

PowerFilm[®]

MADE IN THE USA

SOLAR

Powering the IoT

PowerFilm Brief

We design and manufacture custom solar cells, modules, panels and power solutions for energy harvesting and portable power applications using proprietary thin-film or high efficiency crystalline PV technology.

With over 200 staff years of engineering experience, we have provided rugged and high performance solar solutions across a wide range IoT, transportation, military, and consumer markets.

We take great pride in supporting our customers with the high quality solar solutions. Located in Ames, Iowa, our products are completely designed and manufactured in the United States.



The Problem

Battery Life



Battery life is often measured in months, rather than years.

Dead batteries must be recharged or replaced, putting a heavy maintenance burden and cost on end users and hindering wider spread implementation of large IoT networks.

Limited Power



IoT solution providers are forced to cut features or reduce functionality based on the limited capacity of a battery.

Devices are also unable to recover from unexpected high power events, such as firmware updates and loss of connection.

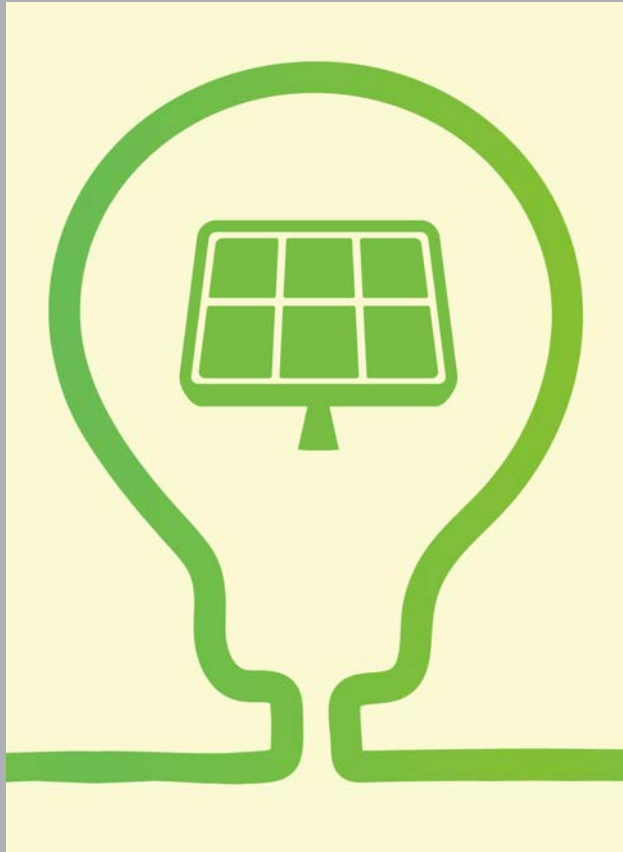
Battery Bulk



Batteries take up significant physical space compared to the electronics they power.

This is problematic for wearables and other low profile electronics where reducing bulk volume is critical.

Energy Harvesting Solution



Extend Battery Life with a perpetual source of light energy from outdoor or indoor, artificial sources.

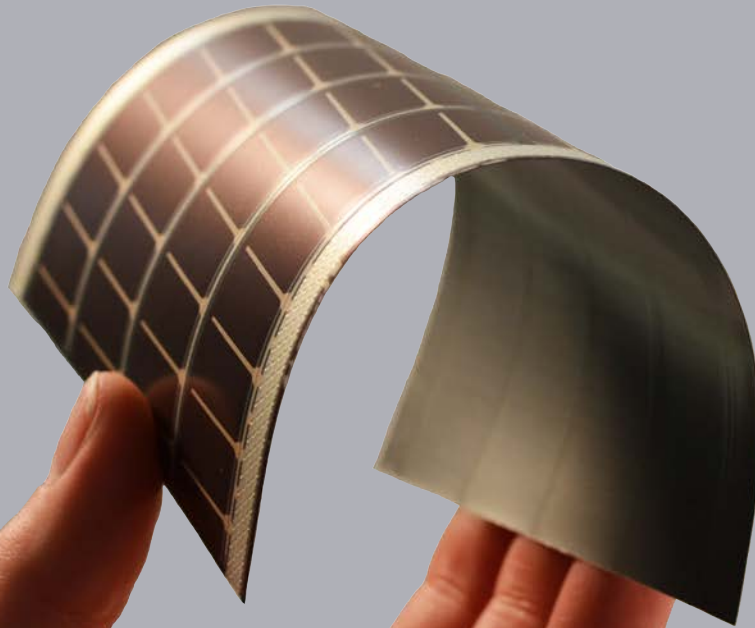
Expand Functionality and Resilience with increased continual power available.

Enable Compact Low Profile Electronics with thin, flexible, high performance PV material.

Thin-Film Solutions

Using proprietary Amorphous Silicon PV material, our thin-film solutions are ideal for low power indoor/outdoor IoT and energy harvesting applications.

Starting with polyimide plastic, these panels are completely manufactured using high throughput, roll-to-roll processes. With only simple adjustments, we can print solar cells and modules in many different custom sizes.



Features

- Indoor or outdoor light collection
- Highly customizable
- Ultra-thin: 6-25mils
- Flexible: < 1 in bend radius
- Lightweight: >300mW/g
- SMT compatible
- -40-85C+ configurations
- Extremely durable

Applications

- BLE beacons and tags
- Wireless sensors
- E-paper displays
- Wearables
- Telematics
- Field and herd monitoring
- Smart locks
- Low power electronics

Semi-Flexible Solutions



Using high-efficiency SunPower solar cells, we provide cost effective solutions for semi/permanent applications where power density and ruggedness are critical requirements.

With proprietary integrated charge-controllers and custom layouts available, our semi-flexible solutions can meet the needs of a wide range of medium to high power applications.

Features

- 22%+ conversion efficiency
- Custom shapes and cell layouts
- Integrated charge controller
- Lightweight: > 30W/lb
- Semi-flexible
- Rugged durability
- Thin: 1.3-3.0 mm
- US made

Applications

- Telematics systems
- Wireless gateways
- Trucking and transportation
- Controllers and actuators
- Camera systems
- Marine power
- Auxiliary power
- Lifts and gates

[Semi-Flexible Solar Panels](#)

Getting Started



Standard Products

[Electronic Component](#) • [Semi-Flexible](#) • [Development Kits](#) • [Custom Design Tool](#)

Whether you are designing a wireless sensor or setting up a remote base station, starting with a standard product can expedite the development process and get you up and running faster



Development Kits

Plug and play [solar development kits](#) make it easy to experiment with and explore the potential of indoor solar. These kits demonstrate that even in dimly lit environments, such as warehouses and industrial plants, Indoor Solar Panels can generate enough power to run sensors, beacons and other low power devices of the emerging IoT industry.



Do IoT Devices Really Need Batteries?

Learn More

[The Horizon Blog](#): Simple to read technical content aimed at helping people learn more about solar, energy harvesting, and remote power.

[Custom Solar Panel Design Tool](#)

Contact Us: <https://www.powerfilmsolar.com/explore/contact-us/>

Why PowerFilm?

With a proven track record of high quality custom designs across multiple industries and technologies, you can be confident we can provide a solution that meets or exceeds your requirements.

Whether you are a corporate leader or a government entity we have the knowledge, experience, and capability to meet your IoT and remote power needs.

We're eager to hear from you:

[Contact Us](#)

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