

Release without delay – maximum product safety during filling

In-line monitoring of turbidity and colour between the pressure tank cellar and the bottling stage using the TurBiScat PM 40

Bottling is one of the most critical stages in the brewing process. It is just before bottling that it is determined whether a beer meets the required turbidity and colour standards and can be released. The TurBiScat PM 40 enables continuous in-line measurement of turbidity and colour between the pressure tank cellar and the bottling line – thereby replacing time-consuming laboratory analyses for product release, particularly during three-shift operation.

Initial situation and challenge

Before each filling operation, every pressure tank must be approved by the laboratory. In practice, this gives rise to several challenges:

- Every pressure tank requires a laboratory sample for approval
- Delay between sampling, analysis and approval
- High staffing requirements in the laboratory, particularly at night
- Laboratories are often not staffed across three shifts
- There is no continuous quality monitoring

At the same time, demands for product safety, traceability and process stability are increasing.

Necessity

In-line monitoring immediately prior to filling provides transparency where it is most important:

- Continuous monitoring of actual product quality
- Early detection of deviations throughout the entire filling process
- Reducing the laboratory's workload to allow it to focus on more demanding analyses
- A clear data basis for approval, documentation and traceability

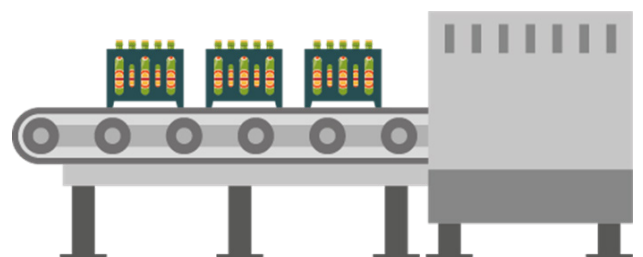
The solution

The TurBiScat PM 40 is a high-precision in-line photometer, specially developed for the continuous monitoring of turbidity and colour in brewing processes.

Measuring principle

- Two-angle scattered light measurement at 25° and 90°
 - 90°: sensitive to fine, colloidal turbidity
 - 25°: sensitive to larger particles
- Automatic colour compensation for stable and reproducible turbidity measurement
- Colour measurement in accordance with MEBAK/EBC for real-time monitoring of beer colour

Measurement takes place continuously throughout the entire filling process – not just at specific points, as is the case with laboratory analyses.





The TurBiScat PM 40

Bonus for three-shift operations

Automated in-line approval ensures seamless shift handover, reduces coordination efforts and maximises process reliability – even at night and at weekends.

Typical installation

The TurBiScat PM 40 is installed between the pressure tank cellar and the bottling line.

Recommended position:

- In the product flow, immediately before the bottling line
- Continuous measurement of every litre of beer bottled

Customer benefits at a glance

Time and cost savings

- Elimination of sampling and laboratory approval in three-shift operations
- Reduction in waiting times prior to filling
- Reduced workload for laboratory staff

Improved product safety

- Continuous monitoring of turbidity and colour
- Immediate detection of deviations
- Greater safety during shift handover

Process optimisation

- Rapid corrective action in the event of deviations
- Clear quality data for every bottling run
- Improved traceability in the event of complaints

Quality and shelf life

- Consistent product quality
- Reduced risk of complaints related to cloudiness
- Contributes to a longer shelf life

Figures & Benefits

- 100 % inline monitoring instead of spot checks
- No waiting time for laboratory results before bottling
- Significantly fewer manual interventions during the bottling process
- More laboratory time available for complex analyses

(Actual savings depend on the size of the business, filling capacity and shift pattern.)

Technical details

Full technical details of the TurBiScat PM 40 can be found on our website.

Further measurement tasks

TurBiScat PM 40 (examples)

The TurBiScat PM 40 can also be used to measure turbidity in diatomaceous earth and other filters, in the blending plant and in the bottling plant.

Conclusion

With the TurBiScat PM 40, quality approval prior to bottling is carried out reliably, quickly and reproducibly directly within the process. Continuous in-line measurement of turbidity and colour enhances product safety, reduces costs and takes the pressure off the laboratory – a decisive advantage for modern breweries with high quality and efficiency requirements.