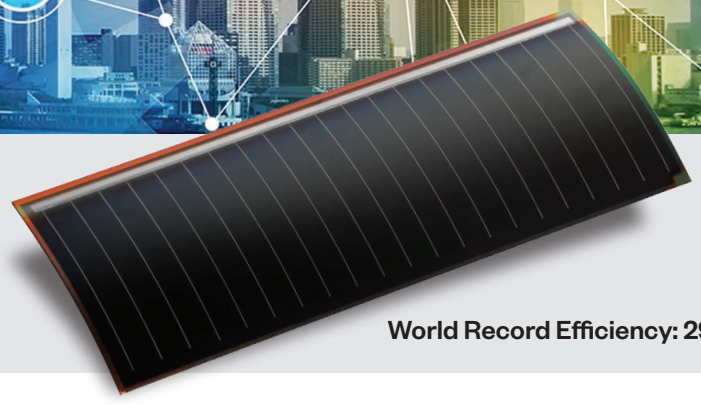
Unmatched Performance

Lightweight and Flexible

AnyLight™ Technology

Designed To Fit



World Record Efficiency: 29.1%

Solar Power for IoT, Wearables and Sensors

The Battery Replacement Problem

The Internet of Things (IoT) is poised to be everywhere but replacing batteries on devices can be costly and an annoyance. Currently there are few alternatives to periodically replacing batteries in remote IoT sensor applications. This regular maintenance not only costs time and money but increases the amount of hazardous waste. As end-users of IoT become more aware of ongoing maintenance costs and battery disposal issues, they will demand a better solution.

The Solar Solution

Solar power allows IoT devices to be powered indefinitely without battery replacement or for significantly longer intervals between maintenance. Solar technology has improved but existing technologies are too bulky, rigid or not efficient enough for use in small and remote IoT devices, until now. Alta Devices has developed an extremely light weight, flexible and thin, Gallium Arsenide (GaAs) solar cell that holds the world record for efficiency at 29.1%.

Outdoor Power Output (AM1.5G)	26 mW/cm^2
Indoor Power Output at 200Lux	15 μW/cm^2
Indoor Power Output at 50Lux	3.5 μW/cm^2
Weight (unencapsulated)	11 mg/cm^2
Flexibility	5 cm radius of curvature

Note: Numbers are for the Alta Devices single junction solar cell under AM 1.5G standard test conditions.

Alta Devices Solar Cells Integrated into a Wearable Device. (Demonstration Only)

Solar Power for IoT, Wearables and Sensors

The Benefits

Alta Devices solar cells offer an exceptional combination of high efficiency, flexibility, thinness and low weight. The high efficiency material permits greater power from a smaller surface area. Alta Devices cells can power your IoT devices longer than other solar technologies. Our solar cells can be easily and directly designed into your final product by molding the highly flexible material around curved surfaces.

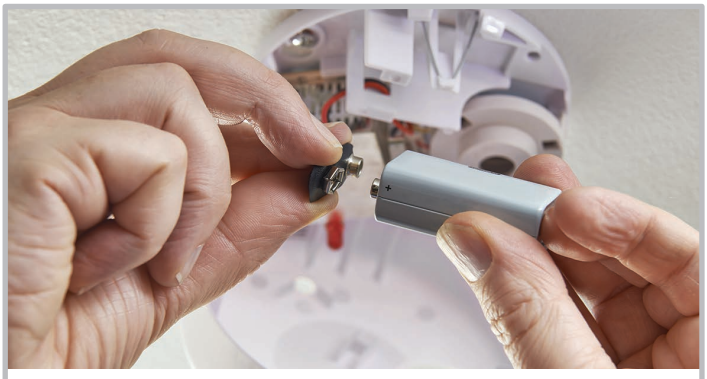
Superior Low Light Performance

Unlike most solar technologies, Alta Devices' Anylight technology can harvest energy from indoor lighting. Typically indoor/artificial lighting does not produce the full light spectrum that is present in sunlight; so there is substantially less energy present. However, even in very dim lighting such as parking lots (ie. 50 lux) dozens of microwatts can still be harvested via a single Alta Devices solar cell to greatly extend the life of a primary battery and thereby the life of your IoT device.

Alta Devices Solar Cells Integrated into a Solar Windbreaker (Pauline Van Dongen) Photo: Roos van de Kieft.

Designed to Fit

Alta Devices solar cells are highly customizable and can be tailored to your product's electrical and physical needs. If your product requires a custom solar solution, please contact us to discuss your specific needs.



Case Study- Office Sensor

An indoor IoT device using 12 milliwatt-hours per day can increase time between battery replacements by up to 50% by using just one Alta Devices solar cell. Harvesting 12 hours per day of indoor light* adds up to 6 milliwatt-hours each day; and lowers net power usage in half. With more solar and/or less power consumption, the time between battery replacements can be even longer, or possibly, never.

IoT Device power used per day	12 mW-h
Solar power harvested per day	6 mW-h
Total power available	18 mW-h
Increase in power	50%

*500lux office lighting

Teamwork

Our highly skilled and knowledgeable team of application engineers works closely with each customer, providing technical support from beginning to end of each project to ensure our customer's needs are met. Email us at info@altadevices.com

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