

**APPLICATION NOTE**

**6.02 FOOD & BEVERAGE**  
**DAIRY – INTERFACE**  
**DETECTION**

- 0.0005 – 80% total solids content
- Reduce waste
- Optimize set-up times
- Optimize CIP cleaning cycles
- Detect leaks

Many dairies operate Clean in Place and product change-over cycles without adequate instrumentation. Product interfaces are often controlled using fixed time or volume-based calculations using manual verification where safety margins ensure the product will always be at the desired concentration prior to further processing. Unnecessarily long product interfaces resulting from a lack of real time process data results in substantial waste – lost product, process downtime and waste treatment costs.

Knowledge of the actual concentration of the dairy product in real time will eliminate costly guess work and result in significant and substantial cost reduction.

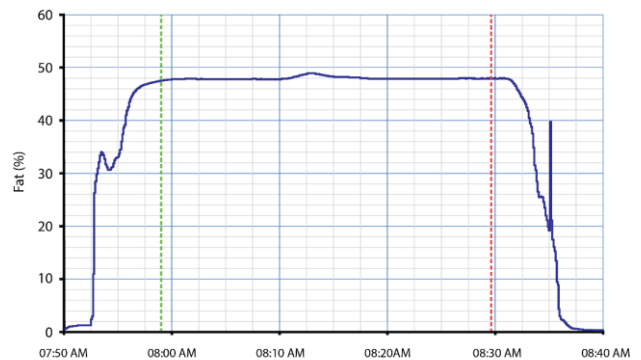
By knowing the exact concentration of product in the line, CIP cycles can be optimized, product set-up times can be significantly reduced and product quality can be improved resulting in an increased profitability for the dairy, a better environment through reduced waste and happier customers.



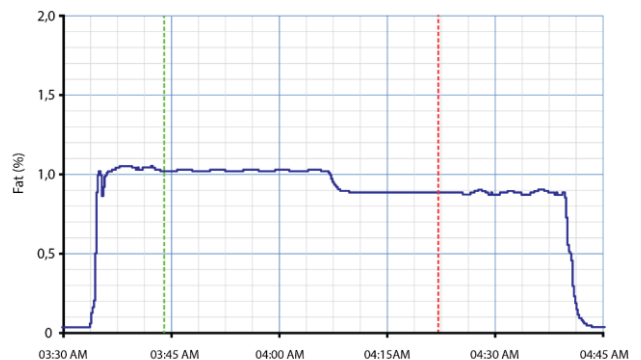
*Kemtrak DN25/1" sanitary clamp pipe coupling fiber optic reflectance probe installed in a DN50/2" pipeline.*

**APPLICATION**

The [Kemtrak TC007](#) backscatter photometer simplifies the measurement of high concentration suspended solids allowing continuous high resolution monitoring of transitions points. Product to product, product to water and water to product interfaces can be accurately monitored, in-line and in real time, over the full range of milk-fat concentrations anywhere in the dairy or creamery.



*Continuous in-line monitoring of extra thick double cream.*



*Continuous in-line monitoring of low fat dressing*

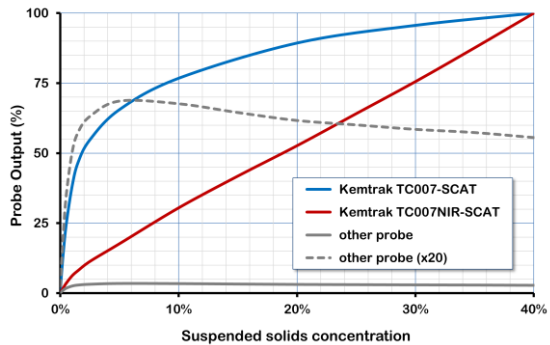
The [Kemtrak TC007](#) backscatter photometer is simple to install and commission. A leading dairy customer in the UK installed the [Kemtrak TC007](#) on a Friday, by Monday they had been able to predict savings of 400,000 L of product per line. The projected annual savings at their smallest cream plant was £300,000 (€400,000 / \$455 000).

### INSTALLATION

The recommended installation for dairy applications is to mount the [Kemtrak sanitary backscatter probe](#) with integrated DN25/1" sanitary clamp pipe coupling directly on any size pipeline greater than DN25/1" diameter.

The sanitary backscatter probe is manufactured in 316L stainless steel with a robust scratch resistant sapphire window. The highly polished unbroken probe surface ensures freedom from fouling and suitability for sanitary applications.

A unique benefit of the [Kemtrak sanitary backscatter probes](#) is that it will not go blind at any concentration of suspended solids. The output of the [Kemtrak TC007](#) will continue to increase with sample concentration ensuring a reliable measurement at any concentration. The TC007-SCAT (low range) analyzer is recommended for process concentrations up to 10% total solids, while the TC007NIR-SCAT (high range) analyzer should be used for precise monitoring of suspended solids exceeding 10%.



*Two instrument models are available for 0.0005-80% total solids content determination. The TC007-SCAT (low) has higher resolution from 0.0005-10% solids, while the TC007NIR-SCAT (high) has significantly higher resolution above 10% suspended solids.*