

TECHNICAL BASIS FOR LIGHTING DESIGN

LIGHT COLOR AND LIGHT TEMPERATURE

Custom lighting is a solution - key factors in adequate lighting.

Light color / light temperature

The light temperature characterizes the light color from a light source. The reference test source is often a heated black body radiator (made of platinum) which shows determined colors at determined temperatures. Initially it is dark red, and then red. As the temperature rises, it becomes orange, then yellow, then white, and finally light blue with very high temperatures. A given color may thus be determined by the temperature indication of the black body radiator in K (Kelvin). The Kelvin temperature scale starts at absolute zero (-273°C).

Light colors of light sources

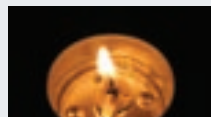
The norm divides light colors of light sources into three groups:

Light color	Light temperature in Kelvin
Warm white	< 3300
Neutral white	3300 - 5300
Day-light white	> 5300

Visual perception table:



Ember / 500 K



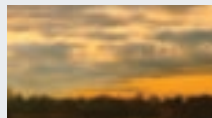
Candle / 1500 K



Lightbulb 40 W / 2680 K



Halogen light bulb / 3200 K



Sun at dusk / 3500 K



Fluorescent tube / 4000K



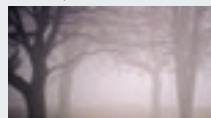
Morning sun / 5000 K



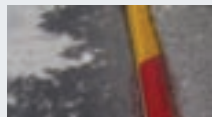
Midday sun / 5500 K



Camera flash / 6000 K



Fog / 8000 K



In the shade / 9-12000 K



Polar light / 15-25000 K