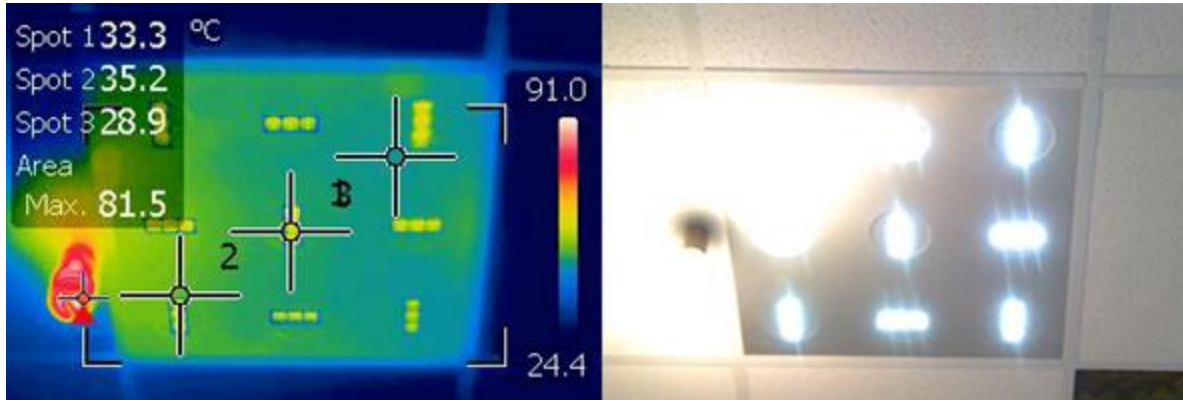
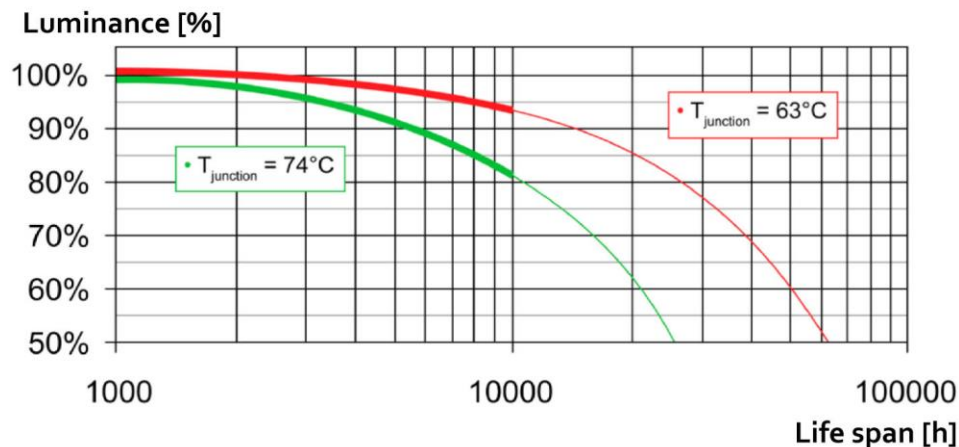


Thermal management

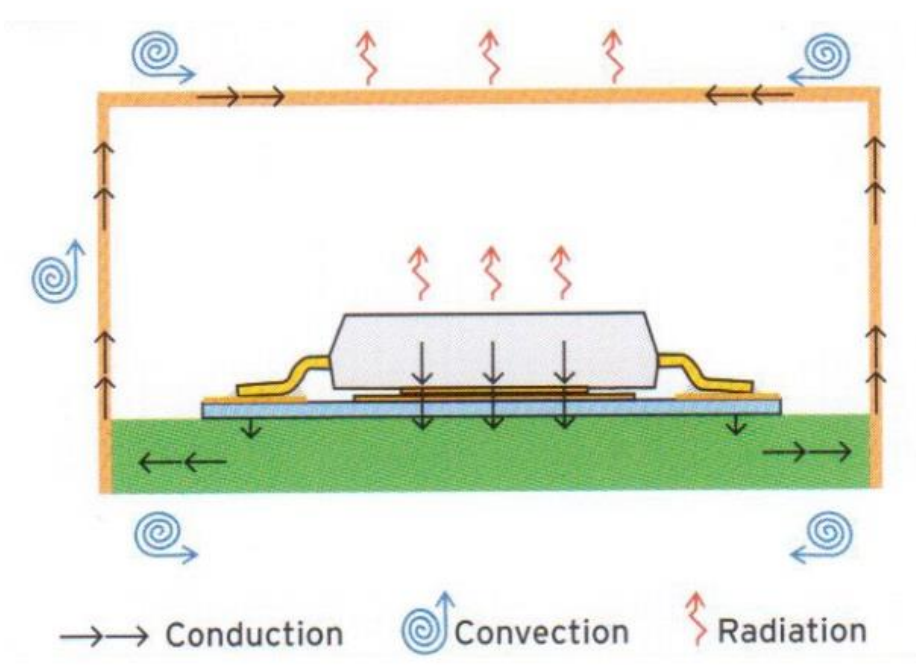
High power LED diodes are lights producing high amounts of heat. But the amount of electrical energy converted to heat is much smaller than other light sources. On the thermal picture below you can see a comparison between NGL LED light and compact fluorescent light (CFL).



When we are developing LED lights it is very important that we have good thermal management. The thermal management prevents LED diode from overheating and provides low junction temperature. Recommended junction temperature for high power LEDs should be under 85°C. If the temperature is higher **the life span, efficiency, luminance and reliability** of LED diodes is decreased. Low quality LED diodes can reach temperatures around 190°C. The life span of those LED diodes is questionable.



We can cool the LED diodes with different methods. We can decrease the temperature with lowering the LED current, but the luminance will also decrease. We can cool the LED diodes with aluminum or copper heat sinks. It is possible to use combination of heat sink and ventilator to cool down the LED diodes, but this method wastes more energy.



NGL LED lights are distinguished by very good thermal management. The junction temperature is almost never higher than 60°C.

