

TECHNICAL BASIS FOR LIGHTING DESIGN

HEAT GENERATION AND MANAGEMENT / SHADOWS

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



Heat generation and management of surgical and examination lights

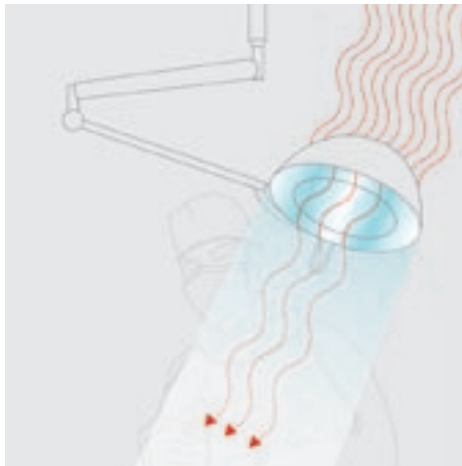
There are two heat zones which cause particular discomfort during medical care:

Heat next to the field of operation

Heat can dry out open wounds faster and encourages the growth of bacteria.

Heat at head-level

In general, the head of the luminaire is very close to the physician's head during surgery. This heat emission by the light affects their performance (the hotter it becomes, the quicker the sensation of fatigue appears) and may cause headaches.



Avoiding heat generation

Heat absorption filters, specific luminaire head designs, can allow to reduce or even get rid of this heat generation at head level or above the field of operation. It is thus possible to work in better work conditions regarding the heat issue.

Heat absorption filters

They reflect the infrared light so the heat cannot be generated through the front part.

Luminaire head design

Chimney effect – thanks to the twin-wall housing of the luminaire head, the heat evacuates upwards like in a chimney.

Efficient optics

The ideal situation is to never allow heat to form in the first place. A professional lighting technique, with the lowest light source power is the solution --> heat reduction!

Shadow formation

The casting of shadow and light is essential to facilitate movement in a room and to perceive objects. For our spatial vision, we need shadows on the objects. On the other hand, shadows are unwelcome and disturbing during medical examinations or surgeries. In this case, shadows distract the medical professionals, diminish the luminous intensity and may interfere with a sure, precise, and concentrated medical procedure.