

APPLICATION NOTE

Bottle Inspection: checking presence of cap & tamper seal, and fill level

CAPABILITY

A smart camera with an LED backlight utilises various tools for basic bottle inspections:

- Cap presence/fitment - to detect missing, loose and cocked caps
- Tamper band integrity – for missing or broken tamper seals
- Liquid fill level – to detect under/over fills



Cap Height

Tamper Seal

Fill Level

HARDWARE

The hardware required for a basic bottle inspection is:

- Camera
- LED Backlight
- I/O Cable
- Trigger Sensor
- Ethernet Cable

METHOD

- a reference image is to be captured by the camera.
- Locate Position – locates a dark-light or light-dark edge for position referencing other tools
- Line Edge – calculates height and angles of cap features, to detect presence and fitment
- Brightness – calculates the brightness of the selected region (0=Black, 100=White) for fill level measurement, and to detect missing caps & broken tamper seals
- pass/fail output and specific fail diagnostics can be sent to connected devices

CONSIDERATIONS

- number of SKU's to be inspected
- different product geometries
- required accuracy of fitment and fill measurements
- Production environment and IP rating required

OFFER

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TECHNOLOGY PARTNERS

