

POWER OVER ETHERNET LIGHTING (POE)

WHAT IS POE LIGHTING ?

Power over Ethernet or PoE describes any of several standardized or ad-hoc systems which pass electric power along with data on twisted pair Ethernet cabling (CAT5). This allows a single cable to provide both data connection and electric power to devices such as wireless access points and IP cameras ([wiki ref.](#)). LEDs outperform the lumens output of the older technologies, now, PoE standard can deliver 30W and UPOE can deliver up to 60W of power, that's enough to get those LEDs working and communicating.

IS IT GOOD ?

ADVANTAGES

- Power and data over single-layer infrastructure
- Uses DC power - ideal for LEDs
- Is low-voltage and safe to install; no certified electrician required
- Uses Ethernet Standards
- Is future proof and upgradable; each light and sensor has an IP address that can be reconfigured at any time.
- Software and firmware upgrades can be made from the network without the need to change hardware
- Can be integrated with other systems
- Highly secure
- Creates the possibility for new data analytic schemes

INCONVENIENT

- Expected pricing is 4 times than a DALI system
- Limits on the current carrying, restricted available lighting loads
- Can only daisy chain twice
- Length cable limitation based on Ethernet standard (100 metres)
- Lack of accessories and drivers available (motion detectors, switches etc.).
- Heat generated by large IT Room equipment and Ethernet wire needs to be cooled
- Power loss factor due of tiny Ethernet wire and connection
- Unknown IT Budget cost
- Needed of Battery Powered backup for DC power on power outage

RESUME

At the moment, the POE technologies are interesting as it's a completely digital and everything stays low voltage and easy to deploy, but at what cost ? We know the price of Network POE switch cost around 100\$ per port that can deliver only 60W of power each. A 32 port switch cost around 700.00\$. Some say the system is greener, but heat dissipation by the Network Switches and power loss by Ethernet cable will need the addition of cooling systems. You achieve cost benefits in some areas while paying more in others. For many years, lighting control system is being decentralized to reduce the back and forth run or wire, with POE we getting back to a centralized solution with the needs of big closet for all the network infrastructure. Price is the main barriers right now, but PoE lightening might have a brighter future.

SOURCE

POE TECHNOLOGY FOR LED LIGHTING DELIVERS BENEFITS BEYOND EFFICIENCY

<http://www.ledsmagazine.com/articles/print/volume-12/issue-8/features/dc-grid/poe-technology-for-led-lighting-delivers-benefits-beyond-efficiency.html>

POWER OVER ETHERNET POWER CONSUMPTION: THE HIDDEN COSTS

<http://www.computerweekly.com/feature/Power-over-Ethernet-power-consumption-The-hidden-costs>

SELLING LIGHTING OR SELLING DATA?

<http://www.electricaltrends.com/2016/02/selling-lighting-or-selling-data.html>

A DIM VIEW OF POE LED LIGHTING

<https://thwack.solarwinds.com/community/solarwinds-community/geek-speak-tht/blog/2016/08/08/a-dim-view-of-poe-led-lighting#start=25>

HOW MUCH DOES A POE LIGHTING CONTROL SYSTEM COST?

<https://www.linkedin.com/pulse/how-much-does-poe-lighting-control-system-cost-simon-j-richardson>

PROPOSED REVISIONS TO 2017 NATIONAL ELECTRICAL CODE WOULD IMPACT POE DEPLOYMENT

<http://www.cablinginstall.com/articles/print/volume-24/issue-1/departments/perspective/proposed-revisions-to-2017-national-electrical-code-would-impact-poe-deployment.html>

WHAT NOBODY TELLS YOU ABOUT POWER OVER ETHERNET

<http://luxreview.com/article/2016/08/what-nobody-tells-you-about-power-over-ethernet>

POWER OVER ETHERNET LIGHTING FOR COMMERCIAL BUILDINGS BY MOLEX

<https://www.led-professional.com/resources-1/articles/power-over-ethernet-lighting-for-commercial-buildings-by-molex>

THESE COMPANIES ARE MINING THE WORLD'S DATA BY SELLING STREET LIGHTS AND FARM DRONES

<http://qz.com/191545/these-companies-are-mining-the-worlds-data-by-selling-street-lights-and-farm-drones/>

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https://en.wikipedia.org/wiki/Power_over_Ethernet