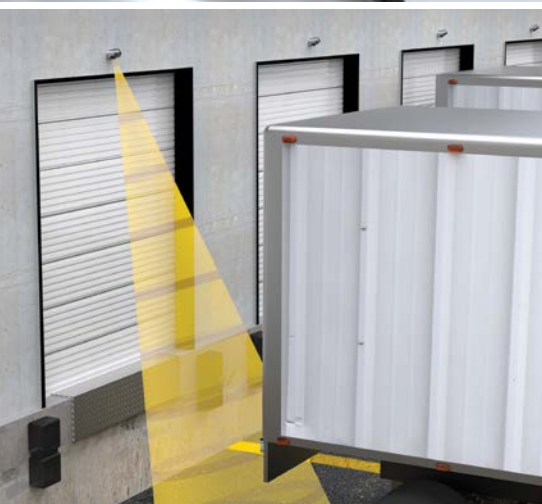


Material Handling Solutions



The Future of Material Handling Runs on Banner

Banner Engineering provides the automation technology that keeps material handling operations moving—faster, safer, and without disruption. From high-speed sensing and simplified motor control to advanced indication, safety, and connectivity, our solutions streamline operations and sustain reliability at scale. Speed, accuracy, and reliability have always defined success in material handling, but as demand pushes the limits of throughput and the margins for error shrink, achieving them requires more than just keeping up—it demands smarter solutions designed for modern complexity.

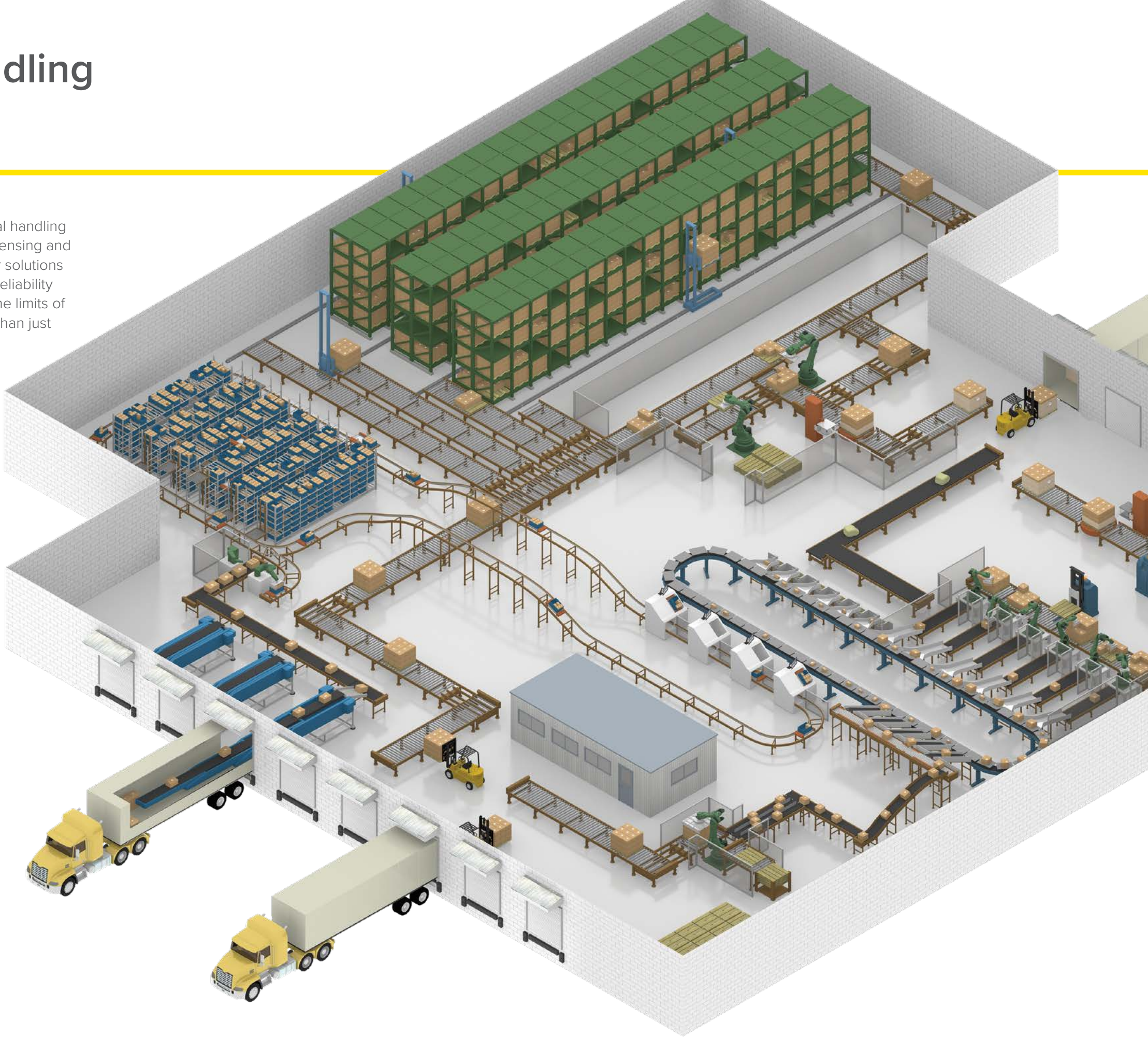
Meeting the Demands of Modern Material Handling

Material handling today demands more than just speed and precision—it requires systems that work together to sustain efficiency at scale. Keeping operations running smoothly means identifying bottlenecks before they cause delays, detecting machine wear before failures occur, and coordinating action with reliable detection and data-driven accuracy. Banner Engineering offers a complete automation solution that makes this possible—while seamlessly integrating existing devices. Extending far beyond sensors, our solution includes lighting and indication, networked safety, and automated alerts, all working in concert to reduce inefficiencies, prevent downtime, and keep material moving without disruption. Our smart sensors capture continuous performance data, equipping operations and maintenance teams with the information needed to prevent slowdowns, track conveyor efficiency, and monitor equipment health for predictive maintenance. Our connectivity solutions ensure critical data flows instantly across a facility, keeping teams informed and ready to act where and when it matters most. Once-isolated systems now work as one, with custom dashboards and analytics tools providing a clear, up-to-date view of material flow, machine status, and overall system performance.

Getting Started

Throughout these pages, you'll find real-world applications of Banner solutions in key areas of material handling—including Conveyors, Sortation, Workstations, Robots and AGVs, Storage and Retrieval, and Loading Docks. Each section highlights practical, field-proven technologies designed to improve efficiency, accuracy, and uptime.

For more information, contact us to speak directly with an industry expert who can help identify the right solutions for your needs.



Conveyors

Control and Indication

- Durable capacitive touch buttons withstand harsh conditions
- Bright LED indication notifies workers of machine status
- Products: K30, K50, S22, SSA-Series E-stop

Leading Edge Detection

- Multiple sensor designs to fit any conveyor
- Various technologies to detect everything from boxes to pallets
- Products: TTR, SAB, LX, QS18, B25, Q20-2

Machine Status Indication

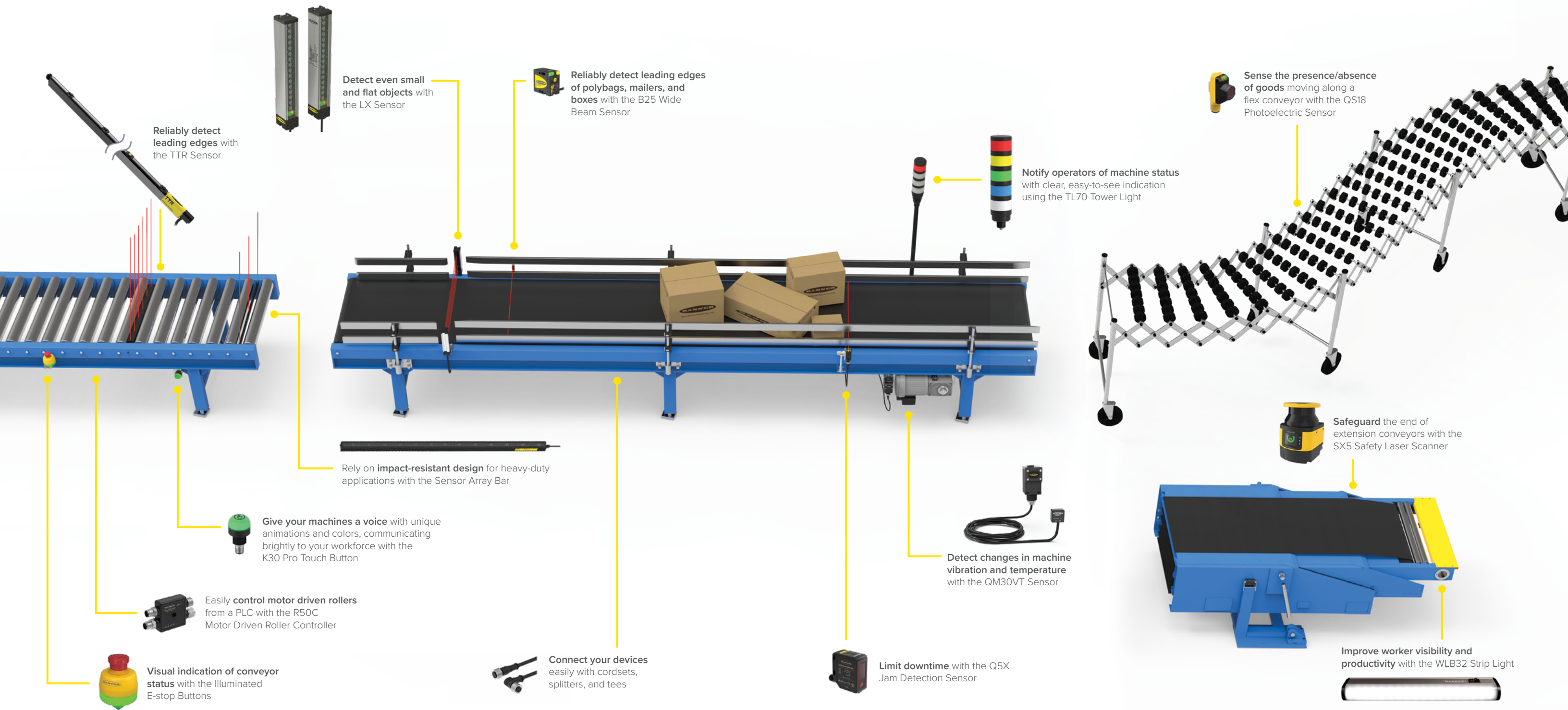
- Bright, uniform LED lights help machines communicate with operators
- Programmable models allow for more unique custom animations
- Products: TL30, TL50, TL70, WLS15, WLS27, WLS28

Predictive Maintenance

- Easy-to-install vibration and temperature sensors monitor equipment around the clock
- Reduce unplanned downtime by scheduling maintenance
- Products: QM30VT, Q45 All-in-One, DXM700, Solutions Kit

Jam Detection

- Detect conveyor jams faster and with greater accuracy
- Industry-standard M12 connector makes installation easy
- Products: Q5X Jam Detection Sensor



Sortation

Package Detection

- Precision sensors accurately measure goods for proper routing
- Various sensor technologies and form factors adapt to any machine design
- Products: EZ-ARRAY, MINI-ARRAY, Q4X, Q5X

Product Position on Belt Sorter

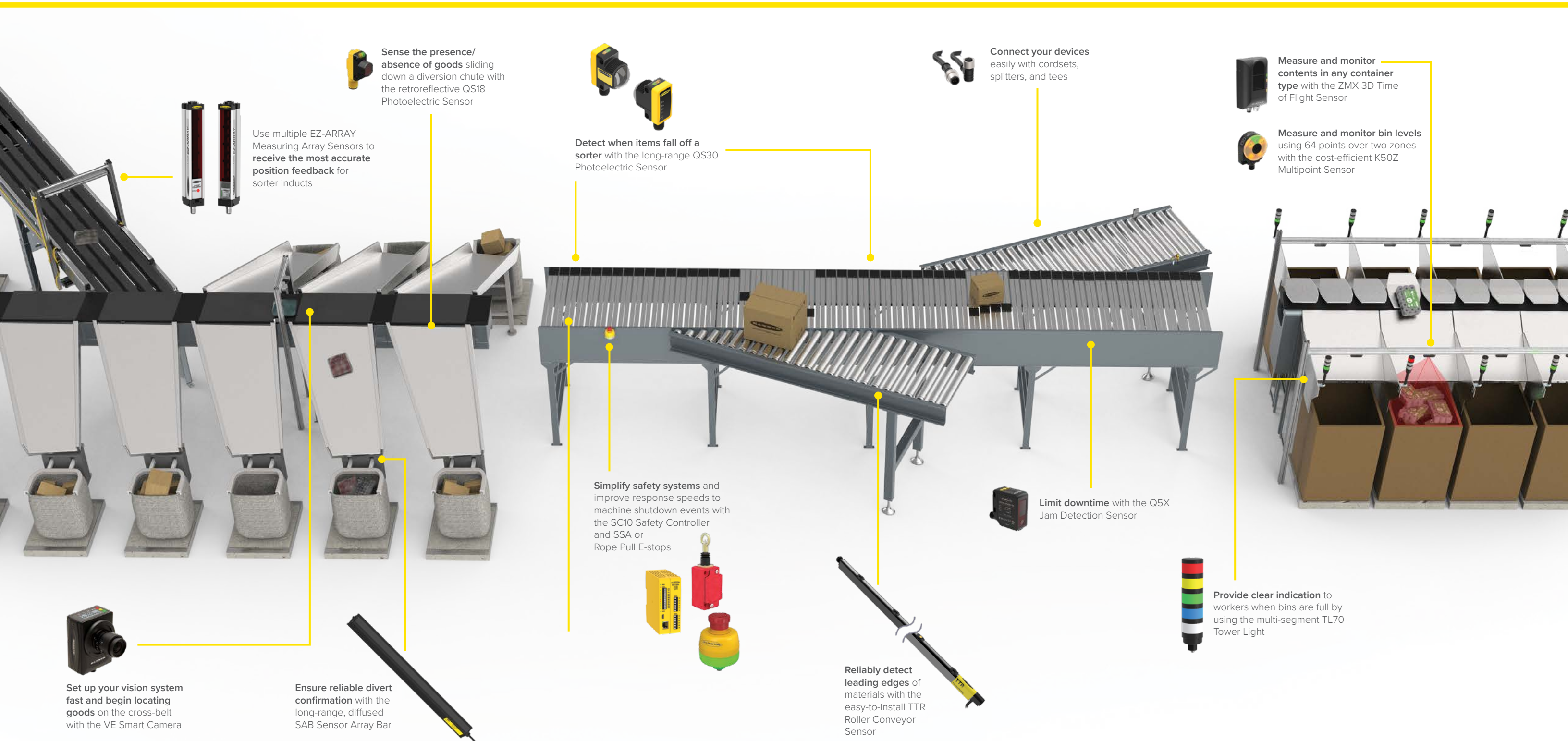
- Easy-to-use sensors determine if goods are located properly on sorters
- Multiple signal types ranging from discrete, analog to x/y coordinates adapt to any machine design
- Products: VE, iVu, Q4X, QS18

Sorter Divert Sensing

- Simple photoelectric sensors determine if goods were diverted down the correct chute or if a jam is present
- Several sensor options provide flexibility to detect any type of package
- Products: QS18, LX, SAB, B25

Bin Level Measurement and Indication

- Robust laser, ultrasonic, and radar technologies accurately measure bin level
- Easy-to-see LED lights notify workers when bins are full
- Products: Q5X, T30R, QS18, TL50, ZMX, K50Z



Work Stations

Andon Lights

- Bright LEDs provide operator guidance and status indication at a distance
- Complete plug-and-play solution simplifies installation
- Products: TL50 Andon Light

Put-to-Light

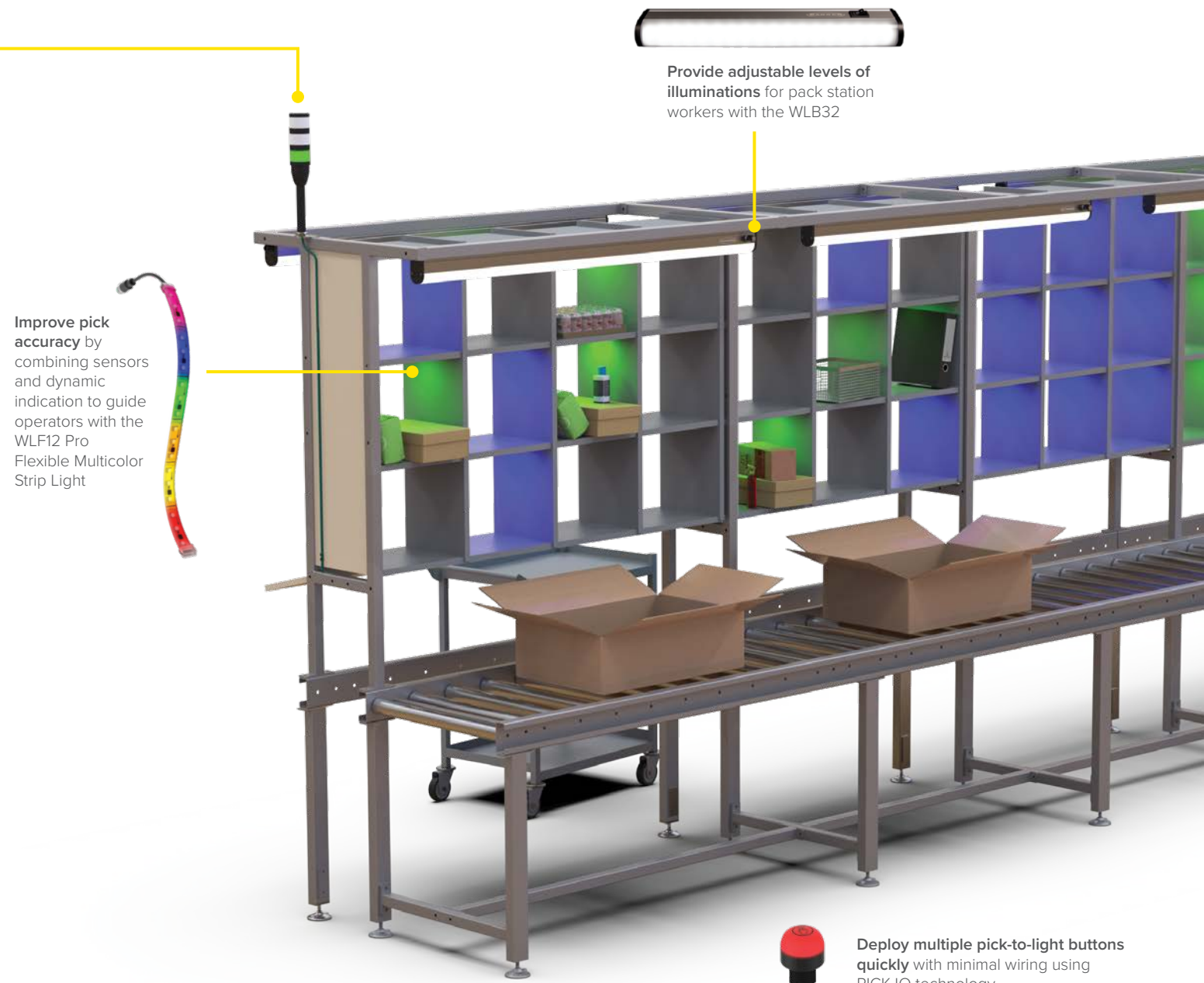
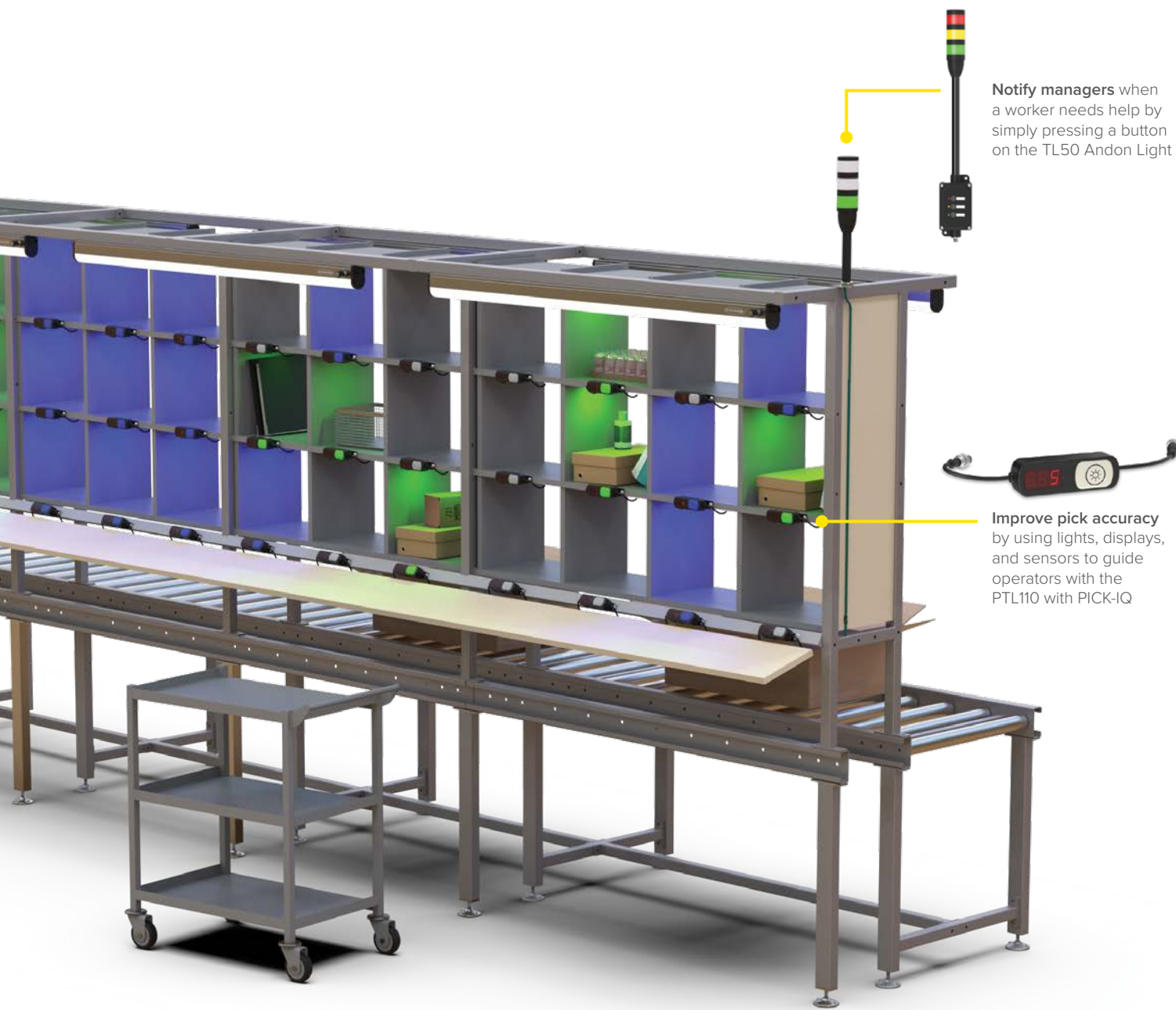
- Easy-to-see lights help operators place items faster and more accurately
- Available with built-in sensors to reduce placement errors
- Products: PTL110, K30 Touch, K50 Touch with Display

Pick-to-Light

- Easy-to-see lights help operators pick items faster and more accurately
- Available with built-in sensors to reduce mispicks
- Products: WLF12, K30 Touch, K50 Touch with Display

Overhead Lighting

- Uniform, energy-efficient LED lighting improves operator visibility
- Variety of lengths, colors, brackets, and power input options adapt to any workstation
- Products: WLB32, WLB72, WLS28, WLB92



PICK-IQ™ Add intelligence to your picking and order fulfillment applications. PICK-IQ™ communication enables greater speed and accuracy in medium and large scale pick-to-light systems. Pick-to-light devices powered by PICK-IQ are easy to use, interchangeable, and scalable to create flexible pick-to-light systems that set up quickly and adapt to changing needs.

- Deploy multiple pick-to-light buttons quickly with minimal wiring using PICK-IQ technology
- Deploy pick-to-light devices with multi-touch inputs and numeric displays using PICK-IQ technology

Robots and AGVs

Measurement Sensors

- Various range, output, and accuracy options fit any application
- Durable housings withstand tough environments
- Products: Q4X, Q5X, Q2X, LM, LE, T30UX, T30R

Machine Status and Indication

- Bright LED lights improve machine-to-human communication
- Numerous form factors simplify machine design and installation
- Products: WLS27, WLS28, K90, TL30, TL50, TL70, SD50

Personnel Detection

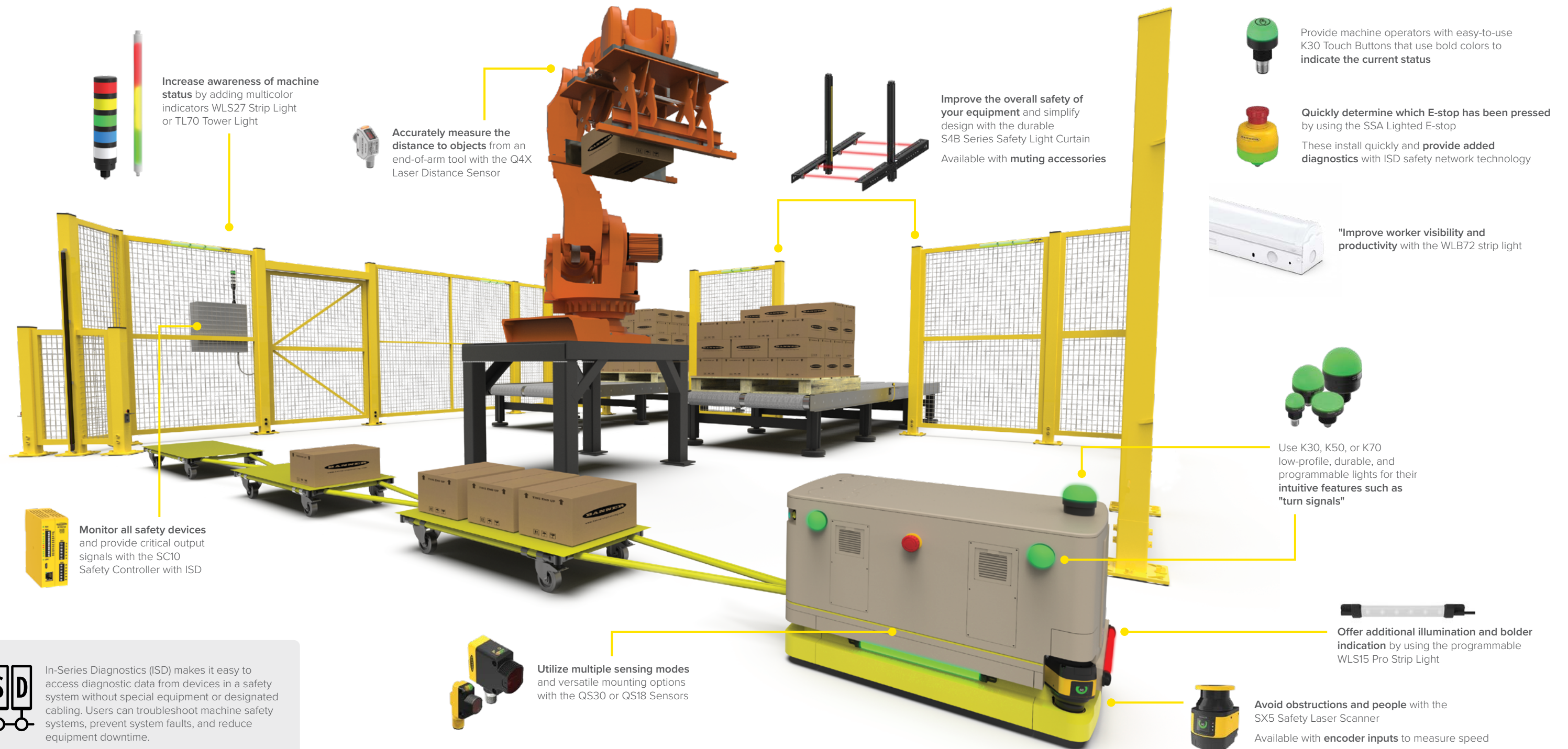
- Robust light curtains withstand impacts
- Various length, resolution, and mounting options simplify installation
- Products: S4B, SLC4

AGV Status/Signaling

- Programmable LED lights provide turn-signal and machine status to operators
- Impact-resistant housings withstand harsh conditions
- Products: WLS15, WLS27, K50

AGV Safety

- Reliable safety laser scanners detect people and objects
- Standard encoder inputs integrate speed into detection algorithm
- Products: SX5, SC10



Storage and Retrieval

Package Dimensioning

- Fast and accurate sensors measure goods moving down a conveyor
- Various models adapt to any mounting requirements
- Products: EZ-ARRAY, MINI-ARRAY, Q5X, VE Smart Camera

Machine Status Indication

- Bright LED lights improve machine-to-human communication
- Numerous form factors simplify machine design and installation
- Products: WLS27, WLS28, K90, TL30, TL50, TL70

Crane Position Sensing

- Long-range sensors provide accurate feedback on machine position
- Basic photoelectric sensors detect when pallets are in position
- Products: LTF, LT7, Q20-2, QS18

Personnel Detection

- Robust safety light curtains withstand impacts
- Various length, resolution, and mounting options simplify installation
- Products: S4B, SLC4



Accurately measure distances up to 24 m away by using the LTF24 Sensor



Read virtually any type of barcode fast and reliably with the ABR Series of Barcode Readers



Quickly determine which E-stop has been pressed by using the SSA Lighted E-stop
These also install quickly and provide added diagnostics with our ISD safety network technology



Measure pallets and packages with 5 mm resolution to ensure goods are directed to the right location using the EZ-ARRAY



Protect the storage system where pallets move through hard guarding with the S4B Series Safety Light Curtain



Reliably detect leading edges with the TTR or B25 Sensors



Limit downtime with the Q5X Jam Detection Sensor



Alert workers to machine stoppages with lights and audible alarms with the TL70 Tower Light

Loading Docks

Single Bay Detection

- Reliable detection in any dock configuration—under-eave, angled, or below-dock
- Sealed housings ensure reliable vehicle detection in any environment
- Products: T30R, Q90R

Dual-Bay Detection

- Monitor two bays using independent detection zones in one sensor
- Multiple output types simplify integration with systems
- Sealed, rugged housing ensures reliable detection in demanding environments
- Products: Q90R2

Trailer Illumination

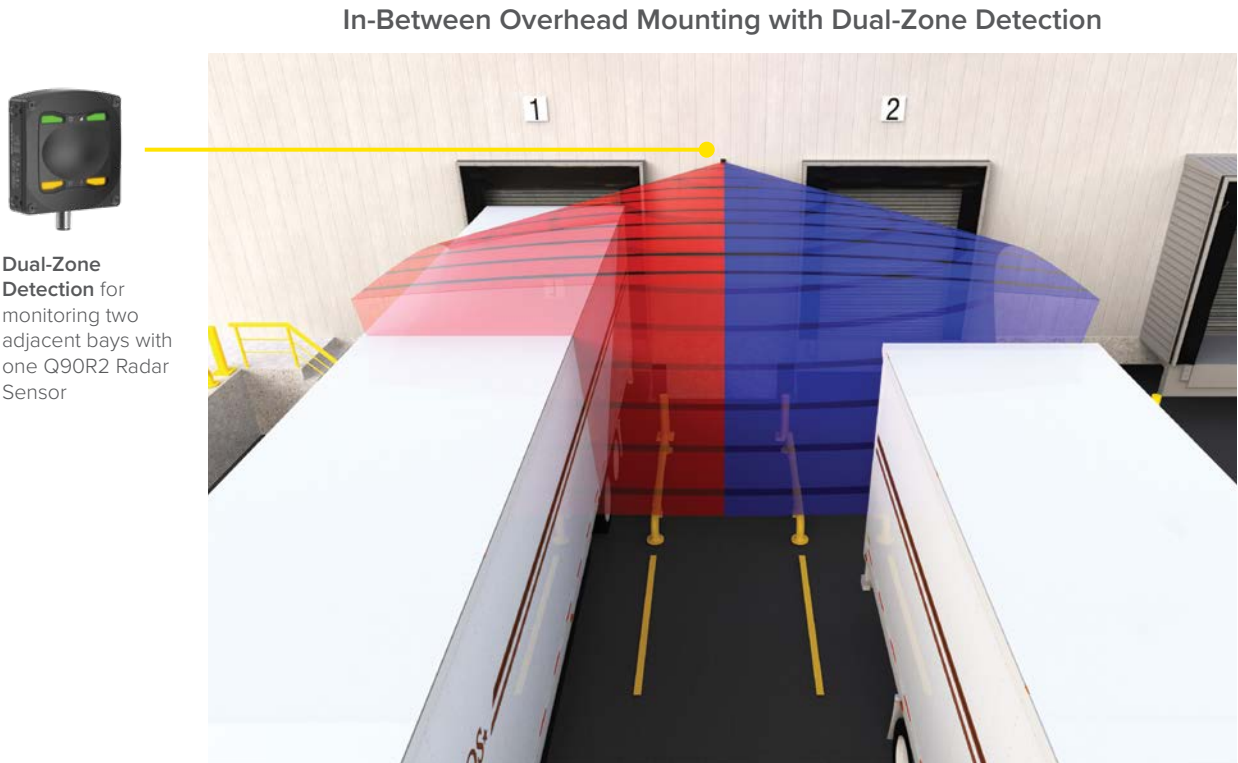
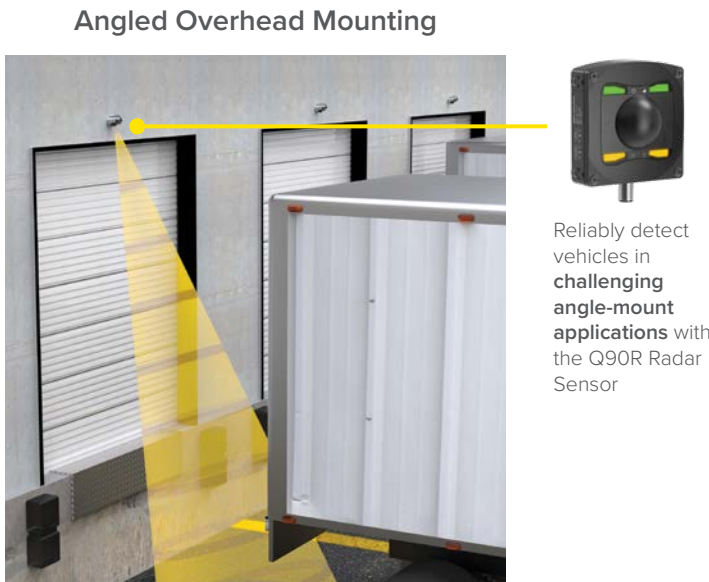
- Bright, uniform LED light provides illumination for operators
- Durable construction improves reliability in harsh environments
- Products: WLB72

Call for Support

- Reliable touch buttons allow operators to signal managers for help
- Wireless technology makes installation fast and easy
- Products: K70 Wireless, Direct Select

Dock Door Position

- Simple photoelectric sensor determines when door is open
- Powerful sensing technology withstands dust buildup and improves reliability
- Products: QS30, QS18



The Pro Series programmable multicolor LED devices from Banner Engineering offer limitless possibilities for advanced indication of dynamic machine states, operator interaction, and process statuses. Use Banner's Pro Editor Software, IO-Link, or PICK-IQ® for real-time communication across your factory.



Pulse Pro output for direct integration with Banner lights. Direct process feedback which only requires power; no controller needed.

Smarter Automation. Better Solutions.™

Banner Engineering designs and manufactures industrial automation products including sensors, smart IIoT and industrial wireless technologies, LED lights and indicators, measurement devices, machine safety equipment, as well as barcode scanners and machine vision. These solutions help make many of the things we use every day, from food and medicine to cars and electronics. A high-quality, reliable Banner product is installed somewhere around the world every two seconds. Headquartered in Minneapolis since 1966, Banner is an industry leader with more than 10,000 products, operations on five continents, and a worldwide team of more than 5,500 employees and partners. Our dedication to innovation and personable service makes Banner a trusted source of smart automation technologies to customers around the globe.

