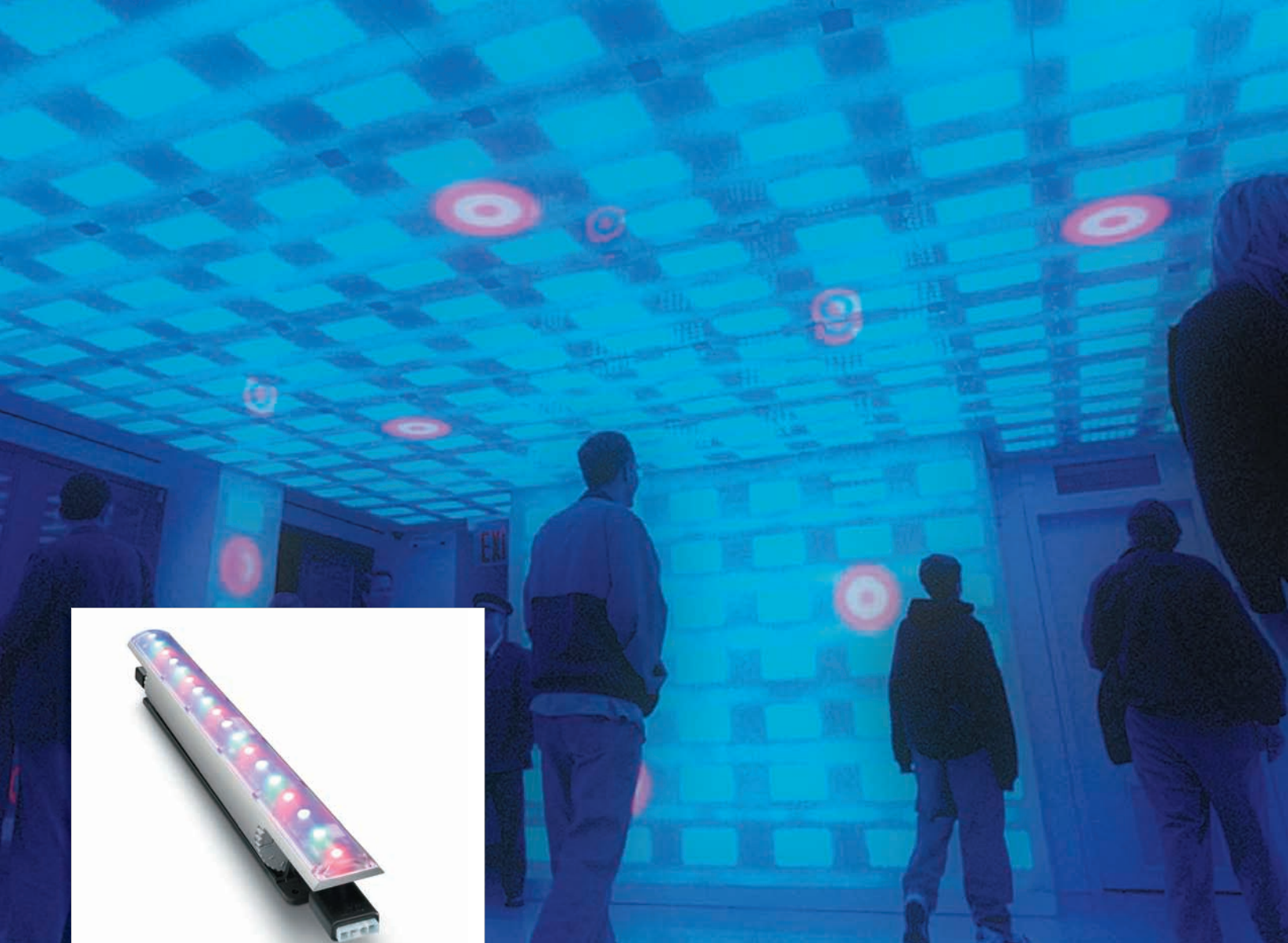




iColor Cove MX Powercore

Compact, intelligent RGB cove light offering virtually limitless options

PHILIPS

iColor Cove MX Powercore

Compact, intelligent RGB cove light offering virtually limitless options

iColor® Cove MX Powercore high-intensity LED fixtures afford virtually limitless options for filling indoor alcoves and accent spaces with vibrant light. As the premium member of the iColor Cove family of intelligent color-changing cove lights, this compact, high-performance fixture is also ideally suited for backlighting and cost-effective indoor wall grazing. iColor Cove MX Powercore combines professional-grade color mixing and maximized output with the efficiency and cost-effectiveness provided by Powercore® technology.

- **High output** — These high-performance cove fixtures deliver professional-grade illuminance, with total light output of over 100 lumens.
- **Universal power input range** — iColor Cove MX Powercore accepts power input of 100 to 240 VAC. Depending on input voltage, a single Data Enabler can support up to 95 iColor Cove MX Powercore fixtures, installed end-to-end in a single run.
- **Integrates Powercore technology** — Powercore technology rapidly, efficiently, and accurately controls power output to iColor Cove MX Powercore fixtures directly from line voltage. The Philips Data Enabler merges line voltage with control and delivers them to the fixture over a single standard cable, dramatically simplifying installation and lowering total system cost.
- **Industry-leading controls** — iColor Cove MX Powercore works seamlessly with the complete Philips line of controllers, including iPlayer 3 and Light System Manager, as well as third-party DMX controllers.
- **Easy installation** — By delivering line voltage directly to the fixtures, Powercore simplifies installation by reducing the number of external power supplies, allowing long product runs and eliminating the need for special wiring. Easy-to-install 4 ft (1.2 m) mounting tracks allow quick project setup in linear applications.
- **Flexible mounting and positioning** — With end-to-end locking power connectors that can make 180° turns, these compact 12 in (305 mm) cove fixtures are easy to position in even the most challenging mounting circumstances. 1 ft (305 mm) and 5 ft (1.5 m) jumper cables can add extra space between fixtures. Optional mounting tracks support vertical and overhead positioning.



Two Beam Angles

Combined with the fixture's high output, the wider 70° x 70° beam is ideally suited for filling large alcoves and accent spaces with vibrant light, while the narrower 20° x 60° beam is perfect for indoor wall grazing.

Fixture rotates in 10° increments through a full 180° for precise aiming and color mixing.

Achieving New Creative Heights

In addition to simple backlighting and wall grazing applications, iColor Cove MX Powercore offers extraordinary flexibility for creating highly innovative and intricate lighting installations requiring intelligent and precise control.

Target Interactive Breezeway

High atop New York's Rockefeller Center is a unique, interactive space that takes the capabilities of intelligent RGB LED lighting to new creative heights. The Target Interactive Breezeway is an imaginatively lit passage that connects the Center's top-floor observation decks. Its intention is to engage visitors as they pass through by tracing their movement with intelligently controlled light.

The lighting designer needed an intelligent LED fixture that could effectively deliver the full RGB spectrum in a small package while keeping power consumption to a reasonable level. After researching the available options, he concluded that iColor Cove MX Powercore was far and away the best choice.

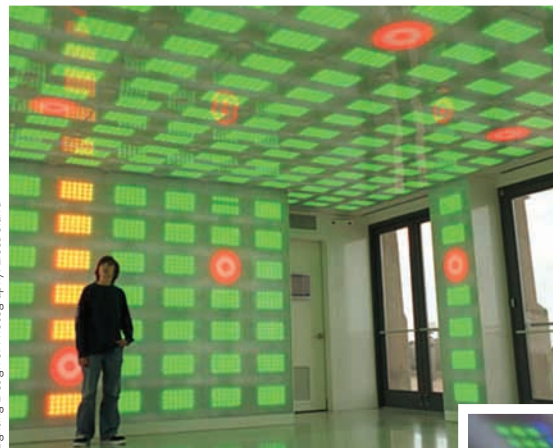
The Breezeway features a glowing ceiling and walls lit by 1,300 iColor Cove MX Powercore fixtures. To achieve the breezeway's remarkable effects, each fixture is configured as an individually controllable 1 ft unit, creating an interactive video-like display that wraps around the Breezeway's surfaces. Each "pixel" in this intelligent skin is composed of four tightly grouped iColor Cove MX Powercore fixtures. These pixels are installed in all available wall and ceiling surfaces, behind translucent glass and backlit by white LED strips. The unmistakable Target brand is represented by bullseye logo light fixtures integrated within the pixel array.

The iColor Cove MX Powercore fixtures receive power and data from compact Data Enabler power / data supplies, which deliver line voltage and control data over a single cable, eliminating the need for additional low-voltage power supplies. With support from Philips Color Kinetics, the design firm developed its own custom software for controlling the LED fixtures. The application transmits control messages (as UDP packets) via Ethernet directly to the Data Enablers to generate patterns in the intelligent skin.

The designers engaged a leading developer of 3D vision systems to provide an elaborate tracking scheme that uses the lighting fixtures' precise control for a truly immersive and interactive environment. Data from four stereo video cameras locates and tracks up to 30 separate visitors as they enter and walk around the Breezeway. Each visitor is automatically assigned a "personality" by the system and is



Lighting Design & Photography: Electroland



followed by individualized light colors and patterns. The designers continuously monitor the space remotely via webcam, and test and upload new patterns on a regular basis. The result is a truly interactive and personalized environmental experience, made possible by iColor Cove MX Powercore.



Photometrics

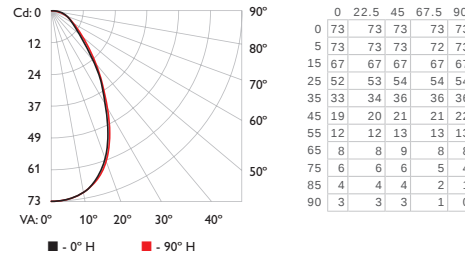
Photometric data is based on test results from an independent NIST traceable testing lab. IES data is available at www.colorkinetics.com/support/ies.

iColor Cove MX Powercore 70° x 70° (medium) beam angle

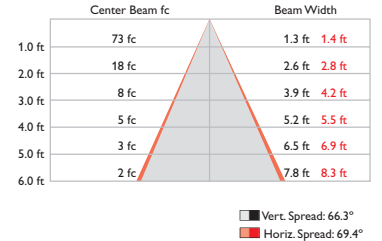
LED	Lumens	Watts	Efficacy
RGB	119	12	9.9
R	18.5		
G	54.1		
B	21.2		



Polar Candela Distribution



Illuminance at Distance



Zonal Lumen

Zone	Lumens	% Lamp	% Luminaire
0-30	50.0	42%	42%
0-40	72.0	60.5%	60.4%
0-60	99.5	83.6%	83.6%
60-90	17.5	14.7%	14.7%
0-90	117.0	98.3%	98.2%
90-180	2.1	1.8%	1.8%
0-180	119.1	100.1%	100%

Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%																			
RCC %:	80	70	50	30	0	70	50	30	0	50	30	20	50	30	20	50	30	20	0
RW %:	70	50	30	0	70	50	30	0	50	30	20	50	30	20	50	30	20	0	0
RCR:	0	1.19	1.19	1.19	1.19	1.16	1.16	1.16	98	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	98
	1	1.09	1.05	1.01	.98	1.07	1.03	.99	.85	.98	.95	.93	.94	.92	.90	.90	.88	.87	.84
	2	1.01	.94	.88	.83	.98	.92	.86	.75	.88	.84	.80	.85	.81	.77	.81	.78	.76	.73
	3	.94	.84	.77	.72	.91	.83	.76	.66	.80	.74	.69	.77	.72	.68	.74	.70	.67	.65
	4	.87	.76	.69	.63	.85	.75	.68	.59	.72	.66	.61	.70	.65	.60	.68	.63	.59	.57
	5	.81	.70	.62	.56	.79	.69	.61	.53	.66	.60	.55	.64	.59	.54	.62	.57	.53	.51
	6	.76	.64	.56	.50	.74	.63	.55	.48	.61	.54	.49	.59	.53	.49	.58	.52	.48	.46
	7	.71	.59	.51	.46	.69	.58	.51	.44	.56	.50	.45	.55	.49	.45	.53	.48	.44	.42
	8	.67	.54	.47	.42	.65	.54	.46	.40	.52	.46	.41	.51	.45	.41	.50	.44	.40	.39
	9	.63	.51	.43	.38	.61	.50	.43	.37	.49	.42	.38	.48	.42	.38	.47	.41	.37	.36
	10	.59	.47	.40	.35	.58	.47	.40	.34	.46	.39	.35	.45	.39	.35	.44	.38	.35	.33

RCC %: Ceiling reflectance percentage, RW %: Wall reflectance percentage, RCR: Room cavity ratio

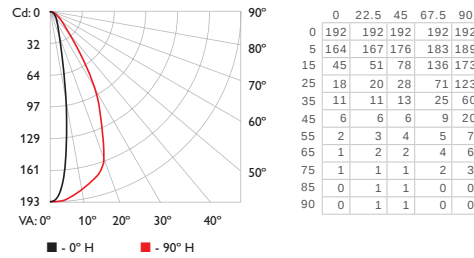
For lux multiply fc by 10.7

iColor Cove MX Powercore 20° x 60° (narrow) beam angle

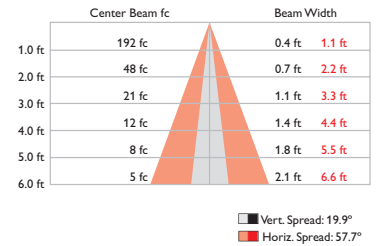


LED	Lumens	Watts	Efficacy
RGB	93	12	7.8
R	18.5		
G	54.1		
B	21.2		

Polar Candela Distribution



Illuminance at Distance



Zonal Lumen

Zone	Lumens	% Lamp	% Luminaire
0-30	63.3	68.1%	68.6%
0-40	76.7	82.5%	83.1%
0-60	87.5	94%	94.7%
60-90	4.9	5.2%	5.3%
0-90	92.3	99.3%	100%
90-180	0	0%	0%
0-180	92.3	99.3%	100%

Coefficients Of Utilization - Zonal Cavity Method

		Effective Floor Cavity Reflectance: 20%																				
RCC %:		80				70				50				30				10				0
RW %:		20	50	30	0	20	50	30	0	20	50	30	0	20	50	30	0	20	50	30	0	
RCR:		1.18	1.18	1.18	1.18	1.15	1.15	1.15	1.15	1.10	1.10	1.10	1.06	1.06	1.06	1.01	1.01	1.01	0.99	0.99	0.99	0.99
		1.12	1.09	1.06	1.04	1.09	1.07	1.04	.92	1.03	1.01	.99	.99	.97	.96	.96	.94	.93	.91	.91	.91	
		2	1.06	1.01	.96	.93	1.04	.99	.95	.85	.96	.92	.90	.93	.90	.88	.90	.88	.84	.84	.84	
		3	1.00	.94	.88	.84	.98	.92	.87	.79	.90	.86	.82	.87	.84	.81	.85	.82	.80	.78	.78	
		4	.95	.87	.82	.77	.93	.86	.81	.74	.84	.80	.76	.82	.78	.75	.80	.77	.74	.73	.73	
		5	.91	.82	.76	.72	.89	.81	.75	.69	.79	.74	.71	.78	.73	.70	.76	.72	.69	.68	.68	
		6	.86	.77	.71	.67	.85	.76	.71	.65	.75	.70	.66	.74	.69	.66	.72	.68	.65	.64	.64	
		7	.82	.73	.67	.63	.81	.72	.67	.61	.71	.66	.62	.70	.65	.62	.69	.65	.61	.60	.60	
		8	.79	.69	.63	.59	.77	.69	.63	.58	.67	.62	.59	.66	.62	.58	.65	.61	.58	.57	.57	
		9	.75	.66	.60	.56	.74	.65	.60	.55	.64	.59	.56	.63	.59	.55	.63	.58	.55	.54	.54	
		10	.72	.63	.57	.53	.71	.62	.57	.52	.61	.56	.53	.61	.56	.53	.60	.56	.53	.51	.51	

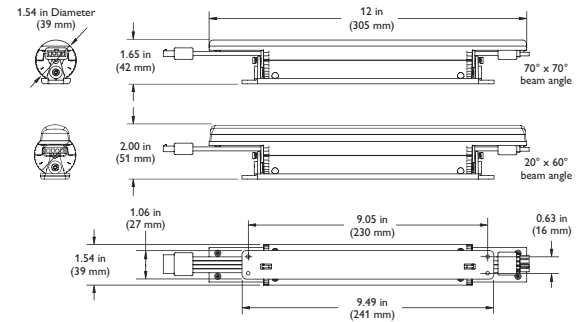
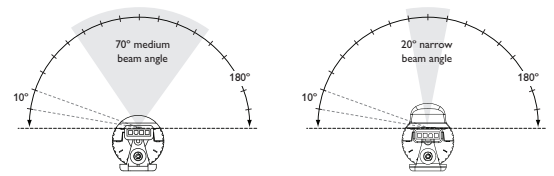
RCC %: Ceiling reflectance percentage, RW %: Wall reflectance percentage, RCR: Room cavity ratio

For lux multiply fc by 10.7

Specifications

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

Item	Specification	Narrow Beam Angle	Wide Beam Angle
Output	Beam Angle	20° x 60°	70° x 70°
	Lumens†	93	102
	Color Range	16.7 million additive RGB colors; continuously variable intensity	
	Mixing Distance	6 in (152 mm) to uniform light	
	Lumen Maintenance‡	50,000+ hours L50 @ 50° C (full output)	
Electrical	Input Voltage	100 – 240 VAC, auto-switching, 50 / 60 Hz	
	Power Consumption	12 W maximum at full output, steady state	
Control	Interface	Data Enabler (DMX or Ethernet)	
	Control System	Philips full range of controllers, including Light System Manager and iPlayer 3, or third-party DMX controllers	
Physical	Dimensions (Height x Width x Depth)	2 x 12 x 1.5 in (51 x 305 x 39 mm)	1.6 x 12 x 1.5 in (42 x 305 x 39 mm)
	Weight	0.8 lb (0.36 kg)	
	Housing	Die-cast aluminium, gray powder-coated finish.	
	Lens	Clear polycarbonate	Frosted polycarbonate
	Fixture Connections	Integral male / female connectors	
	Operating Temperature	-4° – 122° F (-20° – 50° C)	
	Humidity	0 – 95%, non-condensing	
	Fixture Run Lengths Per Data Enabler*	57 @ 110 VAC 60 @ 120 VAC 90 @ 220 VAC 95 @ 240 VAC	Configuration: Fixtures installed end-to-end, 20 A circuit, standard 40 ft (12.2 m) Leader Cable
Certification and Safety	Certification	UL / cUL, FCC, CE, PSE	
	LED Class	Class 2 LED product	
	Environment	Dry / Damp Location, IP50	



To calculate the number of fixtures your specific installation can support, download the Configuration Calculator from www.colorkinetics.com/support/install_tool/



† Lumen measurement complies with IES LM-79-08

‡ Philips Color Kinetics follows IESNA LM-80-08 in using L50 (lumen depreciation to 50% of original light output) to define useful life of RGB LED fixtures. At maximum operating temperature (typically 50° C) and displaying white (full output), the useful life exceeds 50,000 hours. At room temperature and displaying a color wash effect, the useful life ranges from 80,000 to 100,000 hours or more.

* These figures, provided as a guideline, are accurate for this configuration only. Changing the configuration can affect the fixture run lengths.

CHROMACORE[®] | OPTIBIN[®] | POWERCORE[®]
CK TECHNOLOGY | CK TECHNOLOGY | CK TECHNOLOGY

Fixtures and Accessories

iColor Cove MX Powercore fixtures are part of a complete system which includes fixtures and:

- One or more Data Enablers.
- One leader cable to connect each Data Enabler output to a series of fixtures.
- Any Philips controller, including Light System Manager and iPlayer 3, or a third-party DMX controller.

Included in the box

iColor Cove MX Powercore fixture
Installation Instructions

iColor Cove MX Powercore fixtures

Item	Type	Item Number	Philips 12NC
iColor Cove MX Powercore	70° x 70° beam angle	123-000004-00	910403326301
	20° x 60° beam angle	123-000004-01	910403326401

Optional mounting track ensures straight runs of fixtures.

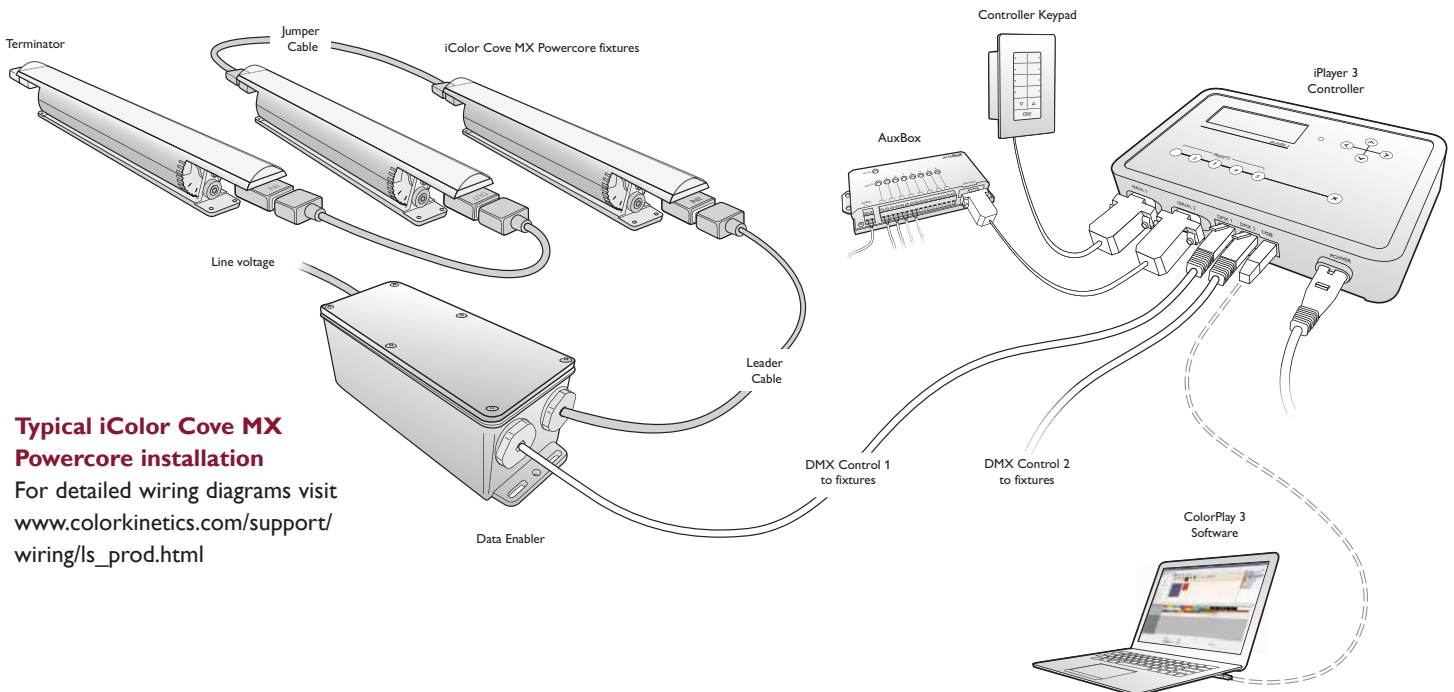
Mounting Track	25 @ 4 ft (1219 mm)	123-000006-00	910503700149
40 ft Leader Cable with terminator	UL / cUL	108-000021-00	910503700081
	CE / PSE	108-000021-01	910403326501
Jumper Cable	1 ft (305 mm)	108-000022-00	910403326601
	5 ft (1.5 m)	108-000022-01	910403326701

Depending on the installation's design, you may need jumper cables to add space between fixtures.

You can use any Philips controller or third-party DMX controller.

Data Enabler	DMX	106-000003-04	910403326801
	Ethernet	106-000003-05	910503700064
Light System Manager	Ethernet	103-000015-00	910503700221
iPlayer 3	N.A. Power Cord	103-000019-00	910403327101
	Europe Power Cord	103-000019-01	910503700392
ColorDial	DMX	103-000014-00	910403326901
Synchronizer	DMX	103-000001-00	—
Multi Synchronizer	DMX	103-000002-00	—

Use Item Number when ordering in North America



Typical iColor Cove MX Powercore installation

For detailed wiring diagrams visit www.colorkinetics.com/support/wiring/lc_prod.html

Installation

iColor Cove MX Powercore offers high-intensity indoor cove lighting with Powercore technology. Powercore, which integrates LED power and data management within the fixture, eases installation by eliminating the need for external power supplies.

Owner / User Responsibilities

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

Refer to the iColor Cove MX Powercore Installation Instructions for specific warning and caution statements.

Create a Lighting Design Plan and Layout Grid

1. Determine the appropriate location of each Data Enabler in relation to the fixtures, and of the fixtures in relation to each other. The Data Enabler and first fixture must be separated by no more than the 40 ft (12.2 m) length of the Leader Cable.

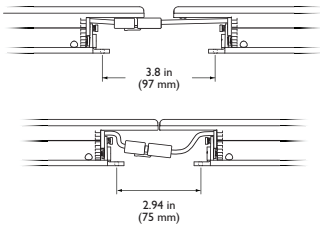
Refer to the Data Enabler Installation Instructions or Product Guide for guidelines on configuring and positioning the Data Enabler in relation to the controller.

iColor Cove MX Powercore fixtures are installed in series. The in-line connectors allow end-to-end fixture connections for the best visual effects. Joined directly together, the connectors allow for up to 1 in (25 mm) spacing without a jumper cable. When you need to separate fixtures by more than an inch, use the 1 ft (305 mm) or 5 ft (1.5 m) jumper cables.

The maximum number of fixtures each Data Enabler can support depends on specific configuration details such as fixture length, fixture spacing (jumper cables), circuit size, line voltage, and Leader Cable length. As an example, the table to the right lists the maximum number of fixtures in a single run at various voltages, assuming iColor Cove MX Powercore fixtures installed end-to-end on a 20 A circuit, using the standard 40 ft (12.2 m) Leader Cable. Keep in mind that these figures, provided as a guideline, are accurate for the specified configuration only. Changing the configuration can affect the fixture run lengths.

In addition to maximum fixture run lengths determined by the electrical configuration, each Data Enabler imposes maximum run lengths based on data integrity. To ensure data integrity, maximum individual run lengths should not exceed 175 ft (53.3 m), and the total cable length per Data Enabler should not exceed 400 ft (122 m).

Distance between fixtures

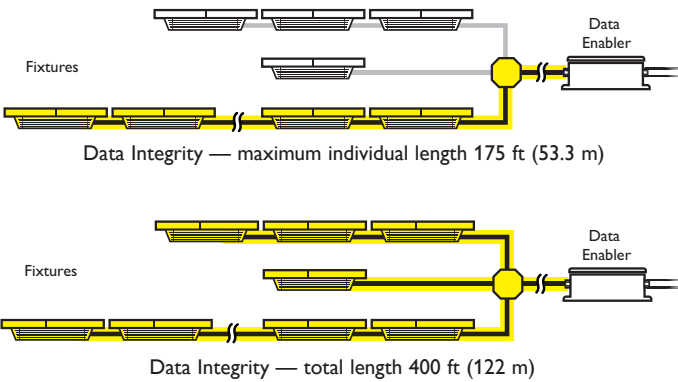


Fixture run lengths

57 @ 110 VAC
60 @ 120 VAC
90 @ 220 VAC
95 @ 240 VAC

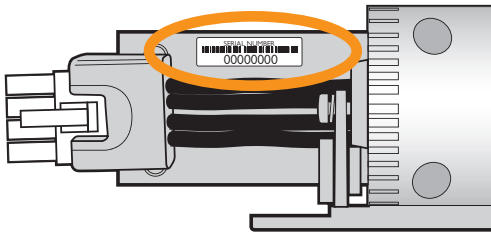
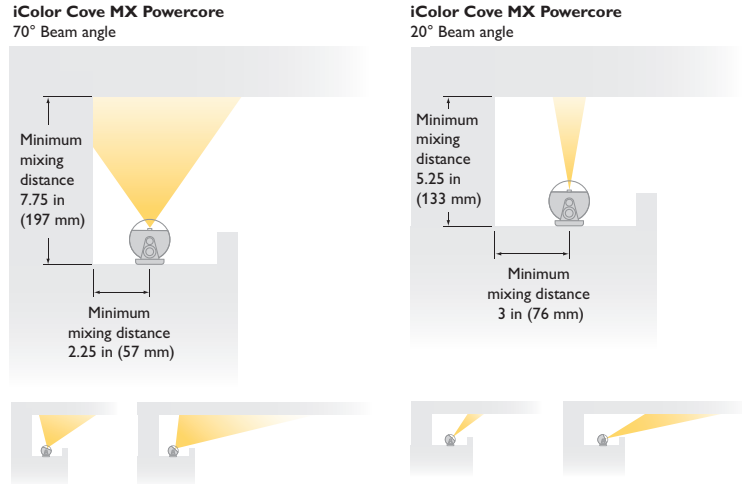
assuming fixtures installed end-to-end on a 20 A circuit, using a standard 40 ft (12.2 m) Leader Cable

For help calculating the number of fixtures your specific installation can support, download the Configuration Calculator from www.colorkinetics.com/support/install_tool/, or consult Application Engineering Services at support@colorkinetics.com.



- Using the fixture's power consumption and efficiency ratings, the lighting designer or architect should calculate the cove dimensions to ensure that operating temperatures remain within safe levels. The designer or architect should also determine the cove's fascia design and fixture setback based on the cove dimensions and room width. For consistent results, the cove width and height should accommodate the fixtures' minimum mixing distances. We strongly recommend creating dimensional models and mockups prior to installation.

These diagrams provide general guidelines for positioning iColor MX Powercore fixtures in coves with matte white surfaces. Specific dimensions and positioning depend on the details of your installation.



- On an architectural diagram or other diagram that shows the physical layout of the installation, identify the locations of all switches, controllers, power supplies, fixtures, and leader and jumper cables.
- Each iColor Cove MX Powercore fixture comes pre-programmed with a unique serial number. As you unpack the fixtures, record the serial numbers in a layout grid (typically a spreadsheet or list) for easy reference and light addressing.
- Assign each fixture to a position in the lighting design plan.
- To streamline installation and aid in light show programming, you can affix a weatherproof label identifying the order or placement in the installation to an inconspicuous location on each light fixture's housing.

Start the Installation

- Install all Data Enablers, including any interfaces with controllers. One leader cable is required to connect each run or series of fixtures to a Data Enabler. The Data Enabler sends power and control signals to the fixtures over the leader cable.
- Verify that all additional supporting equipment (switches, controllers) is in place.
- If your installation calls for jumper cables to add space between fixtures, make sure they are available.
- Ensure that all additional parts (optional mounting tracks, mounting hardware, terminators) and tools are available.

For complete instructions on how to wire the Data Enabler, refer to the Data Enabler Installation Instructions. For sample wiring diagrams, visit www.colorkinetics.com/support/wiring/ls_prod.html.

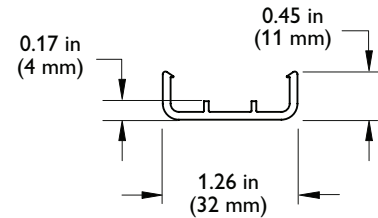
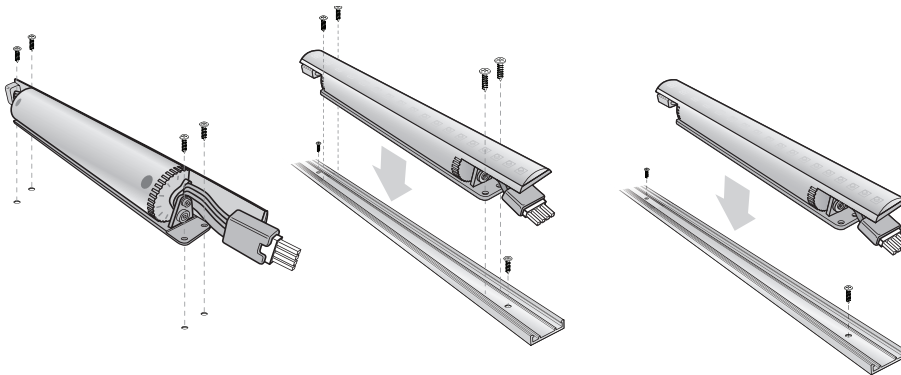
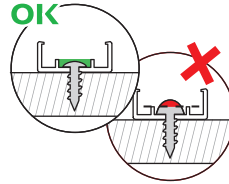
Install the Fixtures

You can mount iColor Cove MX Powercore fixtures directly to a wall, ceiling, cabinet, or other secure surface. For straight linear applications, you can install several iColor Cove MX Powercore fixtures in optional 4 ft (1.2 m) lengths of mounting track to ensure a straight run.

(Optional) Install Mounting Tracks

1. Field-cut the mounting tracks to the desired length with hacksaws or tin snips.
2. Install the mounting tracks using hardware suitable for the mounting surface.

To ensure proper fixture fit, hardware must not extend above the track standoffs after installation. The recommended maximum spacing between screws is 12 in (305 mm).



Mount and Connect the Fixtures

Make sure the power is OFF before mounting and connecting fixtures.

1. Rotate an iColor Cove MX Powercore fixture as necessary to provide unobstructed access to the mounting holes.
2. Position the first fixture in a series.

If using mounting tracks on a horizontal surface, snap the fixture into the track.

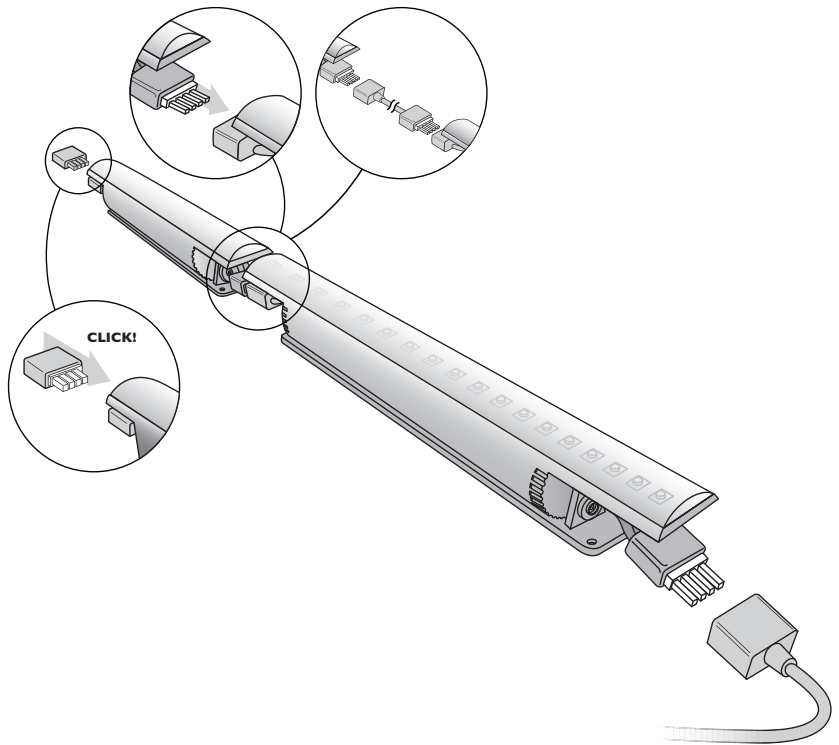
If using mounting tracks on vertical or overhead surfaces, or if not using mounting tracks, attach the fixture with four #6 (3.5 mm) mounting screws (not included) suitable for the mounting surface.

Ensure that the male connector is in position to receive data and power from the leader cable's female connector.

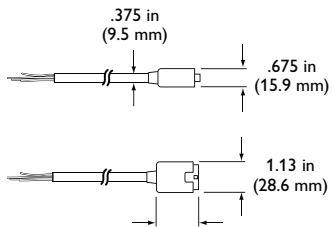
3. Position the next fixture in the series, matching the male connector end to the female connector of the previously mounted fixture. Attach the fixture to the surface or snap it into the track.
4. Continue mounting the fixtures, making power / data connections as you go, until all lights in the series are mounted.

You can use the fixture base as a template when pre-drilled holes are required. Hold the fixture in place and mark the four screw holes.

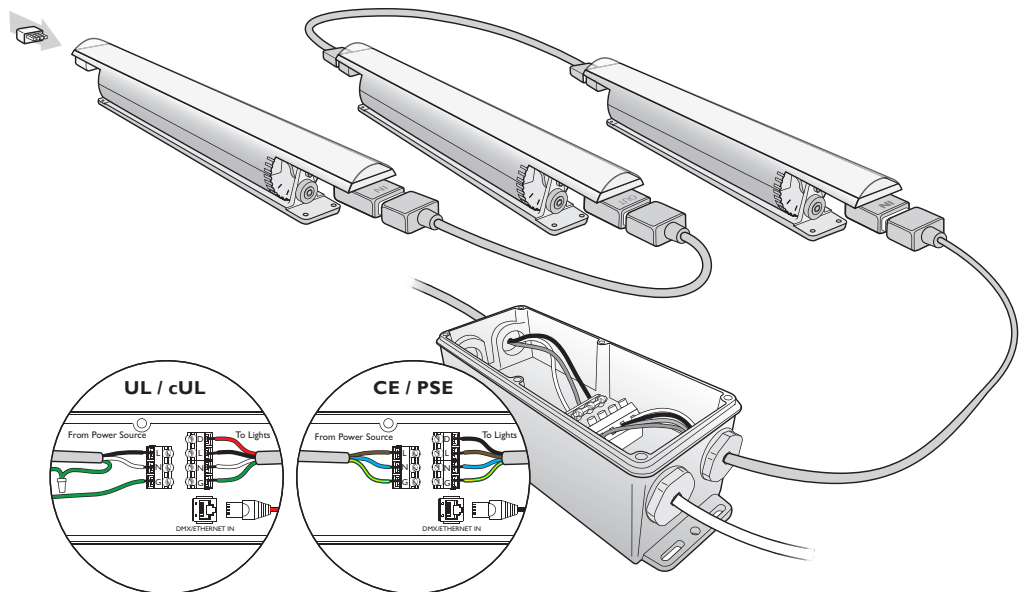
5. Insert the provided terminator into the last fixture in the series.



Leader Cable connector dimensions



6. Connect the appropriate leader cable from the Data Enabler to the first fixture in the series.
7. Repeat steps 1 – 6 for each Data Enabler in the installation.



Address and Configure the Fixtures

Make sure the power is ON before addressing and configuring fixtures.

Each iColor Cove MX Powercore fixture has a *light address*, which controllers use to communicate with the fixture. Each light address corresponds to three sequential DMX addresses, one for red, one for green, and one for blue. iColor Cove MX Powercore fixtures come factory-addressed to light address 1.

For lighting designs where fixtures work in unison, all fixtures must be set to the same light address. Changes to the default addresses are not necessary, but if lights were previously readdressed for use in other installations, you must reset them. For light show designs that show different colors on different fixtures, you must assign unique light address to your fixtures and sort them in a useful order.

- In Ethernet installations, you can address and configure your fixtures using QuickPlay Pro with a computer connected to your lighting installation's network. QuickPlay Pro can automatically discover all of your fixtures, controllers, and Data Enablers for quick configuration.
- In DMX installations, you can address and configure your fixtures using QuickPlay Pro with iPlayer 3 or SmartJack Pro. You can manually enter fixture serial numbers, or you can import a spreadsheet listing each fixture's serial number and starting DMX address.

You can download the QuickPlay Pro software and the Addressing and Configuration Guide from www.colorkinetics.com/support/addressing/

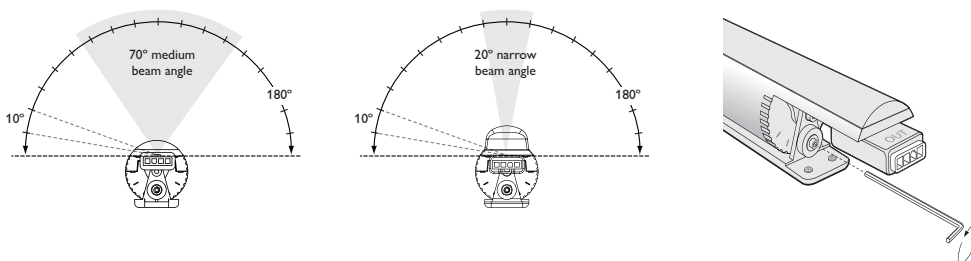
You will need the layout grid that you created when you recorded the serial numbers of the light fixtures in your installation.

For complete details on addressing and configuring fixtures, controllers, and power / data supplies with QuickPlay Pro, refer to the Addressing and Configuration Guide.

Aim and Lock the Fixtures

Aim the fixtures by rotating each fixture to the correct angle. There are detents every 10° in the bracket that hold it in position.

(Optional) Using a 2 mm hex key wrench, tighten the set screw located on each end of the fixture to lock the fixture in place.



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DAS-000019-00 R01 05-09