Center for Sustainable Tourism

Energy Efficiency and LED Exit Signs

Savings of $50 per fixture can be achieved annually with every LED exit sign installed with a one-year return on investment!

Exit signs might not seem like an important part of energy efficiency, but because they operate 24/7, they can have substantial electricity usage. Energy efficiency is a key criteria when selecting an exit sign, along with appearance, visibility and readability. The three prominent types of exit sign bulbs are described below, followed by a table listing the estimated costs of each option.

Types of Exit Signs

Incandescent lights were the first standard lights and are still prominent in commercial buildings because of their low bulb cost. However, they are the least energy-efficient option and require the most maintenance since they have the shortest lamp life.

Fluorescent lights have advanced technologically, with compact fluorescent lamps leading the way. The lamps are very bright, but they have uneven illumination and moderate lamp life. They are more energy-efficient than incandescent; however, they have a higher replacement cost.

Light Emitting Diode (LED) lights are the current standard due to their ultra-low energy usage, long bulb life and excellent illumination. LEDs are small semiconductor chips that efficiently convert electricity into light. They have a moderate initial cost, but they also have minimal maintenance and the lowest operational cost.

Purchasing Considerations

- It is important to remember, as with all lighting, not all LED exit signs are the same. Although LEDs with lower quality infrequently burn out, the light output can quickly decrease and no longer meet code.
- Energy Star has recently suspended the exit sign specification due to new minimum federal efficiency standards. Exit signs manufactured on or after January 1, 2006 must have an input power demand of 5 watts or less per face.
- Factors to consider when purchasing new LED exit signs include: color of sign (green or red), battery backup, location and placement, applicable state and local building codes, appropriate casing material for application, and number of faces (single or double).
- LED exit sign retrofit kits are also available (see reverse side).
- Photoluminescent (PL) exit signs are non-electrically powered. They are illuminated using glow-in-the-dark illumination. Although they do not require an electrical power connection, they do require a light source to charge and therefore are not appropriate for all locations.

Cost Comparison Table

The operating costs of conventional exit signs accumulate greatly over time. The graph illustrates that it makes sense to change out all your old exit signs with LED signs. The operating cost estimate includes bulb, labor, electricity costs for one sign in operation for one year. For more information on cost savings using LED signs, visit http://www.energystar.gov/

Fixture Type	Typical Wattage (watts)	Bulb Life (years)	Annual Bulb + Labor Cost	Purchase + Install Cost	Annual Energy Cost	1st Year Cost	10th Year Cost Savings
Incandescent (existing)	40	0.5	$26	0	$39	$65	--
Fluorescent (existing)	11	1.0	$27	0	$11	$38	$269
LED (new installation)	2	10+	$0	$20 + $25	$2	$47	**$581**

Other Benefits of LED Exit

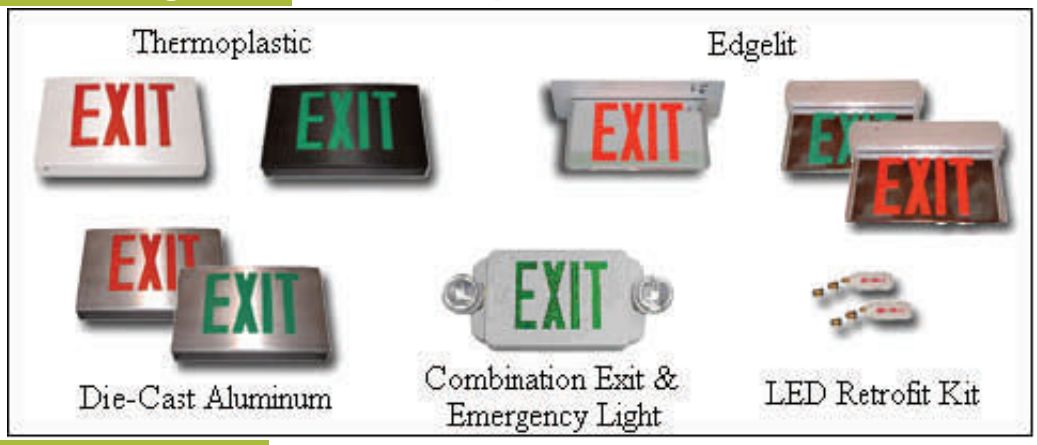
- The longer life of LED bulbs means they require less frequent changing, reducing their maintenance costs.
- LED lights are more durable than traditional glass bulbs and are less likely to break.
- Because of the reduced energy required by LEDs, they contribute to reduce greenhouse gas emissions.
- LED exit signs generally have better contrast with their background than traditional signs plus uniform illumination, making them more effective and safer.
- LED lights require less power, so battery backup may last longer in case of an electricity outage.

Retrofitting LED Exit

- A variety of LED retrofit kits for exit signs exist, including LED bulbs and bracket systems. This can be a cost effective way of replacing existing exit signs with more efficient LEDs.
- Be careful when retrofitting existing fixtures with LED bulbs. Not all LED retrofit kits fit conventional exit signs.
- Heat emitted by incandescent bulbs can erode wiring and add an unpleasing yellow hue on the casing of sign fixtures over time.

Examples of LED Retro-

Types of LED Exit Signs



Suppliers of LED

LED exit signs are now readily available and can be found at many major lighting and commercial supply retailers. Below is a sample of retailers that offer LED exit signs and retrofit kits.

Company	Address	City	Phone Number
Metro Fire & Safety	130 Wolfpack Lane	Durham	(919) 220-3265
World Electric Supply	1407 Westinghouse Blvd. Suite C	Charlotte	(704) 588-6878
Pye Barker Fire & Safety Inc.	www.pyebarkerfiresafety.com	Three NC Locations	(678) 260-2100
Home Depot	www.homedepot.com	Stores Across NC	(800) 553-3199
Grainger Industrial Supply	www.grainger.com	Branches Across NC	(888) 361-8649
Green Suites	www.greensuites.com		(800) 224-4228
4exits.com	http://4exits.com		(866) 345-4837
1000bulbs	www.1000bulbs.com		(800) 624-4488
Exitsignage.com	www.exitsignage.com		(866) 697-9560

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