

## 2.9 Conventional (non-LED) Luminaire Requirements

Within the luminaire; the light source shall be of standard proven lamp type, energy efficient with minimum lamp efficacy as per handbook.

The lamps shall be from reputed manufacturers with standard lamp base type configuration and shall provide class A1, A2 or A3 high efficiency (HF) electronic control gear, where available. Conventional wire-wound control gears are only acceptable if no HF-control gear is available or for any application which is liable to extreme high temperatures, in excess of degree Celsius ambient operation, as per DMA specifications.

*NOTE 1 Acceptable lamp types include compact and linear fluorescent (tri-phosphor only), metal halide, induction, plasma, LED and efficient electro-luminescent technologies.*

*NOTE 2 The CRI of above lamp types must be as per DMA specifications.*

*NOTE 3 Lamps and gear shall be replaceable/removable on site without any possible risk to maintaining the luminaire photometry, the IP rating, causing any degradation and without the need to demount the luminaire for sake of future upgrading/maintenance requirements.*

*NOTE 4 Whole luminaire efficacy; the optimum efficiency of the luminaire for example shall be confirmed not below  $> 50 \text{lm/cct/W}$  (@min50°C, min95%RH). Which is given as a total luminaire design (delivered) lumen output (lm) over total luminaire circuit watts (cctW) at minimum 50°C – 60°C operating outside ambient temperature and minimum 95% relative humidity. All parameters to be seen as examples, the relevant DMA specifications will prevail.*

*NOTE 5 Luminaire maximum % direct up-light shall be as per CIE 126-1997/CIE 150:2003 or less and as required/allowed for the project for the ESTIDAMA application as applicable.*

*NOTE 6 The Figures given in the datasheets must provide correct lumen output for minimum 50°C-60°C ambient temperature operation of the luminaire. Figures showing standard testing with other ambient temperatures or laboratory conditions are not acceptable, for more information please refer to DMA specifications.*

*NOTE 7 The luminaire shall be fitted with optical refractors, diffusers and/or reflectors. Different optics shall be used to suit exactly the application. Independent accredited laboratory photometric test reports shall be available including luminaire photometric files which can be used in DIALux or Relux lighting project calculation programs.*

