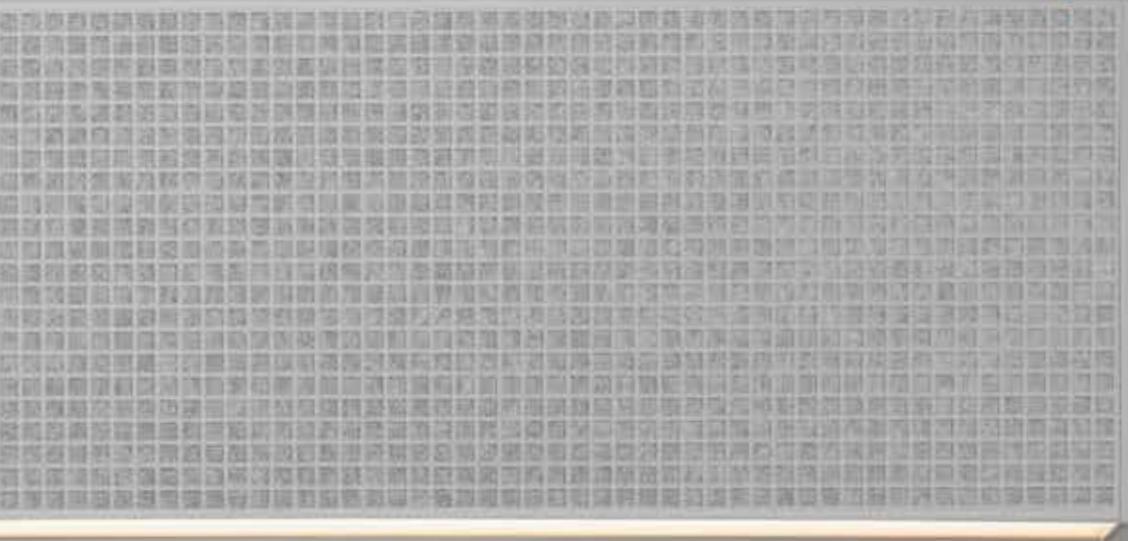


PoE

Solutions



LUMENWERX

What is PoE?



Basically, Power over Ethernet (PoE) is a system enabling electric power and data to be sent to and from multiple devices over an Ethernet cable. PoE is not a new technology per se – Since 2003, it has been used in devices, such as cameras and phones. In the 2010s, however, the technology advanced to allow for a more substantial wattage load (90W), making it an increasingly appealing and beneficial option for entire building systems, including lighting. Through its capacity to connect devices and systems within one centralized and easy-to-monitor network, the new and improved PoE can play a key role in the design and construction of smart buildings.



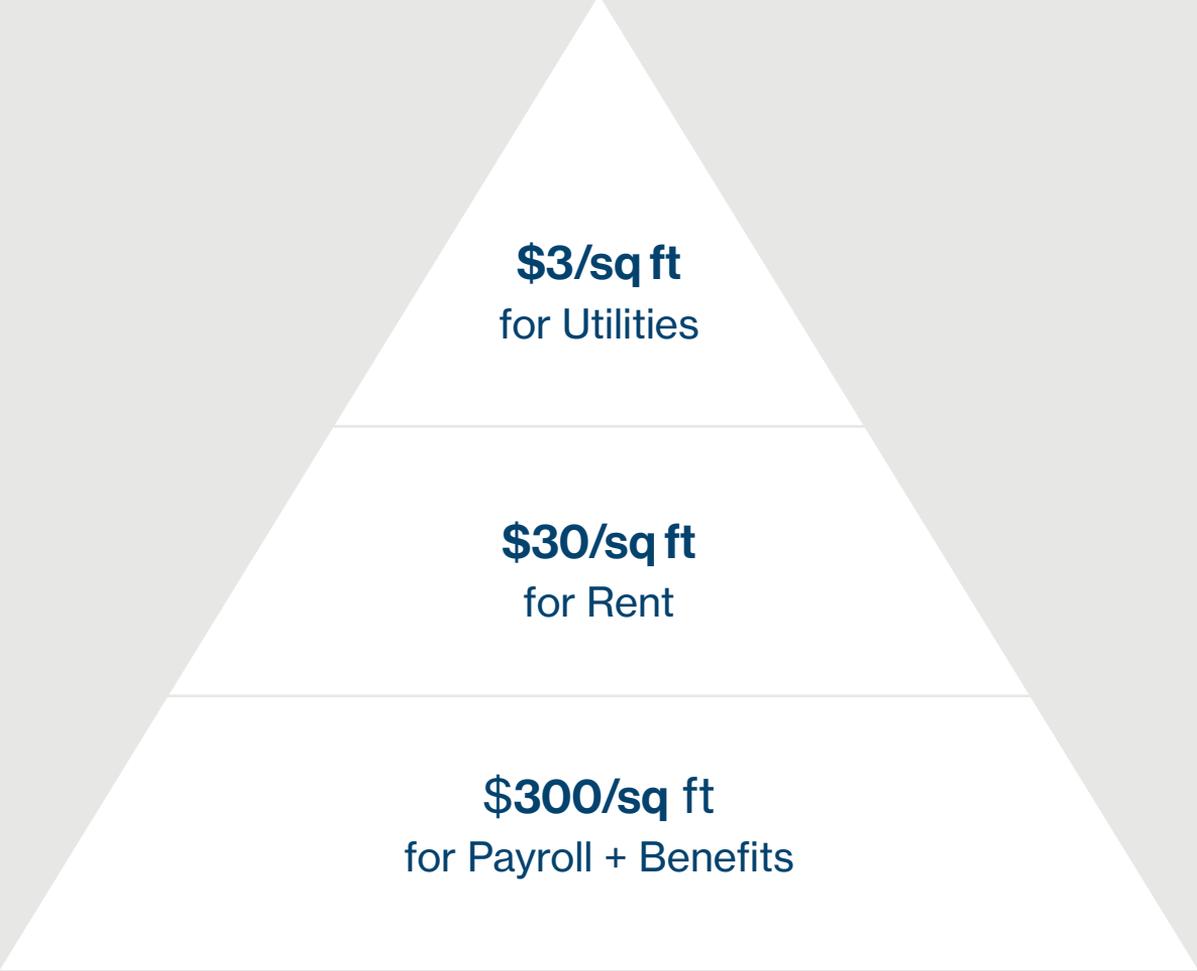
Benefits of PoE

As a system that can share data seamlessly over one network, one cable, and one connection, PoE can reveal a lot of useful information for building owners and managers. By connecting occupancy sensors, CO2 detectors, video cameras, and much more, PoE can be the spinal cord of an entire building, communicating data related to, for example, the use of space. If monitoring shows little activity in a particular room or area, then this knowledge can serve as the basis for re-purposing the space or adjusting staff objectives.

On a grander scale, ostensibly minor details, like slower activity in a certain space, can prove to impact a company's operations significantly, not only logistically, but also financially. The big picture estimate of a company's costs per square foot is represented by the 3-30-300 rule, which puts into perspective how an organization's occupancy cost is typically distributed: \$3 for utilities, \$30 for rent, and \$300 for their employee costs (salaries, benefits, etc.).

Many facility managers typically focus on the 3 and 30 portion, utilities and rent, as the area they can make the largest impact. However, when engaging in conversations with executives it's important to highlight how Facility Managers can and do affect the 300. is the cost \$3/sq/ft utilities \$30/sq/ft but employees are \$300/sq/ft doesn't it make sense to maximize the space for the human occupant. Give the employee control their own environment has proved to make people more productive.

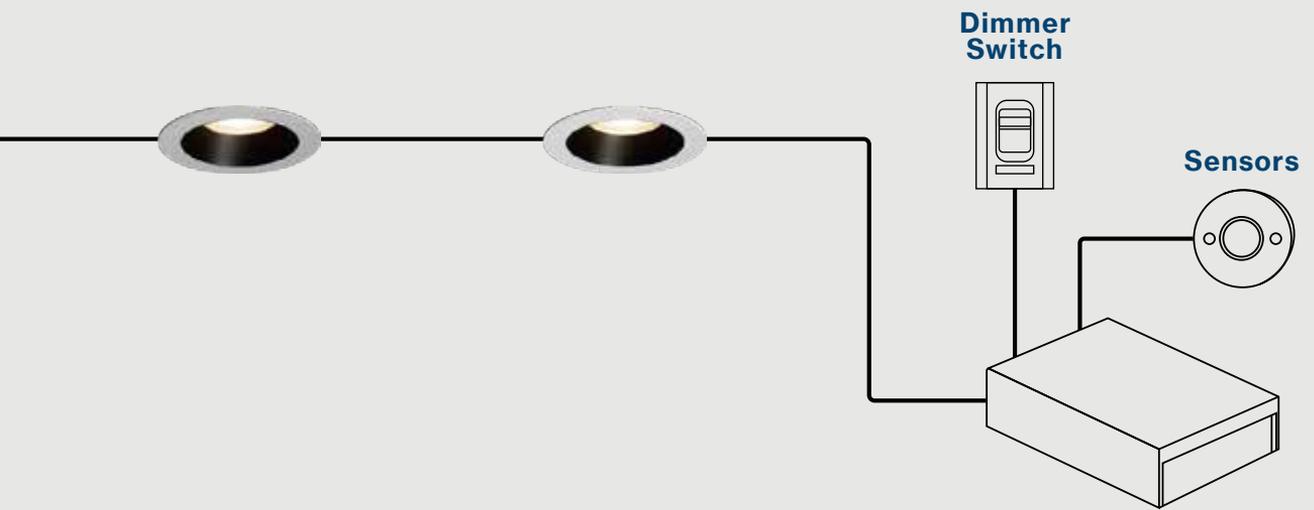
The 3-30-300 Principle



\$3/sq ft
for Utilities

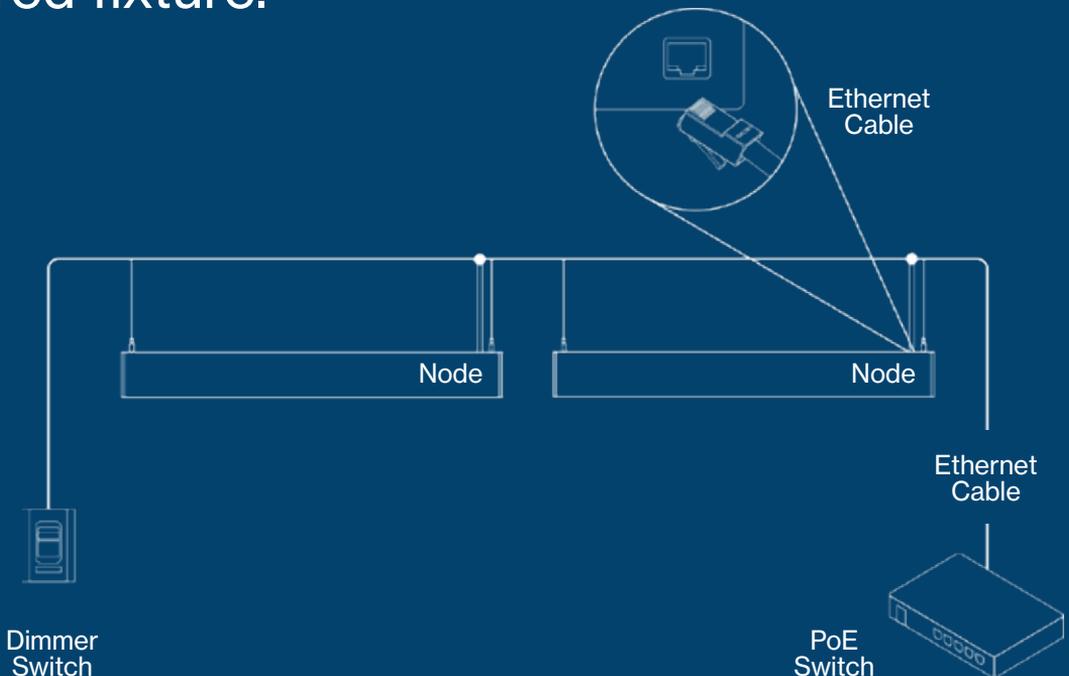
\$30/sq ft
for Rent

\$300/sq ft
for Payroll + Benefits



How does PoE Work?

Making a luminaire PoE-compatible is not as straightforward as one might think. It's not just a simple case of replacing an LED driver with a PoE node and attaching an Ethernet cable for power. Unfortunately, not every PoE node is the same, and electrical compatibility can be tricky. Some traditional lumen packages may not be technically possible, and, similarly, certain nodes may not be compatible with a desired fixture.

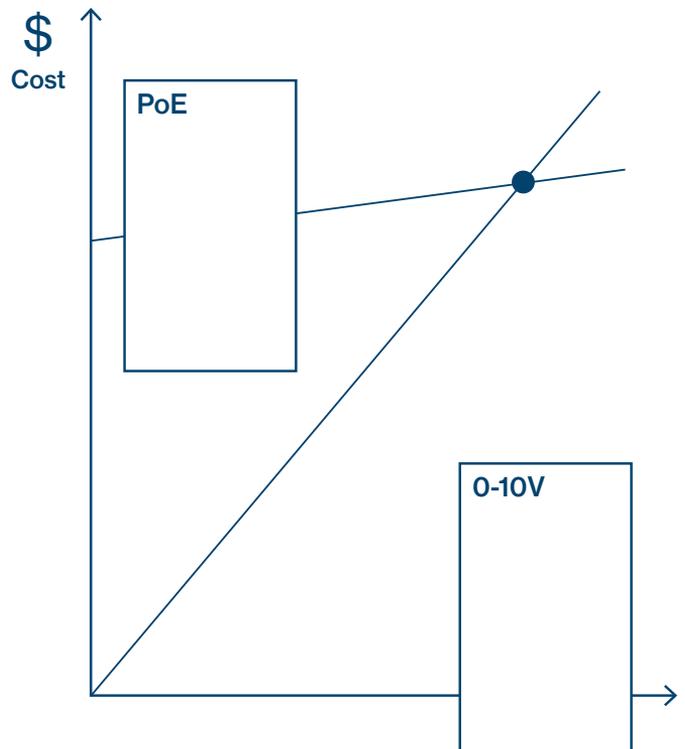


All things considered, a basic PoE system in which the PoE node is compatible with the luminaire schedule has two luminaires each enabled by a PoE node. It also has a dimmer and a PoE switch to which additional luminaires can be connected. Fixtures can be changed easily and without having to touch or manipulate the cable.

PoE can also accommodate RGB+W and tunable white controls, incorporate exit and emergency lighting systems, and address both small and large scale projects.

PoE Wins

For a PoE system, the upfront cost to turn on a single PoE enabled luminaire is much higher than that for a 0-10V system, which simply needs a dimmer and an LED luminaire. The real savings, however, lie in the infrastructure of the PoE ecosystem, where costs are substantially reduced with the merging of computing, security, HVAC, monitoring, and other systems onto one PoE platform.



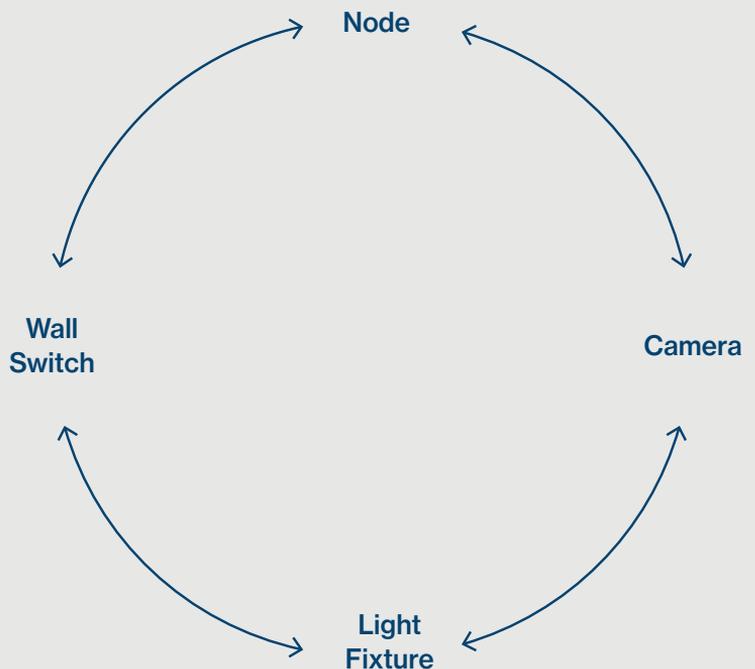
PoE Challenges

Interoperability is currently the biggest challenge for PoE implementation, not to mention being limited to only 90W per PoE node, roughly 9000 lumens of lighting power.

There is also a limited number of PoE drivers on the market, and since not every PoE system is compatible, there is no real ecosystem of parts to be found.

Similarly, controls from different suppliers need to communicate in a more harmonious way.

Project Size





Where is PoE being used?

PoE is suitable for many applications, but it is best served when used in new construction or extensive renovation projects. Retrofitting to PoE, however, is more challenging and substantially more expensive. Of course, if the return on investment can be justified, PoE can then be seen as the solution.

PoE is being used in the following applications;

- Offices
- Education Facilities
- Hospitality
- Hospitals
- Public Facilities
- Shopping Malls (Retail)

Lumenwerx Companion Products

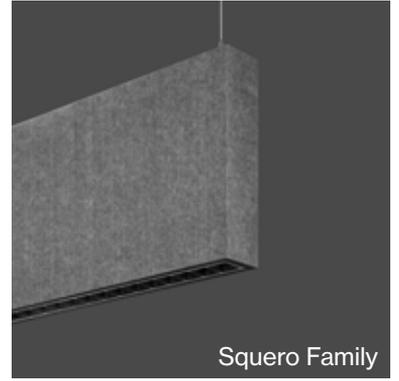
PoE technology can be integrated into many of Lumenwerx's lighting solutions and product families. For nodes, we always aim for complete integration, but when space is limited, we look for a remote solution that doesn't compromise the design aesthetic. PoE can be integrated into 95% of our product offering, including our Chromowerx solutions.



Via Family



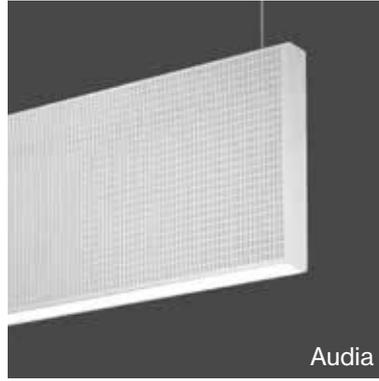
Voilà Family



Squero Family



Shell Family



Audia



Pop,
architectural decorative



Primo,
architectural troffers



Cluster Recessed



Nova



Vega



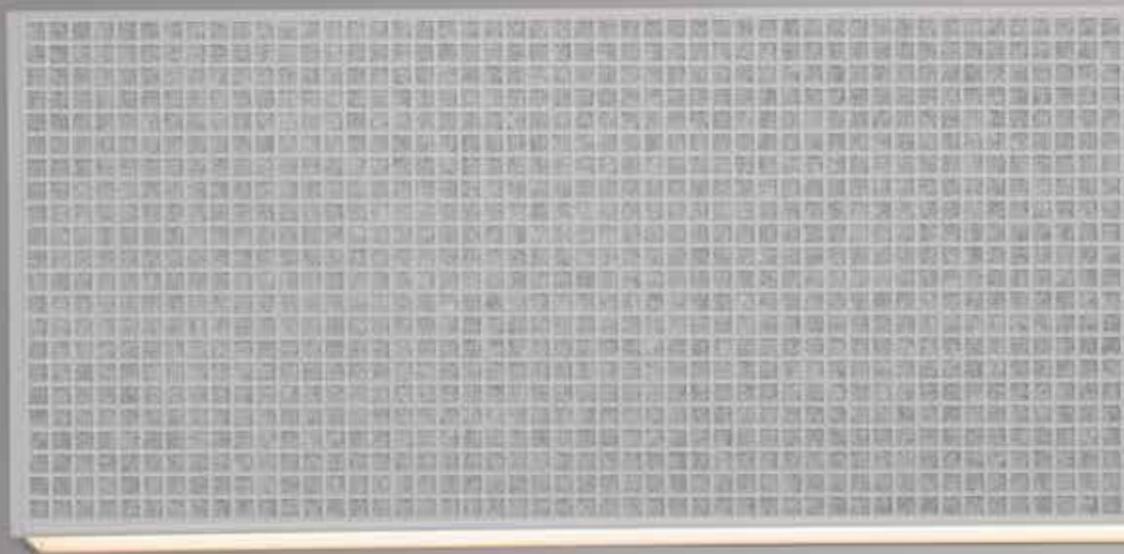
Rim,
architectural decorative



Cava

and more at lumenwerx.com

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