

Nanolumens Lights Up Assembly Atlanta with Landmark Freestanding LED Tower



TRANSFORMING THE CREATIVE EXPERIENCE WITH NANOLUMENS

#May 2025

NANOLUMENS AND CAPITAL SIGN COLLABORATE TO ENGINEER NORTH AMERICA'S LARGEST FREESTANDING LED SCREEN AT ASSEMBLY ATLANTA



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Assembly Studios Case Study

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PROJECT OVERVIEW



Assembly Studios, the heart of the newly developed Assembly Atlanta, is a film and television production hub redefining the entertainment landscape in Georgia. Located in Doraville, just inside the Interstate 285 perimeter, this state-of-the-art studio offers world-class sound stages, stunning exterior locations and comprehensive production services, all within a single, versatile campus. Designed to provide Hollywood-level amenities in the heart of Atlanta, Assembly Studios is an expansive development including 22 high-tech studios, realistic city facades and office spaces, along with public attractions such as parks, an amphitheater and picturesque ponds.

THE ROLE OF NANOLUMENS



The project at Assembly Atlanta is for Georgia, by Georgia. Assembly Atlanta has partnered with Tucker-based material supplier Cofer Brothers, Norcross-based LED manufacturer Nanolumens and Lilburn-based visual solutions provider Capital Sign, among many other local companies, highlighting its dedication to fostering Georgia's economy while creating a premier destination for entertainment, creativity and community engagement. One of the project's most striking features is the iconic LED tower, designed and manufactured by Nanolumens. Soaring 140 feet high, it stands as the largest freestanding LED screen in North America. Positioned at the studio's entrance, it welcomes visitors and captivates commuters along Interstate 285.

DESIGN INNOVATION

Assembly Atlanta was an ambitious undertaking, standing approximately 140 feet tall and 22 feet wide,” said Arch Nelson, director of themed entertainment experiences for Nanolumens. “It incorporates two different pixel pitches that gradually change as you move upward, creating a seamless visual experience. One of the key engineering challenges was determining the structure to which the display would be attached. Rather than integrating it into an existing building, the display is mounted on a purpose-built engineering framework – an open-shell structure designed solely to support this installation.”

To bring this vision to life, Nanolumens partnered with Capital Signs, which managed the LED wall installation and contributed to the surrounding architectural elements. The display is housed within a distinctive, egg-shaped metal shell that wraps around the triangular structure, forming a bold, spine-like design crafted by Capital Signs.



OVERCOMING CHALLENGES



Andy Panos, vice president for Capital Signs, explained, “We’ve been working with Nanolumens since around 2015, possibly even earlier. Over the years, we’ve collaborated on numerous projects, particularly at the Atlanta Airport and throughout downtown Atlanta. They have always been a great partner for complex, one-of-a-kind projects. We’ve tackled multi-sided displays, curved displays and other challenging installations with them. This project was particularly unique – a 140-foot-tall tower featuring an LED display approximately 136 feet tall. The level of custom engineering required was substantial, and it’s difficult to imagine many other LED manufacturers being capable of handling such a project.”

Building a display on the side of a freestanding tower presents unique challenges, especially when the structure is exposed to wind from all directions. In this case, the tower is triangular, meaning it faces additional weather-related stresses. Nanolumens and Capital Sign collaborated to ensure the display could flex appropriately, which was a key engineering hurdle. The engineers at Nanolumens worked closely to determine an acceptable deflection rate and then developed a display and mounting system capable of accommodating it. Unlike buildings, which are designed to sway, this tower required a significantly higher level of flexibility to withstand environmental forces.

LONG-TERM INVESTMENT



Throughout the process, there was extensive collaboration between our engineers, the customer’s engineers and Nanolumens’ engineering team,” explained Panos. “The challenge wasn’t just mounting the display; we had to ensure the tower could flex and sway without compromising the structure. Nanolumens was crucial in developing a custom mounting solution that integrated seamlessly with the tower’s design.”

Panos added, “Once the display was integrated seamlessly, we integrated a content management system from Acquire Digital, providing the customer with full control over scheduling and maintaining content, making the entire setup both dynamic and user-friendly. The customer has been extremely pleased with both our team at Capital Signs and Nanolumens. The final result has exceeded expectations, and we’re proud of what we’ve accomplished together.

THE FUTURE OF DIGITAL DISPLAY AT ASSEMBLY ATLANTA



Nanolumens' Performance Series played a pivotal role in bringing Assembly Atlanta's ambitious vision to life, delivering a visually stunning and resilient outdoor display. Nanolumens Performance Series is a versatile flat outdoor display designed to withstand extreme weather conditions while seamlessly integrating into existing architecture. With multiple format options and the choice between cabinet and frame-and-skin topologies, it offers maximum design flexibility for any installation. Each cabinet is fully IP67-rated, providing reliable protection against dust, water and harsh environmental elements. Built with high-quality components, the Performance Series comes with an industry-leading three-year extendable warranty. Engineered for durability, these displays are designed to last and exceed expectations in even the most challenging outdoor environments.

ABOUT NANOLUMENS



Nanolumens is a US-Based LED design and manufacturer headquartered in Atlanta, Georgia. Nanolumens offers world-class screens across multiple market segments adding wonder to physical spaces. We're pioneers of the True Curve™ technology and are committed to being better. With a bold and visionary team of experts we will take your project, in all shapes and sizes, from concept to reality. We bring your creative visions to life, leaving a first and lasting impression.

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