



Model No.: NCN-ANSI-7P-ACT-2

REVOLUTIONARY CONTROL

General Description

Neptun's LightGenie™ revolutionizes the way lighting systems are managed and controlled. Operating on a highly secure, encrypted IPv6 full mesh wireless sensor network. Each bi-directional communication Node is capable of data transmission and reception as well as complete control of the light fixture. It is designed to calculate and store various data files on board. Operates as "FOG Computing Device".

Application

The LightGenie™ is applicable with all traditional and modern lighting fixtures such as LED. A resilient built-in antenna delivers seamless connectivity and operation in all conditions. Control and monitoring is performed with cloud-based software as the central management system. Dedicated to the control and monitor of future Smart Cities, Smart Airports, Multi-Facility or Global Corporate Campuses.

Electrical Data

Input Voltage / Frequency	90-305VAC, 50/60Hz
Power Consumption	3W @ 120-277VAC
Load Current	10A Max
Operating Temperature	-40°C ~ +85°C
Dimming	0-10V per IEC 60929
ON/OFF Control	Yes
Rated Load	800W Max.
Load Switching Capability	20,000 operations at 800W Load
Energy Measurement Accuracy	<0.5% (Utility Grade) per ANSI C12.20
Surge Protection	6kV/3kA combined wave per ANSI C62.41
Photocell Operation	According to ANSI C136.10-2006 Standard
Safety	IEC60950-1:2005
Compliance	CC CFR47 Part15 / CISPR22 Class A

Wireless Network Data

Radio Frequency	860MHz / 915MHz / 920MHz
Network Comm. Protocol	IEEE Standard 802.15.4g/e, 6LoW-PAN Adoption Layer
Spread Spectrum	Frequency Hopping (50 Channels)
Addressing	IPv6
GPS Accuracy	3 Meter
Security	256-bit Secure Hash Algorithm (SHA-256)
Encryption	Advanced Encryption Standard AES-256 with certificate based authentication
Node to Node Communication	Mesh Network, Self-Forming, Self Healing
Receiver Sensitivity	-102dBm@38.4kbps
Loss of Communication	Node is equipped with internal memory backup and photocell to guarantee pre-set operation in event of communication loss.
RF Output Power	1 Watt



Features & Functions

- Built-in event logger (i.e. ON/OFF, failures) with security features to discover and report physical/network tampering, effectively eliminates 100% of maintenance costs.
- Group fixture control: ON/OFF, dim, status read, compatible with traditional and modern lighting technologies such as LED.
- Remotely predict, detect and report lamp failure.
- Embedded utility-grade meter to measure active/reactive power, energy, voltage, RMA values and grid frequency.
- Execute scheduled commands based on integrated real-time clock (RTC) and embedded astronomical calendar clock with fail-safe super-capacitor.
- Provides automatic GPS location of each fixture integrated with Google Maps.
- Define custom conditions for automated ON/OFF and 0-10V dimming control with reported energy savings. (i.e. sunrise, sunset, holiday schedule).
- Internal backup micro-operating control system in the event of wireless signal interference guarantees operation according to software settings.
- Photocell Dusk-to-Dawn operation and ON/OFF control in the event of low light condition during daytime and/or communication loss.
- Remote daily operating schedule management.
- All functions and features are executed by dedicated software provided to customer and installed on customer servers or Neptun LightGenie™ Server
- Node has a standby super capacitor inside. In the event of power loss to the light pole, theft of the Node, or theft of the entire luminaire the Node will send 3 alert messages to a specified address or phone. (The alert includes description and current GPS coordinates of the Node).
- The node main body/cover housing is made of semi-transparent plastic material, and does not require any window for the photo cell transistor to operate.
- The Node has the capability to store in its internal flash memory all historical events data and energy consumption data for 31 days.
- The Node has been programmed to store "current node status" in its flash memory, and refresh it every 10 seconds.
- The Node is equipped with High Performance MCU - Silicon Labs EMF32GG232

Assured Connectivity with Adaptive Communications Technology

- Multi-Link technology with dynamic selection.
- Multi-Modulations for optimal link performance.
- Multi-Application Smart Grid network.
- RF Implementations at 920MHz and 888MHz.

Flexible Architecture

- Cell-based scaling to manage capacity and coverage growth.
- Software defined radios to adapt to evolving standards and regional frequency brands.
- Multi-link mesh technology to address "all environments".

Industry Leading Network Layer Security

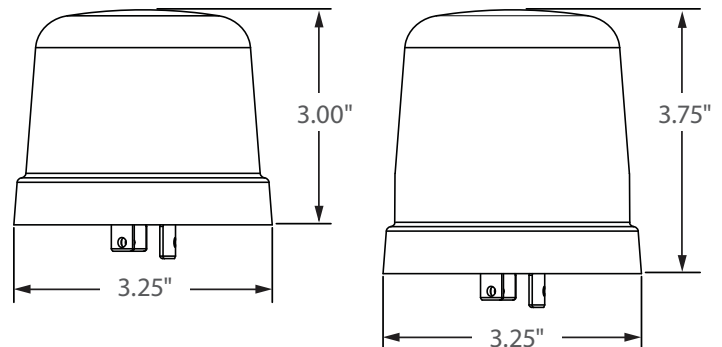
- Certificate based end point authentication.
- Supports independent routing of non-meter traffic.
- Encrypted RFMESH at layer 2.

Network Resiliency for High Reliability

- Dynamic route selection within cell.
- End point failover to neighboring cells.
- Quality of Service (QoS) with 4 priority queues.

Physical Characteristics

- Housing: High impact resistant, UV stabilized polybutylene terephthalate and polycarbonate (PBT + PC).
- Base: High impact resistant, UV stabilized polybutylene terephthalate and polycarbonate (PBD + PC).
- Contact Blades: Solid brass, three (3) prong, locking type per ANSI C136.10 and two (2) additional contacts and provisions for future contacts per ANSI C136.41 (ANSI Dimming).
- Gasket: Medium cellular silicone for outdoor use.
- Dimensions: 2 Sizes offered
- Weight: < 1 pound (0.45 kg)
- Operating Temperature: -40°C - +85°C
- Compliance: Wet Rated, Type 2 Outdoor per UL 773
- Ingress Protection (IP65)



Neptun Light, Inc.
13950 Business Center Drive
Lake Forest, IL 60045
Fax: 847.735.8004

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