

OPTIQUAD Application list

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1 OPTIQUAD-M 4050 W to measure Fat, Protein, Lactose, Total Solids, ...

Raw milk reception: Measurement of fat and protein in raw milk at 4...7°C / 39...45°F after unloading.

Raw Milk: Measurement of fat and protein after raw milk tank but before pasteurization

Raw milk after pasteurization: Raw milk is being pasteurized (69°C / 156°F, 10s) and bacteria's are being removed by a bactofuge. Temp. 4...6°C / 39...43°F.

Raw milk reception: Measurement of fat, protein and lactose in raw milk at 4...7°C / 39...45°F after unloading.

Skimmed milk: prior to powder production

Protein and Total Solids (TS) in skimmed milk and butter milk: Measurement of protein and TS in skimmed milk with different concentrations

Skim milk & whole milk powder: Standardization of protein in TS of 34%

Cream reception: Measurement of cream at truck reception. Fat: 38%...42%.

Cream measurement: Measurement of cream after separation.

Concentrated Cream: Fat concentration up to 48%

Cream before loading to a truck: Cream measurement just before truck loading.

Mascarpone cheese production: From cream, skim milk and protein concentrate. Measurement of Fat, Protein, experimentally: humidity.


Cream Cheese standardization: Fat: 20...34% and TS: 29...42%

Cheese milk standardization: fat and protein standardization (cream and UF retentate)

Cheese milk production: Separated skim milk and cream mixed together. Measurement temp. = 24°C / 75°F.

Cheese milk standardization: milk (raw milk), partially skimmed milk, cream, and high solids milk (from UF of milk with high protein or fat concentration) blending

<p>Cheese Milk for semi-hard cheese production: Fat and Protein measurement of skim milk + cream and sometimes 1-3% buttermilk and then pasteurized.</p>
<p>Final cheese milk: Consisting of whole milk, skim milk and cream to standardize the fat value of the cheeses milk in order to match with the given fat to protein factor.</p>
<p>Cheese milk production: Separated skim milk and cream mixed together. Measurement temp. = 4...8°C / 39...46°F.</p>
<p>Cheese milk production: Separated skim milk, raw milk and whey cream (process of whey cream not known) mixed together in a 1000 liter tank then pasteurized. Measurement temp. = 30°C / 86°F.</p>
<p>Cheese milk production: Separated skim milk, raw milk and whey cream (process of whey cream not known) for on the fly production of cheese. Measurement temp. = 60°C / 140°F.</p>
<p>Fat in skimmed whey: Measurement before the RO filter system</p>
<p>Fat in skimmed whey: Another application before the RO filter system. Fat: 0.02%...0.06%; Protein: 0.4%...0.9%; Total solids 4%...6%</p>
<p>Whey cream after pasteurization: Whey is being separated to whey cream than pasteurized at 80°C and then measured by the OPTIQUAD. Whey cream will be added back to the cheese milk in order to increase the fat level in cheese milk.</p>
<p>Whey after cheese production: Measure the filtered whey after cheese production.</p>
<p>Whey: Measurement prior to ultra-filtration</p>
<p>Non-fat whey after reverse osmosis skid: After removing water in the Reverse Osmosis plant the lactose concentrate will be sold (loaded to a truck).</p>
<p>WPC standardization: 5 different whey products on the line, one calibration</p>
<p>WPC80 production: Whey is concentrated by ultra-filtration to reach a level of 80% protein within dry matter. Measuring temperature 10°C / 50°F.</p>
<p>Protein in retentate: Protein and Total Solids in retentate</p>
<p>UHT milk production: measurement prior to UHT.</p>



▶ **Straight
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▶ **measure the facts**

Fat in standardized milk to UHT milk production: Measurement of fat (1,5%, 3,5% and 3,8%).

Moisture in butter oil (AMF): Feasibility positive

Evaporated milk production: Up to 6 different evaporated milk products mixed with Carrageenan and different amounts of rework milk, measured before filling. Measurement temp. = 4...7°C / 39...45°F.

Yoghurt production: Measurement of Protein (and later fat) to monitor the mixing of protein powder into standardised milk which is circulated until the powder is homogeneously distributed and dissolved.

Extended Shelf Life (ESL) milk production: Measurement of fat to control the fat level of the final product.

2 OPTIQUAD-WW 4050 W to measure COD in industrial waste water applications

Waste Water monitoring (COD measurement): dairy waste water.

Waste Water monitoring (COD measurement): dairy waste water including high amount of lactose.

Waste Water (COD measurement): LACTAM ZA (NH₄)₂SO₄, with a mixture of 2w/w% Organic compound,
Derivative of: Caprolactam

Waste Water monitoring (COD measurement): sugar beet processing. 0...5000mg/l, pipe installation

Waste Water monitoring (COD measurement): sugar production

Waste Water monitoring (COD measurement): municipal waste water (70% waste water from Mondelez)

Waste Water monitoring (COD measurement): dairy waste water.
New OPTIQUAD with new Transmission module field test

Waste Water monitoring (COD measurement): dairy waste water (dry powder)

Waste Water monitoring (COD measurement): after milk production

Waste Water monitoring (COD measurement): potato chips production.

Waste Water monitoring (COD measurement): coffee press water, 0...80000 mg/l

Waste Water monitoring (COD measurement): coffee production


Waste Water monitoring (COD measurement): nut processing, pipe installation, 0...6000 mg/l

Waste Water monitoring (COD measurement): enzyme factory process water

Waste Water monitoring (COD measurement): in a bioethanol plant, 0...13000 mg/l

Waste Water monitoring (COD measurement): inlet of customer's wastewater plant

Waste Water monitoring (COD measurement): dairy waste water of all production lines with huge amount of
different waste water mixtures.



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▶ measure the facts

Waste Water monitoring (COD measurement): dairy waste water, case 1 production waste, case 2 production waste and general waste water. Tank installation.

Waste Water monitoring (COD measurement): after yoghurt production

Waste Water monitoring (COD measurement): after cheese production

Waste Water monitoring (COD measurement): after whey production

COD measurement in an open channel

3 OPTIQUAD-EOF 4050 W to measure FFA, TPM, POV, Moisture, Dirt, AI, IO, ... in edible oil & fat

Deep Frying of fish and fish products: Measurement of free fatty acids (FFA, total polar material (TPM) and peroxide value (POV) in colza oil. Frying temperature: 190...205°C / 374...401°F

Deep frying of potato chips: Measurement of free fatty acids (FFA) in high oleic sunflower oil (HOSO) during frying. Oil temperature: 170...190°C / 338...374°F.

Deep frying of chicken products: Measurement of free fatty acids (FFA) in palm oil during frying. Oil temperature: 170...190°C / 338...374°F

Chicken nuggets production: Measurement of FFA and TPM in order to save fresh oil addition at 195°C / 383°F

Production of potato snacks: Measurement of FFA, Peroxid Value (POV) and Iodine Value (IV) in the deep frying process at 195°C / 383°F

Biodiesel plant: Measurement of FFA, moisture, phosphor just before the reactor in order to optimize the reactor process. Temperature range 30...80°C / 86...176°F

Cocoa butter production: Measure the quality (FFA) of the final product at 180 °C / 356°F

Production of technical fatty acids out of food leftovers: Measurement of FFA, dirt and moisture in the production of technical fatty acids. Raw materials are food leftovers, waste of frying processes and waste of fat separators.

Animal Leftover: OPTIQUAD is being used to distinguish between fat of higher quality (below 5% FFA) and fat of lower quality (above 5% FFA). OPTIQUAD will control the valves towards two dedicated tanks.

Edible Oil Mill: Measurement of FFA and Moisture of the raw oil after oil press to optimize the refining process and to save energy at 80°C / 176°F

4 Miscellaneous Applications

Filter monitoring: Color detection of riboflavin

Detection of biofilm growth in water pipes: Measurement of proteins in organic cells

Detection of leakage in cased wells: Measurement of fluorescent markers

Oil layer on water

Total solids measurement in an open channel

Degree of yellow color of plastics