. Lo-



**EUROPALMS pine tree,
240cm**
Classic pine tree



cal associations and business people also often participate in the local Christmas market with good ideas and a high level of commitment. Advertising on the Internet and in regional newspapers can also attract traveling merchants from other regions to enrich the market.

ADVERTISEMENT

A Christmas market is only successful if enough visitors come and shop there. Therefore, it is important to start advertising early: By October at the latest, you should advertise the event online on social media and invite interested parties. Posters, flyers, and advertisements in regional print media should be published from November for about two weeks. Word-of-mouth should not be underestimated either: Networking with other market operators and organizers is therefore an excellent idea.

SETTING UP BOOTHS AND TECHNICAL INFRASTRUCTURE

It is time for the setting up. For a smooth operation of the Christmas Market, it is important to set up a solid technical infrastructure. This includes the installation of power supply systems, the provision of a sufficient number of (weather-proof!) sockets as well as distributors for the stands, stages, and other areas requiring electrical equipment. An experienced team of technicians will handle the wiring and connection of the various devices, making sure everything works safely and efficiently. In addition, ways to avoid cable clutter and route cables should be designed so that they are safe for visitors to walk on. Non-slip cable bridges made of heavy rubber are ideal for this purpose. Well-thought-out technical solutions ensure that lighting, sound, and other electronic systems work smoothly to create a pleasant atmosphere.

DECORATION AND AMBIENCE

Decoration plays a central role in creating a festive and inviting atmosphere at the Christmas market. To make visitors feel as if they are surrounded by a fairytale winter wonderland when they enter the market, you can dig deep into your bag of tricks when it comes to decorations. Large pine trees, decorated with fairy lights, create a wintry and festive atmosphere. A variety of Christmas decorations such as green garlands, poinsettias, Christmas tree baubles, and



EUROPALMS noble pine garland, dense, 270cm
Pine garland for windows, doors, or table decoration



EUROLITE cable bridge 5 channels
900x500x50mm
 Rugged cable crossover with a yellow cover, maximum load 9t

Christmas figurines add to the festive atmosphere. Stalls can feature decorated sales counters and lovingly crafted decorations to put visitors in the Christmas spirit. Additionally, cozy seating areas can be set up with wooden benches and tables where visitors can take a break and enjoy the atmosphere. Tasteful and lovingly designed decorations will emphasize the ambiance of the Christmas market and create an unforgettable experience for visitors.



EUROLITE BL-10 E-27 Belt
Light Chain
 Weatherproof light chain with 12 colorful lamps

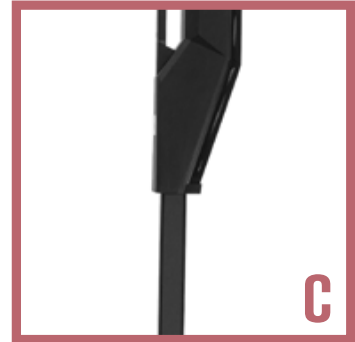
Putting on a Christmas market like this is hard work. But it is also worth it: When you look into brightly shining children's eyes full of Christmas magic and at old friends meeting for mulled wine, the stress of preparation is almost forgotten, is it not? We wish you lots of fun at all the Christmas markets!



Quiz:

UNDER THE MAGNIFYING GLASS

Last but not least, we would like to take a VERY CLOSE look at a couple of our products in this issue. But which ones are they?



A: EUROLITE LED PLL-384 RGB/WW Panel, B: OMNITRONIC PORTY-8A Wireless PA System, C: OMNITRONIC PEN ONE Active Column Speaker System, D: EUROLITE LED CAT-80 Beam Effect white, E: OMNITRONIC FAS Dynamic Wireless Microphone, F: EUROLITE LED IP Atmo Blinder 9, G: FUTURELIGHT EYE-740 MK2 QCL Zoom LED Moving-Head Wash, H: EUROLITE LED IP PAR 7x10W RGBL Spot

Gut Wöllried Rottendorf

FUTURELIGHT IP PLH-420 Moving Head Spot/Beam

Weatherproof beam/spot moving-head (IP65) with 420 W discharge lamp & CRMX wireless receiver



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The content pages of this MOVE magazine were printed on environmentally friendly recycled paper.

Availability, technical changes and errors exempted. All images similar, some symbol photos.



eurolite® IP ATMO BLINDER 9

The LED IP Atmo Blinder 9 from EUROLITE is a cluster of 3 x 3 powerful WW/CW COB LEDs, each of which sits in a reflector. Each of the nine COB LEDs is surrounded by two RGB segments for atmospheric light: One RGB LED segment is directed towards the front, one towards the reflector. Each RGB segment can be controlled individually.

REFLECTOR

20 x 0.2 W SMD 3528 3in1
TCL RGB (homogenous color mix)

RING

20 x 0.2 W SMD 3528
3in1 TCL RGB (homogenous color mix)

BLINDER

24 W COB (Chip-on-board)
CW/WW (homogenous color mix)

SPECIFICATIONS

Power consumption:	330 W
Color temperature:	1800K - 6000K adjustable
DMX channels:	13; 18; 72; 85
Cooling:	Low-noise cooling fan
Beam angle:	20°
Dimensions (WxDxH):	37.7 cm x 20.5 cm x 38.4 cm
Weight:	14.00 kg

