

Ciralight's Contribution to LEED Certification

As a proud member of the U.S. Green Building Council, Ciralight is committed to offering superior quality commercial lighting solutions that help to improve the environment – inside and out.

The LEED® (Leadership in Energy and Environmental Design) Green Building Rating System™ is a voluntary, consensus-based program for developing high-performance, sustainable buildings. Based on well-founded scientific standards, LEED emphasizes state of the art strategies for sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

LEED provides a complete framework for assessing building performance and meeting sustainability goals. Based on a system of prerequisites and credits, LEED projects earn points during the certification process and then are awarded one of the four certification levels: Certified, Silver, Gold, and Platinum.

Although USGBC does not certify, promote, or endorse products and services of individual companies, products and services do play a critical role in helping projects with credit achievement.

Using Ciralight Advance Daylighting System will definitely reduce the need for electric lighting of building interiors, resulting in the decrease of energy uses. A well-designed daylit building is estimated to reduce lighting energy use from 50% to as much as 80% (refer to Sustainable Building Technical Manual, chapter IV.7, page 90.). Less energy consumption has a direct result in using less natural resources, which will help reduce air pollution due to the production of energy.

More importantly, natural lighting has a direct influence on people behaviors and awareness to their physical environment, which explains why well daylit buildings have increase occupant productivity and reduce absenteeism and illness. Natural light is a very important component of our everyday life, it will not only help us reduce the use of natural resources, which inherently protect planet earth in the long run, but it plays an important role in our physical and psychological health when we are in a physical space.

As you can see using day lighting (the sun) has a profound impact on our natural environment, potential reduction in energy use in buildings, and improves our health and productivity. All these benefits can be translated and measured to increase the ability to achieve LEED credits in various areas. Below you will find areas we have identified that Ciralight has helped with many of our clients to obtain certain credits per the LEED credit systems (refer to Ciralight's LEED Contribution Chart).

As a reference to the type of projects Ciralight has been involved in, we have incorporate our Advance Daylighting systems into many new and retrofit commercial building projects, major retail and grocery clients, commercial warehouse, schools, and including clothing manufacturer, most recent Patagonia's Service Center in Reno Nevada, which recently achieved LEED Gold certification.

The following is a brief overview of the potential credits that Ciralight Advance Daylighting System can contribute to certain LEED points under the credit system which can be referenced under the LEED Reference Manual for New Construction/ Major Renovations and/or Commercial interiors and/or Core & Shell, there are just the few rating system, for more information how Ciralight Smart Skylights contributes to LEED Credit in the varies rating system please refer to our LEED contribution Chart. For complete details about how to achieve each individual credits please refer to the latest LEED Reference Guide:

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Here are examples of LEED credits that Ciralight's Smart Skylight will contribute to achieving these credits:

Energy and Atmosphere:

- **EA Prerequisite 2: Minimum Energy Performance:** To establish the minimum level of energy efficiency for the proposed building and systems to reduce environmental and economic impacts associated with excessive energy use.
- **EA Credit 1: Optimize Energy Performance Credit: (1–10 points)** To achieve points for this credit, a project must demonstrate a percentage improvement in the proposed building performance rating compared to the baseline building performance rating per ASHRAE/IESNA Standard 90.1-2004 (without amendments), by a whole building project simulation using the Building Performance Rating Method in Appendix G of the Standard. **Ciralight Relevance:** *Due to its ability to channel daylight into buildings, Ciralight's Suntracker One may be able to provide desired light levels while maintaining a lower skylight to floor space ratio. This may be of significant value when considering the heat gain or loss often attributed to passive daylighting. In addition, since the Suntracker incorporates thermal barriers to minimize heat gain/ heat loss and further, may provide sufficient lighting longer each day than other skylights, the use of the active system could significantly reduce the amount of electricity required to light a building.*

Materials & Resources:

- **MR Credit 5.1- 5.2: Regional Materials: 10%/ 20% Extracted, processed & Manufactured Regionally (1-2 points)** Credits are available for projects which use building materials or products that have been extracted, harvested or recovered, as well as manufactured, within 500 miles of the project site for a minimum of 10% (based on cost) of the total materials value. If only a fraction of a product or material is extracted/ harvested/ recovered and manufactured locally, then only that percentage (by weight) shall contribute to the regional value). **Ciralight Relevance:** *Relative to Ciralight's Suntracker, this credit is relevant for projects within 500 miles of Texas zip codes 75074, 75002, 75042, Arizona zip code 85726 and California zip code 91761*

Indoor Environment Quality:

- **EQ Credit 6.1: Controllability of Systems: Lighting: (1 point)** This credit gives a point for individual lighting controls for 90% (minimum) of the building occupants to enable adjustment to suit individual task needs and preferences and provides lighting system controllability for all shared multi-occupant spaces to enable lighting adjustment that meets the group needs and preferences. **Ciralight Relevance:** *Ciralight could be beneficial to achieving this credit if used in conjunction with our recommended lighting control system.*
- **EQ Credit 8.1: Daylight and Views: Daylight 75% of Spaces: (1 point)** In order to qualify for this point, the project must achieve a minimum daylight factor of 2% in a minimum of 75% of all regularly occupied areas. **Ciralight Relevance:** *When designing with skylights, it may become necessary to increase the daylight factor in order to achieve the desired light levels. Due to its ability to channel daylight into buildings, Ciralight's Suntracker can maximize interior day lighting, which will connect building occupants with natural lighting.*

Innovation & Design Process:

- **ID 1.1: Innovation in Design(1 point)** Create an education program to teach and provide awareness around the benefits of natural lighting to the interiors space, and why it is important for your occupant to understand the value of having natural lighting in their working environment. Ciralight will not only channel natural lighting into the space but will maximize the amount of natural lighting through it's solar tracking system.

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Ciralight - LEED Contribution Chart

The chart below gives you an idea of where Ciralight product can potentially contribute into each LEED prerequisites and credits in the different LEED rating systems. For more information about the LEED rating system, please visit USGBC website at www.usgbc.org.

LEED Rating Systems:

- LEED for New Construction: LEED-NC 2009
- LEED for Core and Shell: LEED-CS 2009
- LEED for Schools: LEED-S 2009
- LEED for Commercial Interiors: LEED-CI 2009
- LEED for Existing Buildings: LEED-EBOM 2009
- LEED for Homes: LEED-H 2008
- LEED for Retail Commercial Interiors Pilot: LEED-R-CI
- LEED for Retail New Construction Pilot: LEED-R-NC
- LEED for Healthcare Pilot: LEED-HC (GGHC v2.2)



| CiraLight - LEED Guidance Chart | | LEED RATING SYSTEM | | | | | | | |
|--|---|--------------------|----------|----------|-----------|-------------|-----------|-----------|----------|
| | | NC 2009 | CS 2009 | S 2009 | EBOM 2009 | LEED-H 2008 | LEED-R-NC | LEED - HC | CI 2009 |
| Sustainable Sites | | | | | | | | | |
| SS 8.1 | Light Pollution Reduction | x | x | x | x | | x | x | x |
| Energy & Atmosphere | | | | | | | | | |
| Prereq 2 | Minimum Energy Performance | x | x | x | x | x | x | x | x |
| EA 1 | Optimize Energy Performance | x | x | x | x | x | x | x | x |
| EA 4 | Windows | | | | | | | x | |
| Materials & Resources | | | | | | | | | |
| Credit 5.1 | Regional Materials , 10% Extracted, Processed, & Manufactured Regionally | x | | | | | | | x |
| Credit 5.2 | Regional Materials , 20% Extracted, Processed, & Manufactured Regionally | x | | | | | | | x |
| Indoor Environmental Quality | | | | | | | | | |
| Credit 6 | Controllability of Systems , Lighting & Thermal Comfort | x | x | x | | | x | x | x |
| Credit 8.1 | Daylight & Views , Daylight 75% of Spaces | x | x | x | x | | x | x | x |
| Credit 8.2 | Daylight & Views , Views for 90% of Spaces | x | x | x | x | | x | x | x |
| Innovation & Design Process | | | | | | | | | |
| Credit 1.1 | Innovation in Design : Exemplary Credit | x | x | x | x | | x | x | x |
| Credit 1.2 | Innovation in Design : Education | x | | x | | | x | | |
| Total possible contribution for each rating system: | | 10 | 7 | 8 | 6 | 2 | 8 | 8 | 9 |

Certified 40-49 points Silver 50-59points Gold 60-79 points Platinum 80 & Above points