

THE RING CYCLE

Omnia, the new club in Vegas, offers plenty of spectacle, beginning with its unique ring chandelier

By: Louis M. Brill

A 75,000-sq.-ft. destination dedicated to electronic dance music, Omnia Nightclub, located at Caesar's Palace in Las Vegas, offers the usual enticements, including a vast dance floor, high ceiling, lounge, and rooftop space, along with a novel, and jaw-dropping, effect: A chandelier that separates into eight rings covered in LED nodes.

Omnia is the second Vegas club created by the Hakkasan Group, a dining, nightlife, and hospitality company; the first was Hakkasan Las Vegas Restaurant and Nightclub, at MGM Grand (LSA, October 2013). James Algate, vice president of music at Hakkasan, who participated in the club's creation, says, "Omnia is designed to offer something uniquely different, that stands on its own from a design perspective and encompasses a production element that nobody else on The Strip can offer. From that brief, we collectively designed the most beautiful and inspiring nightclub you could imagine."

"One of Hakkasan Group's goals was to create a great nightclub, one that looks amazing even when the house-lights are up," says Shawn Sullivan, partner and studio leader of The Rockwell Group, the club's interior design firm. "To get that look, we studied beautiful, elegant concert halls and performing arts venues around the world, such as Palais Garnier in Paris, Metropolitan Opera in New York, and Bolshoi Theatre in Moscow. We took from them layouts, as well as inspiration and experiential information, to create a super-modern version of them.

"It was the intimacy of the Paris Opera House that we really loved. We utilized many design elements of that venue—its sight lines, opera boxes, sconces, balcony edges, and mezzanine staircases—and embellished them into something very current. The chandelier became a criti-

cally important component of our design, as an architectural piece and a technological performance element. Its presence helps fill the club space, gives scale to the room, and looks equally spectacular as a static object."

Sound

Algate says that Dublin, Ireland-based Audiotek, Ltd., which "has been Hakkasan's A/V integrator for over a decade," consulted on the right PA. "Once they understood our audio concerns, we were given a demonstration of an L-Acoustics setup, which impressed us so much that it became our system of choice for Omnia."

"Once that decision was made," Algate continues, "we told Audiotek and L-Acoustics that our requirement for the club's sound distribution was to have a drop of 8dB from the main dance floor to the surrounding banquette seating areas. The resulting audio setup enables us to run an amazing SPL without having to drive the audio system, while still achieving our goal of having both a substantial dB level on the dance floor, and high-quality sound throughout the nightclub."

Audio for the main dance floor is positioned in a quad layout using 12 L-Acoustic ARCS II mid/high speakers. A three-speaker cluster is placed at every corner of the dance floor, in a 90° pattern. These are driven by L-Acoustics LA4 and LA8 controlled amplifiers, which can handle four channels of up to 1,000W each. Accompanying each cluster are 12 L-Acoustics SB28 bass reflex subwoofers, also driven with LA8 amps.

"One concern was that, in certain places, [the speakers] might obstruct the guests' view of the room," says Algate. "To prevent that, we had the fill speakers recessed into soffits in the ceiling. We also placed a delay ring under the





An aerialist performs high in the air over the crowded dance floor.

balcony, using a series of 24 L-Acoustics 12XT coaxial loudspeakers, also supported by LA4X amps. For audio coverage around the Opal Bar [behind the DJ area], we positioned, at left and right, six L-Acoustics passive two-way ARCS WIDE speakers (again with LA4X and LA8 amps). The Arcs Wide units are accompanied by two SB18 subwoofers in each position.

One major acoustical challenge posed by the room involves the overhead fly space, which extends 60', ending in a curved dome; the room's curved walls also generate reflections. Algate says, "Our solution to both issues was to place acoustical panels around the walls and acoustical baffles in the ceiling above the ring chandelier to block sound reflections from the curved roof.

"Another concern involved the ring chandelier's mobility in relation to the placement of speakers on the dance floor. In this case, hanging speakers were out of the question. To get speakers properly located and to provide fill sound around the mezzanine level, we use L-Acoustics 115XT HiQ boxes, which are mounted on the columns surrounding the banquette tables."

In developing the DJ area, Sullivan notes, "We spent a lot of time asking, How do the DJs experience the show? If they're having an amazing time, it goes without saying that the guests will, too." The DJ booth setup incorporates Pioneer players including four CDJ-2000NXS and one CDJ-900NXS. DJ monitors include six L-Acoustics KARA line-array units and four SB18i subwoofers. Omnia has the only DJ booth in the world with a chandelier as part of its tool set. This gives DJs added performance capabilities and allows them to offer a unique entertainment experience to club guests.

Omnia offers two additional gathering places for guests. The first, Heart of Omnia, is an ultra-lounge with a capacity of 1,000 and its own DJ setup, including four L-Acoustics ARCS-FOCUS and four Arcs-Wide speakers. A set of each hangs in a cluster, allowing for an even SPL over the vertical dispersion. Also used are six L-Acoustics SB18 subwoofers and six L-Acoustics 12XTi and six L-Acoustics 115XT HiQs for fill applications.

The second gathering place, the rooftop terrace, provides a view of the surrounding Las Vegas skyline.

“Because the terrace is outdoors, and large hotels are within 200 yards, we had to minimize off-site noise,” says AudioTek’s Chris Kmiec. “The Renkus-Heinz IC Live system not only provides clean, clear audio, it also enables us to precisely steer the sound to cover the L-shaped terrace and not beyond it.” The terrace outdoor sound system uses eight Renkus-Heinz Iconyx ICL-R steerable column speakers, seven Renkus-Heinz IC118S-R subwoofers, and six Renkus-Heinz TRX61 fill units.

QSC Q-SYS processing is used for all routing and control. This allows A-to-D conversion to be done locally at each DJ booth and routed over a dedicated IP/TCP network to the processing rack. The system is designed to be entirely redundant, with a backup for any network switch, or DSP unit, in the network running simultaneously at all times. It includes two QSC Q-SYS Core 500i integrated processors, three TSC-8 touch screens, 16 Q-SYS I/O units, and one iPad. Control of all audio in the venue can also be done on this system via iPad.

Lighting/video

The chandelier’s central placement makes it a natural location for lighting fixtures. Units placed there, around the dance floor, and under the balcony include 51 Robe Pointes, 24 Robe MMX units, 16 Ayrton MagicBlade-Rs, 24 Robe ROBIN 300 LEDWash units, and 15 Solaris Flares, the latter distributed in the US by TMB.

The Cascade Wall is an automated truss, located above the DJ booth, featuring an array of horizontal and vertical LED video panels covered with black mirrors that offer reflections of the surrounding room. When the LED displays are turned on, these mirrors become walls of streaming graphic images. Also incorporated on the winched truss are four RGB Laserworld projectors, four Ayrton MagicPanel-Rs, and four Robe Pointes.

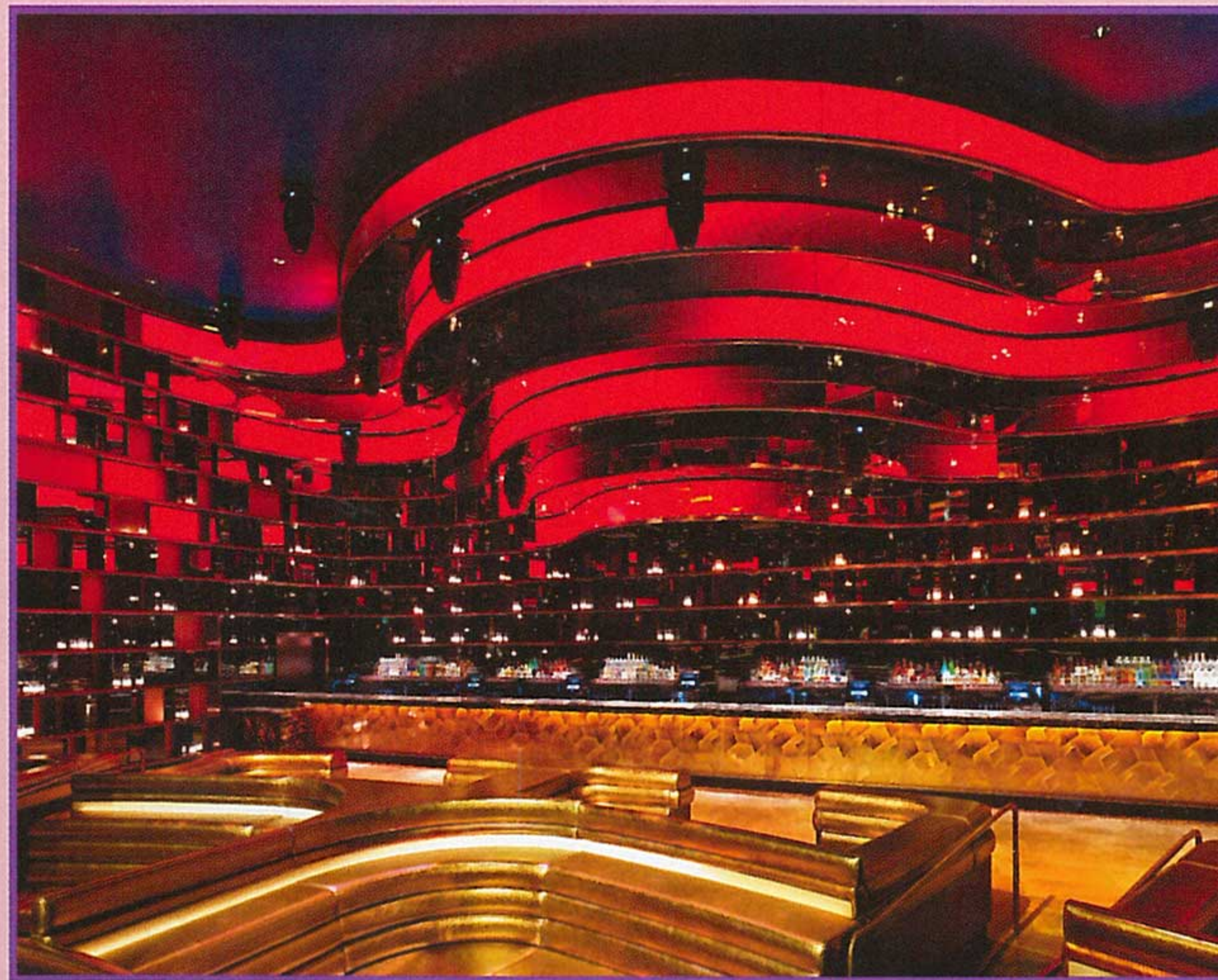
Additional graphic content can be seen streaming across the curved front of each balcony booth. Each, Algate says, “is composed of a single horizontal band of Absen A103 3.9mm high-resolution LED screens. In total, 4,000 sq. ft. of LED screen was custom-designed to fit across the entire balcony fascia, the rear cascading wall, and the entire club. The LED screens are covered with a special two-way black mirror to enhance the screen’s video content, while limiting the amount of ambient light this amount of screen would emit into the space.

“One nice visual effect is that the LED balcony displays have a layered look, simultaneously presenting the screen’s video content and reflecting the opposite side’s video displays in its mirrors,” Algate adds. “When the display is turned off, the surrounding entertainment lighting is reflected in the mirrors.” The black mirror effect set the standard for the video screens throughout the nightclub, as all video displays are hidden behind two-way mirrors or translucent fascia panels.

The chandelier

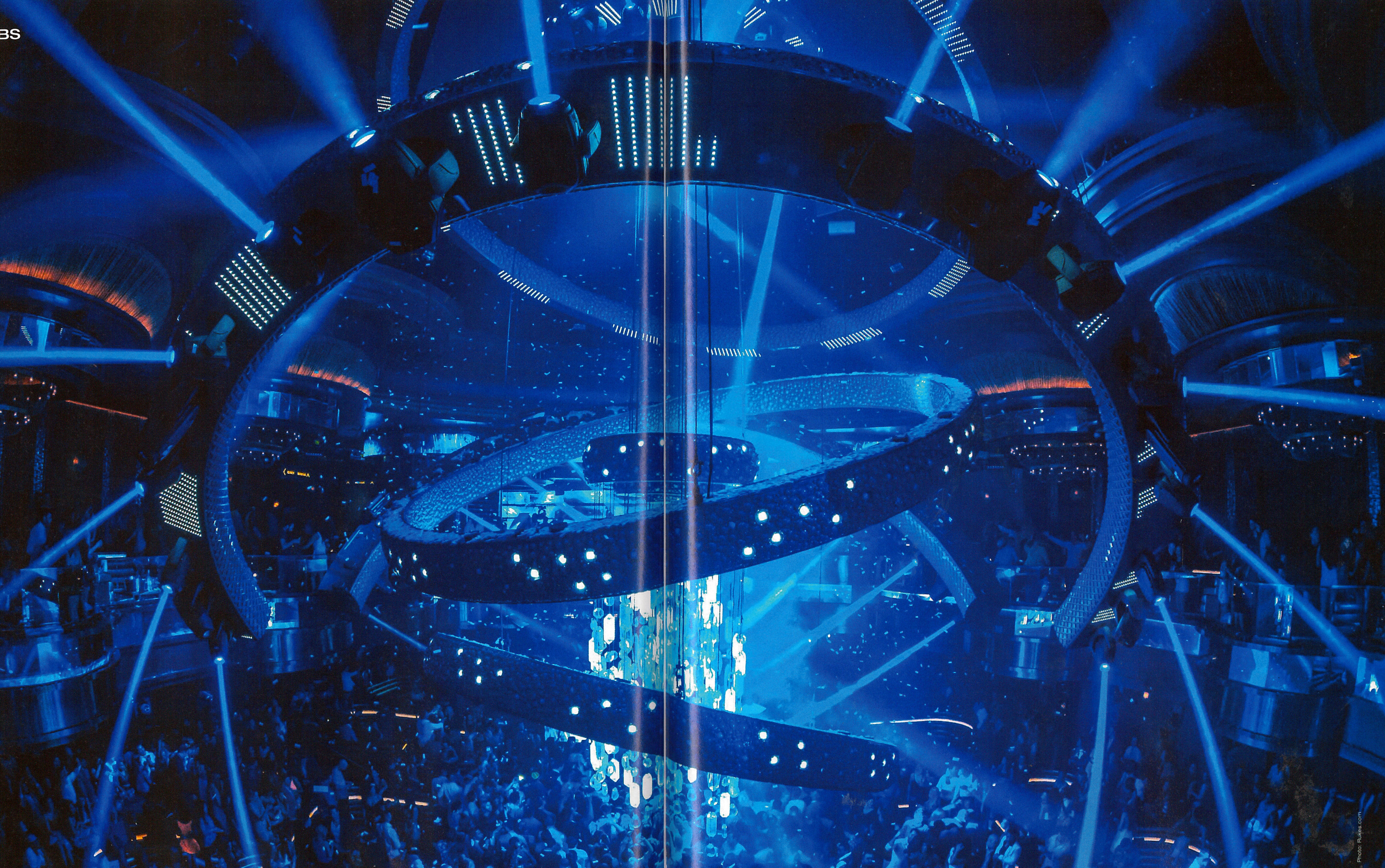
The chandelier is a bridge between the nightclub’s opulent “opera” look and its reality as a 21st-century dance club. It weighs about 22,000lb and, fully extended, reaches a length of about 60'. Willie Williams, the noted concert lighting designer, who created Omnia’s rig, says, “The lighting built into the chandelier is just a part of the overall club lighting system. The huge advantage of utilizing the chandelier in this way is that the lighting rig continually changes shape through the course of the evening, offering much more variety than you’d ever get from a static rig above a dance floor. It’s the integration of all the effects—light, sound, motion, fog, confetti, and performers—that makes the visuals in Omnia unique.”

The chandelier’s design is the result of a collaboration among the Hakkasan Group, the Rockwell Group, and Williams; it was fabricated by Lititz, Pennsylvania-based



The Cascade Wall overlooks the main dance area.

scenic specialist firm Tait. “The concept for the chandelier came from a desire for the nightclub to have a unique element that would be the central focus of the main room,” Williams says. “Part of the brief was to create something that could psychologically isolate the ground floor, allowing it to be used in isolation for smaller events. I proposed a series of LED strips that would rise in kinetic waves to fill the dome space. These were to have been individually mobile and able to adopt a variety of configurations, including forming a low ceiling. This was rationalized into the concentric rings in the final design, going through many variations en route. The spirit of the LED strips





The outside coverings of the rings have a bubble-like decorative texture. Behind each ring is an embedded LED screen.

remains in the LED bands that circle the mezzanine level.”

As the rings descend from the ceiling, they can assume any number of configurations: all eight rings lowered as a single unit, the rings lowering one at a time, or certain rings rising while others continue to lower. Williams says, “For the sake of the operators, we gave the animations names that pretty much describe their look and movement: ‘The Pinch,’ ‘Helter Skelter,’ ‘Slinky,’ ‘Double Bounce,’ and so on. The various looks from the different elements and fixtures build on one another, producing a series of different environments throughout the night. Unsurprisingly, we begin quite gently and ramp up the effects as the night progresses.”

The chandelier’s movement is directed by series of 21 winches located in the ceiling within the rotunda. The “winch farm,” as Williams calls it, includes various models from Stage Technologies, a division of Tait: BigTow Classics, BT2-200s, and BT290s. All winch rigging is managed by complementary muling sheaves, which keep all the rigging lines locked in their assigned paths as they move at approximately 1m per second.

The chandelier is composed of circular aluminum trusses, each connected to its own individual winching system. Each circular truss is covered with a polycarbonate cowling, giving each ring a donut-shaped look. Each ring is also covered on both sides with LED screens. These consist of Martin LED strips, each with different dot resolutions, including 1,242 VC-Dot 8s and 224 VC-Dot 16s. “The outsides of the rings have a lower density of LED and serve mostly to enhance the texture of the ring surface,” Williams says. “These, too, differ from ring to ring, with ‘jewel,’ ‘bubble,’ and ‘snakeskin’ textures. The undersides of the rings house radiating lines of LED that can display graphics of greater detail to complement and animate the lighting looks.”

The chandelier rings break down into three groups, with each ring numbered to identify its specific features: the central three (rings one, two, and three), which support strands of crystal (see below); two rings (four and eight) that house lighting instruments; and rings five, six, and seven, which hold the majority of the Martin strips and are designed to have the greatest freedom of movement.



As the chandelier descends from the ceiling, it can position into any number of stacked ring configurations.

Ring eight is the largest, spanning 32' in diameter. It, along with ring four (which is 13' in diameter), handles dance floor lighting. Each has 33 Robe Robin Pointes, 18 Robe Robin MMX Spot units, and Solaris Flares.

Hanging between ring one (3' diameter), ring two (5' diameter), and ring three (7' diameter), are custom glass-filled crystals (357 in all), with their own LED lights. Shaped like a spiral curtain, these form a helix pattern, with its own rigging, allowing the helix form to fly vertically through the rings. It is, Williams notes, "considered a 'chandelier-within-a-chandelier' and is presented to look like it belongs in the room and to complement the décor, rather than to feel like another lighting system. The hanging crystals light up and animate when the rest of the ring chandelier is at rest, giving a much more genteel feel without hinting at the creative lunacy to follow."

In addition, four Christie WU12K-M video projectors deliver images that are visible on both sides of a series of independently controlled vertical translucent screens. Williams says the drop-down projection screens, which are used for DJ introductions and more intimate moments of

the evening, allow softer graphics that provide a "visual relief" from the more intense looks on the video panels. The club features two MA Lighting grandMA light consoles, one for the lighting another for the Tait Navigator system, which stores all of the chandelier's motion commands, lighting, and audio processing. Video content is managed by four Avolite Infinity EX8 media servers, each with a dedicated purpose: One is directed to the main room LED walls, a second manages the main room's projections, a third is directed solely to the chandelier, and the fourth manages the Heart of Omnia's LED walls. Each server is also triggered from the lighting desk in each room to run different playback effects.

Omnia pushes the nightclubbing experience into a new dimension in which entertainment is now as much about kinetic staging as the usual lighting effects and overwhelming sound. Within the club community, the chandelier opens the door to a new era of design, in which new kinetic staging ideas will become the next frontier. 📶