

industrial case study:  
**Solyndra**



**Background**

Solyndra designs and manufactures photovoltaic systems, comprised of panels and mounting hardware, for the commercial rooftop market. Founded in 2005 and headquartered in Fremont, California, Solyndra operates a state-of-the-art 300,000 square foot highly automated manufacturing complex, which required a lighting retrofit solution.

As a high-tech company in the energy market, Solyndra required a high-tech and energy efficient lighting solution for their manufacturing complex.

**Original Situation**

Approximately 100,000 sq. ft. of facility, called the Tool Build area, required a lighting upgrade solution. Type of work performed in this area required a foot-candle reading of 70fc

- Consisted of 300 ten year old 400w HID units suspended ~25ft high
- Average foot-candle reading - 30fc

**The Result**

This high-tech customer demanded a high-tech and energy efficient lighting solution. Two technologies were reviewed: T5 Fluorescent and Electronic HID. Ultimately, the state-of-the-art Electronic HID Technology was selected as it delivered:

- Superior light quality - optically efficient point source lighting vs. flat volume of light produced by linear fluorescent solution
- Higher energy savings
- Lowest total cost of ownership - \$130k lower than fluorescent on NPV basis
- Flexible lighting system - Metrolight ballasts ship complete with full digital and analog control capabilities

**Snapshot**

Energy Savings  
**41%**

**Lamp Power**

Reduced from 400w to 250w

**Annual kWh Saved**

453,743

**Annual CO<sup>2</sup> Saved**

326 metric tons

**Simple Payback Period**

1.18 years

**Total Annual Saving**

\$68,061

Initial analysis by Solyndra's electrical consultant showed that in order to achieve 70fc using a different brand of 400w HID ballast, 150 additional HID units would be required. Solyndra consulted and closely worked with Metrolight to perform additional analysis using Metrolight's recommended HID ballast. The analysis showed that 70 fc can be reached using Metrolight's 250W HID ballasts without requiring additional ballasts and using the existing location thus avoiding additional cost due to rewiring.

- Achieved 41% energy efficiency
- 400 watt magnetic HID fixtures replaced with Metrolight SmartHID™ 250 watt electronic fixtures
- Maintained required lighting levels
- Reduced maintenance costs by ~50%

**“We are very pleased with Metrolight’s support for our project. Metrolight’s engineering staff and field support were excellent. The system performed exactly as calculated. Metrolight’s solution gave us lowest total cost of operation and installation. We look forward to working with them again and would recommend Metrolight to other owners, contractors, and engineers.”**

Mr. Mario Lopez, Solyndra Project Manager



*Before Metrolight* 400w magnetic HID ballasts



*After Metrolight* 250w SmartHID™ electronic ballasts - matching light levels!

| Features                            | Before Installation | After Installation | Savings   |
|-------------------------------------|---------------------|--------------------|-----------|
| Fixture Power Consumption           | 458 Watts           | 269 Watts          | 189 Watts |
| Operating Hours/Days                | 24/365              | 24/365             | -         |
| Annual Lighting-Related Energy Cost | \$173,650           | \$105,589          | \$68,061  |
| Total Annual Savings                | <b>\$68,061</b>     |                    |           |
| Simple Payback/ROI                  | <b>1.18 Years</b>   |                    |           |

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