



Indirect lighting has come to represent a family of fixtures in which 90-100% of the light output of the fixture is bounced off of room surfaces before reaching the workplane. It is available in a broad range of configurations, mounting options, materials, shapes, colors and distributions. Typical indirect fixtures include pendant-mounted linear

fluorescent, workstation-integrated/mounted, disk-shaped pendant-mounted decorative compact fluorescent, and others.

Indirect lighting for open office plans began to grow in popularity with the rapid adoption of computers in the early '90s. The computers feature a video display terminal (VDT), a vertical workplane and a highly reflective surface. Since lensed recessed fluorescent troffers in the ceiling of many open offices are brighter than the surrounding ceiling space, they can be reflected on the VDT screen. The eye tends to drift towards the brightest spot in our field of view, making these reflections distracting and visually fatiguing. In many cases, veiling reflections from VDT screens can obscure tasks on the screen.

One of the most exciting new developments in indirect lighting is the introduction of the T5/HO lamp, which reduces required fixture profiles, increases possible fixture spacing distances, and reducing the number of fixtures required in a space.

Advantages & Disadvantages

Indirect lighting's advantages include:

- Provides soft, uniform light distribution
- Minimizes harsh shadowing
- Minimal glare on VDT screens
- Good for lighting vertical surfaces such as bookshelves in libraries
- Reveals faces well
- Makes the space appear brighter and more spacious by adding more light to ceiling and upper walls
- At peak performance, direct/indirect fixtures are much more efficient than direct parabolic fixtures, with efficiencies as high as 95% for direct/indirect vs. 50-70% for lay-in fixtures
- Works well to provide low ambient illumination while task lighting provides most of the task illumination, reducing energy costs

The disadvantages of indirect lighting include:

- Possibility that details in three-dimensional objects will not be rendered as well as direct lighting
- Higher installed cost in many cases than direct lighting schemes
- Fixture reflectors and room surfaces must be cleaned regularly to ensure maximum performance

A greatly expanded version of this article is posted on our website. Many examples of indirect and direct/indirect lighting are on display at the Lighting Design Lab.

indirect lighting



Above: The lighting in the meeting room at the Lighting Design Lab is almost completely indirect, using T5HO lamps.

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