FUSION™

Direct PV Powered LED

energybank®

Disruptive technology

Sitler's LED SUPPLIES

Talk to one of our LED consultants today!

(800) 426-3938 • (319) 653 3198

info@sitlersupplies.com

www.sitlersledsupplies.com

FUSION™

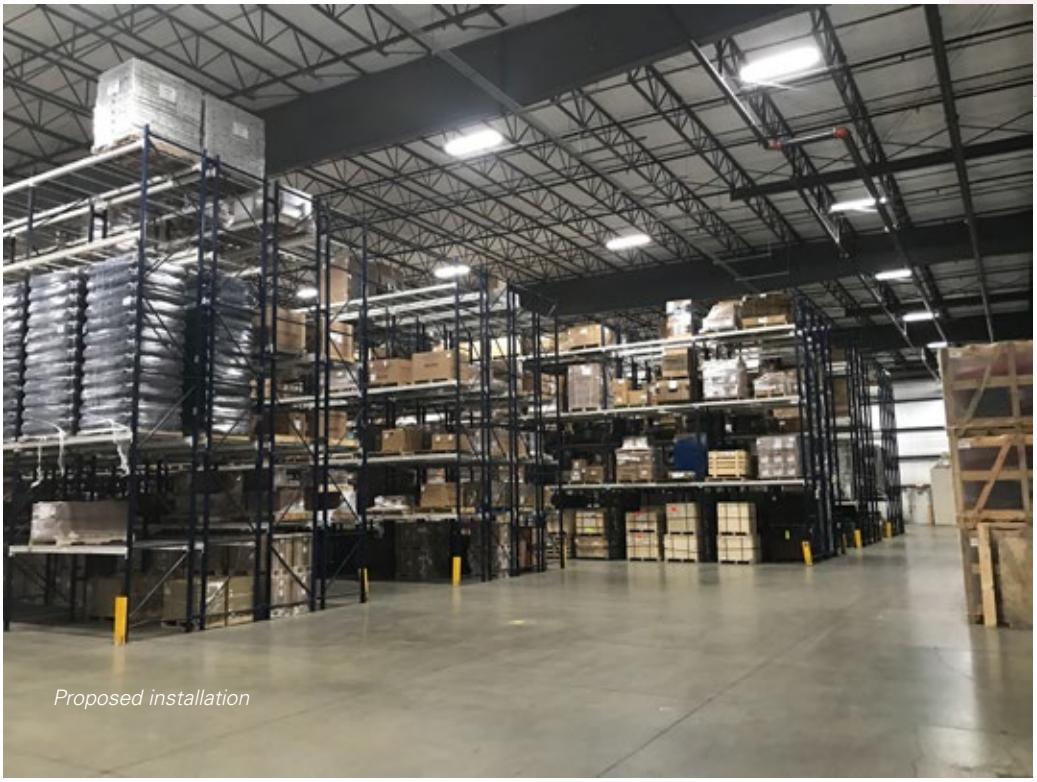
The concept behind Fusion is brilliantly simple: Use DC power output from Photovoltaic panels to directly energize LED fixtures – without conversion to AC.

Historically, to integrate Photovoltaic DC power output into a facility's electrical system, it was first converted to AC power. That AC power was then converted back to DC power for use by lighting fixtures. Those conversions can suffer losses of up to 15% of the power generated by a Photovoltaic panel.

FUSION eliminates the inefficient, expensive and complex conversion process from DC to AC to DC that requires an inverter, battery storage and transfer switching equipment.

FUSION dramatically reduces base load on your electrical demand when electricity from utilities is at its most expensive.

FUSION will maintain your desired light level setpoint throughout all hours of operation.



Proposed installation

A single FUSION Direct Photovoltaic Powered LED System can power 6 FUSION high bay fixtures.

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FUSION Photovoltaic Panels are installed on the roof using a proprietary, ballasted support base. No holes or fasteners are needed to securely position and permanently place the panels.

Ballasted support base conforms to contour and pitch of the roof without compacting insulation.

Only one small industry-standard boot is required per panel to pass the DC power lines into the facility, insuring a tight roof top seal.

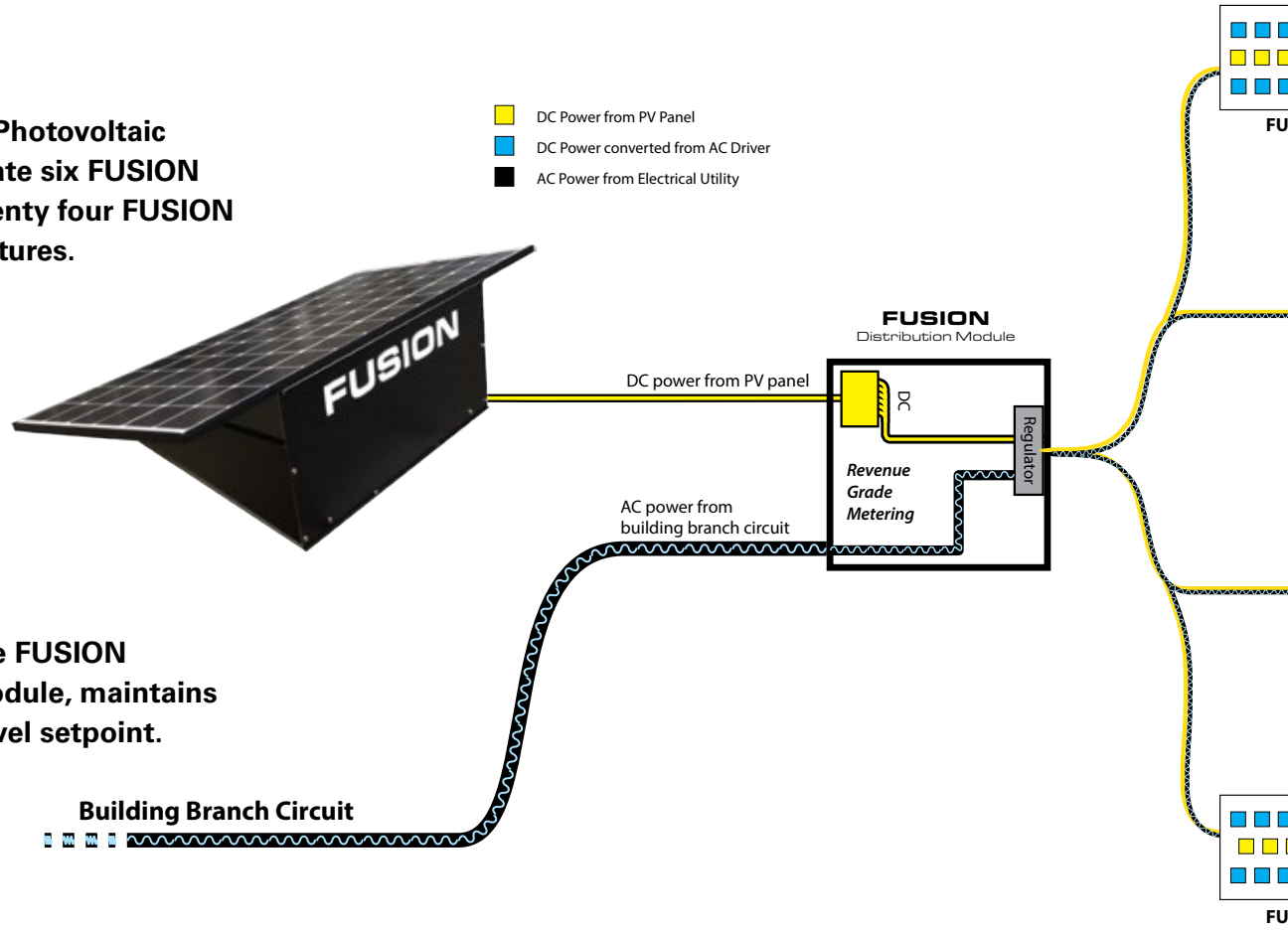
Proposed installation

A single FUSION Direct Photovoltaic Powered LED System can power up to 24 FUSION office troffers. Use free sunlight to illuminate your facility interiors during the day - without all of the irritating variables of typical lightpipe or skylight systems.

FUSION System – New construction or retrofit

FUSION uses a proprietary algorithm to seamlessly blend AC and DC to maintain desired light level setpoint. No ambient light sensor/control is required.

A single 340W Photovoltaic Panel can operate six FUSION high bay or twenty four FUSION office troffer fixtures.



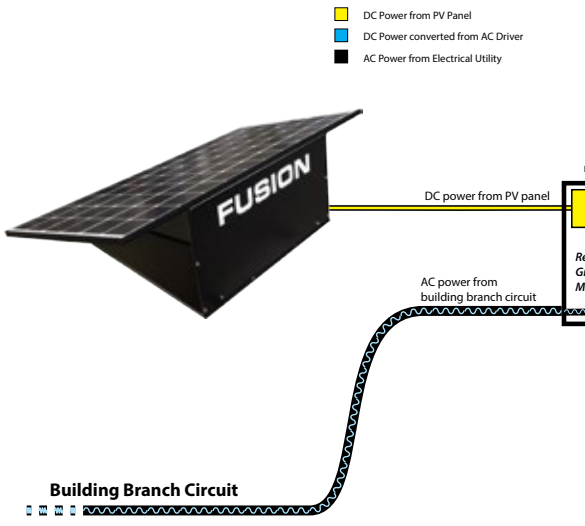
At all times, the FUSION Distribution Module, maintains desired light level setpoint.

FUSION and an existing lighting system

FUSION LED fixtures are powered by Photovoltaic. For successful integration, system requires that existing AC powered lighting fixtures are capable of dimming with an ambient light sensor/ control.

When FUSION fixtures (yellow) are generating light, existing AC powered lighting fixtures (blue) will reduce output to maintain desired light level setpoint.

At night or when daylight levels are low, the AC powered fixtures increase light output to maintain desired light level setpoint.



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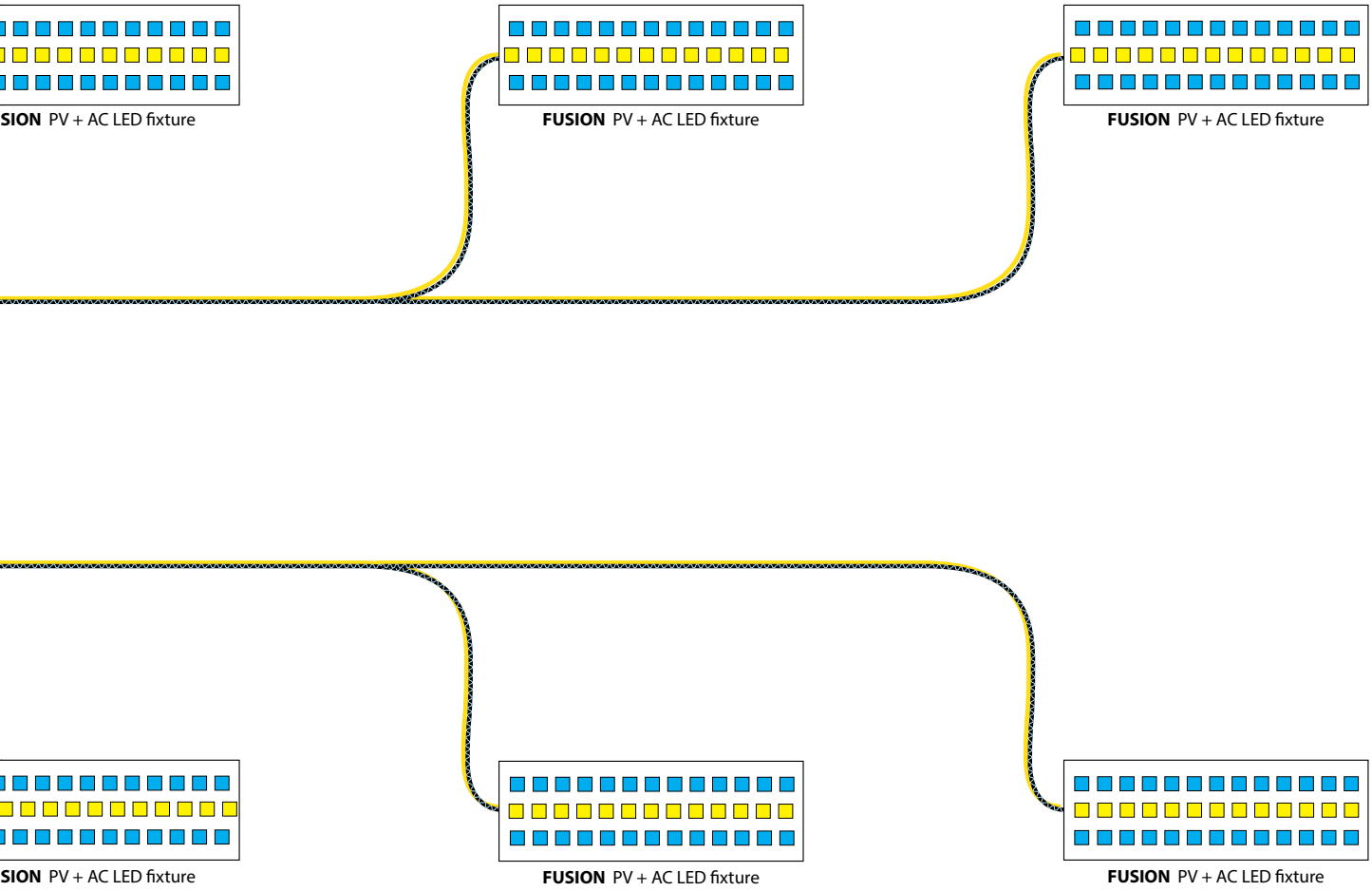
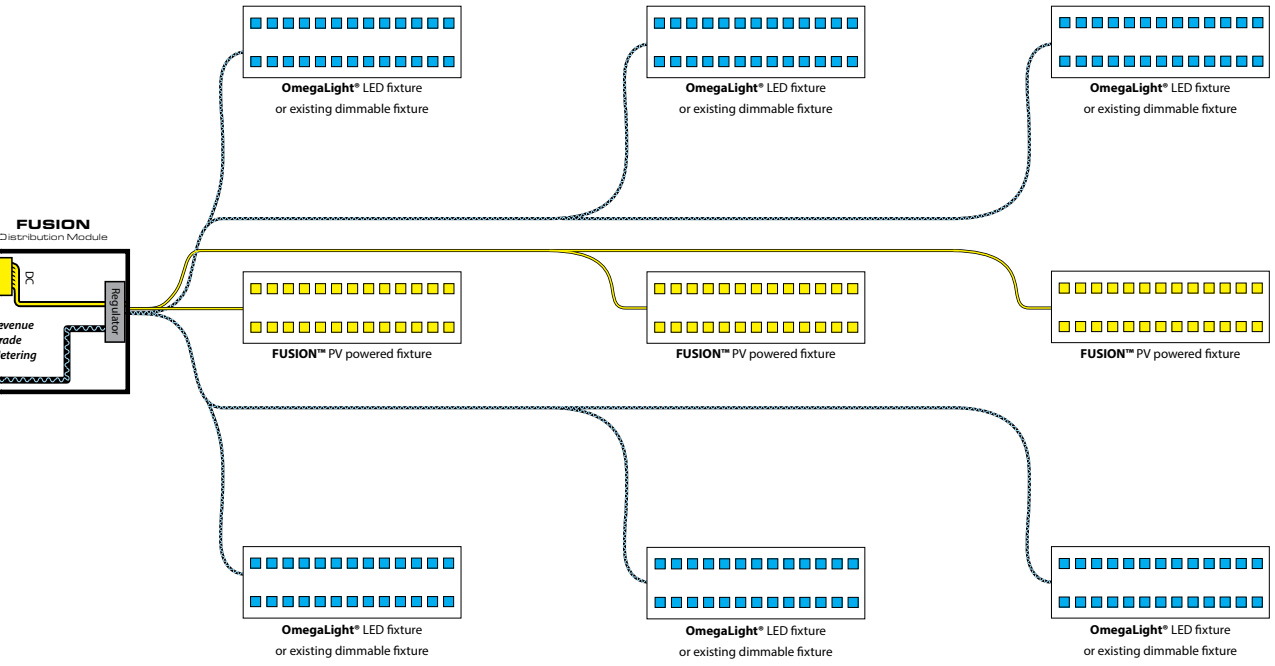
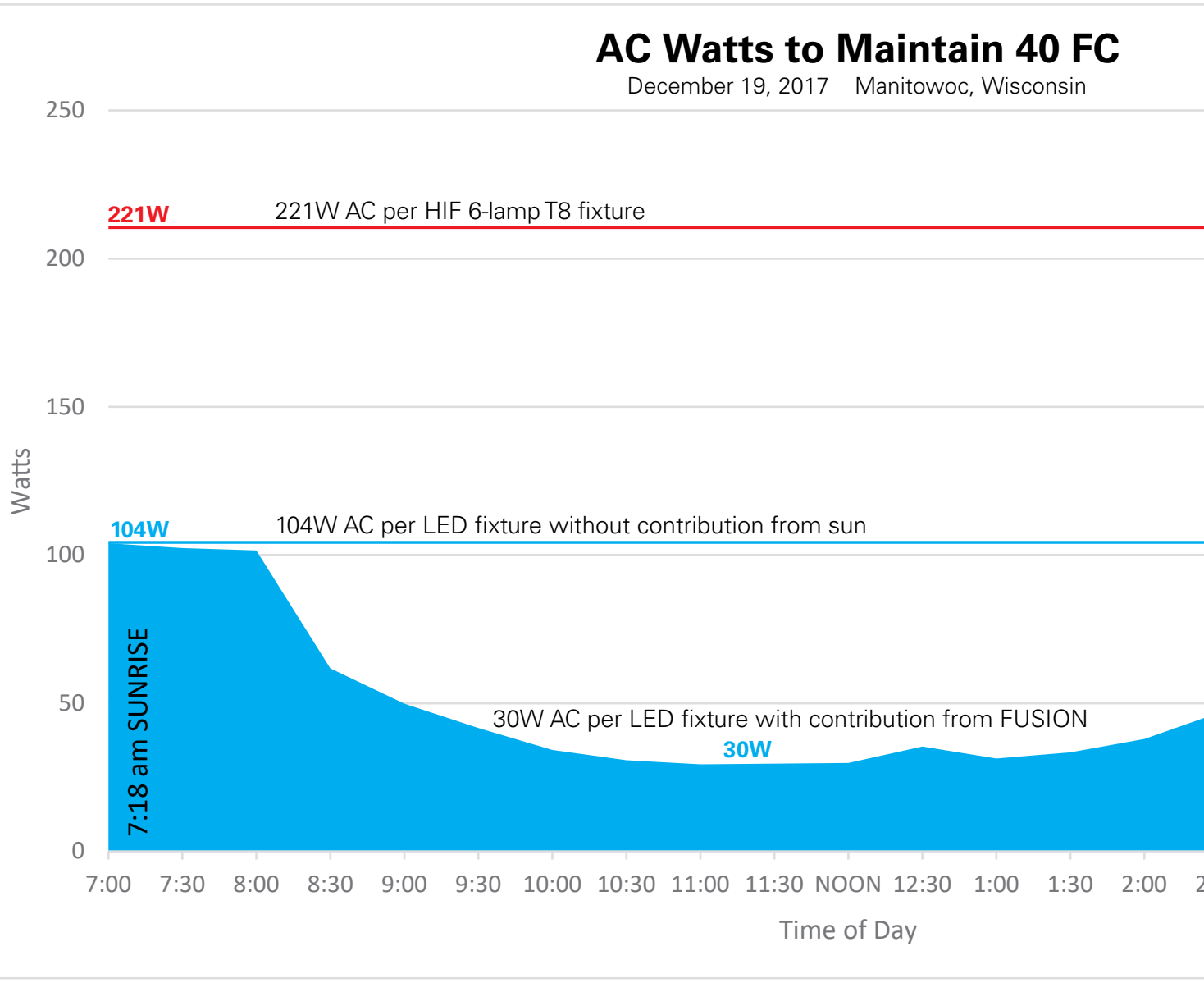
How it works

Receiving commands from the FUSION Distribution Module, FUSION LED fixtures are energized by a combination of AC and DC power to maintain the desired light level setpoint.







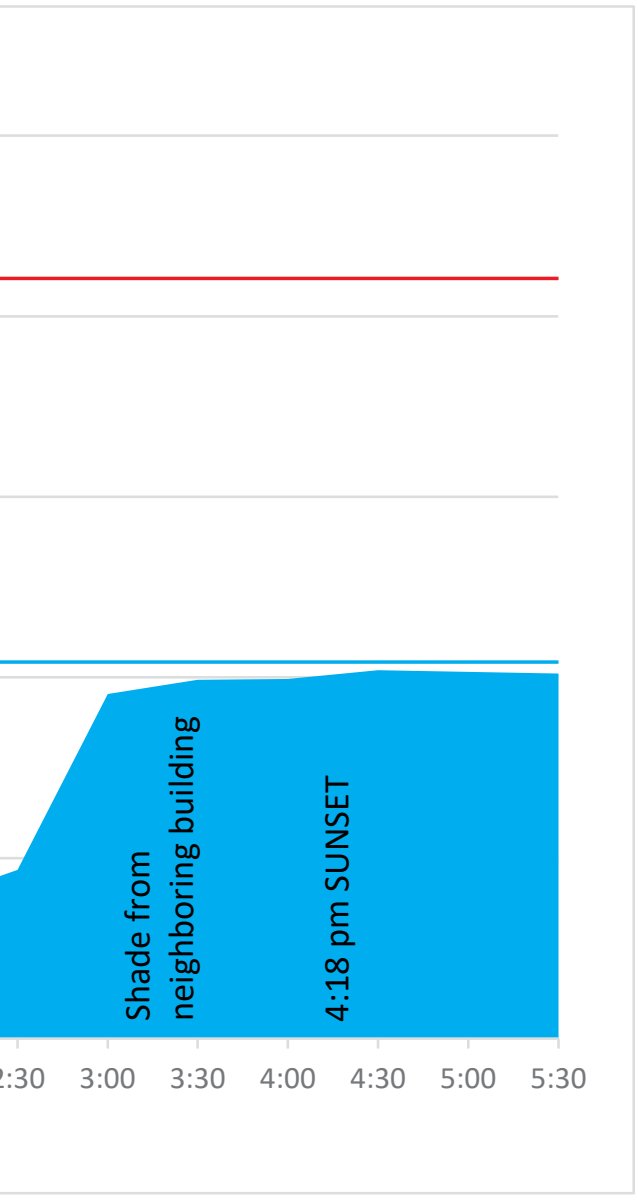
FUSION Advantages

Compared to traditional Photovoltaic installations:

- No DC-AC-DC conversion losses
- Less initial cost
- Minimal cost to operate
- Less maintenance
- Simpler, faster installation
- Proprietary roof top mounting system for protection of roof membrane
- Proprietary system to maintain desired light level setpoint
- Revenue grade metering
- Web-based monitoring
- Qualifies for renewable energy credits

Compared to Light Pipe / Skylights:

- Minimal roof top penetrations
- Maintain desired light level setpoint
- No hot spots/glare
- No heat gain/loss from openings
- No security issues due to openings on roof
- Will not void roof warranty (if installed by roofer)



By the numbers

The chart *(at left)* shows a significant reduction in utility provided electrical power on December 19, 2017.

Between 8:21am and 2:33pm, with the contribution of Photovoltaic DC power, the LED fixture required only 39 watts (AC) to deliver desired light level setpoint. Without Photovoltaic contribution, that same LED fixture would require 104 watts (AC). That's a reduction of 65 watts over six hours. Not bad for one of the shortest days of the year in Wisconsin.

Compared to a typical 6-lamp T8 fluorescent fixture requiring 221W, a FUSION Direct Photovoltaic LED system dramatically reduces daytime lighting costs by up to 85%.

You may qualify for significant renewable energy credits (up to 30% of the system cost) based on the renewable energy aspects of the FUSION Direct Photovoltaic LED system.

Average Annual Maximum PV Output

MIDNIGHT **NOON** **MIDNIGHT**

Typical Electrical Utility Peak Demand Period

Period of maximum Photovoltaic output typically exceeds utility peak demand period. That means you pay the utility nothing to operate the LED fixtures when electricity is at its most expensive.

During daylight hours, the FUSION LED fixtures provide all or a majority of light from Photovoltaic power. No power or only minimal power from the utility is used.

Even during early morning and late afternoon, or on overcast days, the FUSION system will contribute significant energy to the LED fixtures, reducing operating costs.

DESIGN. MANUFACTURE. INTEGRATE.

Simply a better LED lighting system than anything else on the market.
Recognized by some of the world's best organizations for our innovative designs.

2016 PLATTS GLOBAL ENERGY AWARDS FINALIST

S&P GLOBAL PLATTS
GLOBAL ENERGY AWARDS
2017 FINALIST

FUSION results in the lowest cost of operation for any lighting system available. Essentially, you're harnessing the sun to energize your light fixtures.

Our diverse product line is designed and built in the USA featuring industry-leading components, patent-pending thermal management technology, transient voltage protection and proprietary optical designs.

AMERICAN INNOVATION

Designed & Built in USA

energybank.