TECHNICAL BRIEF

P&P Optica

Unlock Precision in Lean Point Assessment with Hyperspectral Imaging

Choosing the right vision system for fat and lean analysis is essential for optimizing yield and ensuring product quality in meat processing. Many systems claim to offer both fat/lean analysis and foreign material (FM) detection, but not all technologies deliver both with the same level of accuracy and consistency.

Unlike X-ray systems, which often compromise FM detection accuracy when performing lean point analysis, PPO's hyperspectral imaging technology delivers both analyses simultaneously without sacrificing the precision of either. This dual capability ensures processors can achieve accurate fat and lean measurements alongside superior foreign material detection—without compromise.

Accurate Inline Fat and Lean Analysis with Hyperspectral Imaging

PPO's technology provides accurate compositional analysis of meat products, including lean and fat content, with a ±1% chemical lean (CL) accuracy. Unlike traditional core sampling methods, which test only small portions and can cause inaccurate lean estimates, PPO's inline hyperspectral imaging system scans the entire product flow. This 100% real-time inspection improves accuracy, eliminates destructive testing, and reduces waste, labor, and rework.

Effective lean point management is crucial for processors who aim to reduce costs associated with fat claims and maximize profitability. PPO's hyperspectral imaging system allows precise fat control, minimizing both visible and hidden lean giveaways. It also ensures recipe consistency for secondary processors. This system improves operational efficiency, ensuring that every stage of production meets high standards for quality and yield.

PPO's hyperspectral imaging system goes beyond lean measurement

In addition to lean and fat measurement, PPO's hyperspectral imaging technology offers superior foreign material detection, helping processors mitigate recall risks and minimize product waste. The system integrates seamlessly with various meat forms, including fresh, frozen, bulk, blended, or packaged meat, delivering consistent quality throughout the production process.

By combining foreign material detection with precise lean point measurement, PPO's solution ensures optimal product quality without compromising safety or operational efficiency. This dual capability allows processors to maintain high safety standards while improving yield and profitability.

PPO's Smart Imaging System: How It Works

1. **Custom-Designed Hyperspectral Lamps:** PPO uses specialized lighting that generates both visible and near-infrared (NIR) wavelengths, ideal for meat composition analysis.
2. **Real-Time Spectral Analysis:** As products move along the production line, the system captures reflected light and analyzes hundreds of wavelengths to determine lean-to-fat ratios.
3. **AI-Powered Precision:** Machine learning models process spectral data to deliver highly accurate and consistent lean point measurements at full production speed.
4. **Actionable Insights:** PPO's Insights software provides real-time data on quality metrics, allowing processors to monitor and adjust production to prevent costly chargebacks and enhance operational efficiency.

With the added benefit of superior foreign material detection, processors can reduce recall risks and prevent product waste. PPO's solution integrates seamlessly with fresh, frozen, bulk, blended, or packaged meat—ensuring consistent quality, reduced waste, and improved yield at every stage of production. Importantly, our technology achieves this without compromising lean point measurement, ensuring that processors can maintain optimal product quality while also enhancing safety and operational efficiency.

For more information or to schedule a demonstration, please visit www.ppo.ca or contact PPO at info@ppo.ca.