DRACULA TECHNOLOGIES

Dracula Technologies and CoolR lead the way in retail efficiency with OPV energy harvesting technology

Success Story

March 2025

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Success Story

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Customer Overview

CoolR Group, a pioneering US-based leader in retail technology, specializes in integrating Artificial Intelligence (AI) and the Internet of Things (IoT) to revolutionize inventory management. By deploying their cutting-edge StoreAware solution, CoolR empowers brands and retailers with real-time inventory insights, ensuring optimal on-shelf availability, efficient product portfolio management, and significant cost savings - particularly in high-demand sectors like cold beverages, ice cream, and perishables.

The result is a seamless product mix on the shelves, fewer out-of-stock situations, lower service costs, reduced carbon footprint, and enhanced customer satisfaction, which ultimately boosts sales.

The Challenge

CoolR Group's flagship offering, VistaZ, a wire-free cellular camera, transforms traditional refrigerators and freezers into smart, connected devices. However, CoolR faced a significant challenge: traditional battery-powered sensors in refrigerated environments often underperformed in low temperatures, leading to reduced battery life and frequent replacements.

With millions of cabinets to manage across vast networks, frequent battery swaps proved financially burdensome and logistically complex. Not only did this involve the direct costs of batteries, but also labor, downtime, and operational disruptions. Moreover, this maintenance cycle was an obstacle to scaling their IoT networks effectively and efficiently.

Compounding the issue, the frequent disposal of batteries added environmental strain, with over 50% of batteries ending up as waste. CoolR sought an environmentally friendly, cost-effective solution that maintained the reliability and scalability of their systems.

The Solution

To tackle these challenges, CoolR turned to Dracula Technologies, a global leader in energy-harvesting solutions, to integrate Organic Photovoltaic (OPV) modules into their VistaZ IoT cameras. This collaboration resulted in a hybrid model that combines traditional batteries with OPV technology.

The VistaZ system is a fully wireless, energy-harvesting cellular camera that can be effortlessly retrofitted to existing refrigerators and freezers. By capturing ambient light, Dracula's OPV modules provide continuous, autonomous power to the cameras, eliminating the need for frequent battery replacements. These flexible, organic modules are made from durable, plastic-based materials, making them ideal for the cold, low-light environments typical in coolers and freezers.

This OPV-powered model allows for real-time monitoring of stock levels with minimal maintenance, dramatically reducing operational downtime and costs. The simplicity of installation-using a peel-and-stick method-makes it a game-changing, hassle-free solution for operators.

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Results:
Efficiency, Sustainability, and Scalability

Currently, several thousands of Dracula Technologies' OPV-powered units have been integrated and deployed by CoolR at its customers' sites. Since, CoolR has experienced significant benefits, both for their business and their customers:

Cost Savings: The reduced need for battery replacements has dramatically lowered operational costs, leading to a reduced Total Cost of Ownership (TCO) for their IoT solutions.

Environmental Impact: With 65% of CoolR's units projected to operate for 3+ years without needing battery replacements, the reduction in battery waste supports CoolR's strong commitment to sustainability.

Scalability: CoolR can now scale its IoT solutions effortlessly. With over 120 million cabinets in the market, replacing existing units is impractical. The OPV-powered VistaZ cameras allow for simple retrofitting, enabling massive scalability without the need for large infrastructure investments.

Business Outcomes: Trusted by global brands like Unilever, CoolR has improved on-shelf availability, reduced service costs by 15%, and driven revenue growth by up to 40%. Real-time stock insights enable informed decisions, optimizing operations and enhancing the customer experience.

By combining technological innovation with sustainability, CoolR and Dracula Technologies are leading the way in IoT solutions that reduce costs, scale efficiently, and contribute to a greener future.

"Partnering with Dracula Technologies has been a game-changer for CoolR. Their innovative OPV technology has transformed our vision for sustainable, scalable IoT solutions into reality. Together, we're not just optimizing operational efficiency—we're setting a new standard for eco-friendly technology in retail. This collaboration empowers our clients with smarter, greener, and more cost-effective solutions, redefining what's possible in inventory management."

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Journey

Dracula Technologies and CoolR first met at CES 2023, when one of CoolR Group's investors spotted Dracula alongside other ambient energy-harvesting companies. At the time, CoolR Group was already exploring energy-harvesting options and saw potential in Dracula's technology. CoolR quickly received an evaluation kit, and testing confirmed that Dracula's solution was the ideal fit for their VistaZ product.

The two companies then worked closely to finetune and test the technology in challenging environments such as coolers. CoolR Group launched VistaZ in December 2023, introducing a patent-pending indoor energy-harvesting camera for retail applications.

Building on this success, Dracula Technologies is now working on a more advanced generation of OPV modules to further enhance the performance of VistaZ IoT cameras, bringing even greater capabilities to the market.

Benefits

Prolonged Battery Life
OPV technology continuously recharges batteries, minimizing discharge rates and significantly extending their lifespan.

Reduced Environmental Impact
Fewer battery replacements result in less production and disposal, effectively lowering environmental waste and carbon emissions. Moreover, the extended life of OPV-supported batteries lessens the demand for production, reducing the overall environmental impact.

Extended Maintenance-Free Operation
Longer battery life reduces maintenance needs, particularly valuable for devices deployed in remote or hard-to-reach locations.

Optimized Performance in Low-Light Conditions
OPV modules efficiently generate energy even under minimal light (sub 200 LUX), ensuring consistent battery charging in a variety of environments.

Continuous Energy Harvesting
Harnessing ambient light, the solution provides a steady energy supply that keeps batteries charged, enhancing their durability and reliability.

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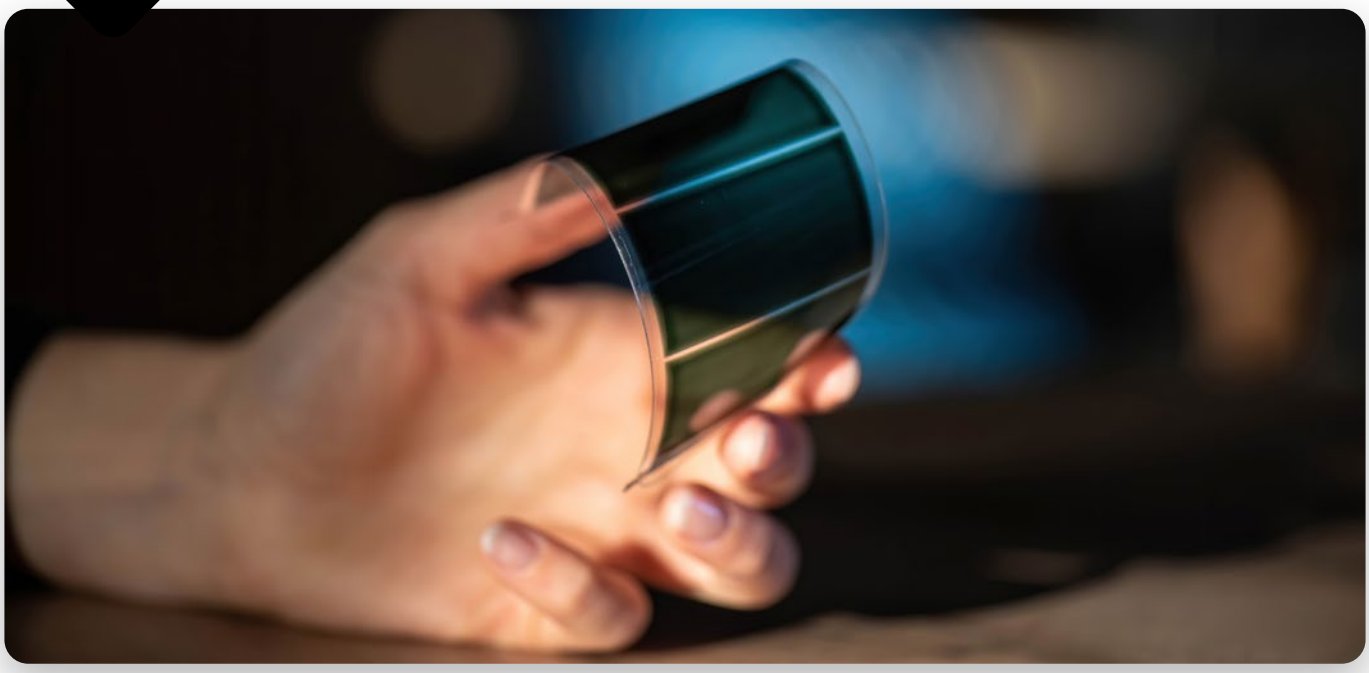

Dracula Technologies' LAYER solution is designed to power your IoT devices sustainably and efficiently.

With the flexibility to be tailored to specific shapes and sensors, and optimal performance even under sub-200 lux lighting conditions, LAYER offers a groundbreaking alternative to traditional batteries. Perfect for large-scale IoT roll-outs, it provides a highly sustainable solution with a lifespan of up to 10 years, eliminating the need for battery replacements and maintenance entirely. By harnessing energy harvesting, IoT solutions powered by LAYER benefit from a significantly reduced Total Cost of Ownership.

Get in touch with Dracula Technologies today to discover how LAYER can be customized for your business and drive your retail transformation sustainably.

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About **Dracula Technologies**

Dracula Technologies, a leader in energy harvesting for low-power microelectronics, offers LAYER® and LAYER®Vault, highly sustainable inkjet-printed solutions replacing traditional batteries. Our Green Micropower Factory produces 150 million cm^2 of eco-friendly OPV modules annually.

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About **CoolR**

CoolR Group is a pioneering US-based leader in retail technology who specializes in integrating Artificial Intelligence (AI) and the Internet of Things (IoT) to revolutionize inventory management.

Beyond Batteries, Beyond Imagination:

LAYER® Lights Up Innovation.

DRACULA TECHNOLOGIES

OPV LAYER®

Our technology harnesses the photovoltaic effect, featuring an organic active layer rich in carbon and hydrogen and utilizing environmentally friendly solvents.

It represents a significant advancement in renewable energies as part of the third generation of photovoltaic technologies.

Applications across various industries

Smart Home & Smart Building

- Monitoring
- Energy Management
- Home Control
- Lighting

Smart Asset Tracking

- Cold Chain Monitoring
- Geotagging

LAYER® Vaults

Energy Harvesting & Storage in 1

Low-light OPV energy harvesting and electrical storage printed on both sides of one flexible thin film.

- Stores surplus energy for later use, ensuring uninterrupted functionality.
- Seamlessly integrates into diverse applications for ultra low-power devices.
- Eliminates need for having super capacitor.

With a production capacity of 150 million cm^2 printed OPV surface, Dracula Technologies is the largest manufacturer of organic photovoltaic in Europe.

Contact us to discuss your needs!

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