



Port and Terminal Lighting & Controls

INCREASE SAFETY, SECURITY, PRODUCTIVITY

Lighting Requirements for Today's Transportation Environments

- ▶ **Productivity**
- ▶ **Safety**
- ▶ **Security**
- ▶ **Energy savings**
- ▶ **Wildlife Protection**



Increased Productivity

Employee Satisfaction

Sense of Ownership



Feeling of Safety

Less Fatigue

Quality of Light = Quality of Life

- ▶ **U.S. Bureau of Labor and Statistics** : “the quality of lighting can have a positive impact on reducing the risk of the primary causes of occupational injuries....better lighting would decrease the likelihood of accidents.
- ▶ Employees are **positive, excited and emotionally enthusiastic** because of the brighter environment. Management is thrilled with the impact the lighting has had on **worker safety, the balance sheet** and our broader sustainability goals.”

Exterior Portside OPERATIONS

- ▶ Terminal Quay and apron
- ▶ General cargo Facilities
- ▶ Containers STS, RTG
- ▶ Rail and Truck Loading
- ▶ RO/RO



Crane Lighting: STS, RTG, Rail, Gantry, Tower



Equipment Mounted



Post and High Mast

Energy and Maintenance Savings

- ▶ Energy savings amount to between 50 /60 %
- ▶ With **controls** an additional 40-/70% can be realized
- ▶ Maintenance costs can decrease by up to 90%
- ▶ Fewer Fixtures, Lower Mounting Heights

Exterior Dockside Operations

- ▶ Lighters and Barge Handling
- ▶ Drydock/ graving docks,
- ▶ Cruise terminals Parking Fields
- ▶ Conveyor, Tipple Operations
- ▶ Bulk – grain, chemical, fertilizer,
- ▶ Petroleum (Explosion Proof)



Interior and Buildings

- ▶ Customs and security check point, Points of Entry
- ▶ Warehousing
- ▶ Office Complexes
- ▶ Cruise Passenger Embarkation Centers
- ▶ Heavy Port Manufacturing

Security Features in Lighting Fixtures

- ▶ Security appearance of monitoring
- ▶ Cameras, speakers and weather updates
- ▶ Gate and Door control , RFID Asset Tracking
- ▶ Containers, Cranes, Forklifts, Cargo
- ▶ Homeland security Compliance ,
- ▶ Global Panic button, selective zone control,
- ▶ Energy saving additions

Interior Warehouse, Shipyard and Manufacturing



Greenbriar Video

Cost: New or Relighting Projects

- ▶ Rebates
- ▶ DLC Listed Products (Design Lighting Consortium)
- ▶ ROI 1-3 years
- ▶ Funding Sources



Hubbell Control Solutions | Introduction

HUBBELL
Control Solutions



HUBBELL
Lighting

HCS Product Lineup

Indoor Systems



Outdoor Systems



Standalone Controls



Occupancy & Vacancy Sensors

— Power Packs & Relays



Daylighting Harvesting Controls



Emergency Lighting Controls



Lighting Control Panels

— LX & CX






Wallbox Switches

Dimming and Controls Saves Energy



Systems Portfolio

Systems	 NX DISTRIBUTED INTELLIGENCE	 POWERHUBB PoE LIGHTING & CONTROL	 wiSCAPE TM
Standalone or Network	Standalone & Network	Network	Network
Interior or Exterior Space	Interior & Exterior	Interior	Exterior
Wired Connectivity	●	●	X
Wireless Connectivity	●		
Basic Code Compliance	●	●	●
Enterprise-level Business Integration (BACnet)	●	●	●
Value Added Services (Analytics)		●	●

wiSCAPE Wireless Outdoor Lighting System

Monitor, Manage and Measure Outdoor Lighting Wirelessly



wiSCAPE™ outdoor lighting management system delivers wireless control solutions to maximize energy savings and enhance safety for parking lots to campuses and cities. With a fully integrated, end-to-end platform and robust software suite to manage, monitor and measure lighting assets, wiSCAPE provides an immediate path to improved operational efficiencies.



Unparalleled Scalability and Flexibility

wiSCAPE provides the ability to monitor, manage, and meter a limitless number of lighting assets to deliver optimized deployment solutions that can be adjusted without impact to infrastructure.



Versatile Operation with Peace of Mind

wiSCAPE's intuitive enterprise software suite offers real-time asset management to advance customizable map views and dashboards to help improve operational efficiencies. This is accomplished over a highly secure network using the latest in advanced security measures and encryption to ensure data is handled safely.



Open Connectivity

Compliant with open standardized network technologies and industry protocols, wiSCAPE's connected devices integrate seamlessly and reliably with 3rd party systems to deliver additional application solutions.



Invaluable Insights

Data insights generated by wiSCAPE's advanced energy management tools, utility-grade metering, 24/7 diagnostic reporting, and/or configurable alert notifications, can be used to implement control strategies and preventive measures that improve the bottom line.

Platform Snapshot					
Space Type	Architecture	Deployment	Connectivity	Integration Options	Advance Services
Exterior	Distributed	Network	Wireless	BACnet™, Enterprise	API, Analytics

wiSCAPE® System Components



In-Fixture Module:

- Universal voltage: 120-480V 50.60Hz
- Outputs 0-10V for dimming ballasts (Sink+Source)
- Inputs for low-voltage switch, motion and photo sensor
- Dry contact output for driving external contactors



External Fixture Module:

- Switch 10 Amp loads 110-347VAC, 6 Amps @480VAC
- Compliant with ANSI Standard C136-41 (7 & 5 pin) receptacles
- Input for low-voltage switch, motion and photo sensor
- Outputs 0-10V for dimming ballasts (Sink+Source)



Motion Sensor:

- Digital Passive Infrared (PIR) sensor
- Interchangeable high/low area detection lens options
- End-mount and surface-mount versions
- Withstands low temperature and conforms to IP65 water-tight standards



Daylight Sensor:

- Open loop operation
- Foot candle range: 0 – 250FC



Gateway:

- Module/Gateway ratio: 1000 modules per Gateway
- Standard and astronomical time clock scheduling
- Cellular modem option for remote access



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Control Solutions

HUBBELL®
Lighting

wiSCAPE's Core Capabilities

Manage

Setup and code compliance are simple using the wiSCAPE software suite. Lights with wireless nodes are placed on maps or site plans and configured to meet code.

Monitor

No more calls about a luminaire being out – you know it first. The wiSCAPE system provides 24/7 monitoring of each luminaire with alarm notifications via SMS or email.

Measure

Commercial-grade metering enables you to determine just how much energy is being consumed by individual luminaires, sites or an entire city.

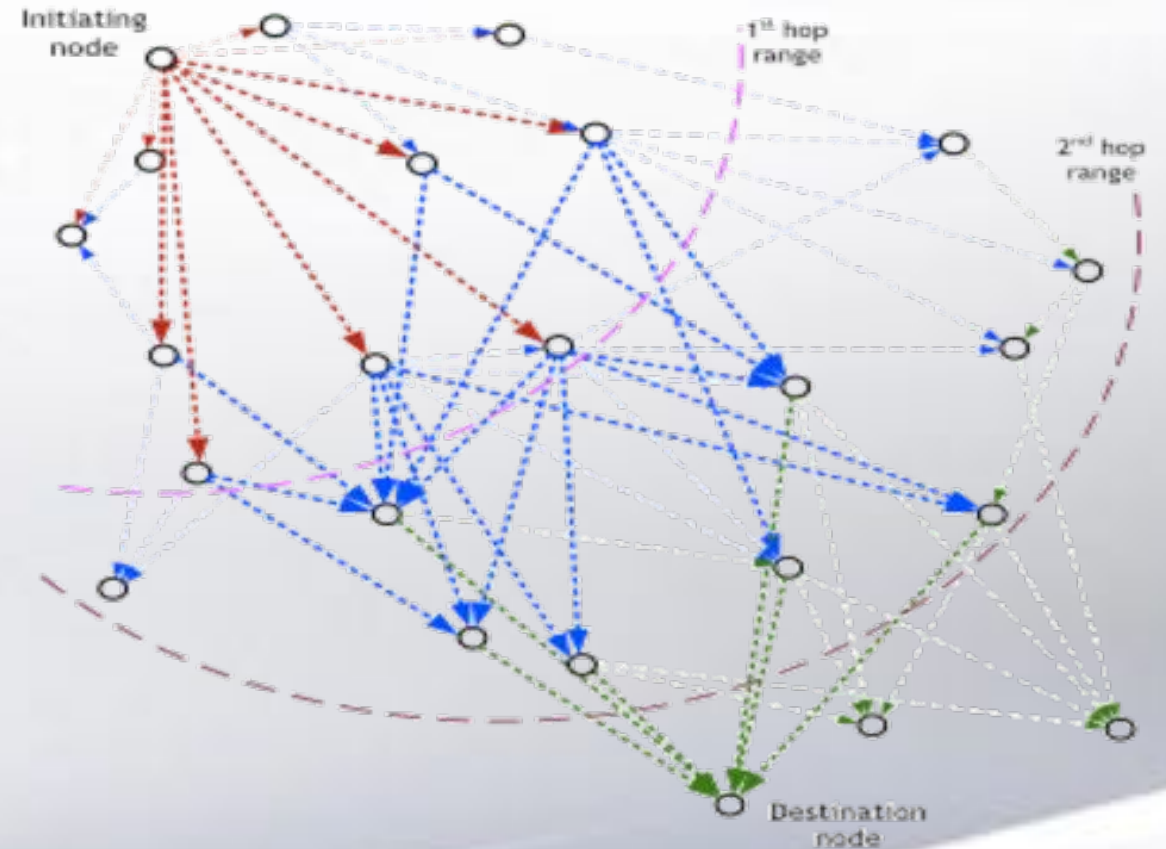
Take Control of the Outdoors
and Enhance Safety and Improve
Operational Efficiencies



Wireless Technology

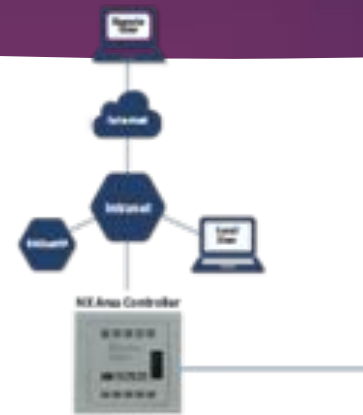
Flooding Mesh

- Multi-Hop Network Controlled By:
 - Time To Live (TTL)
 - Message Sequence Number
- Nodes Receive Signal and Decrement TTL



SIMPLE & FLEXIBLE

- Solutions for virtually any application
- Indoor or outdoor
- Wired or wireless
- Cost-effective for new and retrofit applications
- Simplifies building operations
- Solves simple to complex control requirements



M **Manage, Monitor and Meter** wiSCAPE® Features

- Individual Fixture Control
- Input From Motion and Photo Sensors
- Standard and Astronomical Time Clocks
- Graphical System Management Software
- Alarms and Notifications
- Modular and Expandable
- Updateable Over the Air



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wiSCAPE® Fixture Modules

Each Module is an Intelligent, Autonomous Lighting Control Center

- 0-10V Dimming and Switching
- Can Be Used with All Fixture Types
- Internal and External Fixture Modules
- Latitude and Longitude Location Information
- Used in Both New and Retrofit Applications
- Contacts for Low Voltage Input and Output



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Remotely Monitor, Control, Modify

wiSCAPE® View

- ▶ Included With Purchase of a wiSCAPE Gateway
- ▶ Central Management of Schedules, Groups, Scenarios and Settings
- ▶ User-friendly Graphical User Interface
- ▶ Real-Time Control Status
- ▶ Password Secured
- ▶ Easy Reporting and Exporting
- ▶ Backup Utility for System Backup and Restore



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▶ Hubbell Lighting Booth #30

▶ Questions ?