

## **Application Note**

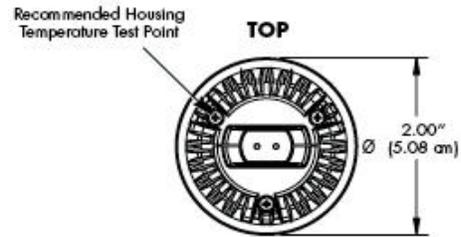
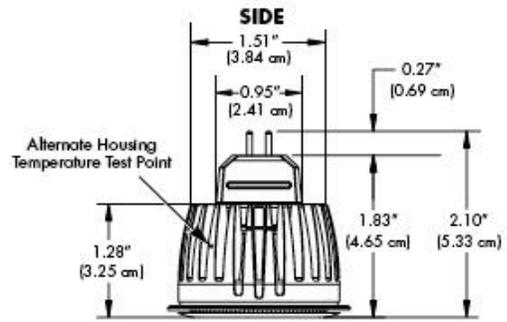
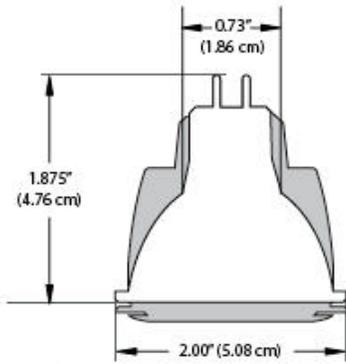
### **eW™ MR Track Fixture Compatibility**

The eW™ MR lamp has a form factor that differs slightly from a traditional MR16 and therefore, may not be compatible with all track fixtures for standard MR16 lamps. This application note addresses fixture categorization and how to apply trends in compatibility of category types towards specifying track heads. Variations within each category type are accounted for. Color Kinetics' approach toward qualifying fixtures for categorization is also discussed. The goal of this application note is to facilitate a more informed approach for specifiers and designers when choosing a track head for the eW MR lamp.

#### **Overview**

This document compares dimensions of the eW MR lamp to those of a traditional MR16 which is shown below. One of the most obvious differences in form factor between the lamps is their widths. The difference in width is due to the heat sink on the eW MR lamp. Also because of the heat sink, the neck of the eW MR lamp is not smoothly tapered towards the pins like the MR16. Another difference in form factor is the height of the lamps. The MR16 is 1.875" tall where as the eW MR lamp is 2.10" tall. Finally, the fins of the MR16 are 0.73" wide and the fins on the eW MR lamp are 0.95" wide. All of these form factor variations should be considered when preparing specification with the eW MR lamp.

Overlay of an eW MR with a Typical Halogen MR 16

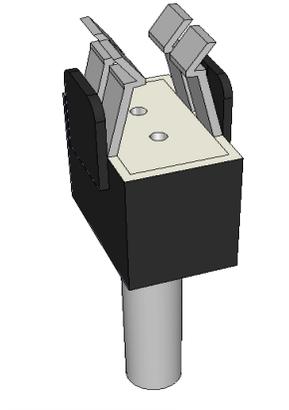


There is a wide gamut of track fixtures available in the market place; because of this, the Applications Engineering group at Color Kinetics developed a qualifying approach for track fixture compatibility testing, as testing all fixtures in the market, would be an impossible task. This is why trends in compatibility do not conform to any specific brand, but rather they provide general guidelines that may be applied to any brand, based on the category type of the track fixture to be specified. Variations within each category type will also be discussed.

- The first step in qualifying fixtures to describe fit, is to generate categories of track fixture type.
- The second step in qualifying fixtures is to identify trends in compatibility with regard to fit.
- There are certain categories of track fixtures that have shown trends in fit. These trends are largely affected by the form factor of the eW MR lamp.

### **Track Fixture Categories**

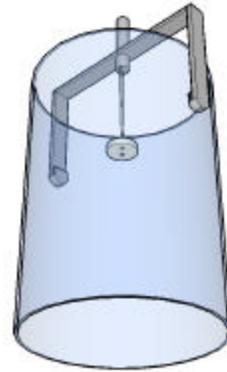
**Clip Connection:** A clip near the mounting point of the fixture, where the pins of lamp connect to the sockets on the fixture. A variation of this category type may include track heads that have a recessed clip connection, where there is material surrounding the clip.



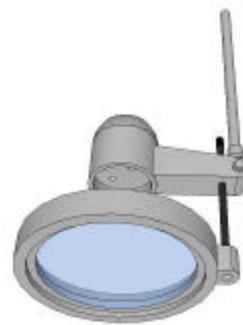
**Recessed Connection:** Is a fixture where the pin sockets are recessed. This creates a circular enclosure where the pins of the lamp connect to the sockets on the fixture. A variation of this would be an open ring fixture or a recessed clip connection.



**Open Back Glass Enclosed:** A fixture that encloses the lamp in glass and is open to the air in the back/top of the track head. Variations of this fixture type may have additional metal supports near the sockets or the stem from the track. The glass may be frosted or have a pattern.



**Open Ring:** An open-air fixture where the lens of the lamp is enclosed by a ring or housing. Variations may include square housing where the ring would be, with open air between the backside of the ring to the pin sockets. Sockets may be open, clip or recessed.



**Enclosed:** An enclosed fixture completely encloses and surrounds the lamp. No part of the lamp is open to the air except the lens. Variations may include tapered enclosures where the interior of the enclosure is tapered to closely fit the dimensions of an MR16. The exterior may reflect this variation as well, tapering towards the top of the lamp where the pin sockets would be located.



## Compatibility Trends

By categorizing the markets track fixture types above, the following compatibility trends have been found.

- Fixtures with clip connections are compatible with the eW MR lamp as the clips are generally flexible enough to accommodate the size of the eW MR lamp near the pins at the socket. Variations with a recessed clip connection are generally compatible, though special attention should be paid to the diameter of the opening of the recession, due to the width of the fins on the eW MR lamp.
- Fixtures with recessed connections are generally not compatible as the enclosure around the recession of the mounting point on the fixture is too small to accommodate the size of the area of the eW MR lamp near the pin connections at the mounting point. As stated above, recessed clip variations are generally compatible with the width caveat. Open ring variations with a recessed connection are generally not compatible.
- Fixtures that are open back-glass enclosed are typically compatible provided that the pin connection is open and not recessed. The cylindrical shape of the glass enclosure is generally large enough to accommodate the size of the eW MR lamp. If the glass enclosure is tapered towards the pin connection, it may not be able to accommodate the size of the eW MR lamp. Variations with additional metal supports are generally compatible provided that there are no components wrapping around heat sync. As discussed earlier the heat sync is wide and components that would normally wrap around an MR16 will not be able to accommodate the width of the eW MR lamp.
- Fixtures that are open ring or open ring with lens housing are generally compatible with the eW MR lamp provided the sockets on the fixture near the pin connection are open and not recessed. The lens rings and housings generally accommodate the size of the eW MR lamp around the bevel. The same applies to square variations. Clip variations are also generally compatible with the same caveat stated above.
- Fixtures that are enclosed are generally not compatible with the eW MR lamp. Many of these fixtures are tapered on the interior to closely fit the dimensions of a traditional MR16 lamp and therefore do not accommodate the size of the eW MR lamp. In addition to this, thermal shut down is a concern with enclosed fixtures, because the lack of open air does not allow for ample heat dissipation. When the lamp reaches a temperature that exceeds that of intended operation, the lamp will shutdown to avoid over heating and causing damage to the components within.

The eW MR lamp is compatible with many track fixtures designed for MR16 lamps, but not with all of them. It is not compatible with all types of track fixtures because of the differences in form factor from the MR16, particularly the fins and the heat sync. Identifying fixtures to be specified with the categories and trends within this application note, will aid in the ease of specification. It is recommended that a sample of the fixture to be specified for an application is tested to ensure compatibility with the eW MR lamp. Dimensions and design elements of track fixtures may change at the discretion of any manufacturer at anytime which is why it is not possible for CK to recommend any fixtures for specific applications.

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