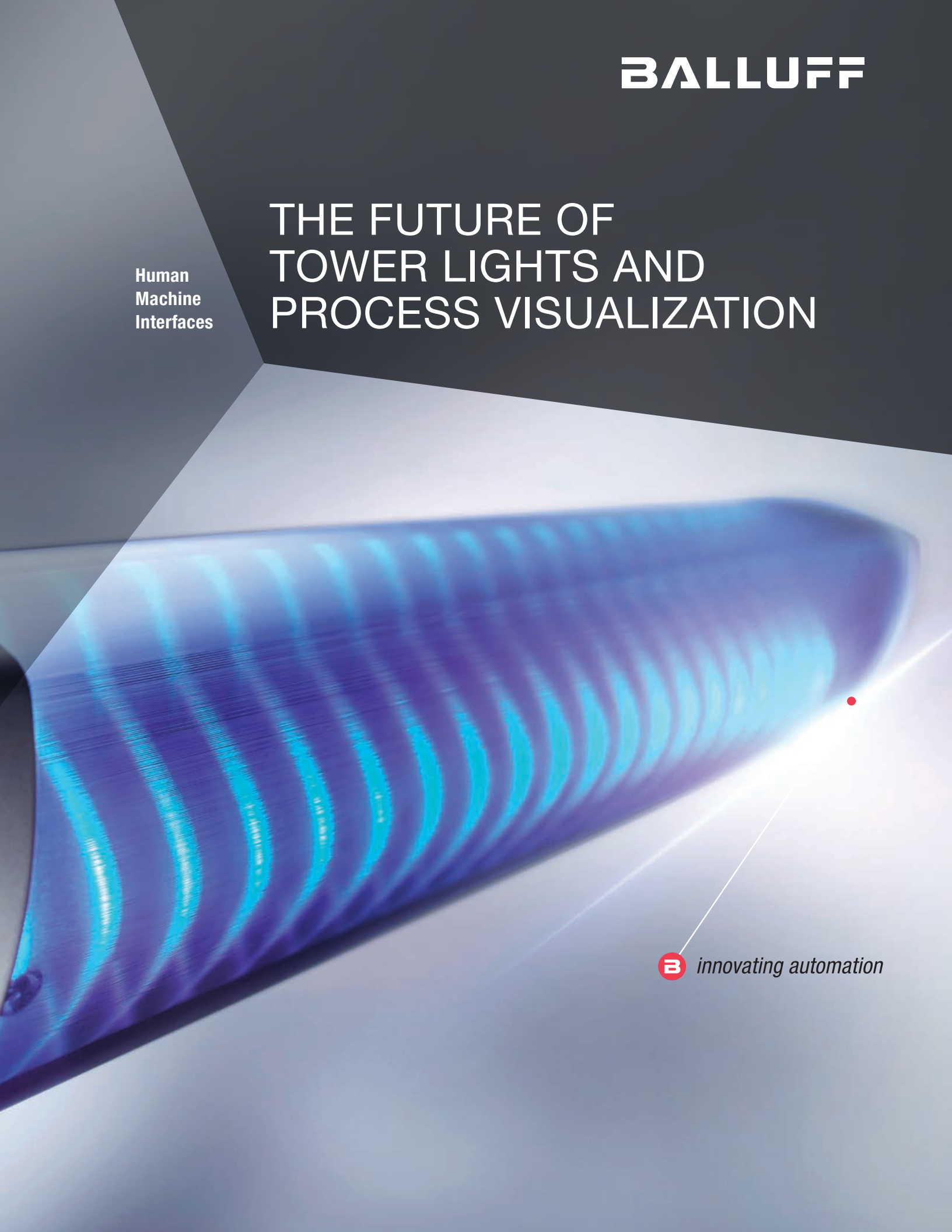
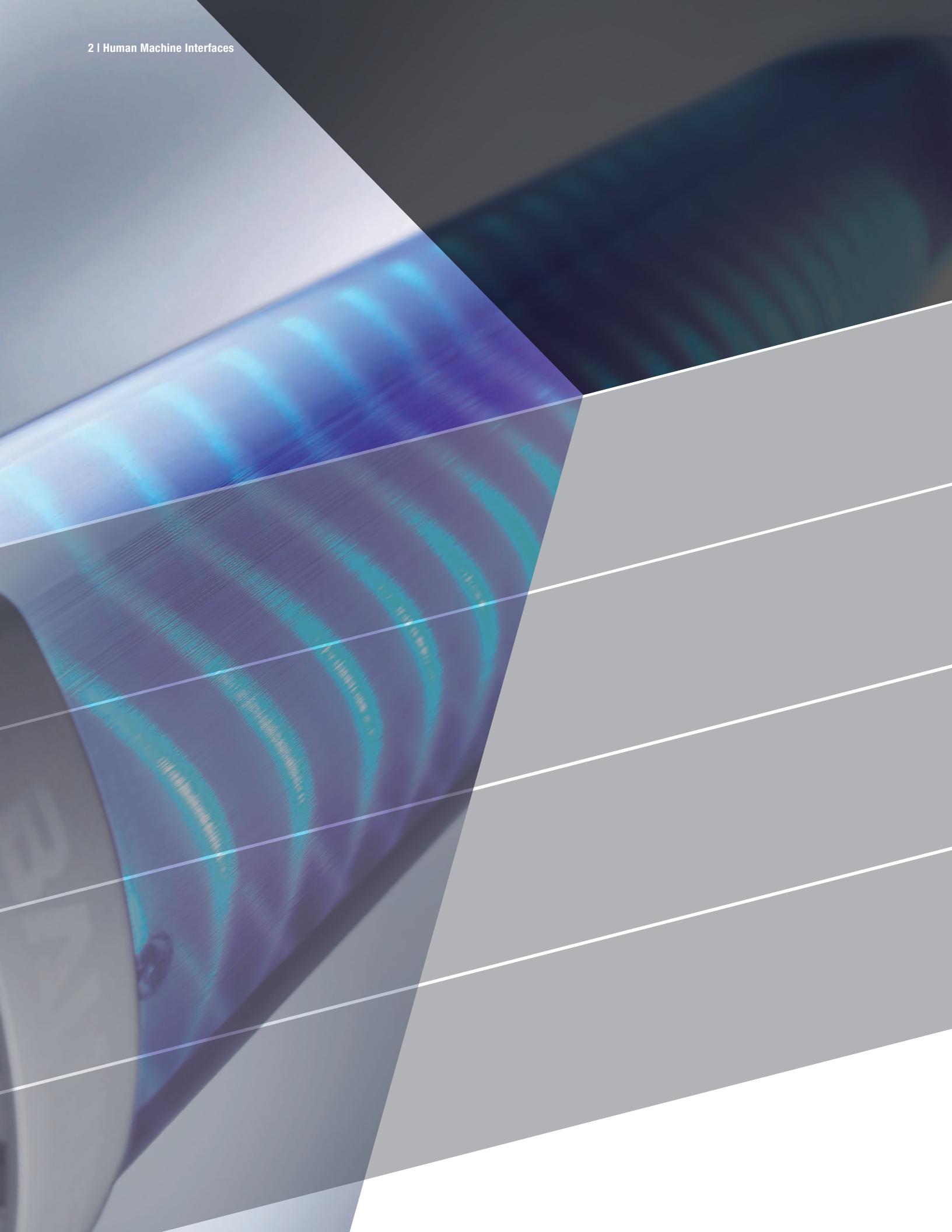
BALLUFF

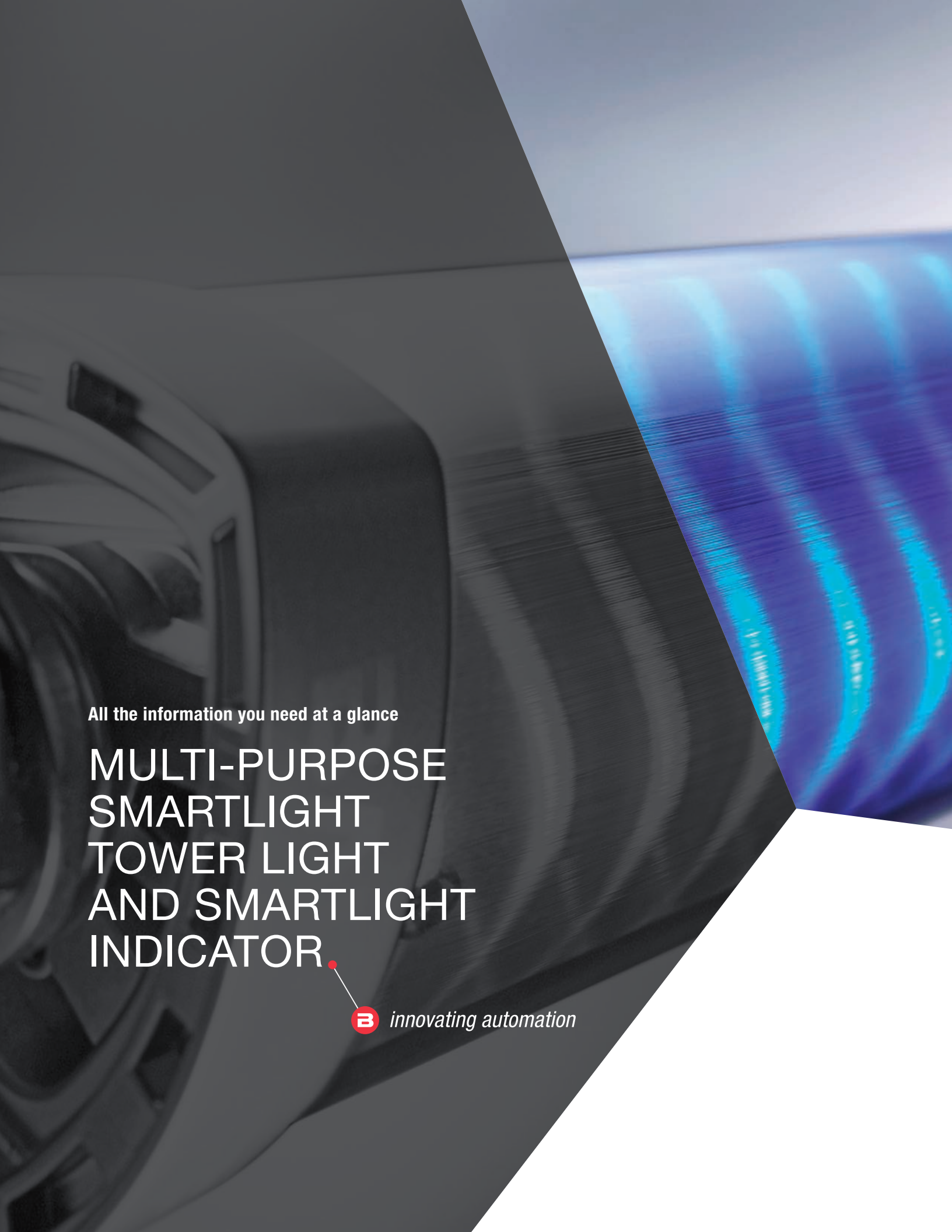
THE FUTURE OF TOWER LIGHTS AND PROCESS VISUALIZATION

Human
Machine
Interfaces



innovating automation

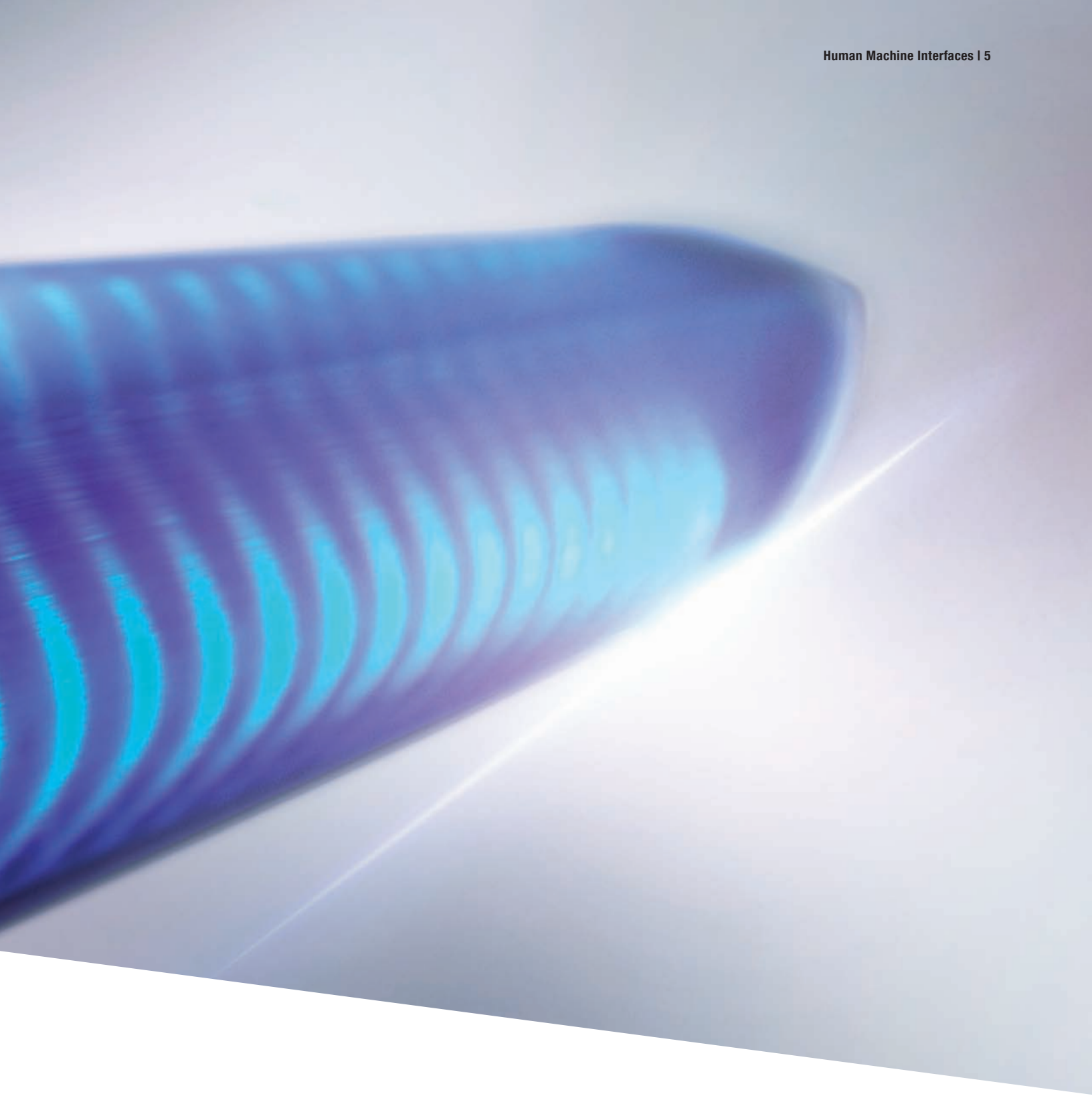




All the information you need at a glance

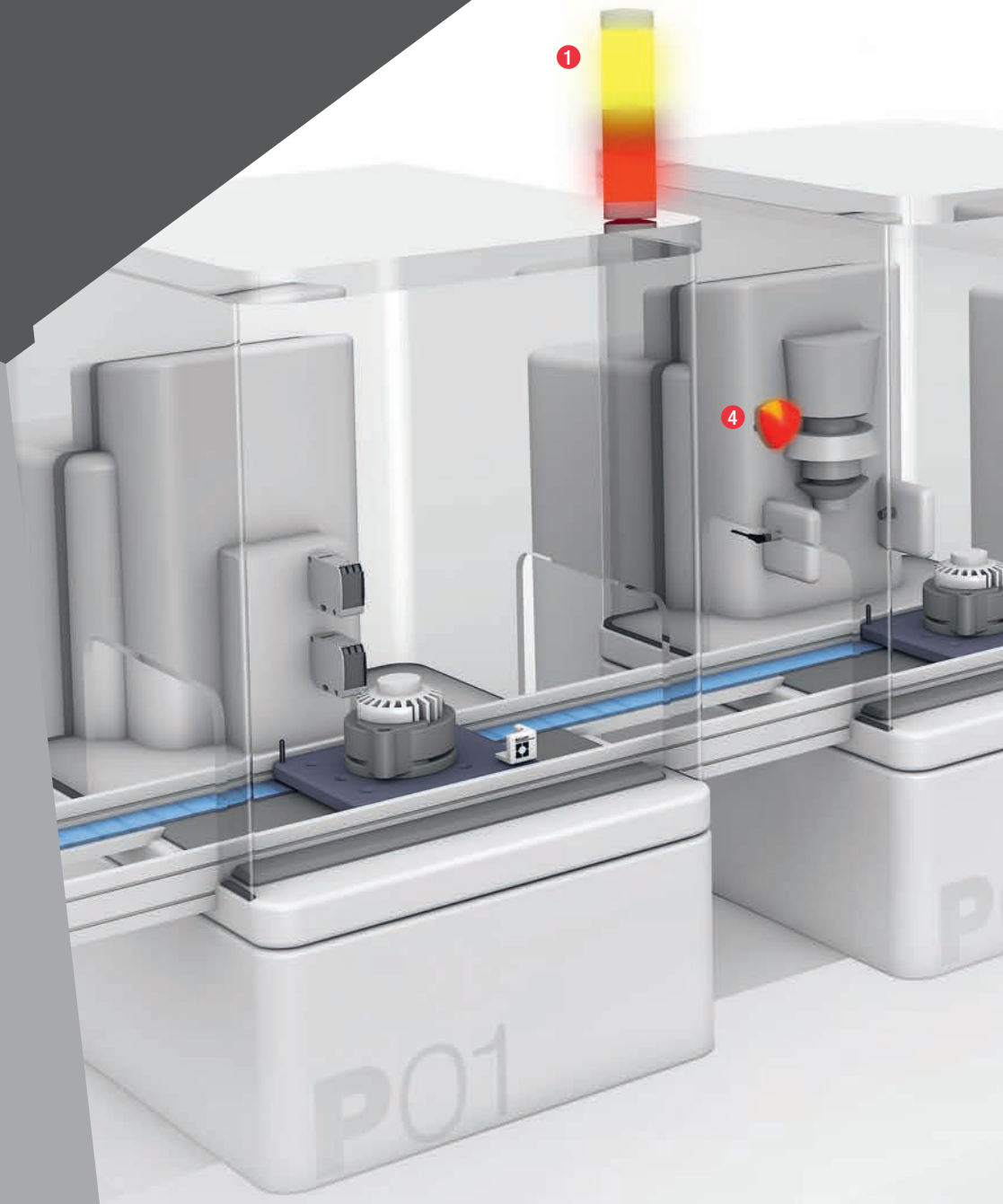
MULTI-PURPOSE SMARTLIGHT TOWER LIGHT AND SMARTLIGHT INDICATOR

innovating automation

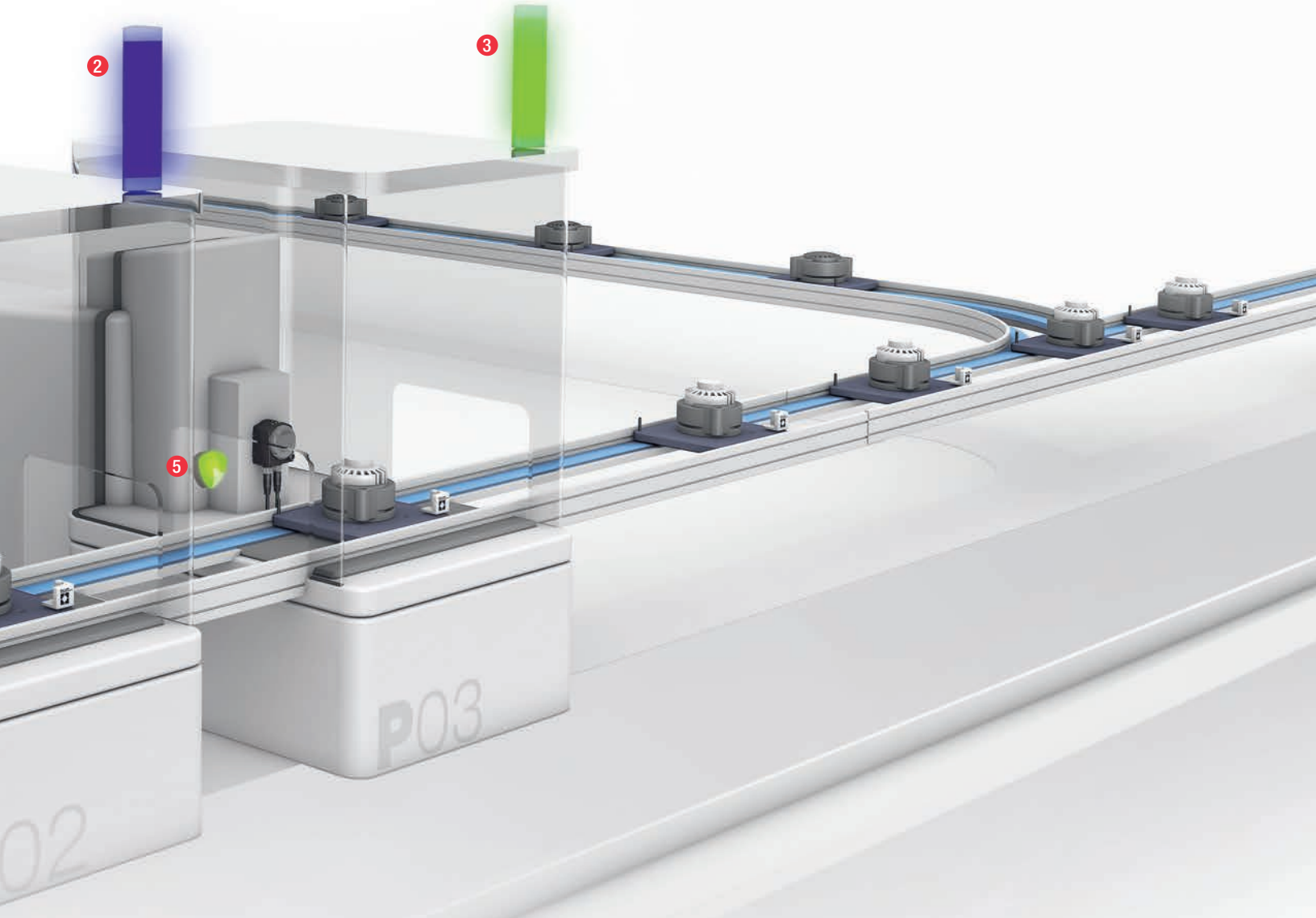


SmartLight is the first programmable LED tower light. With a rich color spectrum, adjustable light intensity and the ability to program individual configurable segments, the Balluff SmartLight can display various machine or process status information instantaneously. The mode of operation can be switched based on programmed conditions so that a single SmartLight can be used as a multi-function tower light.

Solutions at the cell level



Process monitoring and machine status at the cell level is an integral part of manufacturing operations. Instantaneous visual feedback enables plants to operate efficiently. SmartLight adds tremendous value to the plant floor as it combines multiple modes of operations and functions in a single programmable tower light. With the SmartLight tower light and SmartLight indicator there are unlimited possibilities!



1 Light and sound indicators
- Programmable intensity and customizable bright colors
- Audible 95db sound modules

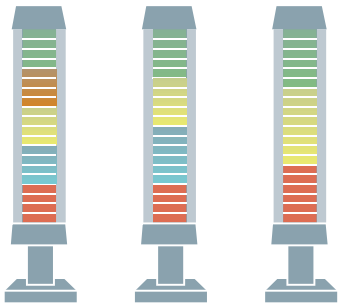
2 Simplified use
- Standard M12 sensor cable connection reduces need for special spare parts, no assembly required
- Mount exactly where needed with wall, ceiling or pole mounting options

3 Maintenance friendly design
- Mainentance-free, long work life with LED segments to power the lights
- Built-in diagnostics with IO-Link

4 Point-of-use pressure indicator

5 Point-of-use reject indicator

Flexible, scalable, intelligent tower light for cell level information

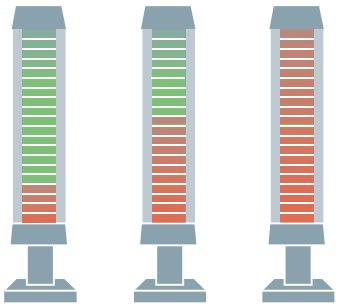


The SmartLight tower light offers four programmable modes of functionality: segment or stack light, level indication, run light, and flexible mode. Additionally, a SmartLight tower light with a buzzer option is available for audible feedback.

STACK LIGHT MODE

SmartLight's segment or stack light mode is feature-rich compared to a standard stack light. The number of segments and color for each segment can be programmed and changed on demand. Individual segments can be set for blinking or flashing mode, and the frequency of blinking can be programmed as well.

- 1 – 5 segments
- Programmable, customizable colors for each segment
- Blinking mode with programmable frequency

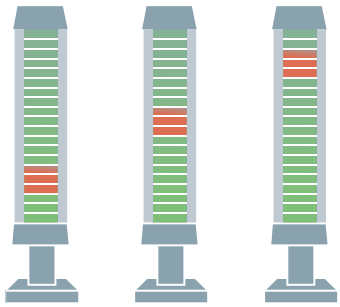


LEVEL MODE

When using the SmartLight as a level indicator, the resolution of input level can be mapped from an 8-bit to a 16-bit integer number and displays a bar graph.

The input could be a position of an object on a linear track or liquid level in a tank. Colors of the LEDs can be changed to signify the importance of the level as well. For example, if the level or the pressure in the tank is closer to the extreme, the SmartLight will display in red.

- Individual LEDs light up to display level
- Level input mapped directly to SmartLight
- Programmable, customizable colors for level indication

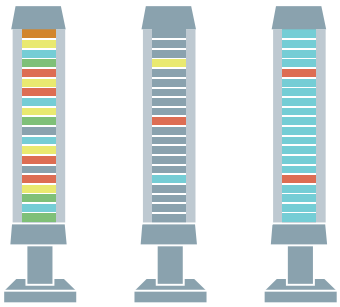


RUN LIGHT MODE

SmartLight, in a run light mode, allows using different programmable colors for the background and for the running segment. The length of the running segment and the speed of the running mode is configurable and can be switched to express different conditions.

As with any other mode, the intensity or brightness can be configured to ensure noticeable performance.

- Complete module displays the running light effect
- Programmable colors of running segment and background
- Programmable speed for running segment



FLEXIBLE MODE

Flexible mode allows every LED segment to be controlled individually. The color and intensity of each LED element can be individually defined. Patterns and moving functions are then handled by the control system. This mode allows for the most creativity and unique indication solutions available.

- Complete control of each LED element
- Define your own segment structure (i.e., six segments)
- Program unique movement patterns (in control system)

Flexible, scalable, intelligent pick-to-light indication

At the heart of most lean initiatives is the desire for more flexibility with increased productivity. Traditional pick-to-light systems can provide that productivity but fall short on flexibility…until now.

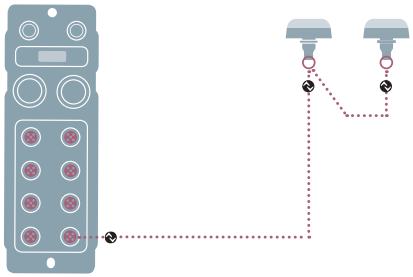
The SmartLight indicator with integrated photoelectric sensors is the most innovative pick-to-light product available. All the functions from the indicator only unit are available in this unit. Integrated into flow-racks and supermarkets on the manufacturing floor, it can direct different types of personnel including multiple assemblers, part runners, maintenance and others. One indicator can orchestrate an entire assembly cell or kitting station. All at an affordable price due to the innovative use of IO-Link.

1. **Solid red**
   Bin needs to be replenished
2. **Solid green**
   Bin is stocked and ready for a call
3. **Yellow/green**
   Bin is ready and calling for a pick from the yellow operator
4. **Blue/green**
   Bin is ready and calling for a pick from the blue operator


2
3
4

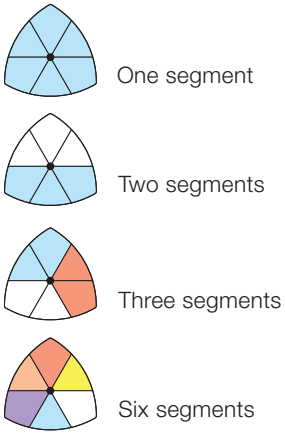
Flexible, scalable, intelligent point-of-use indication

The SmartLight indicator line consists of only two parts: an indicator only version and indicator with an integrated photoelectric sensor for Pick-to-Light applications. Both share the same powerful LED indication functions and an IO-Link interface with Balluff's innovative expansion mode. This expansion mode allows two indicators to be connected to one IO-Link port.



The LED indication functions are divided into six unique segments. Each segment can be individually controlled or utilize a variety of pre-programed operating modes. Due to the shape, directional indication is easily achieved.

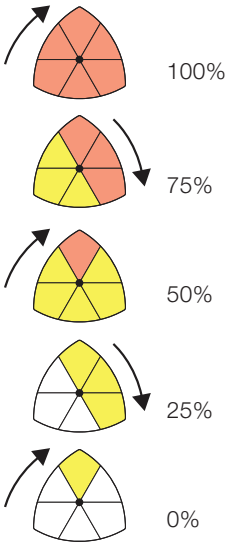
The photoelectric sensor version has an infrared, time-of-flight laser with a default 100mm range. This sensor has a sharp cutoff and tolerance to texture/color changes making it ideal for Pick-to-Light applications. The sensing range can be reduced for tighter applications or small bias.



SEGMENT MODE

In segment mode, you are in complete control over the SmartLight indicator. Each of the six segments are freely programmable for color and intensity. Operate the indicator as a segmented light or develop your own unique functions utilizing your control system.

- Operates in 1, 2, 3 or 6 segments
- Full control of color and blink mode
- Indication direction
- Mix your own color

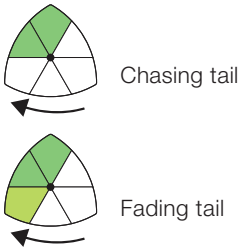


LEVEL MODE

In level mode, the resolution of input level can be mapped from an 8-bit to a 16-bit integer number. The input could be a pressure value, countdown timer, object position, tank level or any other continuously variable value.

Colors of the LEDs can be changed to signify the importance of the level as well. For example, if the level or the pressure in the tank is closer to the extreme, the SmartLight indicator will display in red.

- Dual color mode for low and high values
- Two rotations (720°) represents full swing
- Can also use one rotation (360°)
- Rotation direction control
- Fading transition control



RUN LIGHT MODE

Run light mode allows different programmable colors for the background and for the running segment. The length of the running segment, speed of rotation and trailing effect is configurable and can be switched to express different conditions.

As with any other mode, the intensity or brightness can be configured to ensure noticeable performance.

- Indicate run or wait condition
- Define foreground and background color to indicate different run/wait conditions
- Fully programmable for speed, number of segments, color and direction
- Two display versions: Fading tail and chasing tail

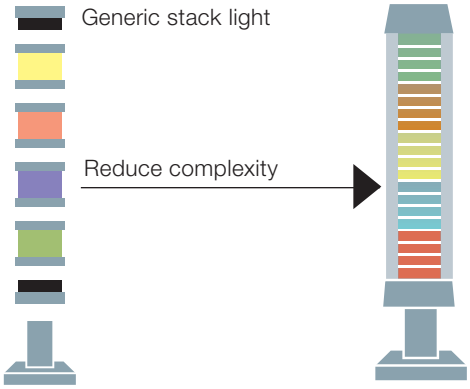
Reduce complexity; reduce risk

Doing more with less is the foundation of our SmartLight product line. With one part number and one standard M12 cable you can fulfill nearly every task in your plant for cell level and point-of-use indication.

One part number
The days of purchasing and stocking multiple stack light segments, lamps, bases and caps are over. Building up a unit to a specific task is also over. No more wasted time configuring and building a stack light that limits flexibility and expansion.

The SmartLight tower light product line is comprised of only six part numbers—three sizes, with or without an audio alarm. That's it.

One standard M12 cable
No more wiring, period. All SmartLight products utilize IO-Link for simple, low-cost connections. The standard IO-Link interface ensures interoperability and provides unique, never-before-seen capability. The physical connection uses the industry standard M12 sensor-type cables which are economical and readily available.



ONE PART NUMBER

No need to build your own stack light anymore. One part does it all and much more.

- Single part number
- Tamper resistant design
- Programmable colors, intensity, and blinking
- Configurable modes of operation with on-demand change of mode
- Programmable buzzer for continuous chopped or beeping sounds

ONE STANDARD M12 CABLE

No need to terminate individual wires. Simply plug in a standard M12 cable.

- Eliminate wiring problems
- Enable the convenience of quick disconnect
- Gain functionality
- Reduce the volume of I/O points required in the PLC

IO-Link distributed modular I/O

IO-Link is a fieldbus and manufacturer independent communications standard defined by the international communications standard IEC 61131-9. IO-Link enables seamless integration of a variety of actuators while maintaining scalability for future adaptability in the controls architecture. IO-Link is universal and adaptable to any major industrial network protocol, such as EtherNet/IP, Profinet, EtherCAT, CC-Link ie field, DeviceNet, Profibus, or CC-Link.

A multitude of actuators or devices can be connected without complex wiring. Devices include discrete I/O (e.g., prox switches), analog I/O devices, smart sensors (e.g., pressure sensors, linear position sensors), and specialty devices (e.g., RFID, non-contact connections).

IO-Link has built in scalability to add more devices to the existing network without adding more network nodes in the architecture thus providing ease of operation and a cost-effective solution for automation.