

Designing with PoE:

Lighting a \$25,000-Per-Night Villa



The first impression of Villa 66 is not its scale—though at this level of hospitality, scale is expected. It is the quiet precision of light.

At Resorts World Las Vegas, within the Crockfords collection, Villa 66 represents the highest tier of accommodation. At roughly \$25,000 a night, it is designed for a very specific guest. The lighting reflects that expectation—not just luxury, but control, flexibility, and atmosphere on demand.

Mark Simpson, lighting designer with **Celano Design Studio Co.**, was involved from the earliest stages, embedded within the interior design team. That proximity changed everything.

“Because I’m part of the team from the start, I can chime in much earlier,” Mark explains. “Instead of reacting to decisions after they’re made, I’m able to ask questions like, ‘What if we pushed that panel off the wall so we could create a glow behind it?’”

The result is a project where light is not layered onto the architecture—it is inseparable from it.

Precision from Above

In the main living areas, the ceiling plane is deliberately quiet. The lighting is there, but it never calls attention to itself.

That restraint is achieved through small-aperture downlights from **USAI**. Originally conceived as full circadian fixtures, the design evolved into a tunable white solution—balancing performance, flexibility, and budget.

“They ended up as tunable white,” Mark says. “Two-circuit downlights that can shift throughout the day.”

These fixtures provide the backbone of the ambient lighting strategy, ranging from crisp, cooler tones in active areas like the kitchen to warmer, more intimate settings in the lounge and bedrooms. Their precision optics and minimal aperture allow them to disappear into the ceiling while delivering controlled, high-quality light exactly where it’s needed.

Linear Layers

If the downlights establish the foundation, the linear lighting—largely from **Luminii**—builds the architecture.



Throughout the suite, walls are subtly pulled off their surfaces, creating concealed cavities for light. Within these spaces, Luminii linear systems deliver both white and color-changing illumination, grazing surfaces and creating depth without revealing their source.

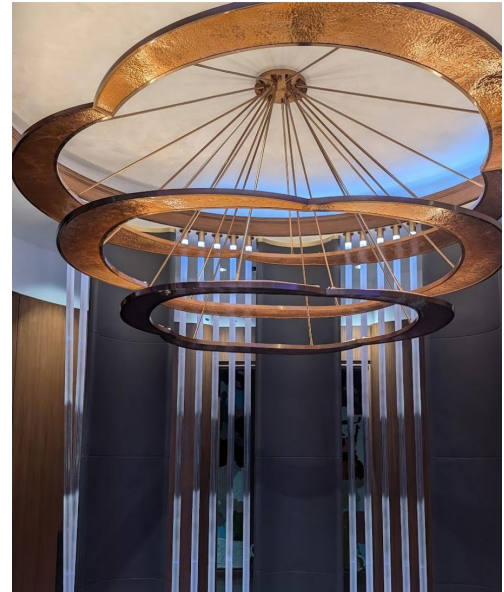
In the bedrooms, thin bands of magenta or amber trace the edges of panels. “That color stripe is color-changing light,” Mark explains, describing how these integrated elements add dimension to otherwise quiet materials.

In public spaces, Luminii’s linear fixtures are used in coves—washing ceilings and floors from hidden positions. These layers are not decorative in the traditional sense. They are atmospheric, shaping perception rather than drawing attention.

The Bar: Where Light Becomes Object

At the center of Villa 66 is the bar—a luminous installation that combines multiple lighting systems into a single composition.

Vertical acrylic tubes form the back bar, each internally lit with color-changing LEDs. Light enters from both ends, diffusing through the frosted material to create a soft gradient.



“It was actually built as a light fixture,” Mark says. “There’s a circular color-changing LED at the top and bottom of each tube.”

The effect is layered. Behind the bottles, within the tubes, and across the bar surface itself, light operates at multiple depths.

Above, a custom chandelier by **CADLume** introduces a more familiar language—exposed filament bulbs—but with a technical twist. These are 48-volt lamps, integrated into a Power over Ethernet (PoE) system.

“That was the biggest relief,” Mark recalls. “When I heard we could get those in 48 volts, with warm dimming... that was the moment I was totally on board.”

The chandelier looks conventional. Its behavior is anything but.

Power Over Ethernet: A Different Infrastructure

Behind the scenes, Villa 66 operates on a radically different lighting infrastructure. Nearly every fixture—USAI downlights, Luminii linear systems, decorative lamps—is powered and controlled through PoE.

“All of the fixtures run back to an IT closet,” explains Joe Herbst from PoE Texas. “From there, the server takes any input and executes the corresponding scene.”

This centralized system eliminates traditional drivers at the fixture level. Instead, intelligent drivers in the network determine how much power each fixture requires, even when integrating third-party products like USAI.

“It auto-senses,” Joe says. “If I know how much power it’s supposed to be, it figures out how to deliver it.”

For Mark, this changed the design process entirely. Instead of handing off intent to a separate controls contractor, he collaborated directly with the system designer from the beginning.

“In another system, I wouldn’t meet the programmer until the end,” he says. “Here, we were working together the whole time.”

Control as Experience

Control in Villa 66 is both sophisticated and invisible.

Sleek panels from Black Nova provide the user interface—minimal, tactile, and intuitive. Behind them, the system allows each fixture to be individually addressed, grouped, and programmed into scenes.

“We start with every fixture individually controllable,” Joe explains. “Then we group them and build scenes based on how the space is used.”

This level of control extends to color. During commissioning, the team calibrated lighting scenes against the natural sunset visible from the suite.

“A little more red, a little more green,” Mark recalls.

The final palette is not arbitrary—it is environmental, tied to the rhythms of the outside world.

Invisible Decisions

Some of the most important design choices are the least visible.

Table lamps, for example, are not plugged into standard outlets. To avoid confusion with low-voltage systems, the team eliminated conventional receptacles, instead using concealed connectors that allow quick maintenance without electrical work.

“We didn’t want something that looks like a normal outlet but isn’t,” Mark explains.

Elsewhere, artwork doubles as illumination. A sculptural circular piece in the dining area—also by CADLume—is backlit, functioning as both focal point and light source.

These decisions reinforce a consistent idea: light should feel inevitable.

A New Standard for Integration

Villa 66 is not just a luxury suite. It is a case study in integration. Each element plays a role. None dominates.

The takeaway is clear: the future of high-end hospitality lighting is not about more fixtures or more spectacle. It is about deeper integration—between disciplines, between systems, and between light and experience.

At Villa 66, that integration is complete. ■

LOCATION	MANUFACTURER	FIXTURE TYPE
Main Living Areas	USAI	Small-Aperture Tunable White Downlights
Kitchen	USAI	Small-Aperture Tunable White Downlights
Lounge Areas	USAI	Small-Aperture Tunable White Downlights
Bedrooms	USAI	Small-Aperture Tunable White Downlights
Bedrooms	Luminii	Color-Changing Linear LED
Public Spaces	Luminii	Linear LED Cove Lighting
Throughout Suite	Luminii	Concealed White and RGB Linear LED
Bar Feature	CADLume	Acrylic Tube Light Sculpture
Bar Area	CADLume	Decorative Chandelier
Dining Area	CADLume	Backlit Illuminated Artwork
Table Lamps	Various/CADLume	Decorative Table Lamps
Control System	PoE Texas	PoE Lighting Infrastructure
User Interface	Black Nova	Lighting Control Panels