

# ReFlex R15 User Guide

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**CINEO**  
LIGHTING™  
A NBCUNIVERSAL COMPANY

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## **Cineo ReFlex R15: a whole new category of hybrid media production lighting.**

Dedication to creating lighting products that fulfill the expectations of motion picture and television professionals has been Cineo's passion since our first high-power LED soft-light studio fixtures. And now with ReFlex we've applied patented, groundbreaking technologies to create a high-output, focusable-beam, fully dimmable hard light which exceeds the capabilities of traditional lighting tools. ReFlex also re-defines versatility by delivering both high-output hard lighting combined with soft lighting capabilities.

ReFlex R15 delivers 125,000 lumens of flicker-free and color stable digital lighting with less than a 1,500 watt AC power draw. By providing constantly variable CCT, it can replace both high-output tungsten, large HMI fixtures and everything in-between. Beam angle adjustment from 15 to 75 degrees is accomplished without mechanical movement, making it remotely adjustable; and the Advanced Beam Control opens a whole new realm of possibilities. The reflector can easily be removed and replaced with a variety of structured soft lighting solutions.

Cineo has completely re-designed its control strategy, making it as easy to use as your smart phone. A full complement of remote control protocols are supported including DMX/RDM and CRMX wireless, with sACN, ArtNet and Bluetooth soon available. All this in a completely integrated, water-resistant package weighing under 75 lbs.

Leveraging our years of experience in solid-state lighting and material sciences, ReFlex uses Cineo-designed, custom-built LEDs and control electronics deliver the same bright, beautiful color rendering and extended deep-red spectrum as our Remote Phosphor fixtures.

ReFlex continues our high standard of durability through quality manufacturing, designed for field service and backed by a 2-year warranty.

## **General Notes**

- Please read through this manual carefully before operating this fixture and keep this manual for future reference.
- There are numerous safety instructions and warnings that must be adhered to for your own safety.
- Cineo ReFlex R15 is not intended for residential use. It is intended for use in a professional studio.
- ReFlex R15 must be serviced by a qualified technician.
- ReFlex R15 is rated IP23 – suitable for outdoor use.
- Cineo products are not certified for use in hazardous locations.
- ReFlex R15 has a typical operating temperature of 55°C (130°F).

## **Features**

### **125,000 Lumen digital hard light**

Utilizing 54 high-density CSP arrays, the ReFlex Radial Light Engine consists of 9 concentric light sources around its liquid cooled core.

### **Comprehensive control options**

Local control is managed through an intuitive touchscreen on the back of the fixture. For remote operation, ReFlex supports all existing control protocols including DMX/RDM, wireless CRMX, Ethernet, WiFi and Bluetooth. Fixture settings, user libraries and software updates utilize the unit's built-in USB port.

### **Electronically variable, 15°-75° spot/flood beam control**

The ReFlex light engine technology permits the beam angle to be controlled continuously from 15° to 75° electronically, both locally and remotely, with no moving parts.

### **Uniform Field Lighting Area**

Due to the way the light engine is controlled, the exposure level across the selected beam angle is perfectly uniform: no hot spots or dark areas. Color variances within the beam due to Color-over-Angle (COA) can be compensated by adjusting the CCT of the beam as the beam angle changes.

### **User-controlled beam shaping**

If a more customized beam shape is needed, individual controls of all 9 lighting sources (both intensity and CCT) are available both locally and remotely.

### **2700K to 6500K hybrid output**

ReFlex can do the work of both HMI and incandescent hard lights without bulb replacement for the life of the fixture.

### **100% to 0% dimming – zero flicker, zero color shift**

Like all Cineo Lighting fixtures, dimming is controlled over the full range from zero to full output, at all CCTs with no color shift and no flicker at frame rates up to 10,000fps.

### **110/220v household circuit operation**

At full power, ReFlex requires less than 1500 watts, making it a simpler solution for remote setups where auxiliary power is impractical.

### **Interchangeable reflector and light shaping accessories**

The hard reflector is easily removable, creating a 180° Lambertian light source. Soft accessories turn ReFlex into a high-powered soft lighting source with controllable shape.

### **Total weight: 73lbs.**

ReFlex is completely self-contained: no ballasts or external power supplies. The unique cooling system and compact electronics of ReFlex make for a total weight manageable by one person.

### **Weatherproof**

ReFlex's sealed electronics and cooling systems provide for safe use in wet locations without additional protection.

**70,000 hour (L70) life span**

The extremely robust proprietary arrays used in ReFlex deliver uncompromised output for the long life of the fixture.

**Durable construction, designed for service**

ReFlex 15 polycarbonate radial light engine can withstand extreme impact, while the immersion cooling system is completely sealed and monitored. All electronic components are modular and field serviceable by a qualified technician.

**Warnings, etc.****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 fixture use. Do not touch the Light Engine 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**

Electronic components used in R15 are ESD (Electro-Static Discharge) sensitive. To prevent the possibility of destroying components do not touch either in operation or while 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 PowerCON True1 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.

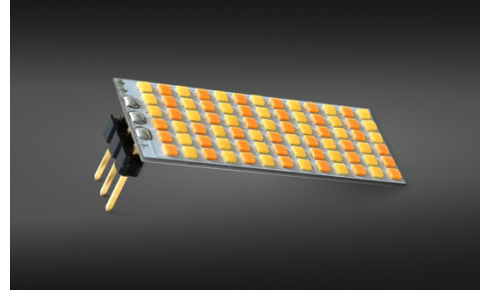
**Disposal of Old Electrical & Electronic Equipment**

This product shall not be treated as household waste.

## Theory of Operation

### CSP Arrays

ReFlex R15 employs next generation high-output ChipScale Packaging (CSP) LED arrays that deliver a power density of 100 watts per square inch. ReFlex R15 uses 54 of these CSP arrays in a circular pattern as its light engine.



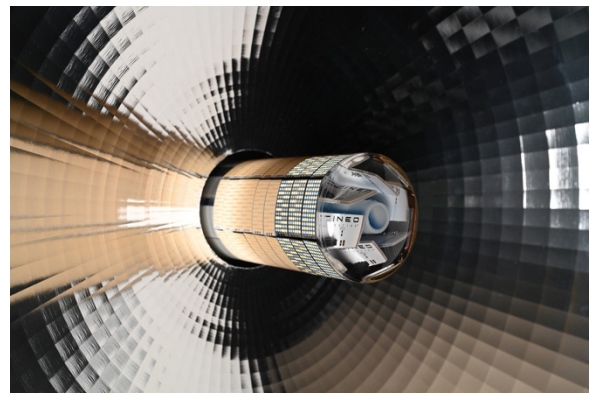
### Immersion Cooling

The fixture uses an optically transparent dielectric fluid to manage the high-density thermal mass generated by the ReFlex light engine. The refractive index of the fluid and CSP phosphors have been tuned to deliver Cineo-quality white light at any color temperature from 2700 to 6500K.

### 9-zone Beam Shaping

The ReFlex Radial Light Engine uses nine individually controlled concentric light sources to derive beam angle, shape and CCT. The advantages are many:

- Electronic beam angle control – from Spot to Flood with no moving parts
- A completely uniform beam shape from 15° to 75°
- Advanced controls to change the beam shape and CCT for specific applications
- All beam functions are digitally adjustable locally and remotely



### Additional optics

The faceted reflector is easily removable, turning the R15 into a 180° evenly dispersed lambertian light source. Structured soft light accessories such as Snapbag®, Lanterns or traditional space light skirts can be added to turn the R15 into a perfectly illuminated 1500 watt soft source.



## **Immersion Cooling Facts**

The ReFlex coolant system is designed to be service free. The proprietary hydrocarbon coolant does not evaporate, should not need refilling and has an operational life of >10 years.

DO NOT ADD COOLANT TO THE R15. Please contact Cineo Service if you are concerned about a loss of coolant, contamination of the coolant or need replacement coolant.

The R15 coolant (like most fluids) will absorb dissolved air if left unused for a longer period of time. Air can also be introduced during transport when the system is agitated and exposed to large swings in temperature and altitude. Seeing some bubbles in the LED Tower is normal after an R15 unit has been stored or transported. The R15 is designed to remove this dissolved gas over time for this, using an internal auto-degassing system.

If there is a higher than desired quantity of bubbles after transport or long storage period, degassing can be done prior to rigging; however, this is not a necessary process. Follow these steps:

- Turn on light and set DIM to 30-50% - light and pump must be on to generate heat and circulate the coolant thru the Auto-degassing system.
- Ideally allow R15 to run for 1 or more hours. Optimal de-gassing can take up to 8 hours depending on how long the unit was stored or how much air was introduced during transport.
- Again – degassing is NOT required prior to using an R15. However, after full degassing users will notice virtually all micro-bubbles are gone and the pump sound is slightly reduced.

For maximum LED reliability and performance, the temperature of the LEDs in the R15 are carefully managed and monitored. The R15 has 4 thermal sensors and 2 independent thermal management and protection circuits:

### 1. Fail Safe - Thermal Relay and LED Shut Off

If the LED array exceeds 95c, this relay immediately cuts off the power to ALL the LEDs while leaving the control panel and rest of the R15 operational (fans and coolant pump) so you can review what the error might be. Causes of a thermal shut off could be:

- a. R15 is being operated in an environment that exceeds its 40C max operating temp
- b. Pump is not functioning properly
- c. Fans are not functioning properly
- d. Coolant level is insufficient

If the R15 performs a thermal relay shut off and the cause is not identified, we recommend turning off the unit until you have contacted Cineo service. It will reset itself after it cools, but repeated thermal shutoffs would indicate the unit is not operating properly and could be damaged thru continued operation.

### 2. Digital Thermal Sensors

Additionally, the R15 has 3 internal digital temperature sensors that monitor and control the thermal system operation. The R15 uses these sensors to reduce the fan speed when temperature allows to minimize fan noise.

Output from these sensors can be viewed in the TOOLS menu, as well as the actual fan speed and pump speeds.

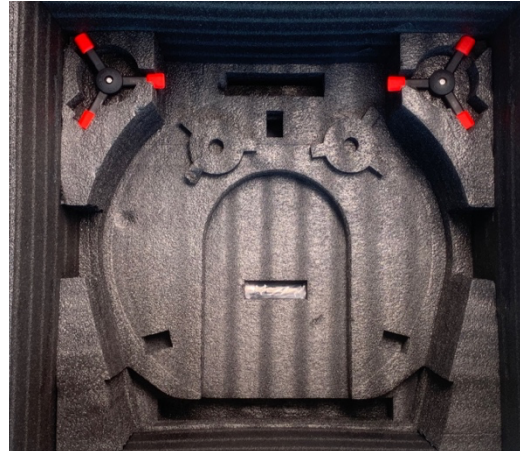
## **Setup, Packing and Shipping**

Always transport ReFlex in the road case designed specifically for the fixture.

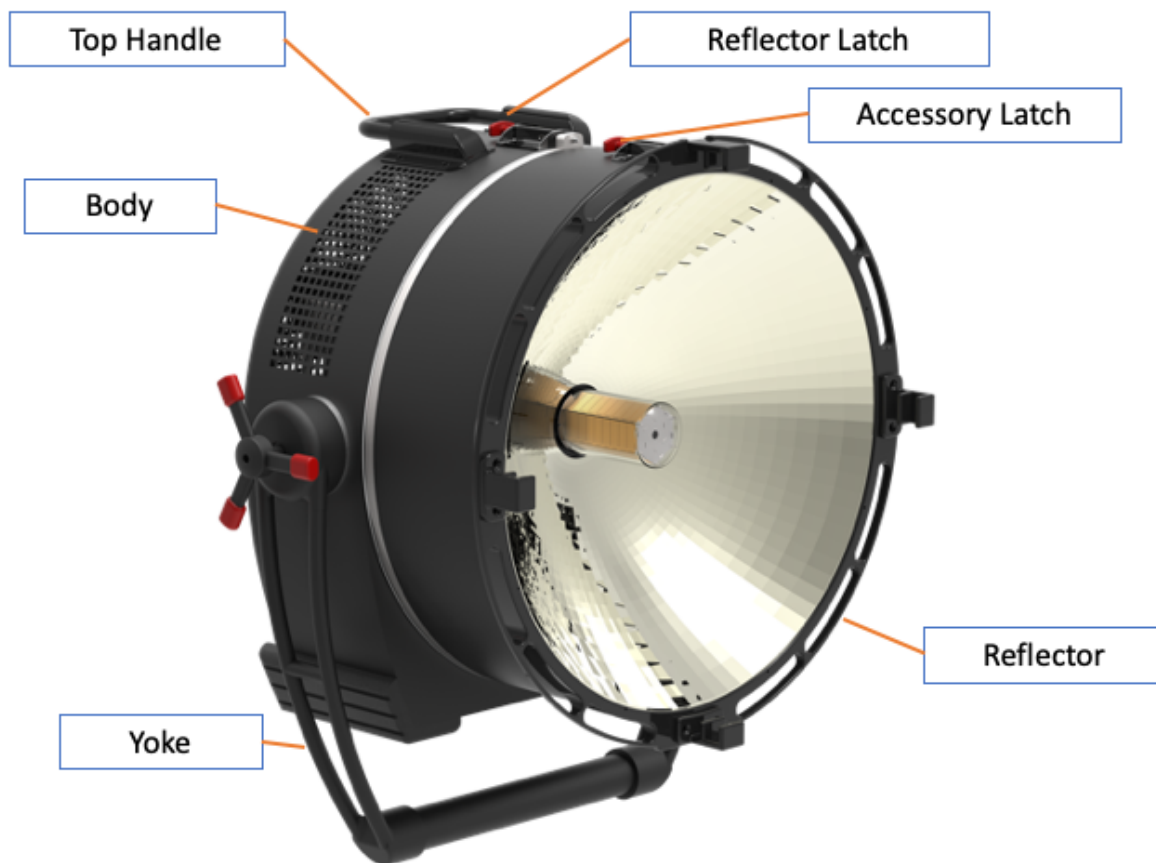
Shipping weight in its road case is 130 lbs. (60 kg.) Case size is 33.5”h x 33.5”w x 34.5”d including wheels.  
(85 x 85 x 88 cm.)

Please follow the packing instructions, below:

1. The R15 must ship in its original case and packaging to prevent damage.
2. Remove the mounting pin from the yoke using a 3/4” wrench. Once removed, place the mounting pin in the foam cutout.
3. Remove the mounting pin from the yoke using a 3/4” wrench. Once removed, place the mounting pin in the foam cutout.
4. Remove the yoke by removing both yoke handles. The yoke handles are to be placed in the designated foam cutouts with the foam insert in top of the handles.
5. The yoke has a designated place on the bottom of the shipping case. Remove the upper layer of foam and place the yoke in the cutouts and reinstall the upper foam layer.
6. Securely fasten the reflector to R15 chassis. The reflector must be installed before shipping. Once reflector is installed, the R15 should be facing up with the tower.
7. Lastly, add the powerCON TRUE1 cable to the front of the case by the yoke mounting plate.



## Component locations



### Body

Flow-through design allows both air and water to safely contact the interior system components.

### Top Handle

Safety rated; also prevents damage to the rear of the fixture.

### Reflector/latch

Pull this latch pin and turn the reflector to remove.

### Yoke

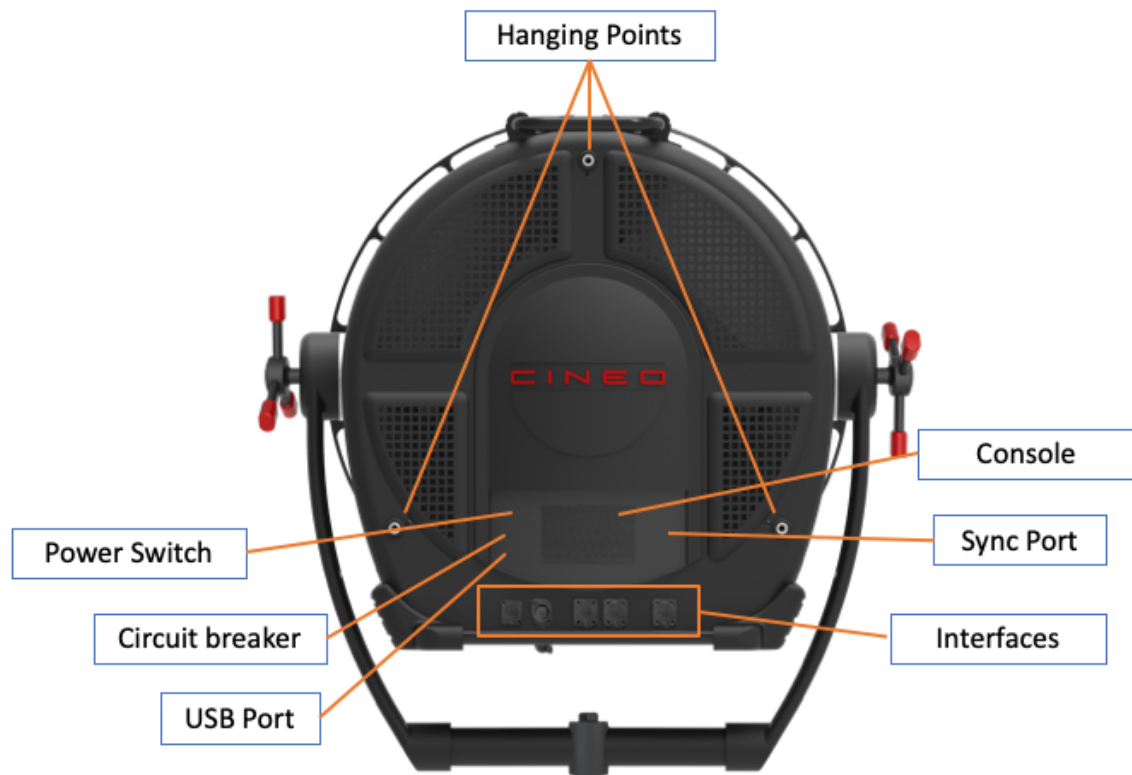
Easily removed with captive components by spinning off the side handles.

### Reflector

Removable open-face hard light reflector.

### Front accessory latch

Pulling this latch pin opens the retaining clip for mounting light control accessories in front of the reflector.



#### Hanging Points

(3) safety-rated 3/8-16 threaded hang points for top hanging.

#### Illuminated Power Switch

#### 20 Amp self-resetting circuit breaker

#### USB Port

Type-A USB 2.0 port, designed to update software and up/download user libraries.

#### Control Console

Capacitive touchscreen for managing local control and remote communications

#### Sync Port

This connector is reserved for future use.

## **Power and communications interfaces**



### **AC Input**

The fixture is connected to AC power, 100-240VAC 50/60 hz. using a waterproof True1 connector. Maximum power draw is 1460 watts.

### **Ethernet Port**

This waterproof RJ45 jack is used for network connections supporting sACN or ARTnet communications.

### **DMX In/Thru**

Waterproof 5-pin DMX/RDM 512 8-bit communications. The THRU port is passive and self-terminating when no cable is attached to this port.

### **DMX Bridge**

Waterproof DMX OUT that regenerates all communication received by the fixture. All local operations are outputted here when in LOCAL mode; when in REMOTE mode, whatever control method used to control the fixture (DMX, wireless, network, etc.) is outputted as a full DMX512 signal. RDM is not supported on this port.

## Control Operation

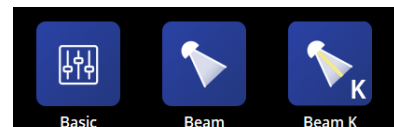
### Home Screen

The ReFlex fixture incorporates a high-resolution touchscreen, Linux-based 64-bit processor, 32GB storage and a precision real-time clock. This platform provides an intuitive user interface for local control, system setup and diagnostics, specialized functions and remote operation.



### Controls

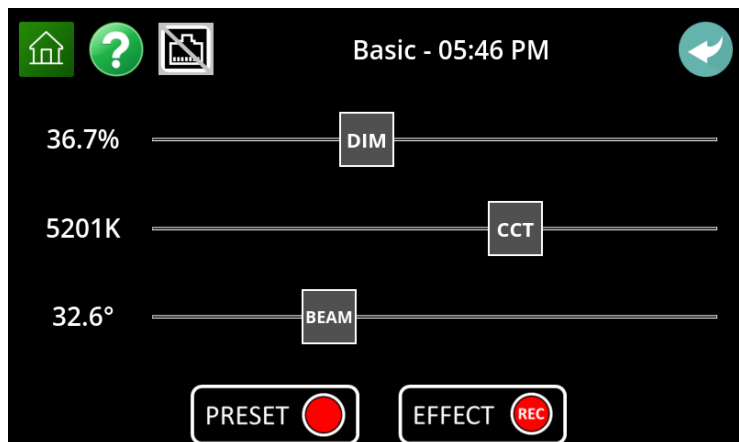
The control section is located at the bottom of the screen, identified by dark blue icons.



### Basic Control

The basic controls are the simplest method for controlling the fixture. Select the Basic icon, and three sliders appear: DIM, CCT and BEAM. Slide the control to the desired setting, or use the shortcuts:

- Press and hold the value displayed to the left of the slider. A keypad is displayed so precision values can be entered.
- Tap the slider to advance to the next logical value for the control. There are:
  - DIM: 20% increase in output, which corresponds to 1 f-stop increase in output.
  - CCT: Tap the slider control to jump from 2700, 3200, 4300, 5600, and 6500.
  - BEAM: Tapping this slider increases beam angle by 10%.

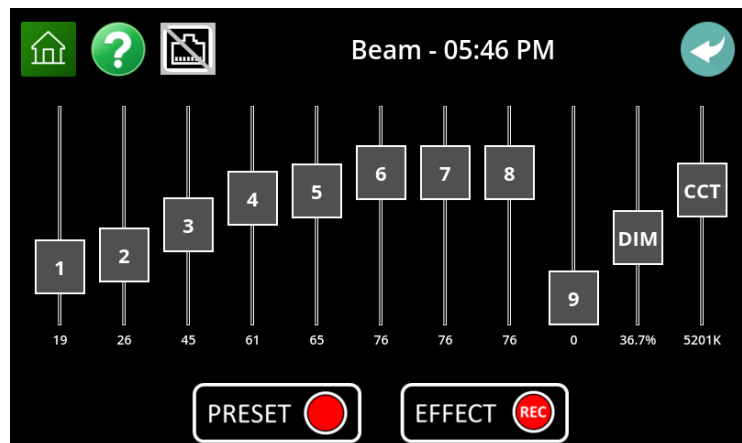


All control screens include the ability to save current settings as either a Preset or Effect, with buttons preset at the bottom of all control screens. This will be explained in a following section.

The Home icon in the upper left corner always returns you to the Home screen, while the arrow icon in the upper right corner returns you to the previous screen.

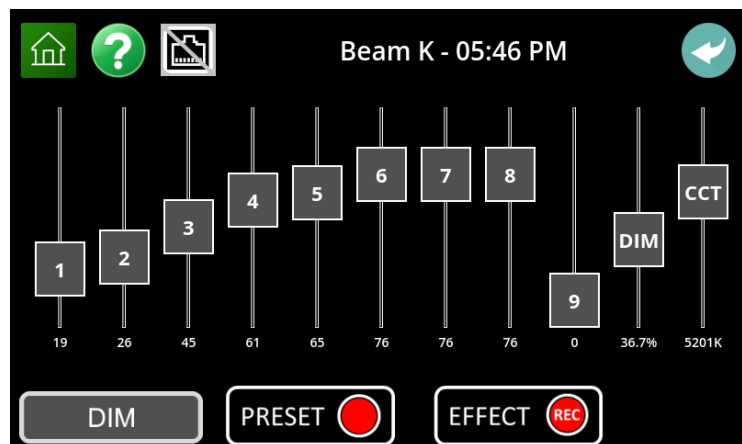
### Beam Control

Selecting this icon displays 9 sliders, each representing intensity control of each of the 9 concentric radial sources in the light engine. To the right of these are master DIM and CCT controls. Any values set in the Basic control screen are mapped into the Beam control, giving you a starting point for customizing the overall shape of the beam. Shortcuts for both presets and the keypad are available on all sliders. Note that if a custom beam shape is designed and unsaved, it will be cleared when the Basic control is used.



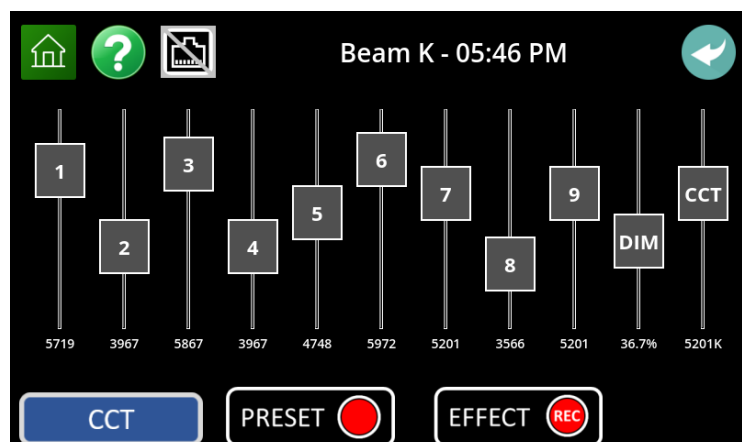
### Beam K Control

The Beam K control is the most sophisticated local control currently available, allowing complete control over both beam shape and CCT, individually controlled over the 9 concentric light sources. The interface is similar to the Beam control, with master DIM and master CCT displayed to the right of the 9 sliders. All shortcut methods previously described are available on all sliders.



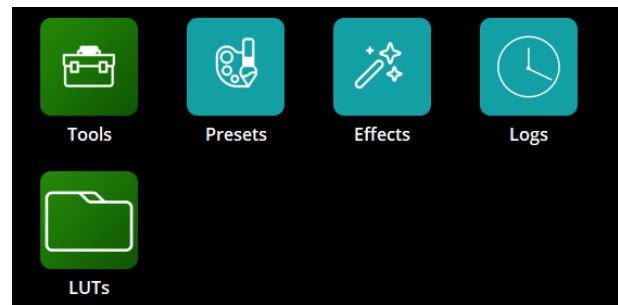
An additional button on the bottom of the screen displays the current function being controlled and when pushed toggles between the CCT controls and Beam controls.

Note: once the master CCT is used, or the Basic controls are used, any unsaved customization to the Beam K will be reset.



## Settings and Functions

The top left area of the menu screen contains several icons, containing additional settings and features for the fixture. The Green icons represent settings, while the teal icons contain additional features.

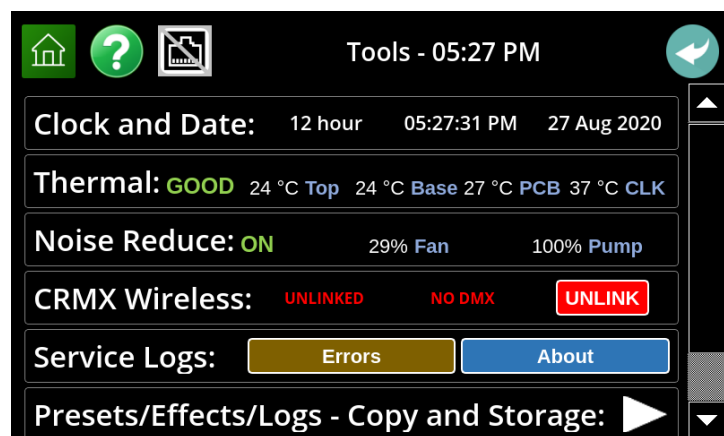


## Tools

By touching the Tools icon, several fixture settings are available, as well as temperature and component monitoring status.

## Time Set

The R15 contains a crystal-accurate clock that is the time reference for the fixture. This includes the date and time displays throughout the user interface, the timestamps used for event logging and creation/modification date stamps for all stored LUTs, Presets and Effects. Touch the Date, Time or 12/24-hour time format to change any of these criteria.



## Thermal / Noise Reduce

The thermal management of ReFlex includes sophisticated software designed to prevent thermal stress while minimizing the fan noise. It also includes a fail-safe thermal relay that prevents a catastrophic thermal event from damaging the fixture. Depending on operation, the Thermal menu displays the overall thermal state of the unit: GOOD, WARM or HOT. For diagnostics purposes, the Cooling section currently shows the temperature in four critical areas of the fixture: the Light Engine tip and Base, the processor PCB and the clock. There is no user intervention required. If the system is managing the fan and pump speed for quiet operation, it displays “Noise Reduce: ON”; otherwise if the system requires 100% fan and pump, the Noise Reduce status changes to “OFF”. The fan speed and pump speed are also displayed, again for diagnostics purposes.

## CRMX

In this section, the CRMX radio linking and status are managed. The top red button, labeled “Press to Unlink” unlinks the unit to an available wireless DMX transmitter. CRMX receivers always automatically “Link” to the available transmitter in the vicinity. The lower red area displays the current fixture status in relationship to being linked to a transmitter or not.

### Service Logs

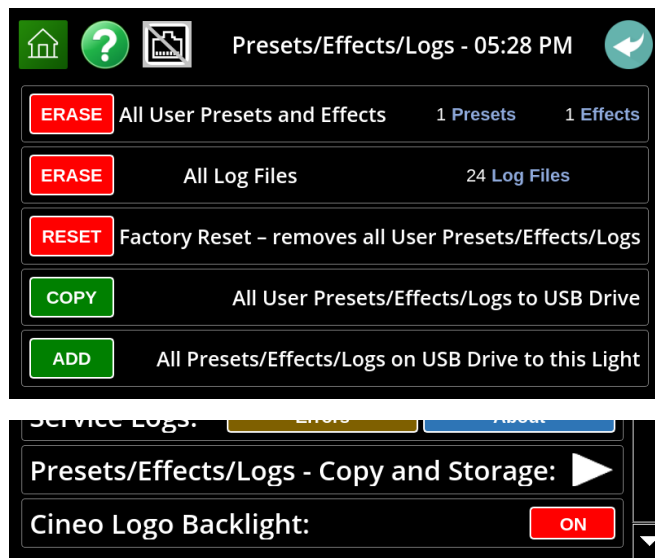
Pressing the “Errors” button show a list of errors reported for diagnostic purposes. The “About” button displays system information, including the software version.

### Presets/Effects/Logs – Copy and Storage

By pressing the arrow button, the system memory can be managed, as well as providing tools to move user Presets, Effects and Logs to/from a USB storage device.

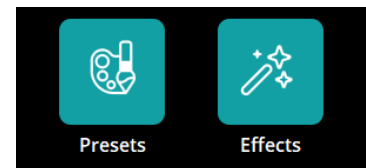
### Logo Light On/Off

The R15 includes an illuminated “Cineo” logo on the back of the fixture. This not only helps locate fixtures on a dark stage but can also show error codes in future releases.



### Presets and Effects

The ReFlex is capable of recording and playing back static or dynamic settings. In all Control screens, current static output settings for the fixture can be recorded and recalled for future use. The same is true for saving dynamic lighting changes, created locally or played from a console via supported remote protocols. These are organized in the Presets and Effects icons on the Home screen, with static settings stored in Presets, and dynamic settings stored in Effects. In either area, the user can create collections of both Presets and Effects, stored in folders called Libraries.



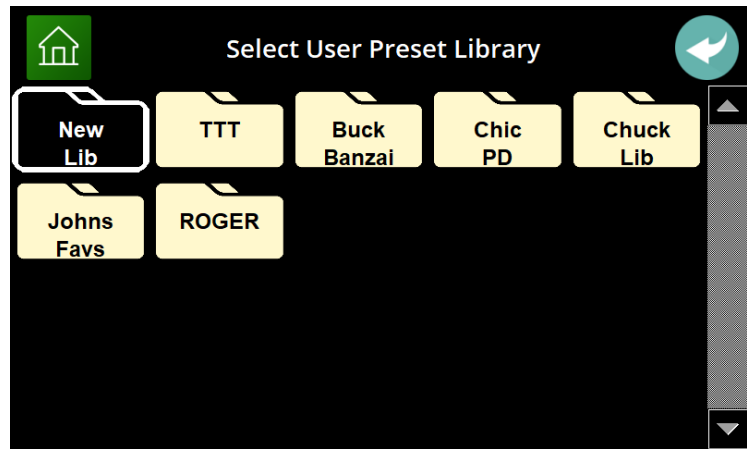
The R15 is shipped with pre-built “Cineo Presets” and “Cineo Effects”, in addition to the ability to create your own. Any Cineo preset or effect can be recalled by simply selecting the stored item; it can then be modified and stored as a new item in the “User Presets” area of Libraries.

### Creating Presets

As previously mentioned, all applicable screens, including the remote operation screen offer the ability to record a Preset event.

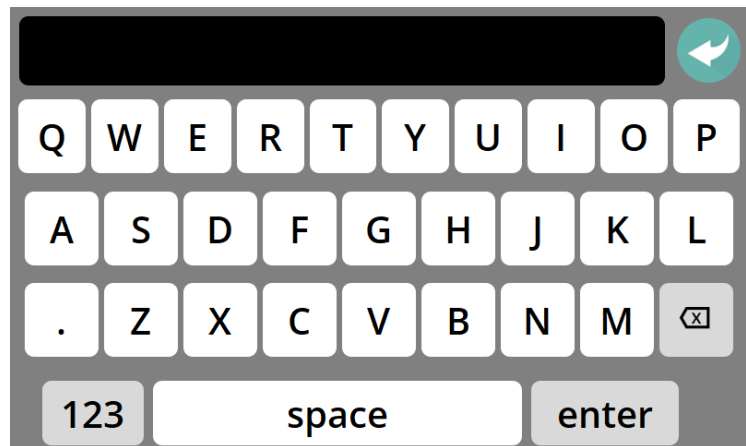


Since a Preset is a snapshot of the current settings, once the Preset button is pushed, the user is prompted to select an existing Library for storage, or the choice to create a new Library.



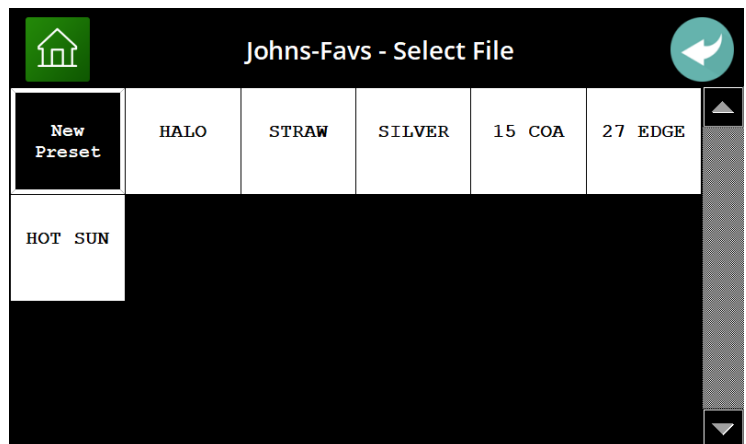
If storing in an existing Library, “New Preset” button is shown, along with the existing Presets stored in the Library. The user can choose to overwrite an existing Preset or choose the “New Preset” button.

When the latter is chosen, an alphanumeric keypad is then displayed for naming the Preset. If creating a new Library, the keypad is displayed for naming the Library, followed by the “New Preset” button. Naming of the Preset follows similar conventions.



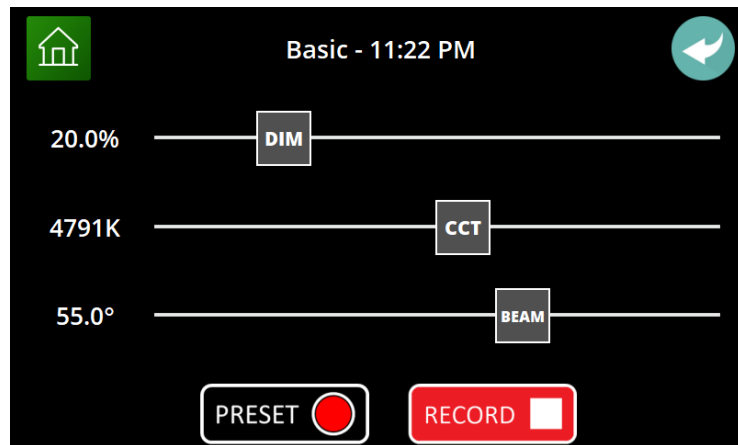
### Recalling Presets

To recall an existing preset, simply go to the Presets icon on the Home screen, choose the Library and Preset and the fixture will recall and display the chosen Preset.



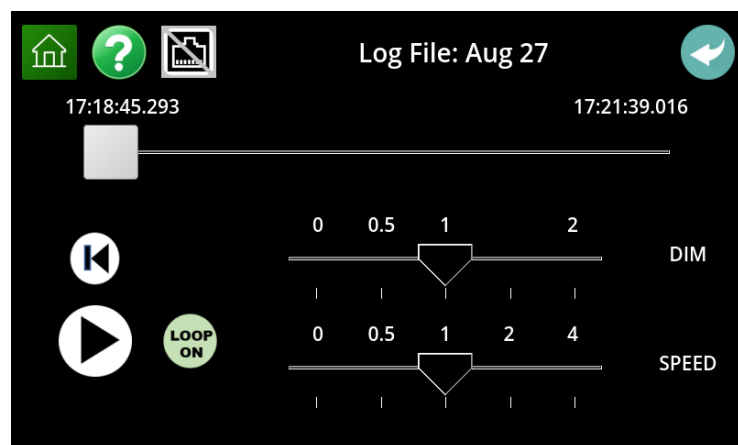
### Recording Effects

Effects creation is very similar to Preset creation, except the Effects are time-based. When pressing the Effect button from any control screen, the button changes to “Record”. It will now record all changes made to the settings, either locally or remotely, until the Record button is pushed again. A list of Effects Libraries is then displayed, and the ability to select a Library create a new Library, save the Effect or overwrite an existing Effect are identical to the operation of saving Presets.



### Effect Playback

Select an Effect to playback in a similar manner to choosing a Preset; however, when the Effect is chosen an Effect Player is displayed. This is a very powerful tool, allowing you to control the playback speed and DIM level, along with the option of looping the Effect. A start frame can be selected by Tapping on the time slider, and entering a start time.



### Logs

Log files are a time-stamped history of all settings for the fixture. Every time the fixture is powered-on, a new Log file is created and continues to record the events, both locally and remotely that the fixture is doing. These Log files are saved indefinitely, so several days, weeks or months of previous activity can be reviewed and recalled. There are several purposes of the Log files, including:



- Review and recall any setting or series of settings created before. When selected, Log files are loaded into the Effects player, and can be reviewed.
- Logs show the chronological usage of the fixture, for analytics purposes.
- Diagnostics. Cineo Customer Service can review the Log files as a troubleshooting tool.

## LUTs

The ReFlex R15 takes advantage of Cineo's CLF LUT feature and will be available in future releases.

## Remote Operation

The R15 can be remotely controlled using a wide range of protocols, the simplest of which is DMX/RDM. Current release also supports the built-in CRMX wireless DMX protocol, and future releases will add sACN/ARTNet, Wifi and Bluetooth.

All functions in this area are also available via RDM, including the ability to place the unit in Remote or Local operation.

## Control method

By selecting this icon, current control methods are presented. In the current release, choices are DMX and CRMX.

## 8/16 bit protocol

By choosing this icon, 8-bit or 16-bit DMX protocol is selected. Using 16 bits offers considerably more adjustment resolution and doubles the number of DMX channels.

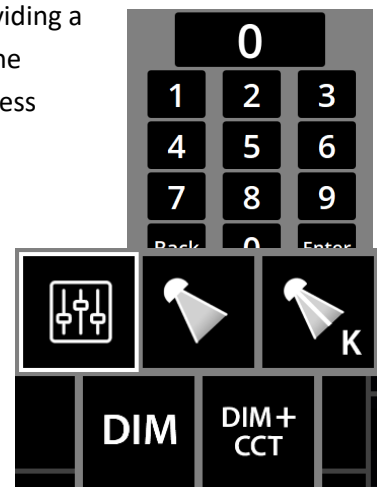
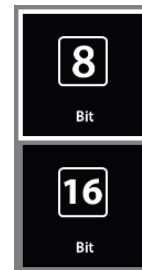
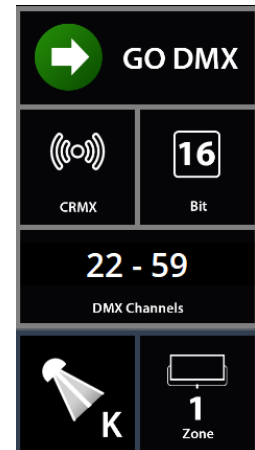
## DMX Channels

By touching this area of the screen, a numeric keypad is displayed, providing a method to choose the starting DMX address for the fixture. Based on the Operating Mode, Zone count and 8/16 bit data protocol, the DMX address range is calculated and displayed in the DMX Address area.

## Select Operating Mode

The R15 can utilize any of the three Local operating modes in Remote Operation: Basic control, Beam control or Beam K control. Choose this by touching the Mode area.

In addition, the fixture can be operated remotely in two additional modes: DIM-only and DIM+CCT only. Like other Cineo fixtures, these two modes accommodate installations that choose to limit the amount of available control of the fixture from a console. When the DIM mode is chosen, the Basic



Beam settings and CCT settings are locked in their current state, allowing remote control of only the dimming of the fixture, occupying one DMX slot. Similarly, when the DIM+CCT Mode is chosen, the Basic Beam settings are locked, and two DMX slots control dimming and CCT for the fixture.

### Zones

The ability to select zonal control will be available in future releases.

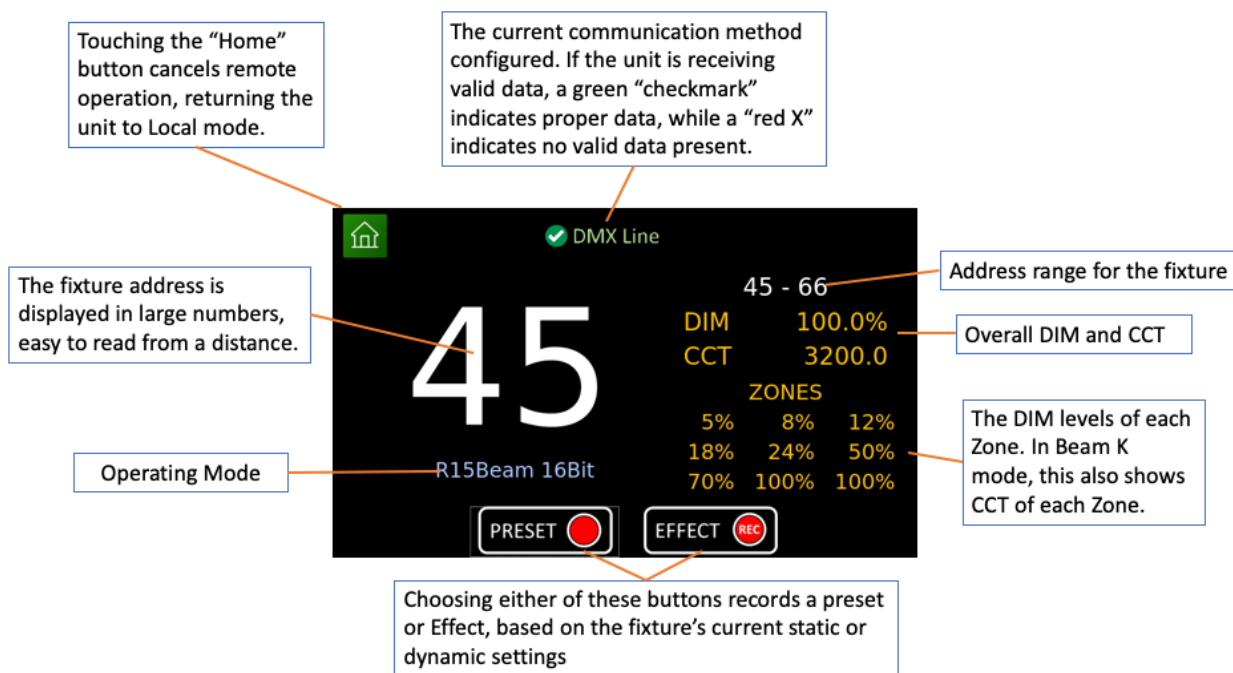
### Go DMX

The right side of the Home screen provides selection of all parameters of remote operation. The top “GO DMX” button places the unit in remote mode, using all of the setting chosen below this.



### Remote Operation Screen

When the ReFlex R15 is operating from a remote control, the following screen is displayed on the Control screen. This provides substantial information about the current state of the unit, as well as information that may help troubleshoot any communications issues.



## **Accessories**

### **Reflector**

The ReFlex R15 ships with an open-face reflector that provides variable beam angle adjustment from 15° spot to a 75° flood. The reflector can be removed, and the fixture can be operated as a soft light, either “bare-bulb” or with an accessory ring that accommodates a variety of soft accessories from TRP Worldwide™. The Light Engine is made from durable polycarbonate; however, care should be taken when removing or attaching the accessory ring. Note that the fixture should only be shipped with the reflector attached to the fixture.

### **Reflector removal**

To remove the reflector, follow these steps:

1. Unplug the power cord from the back of the fixture.
2. Place the R15 on its back, resting on the focusing handles.
3. Pull the spring pin on the front-top of the fixture
4. Rotate the reflector shell ½” to the left
5. Lift the reflector straight off the fixture.
6. Attach the reflector in reverse order.
7. The accessory ring attaches/detaches in the same way.

### **Barn Doors**

The ReFlex uses a 4-leaf 24” barn door, specific to the R15. To attach to the front of the reflector, pull the spring pin on the top/front of the reflector. The barn door retention clamp will open. Insert the barn door and close the retaining clamp.

## **Mounting options**

### **Yoke operation**

The R15 ships with a standard yoke that includes a Junior-style mounting pin. This can be removed by spinning off both the tension knobs.

### **Hanging points**

Three safety rated 3/8”/16 threaded inserts on the back of the fixture. Cineo manufactures an optional cable hanging accessory that threads into these holes for top hanging.

## **Specifications**

125,000 lumen output

Variable white light: 2700-6500K

CRle: 90-96

All functions available locally via touchscreen

DMX/RDM plus DMX re-gen.

CRMX wireless control. sACN/ArtNet capable; bluetooth ready

Electronically variable uniform field beam angle: 15° to 75° (FWHM)

Digitally controlled beam shape, combined with beam-variable CCT

Flicker-free dimming, 0-100%, 10,000fps

Removable reflector with optional soft lighting accessories

Removable mounting yoke with Junior Pin

(3) Reinforced hang points for top-hanging

Input Power: 110-240VAC. 1,500 watts max. Integrated power supply.

Fixture size (with reflector): 19"l. x 31.5"w. x 26" dia. (48.3cm l. x 80cm w. x 66cm d.)

Weight (with reflector): 73 lbs. (33kg.)

Environmental temperature range: -20°C - +40°C Max. temperature rise: +40°C

Quiet, active cooling

ETL, cETL, CE pending

### **Light Output** (measured at 30ft.)

| CCT  | Flood (50°) FC/Lux | Spot (15°) FC/Lux |
|------|--------------------|-------------------|
| 2700 | 44/474             | 263/3154          |
| 3200 | 57/614             | 342/3681          |
| 4300 | 93/1001            | 503/5414          |
| 5600 | 69/743             | 415/4467          |
| 6500 | 55/592             | 330/3552          |

## **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.

Cineo 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. Customer 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.

## **Addendum: ReFlex R15 Personality List and DMX Maps**

| PERSONALITY | DESCRIPTION |
|-------------|-------------|
|-------------|-------------|

|    |                  |
|----|------------------|
| 1  | Local            |
| 2  | Basic 8-bit      |
| 3  | Basic 16-Bit     |
| 4  | Beam 8-Bit       |
| 5  | Beam 16-Bit      |
| 6  | Beam K 8-Bit     |
| 7  | Beam K 16-Bit    |
| 8  | DIM Only 8-Bit   |
| 9  | Dim Only 16-Bit  |
| 10 | Dim + CCT 8-Bit  |
| 11 | Dim + CCT 16-Bit |

### **Basic Personalities**

| PERSONALITY # | PERSONALITY | SLOT COUNT | SLOT # | PARAMETER  | RANGE          |
|---------------|-------------|------------|--------|------------|----------------|
| 2             | Basic 8-Bit | 3          | 1      | Intensity  | 0 to 100%      |
|               |             |            | 2      | CCT        | 2700k to 6500k |
|               |             |            | 3      | Beam angle | 15° to 75°     |

| PERSONALITY # | PERSONALITY  | SLOT COUNT | SLOT # | PARAMETER      | RANGE          |
|---------------|--------------|------------|--------|----------------|----------------|
| 3             | Basic 16-Bit | 6          | 1      | Intensity Hi   | 0 to 100%      |
|               |              |            | 2      | Intensity Low  |                |
|               |              |            | 3      | CCT Hi         | 2700k to 6500k |
|               |              |            | 4      | CCT Low        |                |
|               |              |            | 5      | Beam angle     | 15° to 75°     |
|               |              |            | 6      | Beam angle Low |                |

## Beam Personalities

| PERSONALITY # | PERSONALITY | SLOT COUNT | SLOT # | PARAMETER        | RANGE          |
|---------------|-------------|------------|--------|------------------|----------------|
| 4             | Beam 8-Bit  | 11         | 1      | Master Intensity | 0 to 100%      |
|               |             |            | 2      | Master CCT       | 2700k to 6500k |
|               |             |            | 3      | Zone 1 Intensity | 0 to 100%      |
|               |             |            | 4      | Zone 2 Intensity | 0 to 100%      |
|               |             |            | 5      | Zone 3 Intensity | 0 to 100%      |
|               |             |            | 6      | Zone 4 Intensity | 0 to 100%      |
|               |             |            | 7      | Zone 5 Intensity | 0 to 100%      |
|               |             |            | 8      | Zone 6 Intensity | 0 to 100%      |
|               |             |            | 9      | Zone 7 Intensity | 0 to 100%      |
|               |             |            | 10     | Zone 8 Intensity | 0 to 100%      |
|               |             |            | 11     | Zone 9 Intensity | 0 to 100%      |

| PERSONALITY # | PERSONALITY | SLOT COUNT | SLOT # | PARAMETER            | RANGE          |
|---------------|-------------|------------|--------|----------------------|----------------|
| 5             | Beam 16-Bit | 22         | 1      | Master Intensity Hi  | 0 to 100%      |
|               |             |            | 2      | Master Intensity Low |                |
|               |             |            | 3      | Master CCT Hi        | 2700k to 6500k |
|               |             |            | 4      | Master CCT Low       |                |
|               |             |            | 5      | Zone 1 Intensity Hi  | 0 to 100%      |
|               |             |            | 6      | Zone 1 Intensity Low |                |
|               |             |            | 7      | Zone 2 Intensity Hi  | 0 to 100%      |
|               |             |            | 8      | Zone 2 Intensity Low |                |
|               |             |            | 9      | Zone 3 Intensity Hi  | 0 to 100%      |
|               |             |            | 10     | Zone 3 Intensity Low |                |
|               |             |            | 11     | Zone 4 Intensity Hi  | 0 to 100%      |
|               |             |            | 12     | Zone 4 Intensity Low |                |
|               |             |            | 13     | Zone 5 Intensity Hi  | 0 to 100%      |
|               |             |            | 14     | Zone 5 Intensity Low |                |
|               |             |            | 15     | Zone 6 Intensity Hi  | 0 to 100%      |
|               |             |            | 16     | Zone 6 Intensity Low |                |
|               |             |            | 17     | Zone 7 Intensity Hi  | 0 to 100%      |
|               |             |            | 18     | Zone 7 Intensity Low |                |
|               |             |            | 19     | Zone 8 Intensity Hi  | 0 to 100%      |
|               |             |            | 20     | Zone 8 Intensity Low |                |
|               |             |            | 21     | Zone 9 Intensity Hi  | 0 to 100%      |
|               |             |            | 22     | Zone 9 Intensity Low |                |

**Beam K Personalities**

| PERSONALITY # | PERSONALITY  | SLOT COUNT | SLOT # | PARAMETER        | RANGE          |
|---------------|--------------|------------|--------|------------------|----------------|
| 6             | Beam K 8-Bit | 19         | 1      | Master Intensity | 0 to 100%      |
|               |              |            | 2      | Zone 1 Intensity | 0 to 100%      |
|               |              |            | 3      | Zone 1 CCT       | 2700k to 6500k |
|               |              |            | 4      | Zone 2 Intensity | 0 to 100%      |
|               |              |            | 5      | Zone 2 CCT       | 2700k to 6500k |
|               |              |            | 6      | Zone 3 Intensity | 0 to 100%      |
|               |              |            | 7      | Zone 3 CCT       | 2700k to 6500k |
|               |              |            | 8      | Zone 4 Intensity | 0 to 100%      |
|               |              |            | 9      | Zone 4 CCT       | 2700k to 6500k |
|               |              |            | 10     | Zone 5 Intensity | 0 to 100%      |
|               |              |            | 11     | Zone 5 CCT       | 2700k to 6500k |
|               |              |            | 12     | Zone 6 Intensity | 0 to 100%      |
|               |              |            | 13     | Zone 6 CCT       | 2700k to 6500k |
|               |              |            | 14     | Zone 7 Intensity | 0 to 100%      |
|               |              |            | 15     | Zone 7 CCT       | 2700k to 6500k |
|               |              |            | 16     | Zone 8 Intensity | 0 to 100%      |
|               |              |            | 17     | Zone 8 CCT       | 2700k to 6500k |
|               |              |            | 18     | Zone 9 Intensity | 0 to 100%      |
|               |              |            | 19     | Zone 9 CCT       | 2700k to 6500k |

**Beam K Personalities, cont.**

| PERSONALITY # | PERSONALITY   | SLOT COUNT | SLOT # | PARAMETER            | RANGE          |
|---------------|---------------|------------|--------|----------------------|----------------|
| 7             | Beam K 16-Bit | 38         | 1      | Master Intensity Hi  | 0 to 100%      |
|               |               |            | 2      | Master Intensity Low |                |
|               |               |            | 3      | Zone 1 Intensity Hi  | 0 to 100%      |
|               |               |            | 4      | Zone 1 Intensity Low |                |
|               |               |            | 5      | Zone 1 CCT Hi        | 2700k to 6500k |
|               |               |            | 6      | Zone 1 CCT Low       |                |
|               |               |            | 7      | Zone 2 Intensity Hi  | 0 to 100%      |
|               |               |            | 8      | Zone 2 Intensity Low |                |
|               |               |            | 9      | Zone 2 CCT Hi        | 2700k to 6500k |
|               |               |            | 10     | Zone 2 CCT Low       |                |
|               |               |            | 11     | Zone 3 Intensity Hi  | 0 to 100%      |
|               |               |            | 12     | Zone 3 Intensity Low |                |
|               |               |            | 13     | Zone 3 CCT Hi        | 2700k to 6500k |
|               |               |            | 14     | Zone 3 CCT Low       |                |
|               |               |            | 15     | Zone 4 Intensity Hi  | 0 to 100%      |
|               |               |            | 16     | Zone 4 Intensity Low |                |
|               |               |            | 17     | Zone 4 CCT Hi        | 2700k to 6500k |
|               |               |            | 18     | Zone 4 CCT Low       |                |
|               |               |            | 19     | Zone 5 Intensity Hi  | 0 to 100%      |
|               |               |            | 20     | Zone 5 Intensity Low |                |
|               |               |            | 21     | Zone 5 CCT Hi        | 2700k to 6500k |
|               |               |            | 22     | Zone 5 CCT Low       |                |
|               |               |            | 23     | Zone 6 Intensity Hi  | 0 to 100%      |
|               |               |            | 24     | Zone 6 Intensity Low |                |
|               |               |            | 25     | Zone 6 CCT Hi        | 2700k to 6500k |
|               |               |            | 26     | Zone 6 CCT Low       |                |
|               |               |            | 27     | Zone 7 Intensity Hi  | 0 to 100%      |
|               |               |            | 28     | Zone 7 Intensity Low |                |
|               |               |            | 29     | Zone 7 CCT Hi        | 2700k to 6500k |
|               |               |            | 30     | Zone 7 CCT Low       |                |
|               |               |            | 31     | Zone 8 Intensity Hi  | 0 to 100%      |
|               |               |            | 32     | Zone 8 Intensity Low |                |
|               |               |            | 33     | Zone 8 CCT Hi        | 2700k to 6500k |
|               |               |            | 34     | Zone 8 CCT Low       |                |
|               |               |            | 35     | Zone 9 Intensity Hi  | 0 to 100%      |
|               |               |            | 36     | Zone 9 Intensity Low |                |
|               |               |            | 37     | Zone 9 CCT Hi        | 2700k to 6500k |
|               |               |            | 38     | Zone 9 CCT Low       |                |

### **Dim-Only Personalities**

| PERSONALITY # | PERSONALITY    | SLOT COUNT | SLOT # | PARAMETER | RANGE     |
|---------------|----------------|------------|--------|-----------|-----------|
| 8             | Dim Only 8-Bit | 1          | 1      | Intensity | 0 to 100% |

| PERSONALITY # | PERSONALITY     | SLOT COUNT | SLOT # | PARAMETER     | RANGE     |
|---------------|-----------------|------------|--------|---------------|-----------|
| 9             | Dim Only 16-Bit | 2          | 1      | Intensity Hi  | 0 to 100% |
|               |                 |            | 2      | Intensity Low |           |

### **Dim + CCT Modes**

| PERSONALITY # | PERSONALITY     | SLOT COUNT | SLOT # | PARAMETER | RANGE          |
|---------------|-----------------|------------|--------|-----------|----------------|
| 10            | Dim + CCT 8-Bit | 2          | 1      | Intensity | 0 to 100%      |
|               |                 |            | 2      | CCT       | 2700k to 6500k |

| PERSONALITY # | PERSONALITY      | SLOT COUNT | SLOT # | PARAMETER     | RANGE          |
|---------------|------------------|------------|--------|---------------|----------------|
| 11            | Dim + CCT 16-Bit | 4          | 1      | Intensity Hi  | 0 to 100 %     |
|               |                  |            | 2      | Intensity Low |                |
|               |                  |            | 3      | CCT Hi        | 2700k to 6500k |
|               |                  |            | 4      | CCT Low       |                |