Office and Classroom Lighting

Leading the Way to a Brighter Future

Lighting is typically the largest energy user in commercial and educational buildings. Technological advancements and lighting design techniques provide a range of options for improving lighting in commercial and educational spaces. Modern lighting technology can improve productivity, comfort, student performance and energy efficiency.

Essential Considerations for Lighting Performance

Proper illumination levels for the task – Lighting levels that are too high or too low make tasks difficult, causing fatigue, and possibly wasting valuable energy dollars.

Accurate color rendering – Lighting sources vary in their ability to render colors accurately. When lamps with low color rendering abilities are used, object contrast goes down. In addition, the human vision system works to correct for poor color rendering, which can cause fatigue. The ability to render colors accurately is measured by the Color Rendering Index (CRI) scaled from 1-100, with natural daylight receiving a score of 100.

Glare control – Direct glare from lamps and windows, and indirect glare from paperwork and monitors can undermine productivity.

Noise – Old fluorescent lighting systems can be noisy. Humming or buzzing magnetic ballasts can be a real distraction. Modern electronic ballasts are virtually silent.

Designing for Visual Comfort and Performance

Designers should strive to supply the correct amount of light for task areas, while providing the appropriate level of background illumination. Recommended guidelines for lighting levels have been established by the Illuminating Engineering Society and are made available by most lighting fixture manufacturers.

Lighting glare is a significant problem in office and classroom environments, made even more critical by the dependence upon computer monitors. Glare is controlled by keeping high brightness lamps and sunlight out of the sightline of students and workers. Using larger numbers of low brightness fixtures, indirect lighting, glare controlling baffles and shades are all strategies that help to control glare.

Modern Lighting Technology

Advanced Fluorescent Technologies – Fluorescent lighting has long been the mainstay of commercial lighting. Recent advances in T8 (1" diameter) and T5 (5/8" diameter) lamps and High Performance fluorescent fixtures have made dramatic improvements in the overall efficiency of commercial lighting. Today's modern lighting systems provide high quality light evenly and efficiently to the workplace.

Daylighting – A growing body of evidence tells us what we intuitively know – that daylighting is the best light source for productivity and satisfaction. Modern glazing systems allow for daylighting to be efficiently delivered to commercial spaces, yet glare from daylighting can be particularly troublesome. However, when glare is controlled, the abilities of daylighting to render colors accurately and to provide a pleasant environment cannot be matched by any artificial light source.

With daylighting, glare and excess heat must be controlled, but proper design, modern glazing materials, and proper shading, can successfully deal with both issues. Designers increasingly utilize indirect daylighting, bouncing light off of architectural features, such as light shelves and ceilings, shielding occupants' eyes from direct sunlight. Modern glazing materials maximize the light gain while minimizing both heat gain and heat loss.

efficiency MAINE

Leading the Way to a Brighter Future

Efficiency Maine Incentives for Office and Classroom Lighting

Efficiency Maine offers incentives for premium efficiency industrial lighting through the Efficiency Maine Business Program. The following measures offer excellent efficiency opportunities for classroom, office, and other commercial environments:

Measure Code L10 – High Performance T8 Relamp and Reballast

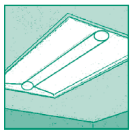
This measure encourages the retrofit of older T12 lamps and ballasts with qualifying High Performance T8 lamps and electronic ballasts. This measure results in a 25 to 30 percent energy savings, with no reduction in light output. Click here for complete description.

Measure Codes L15 & L16 – New Fluorescent Fixtures

For new construction, when redesigning spaces, or when older fixtures have degraded, the installation of new HPT8 or T5 fixtures is advisable. Click here for complete description.

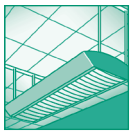
Measure Codes L30 & L31 – High Efficiency Fluorescent Fixtures

These fixtures offer a step up in efficiency from standard new fixtures. Qualifying fixtures may be recessed or surface mounted HPT8 or T5 troffer style fixtures. Click here for complete description.



Measure Codes L32 & L33 – New Low Glare High Efficiency Fluorescent Fixtures

The fixtures supported by these measures incorporate special features designed to limit glare and distribute light evenly while also providing high efficiency. These fixtures can be an excellent alternative to parabolic fixtures. Qualifying fixtures must be selected from an Efficiency Maine qualifying list. Click here for complete description.



Measure Code L35 – New Pendant Mounted Indirect Fluorescent Fixtures

For areas with high ceilings, pendant mounted indirect fluorescent fixtures can provide low-glare even illumination by bouncing light off the ceiling. This style of fixture is particularly useful in large open offices. Click here for complete description.

Measure Code L25 – New Hard-Wired Compact Fluorescent Fixtures

Although not as efficient as linear fluorescent fixtures, hard-wired compact fluorescent lighting fixtures are the efficient alternative to incandescent fixtures. Click here for complete description.

Measure Code X10 – New LED Exit Signs

Burned-out lamps in exit signs are a real safety hazard. LED exit signs last for approximately 20 years and use very little energy. Measure X10 is for the installation of new LED exit signs to replace existing incandescent or fluorescent exit signs. Because LED exit signs are now standard practice for new construction, no incentives are offered for new construction projects. Click here for complete description.

Custom Lighting Incentives

In addition to the above prescriptive incentives, Efficiency Maine offers Custom Incentives for premium efficiency lighting projects. Please contact Efficiency Maine at 866-376-2463 for lighting projects that do not fall within the above categories.