iW MR gen3

MR 16 LED lamp with high-quality intelligent white light

PHILIPS

COLOR KINETICS

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MR16 LED lamp with high-quality intelligent white light

iW MR gen3 is an intelligent white LED lamp that delivers intense, color temperature adjustable white light. The stylish housing fits into most standard MR16 fixtures, including tracks, cables, rails, and pendants. These high-performance fixtures provide channels of warm, neutral, and cool LED sources to offer white light in color temperatures ranging from 2700 K – 5700 K. With high-intensity LED light sources and three beam angles, iW 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, iW MR gen3 is compatible with most MR16 tracks, rails, cables, and pendant fixtures.
- Standard wiring and simple installation — iW MR gen3 lamps work with standard 2-conductor jacketed cable or hook-up wire. Power / data supplies specifically designed for use with iW MR gen3 multiplex power and data onto a two-wire circuit for use with conventional MR16 fixtures and sockets.
- Three beam angles — Use the 20° lamp when you need a spot of light with sharply defined edges, the 26° lamp for a wider spread of light, and the 100° (no optic) lamp for a soft, diffuse light.
- Efficient and cost-effective — iW 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, iW MR gen3 lamps cost significantly less to own and operate than conventional MR16 lamps.
- Complete integrated system — PDS-70mr 24V power / data supply, for use with MR LED lamps, is a complete custom control solution from Philips Color Kinetics.

Intense Light Output

iW MR gen3 lamps output up to 241 lumens of color temperature adjustable white light.

Lighting It Up with iW MR gen3

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

STACK at the MGM Mirage

The inviting atmosphere at STACK blends light and architecture to create a truly unique environment -- a seemingly candle-lit canyon. Opened in December 2005, the American bistro features high ceilings and curvilinear walls that are stacked with a layered and richly textured wood to achieve an intimate yet cavernous effect.

Photography: © Matt Franks, Arup Lighting

Conceptualized by the designers at Arup Lighting in New York, the lighting scheme required an appropriate source to light "pockets" inside the multi-layered walls. According to Arup's principal lighting designer, Brian Stacy, "The walls step front to back to create peels where we wanted to hide small lights. We considered several options, and found that the iW MR was ideally suited for the application. We were able to use it in a standard MR16 fixture while benefiting from the long-life, low-maintenance nature of LEDs. Furthermore, unlike conventional sources, when we dim the iW MR lamps their color temperature remains consistent."

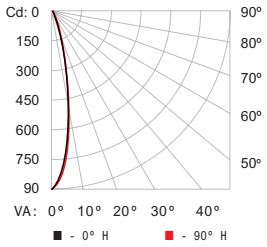
Photometrics

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

iW MR gen3 20° beam angle

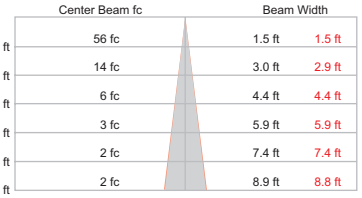
Lumens	Efficacy
212	17.2

Polar Candela Distribution



	5	30	50	75	95
0	889	889	889	889	889
5	761	753	756	763	770
15	232	232	235	239	242
25	74	75	75	77	79
35	33	34	35	35	37
45	14	14	15	15	15
55	6	6	6	6	6
65	3	3	3	3	3
75	2	1	2	1	2
85	0	0	0	0	0
90	0	0	0	0	0

Illuminance at Distance



29.8 ft (9.1 m)
1 fc maximum distance

■ Vert. Spread: 21.0°
■ Horiz. Spread: 20.8

Zonal Lumen

Zone	Lumens	% Fixture
0 - 60	207.5	97.7 %
60 - 90	4.9	2.3 %
0 - 90	212.4	100.0 %

Coefficients Of Utilization - Zonal Cavity Method

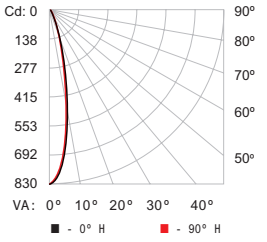
Effective Floor Cavity Reflectance: 20%

RCC %:	80				70				50			30			10		0
RW %:	70	50	30	0	70	50	30	0	50	30	20	50	30	20	50	30	20	0
RCR: 0	119	119	119	119	116	116	116	100	111	111	111	106	106	106	102	102	102	100
1	114	111	109	107	112	109	107	95	105	104	102	102	100	99	98	97	96	95
2	109	105	101	98	107	103	100	90	100	97	95	97	95	93	94	92	91	89
3	105	99	94	91	103	97	93	85	95	91	89	92	90	87	90	88	86	85
4	100	94	89	85	99	93	88	81	90	87	84	89	85	83	87	84	82	80
5	96	89	84	80	95	88	83	78	86	82	79	85	81	79	83	80	78	77
6	93	85	80	76	91	84	79	74	83	79	75	82	78	75	80	77	75	73
7	89	81	76	73	88	81	76	71	80	75	72	78	75	72	77	74	71	70
8	86	78	73	70	85	78	73	69	77	72	69	76	72	69	75	71	69	68
9	83	75	70	67	82	75	70	66	74	70	67	73	69	66	72	69	66	65
10	81	73	68	65	80	72	68	64	71	67	64	71	67	64	70	67	64	63

iW MR gen3 26° beam angle

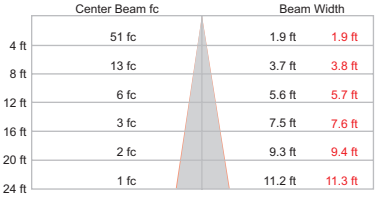
Lumens	Efficacy
241	19.4

Polar Candela Distribution



	5	30	50	75	95
0	824	824	824	824	824
5	744	733	731	725	724
15	357	354	348	344	345
25	109	106	108	106	105
35	30	30	31	30	29
45	10	10	10	10	10
55	4	3	4	4	4
65	2	1	2	2	1
75	1	1	1	1	1
85	0	0	0	0	0
90	0	0	0	0	0

Illuminance at Distance



28.7 ft (8.7 m)
1 fc maximum distance

■ Vert. Spread: 26.3°
■ Horiz. Spread: 26.6°

Zonal Lumen

Zone	Lumens	% Fixture
0 - 60	238.1	99.0 %
60 - 90	2.4	1.0%
0 - 90	240.5	100.0 %

Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

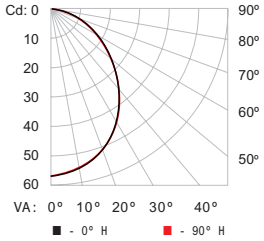
RCC %:	80				70				50			30			10		0
RW %:	70	50	30	0	70	50	30	0	50	30	20	50	30	20	50	30	20	0
RCR: 0	119	119	119	119	116	116	116	100	111	111	111	106	106	106	102	102	102	100
1	114	112	110	108	112	110	108	96	106	104	103	102	101	100	99	98	97	95
2	110	106	102	99	108	104	101	91	101	98	96	98	96	94	95	94	92	91
3	106	100	96	93	104	99	95	87	96	93	90	94	91	89	92	90	88	86
4	102	95	91	87	100	94	90	83	92	89	86	90	87	85	88	86	84	82
5	98	91	86	83	96	90	86	80	88	84	82	87	83	81	85	82	80	79
6	94	87	82	79	93	86	82	77	85	81	78	84	80	77	82	79	77	76
7	91	83	79	75	90	83	78	74	82	78	75	81	77	74	80	76	74	73
8	88	80	75	72	87	80	75	71	79	75	72	78	74	71	77	74	71	70
9	85	77	72	69	84	77	72	68	76	72	69	75	71	69	74	71	68	67
10	82	74	70	67	81	74	70	66	73	69	66	73	69	66	72	69	66	65

For lux multiply fc by 10.7

iW MR gen3
100° beam angle

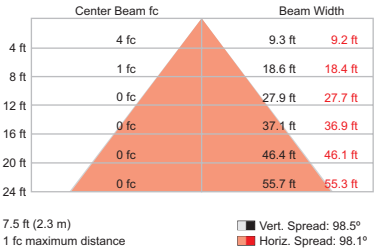
Lumens	Efficacy
134	10.8

Polar Candela Distribution



0	5	30	50	75	95
0	56	56	56	56	56
5	56	56	56	56	56
15	53	53	53	53	53
25	48	48	48	48	48
35	41	41	41	41	41
45	32	32	32	32	32
55	23	23	23	23	23
65	14	14	14	14	14
75	6	6	6	6	6
85	0	0	0	0	0
90	0	0	0	0	0

Illuminance at Distance



Zonal Lumen

Zone	Lumens	% Fixture
0 - 60	112.8	84.5 %
60 - 90	20.7	15.5 %
0 - 90	133.5	100.0 %

Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance: 20%

RCC %:	80				70				50			30			10			0
RW %:	70	50	30	0	70	50	30	0	50	30	20	50	30	20	50	30	20	0
RCR: 0	119	119	119	119	116	116	116	100	111	111	111	106	106	106	102	102	102	100
1	110	106	102	98	107	103	100	87	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	91	85	74	88	83	79	84	80	77	82	78	75	73
3	92	82	75	69	90	81	74	64	78	72	67	75	70	66	73	68	65	63
4	85	73	65	59	83	72	64	56	70	63	58	67	62	57	65	60	56	54
5	78	66	57	51	76	65	57	49	63	56	50	61	55	50	59	54	49	47
6	72	60	51	45	71	59	51	43	57	50	44	55	49	44	54	48	44	42
7	67	54	46	40	66	53	45	39	52	45	40	51	44	39	49	43	39	37
8	63	50	41	36	61	49	41	35	48	41	35	46	40	35	45	39	35	33
9	59	46	38	32	57	45	37	32	44	37	32	43	37	32	42	36	32	30
10	55	42	35	29	54	42	34	29	41	34	29	40	34	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	20° Beam Angle	26° Beam Angle	100° Beam Angle
Output	Lumens*	212	241	134
	Efficacy (lm / W)	17.2	19.4	10.8
	CRI	81	81	82
	Lumen Maintenance†	54,000 hours L_{70} @ 40° C 54,000 hours L_{50} @ 40° C	54,000 hours L_{70} @ 25° C 54,000 hours L_{50} @ 25° C	
	LED Channels	2700 K / 4000 K / 5700 K		
Electrical	Input Voltage	24 VDC		
	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 (20° and 26° beam angles), Tempered glass (100° beam angle),		
	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		
	Maximum Fixture Run	14 maximum per PDS-70mr 24V Maximum cable length 50 ft (15 m)		
Certification and Safety	Certifications	UL / cUL, CE		
	Environment	Dry Location, IP20		

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

† L_{70} = 70% lumen maintenance (when light output drops below 70% of initial output). L_{50} = 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 for more information.

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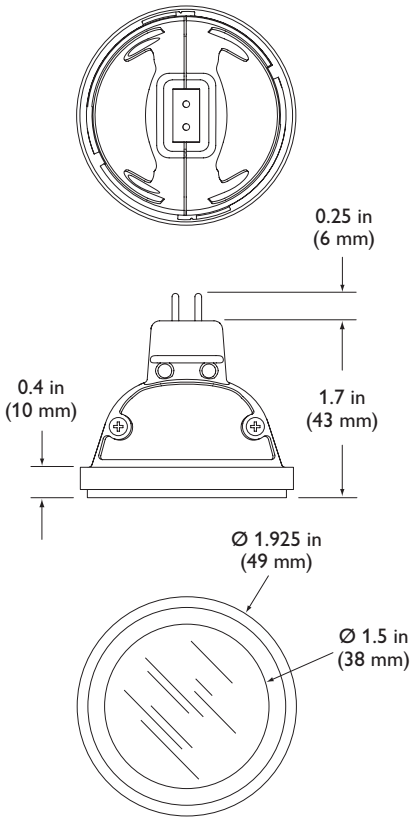


Included in the box

iW MR gen3 lamp
Installation Instructions

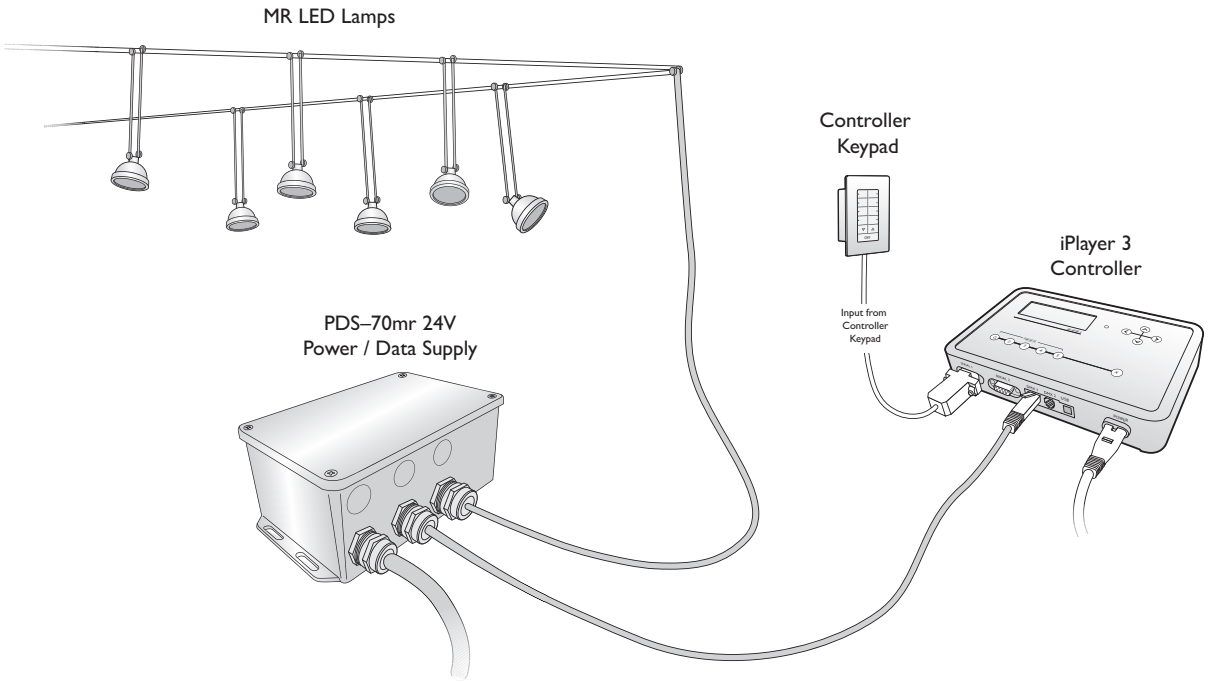
Fixtures and Accessories

iW 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
iW MR gen3	20° beam angle	501-000015-00	910503704547
	26° beam angle	501-000015-01	910503704629
	100° beam angle	501-000015-02	910503704630
PDS-70mr 24V	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 iW MR gen3 installation

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

Installation

iW MR gen3 is an intelligent white light fixture that delivers an adjustable range of color temperatures, capable of producing cool, neutral, and warm hues of white light. The stylish housing fits into most standard MR16 fixtures, including tracks, cables, rails, and pendants. Fourteen iW 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 iW 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, iW MR gen3 LED lamps plug directly into compatible MR16 fixtures. iW MR gen3 lamps are compatible with many, but not all, MR16 fixtures. Keep the following considerations in mind as you plan your installation:

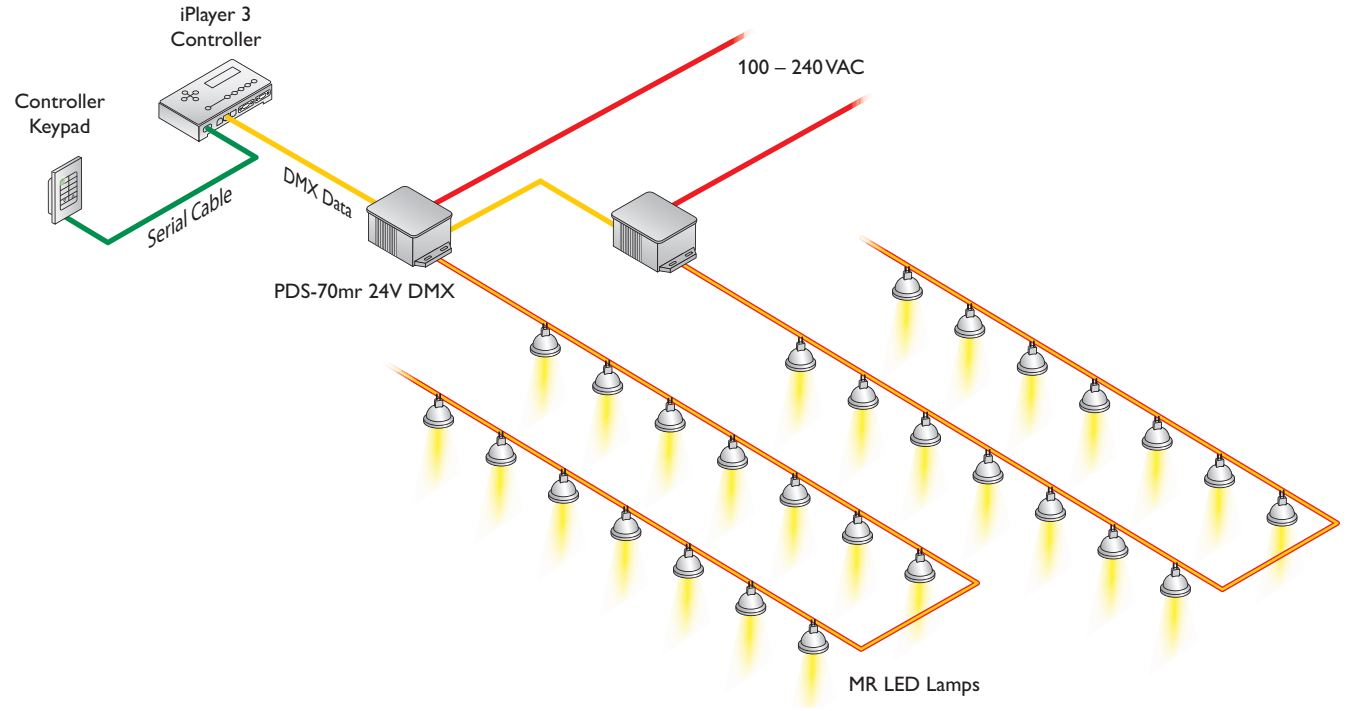
- iW MR gen3 lamps plug into many standard, low-voltage MR16 lighting tracks, cables, rails, pendants, and other fixtures. iW MR gen3 will not work with MR16 fixtures that have individually attached transformers.
- iW MR gen3 lamps require adequate ventilation around the lamp housing to ensure peak performance and maximize useful life. Using iW MR gen3 lamps in sealed fixtures and recessed fixtures, therefore, is not recommended. Using iW MR gen3 within small enclosures is recommended only if the enclosed space is adequately vented or cooled.
- Because iW 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 iW MR gen3 lamps on the same fixture, track, rail, or cable with any other type of MR16 lamp.
- iW 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

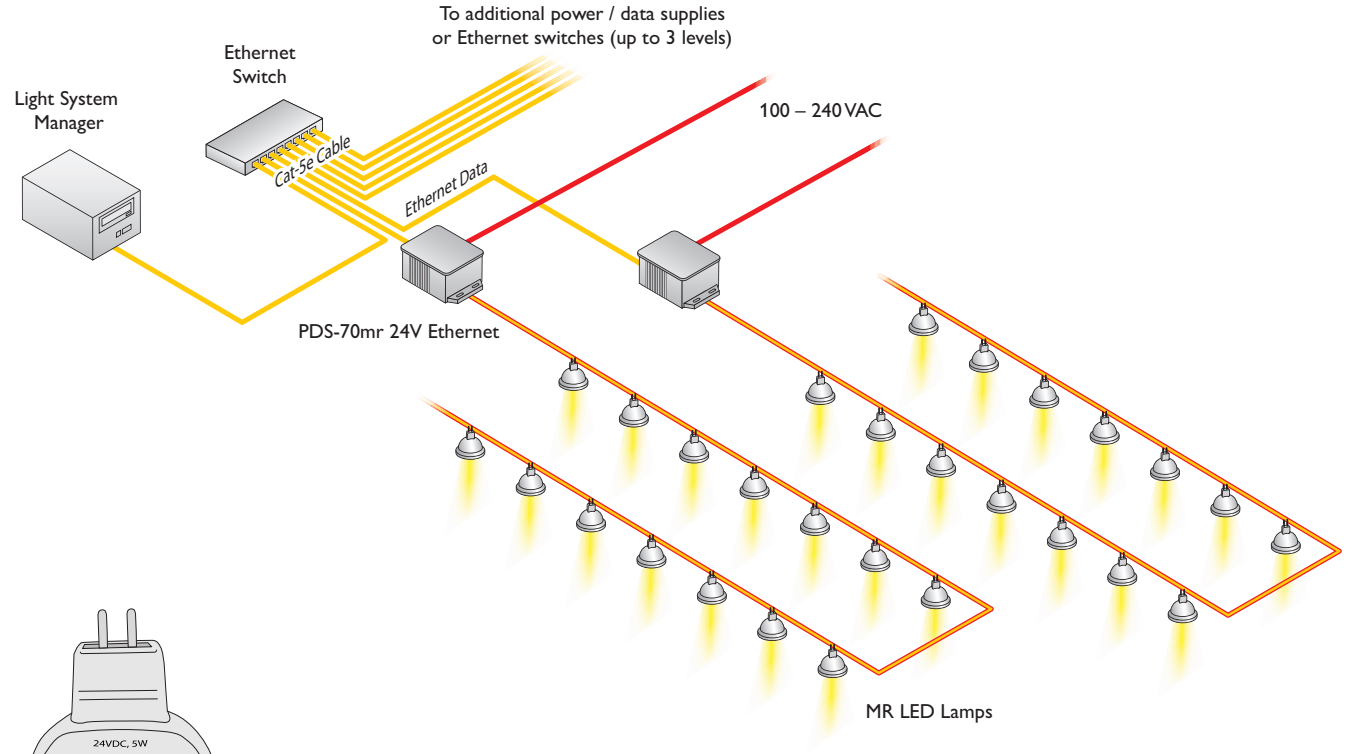
1. Select compatible low-voltage MR16 fixtures, and follow the manufacturer's guidelines for installation and wiring.
2. Determine the appropriate location of each PDS-70mr 24V power / data supply in relation to the MR16 fixtures.

   Each PDS-70mr 24V can power up to 14 iW 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.

DMX Installation with iPlayer 3



Ethernet Installation with Light System Manager



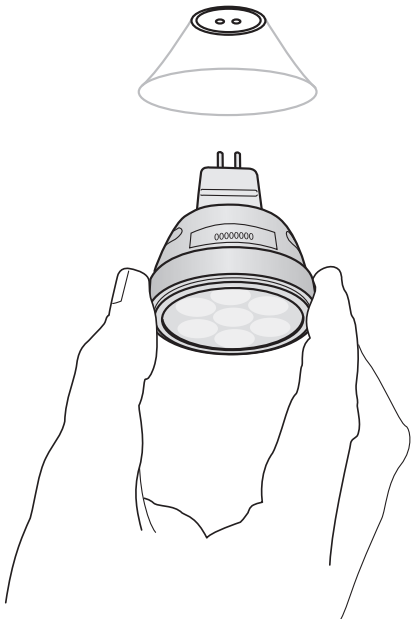
4. Each iW MR gen3 lamp comes pre-programmed with a unique serial number. As you unpack the lamps, record the serial numbers in a layout grid (typically a spreadsheet or list) for easy reference and light addressing.
5. Assign each fixture and lamp to a position in the lighting design plan.

Install the Fixtures and Lamps

Make sure the power is OFF before installing MR16 fixtures and iW 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 iW 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 iW MR gen3 lamps using QuickPlay Pro addressing and configuration software, which you can download for free from www.philipscolorkinetics.com/support/addressing/

Addressing iW MR gen3 Lamps

iW MR gen3 lamps operate in 8-bit mode by default. You can configure iW 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 (2700 K, 4000 K, and 5700 K). 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	
	2700 K		4000 K		5700 K	
16-Bit Mode	1	2	3	4	5	6
	2700 K Coarse	2700 K Fine	4000 K Coarse	4000 K Fine	5700 K Coarse	5700 K Fine

iW 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.

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.

Setting Lamp Dimming Curve

Dimming curves describe how slowly or quickly a lamp dims at different levels of input. For finer control, iW 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. iW 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. iW 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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