

MechSE WELLness

L03 Circadian Lighting Design

Intent: Support circadian health through use of electric lighting.

Our circadian rhythms are very important. Circadian rhythms are 24-hour cycles that are part of the body's internal clock, running in the background to carry out essential functions and processes. Being indoors for a long time often prevents us from opportunities for exposure to daylight that impacts our circadian system and affects our quality of sleep. If we upset our sleep cycle, this has direct impact on our ability to concentrate, study, or work at our optimal level.

Impact: Using electric light can help maintain healthy circadian system and improve sleep quality, mood, and cognitive functioning.

What are the requirements to earn this credit?

1. LUMEB must achieve 120 EML in all spaces where people gather, work, or study.

How is MechSE accomplishing these requirements?

“EML” stands for “equivalent melanopic lux”. What is that and why is a level of 120 important? Scientists are exploring the ‘non-visual’ aspects of light on our body's systems. The melanopic response relates light color levels with our body's natural production of melatonin. Blue light tends to suppress the production of melatonin (think gorgeous day and blue skies), while red light tends to increase levels of melatonin (think beautiful sunset). Thus, more blue light, we are alert and awake, while less leads to desire to sleep. Thus, the electrical engineer specifically chose LED lighting to include a blue “burst” to mimic the effect of daylight and help us maintain our circadian rhythm. In theory, the daylight and electric light of LUMEB helps you sleep better, be in a better mood, and enhances your ability to think and excel. That's pretty cool.



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