

# UNDERSTANDING THE ANSI FL1 STANDARD

Buying a new flashlight, headlamp, bicycle light, or spotlight can be a confusing proposition to most consumers. The problem has been a lack of industry standards, basically each manufacturer had their own testing & reporting methods – this has recently changed with the adoption of the ANSI / NEMA FL1 Standard.

In order to help alleviate confusion from consumers, a group of the leading companies in the industry joined together to create a new comprehensive standard. The resulting ANSI / NEMA FL1 standard, spells out specific testing & reporting methods for portable lighting products that emit directional light. If the ANSI FL1 icons are present on the packaging, consumers can gain confidence that the reported performance claims are tested to industry standards, and even more importantly, the consumer can compare “apples to apples” when evaluating different products.

Listed below are the set of icons that confirms the product has been tested to the ANSI FL1 standard along with a description of each specification.



**Light output** – Total light output measured in Lumens. Lumens have become the most commonly used unit of measure for total light output in portable lighting devices. Wattage on the other hand, is a measurement of power consumption, not light output. With today’s efficient LED technology, it’s very possible to have a lower wattage LED flashlight with a greater light output than another flashlight with a higher wattage rating. This is the reason why Lumens have become the best comparison method.



**Beam distance** – The distance, measured in meters, at which the light projects a useful amount of light, measured at 0.25 lux. (0.25 lux is approximately the equivalent of light emitted from a full moon “on a clear night in an open field.”)



**Run time** – Tested with fresh batteries from 30 seconds after the light is turned on until the light output reaches 10% of the initial measurement. This is the total time of useable light before most consumers will change batteries.



**Peak beam intensity** – The brightest point in the beam measured in candela. Candela is the modern unit of measure for light intensity replacing the now-obsolete unit known as candlepower.



**Impact resistance** – The height, measured in meters, from which the light can be dropped onto cured concrete and still work properly. This testing is completed by dropping the product (6) times using drop orientations that approximate each side of a cube. Dropped samples cannot have any visible cracks or breaks and must remain fully functional. The product must meet a minimum of (1) meter to receive this rating.



**Water resistance** – This icon indicates an IPX4 rating which means the sample is tested against water sprayed from all angles. If this test is performed, it must be done after impact resistance testing is completed to ensure water resistance under real-life conditions.



**Water Proof** – Water submersion depth rating, measured in meters. This icon indicates at least an IPX7 rating which means the sample is submerged to a minimum of 1 meter depth for 30 minutes. If this test is performed, it must be done after impact resistance testing is completed to ensure water tightness under real-life conditions.

When it is time to purchase your next directional light, you can be confident that you will select the light that suits your needs by comparing lights that use the ANSI FL1 flashlight standards on their packaging and advertising.

