

## Expected lifetime of powerLED modules (white)

The expected lifetime of light sources is defined by the failure of the light source (mortality) and lumen maintenance.

### Mortality

Mortality indicates the probability of failure within a certain period of operation. The mortality of LED modules is very low compared with conventional light sources. Under the nominal conditions specified in the data sheet the failure rate for LED modules is <0.1% per 1000 hours of operation.

### Lumen maintenance

If lumen maintenance is used to define the lifetime of an LED module, the figures relate to the number of hours of operation after which the luminous flux of the LED module is 80% (T80), 70% (T70) or 50% (T50) of the rated value.

Lumen maintenance is determined mainly by the temperature at the "tc point" (reference point) on the LED module measured under normal conditions of use.

The precise position of the "tc point" is shown in the diagram in the data sheet.

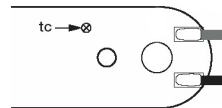
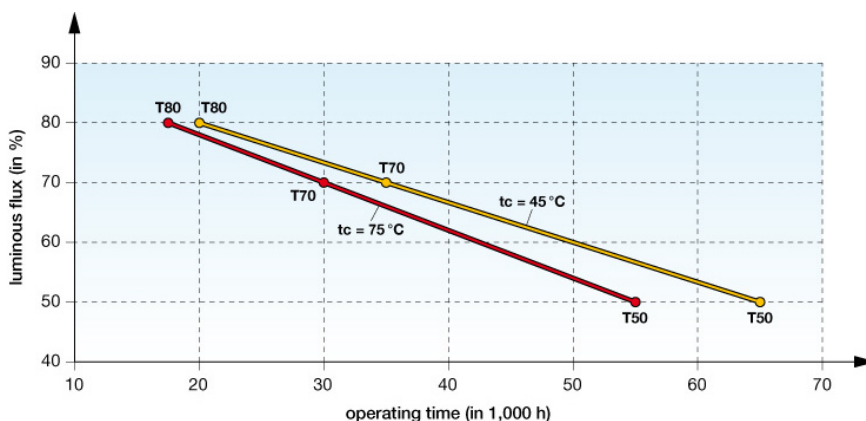


Fig. Position of the "tc point"™ on LED P510

The following diagrams enable the lumen maintenance and associated operating time to be determined for different tc temperatures.

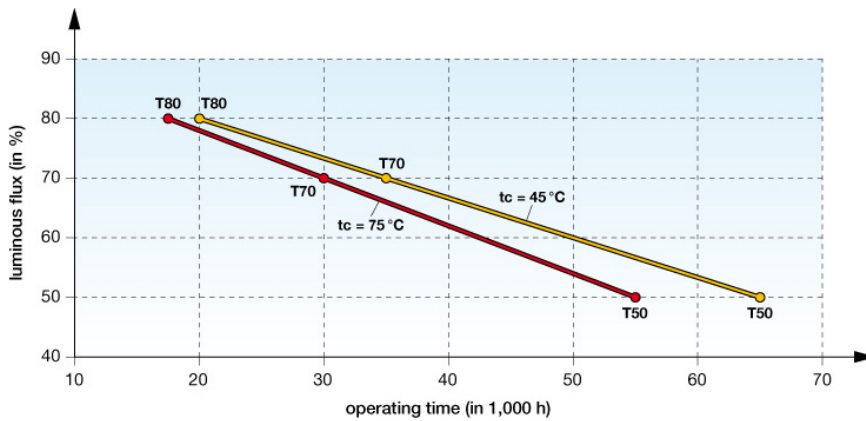
Intermediate values can be found with sufficient accuracy by interpolating between the reference curves.

### powerLED strips, chains, modules, spaceLED



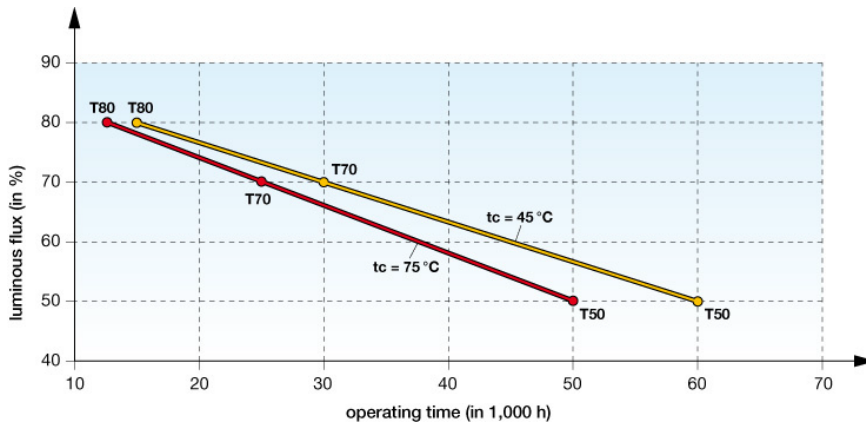
tc temperature °C	luminous flux %	expected lumen maintenance h
45	80	22,000 (T80)
	70	35,000 (T70)
	50	65,000 (T50)
75	80	19,000 (T80)
	70	30,000 (T70)
	50	55,000 (T50)

**powerLED EOS, 350m**



tc temperature °C	luminous flux %	expected lumen maintenance h
45	80	22,000 (T80)
	70	35,000 (T70)
	50	65,000 (T50)
75	80	19,000 (T80)
	70	30,000 (T70)
	50	55,000 (T50)

**powerLED EOS, 700mA**



tc temperature °C	luminous flux %	expected lumen maintenance h
45	80	19,000 (T80)
	70	30,000 (T70)
	50	60,000 (T50)
75	80	15,000 (T80)
	70	25,000 (T70)
	50	50,000 (T50)

To achieve the lifetimes stated in this document complete compliance with all the operating parameters specified in the data sheet is essential.

The lifetime values have been derived from long-term projections from current test data and are subject to change at any time without notice.

The lifetime tests are performed in accordance with the "ASSIST Recommendations on LED Life for General Lighting (Feb. 2005)".

Application Engineering  
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