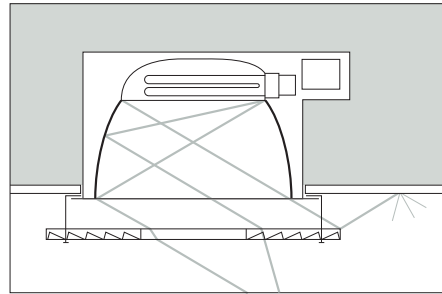
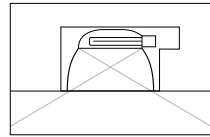


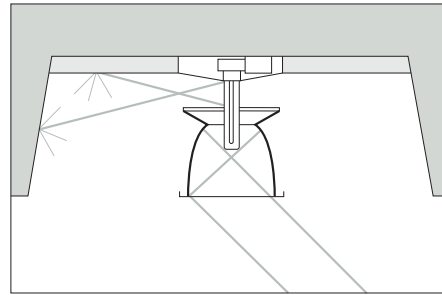
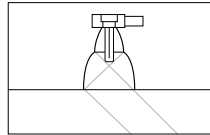
In the case of additive lighting the luminaires are not integrated into the architecture, but appear as elements in their own right. Besides planning the lighting effects which are to be produced by these luminaires, the lighting designer has to specify the luminaire design and plan the lighting layout in accordance with the architectural design. The range of planning possibilities extends from harmonizing luminaires with available structural systems to selecting luminaires that will have an active influence on the overall visual appearance of the space.

Luminaires typically used for additive lighting are light structures, spotlights and surface-mounted downlights. Due to the fact that they are a separate element from the ceiling, light structures offer wide scope for a variety of applications: they allow both direct and indirect or combined direct-indirect lighting. Spotlights, which can be mounted directly onto the ceiling or onto suspended trunking systems, are especially suitable when flexible lighting is required, e.g. for display and exhibition purposes. What is gained in flexibility is offset by the task of harmonizing the visual appearance of the lighting installation with the environment and avoiding visual unrest through the mixing of different luminaire types or by a confusing arrangement of light structures.

There are numerous intermediate options between the extreme forms of completely integral lighting and totally additive lighting. Integral lighting using downlights comes close to an additive lighting concept if semi-recessed, surface-mounted or pendant downlights are installed. The lighting requirements met by spotlights in an additive lighting concept can also be met by using recessed directional spotlights. Lighting design and the luminaire selection are therefore not bound by the decision to opt for a distinctly integral or additive lighting solution. Within the available options a decision can be made on a concept that corresponds to the architectural, aesthetic and lighting requirements.

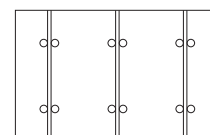
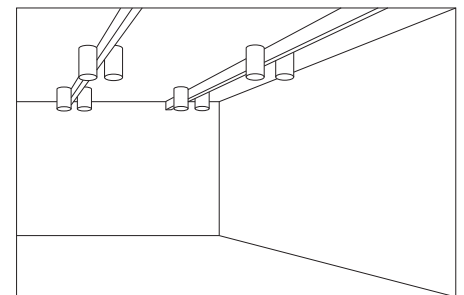
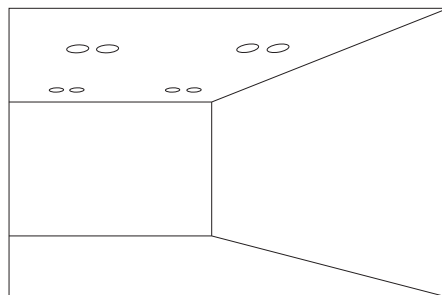


Custom designed luminaires based on standard products: a prismatic panel mounted at a specific distance below the ceiling aperture of a standard downlight controls luminance distribution. The ceiling is illuminated and the shielding of the lamp is improved.



The darklight reflector in a conventional downlight is used as the direct element in a rotationally symmetrical secondary reflector luminaire.

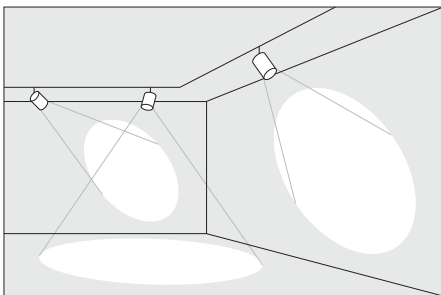
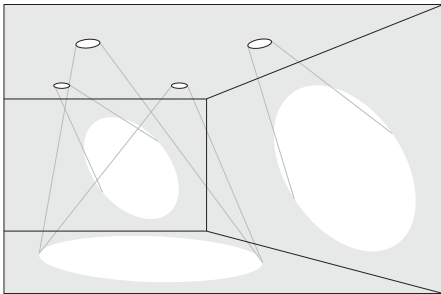
Integral and additive lighting: identical lighting effects produced by recessed downlights and downlights mounted on a light structure.



3.3.2.3 Stationary or movable lighting

The decision to opt for a stationary or variable lighting installation overlaps the decision to go for an integral or additive solution; it is determined by the lighting requirements the installation has to meet rather than by design criteria.

There are different ways of making a lighting installation flexible. Time-related or spatial changes can be produced in all permanently fitted systems, whether they consist of recessed luminaires, surface-mounted luminaires or suspended structures, by using a lighting control system. Individual luminaires or groups of luminaires can be dimmed or switched to adjust the lighting to suit the changing uses of the space. The next step towards increased flexibility is the application of permanently fitted luminaires that can be directed, such as directional spotlights or spotlights installed on singlets. The highest degree of flexibility, as required for the lighting of temporary exhibitions and display lighting, is provided by movable spotlights mounted on track or trunking systems. This means that the lighting can be adjusted using a lighting control system, completely rearranged, realigned or individual luminaires substituted. In the decision to go for a more static or a variable lighting system there is a seamless transition between the extremes, which allows the lighting to be adjusted to suit the specific requirements.



Stationary and movable luminaires: identical lighting produced by directional spotlights and track-mounted spotlights.

sufficient to provide ambient light – general lighting can therefore be produced by accent lighting. This shows that there are no longer any grounds for dividing general lighting and accent lighting into distinctly different forms of lighting. Both areas overlap, in fact, the two are no longer separate, the one can now be combined with the other.

Luminaires with wide-angle distribution are most suitable for general lighting, especially louvred luminaires and light structures designed for fluorescent lamps, as found in a majority of installations designed for work-places. Uniform lighting can be equally well effected using indirect lighting provided by ceiling washlights, wallwashers or secondary luminaires. Above all, for the lighting of prestigious spaces, such as lobbies or large meeting rooms, a close arrangement of narrow-beam downlights recessed in the ceiling is appropriate.

The choice of luminaires for accent lighting is less extensive and limited to luminaires that are able to produce concentrated, directed beams of light. Downlights are generally used for the static lighting of horizontal lighting tasks, the more variable version being recessed directional spotlights. Movable spotlights on track or light structures offer the maximum flexibility in beam direction and variability.

3.3.2.4 General lighting and differentiated lighting

The decision to design predominantly uniform general lighting or more distinctly differentiated accent lighting depends on the lighting task – it only makes sense to emphasize individual areas using light if there is a noteworthy difference in the information content between significant areas or objects and their surroundings. If the distribution of lighting tasks and information content is uniform across an area, correspondingly general lighting will be appropriate.

Whereas uniform general lighting usually means a standard lighting design concept, which is generally the case for the lighting of workplaces, a lighting design concept that aims to create isolated accents may be regarded as an exception. As a rule, accent lighting will always contain a general lighting component to allow the viewer to perceive the spatial arrangement of illuminated objects and provide for orientation within the space. This general lighting can be produced by certain luminaires, the ambient light they produce providing a background against which significant areas can be picked out using accent lighting to produce "focal glow". Scattered light from the areas illuminated by accent lighting is frequently