Lumitex
LED LIGHTING

LED Fact Sheet #13

The Ta and Tc Rating

A lesser known but critical LED light specification is the Ta rating. Ta, or “ambient temperature,” is the reference temperature of the ambient air when the product is tested to deliver the rated performance.

This specification is important in critical or harsh environments. For example, in the absence of specific instructions from the manufacturer, the default testing temperature in a laboratory may be only 25° C.

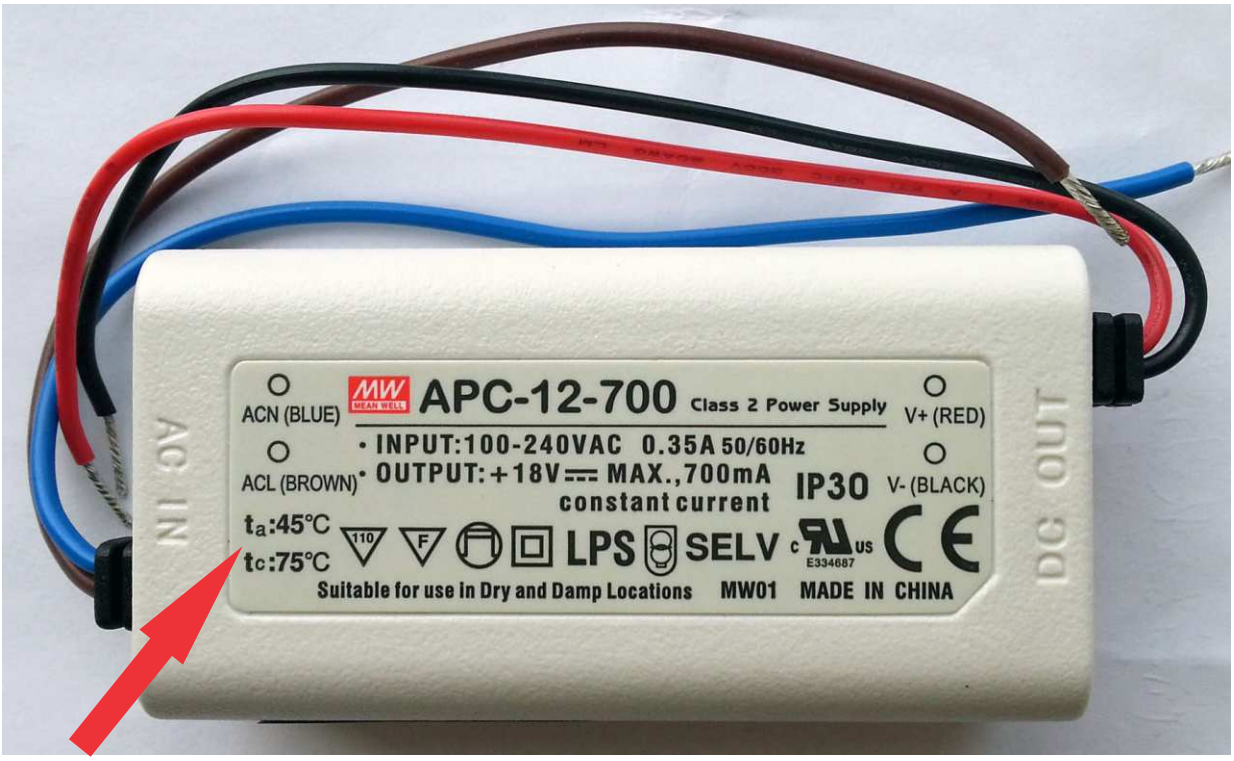
If the luminaire is to be installed into a harsh environment where the average temperature is 45° C, the 20°C difference will have a significant negative impact on the anticipated life of the product.

Furthermore, the other critical reference is the Tc, which is the hottest point of the luminaire component at the time of testing in the selected ambient temperature.

In the theoretical case above, the Tc point on a driver may be tested at 65°C at a Ta of 25°C.

If the actual installation environment has a Ta of 45°, then it stands to reason that the Tc could escalate well above the reliable operating limit for that device.

In summary, the Ta is an important technical specification that should be carefully explored to ensure the product selected is fit for purpose for the intended installation environment.



Ta and Tc rating

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