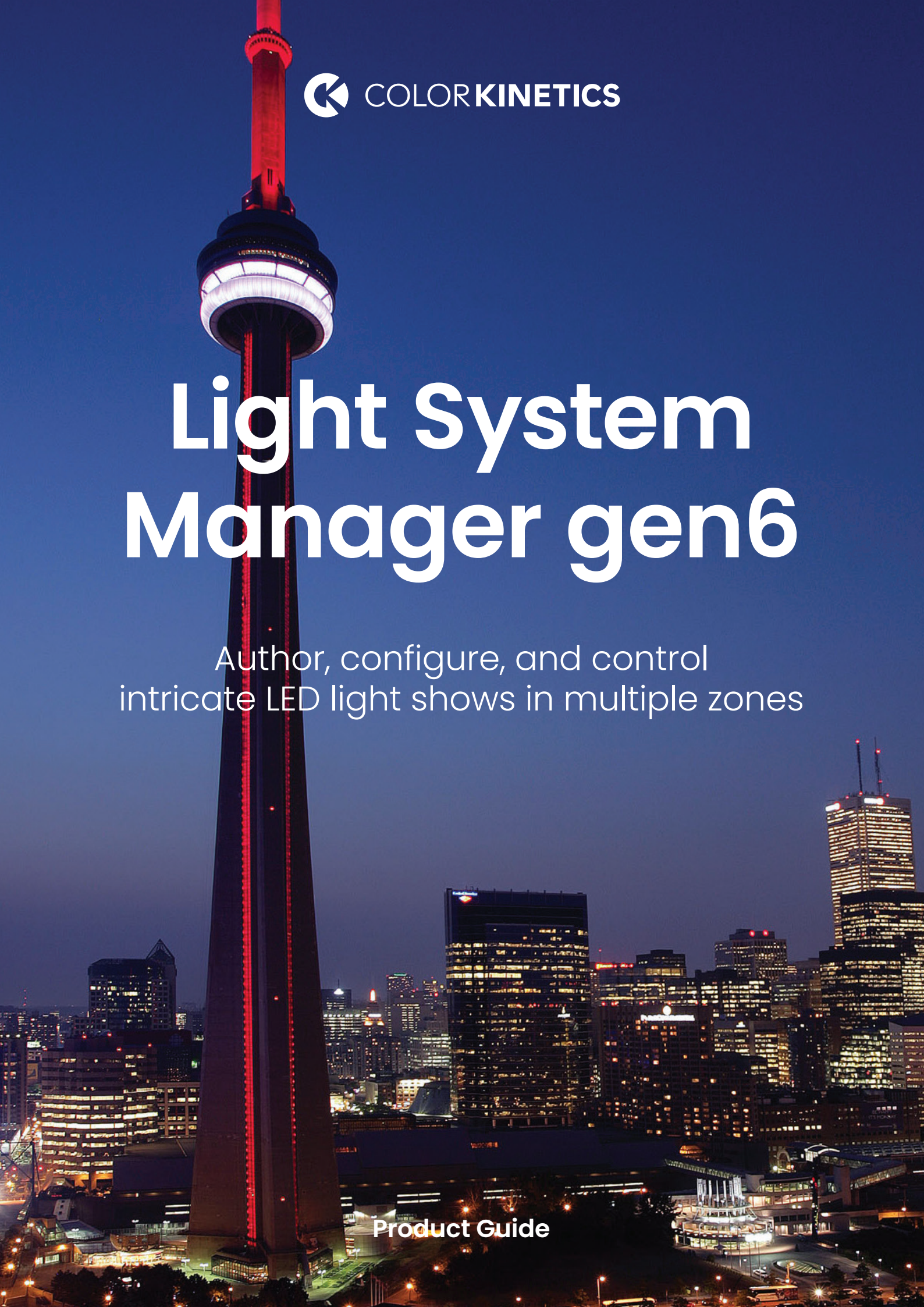


Light System Manager gen6

Author, configure, and control intricate LED light shows in multiple zones

Product Guide

Light System Manager

Author, configure, and control intricate LED light shows in multiple zones

Optimized for medium and large-scale LED lighting installations, Light System Manager is an integrated solution comprising Light System Engine controller hardware and Light System Composer software. With support for intricately designed installations containing thousands of LED nodes, Light System Manager offers the versatility to manage wide-ranging architectural, entertainment, and retail lighting environments.

Take a closer look

Easy to use
Featuring Ethernet-based control and automatic lighting system discovery, Light System Manager dramatically simplifies installation.

Hardware support for medium and large environments
Light System Engine hardware processes simultaneous light output data for up to 15,000 individually controllable LED nodes, depending on configuration.

Native control of multi-channel luminaires
Light System Manager supports luminaires with up to 12 LED channels in either 8-bit mode or 16-bit mode. That means you have greater control of the full gamut of lights from Color Kinetics, including IntelliHue and Intelligent White luminaires, right out of the box.

Improved reliability
Solid-state drives reduce the number of moving parts to enhance the reliability of the Light System Engine.

Slim profile and flexible mounting options
Integrated mounting tabs allow installation overhead, on vertical surfaces, or on moving architectural or entertainment features.

Automate show playback
Set calendar events to automatically trigger show playback based on a specific date or an astronomical event, such as sunrise or sunset.

Web interface access
Set event triggering, create show schedules, and easily select point-and-click static color scenes using an online web interface. The web interface supports multiple online users with activity logging for each user account.

Versatile zone usage
Configure and control multiple playback zones, each with unique light show assignments. Light System Manager allows zone control of both indoor and outdoor luminaires within a single installation.

Dual configurable network ports
Two network ports support integration into existing network environments, while maintaining connectivity to a separate dedicated lighting network.

ActiveSite integration
ActiveSite is the first ever cloudhosted connected lighting system for architectural LED lighting installations. ActiveSite allows you to remotely monitor, manage, and maintain an installation site from anywhere in the world, using a secure web connection.

Design and Manage Multi-Layered Light Shows
The Show Designer module in Light System Composer provides the flexibility to design shows based on your creative vision.

Show Designer allows you to incorporate graphics and images for eye-catching visual presentations.

Each light show effect is fully customizable. For sophisticated results, modify effect variables, such as color palettes and transitions.

Specifications and information

Due to continuous improvements and innovations, specifications may change without notice.

General information

Electrical

Input Voltage	100 to 240 VAC, auto-switching
Power Consumption	180 W maximum
Surge Protection	For Surge Protection Requirements for LED Lighting Systems, please refer to www.colorkinetics.com/KB/surge-protection.

Capability

Supported LED Nodes	500 to 15,000 nodes depending on configuration‡
Network Data	KiNET Ethernet* protocol via standard Ethernet switch†
Light System Composer Software‡	Light System Composer from Color Kinetics is required to create light shows for Light System Manager. To download Light System Composer, visit www.colorkinetics.com/support/lsm/.

Physical

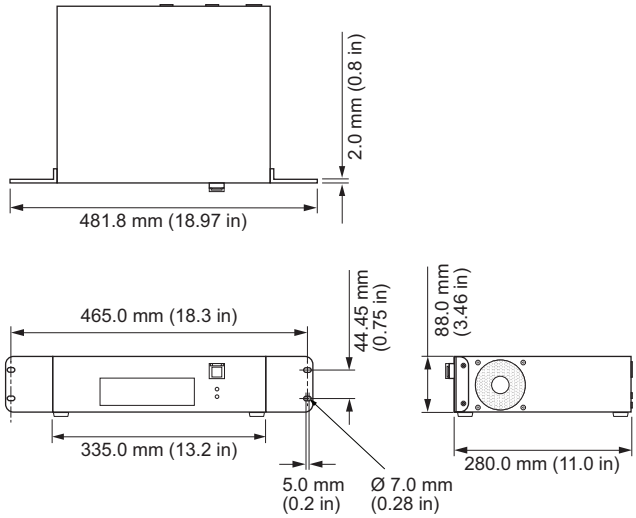
Dimensions *(Height x Width x Depth)*	335 x 280 x 88 mm (13.2 x 11.0 x 3.5 in)
Weight	4.82 kg (10.6 lb)
Housing	Aluminium enclosure
Connector/Cable	(2) RJ45 ports, shielded. Cat. 5e or better data cable (not included)
Operating Temperature	0 to 35 °C (32 to 95 °F)
Humidity	0 to 90%, relative humidity, non-condensing

Certification and Safety

Certification	UL/cUL, FCC, CE, RCM, CCC
Environment	Dry Location

* KiNET is the Ethernet lighting protocol from Color Kinetics.
† Use PoE (Power-over-Ethernet) switches, or PoE injectors, when installing a lighting system containing one or more Antumbra Ethernet Keypads.
‡ Requires 64-bit Windows 7 or newer, or macOS 10.10 or newer, with at least 100 MB of free space.

Dimensions



Part Numbers

	Item Number	Item 12NC
Light System Manager gen6, 500 Node	103-000042-00	912400135993
Light System Manager gen6, 1,000 Node	103-000042-01	912400134287
Light System Manager gen6, 2,000 Node	103-000042-02	912400134288
Light System Manager gen6, 3,000 Node	103-000042-03	912400134289
Light System Manager gen6, 5,000 Node	103-000042-05	912400134290
Light System Manager gen6, 8,000 Node	103-000042-08	912400134291
Light System Manager gen6, 12,000 Node	103-000042-12	912400134292
Light System Manager gen6, 15,000 Node	103-000042-15	912400134293

For further information

Light System Manager gen6 processes data for up to 15,000 individually controllable LED nodes. Complete details including Installation Instructions, Specification Sheets, .ies files, and product drawings, can be found at: https://www.colorkinetics.com/global/products/controllers/lsm

Light System Manager gen6

Configuration and planning

Regardless of the size and complexity of your installation, the planning time you spend up front can help streamline the installation and configuration of your luminaires. Keep these points in mind as you plan your installation:

Configuration Overview

Light System Manager allows your lighting installation to display of a variety of light show designs and choreographed moving images. Light System Manager comprises Light System Engine, a computer (for initial setup and programming), one or more Antumbra Ethernet Keypads (optional), network hardware, and lighting components.

Ethernet Layout

Light System Engine hardware communicates with the interfaces in the lighting installation (power/data supplies) via KiNET, the Ethernet network protocol engineered by Color Kinetics for high-performance lighting system control. Light System Engine offers full compatibility with all conventional Ethernet hardware, accommodating network trees up to three switches deep between the Light System Engine and the farthest KiNET interface. Ethernet limits the maximum cable run to 100 m (328 ft). Adding Ethernet optical data cabling and hardware to your layout extends the maximum cable run distance.

Antumbra Ethernet Keypads are Power over Ethernet (PoE) devices. Use PoE-compatible Ethernet switches if Antumbra Ethernet Keypads are installed on the network. Alternatively, if using non-PoE switches, install PoE injectors from Color Kinetics inline between each keypad and switch.

Dedicated Local Area Network

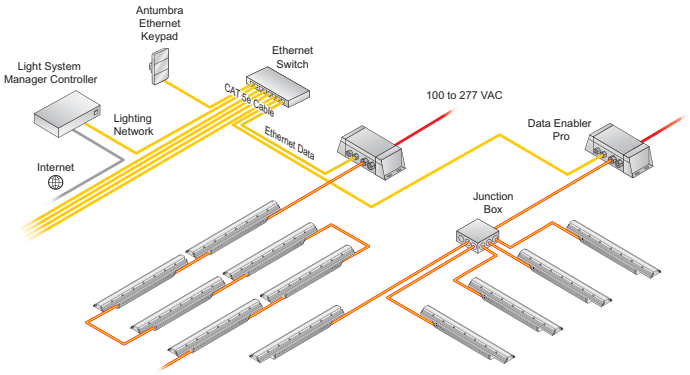
To achieve optimal display and network connectivity performance, the lighting network port of the Light System Engine and all lighting components must be installed on a dedicated Local Area Network. Light System Engine hardware delivers thousands of packets of light output data per second to your lighting installation, requiring uninterrupted data throughput.

You can use the Internet network port to connect to an existing building network, and maintain Internet connectivity.

Automatic Interface Discovery and Creating Maps

Light System Engine references a map file when communicating with the lighting components in the network. The map allows the Light System Engine to identify every luminaire and interface in the installation as a separate device and route data accordingly. For your convenience, the Management Tool module in Light System Composer automatically discovers all connected Ethernet power/data supplies and luminaires, including device properties such as IP address, DMX address, device name, and luminaire configuration.

Ethernet Configuration



Verify the electrical plan and all necessary surge protection requirements

Read about understanding surge protection for LED lighting systems at www.colorkinetics.com/KB/surge-protection

Owner/User Responsibilities

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate Light System Manager system in such a manner as to comply with all applicable codes, state and local laws, ordinances, and regulations. Consult with the appropriate electrical inspector to ensure compliance.

Plan the Installation

To streamline installation and ensure accurate configuration, start with a layout or a lighting design plan that shows the physical layout of the installation and identifies the locations of all luminaires, Data Enabler Pro devices, controllers, switches, and cables

Color Kinetics offers lighting systems suitable for environments ranging from the simplest to the most complex. A simple Light System Manager installation might use 25 ColorGraze IntelliHue Powercore luminaires installed in a single zone, whereas a larger installation might use 200 strands of iColor Flex LMX gen2 displaying light shows in multiple zones.

Keep these suggestions in mind as you plan your installation:

1 Create a lighting design (CAD layout, architectural plan, or other diagram) that specifies the locations of all luminaires, power/data supplies, Ethernet switches, Ethernet cables, the Light System Engine, and Antumbra Ethernet Keypads.

2 Color Kinetics offers a Configuration Calculator to help calculate the number of luminaires a specific installation can support. You can download the Configuration Calculator from www.colorkinetics.com/support/install_tool/.

For further help, please consult Application Engineering Services at support@colorkinetics.com.

3 Light System Manager is an Ethernet-based system offering flexible and convenient installation options. Note that Ethernet limits maximum individual cable runs to 100 m (328 ft). For larger installations, adding fiber optic data cabling and hardware to your lighting network extends the maximum cable run distance.

Ethernet maximum data cable length

4 As part of the lighting design plan, where possible, make use of a repeated layout that specifies the preferred orientation of each luminaire. For example, if using ColorGraze MX4 Powercore luminaires, install each luminaire in a uniform manner so that jumper cables plug into the same side of each luminaire in a sequence.

5 The Management Tool module in Light System Composer automatically discovers all connected Ethernet power/data supplies and addressable luminaires. As needed, use QuickPlay Pro addressing and configuration software to assign unique IP addresses and device names to all power/data supplies and addressable luminaires before using the Management Tool to map your installation.

6 To streamline physical installation and future maintenance, affix a weatherproof label identifying installation placement, IP address, and device name to an inconspicuous location on each power/data supply and luminaire housing.

7 Refer to the Light System Manager User Guide for detailed instructions on using the Light System Manager.

Installation

Multi-language installation instructions can be found at:
https://www.colorkinetics.com/global/products/controllers/lsm

Start the installation

1 Install all luminaires and power/data supplies. If your installation calls for jumper cables to add space between luminaires, make sure they are available.

2 Verify that your Light System Engine lighting network port is connected to a dedicated LAN using standard Ethernet switches.

3 If using one or more Antumbra Ethernet Keypads, you must use a PoE (Power over Ethernet) switch, or install PoE injectors inline between each keypad and the switch to which it is connected.

Install Light System Manager

Light System Manager comprises two components: the Light System Engine controller and Light System Composer software:

Light System Engine Installation Overview

- Install Light System Engine in a convenient, temperature-controlled location. Use the Installation Instructions document included in the product packaging for step-by-step hardware installation instructions.
- Assign a static IP address to the personal computer and connect it to the lighting network. After connecting the personal computer, verify that the computer can connect to the Light System Engine. Note that following light show programming and configuration, you can disconnect and remove the personal computer from the network.
- Refer to the Light System Manager User Guide for additional details, as needed. The Light System Manager User Guide is available online at www.colorkinetics.com/ls/controllers/lsm/.

Light System Composer Installation Overview

- Use the Light System Manager Quick Start Guide included in the product packaging for step-by-step software installation instructions.
- Download and install Light System Composer.

Updating Firmware

The Light System Manager gen6 firmware is periodically updated to improve system performance and functionality. To maximize system performance, make sure your Light System Manager gen6 is running the most recent version of the firmware. We recommend that you confirm that your Light System Manager gen6 has the most recent version of the firmware before installing it in your lighting network.

See www.colorkinetics.com/global/support/lsm for more information.

Configuration

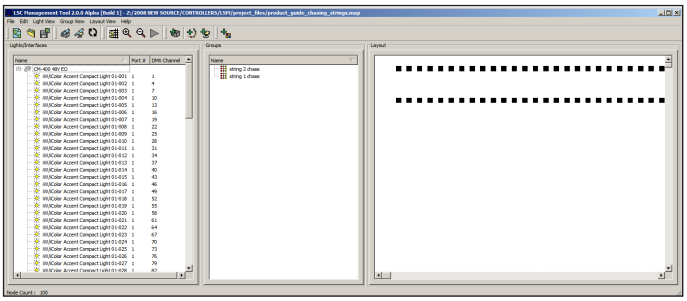
Using the Light System Engine Web Interface

The Light System Engine has a powerful web interface that you can use to set event triggering, create show schedules, and easily select point-and-click static color scenes. The web interface supports multiple users with activity logging for each user account.

Connect to the Light System Engine interface by entering its IP address in a web browser on the computer connected to the dedicated local area network. The default lighting network IP is 10.1.3.100. The default username is color and the default password is kinetics.

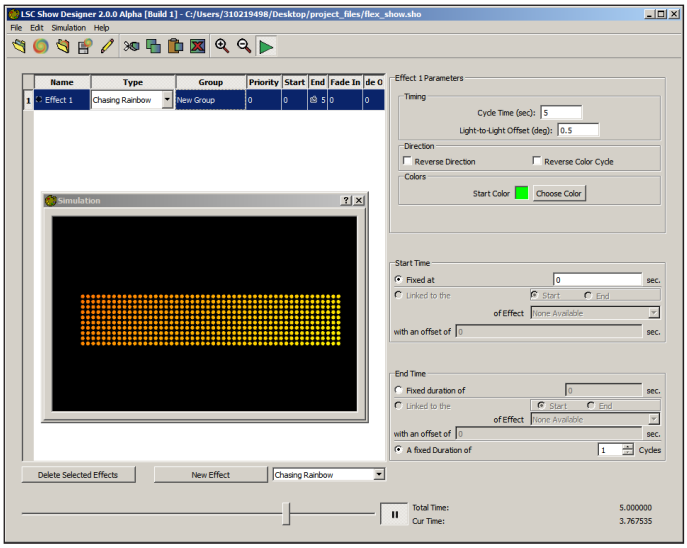
About Light System Composer Software

Light System Composer is a full-featured software package containing the following modules:



Management Tool

When connected to a lighting network, the Management Tool module automatically discovers all lighting system components, allowing you to create a map of the installation. The map identifies all hardware so that the Light System Engine controller can send accurate light output instructions. Additionally, Management Tool allows you to create groups of luminaires that can have colors or effects applied to them using Show Designer or the Web Interface.



Show Designer

The Show Designer module enables you to author and refine dynamic light shows using eight fixed color and chasing color effects, two animated image effects, and two geometric effects. You can apply pre-defined effects to groups of luminaires, and then modify those effects by modifying their parameters. Show Designer also allows you to simulate your show via the Live Play simulation feature, which displays the light shows on the luminaires in your installation.

Creating and Displaying a Light Show workflow

Create a Map

The first step in creating a light show is to map the installation. The map links all lighting luminaires and interfaces (power/data supplies) to the Light System Engine controller, and acts as a virtual representation of the installation. The Management Tool module enables you to automatically discover all lighting system components and build the map. When new luminaires are added to an existing installation, or when working off site, the Management Tool module also allows you to manually build a fully functional virtual map.

Create a Zone

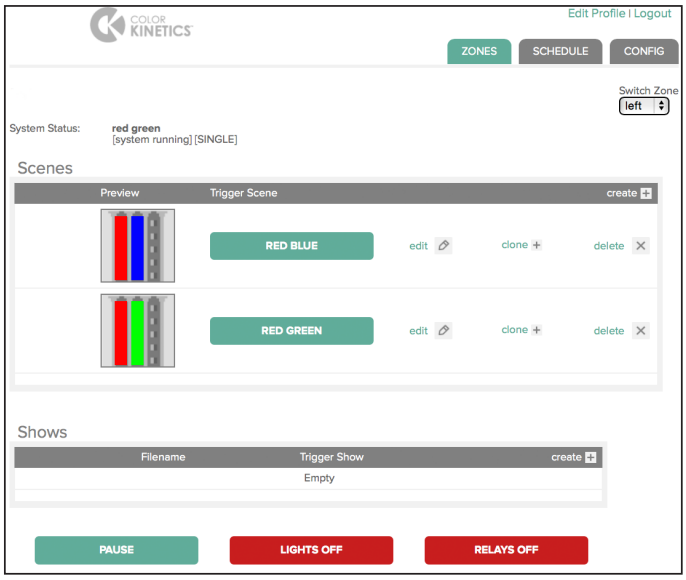
Access the Web Interface, and click the Config tab. Click Zones, and upload your map file to create a new zone.

Create a Dynamic Light Show or Static Color Scene

After the zone is created, create a dynamic light show or static color scene.

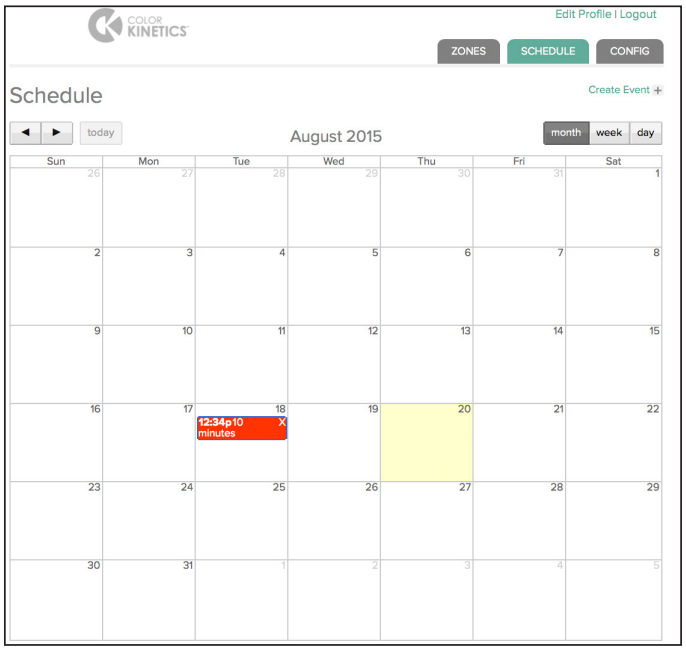
Dynamic Light Show

Use Show Designer to create dynamic lighting effects. Show Designer lets you add effects to each group of luminaires in the installation and then modify the effect parameters to create unique results. Use the Live Play feature to test and refine your show. Once your show is created, use the built-in Web Interface to upload your show file and any related image assets. Each animation effect requires a zip file containing the animation images. Each image scroll effect requires an image file (.png, .jpg, or .bmp)



Static Color Scene

Use the Web Interface to create static color scenes. Colors can be applied to groups of lights in your installation. These groups are created in Management Tool, and are assigned to point-and-click areas through the group map editor, which is located in the Configuration tab of the Web Interface. You can use the scene editor to select colors live on your installation while the selected scene is actively playing.

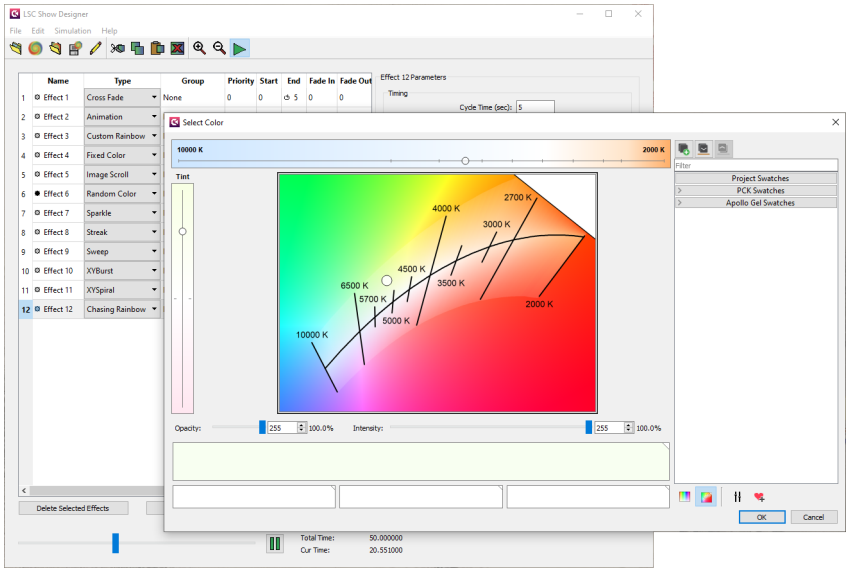


Schedule Show or Scene

Using the Schedules tab of the Web Interface, you can schedule shows or scenes to play at a fixed or astronomical time. You can manually trigger a show or scene using the Zones tab of the Web Interface.

Light System Manager Effects Palette

The Light System Composer Show Designer module offers a palette of twelve pre-defined visual effects:



Animation
A series of still images appears in rapid succession, creating an animation sequence.

Chasing Rainbow
When applied to a group of luminaires, colors of the rainbow appear to chase each other from node to node.

Color Sweep
When applied to a group of luminaires, a color advances from node to node in a sweeping motion.

Cross Fade
Colors fade gracefully from a solid color to another solid color.

Custom Rainbow
Custom Rainbow is similar to Chasing Rainbow, but allows a choice of colors.

Fixed Color
Static display of a single color.

Image Scroll
A still image moves across the luminaires in a user-defined motion.

Random Color
At specified intervals, colors jump cut from one color to the next, in random order.

Sparkle
When applied to a group of luminaires, flashes of light appears on several luminaires in the group, in random order.

Streak
When applied to a group of luminaires, a pulse of color races from node to node.

XY-Burst
Produces multiple expanding concentric circles of color.

XY-Spiral
Produces a color-changing wheel revolving around a center point.

www.colorkinetics.com

Cover photography credits: George Fischer

DAS-000035-00 R14 5 March 2021