

NILUMI: INTELLECTUAL PROPERTY & MARKET BRIEF

The World's First Smart, Hardwired Emergency Wall Switch

Patent Portfolio: US 11,852,306 B2 | US 12,529,456 B2

Licensing Opportunity: Residential Electrical, Smart Home, and Emergency Lighting

1. Executive Summary

Nilumi solves a critical gap in the residential market: the failure of emergency lighting when it is needed most. Traditional solutions—plug-in lights and battery-operated switches—are aesthetically intrusive, prone to loss, or non-compliant with modern building codes.

Nilumi replaces the standard wall switch cover with a **hardwired, always-charged, removable flashlight system**. It creates a permanent "home" for emergency lighting on the wall, integrated directly into the building's electrical topography.

The company holds **two issued U.S. Utility Patents** protecting both the mechanical integration and the wireless smart ecosystem, offering a turnkey solution for manufacturers looking to capture the Retrofit and Smart Home markets.

2. The Market Opportunity

The Nilumi system sits at the intersection of three high-growth sectors: **Smart Home Automation, Electrical Wiring Devices, and Grid Resilience**.

- **Grid Instability:** Power outages are rising. Approximately 33.9 million U.S. households lose power annually, with the average outage duration nearly doubling over the last decade. Consumer search volume for "emergency lights for home power failure" is surging on major marketplaces.
- **Smart Home Growth:** The U.S. Smart Home market is valued at over \$126 billion (2024) and is projected to grow at a CAGR of 25% through 2032.

- **The "Retrofit" Dominance:** Retrofit installations account for nearly 59% of the smart lighting market. Nilumi is designed specifically to replace existing wall plates without requiring complex rewiring, perfectly targeting this majority share.
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3. Intellectual Property Portfolio

Nilumi's IP moat is secured by two complementary patents that protect the hardware utility and the smart ecosystem.

Patent I: The Mechanical Utility (US 11,852,306 B2)

Title: Flashlight Removably Connected to Cover Plate **Issued:** Dec. 26, 2023

This patent secures the fundamental hardware architecture. It prevents competitors from producing a wall-mounted flashlight that integrates with a switch cover and draws power from the building mains.

- **Broad Claim Language:** The patent protects a flashlight "removably connected" to the cover plate. This functional language covers **magnetic attachment**, snap-fits, or friction-fits.
- **Hardwired Charging:** Crucially, Claim 1 protects the system where the power source is "electrically connected to the electrical switch". This blocks competitors from making "always-ready" wall lights that charge off the house wiring, forcing them into inferior battery-only designs.
- **Flush Aesthetics:** The patent details a "storage device" that allows the flashlight to sit flush or aesthetically blended with the wall plate, solving the bulkiness issue of prior art.

Patent II: The Smart Ecosystem (US 12,529,456 B2)

Title: Flashlight with Wireless Control Switches **Issued:** Jan. 20, 2026

This patent transforms the device from a passive light into an active Smart Home controller.

- **Wireless Control:** Protects a removable flashlight that houses a **microprocessor** and **wireless transmitter**, allowing it to act as a remote dimmer or switch for the room's lighting.
- **The Desktop Cradle Ecosystem:** Specifically claims a system where the flashlight can be removed from the wall and placed in a "**desktop cradle**" for charging while continuing to function as a wireless switch. This extends the product line beyond the wall.

- **Audible Locator:** Includes protection for an integrated speaker system to locate the device if misplaced.
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4. Regulatory & Competitive Advantage

Nilumi offers a distinct advantage over "stick-on" battery-powered smart switches due to evolving building codes.

The "NEC 2023" Regulatory Moat

The 2023 National Electric Code (NEC), specifically section **210.70**, prohibits the use of battery-only wall-mounted control devices for required lighting outlets unless they have a backup power source.

- **Competitor Weakness:** Purely wireless, battery-operated stick-on switches are becoming non-compliant for primary lighting control in new construction.
- **Nilumi Strength:** Because Nilumi is **hardwired** (drawing power from the mains for charging), it is compliant by design. This makes it a "code-safe" investment for builders and electrical distributors.

Versatile Attachment (Magnetic Implementation)

While the patent illustrations depict a mechanical fit, the broad claim of "removably connected" covers Nilumi's premium **magnetic attachment system**. This allows for a smooth, high-end user experience—the light simply "grabs" the wall plate when docked—without infringing on the patent limitations of competitors who rely on complex latching mechanisms.

5. Technical Specifications (Target)

- **Form Factor:** Standard single-gang wall plate replacement (toggle and rocker compatible).
- **Power Input:** Hardwired 120V/240V (Draws from line/load of existing switch).
- **Lighting:**
 - *Emergency Mode:* Automatic activation upon power loss.
 - *Task Mode:* High-lumen removable flashlight.
 - *Nightlight Mode:* Ambient downward illumination when docked.
- **Connectivity:** Capable of integration with Zigbee, Z-Wave, or Bluetooth Low Energy (BLE) protocols for smart dimming and remote control.

- **Attachment:** Magnetic docking system (Covered under "Removably Connected" claims of Patent '306).
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6. Licensing & Partnership

Nilumi is seeking licensing partners in the **Electrical Manufacturing** (e.g., Eaton, Leviton, Legrand) and **Consumer Smart Home** sectors.

Value Proposition for Licensees:

1. **Speed to Market:** Bypasses R&D on mechanical integration of charging circuits into wall plates.
 2. **Defensive IP:** Secures the only patented method for a "hardwired, magnetically-docked, smart-control flashlight" on the wall.
 3. **Cross-Category Appeal:** Fits neatly into "Emergency Preparedness" and "Smart Home Automation" product lines simultaneously.
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Contact:

Robert Myers - Inventor

robert@nilumi.com

760-917-1716

Lech Losiowski - Business Development

lech@nilumi.com

312-304-4898