**Packaging Solutions**

**WORLD-BEAM®**
The photo-electric sensors from the WORLD-BEAM® family are one of the most comprehensive available. They include the Q12 miniature sensors, the main QS18 universal housing and the longer range/high powered QS30 sensors. Virtually all detection modes are available, including several laser based models. It is a perfect fit for any packaging line.

**EZ-LIGHT™**
The EZ-LIGHT™ products offer a full range of LED-based, multi-colour indicator lights in IP67 and IP69K versions. Easy interfacing with cables or connectors, up to 5 colours, extremely long life times and a full range of mounting accessories make this an ideal device for many food processing or packaging machines.
IVU SERIES

Detection of labels
iVu TG series is an image based pass/fail inspection sensor. Monitoring and configuration is done from the on-board touch screen display. iVu TG uses algorithms ideally suited for, amongst others, presence/absence detection of labels.

PreSencePLuS

Label verification
The PresencePLUS® P4 OMNI (dry applications) and the Pro IP68 (wet applications) check if the edges of the top and bottom labels are aligned and not skew on the bottle. If so an output signal to the machine controls is provided to eject the bottle from the conveyor.
Tube filling machines require different verification steps in the filling process (conveying, filling, labelling, sealing, ...). Banner is able to supply a full solution thanks to its large product range.

The QS18FF sensor is a background suppression sensor with fixed range and can be used ideally to check if a tube has been ejected at the end of the sealing process thus eliminating the need for a reflector.

The S18U ultrasonic sensor with an additional wave guide can detect fill levels within a 5 mm ± window (teach set-up) or measure this with a resolution & linearity of ± 0.5 mm.

The PresencePLUS® P4 OMNI BCR can read and output the datamatrix code and combines this with additional quality inspections such as lot code/date code verification.

The QS18U ultrasonic sensor can work adjacent to the FI22 sensor. Thanks to its retrosonic set-up (which uses the background as a reflector) it can reliably detect the tube irrespective if this is opaque, transparent, glossy or coloured.

The FI22 fiber optic sensor is IP67 and can be mounted adjacent to the application without additional protection. It checks the orientation of the empty tube by detecting the presence/absence of the cap.

The R58 Expert registration mark sensor can detect the orientation of a tube before sealing. It automatically optimizes the contrast by selecting its red, green or blue emitting LED depending on the application.
Banner Engineering's Worldwide Presence

**Packaging Solutions**

Sensors
- Presence/Absence Detection
- Foreground & Background Suppression
- GO/NO GO Inspection
- Gating and Triggering
- Parts Counting
- Level and Distance Measurement
- Positioning
- Contrast and Color Sensing

Vision
- Vision Sensors with Onboard User Interface
- Pattern Recognition
- Traceability (Barcode, Datamatrix and Text Reading)
- OCR/OCV
- Complex Part Inspection
- Part Orientation
- Assembly Verification
- Color Inspections

Wireless I/O
- Slip Ring Replacement
- Tank Farm Monitoring
- Life Stock Environmental Monitoring
- (Waste) Water Treatment
- HVAC Remote Monitoring
- Traffic Monitoring & Control
- Process Automation
- Remote Sensing
- Cable Replacement
- ATEX Approved Solutions

Lighting & Indicators
- Bin & Part Picking
- Error/Mistake Proofing
- Pick-to-Light & Put-to-Light
- Operator Guidance
- Call for Parts
- Incorrect Pick Signal
- Remote Start/Stop Indication

Machine Safety
- Safety Light Screens
- Optical Non-Contact Safety Systems
- Ergonomic Two-hand Control Devices
- Safety Modules
- Emergency Stop Devices
- Safety Interlocking
- Laser Scanners for Safety Applications

Banner Engineering's Worldwide Presence

**Sensors**
- Headquarter USA
  - Banner Engineering Corp.
  - 9714 Tenth Avenue North
  - Minneapolis, Minnesota 55441
  - +1 763 544 3164
  - Fax +1 763 544 3213
  - sensors@bannerengineering.com
  - www.bannerengineering.com

**Vision**
- Banner Engineering Europe
  - Park Lane, Culliganlaan 2F
  - 1831 Diegem
  - Belgium
  - +32 (2) 4560780
  - Fax +32 (2) 4560789
  - mail@bannereurope.com
  - www.bannereurope.com

**Wireless I/O**
- Hong Kong
  - Banner Engineering Hong Kong
  - Rm. 15C, Building B, Fortune Plaza
  - No. 7060 ShenNan Rd, Shenzhen
  - +86 755 83022293
  - sales@bannerengineering.com.cn

**Lighting & Indicators**
- Taiwan
  - Banner Engineering Taiwan
  - Neihu Technology Park
  - 5F-1, No. 51, Lane 35, Jihu Rd.
  - Taipei 114
  - +886 2 8751 9966
  - info@bannerengineering.com.tw

**Machine Safety**
- China
  - Banner Engineering Shanghai Rep Office
  - Rm. G/H/I, 28th Flr., Cross Region Plaza
  - No. 899, Lingling Road,
  - Shanghai 200030
  - +86 21 54694500
  - sensors@bannerengineering.com.cn
  - www.bannerengineering.com.cn

**India**
- Banner Engineering India – Pune (HQ)
  - Office No 1001, 10th Floor,
  - Sai Capital, Opp. ICC
  - Senapati Bapat Road
  - Pune - 411016, Maharashtra
  - +91 20 66405624
  - salesindia@bannerengineering.com
  - www.bannerengineering.co.in

**Japan**
- Banner Engineering Japan
  - Cent-Urban Building 305
  - 3-23-15 Nishi-Nakajima
  - Yodogawa-Ku, Osaka 532-0011
  - +81 6 6309 0411
  - mail@bannerengineering.co.jp
  - www.bannerengineering.co.jp

Banner offers a full range of sensing solutions