Most of the Lycian booth space was devoted to a display of antique followspots, including (along the front) three Strong follow spots and a Genarco. The Logothetis family and Lycian staff are shown at the back of the picture.

Excelsior!
ESTA members at LDI 2017

“IT’S DEJA VU ALL OVER AGAIN,” is a famous Yogi-ism. I’ll use it as my lede, but it doesn’t perfectly fit the LDI 2017 trade show, held at the Las Vegas Convention Center, November 17 – 19. The show was in the same hall, the same building, the same city as it has been for most years so far this century, but every LDI has been different. The participants are different each year, and what they show is different. Furthermore, this year I took a different approach: rather than trying to cover the entire show floor, I only visited the booths of ESTA members. That shortened my agenda, but I still had too little time and too much to see. Again, I am not claiming to tell you about everything at LDI or about “the best.” I’m simply telling you about what caught my eye and that I can stitch into a story of about 3,000 words.

But where to start? High End Systems had a light show that was a place to stop—if for no other reason than because it drew a crowd that blocked the aisle. The SolaFrame 750 was the new instrument there, with the pitch being its versatility. It is rated to put out over 10,000 or 11,300 lumens (the brochure says both), and offers framing shutters, CMY color mixing plus a color wheel, a spot-flood range of 6° to 50°, and other features. The light is a cold-white 7,000 K with a CRI of >75; my personal preference, since I usually light people, would be the 3,200 K SolaFrame Theatre, also shown with almost the same feature set, but significantly better color rendering. In any case, the lights were bright! There’s no need to make “Oh, but you save power” excuses for LED luminaires anymore. They still save power compared to other sources, but they produce plenty of light for many if not most applications.

Lycian Stage Lighting had a large display of ancient followspots, many from Richard Logothetis’ personal collection, which drew a good crowd, but he also had two LED followspot prototypes that showed how far LED luminaires have come. The Zot LED, a few months away from being ready to ship, was shown next to a 700 W HID Zot7. The Zot LED was brighter. Lycian also had a rough prototype of a 1277 Superstar LED. It could only be operated in short bursts, but when it was on it shot a powerful beam of light across the hall that came close to the output of a 1,200 W HMI Excelsior!
Superstar. These units use fairly high wattage LED modules; the power saving with LEDs over HID sources is modest but still significant. Logothetis told me about a conversation he had with a person shopping for LED followspots to replace conventional units on a Las Vegas show. Why? The shows are tenants in the casinos and are charged by the property owners for the ampacity of the electrical service; getting rid of one 400 A feed can save a show far more than enough to pay for new equipment.

Part of the trick of creating a bright, narrow-beam LED luminaire is starting with a very small source, which Ayrton calls out with its “low-entendue White Light Engine” for the new Ghibli automated luminaire. (See Mike Wood’s “Out of the Wood” column in the Winter 2012 Protocol for a discussion of entendue.) The Ghibli consumes 800 W to produce a beam of 23,000 lumens, with a spot-flood ratio of 7° to 56°. The light produced is very cold 7,500 K, and I’m not sure of the color rendering. Ayrton had a spectacular light show, winning the “LDI 2017 Award for the Most Creative Use of Light,” but it didn’t illuminate people or colored objects.

The supplier of the sources for many of the narrow-beam luminaires at LDI is OSRAM, which also owns Claypaky and ADB. One of OSRAM’s newest acquisitions is LED Engin, a maker of LED modules based in San Jose, CA. Their particular expertise is in tightly packing LED chips on a multi-layer ceramic substrate. The layering allows the connecting wires to be buried underneath the chips, rather than running between them, so the chip density is higher. Their latest offering, more for architectural lighting but featured at LDI, was the LuxiTune series of tunable white lighting modules. These are LED sources with TIR lenses and a small mother board driver with 0-10 V control. Plug-in daughter boards expand the control options to include ANSI E1.11 (DMX512) and E1.20 (RDM), DALI, and Zigbee with Bluetooth mesh. These are tunable from 6,500 K to 1,800 K, following the black body line. OSRAM also showed the SplitStar RGBA and SplitStar S32, which offer extremely high luminous density from 16-chip sources less than 7 mm square. The RGBA version can put out up to 10,000 lumens and reach 93 CRI Ra while consuming only 180 W.

Using red, green, blue, and amber LEDs is a common solution for good color rendering, but not the only one. Chauvet Professional showed the Ovation E-930VW profile spot, which uses a six-color system to cover 2,800 to 8,000 K with 88 to 92 CRI. Ninety-one LEDs do the job in a mix of red, orange-red, phosphor-conversion lime, green, blue, and royal blue. It’s designed to be a variable color temperature white spotlight, with a slightly adjustable green content to match other sources, but you can control the individual colors separately for effect.

ETC showed the most recent addition to the ColorSource family, the ColorSource CYC. It uses a five-color mix of red, green, blue, indigo, and lime LEDs to cover the spectrum with good color rendering. ETC has had cyc-lighting units before: the Source Four LED CYC adapter fitted to the light engine of a Source Four LED profile spot. Price, other than the lack of lamps to replace, isn’t a selling point in the ColorSource CYC press material, but the ColorSource CYC is clearly less expensive than that combination, and it’s simpler—no swapping components and figuring where you
Across from the ETC booth ADB, an OSRAM business, showed the Klemantis, a cyclight that uses six colors—red, green, blue, cyan, lime, and amber—combined in multi-chip LED modules to create a broad spectrum and white up to 97 – 99 CRI. The Klemantis offers color consistency over time and temperature changes, using a combination of luminaire calibration and an LED ageing compensation algorithm. Fabiano Besio explained that the latter involved tracking instrument age and sharing this information between instruments in a rig, so newer equipment could match output to older equipment. Also shown were two prototypes of the LEXPERT, a 30 W LED profile spot about the size of a quart milk carton. Almost no information was available about them, but the units shown could do sharp shutter cuts or a soft blending focus.

Color matching is one of the features of ARRI’s SkyPanel line of LED softlights. The S360-C was the big one (1280 mm x 870 mm) that dominated the ARRI booth. Light output and color is adjustable from 2,800 K to 10,000 K in white with a CRI rating above 95, but it can also produce colors. At ESTA’s Photometrics Working Group meeting on November 16, when ANSI E1.54, Standard for Color Communication in Entertainment Lighting, was discussed, Mike Wagner, ARRI’s representative on the working group, had a story about a film shoot in which a SkyPanel had to duplicate the color of the sunlight filtered through the forest canopy. A colorimeter measured the sunlight, and the color coordinates were plugged into the SkyPanel. Voila! Electric light that matches leaf-filtered sunlight. It’s bright too—5,000 lux at 3 m with a wide beam area of about 59 m².

Rosco showed new devices for controlling beam spread: a line of Opti-Sculpt filters and the Pico Cube Zoom Lens. The Opti-Sculpt filters look like frost gel, but they offer precise angular beam control and high transmission, better than 85%. The demo in the Rosco booth was impressive, with the different filters clearly enlarging the beam spread commensurate with their spread rating. Twelve different patterns are available: five symmetrical designs (vertical and horizontal spread the same) and seven rectangular designs (vertical and horizontal spread different). The Pico Cube Zoom Lens could be described as an electrically controlled version of a variable Opti-Sculpt filter for the Pico Cube luminaire line, giving a spot to flood range of 8° to 60°. It’s claimed that the lens has no moving parts, and indeed it looks like a flat glass disk—almost perfectly clear—but something in it must move, perhaps at a molecular
level, to change the light spread. Control is via DMX512 or manual controls on the back of the Pico Cube.

Altman showed the ARIA AP150 RGBW, a PAR-type luminaire offering a 10° to 50° motorized zoom with visible moving parts: the lens plate over the array of red, green, blue, and white LEDs. Maximum output is over 3,700 lumens, with a power input of 150 W at 120 to 240 V, 50 or 60 Hz. The autoranging power supply means it will work anywhere except in Japan, where the power supply is nominally 100 V. Color control is by DMX512 with 16-bit or 8-bit resolution described by hue/saturation/intensity or red/blue/green. It has a built-in virtual color wheel, and you can record preset colors on it via RDM.

All the luminaires listed above can be controlled remotely, and there were a lot of lighting control products on the show floor. Control desks are difficult for me to assess with a quick “What’s new?” booth visit, but there are some control products I’d like to mention.

Lehigh Electric Products Company showed the Zero88 FLX S24 and FLX S48 control desks. The desks are designed around controlling luminaires, rather than dimmer or whatever control channels. The FLX S24 has 24 multi-function faders and can hand up to 48 multi-parameter or conventional luminaires. It will handle 48 groups and 48 palettes of color, beamshape, position, and effects. A 7” touch screen and four encoder wheels help speed programming. The S48 doubles the number of luminaires and palettes, and adds a DVI-D output for an optional touch-screen monitor. The sales pitch emphasized simplicity and ease of use. The desks use RDM, built-in color palettes, and fixture library to make a lighting rig almost self-configurable. Distributing these desks, made by Eaton Lighting Systems in Cwmbran, Wales, has allowed Lehigh in Allentown, PA, to focus on developing other products. One of note is the Impress DMX Color LCD Control panels, a wall-mounted 7” touch-screen tablet for architectural applications. It allows control of up to 512 single or multi-channel zones with 18 presets. Other features including IR remote control and occupancy sensor inputs. It can be easily integrated into a lighting system that uses DMX512 and RDM protocols. The other notable new product is the E-Flex/Stage, a power control box you can hang on a batten to turn on and off the power to luminaires, such as LEDs and moving lights, that draw power even when “off.”

Doug Fleenor Design always has a gag product; the gag this time was a remote controlled toy that popped balloons—fun for
those who like to break things. A new product for fixing broken DMX512 control systems shown was the DMX Decelerator II.

There are nominally “DMX512” receivers in the market that can’t actually handle the standard’s wide 1000-to-1 refresh rate range. The Decelerator II retransmits the data at a rate the receiver can handle, whether slower or faster than the transmitter. The original Decelerator had two output speeds—20 Hz and 40 Hz—to which the new version adds 30 Hz. It also has a pass-through mode in which the Decelerator II acts as an optoisolator. This feature has led to the discontinuation of DFD’s DMX512 Inline Optical Isolator. The Decelerator II provides the same isolation function, but with an EIA-485-compliant receiver, and it costs less.

Goddard Design announced a software update to the DMXter and MiniDMXter to enhance the RDM responder functions in the testing devices. As Bob Goddard noted at the show, one of the problems with developing RDM (ANSI E1.20) controllers is having something that complies with ANSI E1.20 and to respond to the RDM messages. Goddard Design’s DMXter and MiniDMXter can do this, and the software update adds 16 new features. Goddard Design also announced that it is a stocking distributor for a selection of Artistic Licence products. The advantages for North American buyers are stable prices, faster delivery, and fewer charge card refusals for trying to buy something from “an appliance store” overseas. (That’s what my bank thought Artistic Licence was.)

Lex Products showed a new product that fits into this control protocols thread: The PowerData Cable, a 5’ or 10’ jumper that combines power and data conductors in one jacket. The power is carried on 12/3 wire; data is carried on four shielded 24 AWG pairs, suitable for DMX512 or any Ethernet-based protocol. A range of power and data connectors is available.

We have to use wires for practical power distribution, but not for data. At LDII, City Theatrical demonstrated sending nine universes of DMX512/RDM wirelessly using a Multiverse Gateway. The Gateway connects sACN or Art-Net to up to five universes of wireless DMX512 on the 2.4 GHz band, up to four universes on the 900 MHz band, and to eight universes on wired DMX512—17 universes total. The single-universe Multiverse Nodes are receivers if you plug a DMX cable into the output and transmitters if you plug the cable into the input. Management of the system is via the DMXcat phone app using BlueTooth or a Wi-Fi based tablet controller.

RC4 Wireless showed the RC5 EASS-900, a secure wireless data distribution system designed for long distances using the 900 MHz band. The range with elevated, aimed antennas is up to 18 km line-
of-sight—about twice the width of the Hudson River at its widest. Cipher Block Chaining and 256-bit AES encryption are used for an “uncrackable and unhackable data stream.”

There were lots of interesting rigging products shown by ESTA members at LDI. Area Four Industries showed the Tomcat Nemesis, a shallow pre-rig truss that is loaded from the end. It was shown with automated luminaires mounted on transverse bars that slid on rails just under the top chords. Removable casted legs support the truss off the floor while being loaded or transported. It’s a good product with a terrible name; “Nemesis” is the goddess of divine retribution. Also shown was a mechanical latch to support a sleeve block after it is raised into position on a tower, taking the load off the chain hoist.

Tyler Truss showed a weather-protected motor block, a sleeve block that mounts the chain hoist in an offset position under a rain cover. The chain runs down under a chain wheel before going up to the top of the tower; any rain running down the chain drops off at that chain wheel rather than running into the motor. Tyler also showed the TV Truss, a box truss with a center tube on the bottom inset, up from the bottom chords. It’s designed to support video screens, so the top of the image area can be even with the bottom of the truss.

XSF showed the Protective Bolt Plate Truss, a truss line with eared end plates that cover the ends of the chord tubes to prevent damage to the tubes from dropping or dragging. The bolt holes are spaced to allow the Protective Bolt Plate Truss to mate with other common bolt plate truss using standard 5/8” bolts. XSF also showed trusses with the Integrated Rig Point, a bar with a hole in the center that provides an engineered rig point with a 1-ton load rating at each panel point within the truss. A standard 5/8” shackle fits the hole and eliminates the need for round slings to make the connection to the chain hoist. Also eliminated is the need for wire rope or chain safeties to support the truss in a fire.

Wenger recently purchased SECOA and chose LDI to highlight Wenger’s expanded line of acoustical shells, expanded because of that purchase. New at LDI were the Maestro Full-Stage Shell and the Virtuoso Active Acoustical Shell. The Maestro is a traditional physical acoustical shell system consisting of movable towers and ceiling panels. It’s a handsome product, but I was more interested in the Virtuoso Active Acoustical Shell. Developed in cooperation with HARMAN and Lexicon, it electronically creates a virtual acoustical space for the performers and audience. About 40 years ago I heard an electronic acoustic enhancement system at the Concord Pavilion, but it was an expensive, complicated, analog system. The Virtuoso, in contrast, is a spare system of microphones and speakers, and powerful digital processing that creates an appropriately reverberant acoustic environment. The lack of ceiling panels means no arguments with the Authority Having Jurisdiction about the shell blocking fire suppression sprinklers. Plus, it takes almost no space for storage.

And with this I am out of space for covering more exhibitors and products. I limited my visiting at LDI this year to ESTA members. That shortened my agenda, but I think it still gave me a good sense of trends in our industry. To all those ESTA members who spent time talking to me and whose products I didn’t mention here, I will try to cover you next time. ■