

GE

# Leading with environmental excellence

A guide to navigating LEED® Certification



imagination at work

## GE, LEED® and *you*

When buildings are conceived, designed, built and operated with a view toward minimizing the impact on the environment, good things happen. Good things not just for the environment but also for the people who work and live in them, for the community, for the future – and for the building owner.

Today, several environmental initiatives in the marketplace offer incentives through certification. One of these certification programs is the U.S. Green Building Council's LEED® Certification. We at GE know that navigating certification programs can be challenging, but we can help.

To support this environmental certification initiative and to illustrate GE's dedication to energy efficiency, GE Consumer & Industrial has developed a portfolio of products that illuminate and distribute power in energy-efficient and cost-efficient ways. GE is committed to imagine and build innovative solutions that benefit our customers and society at large.



### *Did you know?*

The LEED® Certification rating system is a good baseline for measuring sustainability, whether or not certification attainment is your goal.



## Answers to questions about the USGBC and LEED®

LEED® is a voluntary green building standard created by the U. S. Green Building Council (USGBC), an independent environmental advocacy organization in Washington, DC. The purpose of this publication is to provide information for the following LEED® Certification standards:

- 2009 LEED® for Existing Buildings Operations and Maintenance (LEED-EB)
- 2009 LEED® for New Construction and Renovation (LEED-NC), and



### What is the USGBC?

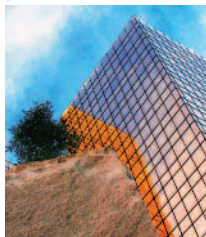
A non-profit community of leaders working to promote environmentally sustainable buildings.

### What is LEED® and why is it important?

- Certification rating for various building types
- Accelerates adoption of existing buildings
- Implements universally understood performance criteria

### Who uses LEED®?

- Facility managers
- Real estate professionals
- Engineers
- Construction managers
- Specifiers (architects, interior designers)
- Contractors
- Government officials



### Why obtain LEED® Certification?

- Be recognized for a commitment to environmental sustainability by community, company shareholders and industry
- Receive third-party validation
- Qualify for a growing number of state and local government incentives

## LEED® Certification categories

LEED® Certification provides a system in which a project earns points in several areas of sustainability. Certification is based on a 100 point system with points accruable in 5 design categories:

- Energy & Atmosphere
- Sustainable Sites
- Water Efficiency
- Materials & Resources
- Indoor Environmental Quality

Two additional categories have been added to gain extra points. These are available in Innovation in Design/Operations and Regional Priority.

For example, within the Energy & Atmosphere section, one way to earn points is through a percentage improvement, beyond a baseline, in energy savings.

It is the building that earns the recognition, not the products that go into its construction or operation. Through our ecomagination<sup>SM</sup> initiatives, innovative lighting and electrical distribution products, and expert consultation, GE can bolster the efforts of builders seeking environmentally sustainable results and LEED® Certification.

Category	Possible Points	
	Existing Buildings Operations and Maintenance (EB)*	New Construction and Major Renovations (NC)*
Sustainable Sites (SS)	26	26
Energy & Atmosphere (EA)	35	35
Water Efficiency (WE)	14	10
Materials & Resources (MR)	10	14
Indoor Environmental Quality (IEQ)	15	15
Innovation in Design (ID)	N/A	6
Innovation in Operations (IO)	6	N/A
Regional Priority	4	4
Total Possible Points	110	110

A project must earn a minimum number of points to be certified at one of four possible levels, which are:

LEED® Certification Classification	Project Point Ranges
Certified	40-49
Silver	50-59
Gold	60-79
Platinum	80 or more

GE Consumer & Industrial offers products that can contribute earning up to 34 points for new construction and up to 39 for existing buildings.\*\*

**All references to USGBC and LEED Certification is based on information available on the USGBC web site at [www.usgbc.org](http://www.usgbc.org).**

\* According to LEED 2009 for Existing Buildings Operations and Maintenance and LEED 2009 for New Construction and Major Renovations

\*\*Points achieved are from combining the benefits of all types of optimized energy performance, examples include: HVAC, power, lighting, and other equipment. GE's products used in conjunction with other efficient building products can obtain up to the maximum allowable points.



## In which categories can GE's products earn points to help attain certification?

Energy comprises more than 35% of LEED® points. GE products help you accelerate LEED® Certification in both the Existing Buildings and New Construction arenas, based on LEED® 2009. Take a look at where you can gain points towards sustainability and success.

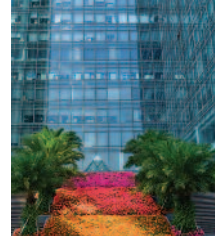


### Existing Buildings and Operations and Maintenance

LEED® Category		Potential GE Products	Potential Points*
<b>Sustainable Sites (SS)</b>	SS Credit 8: Light Pollution Reduction	Full cut off luminaires	<b>1</b>
<b>Water Efficiency (WE)</b>	WE Credit 1: Water Performance Measurement	Submetering, modular metering	<b>1</b>
<b>Energy &amp; Atmosphere (EA)</b>	EA Prerequisite 2: Minimum Energy Performance	The entire line of GE's efficient lighting and electrical products**	<b>Required</b>
	EA Credit 1: Optimize Energy Efficiency Performance	The entire line of GE's efficient lighting and electrical products**	<b>1-18*</b>
	EA Credit 3.1: Performance Measurement: Building Automation System	Power Management Control Systems	<b>1</b>
	EA Credit 3.2: Performance Measurement: System-Level Metering	Submetering, modular metering	<b>1-2</b>
	EA Credit 6: Emissions Reduction Reporting	GE Environmental Tools and Calculators found on the Environmental Information Center web site	<b>1</b>
<b>Materials &amp; Resources (MR)</b>	MR Credit 2: Sustainable Purchasing: Durable Goods	The entire line of GE's efficient lighting and electrical products.** ENERGY STAR® products include: CFLs, LED pedestrian control signals, TP-1 transformers, K-Factor transformers, bath fans	<b>1</b>
	MR Credit 4: Sustainable Purchasing: Reduced Mercury in Lamps	Many of GE's products meet this product requirement. Visit the Environmental Information Center web site to look up specific products. NOTE: New requirement is 90 picograms of mercury-per-mean-lumen-hour or lower.	<b>1</b>
	MR Credit 7: Solid Waste Management: Ongoing Consumables	GE recycling resources found on the Environmental Information Center web site	<b>1</b>
<b>Indoor Environmental Quality (IEQ)</b>	IEQ Credit 1.4: Best Management Practices: Reduced Particulates in Air Distribution	GE UV lamps	<b>1</b>
	IEQ Credit 2.2: Controllability of Systems: Lighting	Lighting controls	<b>1</b>
<b>Innovation in Operations (IO)</b>	IO Credit 1: Innovation in Operations	The entire line of GE's efficient lighting and electrical products**	<b>1-4</b>
	IO Credit 2: LEED® Accredited Professional	GE has LEED® Accredited Professionals (LEED-AP) on staff	<b>1</b>
	IO Credit 3: Documenting Sustainable Building Cost Impacts	GE Energy Saving Tools & Calculators found on the Environmental Information Center web site	<b>1</b>
<b>Regional Priority</b>	RP Credit 1: Regional Priority	Points based on previously attained credits, based on regional applicability	<b>1-4</b>
<b>Total potential points by utilizing GE's lighting and electrical distribution products and services</b>			<b>Up to 39</b>







## New Construction and Major Renovations

LEED® Category		Potential GE Products	Potential Points*
<b>Sustainable Sites (SS)</b>	SS Credit 8: Light Pollution Reduction	Full cut off luminaires	<b>1</b>
<b>Energy &amp; Atmosphere (EA)</b>	EA Prerequisite 2: Minimum Energy Performance	The entire line of GE's efficient lighting and electrical products**	<b>Required</b>
	EA Credit 1: Optimize Energy Performance	The entire line of GE's efficient lighting and electrical products**	<b>1-19*</b>
	EA Credit 5: Measurement & Verification	Submetering and modular metering	<b>3</b>
<b>Indoor Environmental Quality (IEQ)</b>	IEQ Credit 6.1: Controllability of Systems: Lighting	Lighting controls	<b>1</b>
<b>Innovation in Design (ID)</b>	ID Credit 1: Innovation in Operations	The entire line of GE's efficient lighting and electrical products**	<b>1-5</b>
	ID Credit 2: LEED® Accredited Professional	GE has LEED® Accredited Professionals (LEED-AP) on staff	<b>1</b>
<b>Regional Priority</b>	RP Credit 1: Regional Priority	Points based on previously attained credits, based on regional applicability	<b>1-4</b>
<b>Total potential points by utilizing GE's lighting and electrical distribution products and services</b>			<b>Up to 34</b>

\*Points achieved are from combining the benefits of all types of optimized energy performance. Examples include: HVAC, power, lighting, and other equipment. GE's products used in conjunction with other efficient building products can obtain up to the maximum allowable points.

### \*\*The entire line of GE's efficient lighting and electrical products includes:




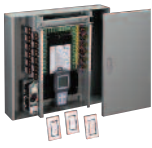





- All LED Light Sources
- Compact Fluorescent Lamps
- Linear Fluorescent Lamps: T5s and T8s
- UltraMax® and UltraStart® Ballasts
- Halogen IR Lamps
- HID Lamps; ConstantColor® CMH® and Metal Halide Watt-Miser® Lamps
- Motor Control including AF-6 Series Drives & ASTAT XT Soft Starter
- Motor Control Centers: Evolution Series E9000®
- Lighting Controls: A-Series Lighting Control Panels and TLC™ Lighting Control Panels, GE TrackPanels™
- Modular and Sub Metering
- Transformers including the QL Ultra Efficient Transformer
- Low Voltage Switchgear: Entellisys™ 4.0

**Grow toward sustainability and certification with GE lighting and electrical products!**



# How GE products help you earn specific LEED® credits.

## Electrical Distribution













Category	Product		Efficiency Attribute	LEED® Credit Category*	
				EB	NC
Motor Control		AF-6 Series Drives	Decreases energy consumption by up to 78% compared to conventional drive systems.	EA Prereq. 2, EA Credit 1	EA Prereq. 2, EA Credit 1
		ASTAT-XT Soft Starter	Reduces mechanical wear and tear by controlling motor acceleration and deceleration.		
Motor Control Centers		Evolution Series E9000®	AF-600 FP and AF-650 GP variable frequency drives use less energy than direct motor control. MM300's built-in display provides powerful metering, including energy management and measurement.	EA Prereq. 2, EA Credit 1	EA Prereq. 2, EA Credit 1
Lighting Control		TLC Panels	Delivers best-in-class solutions for virtually any lighting control requirement. From basic, stand-alone systems to state-of-the-art LonWorks® enabled open systems, TLC® panels reduce building operating costs.	EA Prereq. 2, EA Credit 1, IEQ Credit 2.2	EA Prereq. 2, EA Credit 1, IEQ Credit 6.1
		A-Series Lighting Control Panels	Conserves energy by 25 to 40% by reducing electrical load for lighting in areas compared to facilities without automated lighting control. Remote Operated Circuit Breaker Software option allows users to program panels to easily create lighting zones, establish on/off schedules, and collect data on burn hours.		
		GE TrackPanels™	Allows users to maximize the amount of light, while remaining within code and minimizing the output of watts. Allows tenants to police energy consumed by track lighting.		
Metering		Submetering, Modular Metering	Monitors energy for measurement and verification and can monitor energy usage and thus reduce overall electrical impacts to the entire building. Provides the opportunity to reduce energy costs compared to running a facility without metering.	EA Prereq. 2, EA Credit 1, EA Credit 3.2, WE Credit 1	EA Prereq. 2, EA Credit 1, EA Credit 5
Transformers		QL Ultra Efficient Transformers	More energy efficient than TP-1 transformers, helping building owners reduce lifecycle cost and meet sustainability goals. Saves energy by reducing energy losses at low load conditions. 98.6%/99% efficiency meets U.S. DOE Candidate Standard Level 3 (CSL-3) efficiency for reduced electrical waste.	EA Prereq. 2, EA Credit 1	EA Prereq. 2, EA Credit 1
Switchgear (Low Voltage)		Entellisys 4.0	Provides energy metering and intelligent load shedding. Energy usage, consumption, power and power factor can be precisely tracked for every circuit breaker that has the function enabled.	EA Prereq. 2, EA Credit 1	EA Prereq. 2, EA Credit 1

ecomagination<sup>SM</sup>

For more details on product applicability or on products of ecomagination<sup>SM</sup>, go to [www.geelectrical.com/energy](http://www.geelectrical.com/energy). To request that a specialist contact you, click on the "Request a Publication" tab on that page.



## Lighting

Category	Product		Efficiency Attribute	LEED® Credit Category*	
				EB	NC
Light Emitting Diodes (LEDs)		LED: Cove, Replacement Lamps, Refrigeration and many more	Allows users to curb their carbon emissions, lower their energy and maintenance costs, simplify installation and provide superior lighting performance and branding.	EA Prereq. 2, EA Credit 1	EA Prereq. 2, EA Credit 1
LED Fixtures		Evolve™ Outdoor Lighting	Meets full cut off luminaire requirements, provides >30% energy savings with a 10+ year service life.	EA Prereq. 2, EA Credit 1, SS Credit 8	EA Prereq. 2, EA Credit 1, SS Credit 8
Compact Fluorescent		Screw-In Lamps	Consumes up to 75% less energy than incandescent while costing less than 1/3 as much to operate.	EA Prereq. 2, EA Credit 1	EA Prereq. 2, EA Credit 1
		Plug-In Lamps	Consumes up to 80% less energy than incandescent lamps.		
Linear Fluorescent Lamps		T5 Lamps	Consumes up to 5% less energy when used with UltraStart® ballasts.	EA Prereq. 2, EA Credit 1, MR Credit 4	EA Prereq. 2, EA Credit 1
		T8 Lamps	Consumes up to 35% less energy while producing more light when used with UltraMax® ballasts.		
	Note: All GE 4-foot T8 lamps and all ~4-foot T5 are well below the minimum 90 picograms of mercury-per-mean-lumen-hour building average, which can achieve a LEED® EB certification point. Reference MR Credit 4 within this certification for complete product calculation rulings or go to the Environmental Information Center web site.				
Electronic Ballasts		UltraMax Ballasts	Consumes up to 35% less energy while producing more light when used with T8 GE Ultra® linear fluorescent lamps.	EA Prereq. 2, EA Credit 1	EA Prereq. 2, EA Credit 1
		UltraStart® Ballasts	Consumes up to 5% less energy when used with T5 lamps.		
Halogen IR		HIR™ Lamps	Consumes up to 36% less energy than incandescent lamps.	EA Prereq. 2, EA Credit 1	EA Prereq. 2, EA Credit 1
High Intensity Discharge		ConstantColor® CMH® Lamps - TCLP Compliant	Delivers outstanding energy efficiency, resulting in up to \$260 in energy savings over the life of the lamp.	EA Prereq. 2, EA Credit 1	EA Prereq. 2, EA Credit 1
		Multi-Vapor® Metal Halide Watt-Miser® Lamps	Saves up to \$80 in energy costs with a simple lamp change.	EA Prereq. 2, EA Credit 1	EA Prereq. 2, EA Credit 1
UV Lighting		UV Germicidal Lamps	Provides benefits ranging from sterilization to VOC control. Used in air, surface, and water sterilization and available in a shatter-resistant covRguard® version.	IEQ Credit 1.4	—

ecomagination<sup>SM</sup>



For more details on product applicability, products of ecomagination<sup>SM</sup> or products that are RoHS compliant, go to [www.gelighting.com/energy](http://www.gelighting.com/energy). To request that a specialist contact you, click on the "Request a Publication" tab on that page.

### \*LEED Credit References

#### LEED EB:

SS Credit 8 Light Pollution Reduction  
 WE Credit 1 Water Performance Measurement  
 EA Prerequisite 2 Minimum Energy Performance Required  
 EA Credit 1 Optimize Energy Efficiency Performance  
 EA Credit 3.2 Performance Measurement System-Level Metering  
 MR Credit 4 Sustainable Purchasing: Reduced Mercury in Lamps  
 IEQ Credit 1.4 Reduced Particulates in Air Distribution  
 IEQ Credit 2.2 Controllability of Systems: Lighting

#### LEED NC:

SS Credit 8 Light Pollution Reduction  
 EA Prerequisite 2 Minimum Energy Performance Required  
 EA Credit 1 Optimize Energy Performance  
 EA Credit 5 Measurement & Verification  
 IEQ Credit 6.1 Controllability of Systems: Lighting

## More Resources from GE Environmental Information Center Web Site

Find the latest updates on environmental information within our industry (including both lighting and electrical distribution products):

- One stop location for customer environmental education / information
- USGBC's LEED® certification information
- GE products that can obtain points for certification
- Picogram value product look up
- Environmental trends
- Federal and state legislation
- Energy and environmental calculators
- ecomagination<sup>SM</sup>
- And much more

Go to either of the following sites to review the latest environmental information. Gain quick access to the site by adding either link to your favorites or bookmarks.

[www.gelighting.com/EIC](http://www.gelighting.com/EIC)

[www.geelectrical.com/EIC](http://www.geelectrical.com/EIC)

