

iW MR

INSTALLATION GUIDE

An INTELLIWHITE™ Product



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iW MR
ITEM# 500-000002-00 (3000 K)
ITEM# 500-000002-01 (3500 K)
ITEM# 500-000002-02 (6500 K)

This product is protected by one or more of the following patents: U.S. Patent Nos. 6,016,038, 6,150,774 and other patents listed at <http://colorkinetics.com/patents/>. Other patents pending.

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GETTING STARTED

Color Kinetics® iW™ MR dimmable lamp is available in three temperatures of white light—a cool white and two variations of warm. iW MR fits most standard, low voltage MR16 lighting fixtures, including: track, cable, and rail styles. This guide contains important information not only for operating your new iW® MR lamp, but also for using it safely. For your protection, read it carefully and save it for future reference.

INCLUDED IN THIS BOX

- (1) iW MR
- Installation Guide

ADDITIONAL ITEMS NEEDED

- Suitable fixtures designed for MR16 lamps—track, cable, rail, pendant, etc.
- Low-voltage transformer to provide 12VAC to the fixtures.

OPTIONAL ITEMS

- MR Adapter ring (101-000050-00)
- A dimmer designed for use with the low-voltage transformer.

SCOPE OF THIS USER GUIDE

The goal of this user guide is to explain in easily understandable language the necessary steps to install iW MR and assure peak performance. Its intended use is for reference only, by a fully qualified electrician or technician. This document should never be considered a substitute for any provision of a regulation or state and/or local code.

OWNER/USER RESPONSIBILITIES

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate iW MR in such a manner as to comply with all state and local laws, ordinances, regulations, and the American National Standards Institute Safety Code.

IDENTIFICATION AND WARNINGS OF SAFETY HAZARDS

In accordance with ANSI Z535.4-2002 the following system of identifying the severity of the hazards associated with the products is used:

- "DANGER"** Imminently hazardous situation which, if not avoided, will result in death or serious injury.
- "WARNING"** Potentially hazardous situation that, if not avoided, could result in death or serious injury.
- "CAUTION"** Potentially hazardous situation that, if not avoided, may result in minor or moderate injury or property damage.

DANGER: Ensure that main power source (AC line) is off before installing or wiring iW MR lamps. Failure to adhere to these instructions will result in death or serious injury.

WARNING: iW MR must be installed by a qualified electrician or technician in accordance with NEC and relevant local codes. Failure to comply could result in death, serious injury, or property damage.

WARNING: Do not attempt to install or use iW MR until you read and understand the installation instructions. Failure to adhere to these instructions could result in serious injury or property damage.

WARNING: Do not use iW MR if any fixture cables are damaged. Doing so can result in death, serious injury, or property damage.

CAUTION: Use appropriate low voltage, MR16 lighting fixture and transformer. Follow the manufacturer's installation instructions and safety precautions. Failure to do so will result in product damage and void the warranty.

CAUTION: iW MR has no serviceable parts. Do not attempt to open the lights. Doing so will result in property damage and void the warranty.

CAUTION: Ensure that fixture, tracks, cables, rails, etc. are securely attached, properly mounted, and free of excessive vibration. Failure to do so will result in property damage and void the warranty.

CAUTION: Do not use sharp tools near or on the fixture lens or cables. Doing so will result in property damage and void the warranty.

CAUTION: Do not hot swap. Ensure that power supply is off before connecting or disconnecting fixtures. Hot swapping will result in property damage and void the warranty.

CAUTION: iW MR does not fit all MR16 lighting fixtures. Verify fit prior to installation. Optional adapter rings are available to reduce the overall dimension of the lamp.

CAUTION: iW MR housing becomes hot after extended use. Exercise caution when handling the heated lamp. Failure to do so will result in minor to moderate burns.

CAUTION: Risk of electric shock. Use in dry location only. Installing in wet locations will result in property damage and void the warranty.

CAUTION: This device is not intended for use with emergency exit fixtures or emergency exit lights.

NOTE: The instructions and precautions set forth in this user guide are not necessarily all-inclusive, all conceivable, or relevant to all applications as Color Kinetics cannot anticipate all conceivable or unique situations.

PLAN THE INSTALLATION

The nature of iW MR installation requires third-party fixtures, transformers, and/or dimmers. Whether the installation is new or a retrofit, compatible lighting components are necessary for successful installations and operations. Follow the guidelines for compatible components to ensure that your components are suitable for use with iW MR.

FIXTURE COMPATIBILITY

iW MR is not compatible with all MR16 lighting fixtures. To ensure that your fixture is compatible with iW MR, adhere to the following guidelines.

The iW MR:

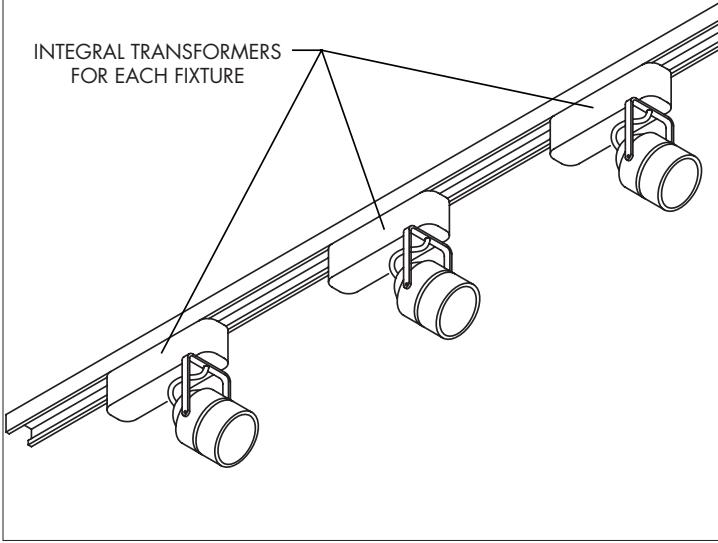
- Requires adequate ventilation around the lamp housing to ensure peak performance and lifetime expectancy, see temperature specifications on page 2.
- Is not recommended for use in sealed fixtures.
- Is not recommended for use with recessed fixtures or within small enclosures unless air exchange or cooling within the enclosed air space is provided, see *Providing Adequate Ventilation* on page 2.
- Is not designed for outdoor use or for use in wet environments.
- Is not compatible with all fixtures having integral electronic transformers, see *Selecting a Transformer*.
- Does not fit all MR16 fixtures. Verify fit prior to installation. Optional adapter rings are available to reduce the overall dimension of the lamp, but does not guarantee to fit all fixtures.
- Has an integral primary optic to focus the light. If the fixture includes a protective lens, remove it if possible.

TRANSFORMER COMPATIBILITY

Two types of low-voltage transformers are used with traditional MR16 lamps: magnetic and electronic. Consider the following when selecting the appropriate transformer for use with the iW MR.

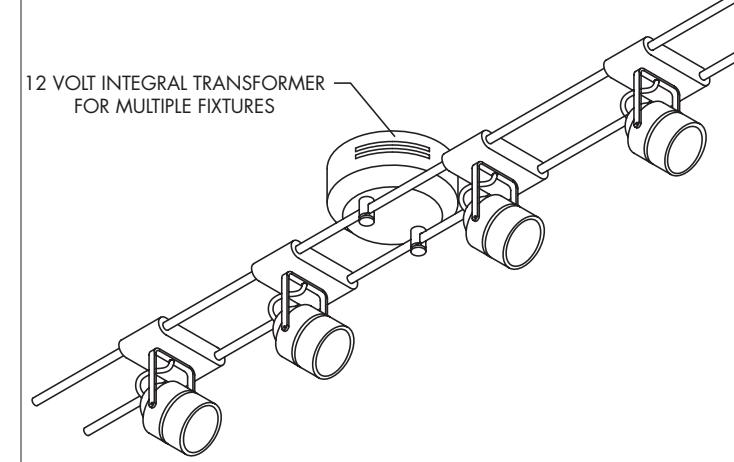
- **MAGNETIC:** iW MR is compatible with all types of magnetic transformers used with 12 volt lighting. Additionally, magnetic transformers are considered more reliable than electronic transformers; however, magnetic transformers are heavier, less efficient, and sometimes make noise (buzzing).
- **ELECTRONIC:** iW MR is not compatible with all electronic transformers due to its low power consumption of only 4 watts. Most electronic transformers require a minimum load greater than 4 Watts in order to work properly. This is especially true of lighting fixtures that have integral transformer for each fixture. See Fig. 1. Symptoms of incompatibility include: no light output, flickering, strobing, or random shutdown.

Fig. 1



- Transformers can be integral to the fixture or remotely located, and can be used to power a group of fixtures, tracks, cables or rails. See Fig. 2.

Fig. 2



- Total power consumption of the iW MR lamps on a circuit must not exceed the rated output of transformer powering that circuit, regardless of type.

Example: 20 iW MR lamps on a track powered by a single transformer consumes 80 watts maximum. Therefore, a transformer rated for more than 80 watts is required.

DIMMER COMPATIBILITY

Utilizing Color Kinetics patented DiMand™ technology, iW MR is designed to be dimmable. Using dimmers will reduce the temperature and power consumption of the iW MR, save energy, and maximize its useful lifetime. Consider the following when selecting the appropriate dimmer:

- Dimmers must be intended for use with the type of low-voltage transformer used to power the iW MR.
- **NOTE:** Common dimmers designed for use with 120V incandescent light will not work. Most dimmer manufacturers offer dimmers specifically designed to work with magnetic transformers or with electronic transformers.
- Dimmers must be rated for a maximum load that exceeds the rated load of all transformers used on the dimmer circuit.
- Most dimmers specify a certain minimum load required for the dimmers to work. Symptoms of insufficient load may include: limited dimming range, flickering, strobing, and random shutdown of the iW MR or the transformer (if electronic type).
- At very low dimmer settings, rapid flickering of the iW MR can occur. This is not harmful to the lamp, and may only be noticeable in low-light situations.
- Dimmers must be installed on the primary (line voltage) side of the transformer, not on the secondary (lamp) side.
- Dimmers compatible with the transformer and the iW MR may still have points in its dimming range where strobing can occur. This is usually the result of not meeting the minimum dimmer load, and will not harm the iW MR. If a dimmer has adjustable pre-set levels available, set them to avoid any such points in the dimming range. Follow the manufacturer's instructions for setting the pre-set levels.

INSTALLATION CONSIDERATIONS

- Consult an Electrical Inspector to approve all wiring plans.
- Refer to local and state codes for installation compliance.
- Select an appropriate low-voltage MR16 lighting fixture and transformer and follow the manufacturer's instructions for installation and wiring.
- Not intended for use in with enclosed or constricted air flow fixtures, see *Providing Adequate Ventilation*.
- Do not exceed maximum operating temperatures. Refer to specifications on Page 2.
- Employ Color Kinetics Application Engineering Services.

INSTALLING iW MR

The iW MR light system requires low-voltage MR16 fixtures with low-voltage (12VAC) transformers. Installing a dimmer on the light system is optional.

WARNING: iW MR light systems should be installed by a qualified electrician or technician in accordance with NEC and relevant local codes.

- Install and wire the MR16 fixtures according to the manufacturer's instructions.
- Install and wire the low-voltage, 12VAC, transformer according to the manufacturer's instructions.
- Optional, install a dimmer suitable for the selected transformer according to the manufacturer's instructions.

CAUTION: Ensure the power is off before installing iW MR lights. Failure to do so can result in property damage.

- With power disconnected, plug iW MR lamps into fixtures.

CAUTION: At 3.4 ounces, iW MR weights 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 can result in property damage and personal injury.

OPERATING TEMPERATURE

The iW MR is designed with the latest LED technology to provide the maximum possible light output in a standard MR16 package. Although iW MR operates at much cooler temperatures than a standard halogen MR16 bulb, the housing can reach temperatures of 167° F (75C). For this reason, handle with care to prevent injuries and provide adequate ventilation to the lamp and fixture.

During normal operation, the iW MR housing becomes very hot and remains hot for an extended time after operation is suspended. Exercise caution when handling the lamp after extended operation to prevent burns.

It is necessary to provide adequate ventilation around the lamp. Adequate ventilation refers to the airflow over the surface of the lamp and air flow within the room, not the room temperature. An iW MR in a hot (40C) room with a fan or ventilation system that keeps air moving can actually run cooler on its surface than in a cool (20C) room with stagnant air.

If any problems occur during usage, unplug the product immediately and call or email:

Color Kinetics Technical Support Group:
1-888-FULL RGB or 617-423-9999 or
www.colorkinetics.com/support

iW MR SPECIFICATIONS

SOURCE	4 high brightness white LEDs
COLOR TEMPERATURES	3000, 3500, and 6500 Kelvin
MIN. SPOT DISTANCE	6 inches (15 cm)
HOUSING	Die-cast zinc, approx. 1.8" (4.6 cm) MOL, 2" (5 cm) DIA.
BASE	GX5.3
WEIGHT	3.5 oz. (0.1 kg)
POWER CONSUMPTION	4W Max.
POWER REQUIREMENT	12VAC
ENVIRONMENTAL SPECIFICATIONS	
AMBIENT TEMP	-4°F to 104°F (-20°C to 40°C)
LAMP SURFACE TEMP	167°F (75°C)
HUMIDITY	0 to 95% non-condensing

LED SOURCE LIFE

In traditional lamp sources, lifetime is defined as the point at which 50% of the lamps fail. This is also termed Mean Time Between Failure [MTBF]. LEDs are semiconductor devices and have a much longer MTBF than conventional sources. However, MTBF is not the only consideration in determining useful life. Color Kinetics uses the concept of useful light output for rating source lifetimes. Like traditional sources, LED output degrades over time (lumen depreciation) and this is the metric for SSL lifetime.

LED lumen depreciation is affected by numerous environmental conditions such as ambient temperature, humidity, and ventilation. Lumen depreciation is also affected by means of control, thermal management, current levels, and a host of other electrical design considerations. Color Kinetics systems are expertly engineered to optimize LED life when used under normal operating conditions. Lumen depreciation information is based on LED manufacturers' source life data as well as other third party testing. Low temperatures and controlled effects have a beneficial effect on lumen depreciation. Overall system lifetime could vary substantially based on usage and the environment in which the system is installed.

Temperature and effects will affect lifetime. Color Kinetics rates product lifetime using lumen depreciation to 70% of original light output. When the fixture is running on warm or cool, at room temperature, the LED lifetime is in the range 50,000 – 70,000 hours. This is LED manufacturers' test data. High output is defined as any LED device that is 1/2 watt or above. For more detailed information on source life, please see www.colorkinetics.com/lifetime.

WARRANTY

This product is sold pursuant to CK's Standard Terms and Conditions (the "T&Cs") which may be found at <http://colorkinetics.com/howtobuy/buy/terms> and which contain important provisions, including, among others, Limited Warranty, exclusions and limitations on CK's liability for damages, and restrictions on the remedies that are available to you.