NATECH INDUSTRIE

What any contractor or distributor should know about LED technology

1 - **Fixture (or components)**: Make sure that :

a. The luminaire meets the North American standards. (see list of certification agencies). It is forbidden to connect an unapproved device. (construction code, chapter V, electricity, article -024.2)
http://www.rbq.gouv.qc.ca/electricite/votre-devoir-envers-la-securite-du-public/approbation-dappareillage-electrique/les-seuls-organismes-dapprobation-accredites-sont.html

b. A modified luminaire or component must be re-approved (by certification for special inspection).

c. Even if LED luminaire or component is powered by a low voltage source, this does not eliminate the requirement for certification. (construction code, chapter V, electricity, article 2-024.3)
It is false to think that low voltage products are free to meet the North American standards.

d. The holder of a licence needs to make sure the products are approved by the certification agencies.
Don't put your licence at risk.
http://www.rbq.gouv.qc.ca/en/electricity/votre-devoir-envers-la-securite-du-public/approval-of-electrical-equipment.html

2 - **LED** : Use only certified LED products from recognized manufacturers. The long-term degradation varies greatly from one manufacturer to another. A lower price often means less luminous flux, a variation in the color of the light or a shorter life.

3 - **Standards:** Standards which regulate the performance and functioning of LEDs have existed for some time now. It is important that LED manufacturers respect these standards. Here are some of the recognized standards:

LM 80 : A measure of the depreciation of luminous flux produced by an LED over time.

LM 79 : A measure of the depreciation of luminous flux produced by an LED as part of an integral lighting system, over time.

TM 21 : (Technical Memorandum) specifies how to extrapolate the LM-80 lumen maintenance date to times beyond the LM-80 test time. This standard is mainly used to compare LEDs beyond the 80% initial lumen output point.

4 - **Luminous flux** : Luminous flux varies as a function of the input current. The LED must be powered as per the manufacturer's specification. The higher the current, the more lumens, but the shorter the lamp life will be.

5 - **Luminous flux** : Luminous flux is also a function for color temperature. As all other variables are constant, the lower the color temperature is, the lower the amount of flux is produced. A specification for an LED at 4100 Kelvin will not apply to an LED listed at 2700 Kelvin.

6 - **Driver/Power Supply** : Ensure that the product is certified and manufactured by a recognized manufacturer, that the power factor is high, that the total harmonic distortion (THD) is low and that it is a constant current source that meets the criteria for magnetic radiation emissions. Like all electric equipment, power supply needs to be approved by the certification agencies.