

Nano Power Pack

Smart Off-Grid for Telecom

Clear Blue's Nano Power Pack is a Smart Off-Grid solution that delivers a highly reliable power source for telecom that is cost-effective, easy to install, and upgradable. It has built-in communications, providing the ability to monitor, control, and proactively manage mission-critical systems remotely.



The solution is delivered in pre-configured power packs consisting of:

- **Smart Off-Grid controllers** for operations and management
- **Solar power panels** (or hybrid wind, diesel, or grid, if required)
- Right-sized **batteries** for back-up power
- A **power cabinet** for greater system durability and reliability
- All power **wiring, terminations, and connectors**
- A Smart Off-Grid services **gateway** to connect to Illumience service and support



An easy to install system that is designed to meet your application's power needs and can be managed remotely ensures that your power components aren't overly taxed and last longer.

Nano Power Pack Benefits



Maximum Uptime

The system ensures uptime with Smart Off-Grid 24x7 monitoring, alerts, and alarms. Predictive analytics, weather forecasting, and load control enable proactive maintenance and expert management for maximum performance and reliability.



Longest Life

The Clear Blue system ensures that battery power management, lifecycle optimization and proactive maintenance are easy and can be controlled over the internet, so you get the longest life possible out of your batteries.



Reliable Energy

A reliable power source using solar or hybrid solar, with built-in communications and remote monitoring, control, and management. This enables efficient energy use and load prioritization for emergency ride-through.



Smart Load Management

With smart load energy control, issues can be solved easily and remotely while energy and weather forecasting can allow for more effective power management, so downtime is minimized and controlled.



Cost Effective & Upgradeable

Smart Off-Grid technology, has effective power management, so batteries can be 30-50% smaller than traditional systems, yet easily upgradeable, for a lower-cost to install and maintain, while providing reliable power.



Easy to Install & Maintain

As a plug and play pre-packaged system, the Nano Power Pack is easy to install and comes with remote support to ensure successful installation and troubleshooting, with no training needed.

Nano Power Pack

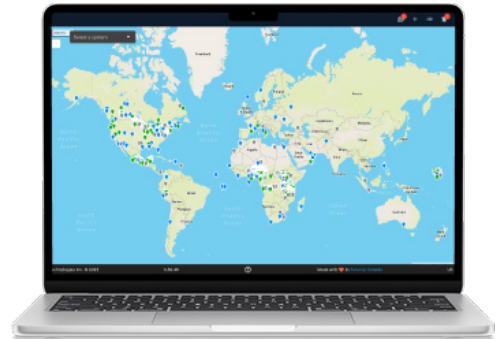
Illumience: Power Monitoring and Management System



Global Monitoring and Management

Performance analysis and management of systems remotely from anywhere in the world.

- Live and historical data for any system provided in a user friendly way.
- Local monitoring and management through Local WiFi App
- Manage settings remotely to optimize system performance.



Energy Forecasting

Advanced analysis of energy capabilities for better energy management and reduction of downtime.

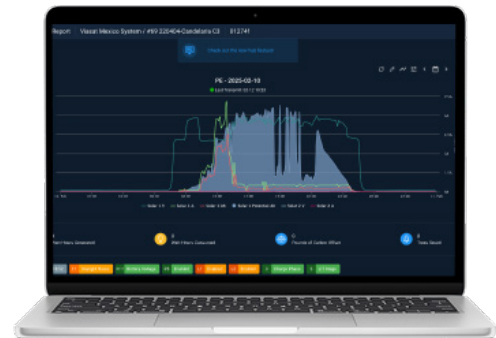
- Historical and live weather data.
- Multi-day weather forecast.
- Customizable load management to accommodate bad weather periods.



Potential Energy

Greater uptime through advanced analysis of shading impacts and solar soiling.

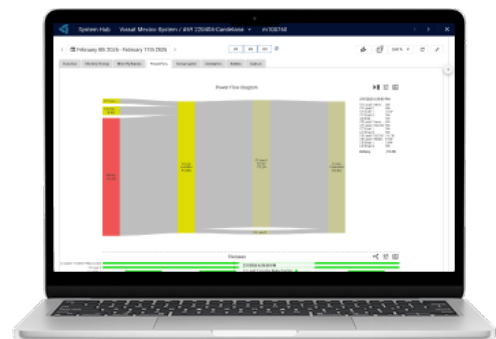
- Measurements of the potential energy the system can generate versus actual energy generation.
- System degradation due to dust or shading.



Battery Life Cycle

Variety of battery management features to maximize battery life and performance.

- Patented dynamic charging algorithms.
- Scalable battery pack.
- Support of multiple battery types.
- Remote battery monitoring and management.



Nano Power Pack Components

	<h3>Smart Off-Grid Controller</h3> <p>Energy generation, storage management and load control for solar and hybrid-powered systems. Industry leading with Illumience energy management software and service, it delivers power anywhere, anytime with remote operations of mission critical applications for easy installation and maintenance, maximum uptime, and longer battery life.</p>
	<h3>DC/DC Converter</h3> <p>Coupled with Clear Blue's Smart Off-Grid Controller for unparalleled load monitoring, management and control. With the DC/DC converter, mission critical telecom, security and other industrial applications will now have unparalleled power regulation and quality, as well as troubleshooting and remediation tools. Through Illumience, the Smart DC/DC Converter contributes to maximum power uptime, long system life and regulated power.</p>
	<h3>Smart Off-Grid Gateway</h3> <p>Clear Blue's Smart Off-Grid Communications Gateway connects the systems' devices to its Illumience Cloud Management Service via ethernet or cellular networking. This provides reliable connectivity that gives you access to your data while providing a low communications cost, secure platform architecture and easy maintenance.</p>
	<h3>Solar Panels</h3> <p>Clear Blue's Nano Power Pack solution is most often paired with solar-only power, but can also work effectively with hybrid systems like solar/wind, solar/grid, or solar/diesel. The type, size, and number of the systems' solar panels are selected to fit the needs of the system with future upgrade capabilities as power requirements grow.</p>
	<h3>Batteries</h3> <p>The Nano Power Pack is capable of supporting multiple battery types including lead acid, lithium ion, or NiMH batteries. The standard system includes Clear Blue's 105 AH Batteries, sized for the amount of energy that can be generated in that geographic location, & the percentage of uptime for the load.</p>
	<h3>Cabinet</h3> <p>The Nano Power solution is delivered in a pre-wired, pre-configured protective cabinet enclosed with all necessary power components. The cabinet is designed to house 2-4 batteries depending on their type and size. The cabinet is also designed for high system modularity, allowing users to easily upgrade the power capacity of their site should service requirements and power needs grow. The cabinet can be installed with a door alarm to prevent against power component theft.</p>