

## Wet Location Luminaires

### What is a wet location luminaire?

DMF Lighting provides a number of luminaires, such as the M4/DRD2M/M4T, which have been tested to the UL 1598 Standard for Safety – Luminaires<sup>1</sup>, and are marked “Suitable for Wet Location”. The DRD2M module must be installed with an M4T trim with a built-in twist and lock feature, in order to qualify for the wet location designation. The twist and lock feature allows for easy trim installation to the module during construction and maintenance, and the ability to specify different module lumen values with a large selection of common trims, allowing the final appearance of the application space to have a clean and consistent look. Typically, wet location luminaires are used in residential single-family or multi-family homes to protect against exposure to the direct spray of water from a shower head.<sup>2</sup>

### What does UL 1598 Standard for Safety - Luminaires require?

UL 1598 Standard for Safety - Luminaires, defines three moisture protection types for luminaires, the definitions are given below,

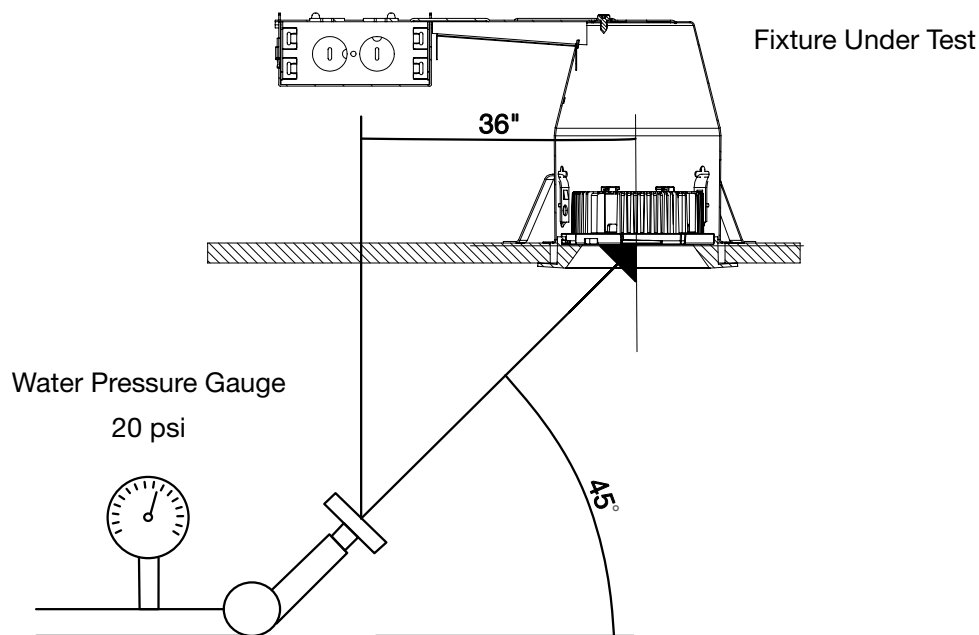
Type	Definition
Dry	A location not normally subject to dampness, but may include a location subject to temporary dampness, as in the case of a building under construction, provided ventilation is adequate to prevent an accumulation of moisture.
Damp	An exterior or interior location that is normally or periodically subject to condensation of moisture in, on, or adjacent to, electrical equipment, and includes partially protected locations.
Wet	A location in which water or other liquid can drip, splash, or flow on or against electrical equipment.

Interior luminaires are often listed as dry or damp and most exterior luminaires are listed as wet. However, as we have seen above, there are national and local requirements for interior luminaires to be wet location listed in areas such as bathrooms and above showers.

<sup>1</sup> Note the standard can be purchased here: [https://standardscatalog.ul.com/standards/en/standard\\_1598\\_3](https://standardscatalog.ul.com/standards/en/standard_1598_3)

<sup>2</sup> The 2017 NEC, in section 410.10 (D) Bathtub and Shower Areas states, “or marked for wet locations where subject to shower spray.” See 2017 NEC here for free: <http://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards?mode=code&code=70>

The 1598 UL standard specifies three wet location tests that can be applied to a luminaire depending on its usage and mounting location: rain, sprinkler and immersion. A given luminaire can be subject to one or more tests to determine if can be classified wet location. All the tests attempt to simulate what the luminaire is likely to undergo in the environment it is intended to be used. The M4/DRD2M/M4T luminaire is a recessed downlight used in ceilings that are protected from external moisture. This means that the application prevents moisture penetrating from above. To this end, the M4/DRD2M/M4T luminaire was tested using the sprinkler test. The test is arduous and is conducted with the controlled spray head pointing at the luminaire as shown in the diagram below while set to 20 psi<sup>3</sup>.



The test is performed over four hours and is sequenced as follows,

1. First hour-the luminaire is turned on and the water jet is off
2. Next half hour-the luminaire is turned off and the water jet is on
3. Next two hours-the luminaire is turned on and the water jet is on
4. Next half hour-the luminaire is off and the water jet is on

After the test is completed, the luminaire is subjected to a dielectric voltage withstand test and fully inspected to make sure that no water intrusion occurred that could cause a hazard or the luminaire to malfunction.

<sup>3</sup> Note: the rain test uses three spray heads set at 5 psi.