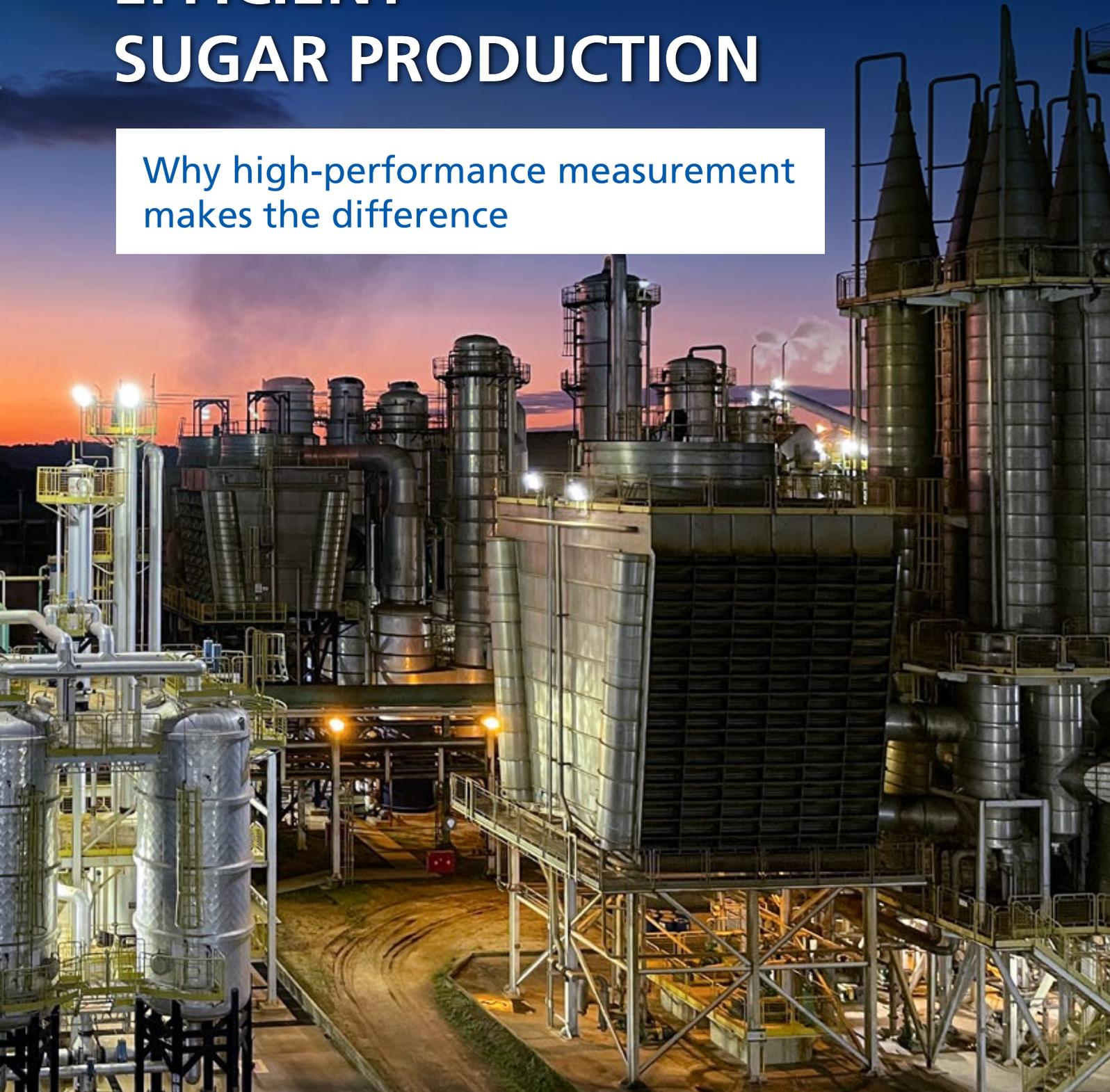


EFFICIENT SUGAR PRODUCTION

Why high-performance measurement
makes the difference



QUALITY
MADE IN
GERMANY

BERTHOLD

Outstanding measuring performance saves money - every day!

Precise Brix measurement is a critical parameter in sugar production, directly influencing process control, product quality, and operational efficiency. Conventional measurement systems often rely on outdated principles that are susceptible to drift, require frequent recalibration, maintenance, and lack the robustness needed for continuous operation in harsh industrial environments.

Berthold addresses these limitations through advanced microwave-based measurement technology. The MicroPolar Brix LB 565 utilizes multi-frequency microwave transmission to determine the properties of the medium, enabling accurate and stable Brix readings independent of colour, turbidity, or temperature variations.

The basis for calculation

These figures are based on a 250,000-ton sugar-cane factory operating over an eight-month campaign. An average investment of 15,000 € to upgrade measurement accuracy can significantly improve overall sugar yield, thereby increasing earnings.

Measuring 1% °Brix more accurately will provide a 0,25% more sugar recovery yield (conservative approach)

- A 0.5% Brix accurate measurement could recover around 100 tons sugar per campaign.
- Taking a sugar price of 300 €/ton sugar, it is possible to save 30.000 € per 8 months campaign.
- ROI: the payback in around 4 months.

Potential savings from reducing system inaccuracies

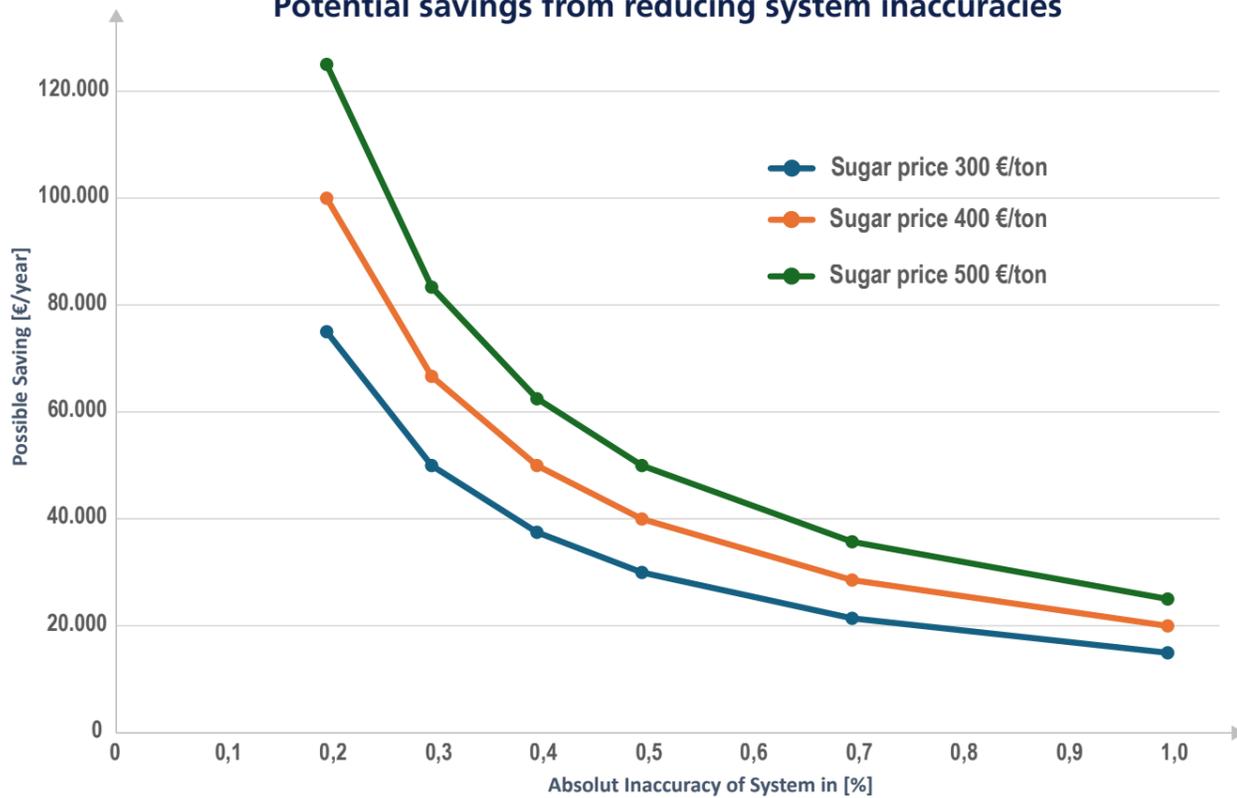


Figure 1: The values illustrated in this graph are based on reference data representative of a sugar mill with an annual sugar production capacity of approximately 250,000 tonnes. A conservative Brix-to-sugar recovery conversion factor was assumed in the calculations.

Linear Regression

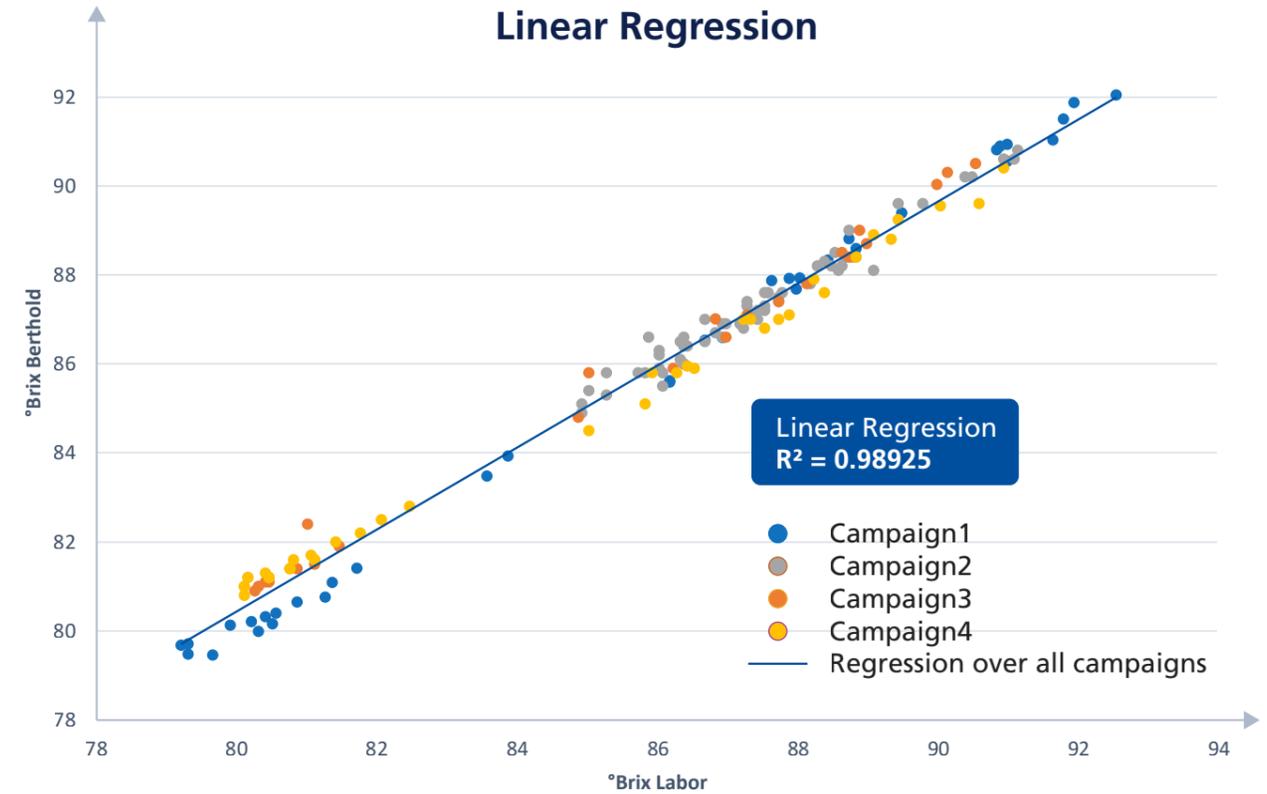


Figure 2: Schematic representation on a Brix measurement across 4 campaigns

It's worth it!

Even under conservative assumptions, the €15,000 investment can pay for itself in less than a single campaign. The actual return will depend on factors such as sugar prices, production costs, and specific operating conditions. However, when considering measurement accuracy alone, the potential savings are substantial as outlined in this document.

A stable, reproducible, and highly accurate measurement system delivers value beyond improved precision. It also reduces the need for recalibration, lowers labour costs, and further enhances overall return on investment. This project represents a high-priority, low-risk investment with rapid payback and significant operational benefits.

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