



# iColor MR gen3

Intelligent RGB MR16 LED lamp for intense, saturated bursts of color



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iColor MR gen3 is an intelligent color-changing lamp that delivers intense, saturated bursts of color and color-changing effects. The stylish housing fits into most standard MR16 fixtures, including tracks, cables, rails, and pendants. With high-intensity LED light sources and three beam angles, iColor MR gen3 is suitable for a wide-range of architectural, theatrical, and retail applications.

- Compatible with most MR16 fixtures and sockets — With its standard GU5.3 base and two-pin MR16 connector, iColor MR gen3 is compatible with most MR16 tracks, rails, cables, and pendant fixtures.
- Standard wiring and simple installation — iColor MR gen3 lamps work with standard 2-conductor jacketed cable or hook-up wire. Power / data supplies specifically designed for use with iColor MR gen3 multiplex power and data onto a two-wire circuit for use with conventional MR16 fixtures and sockets.
- Three beam angles — Use the 17° lamp when you need a spot of light with sharply defined edges, the 30° lamps for a wider spread of light, and the 90° (no optic) lamp for a soft, diffuse light.
- Efficient and cost-effective — iColor MR gen3 is easily adaptable to a wide range of interior environments where MR16 fixtures are commonly used. With long useful source life, low power draw of just 5 W, and low-maintenance operation, iColor MR gen3 lamps cost significantly less to own and operate than conventional MR16 lamps.
- Industry-leading controls — Works seamlessly with the complete Philips Color Kinetics line of controllers, including Light System Manager, iPlayer 3, and ColorDial Pro, as well as third-party controllers.



### **Intense Light Output**

iColor MR gen3 lamps output up to 151 lumens for intense, saturated bursts of color.

## Lighting It Up with iColor MR gen3

iColor MR gen3 intelligent color-changing lamps can be used for stunning effect wherever conventional MR16 lamps are used — from cruise ships to casinos to museums and entertainment complexes,

### **eyecandy sound lounge and bar**

Located in the center of Mandalay Bay's casino floor, eyecandy sound lounge & bar is a contemporary twist on the typical Las Vegas lounge, featuring an inviting atmosphere with an ever-changing landscape enabled by full-color LED lighting.



To create a unique vibe, the lighting designer decided to accentuate various areas of the lounge with color-changing effects. He created four glowing Party Pods — circular seating areas that give patrons the ultimate lighting control. Affixed to a circle track above the seating areas, iColor MR lamps drench the sheer fabric encasing the pod in dynamic colorful light. During the lounge's off-hours the lighting is controlled to change slowly and subtly. During operation, however, these elements can be controlled by the guests via a custom touch-screen to give patrons a unique, interactive experience.

Photography: © Jeff Meyer; shop12



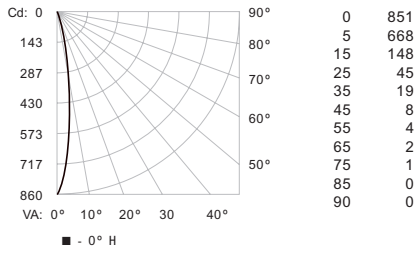
# Photometrics

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

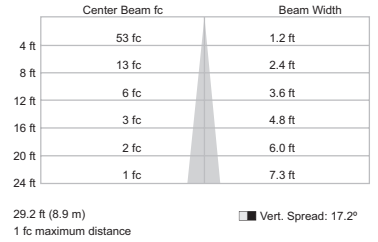
## iColor MR gen3 17° beam angle

LED	Lumens	Efficacy
RGB	143	10.9

### Polar Candela Distribution



### Illuminance at Distance



### Zonal Lumen

ZONE	LUMENS	%FIXT
0- 30	118	82.3
0- 40	130	90.7
0- 60	139	97.4
0- 90	143	100.0
90-180	0	0.0
0-180	143	100.0

### Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

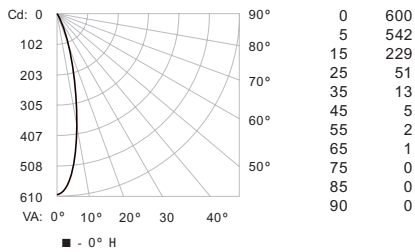
RC	80					70					50					30					10					0
	70	50	30	10		70	50	30	10		50	30	10			50	30	10			50	30	10			
0	119119119119	116116116116	1111111111	106106106	102102102	100																				
1	114112110108	112110108106	106104103	102101100	99 98 97 95																					
2	110105102 99	107104101 98	101 98 96	98 96 94	95 93 92 90																					
3	105100 96 92	104 99 95 92	96 93 90	94 91 89	92 89 87 86																					
4	101 95 91 87	100 94 90 87	92 88 86	90 87 85	88 86 84 82																					
5	98 91 86 83	96 90 86 82	89 85 82	87 84 81	86 83 80 79																					
6	95 87 83 79	93 87 82 79	85 81 78	84 81 78	83 80 77 76																					
7	92 84 79 76	90 84 79 76	82 78 75	81 78 75	80 77 75 74																					
8	89 81 77 73	88 81 76 73	80 76 73	79 75 73	78 75 72 71																					
9	86 79 74 71	85 78 74 71	77 73 71	77 73 70	76 73 70 69																					
10	84 76 72 69	83 76 72 69	75 71 68	74 71 68	74 70 68 67																					

For lux multiply fc by 10.7

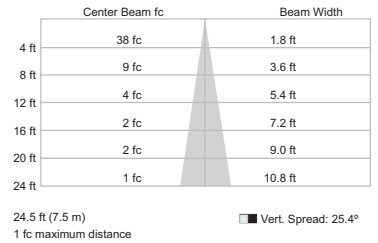
## iColor MR gen3 30° beam angle

LED	Lumens	Efficacy
RGB	151	11.5

### Polar Candela Distribution



### Illuminance at Distance



### Zonal Lumen

ZONE	LUMENS	%FIXT
0- 30	135	89.6
0- 40	144	95.4
0- 60	149	99.1
0- 90	151	100.0
90-180	0	0.0
0-180	151	100.0

### Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

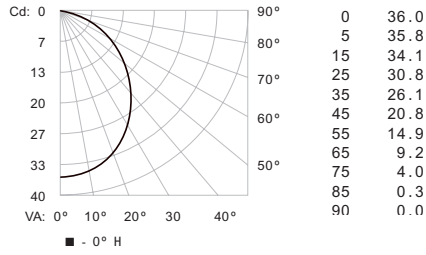
RC	80					70					50					30					10					0
	70	50	30	10		70	50	30	10		50	30	10			50	30	10			50	30	10			
0	119119119119	116116116116	1111111111	106106106	102102102	100																				
1	115112110108	112110108107	106105103	103101100	99 98 98 96																					
2	110106103100	108105102 99	102 99 97	99 97 95	96 95 93 92																					
3	106101 97 94	105100 96 94	98 95 92	95 93 91	93 91 89 88																					
4	103 97 93 89	101 96 92 89	94 90 88	92 89 87	90 88 86 84																					
5	99 93 88 85	98 92 88 85	90 87 84	89 86 83	87 85 83 81																					
6	96 89 85 81	95 88 84 81	87 83 81	86 83 80	85 82 80 78																					
7	93 86 81 78	92 85 81 78	84 80 78	83 80 77	82 79 77 76																					
8	90 83 78 75	89 82 78 75	81 78 75	81 77 75	80 77 74 73																					
9	87 80 76 73	87 80 76 73	79 75 72	78 75 72	77 74 72 71																					
10	85 78 73 70	84 77 73 70	77 73 70	76 72 70	75 72 70 69																					

For lux multiply fc by 10.7

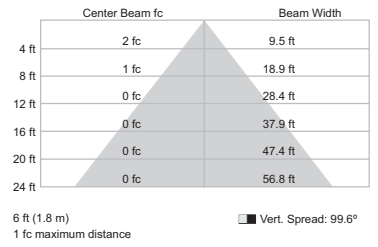
## iColor MR gen3 90° beam angle

LED	Lumens	Efficacy
RGB	87	6.6

### Polar Candela Distribution



### Illuminance at Distance



### Zonal Lumen

ZONE	LUMENS	%FIXT
0 - 30	27.2	31.3
0 - 40	43.5	50.1
0 - 60	72.8	83.9
0 - 90	86.8	100.0
90-180	0.0	0.0
0-180	86.8	100.0

### Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

RC	Effective Floor Cavity Reflectance: 20%																	
	80			70			50			30			10			0		
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	102	98	107	103	100	96	99	96	93	95	93	91	92	90	88	86
2	100	93	86	81	98	91	85	80	87	83	78	84	80	77	81	78	75	73
3	92	82	74	68	90	81	73	68	78	72	67	75	70	65	72	68	64	62
4	85	73	65	58	82	72	64	58	69	63	57	67	61	56	65	60	56	54
5	78	66	57	51	76	65	56	50	62	55	50	61	54	49	59	53	49	47
6	72	59	51	45	70	58	50	44	57	49	44	55	49	44	53	48	43	41
7	67	54	46	40	65	53	45	39	52	44	39	50	44	39	49	43	39	37
8	63	49	41	35	61	49	41	35	47	40	35	46	40	35	45	39	35	33
9	58	45	37	32	57	45	37	32	44	37	32	43	36	32	42	36	31	30
10	55	42	34	29	54	41	34	29	41	34	29	40	33	29	39	33	29	27

For lux multiply fc by 10.7

# Specifications

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

Item	Specification	17° Beam Angle	30° Beam Angle	90° Beam Angle
Output	Lumens*	143	151	87
	LED Channels	Red / Green / Blue		
	Lumen Maintenance†	100,000 hours L70 @ 40° C 100,000 hours L50 @ 40° C	100,000 hours L70 @ 25° C 100,000 hours L50 @ 25° C	
Electrical	Input Voltage	24VDC from PDS-70mr		
	Power Consumption	5 W maximum at full output, steady state		
Control	Interface	PDS-70mr 24V (DMX / Ethernet)		
	Control System	Philips Color Kinetics full range of controllers, including Light System Manager, iPlayer 3, and ColorDial Pro, or third-party controllers		
Physical	Dimensions (Height x Width x Depth)	1.9 x 1.9 x 1.9 in (49 x 49 x 49 mm)		
	Weight	3.1 oz (88 g)	3.0 oz (86 g)	2.9 oz (84 g)
	Housing	Die-cast zinc, silver finish		
	Lens	Polycarbonate optic	Tempered glass	
	Fixture Connections	Standard 2-pin MR16 connector		
	Temperature Ranges	-4° – 104° F (-20° – 40° C) Operating -4° – 104° F (-20° – 40° C) Startup -40° – 176° F (-40° – 80° C) Storage		
	Humidity	0 – 95%, non-condensing		
Certification and Safety	Certifications	UL / cUL, CE		
	Environment	Dry Location, IP20		

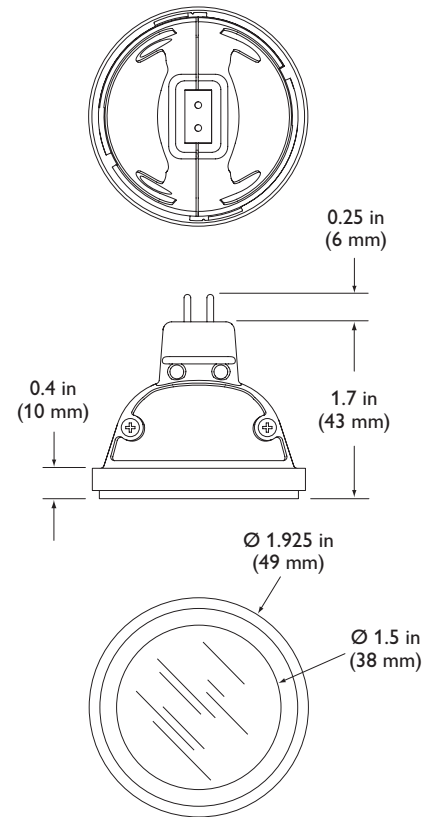
\* Lumen measurement complies with IES LM-79-08 testing procedures.



† L70 = 70% lumen maintenance (when light output drops below 70% of initial output).

L50 = 50% lumen maintenance (when light output drops below 50% of initial output). Ambient luminaire temperatures specified. Lumen maintenance calculations are based on lifetime prediction graphs supplied by LED source manufacturers. Calculations for white-light LED fixtures are based on measurements that comply with IES LM-80-08 testing procedures. Refer to [www.philipscolorkinetics.com/support/appnotes/lm-80-08.pdf](http://www.philipscolorkinetics.com/support/appnotes/lm-80-08.pdf) for more information.

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# Fixtures and Accessories

## Included in the box

- iColor MR gen3 lamp
- Installation Instructions

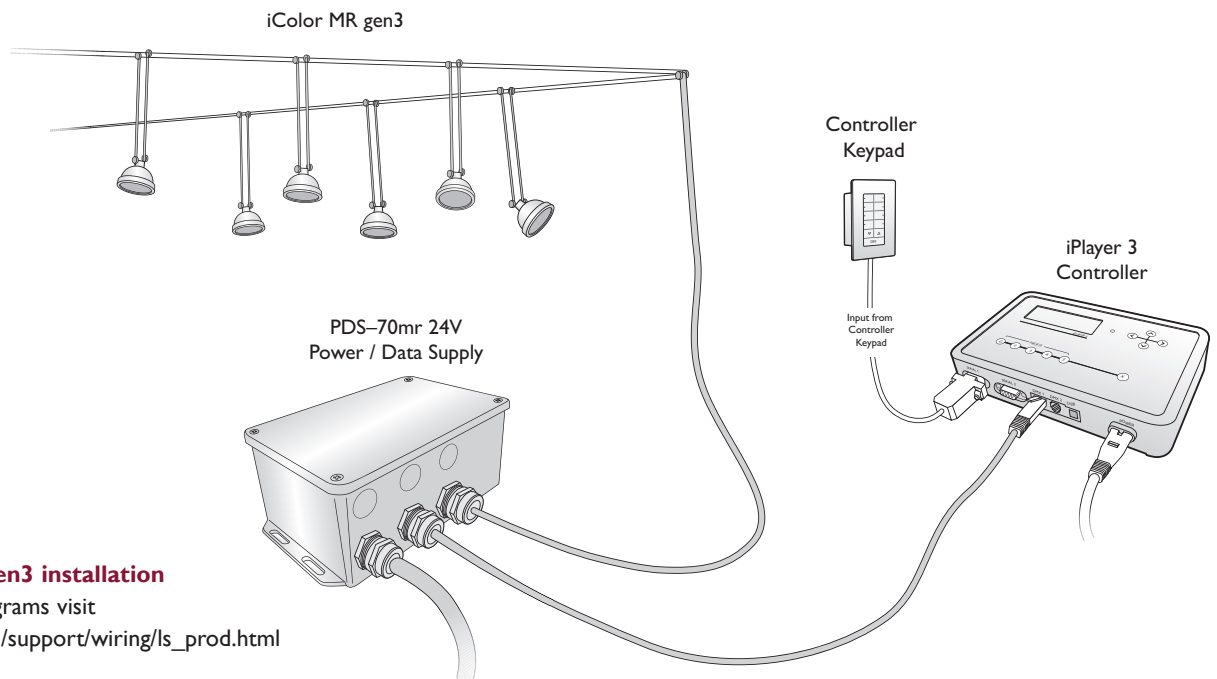
iColor MR gen3 lamps are part of a complete low-voltage system which includes:

- One or more PDS-70mr 24V power / data supplies
- Low-voltage 2-wire track (without transformer) or compatible MR16 fixtures wired in parallel
- Any Philips controller, including Light System Manager and iPlayer 3, or a third-party DMX controller

Item	Type	Item Number	Philips 12NC
iColor MR gen3	17° beam angle	101-000074-00	910503704252
	30° beam angle	101-000074-01	910503704288
	90° beam angle	101-000074-02	910503704289

PDS-70mr 24V Power / Data Supply	Pre-programmed	109-000018-00	910503700098
	DMX	109-000018-01	910503700099
	Ethernet	109-000018-02	910503700583

Use Item Number when ordering in North America.



### Typical iColor MR gen3 installation


For detailed wiring diagrams visit [www.colorkinetics.com/support/wiring/ls\\_prod.html](http://www.colorkinetics.com/support/wiring/ls_prod.html)

# Installation

iColor MR gen3 is an intelligent color-changing lamp that delivers intense, saturated bursts of color and color-changing effects. The stylish housing fits into most standard MR16 fixtures, including tracks, cables, rails, and pendants. Fourteen iColor MR gen3 lamps can be powered by one PDS-70mr 24V.

## Owner / User Responsibilities

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate iColor MR gen3 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 MR gen3 Installation Instructions for specific warning and caution statements.

# Planning Your Installation

Like conventional MR lamps, iColor MR gen3 color-changing LED lamps plug directly into compatible MR16 fixtures. iColor MR gen3 lamps are compatible with many, but not all, MR16 fixtures. Keep the following considerations in mind as you plan your installation:

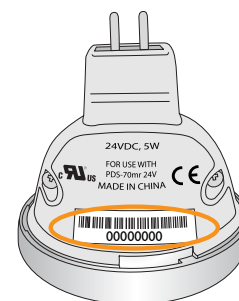
- iColor MR gen3 lamps plug into many standard, low-voltage MR16 lighting tracks, cables, rails, pendants, and other fixtures. iColor MR gen3 will not work with MR16 fixtures that have individually attached transformers.
- iColor MR gen3 lamps require adequate ventilation around the lamp housing to ensure peak performance and maximize useful life. Using iColor MR gen3 lamps in sealed fixtures and recessed fixtures, therefore, is not recommended. Using iColor MR gen3 within small enclosures is recommended only if the enclosed space is adequately vented or cooled.
- Because iColor MR gen3 lamps weigh more than traditional MR16 lamps and could loosen with use and vibration, use fixtures and lamp holders that have locking devices. Failure to do so could result in property damage and personal injury.
- Do not install iColor MR gen3 lamps on the same fixture, track, rail, or cable with any other type of MR16 lamp.
- iColor MR gen3 lamps work only with PDS-70mr 24V power / data supplies (DMX, Ethernet, or Pre-Programmed).

# Create a Lighting Design Plan and Layout Grid

1. Select compatible low-voltage MR16 fixtures, and follow the manufacturer's guidelines for installation and wiring.
2. Determine the appropriate location of each PDS-70mr 24V power / data supply in relation to the MR16 fixtures.

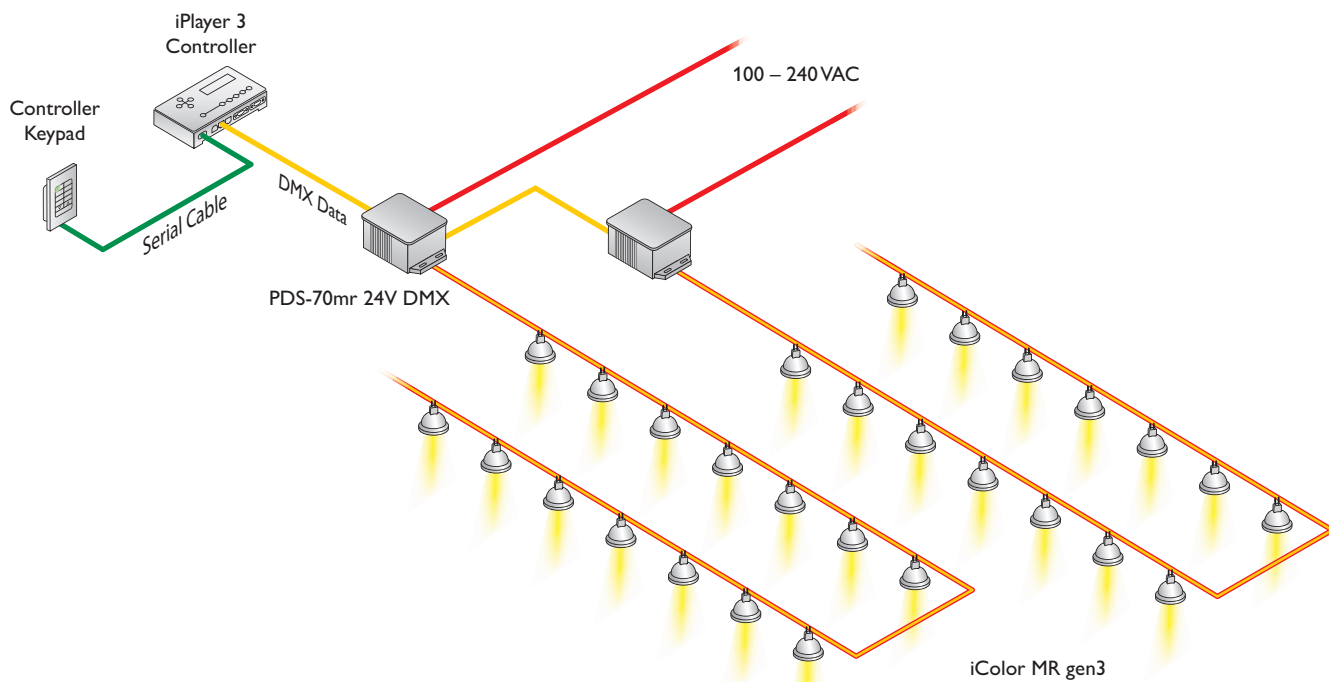
Each PDS-70mr 24V can power up to 14 iColor MR gen3 lamps in a single run. The farthest lamp in the run can be no more than 50 ft (15 m) from the PDS-70mr 24V. Refer to the PDS-70mr 24V documentation for guidelines on configuring and positioning the PDS-70mr 24V in relation to the controller.

3. 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 cables.
4. Each iColor MR gen3 lamp comes pre-programmed with a unique serial number. As you unpack the lamps, record the serial numbers in a layout grid (typically a spreadsheet or list) for easy reference and light addressing.
5. Assign each fixture and lamp to a position in the lighting design plan.

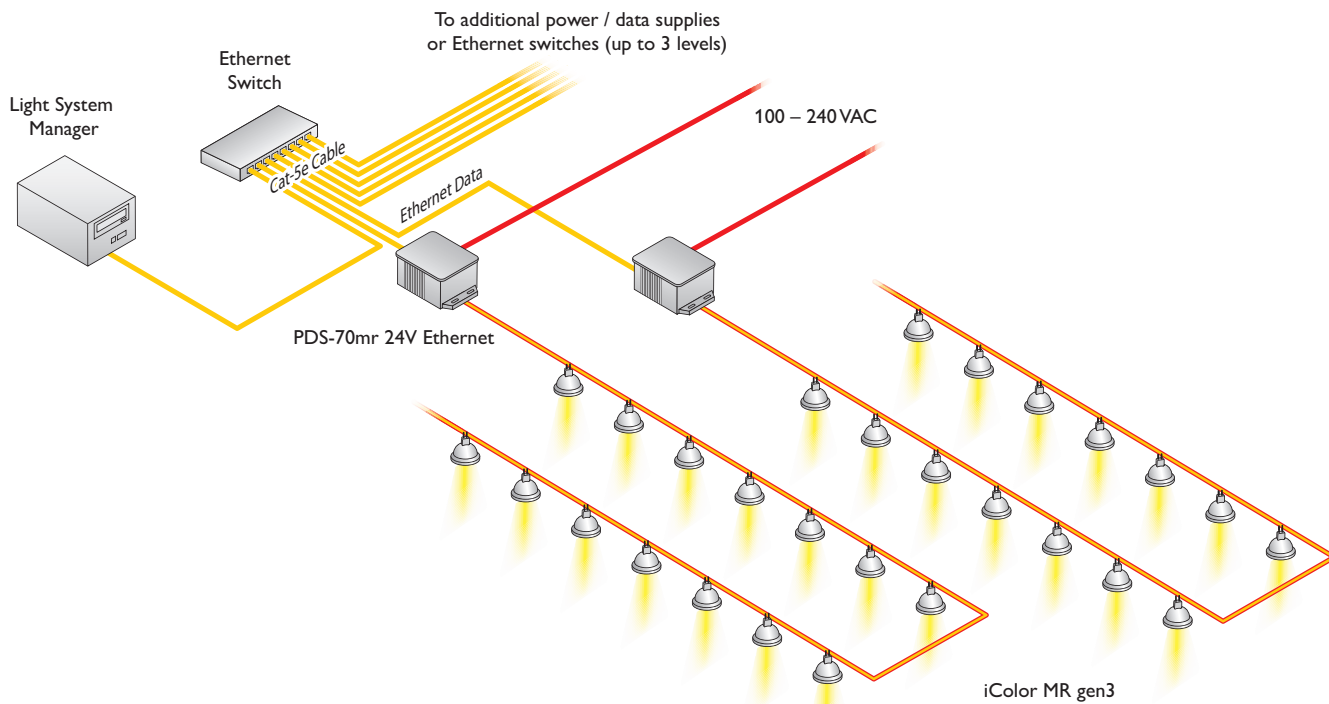




### DMX Installation with iPlayer 3



### Ethernet Installation with Light System Manager

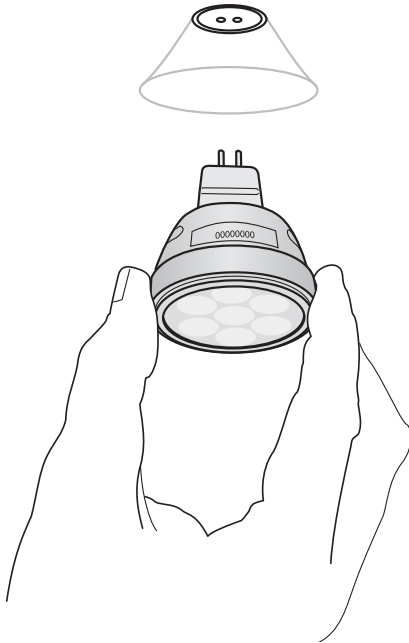


# Install the Fixtures and Lamps

Make sure the power is OFF before installing MR16 fixtures and iColor MR gen3 lamps.

1. Install all power / data supplies, including any interfaces with controllers.
2. Verify that all additional supporting equipment (switches, controllers) is in place.
3. Install compatible low-voltage MR16 fixtures following the manufacturer's instructions, adhering to all safety precautions.
4. Plug the iColor MR gen3 lamps into the MR16 fixtures.

☛ Refer to the *PDS-70mr 24V Installation Instructions or Product Guide* for guidelines on configuring and positioning the PDS-70mr 24V in relation to the controller.



# Address and Configure the Lamps

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

You address and configure iColor MR gen3 lamps using QuickPlay Pro addressing and configuration software, which you can download for free from [www.philipscolorkinetics.com/support/addressing/](http://www.philipscolorkinetics.com/support/addressing/)

## Addressing iColor MR gen3 Lamps

iColor MR gen3 lamps operate in 8-bit mode by default. You can configure iColor MR gen3 lamps to operate in 16-bit mode, which increases fixture resolution for smoother dimming.

In 8-bit mode, fixtures use one DMX address per LED channel (red, green, and blue). In 16-bit mode, fixtures use two DMX addresses per LED channel. The first DMX address corresponds to the “coarse” data for that channel, and the second corresponds to the “fine” data. By using double the number of DMX addresses, 16-bit mode increases fixture resolution from 256 dimming steps to 65,536 (256 x 256) dimming steps.

DMX Address Assignments						
8-Bit Mode	1		2		3	
	Red		Green		Blue	
16-Bit Mode	1	2	3	4	5	6
	Red Coarse	Red Fine	Green Coarse	Green Fine	Blue Coarse	Blue Fine

⊗ For lighting designs where lamps work in unison, all lamps can be assigned the same starting DMX address. Changes to the default starting DMX address is not necessary, but if lamps were previously readdressed for use in other installations, you must reset them.

iColor MR gen3 lamps come factory-addressed with a starting DMX address of 1. For video displays and light show designs that require different lamps to show different light output simultaneously, you must assign unique DMX addresses to your lamps and sort them in a useful order:

- In Ethernet installations, you can address and configure your lamps using QuickPlay Pro with a computer connected to your lighting installation's network. QuickPlay Pro can automatically discover all of your lamps, controllers, and PDS-70mr 24V devices for quick configuration.
- In DMX installations, you can address and configure your lamps using QuickPlay Pro with iPlayer 3 or SmartJack Pro. You can manually enter lamp serial numbers, or you can import a spreadsheet listing each lamp's serial number and starting DMX address.

### Setting Lamp Dimming Curve

Dimming curves describe how slowly or quickly a lamp dims at different levels of input. For finer control, iColor MR gen3 lamps offer three different dimming curves for use in different situations and applications:

- **Normal**  
The non-linear (gamma) dimming curve used in most Philips Color Kinetics LED lighting fixtures. iColor MR gen3 lamps use the normal dimming curve by default.
- **Linear**  
A dimming curve with a linear relationship between power input and DMX output.
- **Tungsten**  
A non-linear dimming curve that emulates the dimming curve of incandescent lamps on a DMX dimmer. This curve offers the most control at low intensities.

### Setting LED Transition Speed

Normally, LEDs react to DMX or other control data instantaneously. In some cases, you may want to slow down the reaction speed to achieve smoother transitions when the intensity of different LED channels changes. iColor MR gen3 lamps offer five levels of decreasing LED transition speed, from Fast (instant snap changes) to Delay-4 (slowest transition speed).



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by Marty Peck, Creative Lighting Design & Engineering DAS-0000312-00 R00 04-13