



Quantum c80

User Guide

Revision 1.2 — October, 2017

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

Welcome to Quantum c80 from Cineo

Quantum c80

Cineo has designed the ultimate creative lighting tool: the Quantum c80. Combining the same award-winning white light quality used in Quantum 120 with innovative saturated color technology, the Qc80 delivers up to 50,000 lumens of beautiful, easily controllable, full-gamut light across a diffused 2' x 4' aperture. With built in power supply and silent operation, the Qc80 delivers 1000 watts of power in a package that is less than 50 lbs and is less than 6 inches deep.

Creating beautiful white light with extended color gamut in smart packaging is only part of the story. Cineo has also developed an intuitive control strategy that allows predictable, repeatable results, either using the graphic on board control panel or remotely with wired or built-in wireless CRMX control.

The strategy for control is simple. Whether using local or DMX settings, four independent controls (Dim, White, Saturation and Color) give range to the entire fixture via a single mode of intuitive operation.

Dim

Uniform control of total fixture output. Cineo's Photo-Accurate Dimming™ maps the 0-100% dimming curve to actual camera stops for precise output control using the DIM control locally or on the first DMX channel.

White

Adjust primary white light base 2700-6500K. For color-accurate white light, choose the CCT as you would with any Cineo fixture, using the WHITE rotary control or the second DMX channel.

Saturation

Blend between white light base and the color gamut. This control blends and balances the amount of saturated color with the CCT base, from pristine white to deep artistic color. Also controlled remotely on the third DMX channel.

Color

Explore brilliant color palettes across the full color space. To optionally add saturated color, the COLOR control adjusts the hue or on the fourth DMX channel; the color of which is displayed on the control panel.

With Qc80, the WHITE, COLOR and SATURATION controls operate mutually exclusive from each other, allowing for consistent color shading across the entire range of white light bases. For example, +2 Green added to 3200K CCT will look the same as +2 Green at 5600K to the correctly white-balanced camera.

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, so all light emitting elements of the c80 carry identical thermal stability, and perform over time with identical differential aging. So after years of service, color stability remains consistent.

The Quantum c80 is passively cooled for completely silent operation, ruggedly built, water resistant and includes an integrated power supply for easy setup.

General Notes

1. Please read through this manual carefully before operating Cineo Qc80, 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. Qc80 is not intended for residential use. It is intended for use in a professional studio.
4. Qc80 must be serviced by a qualified technician.
5. The Cineo Qc80 is rated as IP22 – for damp environments.
6. Cineo products are not certified for use in hazardous locations.
7. The Cineo Qc80 has a typical operating temperature of 50°C (122°F).

Fixture Set Up

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

Ensure the junior mounting pin is correctly mounted onto the yoke before rigging.

Always use secondary safety cables of suitable length when hanging Cineo Qc80 units.

The Qc80 weighs 48 lbs. (22 kg) excluding accessories. The combined weight should be considered when choosing a suitable safety cable.

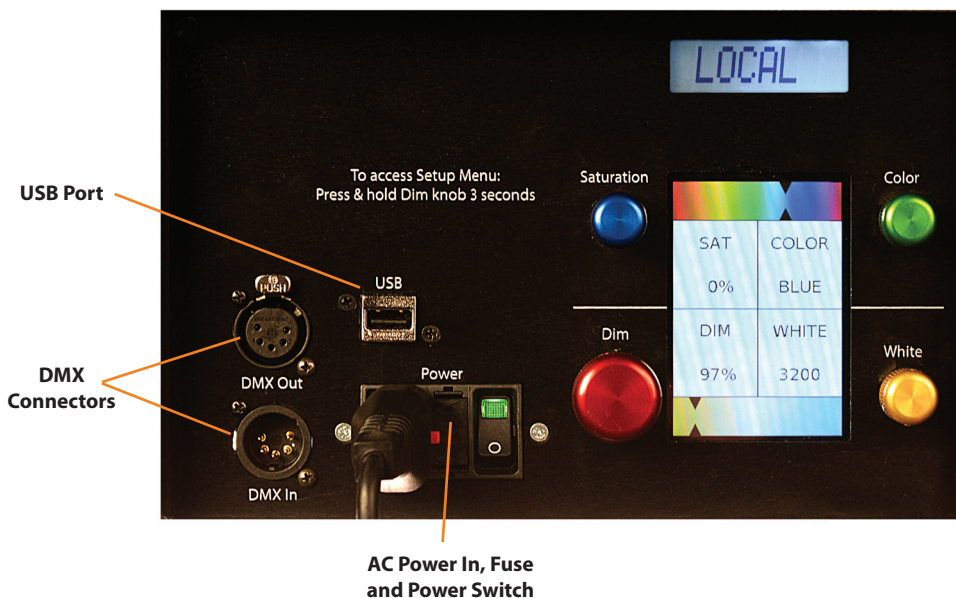
Safety cables must securely be attached to the yoke on Qc80 or the safety holes located in each corner and be as short as possible to reduce travel distance if primary hanging accessory fails.

Ensure that the yoke lock is correctly tightened when manipulating Qc80 in the required orientation for safety purposes.

Ensure the Cineo Qc80 is operated within an ambient temperature range of -20 to +50°C (-4 to 122°F).

System Components, Connections and Controls

All connectors and system controls for the Cineo Qc80 are located on the back of the unit. In addition to its full color heads-up display, optically encoded rotary knobs give access to menu selections and local control inputs. Hard power connections and switches allow for easy set up and strike. The 5 pin DMX connections, embedded wireless receivers, RDM responders and powered USB ports support many options for external control.



Power

The Qc80 unit is controlled by an internal power supply. 110 – 220VAC is provided to the unit via a locking IEC connector, located on the back control panel.

NOTES:

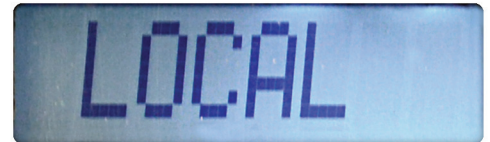
1. Ensure the power cable is disconnected before servicing.
2. Do not connect to a variable supply, such as a dimmer rack.
3. The power cable should be plugged into the power supply before switching the power ON. The power supply should be switched OFF before removing the power cable.
4. A fuse is located within the IEC connection port. A spare fuse is provided in this same space. If power is provided, the power switch is ON and the LED light on the power switch is not illuminated, please disconnect power and check this fuse first.

Displays Screens

The Qc80 control interface includes two backlit displays, each of which communicates valuable yet discrete information during the operation and setup of the Qc80. They are separated as CONTROL and STATUS.

Control Screen

The Control screen is an 8-character, daylight-visible display that shows data adjustment values in Local Mode, shows DMX signal status in DMX Mode, Radio, Calibrate and interacts with the Status screen in Menu Mode.



Status Screen

A full-color screen displays the status of each DIM, WHITE, SATURATION and COLOR control value at all times. The color ribbons on the top and bottom of the display give a visual reference for both the WHITE CCT and the COLOR hue. DIM value and SATURATION are represented as a percentage. In DMX mode, this display reflects the current DMX channel assignment as well as the correlated values for each of the four channels.

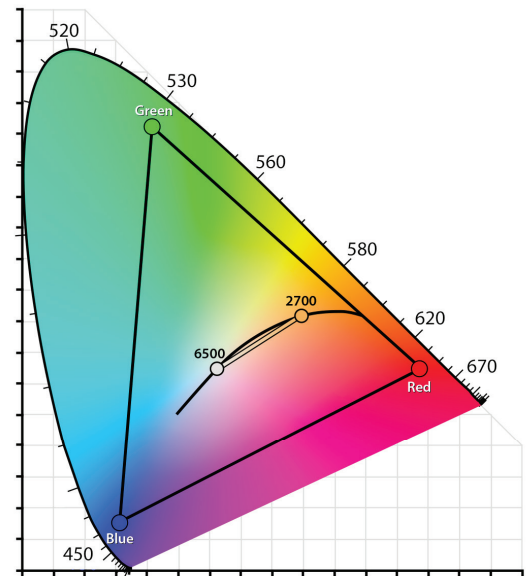


Color Space

The Qc80 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 below illustrates the Qc80 color space.

Controls

Setup of the Qc80 is can be accomplished either using the large Red DIM knob with the control and status displays, or remotely using RDM.



Accessing the Setup Menu

The fixture can be set up via the control panel as follows the follows:

1. Push and hold the larger Red knob for approximately 3 seconds. The status display will now show the top level menu options.
2. Turn the Red knob until the desired control selection is highlighted: LOCAL, DMX, RADIO or CALIBRATE.
3. Push the knob again to select menu category.

Local Mode

When LOCAL mode is selected, all functions of the fixture are managed through the 4 multi colored rotary encoders and feedback is displayed on the display screens. The Control screen contextually switches to show the value of each control being adjusted.

RED knob: Photo-Accurate Dimming

The dimming curve on the Qc80 follows a new 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.

0-100% dimming is controlled by turning the Red rotary knob. Pushing the knob cycles the output at these levels: 20%, 40%, 60%, 80% and 100%.

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

Local 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)

Yellow Knob: CCT Adjustment

The color temperature (CCT) of the fixture is controlled by turning the Yellow knob in a continuously variable range of 2700K to 6500K. Pushing the Yellow control knob cycles the CCT of the fixture between popular settings: 2700, 3200, 4300, 5600 and 6500K.

Blue Knob: Color Saturation

The SATURATION of color added to the base white light is controlled by the Blue knob, which has presets at 0%, 10%, 20%, 50%, 80% and 100%. Note that the addition of saturated color does not change the base CCT of the white light; these are completely independent functions.

Green Knob: Color Control

The COLOR knob adjusts the hue of the saturated color system, which is added to the white light in percentages, from 0% to 100% saturated color. The Green knob adjusts the saturated color hue, in 256 increments, and the approximate hue is displayed on the color ribbon. Pushing the Green knob cycles between the primary and secondary colors: Red, Yellow, Green, Cyan, Blue and Magenta. Colors can be fine-tuned anywhere within the color space.

The Status display shows all values selected for these four controls at all times.

DMX Mode

When DMX is selected from the menu, the output level, CCT, hue and saturation of the fixture are controlled remotely on four DMX addresses in the address range of 001 to 512. The left knob is used to set the master DMX address for dimming; other three controls are automatically addressed sequentially. The Control Display shows the master address of the fixture while the addresses are being selected. When the desired master address is selected, push the Red knob to save and enter DMX mode. The selected addresses are shown on the Status Display for each function, and the Control Screen shows the status of the DMX signal: DMX LINE, DMX WIFI or DMX NONE.

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

The following table lists all the preset values in their DMX addresses for all of the preset values:

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 steps of 1 to 40 units will include a dimming hysteresis, or smoothing. When switching between DMX values of 40 or greater, the value change is instantaneous, allowing the fixture to be externally switched on and off in a strobe effect.

Radio Mode

By selecting the RADIO function from the menu, the Radio submenu is displayed. From here, you can either choose to Unlink the fixture's radio from its previous transmitter pairing, or turn the radio off. Push the Red knob to perform the selected radio function.

Calibration

The Qc80 should periodically be calibrated to re-align all controls to their proper settings. When Calibrate is highlighted on the menu and selected with the Red knob push, the fixture will perform a self-calibration routine, lasting approximately one minute and then return to its previous operating status.

Connections

Wired DMX Connections

Qc80 uses industry-standard 5-Pin XLR male and female connectors to receive and forward DMX signals and output RDM signals. The DMX port is self-terminating and does not require external DMX termination when used in a chain. If the unit is the last device on a DMX chain, make sure that there is no cable inserted into the DMX Out connector.

The DMX pin wiring is as follows:

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

Wireless DMX Control

The Qc80 built-in wireless receiver runs on CRMX / Lumen Radio protocol which can receive signals from CRMX and some WDMX transmitters. Please note that each fixture can only be linked to a single network at a time, and maintains the network ID of its previous linking. Therefore, the fixture's linking data must be cleared prior to linking to a new network.

To unlink Qc80 fixture, follow these steps:

1. Push and hold the Red control knob on the control panel for 3 seconds. Release.
2. Rotate the Red knob until the Status Display shows RADIO highlighted. Push to select.
3. Make sure the UNLINK menu option is highlighted, and select. The Control Display will flash for 10 seconds, and the Radio is ready for linking to a transmitter, clearing the network memory in the fixture.

To link to a new transmitter, make sure the fixture is unlinked, in DMX mode and the DMX addresses are set.

If the unit is in DMX Mode and no cable is inserted in the DMX IN port, Wireless DMX is automatically activated and the unit can now be controlled on a linked wireless DMX network. When the unit is ready to receive a signal from a transmitter but is not yet linked, the CONTROL screen will flash "DMX NONE." Once the connection is made the CONTROL Screen will change to "DMX WIFI" and can now be control remotely.

Refer to your wireless DMX transmitter instructions for linking fixtures to a wireless network.

Third party wireless products can be used by plugging the third party wireless antenna into the DMX XLR port. If power is needed for the antenna the powered USB port can provide such up to 500ma@ 5VDC. If a third party wireless device, powered or non powered, is attached via the 5pin XLR port this connection will take priority over the imbedded wireless receiver.

RDM Support

The Qc80 can remotely report unit information to an RDM controller attached via wired or wireless DMX. The information provided includes the Unit ID and the firmware revision programmed into the unit. The unit also supports the RDM Identify command, and will ask the fixture when an Identify command is issued.

Remote programming of Mode, DMX address and Calibrate functions are supported. The fixture defaults to a 4-address footprint for RDM auto-assign functions.

USB Port

An A-type USB port is included on the control panel for installation of software updates. It can also supply 5 VDC, 500ma power to attached devices. Refer to installation instructions supplied with software upgrade.

Mounting Options

In addition to the attached mounting yoke, (4) attachment points are included of the back of the fixture. All of these points can accept a 3/8"x 16 threaded eyebolt. All of these attach points are safety rated.

Specifications

Input Power: 110-240VAC, 1000 watts max. via locking IEC connector

Integrated power supply

Fixture Size: 24" x 48" x 5.5" (.6m x 1.2m x 14cm)

Diffuser Size: 48" x 48" x 6"

Weight: 48 lbs. (22 kg.)

Mounting yoke includes Junior pin

Variable saturated color with presets at Red, Yellow, Green, Cyan, Blue, Magenta

Variable white/color blending

Local and Remote dimming, 0-100%

5-pin wired DMX/RDM In and Thru

Integrated LumenRadio™ CRMX bi-directional wireless DMX/RDM

Completely flicker-free operation

Silent, passive cooling: no fans

Environmental temperature range: -20°C - +50° C

Max. temperature rise: +45° C

ETL, cETL, CE pending

Made in USA

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 Quantum120 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.

Quantum c80

Specifications are subject to change without notice. Cineo Lighting, Cineo Quantum c80 are registered trademarks of Cineo Lighting, Inc.
©2017 Cineo Lighting, Inc. v11.15.17

Cineo Lighting
P.O. Box 808
El Granada, CA 94018

CINEO
L I G H T I N G™

Silicon Valley | Los Angeles | London
info@cineolighting.com
+1 310.425.3425

www.cineolighting.com