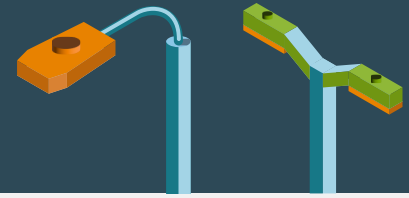


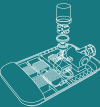




# INNOVATION THAT LIGHTS THE WAY



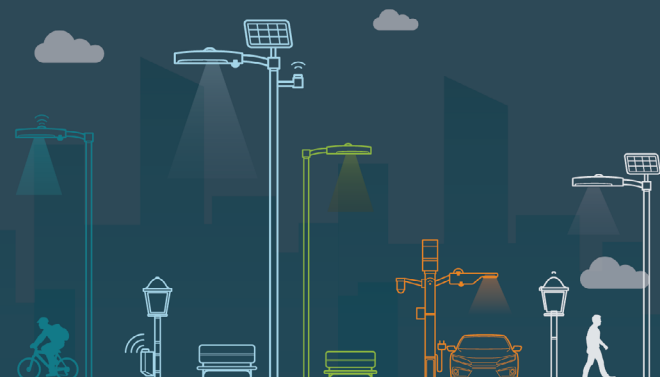
## STREET & AREA LIGHTING SOLUTIONS

The demand for smarter street and urban lighting is transforming cities, cutting maintenance costs, reducing energy consumption, and enhancing safety for local communities. Connected LED luminaires are the key to these advancements, delivering both efficiency and security.

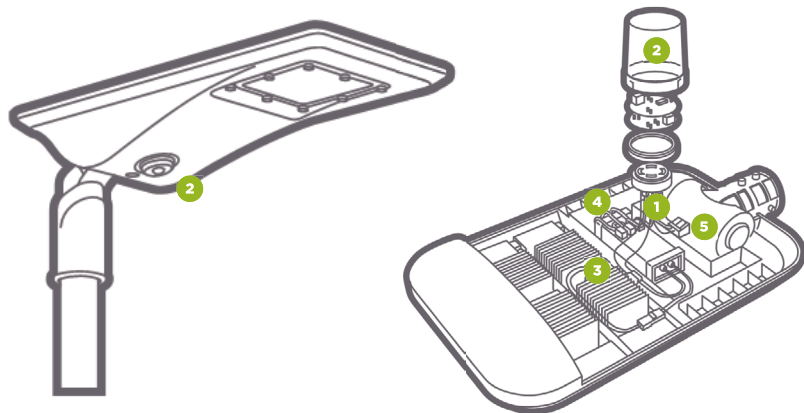
Partner with TE Connectivity (TE) to access a comprehensive portfolio of customized interconnect solutions—including street light control interfaces, sensors, power and data connectors, relays, powerline filters, and labels. With TE, you'll have everything you need to power the next generation of smart lighting technologies.

| DESIGN CHALLENGES   |  | COMPONENT SOLUTIONS   |
|---|--|---|
|    | <b>FIXTURE CONNECT</b> <ul style="list-style-type: none"> <li>Ensuring compliance with ANSI C136 and Zhaga Book 18 while maintaining compatibility</li> <li>Designing durable, low-profile receptacles that withstand harsh environments</li> <li>Reducing assembly complexity, connection parts, and installation time</li> <li>Integrating seamlessly into both new and existing LED streetlight fixtures</li> </ul> | <ul style="list-style-type: none"> <li>ANSI C136 Compliant Dimming Receptacles</li> <li>Zhaga Book 18 Compliant Receptacles and Connectors</li> <li>LUMAWISE Shorting and Open Caps</li> <li>Push Grip Insulated Wire Connectors</li> </ul> |
|  | <b>LIGHTING CONTROLS</b> <ul style="list-style-type: none"> <li>Reducing energy waste from continuously running luminaires</li> <li>Designing cost-effective, reliable dusk-to-dawn controls</li> <li>Ensuring durable, weatherproof protection for outdoor conditions</li> </ul>  | <ul style="list-style-type: none"> <li>LUMAWISE Motion Sensors</li> <li>ANSI and Zhaga Street Lighting Photocells</li> <li>ANSI Street Lighting Base Assemblies</li> <li>Zhaga Book 18 Compliant Bases and Covers</li> </ul>                |
|  | <b>LIGHT ENGINE INTERCONNECTS</b> <ul style="list-style-type: none"> <li>Ensuring reliable power transmission in modern LED streetlights</li> <li>Designing low-profile interconnects to meet space constraints</li> <li>Enabling faster, more efficient connections for streamlined assembly</li> </ul>   | <ul style="list-style-type: none"> <li>BUCHANAN WireMate Connectors</li> <li>Micro MATE-N-LOK Connectors</li> <li>SlimSeal Connectors</li> <li>LIGHT-N-LOK Connectors</li> <li>IDC Poke-In Wire Connectors</li> </ul>                       |
|  | <b>DRIVER INTERCONNECTS</b> <ul style="list-style-type: none"> <li>Designing user-friendly board-to-board and wire-to-board interconnects</li> <li>Ensuring reliable driver connections for long-term performance</li> <li>Providing design flexibility while simplifying installation</li> </ul>  | <ul style="list-style-type: none"> <li>BUCHANAN WireMate Connectors</li> <li>Precision Resistors</li> <li>SCHRACK Power PCB Relay</li> <li>Push Grip Insulated Wire Connectors</li> <li>Twist Splice Wire Connectors</li> </ul>             |
|  | <b>WIRE MANAGEMENT</b> <ul style="list-style-type: none"> <li>Ensuring compatibility with new and existing LED fixtures</li> <li>Designing low-profile, easy-to-install receptacles, terminations, and filters to reduce installation time</li> </ul>  | <ul style="list-style-type: none"> <li>Cable Glands</li> <li>LUMAWISE Power Input Terminal Block</li> <li>ENTRELEC Terminal Blocks</li> <li>Labels and Markers</li> <li>Terminals &amp; Splices</li> </ul>                                  |

## CONNECT. SENSE. LIGHT. REPEAT.



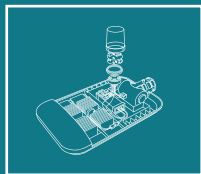
# INNOVATION THAT LIGHTS THE WAY



- 1 Fixture Connect Solutions
- 2 Controls
- 3 Light Engine Interconnects
- 4 Driver Interconnects
- 5 Wire Management

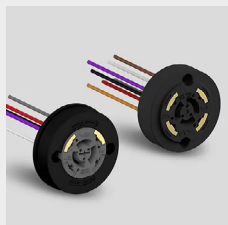


**BRIGHTEN  
YOUR PATH**  
SCAN TO LEARN!



## 1 FIXTURE CONNECT SOLUTIONS

Explore TE Connectivity's fixture assembly solutions, designed for easy integration and faster time to market. Our low-profile receptacles, terminations, and power line filters simplify LED fixture installation, boosting efficiency.



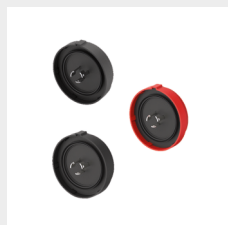
### LUMAWISE Endurance N Dimming Receptacles

- Robust contacts twist lock for a reliable interconnect
- Available with two or four dimming contacts to support one or two channel dimming protocols
- Accepts ANSI standard shorting caps, photocells and other controls to provide a C136 compliant connection
- Integrated gasket option for a cost-efficient luminaire assembly



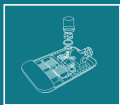
### LUMAWISE Endurance N Rotatable Dimming Receptacles

- Receptacle rotation after installation allows for North facing orientation of control node
- Toolless design minimizes assembly steps in manufacturing process
- Available with two or four dimming contacts to support one or two channel dimming protocols
- Accepts ANSI standard shorting caps, photocells and other controls to provide a C136 compliant connection



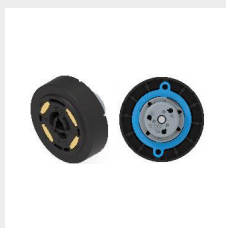
### LUMAWISE Endurance Shorting and Open Caps

- Optional surge protection from transient line voltages
- Distinct cap shape helps improve visual distinction between photo controls and shorting caps
- IP66 ingress protection, with integrated seal gasket
- Color coding to facilitate field maintenance: shorting (black) and open (red)
- Voltage: 0-480 VAC / 15A max



## FIXTURE CONNECT SOLUTIONS

1



### LUMAWISE Endurance N Poke-In Dimming Receptacle

- Eliminates the need for flying leads and terminal blocks, simplifying supply chains and enhancing efficiency
- Directly wire from receptacle to driver. No interstitial cabling required
- IP66 sealed protection from integrated gasket, with control device in place and blind mounting holes
- Available with 7 and 3 positions. Reduces waste, as unused positions 6 and 7 do not need to be cut and terminated.
- Poke-In wire termination with integrated sealing gasket in place, enable manufacturing efficiencies
- Form factor: ANSI C136.41



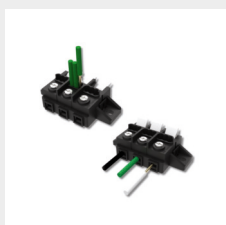
### LUMAWISE Endurance S Zhaga Book 18 Connector

- Dual poke-in wire insertion provides easy termination
- S2 receptacle offers two wires per contact enabling daisy chain wiring with color coding
- Flexible mounting position: upward, downward, or sideways facing
- Optional unique locking washer to help prevent rotation of receptacle during assembly or control connection
- 50N minimum wire retention force



### LUMAWISE Endurance S Dome

- IP66 ingress protection helps reduce outdoor light fixture maintenance and extends operating life
- UV rated material provides high durability
- High impact protection - IK09 rating
- Available in different colors to match luminaire design



### LUMAWISE Power Input Terminal Block

- Simplifies input wire and multi-wire output connections
- Lever actuated spring clamp poke-in wire connections are more ergonomically operator friendly than quick connect tabs and receptacles
- Captive screw design in rising vice clamps prevent dislodged or lost screws
- Accepts ANSI compliant 6 - 14 AWG solid and stranded aluminum and copper input wires
- Accepts 12 - 18 AWG solid and stranded copper output wires



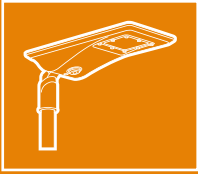
### Street Lighting Photocells

- ALR series street lighting photocells are ANSI C136.10 or Zhaga Book 18 compliant photo controls
- ALR Photocells with IP66 rated protection and high-quality components that surpass 20,000 on/off operation cycles
- Offer an economical and reliable means of controlling lighting systems from dusk to dawn, whether simple on or off or with digital dimming controls
- Engineered to help enhance lighting system performance and save energy.



### Push Grip Insulated Wire Connectors

- Versions available in 2, 3, 4, 5 & 6 positions
- Compact Type accepts 14 - 22 AWG wires
- Save installation time with poke-in wire technology and tool-free conductor termination
- Easy factory or field installation with test slot for voltage testing
- Compact size with color-coding options easy identification



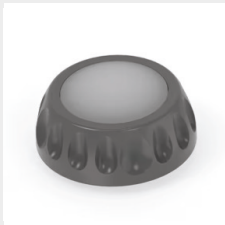
## LIGHTING CONTROLS

Enhance energy efficiency and safety with our outdoor lighting control components for luminaires. Our motion sensors dim the light to help save energy and restore full brightness upon detecting motion, ensuring security and visibility. Backed by cross-industry expertise, our comprehensive product range supports the rapid adoption of connected controls to meet diverse application needs.



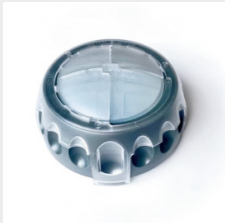
### LUMAWISE Motion Sensor

- Enables energy savings up to 80%
- Market leading detection zone at heights from 5m to 12 m
- Simple plug and play installation
- Mask to adapt the detection zone to the application
- Suitable for lighting schemes with low traffic
- Ideal for harsh environments with IP68 and IK08
- Zhaga-D4i, Zhaga Book 18, Ed 1, 2, 3, ANSI: C136.58 and C136.54 compliant



### LUMAWISE Motion Programmable Sensor

- Programmable version is configurable via the DALI bus
- Allows a user to self-define parameters like brightness levels, on time and ambient light on and off levels
- Detection zone at heights from 5m to 12 m
- Available with both circular and rectangular detection zones, up to 16m from the sensor
- Zhaga-D4i Type B device, with application controller
- IP66, IP68 and IK07



### LUMAWISE Motion Sensor Logic Output

- An analog version of TE's LUMAWISE Motion sensor
- Add motion sensing to analog architecture, via an NLC and downward facing interface
- Detected motion will cause a dimmed luminaire to brighten allowing for energy savings while still providing the safety and security of a well-lit area
- Pluggable device via the 'Z10' interface



### ANSI Street Lighting Photocells

- Multiple options for conventional HID and LED lighting
- Options for several grades of MOV surge protection
- Cap colors for easy visualization of voltage range
- Up to IP66 Ingress Protection
- ANSI C136.10 compliant | UL | CSA Listed
- Up to 20 years rated life



### ALR 11000 ZHAGA Digital Photocell

- Reduces energy consumption and utility spend
- Compact pluggable design and fits the Zhaga ecosystem, with the standard Book 18 interface
- A noteworthy algorithm allows for a virtual midnight without the use of an expensive GPS radio
- Multistage profile allows different dimming levels, maximizing energy savings
- Ultra-compact size for great aesthetics and design freedom for decorative and heritage luminaires
- Compatible with LUMAWISE Motion sensor



## LIGHTING CONTROLS

2



### LUMAWISE ALR Shorting and Open Caps

- Distinct cap shape improves visual distinction between photo controls and shorting caps
- Optional surge protection from transient line voltages
- IP66 ingress protection reduces outdoor light fixture maintenance and extends operating life
- Current: 15 A max
- Voltage: 0 – 480 VAC
- Operating temperature: -40°C to 120°C



### ANSI Street Lighting Accessories

- Translucent covers allow transmission of daylight to a light sensing device
- Different colors provide design flexibility and facilitates luminaire field maintenance
- IP66 rated solution with integrated gasket for harsh environment
- Meets the flammability rating with a UL 94 5-VA rated cover



### LUMAWISE Endurance N Enhanced Base

- Helps enable flexible and cost-effective controls design
- Integrated gasket option for a cost optimized luminaire assembly
- Optional vent for pressure optimization and condensation through vapor diffusion
- Available in 3, 5, and 7 positions
- Power contact voltage: 600 volts AC/DC
- Signal dimming contact voltage: 24V – DALI, 5V (Cellular radios), 3.3V Digital circuits.



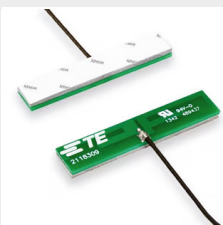
### LUMAWISE Endurance S Connector System

- Zhaga Book 18 compliant
- Scalable solution for street light sensors and control nodes
- IP66 ingress protection with integrated gasket
- Optional vent for pressure optimization and condensation through vapor diffusion
- Snap-fit dome assembly
- Different options for dome size and colors provide design flexibility



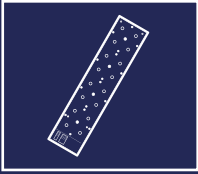
### SCHRACK Power PCB Relays

- The global footprint of the RT series provides the ability to upgrade the application without changing the physical layout
- Mono and bistable coil systems available to support low power consumption
- Inrush current up to 800 A for 200µs
- Suitable for Zero Crossing
- Electronic ballast rated products available
- Meets IEC standards



### Antennas

- High reliability: high performance and isolation
- High efficiency: optimized throughput, minimal losses
- Fully-integrated manufacturing capabilities and quick-turn designs and prototypes
- In-house testing and validation & Implementation services



## LIGHT ENGINE INTERCONNECTS

TE Connectivity's flexible solutions for interconnect applications reliably transmit power and integrate components in modern LED streetlights. TE offers low-profile interconnects in surface mount and through-hole board mount configurations, as well as panel mount and free hanging wire-to-wire versions, designed to enable faster and more efficient connections.



### BUCHANAN WireMate Connector Poke-In Series

- Simple lever design for release of one wire at a time
- Fast and easy installation with poke-in contact feature
- Color configurations enable easy identification
- Allows easy wiring for home installation with tool-less poke-in wire termination



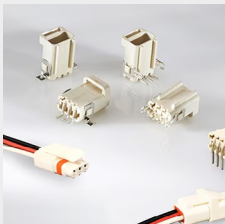
### Micro MATE-N-LOK Connectors

- Discrete wire interconnect available in 2-12 position single row and 2-24 position dual row
- Black and neutral colors available
- Less than 4.7 mm in vertical height required
- Polarized housings help prevent connector mis-mating
- Positive latching helps prevent disconnection



### Hermaphroditic Blade and Receptacle Connectors

- Reduce design time using the same connector for power, data, or signal connections with 2, 4, or 6 positions
- Reduce inventory requirements with a single connector that mates to itself
- Simplify assembly and service with either vertical or horizontal connections



### SlimSeal Connectors

- IP67 seal rating for outdoor applications
- Save space with a compact design
- Polarized connections reduce the possibility of mis-mating
- Positive integral latching helps prevent inadvertent un-mating



### Soft Shell Power and Signal Connectors

- Improved density, keying, and current carrying capacity
- Power and signal connections can be made within the same housing
- Wire-to-wire, wire-to-panel and wire-to-board options
- Secondary locking helps to ensure connections stay connected



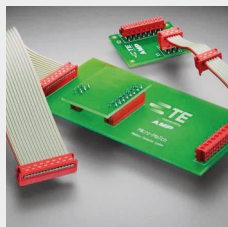
## LIGHT ENGINE INTERCONNECTS

3



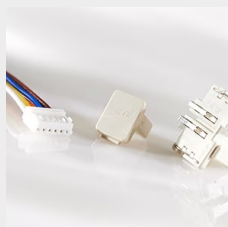
### AMPMODU Interconnect System

- Wire-to-Wire and Wire-to-Board Interconnect System, available in 1, 1.27, 2, 2.54 and 3.96 mm pitch
- Economic & compact design allows for PCB space savings
- Dual-beam contacts provide reliable signal transfers in high vibration environments
- Connector housings available in high-temp resin compatible with reflow solder processes, helping to save customers time and money



### Micro-MaTch Miniature Ribbon Cable Connectors

- Wire-to-Board, and Board-to-Board Interconnection system
- Wire connectors supplied on-tape and suitable for mass termination of 28 AWG [0.08 mm<sup>2</sup> to 0.09 mm<sup>2</sup>] ribbon cable
- Tin plated contact design; Fretting corrosion resistant
- Gas tight connections
- Full range of application tooling from hand tool to fully automated equipment



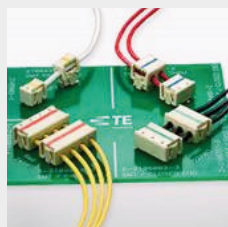
### Inverted Thru Board (ITB) Connectors

- Reduces profile on the LED board
- ITB headers enable power delivery from the underside of the PCB and LED arrays, helping eliminate top surface wire management issues
- Separable interface makes rework and repair easier



### LIGHT-N-LOK Connectors

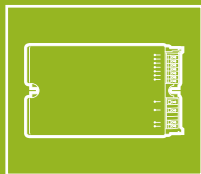
- Tool-less, easy and fast installation with poke-in contact feature
- Compact design saves space
- Support for hot plug abnormal overload test
- Color configurations help enable easy identification
- Modular technology provides design flexibility



### IDC Poke-In Wire Connectors

- Wire-to-board IDC connector solution for surface mount and Thru-Hole applications
- Designed for quick, tool-less termination of discrete solid and stranded wire leads
- Wire Stop feature and feed-through versions for daisy chaining available
- Current rating up to 8 A; voltage rating up to 400 V
- Available in 1-4 positions
- Wire range: 18 AWG – 24 AWG





## DRIVER CONTROLS

TE offer's a broad selection of user-friendly interconnects designed to reliably connect to your driver with board-to-board or wire-to-board options. Our interconnects deliver design flexibility and ease of use. Learn more about our broad selection of user-friendly driver interconnects designed to reliably connect to your driver.



### BUCHANAN WireMate connector Modular Screwless

- Assembles quickly with no special tooling required
- High density compact design saves space
- Multiple pitch options provide design flexibility
- Variety of color configurations makes identification easy
- Vertical poke-in series eliminates the need to hand solder or fixture and wave-solder wires directly to printed circuit board



### BUCHANAN WireMate Poke-in Contacts

- Releasable and solderless poke-in connector design for fast and easy termination
- Offers slim contacts with no shrouding, saving space on the PCB
- Safety standards with UL/CQC approval
- Accepts solid and stranded wire from 16 AWG to 24 AWG
- Available in Tape & Reel packaging



### Push Grip Insulated Wire Connectors

- Versions available in 2, 3, 4, 5 & 6 positions
- Compact Type accepts 14 – 22 AWG wires
- Save installation time with poke-in wire technology and tool-free conductor termination
- Easy factory or field installation with test slot for voltage testing
- Compact size with with color-coding options easy identification



### Tool-Less Splicing Wire Connectors with Twist Grip

- Tool-less twist grip termination for easy and fast installation
- Square-wire spring threads provide a positive "Grip" to ensure quick and secure connections
- Terminates multiple wire gauges into single splice
- Tough thermoplastic, UL 94 V-2 flame-retardant shell at 105° C (221° F) operating temperature
- Color-coded to industry standards for size selection from 22 AWG – 8 AWG



### SCHRACK Power PCB Relays

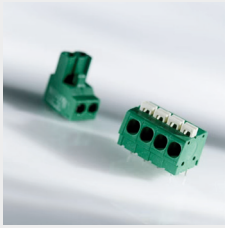
- The global footprint of the RT series provides the ability to upgrade the application without changing the physical layout
- Mono and bistable coil systems available to support low power consumption
- Inrush current up to 800 A for 200µs
- Suitable for Zero Crossing
- Electronic ballast rated products available
- Meets IEC standards





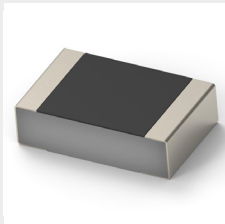
## DRIVER CONTROLS

4



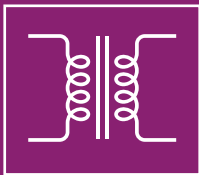
### Eurostyle Terminal Blocks

- High temp and infrared reflow (IR) reflow compatible versions available
- All blocks supplied with open screws to shorten the time to create a connection
- Double captive screw system guards against losing screws
- Rising cage clamp versions for easier and faster wire termination available
- The housing material used is halogen-free Polyamide UL 94V-0 (self-extinguishing)



### Precision / Power / Commodity Resistors

- Large product range offering on-board and off-board resistors
- Precision resistors with tight tolerance down to +/- 0.01%
- Power resistors for 1W to 2500 W
- Commodity resistors with package size down to R0005
- Qualified AEC Q200, flame proof, anit-sulfur, suitable for pulse, surge, and voltage applications



## WIRE MANAGEMENT

5

Our solutions for wire management include identification & labeling products, terminal blocks, cable glands and more to help solve for ease of installation, time savings and low-profile needs in the field. TE's components are engineered for improved manufacturability and faster time to market.



### Cable Glands

- Broad offering for multiple applications including those requiring EMC and vibration resistant, hygienic and industrial grade products
- Specialized glands and accessories from RJ45, ventilation and drain plugs, to multiple entry cable plates
- High ingress protection with IP66 and IP68 rating
- Mounting options with various thread sizes and time saving snap-in options



### LUMAWISE Power Input Terminal Block

- Simplifies input wire and multi-wire output connections
- Captive screw design prevents screws from becoming dislodged or lost during shipment and assembly
- Lever actuated spring clamp poke-in connections
- 6 - 14 AWG for input and 12 - 18 AWG for output using solid or stranded wires



## WIRE MANAGEMENT

5



### ENTRELEC Terminal Blocks

- Screw, push-in/spring, and pluggable connection technology
- Save installation time when using push-in/spring or pluggable technologies
- Large marking area for easier identification/labeling
- Common accessories help significantly reduce inventory needs



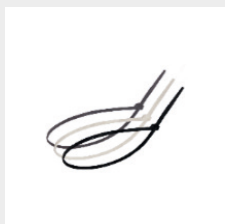
### Labels and Markers

- Full solution system of labels, markers, printers, software, and ribbons
- Heat-shrinkable cable marker sleeves available in a wide variety of configurations, colors and sizes
- Printable tag markers are flat, non-adhesive labels used either pre- or post-termination
- Standard labels are a cost-effective way to identify wires, wire bundles, and equipment



### Terminals and Splices

- Designed for multiple applications including high temperature (650° C) or high voltage rating (1200V), and fluid/corrosion/vibration resistance
- Uninsulated or color-coded insulation material for quick identification
- Engineered for reliable connections with manual, semi-automatic, and automatic tooling options

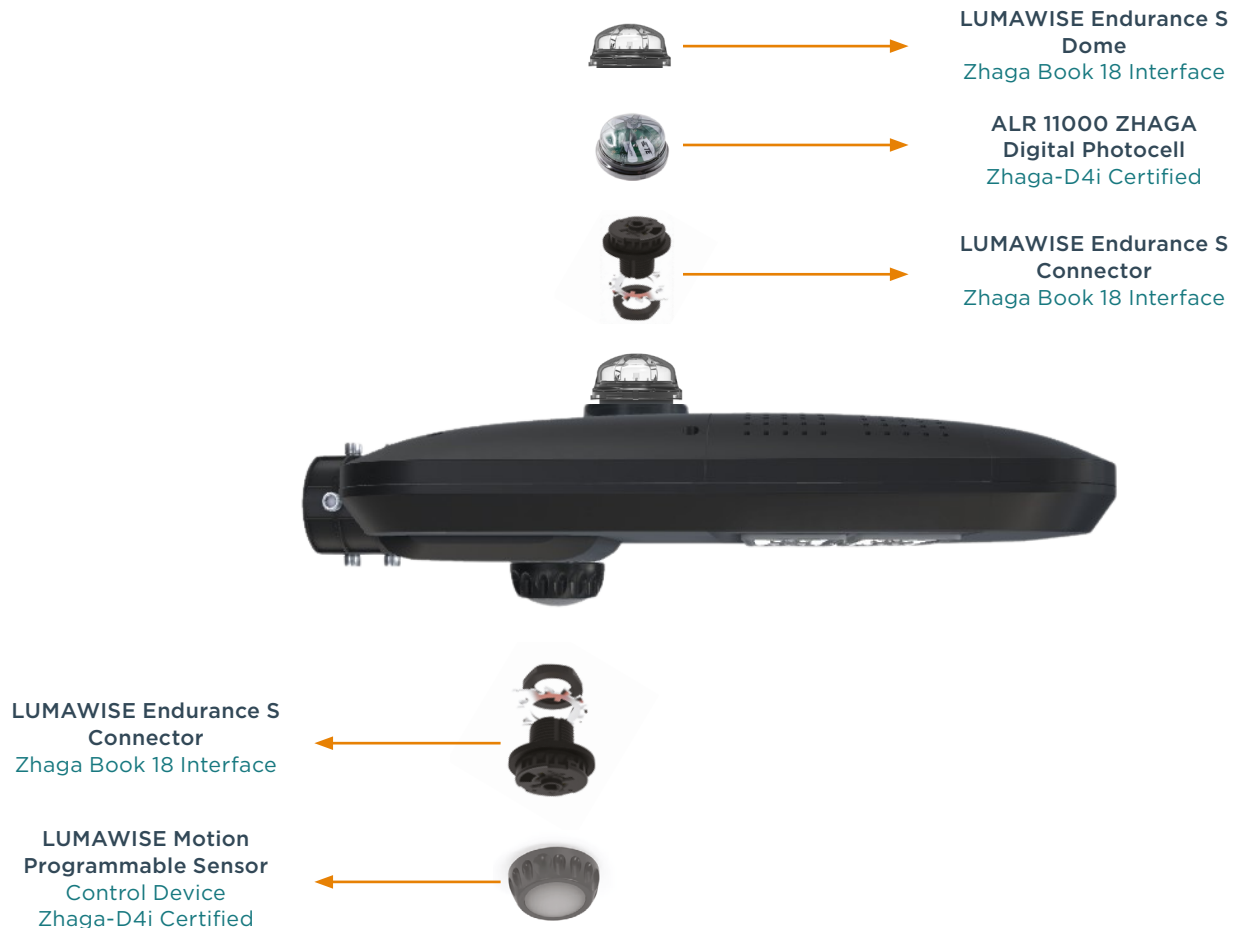


### Cable Ties

- Versatile, capable of securing a wide array of items beyond cables and wires.
- Simple to use — simply slip the pointed end into the ratchet case and pull tight
- Heavy duty options available with tensile strength up to 550 N

## SMARTER STREETLIGHTS, SMARTER CITIES: THE POWER OF TWO-NODE ARCHITECTURE

Why settle for just lighting when you can light up the future? With two-node street lighting architecture, your streetlights do more than shine—they become the backbone of smart cities. Offering enhanced control, greater energy savings, and the ability to collect citywide data, these lights are driving the future of smarter, more sustainable urban living.



## TWO-NODE LUMINARIES AND SMART CONTROLLERS BRING POWERFUL BENEFITS TO CITIES, MUNICIPALITIES, AND UTILITIES



### OPERATIONAL SAVINGS

Smart capabilities can improve system energy efficiency and streamline operations and maintenance.



### INTEROPERABILITY

Zhaga standards ensure interoperable components for easy upgrades and servicing of LED luminaires, helping OEMs deliver top-tier products.



### STANDARDIZATION

Standardizing wiring, power, interface, and protocol ensures consistent operation and maintenance across the network.

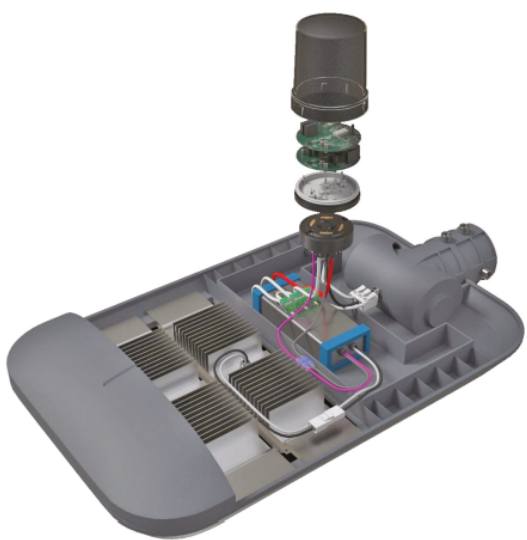


### COST SAVINGS

Many cities could potentially reduce energy costs by up to 50% with smart LED streetlights.

## ZHAGA /ANSI HYBRID TWO NODE ARCHITECTURE

Simplify street and area lighting with the hybrid two-node architecture, combining the reliability of ANSI C136.41 standard with the open simplicity of Zhaga Book 18. In this design, an upward-facing node (photocontrol or communication node) connects via a 7-pole ANSI C136.41 interface, while a downward-facing node (e.g., a motion sensor) enhances functionality. Both nodes and the luminaire are Zhaga-D4i certified, ensuring streamlined wiring, compatibility with Zhaga Book 18 sensors, and support for smart city infrastructure. This innovative approach delivers future-ready lighting solutions with advanced digital communication.

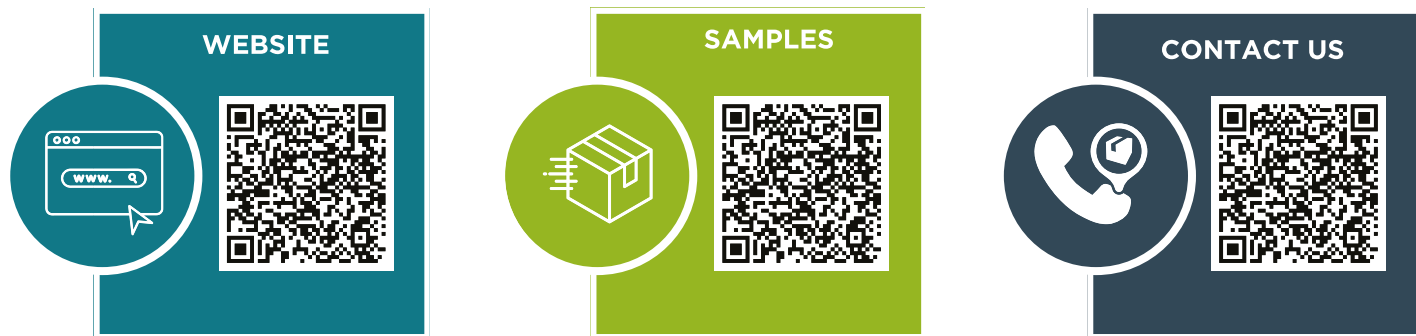


### LUMAWISE ENDURANCE N ANSI STREET LIGHT CONNECTORS:

ANSI C136 compliant **LUMAWISE Endurance N connectors** provide an electrical and mechanical interconnection between an ANSI C136 compliant control and luminaire.

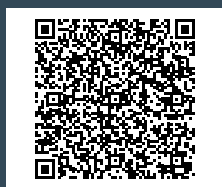
Excellent for outdoor commercial and utility lighting, the ANSI C136.41 compliant dimming receptacle is available with two or four dimming contacts to support either 0-10 V or DALI dimming methods while providing a reliable power interconnect with three robust twist lock contacts.

LUMAWISE Endurance N control connectors include base assemblies and covers which, when combined provide a sealed, IP66 rated control enclosure. The Endurance N product family also includes caps and a power management sub-assembly.

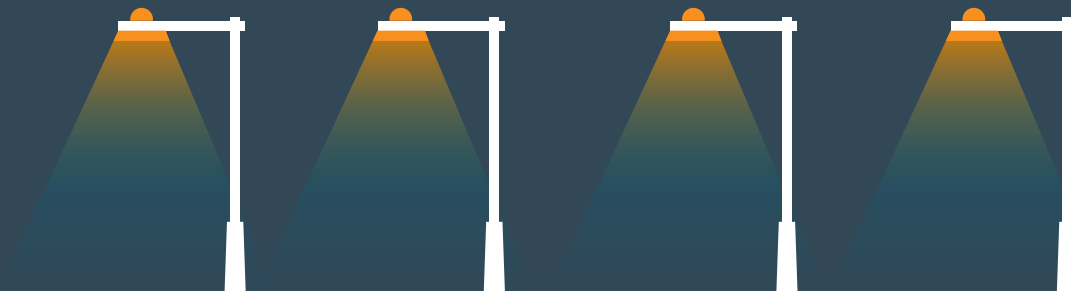


## POWERING BRIGHT SOLUTIONS

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