Lightblade Edge
User Guide

Revision 1.0 — January, 2019

Information and specifications in this document are subject to
change without notice.

Welcome to Lightblade Edge

LIGHTBLADE
Edge Series

NBCUniversal and Cineo have designed an innovative, flexible and modular professional lighting tool: the Lightblade Edge. As a modular fixture, the Edge-series components can be configured in a variety of combinations to fit a wide variety of applications. Combining the same award-winning white light quality used in all NBCUniversal / Cineo products with innovative saturated color technology, Lightblade Edge delivers up to 20,000 lumens of beautiful, easily controllable, full-gamut light across a variety of fixture sizes. The Lightblade Edge delivers between 80 and 320 watts of power in both 2' and 4' linear models, and can be configured as single, double or 4-up light sources. Lightblade Edge is designed to minimize weight, size and cost without sacrificing quality or creative control.

Lightblade Edge can be controlled via traditional DMX/RDM, in either 8 or 16-bit resolution. Operating modes include both Hue/Sat/Intensity/CCT and Cineo's "Smart RGB" mode, with individual Red/Green/Blue/CCT controls that automatically delivers optimum white light quality. Local user control of individual Lightblades is accomplished with an embedded control panel on each Lightblade.

In addition to Cineo's proprietary phosphor-converted white light LEDs, we have developed phosphor-converted saturated color LEDs. The phosphor-converted LEDs use the exact same dies as the white LEDs, ensuring that all light emitting elements of the Lightblade Edge carry identical thermal stability and perform over time with identical differential aging. After years of service, Cineo's color stability remains consistent.

All Lightblade Edge products are ruggedly built, water resistant, and passively cooled for completely silent operation. Each Lightblade includes a detachable controller that can be attached to the fixture, or operate remotely up to 25 feet from the Lightblade.

General Notes

1. Please read through this manual carefully before operating Lightblade Edge, and keep this manual for future reference.

2. There are numerous safety instructions and warnings that must be adhered to for your

own safety.

3. Lightblade Edge is not intended for residential use. It is intended for use in a professional studio.

4. Lightblade Edge must be serviced by a qualified technician.

5. The Lightblade Edge fixtures are at rated as IP22 – for damp environments.

6. These products are not certified for use in hazardous locations.

7. Lightblade Edge fixtures can operate at 40ºC (104ºF) above ambient temperature.

Fixture Set Up

Read these safety instructions carefully to ensure fixture and accessories are used safely.

Ensure the mounting hardware is correctly connected to the fixture before rigging.

Always use secondary safety cables of suitable length when hanging Lightblade Edge units.

The Lightblade Edge can weigh up to 16 lbs. (7.2 kg) excluding accessories. The combined weight should be considered when choosing a suitable safety cable.

Safety cables must securely be attached to the Lightblade Edge and should be as short as possible to reduce travel distance if primary hanging accessory fails.

Ensure that the mounting hardware is correctly tightened when manipulating Lightblade Edge in the required orientation for safety purposes.

Ensure the Lightblade Edge is operated within an ambient temperature range of -20 to +40°C

(-4 to 104°F).

System Configurations

Lightblade Edge systems can be purchased in several configurations, based on the Lightblade lamphead dimensions (2' or 4') and number of Lightblades in the fixture (1, 2 or 4). The following chart describes the details of each:

	Edge 80		Edge 160		Edge 320	
	2'	**4'**	**2'**	**4'**	**2'**	**4'**
Size	24"W, 2.5"H, 2.5"D	48"W, 2.5"H, 2.5"D	24"W, 7"H, 3.4"D	48"W, 7"H, 3.4"D	24"W, 12.5"H, 4.7"D	48"W, 12.5"H, 4.7"D
	610mm W, 64mm H, 64mm D	1.2m W, 64mm H, 64mm D	610mm W, 178mm H, 87mm D	1.2m W, 178mm H, 87mm D	610mm W, 317.5mm H, 120mm D	1.2m W, 317.5mm H, 120mm D
Weight	1.4 lb .6 kg	2.7 lb 1.2 kg	6.8 lb 3 kg	9.6 lb 4.4 kg	11.4 lb 5.1w kg	16 lb 7.3 kg
Mounting	3/8 - 16 Thread, Baby Pin	3/8 - 16 Thread, Baby Pin	3/8 - 16 Thread, OmniMount	3/8 - 16 Thread, OmniMount	3/8 - 16 Thread, OmniMount	3/8 - 16 Thread, OmniMount
Input Power	100 - 240 VAC	100 - 240 VAC	100 - 240 VAC	100 - 240 VAC	100 - 240 VAC	100 - 240 VAC
Power Consumption	80W	80W	160W	160W	320W	320W
Output (Lumens)	5,000	5,000	10,000	10,000	20,000	20,000
FC @ 10'	22	22	45	45	90	90
Lux @ 3m	237	237	377	377	970	970
DMX Interface	RJ45 In/Thru	RJ45 In/Thru	5-Pin XLR In/Thru	5-Pin XLR In/Thru	5-Pin XLR In/Thru	5-Pin XLR In/Thru

All Lightblade Edge configurations feature the following:

Completely flicker-free operation

Silent, passive cooling: no fans

Environmental temperature range: -20ºC - +40º C

Max. temperature rise: +45º C

ETL, cETL, CE pending

Made in USA

Color Space

The Lightblade Edge uses two separate LED engines to independently generate accurate white light, variable from 2700K to 6500K, and an extended RGB gamut for broad saturated color space. The CIE 1931 diagram illustrates the Lightblade Edge color space.
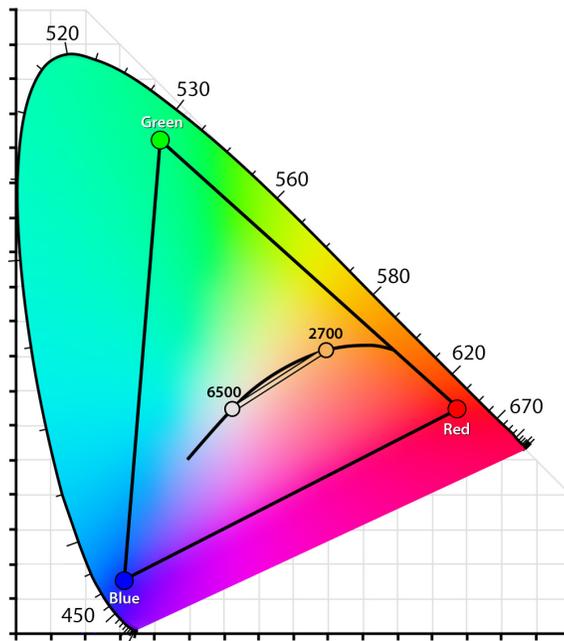
System Components, Connections and Controls

Components

All Lightblade Edge configurations feature these characteristics:

The Lightblade Edge system essentially includes four different components that can be combined or used individually to create optimized lighting fixtures and systems. These are:

1. Lightblade Lampheads

    Linear LED soft light sources, supporting five LED channels: R, G, B, 2700K, 6500K. They are available in both 24" (61 cm) and 48" (122 cm) lengths. Lightblade lampheads connect exclusively to Lightblade Controllers via 10-wire RJ50 cables.

2. Lightblade Controllers

    Lightblade Controllers are designed to provide both power and control to their attached Lightblade lamphead. Each Lightblade Controller connects to a single Lightblade lamphead. Connections include AC power and DMX/RDM. Local control is also provided. A secure 3/8-16 threaded mounting hole is provided for attaching to standard grip equipment.

3. Power Chassis

    The Lightblade Power Chassis is a convenient way to mount, power and control banks of Lightblades. These come in two configurations: 2-Blade and 4-Blade. Power Chassis can accommodate both 2' or 4' Blades. The Power Chassis provides a power switch for the entire fixture, AC distribution to all attached Lightblades and a RJ45-to-5-pin XLR passive adapter for DMX. For convenience, the Power Chassis also includes carrying handles and additional mounting options.

4. Additional mounting equipment

    In addition to mounting a Lighblade fixture with the included 5/8" baby pin, a QuikClik mounting clip is available for mounting individual blades separate from the controller. The Power Chassis can be mounted with the included baby pin, or can be used with a twist-on Omnimount plate.

Power Connections

The individual Lightblade Edge units are powered by a 110 – 240VAC power supply, internal to the controller. Typical power connection is via the attached IEC pigtail. Alternatively, the controller can be hard-wired using the power bus connectors, which are accessed by removing the safety power cover.

The Lightblade Edge fixtures can be configured into multi-blade fixtures using the Lightblade Power Chassis, which are available in 2-Blade and 4-Blade configurations. These power chassis provide mounting support, AC power distribution and switching, as well as convenient DMX connections in standard 5-pin XLR connectors.

NOTES:

1. Ensure the power cable is disconnected before servicing.

2. Do not connect to a variable supply, such as a dimmer rack.

3. A self-resetting thermal breaker is located within the individual Lightblade controllers. The Power Chassis also includes a fuse in the switch/IEC connector module.

Data Connections

All connectors for the Lightblades and their connected controllers are located on the ends of the units. Note that the cable connecting the Lightblade and controller is RJ50 (10-wire). This differs from standard RJ45 connectors (8 wire); these cables are NOT cross-compatible. DMX/RDM connectors use (2) RJ45 connectors, located on the opposite end of the controller. These are passive feed-through connectors and are not load-terminated.

Wired DMX Connections

Depending on the configuration, Lightblade Edge use either RJ45 connectors or 5-Pin XLR male and female connectors to receive and forward DMX and RDM signals. The RJ45 ports are loop-thru connectors with no built-in termination, while the 5-pin XLR connectors on the Power Chassis is self-terminating and does not require external DMX termination when used in a chain.

The RJ45 jacks conform to the industry-standard for DMX over CAT5/6 cable. It is not compatible for network connections:

- Pin 1: Data +
- Pin 2: Data −
- Pin 7: Common
- Pin 8: Common

The 5-pin XLR wiring is as follows:

- Pin 1: Signal Common
- Pin 2: Data −
- Pin 3: Data +
- Pin 4: Spare
- Pin 5: Spare

Controls

Unlike other fixtures in the Lightblade family, the Lightblade Edge does not have separate LOCAL and DMX control modes. Instead, the control module, located on the back of each Lightblade Controller allows the user to locally modify the same parameters that a DMX controller would remotely. It includes (4) push-buttons and a 6-character display.

The Lightblade Controller displays and provides the controls to change these six settings, which subsequently alters the way the attached Lightblade operates. The display uses a single character "Label" to show which parameter is being displayed and potentially adjusted, followed by the value. All button presses are "rotating thru" so if the button is continually pressed it rotates thru all options or values.

These six values are:

1. DMX Address – the starting address for the Lightblade. The first character of the display shows "A", followed by values from 001 to 512.

2. DMX Personality – The display shows on of the four personality options: HSIC16, HSIC08, RGBC16, RGBC08.

3. DMX Slot 1 –If the unit is in HSIC mode, the Label is "I", followed by the intensity in values from 0-100%. If RGBC mode the Label will be "R", representing Red, with a value range of 0-100%

4. DMX Slot 2 - If HSIC mode this will be CCT. The Label character is "C", with a value range is 2700-6500K. If the unit is in RGBC mode this will be "G", with a value range of 0-100%.

5. DMX Slot 3 – If HSIC mode this will be Saturation and labeled "S". If RGBC mode this will be "B". Value range for either is 0-100%.

6. DMX Slot 4 – If HSIC mode this will be Hue, labeled "H", with a value range of 0-360º. If RGBC mode this will be CCT, labeled "C", with a range of 2700-6500K.

If DMX is connected to the Lightblade Edge unit, the display will show the starting DMX address by default. Values of each of the six settings can be checked by cycling through the settings, although LOCAL control is disabled. If no DMX is present, the unit displays LOCAL, and local control is enabled.

Local Control

The control module includes four color-coded buttons, with functions as follows:

MENU (Blue Button)– This selects one of the six settings being displayed and possibly modified. Each press of this button rotates through these values that can be viewed and modified. The display remains on the selected value for 20 sec. allowing the ability to monitor the DMX value live or modify using UP, DOWN followed by ENTER. If no buttons are pressed for 20 sec. the display returns to the DMX Address (for example "A 001") or LOCAL, dependent on DMX signal presence.

UP (White Button)– increments the value displayed by 1 unit. If the button is held down more than 1 sec. then this control auto-increments at higher speed allowing the user faster advance capability thru the numbers.

DOWN (Black Button)– decrements the value displayed. If the button is held down more than 1 sec. then this control auto-decrements at higher speed allowing the user faster decrementing capability thru the numbers.

ENTER (Green Button)– this confirms the displayed of Address or Personality, changed by the UP and DOWN buttons. If ENTER is not pressed within 20 sec of the last UP and/or DOWN change then the display returns to DMX Address mode and NO changes are made.

Adjusting DMX starting Address

When the display is showing the DMX Address, pressing the UP or DOWN buttons changes the starting address for DMX. You must press the ENTER button within 20 seconds in order to keep the new DMX address; otherwise it will revert to the previous address. The example to the right shows the display for Address 001.

Adjusting the DMX Personality

When the display is showing DMX Personality, for example "HSIC08", it reflects the DMX Personality currently set. It can be modified using the UP and DOWN buttons followed by ENTER. The 4 personality options are: HSIC16, HSIC08, RGBC16, RGBC08.

In HSIC personality, the following four DMX slots are (in sequence): Intensity, CCT, Saturation and Hue, and can be operated in 8-bit or 16-bit DMX resolution.

In RGBC personality, the following four DMX slots are (in sequence): Red, Green, Blue and CCT. Select 8-bit or 16-bit resolution.

You must press the ENTER button within 20 seconds in order to keep the new DMX address; otherwise it will revert to the previous address.

Note that 16-bit resolution personalities are selected, the LOCAL controls also operate at the higher resolution.

Adjusting DMX Slot 1

This shows the first DMX slot value based on the current personality setting. The control console can change the value of this channel using the UP/DOWN buttons, and results are reflected on the output of the fixture. . No "ENTER" is required for the new value to take effect.

If the unit is in either 8-bit or 16-bit HSIC personalities, this slot adjusts Intensity, or overall output, 0-100%.

If the unit is in either RGBC personalities, this slot adjusts the value of the Red channel, 0-100%

Adjusting DMX Slot 2

This shows the second DMX slot value based on the current personality setting. The control console can change the value of this channel using the UP/DOWN buttons, and results are reflected on the output of the fixture. No "ENTER" is required for the new value to take effect.

If the unit is in either 8-bit or 16-bit HSIC personalities, this slot adjusts CCT, in values from 2700 to 6500K.

If the unit is in either RGBC personalities, this slot adjusts the value of the Green channel, 0-100%.

Adjusting DMX Slot 3

This shows the third DMX slot value based on the current personality setting. The control console can change the value of this channel using the UP/DOWN buttons, and results are reflected on the output of the fixture. No "ENTER" is required for the new value to take effect.

If the unit is in either 8-bit or 16-bit HSIC personalities, this slot adjusts amount of color Saturation, from 0-100%.

If the unit is in either RGBC personalities, this slot adjusts the value of the Blue channel, 0-100%.

Adjusting DMX Slot 4

This shows the fourth DMX slot value based on the current personality setting. The control console can change the value of this channel using the UP/DOWN buttons, and results are reflected on the output of the fixture. No "ENTER" is required for the new value to take effect.

If the unit is in either 8-bit or 16-bit HSIC personalities, this slot adjusts the Hue angle, from 0-360º.

If the unit is in either RGBC personalities, this slot adjusts the CCT, in values from 2700 to 6500K.

8-BIT vs 16-BIT

Standard DMX data structure is 8-bit, which limits the value range between 0-255. This is the preferable operating mode for maximum compatibility with DMX controllers. If more precise control is required, the unit can be operated in 16-bit mode, offering a value range of 0-65,535. On the surface, this sounds more valuable than 8-bit mode, however operating in this mode assigns two DMX channels for each control, working in pairs, requiring twice as many DMX addresses. The first DMX channel in the pair is the COURSE adjustment of the control, while the second channel is the FINE adjustment. The COURSE channels operate identically to 8-bit controls, while the FINE channels in the pair adjust in-between adjacent values of the COURSE control. To further explain, the COURSE channel adjusts values of 0-255 while the FINE channel adjusts between only two control values. If, for example the COURSE channel is set at value 165, the FINE channel adjusts between 165 and 166. Fortunately, most professional lighting consoles allow controls to be set up in 16-bit mode, so a single fader manages the two channels automatically. It is recommended that 16-bit mode only be used when the DMX controller supports 16-bit operation.

HSIC vs RGBC

Both personalities offer advantages for specific applications, and are provided to meet the lighting control space preferred by the individual user.

HSIC

In HSIC mode, the 4-channel DMX profile, as well as the local interface map as follows:

Intensity - Controls the total fixture output. Cineo's Photo-Accurate Dimming™ maps the 0-100% dimming curve to actual camera stops for precise output control.

CCT - Adjusts the primary white light base from 2700-6500K.

Saturation - This control blends and balances the amount of saturated color with the CCT base, from pristine white to deep artistic color.

Hue - To optionally add saturated color, the HUE control adjusts the RGB hue angle to be added with the Saturation control.

RGBC

The RGB Personality is technically considered RGBC, where the reference white point can be selected as well as values of the primary Red, Green and Blue channels. This is extremely valuable in correlating RGB operation in context with the white balance selected on the camera. Cineo employs SmartRGB™ technology to provide color-accurate white when blending R, G and B signals. This allows RGBC users to work within a prescribed CCT for the white point, with maximum color rendering.

RDM Support

The fixture supports RDM Discovery and Identify commands for identifying fixtures on the network. The Standard 410 supports both GET and SET commands remotely through an RDM controller. The GET information provided includes the Unit ID, device type, firmware revision, DMX address and DMX Personality.

The unit supports SET Commands to allow remote programming of the following:

DMX Personality

DMX base address

Calibration (this should only be done by qualified service personal)

Settings

Photo-Accurate Dimming™

The dimming curve on the Lightblade Edge follows a strategy that provides relative output levels that correspond to image capture. Both DMX values and local control levels directly correlate to camera stops in a meaningful way. The result is extremely predictable light levels within the full output range of the fixture.

The following table shows the relationship between LOCAL values as they relate to camera stops:

DMX Value	% Output increase	Stop Increase
(0-100)		
20%	100	0
40%	200	1
60%	400	2
80%	800	3
100%	1600	4

Here are examples of how to accurately match camera stops to dimming levels in Local Mode:

Local Dimming: The Rule of 20 (0-100 scale)

Increase output 1 Stop: Add 20 units (fc/lux is doubled)

Decrease output 1 Stop: Subtract 20 units (fc/lux is reduced 50%)

Adjust ½ Stop = 10 Units (0-100)

Adjust ¼ Stop = 5 Units (0-100)

When operating in DMX mode, each increase of 50 units (8-bit) doubles the light output, or the equivalent of opening the lens 1 f-stop.

DMX Value	% Output increase	Stop Increase
(0-255)		
50	100	0
100	200	1
150	400	2
200	800	3
250	1600	4

Here are examples of how to accurately match camera stops to dimming levels in DMX Mode:

DMX Dimming: The Rule of 50 (0-255 scale)

Increase output 1 Stop: Add 50 DMX values (fc/lux is doubled)

Decrease output 1 Stop: Subtract 50 DMX values (fc/lux is reduced 50%)

Adjust ½ Stop = 25 DMX Values

Adjust ¼ Stop = 12 DMX Values

DMX Values

The following table lists all the 8-bit DMX values for all of the fixture presets:

Dimming		CCT		Saturation		Color	
100%	255	2700	000	0%	000	Red	000/255
-1 Stop	200	3200	034	10%	025	Yellow	043
-2 Stops	150	4300	107	20%	050	Green	085
-3 Stops	100	5600	195	50%	128	Cyan	127
-4 Stops	050	6500	255	80%	204	Blue	170
Off	000			100%	255	Magenta	212

Note that changing the DMX values in sequential steps, as in performing a live dim to zero will add a dimming hysteresis, or smoothing. When switching between DMX values of 5 or greater, the value change is instantaneous, allowing the fixture to be used for dynamic lighting effects, such as strobing.

Mounting Options

All Lightblade Edge configurations ship with a 3/8" threaded Baby Pin for basic fixture mounting. Optionally, the 160-Series and 320-Series can accommodate a twist-lock Kino mount. We also offer a flush-mount Lightblade clip mount for mounting individual blades to walls, ceilings or set pieces. Be sure to use safety cables whenever Lightblade Edge fixtures are mounted.

Warnings, Disclaimers and Warranty

Risk of Electric shock / Risk of Fire
Do not open. To reduce the risk of electric shock, do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

Burning Injuries
Be aware of high temperatures in excess of 50°C inside the fixture during and after use. Do not touch the LEDs to avoid burning injuries.

Flammable Materials
Keep flammable materials away from the installation. Insure that the amount of air flow required for safe operation of the equipment is not compromised. Proper ventilation must be provided.

ESD and LED's
LED components used in the Lightblade Edge are ESD (Electro-Static Discharge) sensitive. To prevent the possibility of destroying LED components do not touch either while in operation or when switched off.

This Equipment MUST be Grounded
In order to protect against risk of electric shock, the installation should be properly grounded. Defeating the purpose of the grounding type plug will expose you to the risk of electric shock.

AC Power Cords
Use only a rated IEC Connector. The user is responsible for ensuring power cables are of adequate condition for each application. If the power cords are damaged, replace them only with new ones.

Environmental: Disposal of Old Electrical & Electronic Equipment
This product shall not be treated as household waste.

CINEO LIGHTING LIMITED WARRANTY

Products from Cineo Lighting are warranted against defects in materials and workmanship for two years from the date the Product is shipped to Customer. Products are guaranteed to perform substantially in accordance with the accompanying written materials within the warranty period under normal use.

If the Product fails to work as warranted, Cineo Lighting will, in its sole discretion, repair or replace the Product with a new or remanufactured Product that is at least equivalent to the original Product. Customer must obtain a Return Material Authorization number from Cineo Lighting before returning any Products under warranty to Cineo Lighting.

Customer shall pay expenses for shipment of repaired or replacement Products to Cineo Lighting's repair facility. Any repaired or replaced Products will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer. Cineo Lighting will pay shipping of repaired goods back to the customer. After examining and testing a returned product, if Cineo Lighting concludes that a returned product is not defective, Customer will be notified, the product returned at Customer's expense.

This Limited Warranty is void if failure of the Products has resulted from accident, abuse, misapplication, or use outside of normal operating conditions. Warranty is void if serial number has been defaced or removed.

NO OTHER WARRANTIES. EXCEPT AS EXPRESSLY SET FORTH ABOVE, THE PRODUCTS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, AND NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED ARE MADE WITH RESPECT TO THE PRODUCTS, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE OR NON-INFRINGEMENT OR ANY OTHER WARRANTIES THAT MAY ARISE FROM USAGE OF TRADE OR COURSE OF DEALING. ELEMENT DOES NOT WARRANT, GUARANTEE, OR MAKE ANY REPRESENTATIONS REGARDING THE USE OF OR THE RESULTS OF THE USE OF THE PRODUCTS IN TERMS OF CORRECTNESS, ACCURACY, RELIABILITY, OR OTHERWISE AND DOES NOT WARRANT THAT THE OPERATION OF THE PRODUCTS WILL BE UNINTERRUPTED OR ERROR FREE. CINEO LIGHTING EXPRESSLY DISCLAIMS ANY WARRANTIES NOT STATED HEREIN. NO LIABILITY FOR CONSEQUENTIAL DAMAGES. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, IN NO EVENT SHALL ELEMENT AND ITS LICENSORS, DISTRIBUTORS, AND SUPPLIERS (INCLUDING ITS AND THEIR DIRECTORS, OFFICERS, EMPLOYEES, AND AGENTS) BE LIABLE FOR ANY DAMAGES, INCLUDING, BUT NOT LIMITED TO, ANY SPECIAL, DIRECT, INDIRECT, INCIDENTAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES, EXPENSES, LOST PROFITS, INSTALLATION COSTS, LOST SAVINGS, BUSINESS INTERRUPTION, LOST BUSINESS INFORMATION, OR ANY OTHER DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCTS, EVEN IF ELEMENT OR ITS LICENSORS, DISTRIBUTORS, AND SUPPLIERS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. CINEO LIGHTING'S TOTAL LIABILITY ON ALL CLAIMS, WHETHER IN CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE OR BREACH OF STATUTORY DUTY), STRICT LIABILITY OR OTHERWISE, SHALL NOT EXCEED THE AMOUNTS PAID BY CUSTOMER FOR THE PRODUCTS.

Customer acknowledges that the applicable purchase price or license fee for the Products reflects this allocation of risk. Because some states/jurisdictions do not allow the exclusion or limitation of liability for consequential or incidental damages, the above limitation may not apply.   The above limitations shall apply notwithstanding the failure of any limited remedy to fulfill its essential purpose.

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LIGHTBLADE

Edge Series

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