

NEW! FluorLite-PF™ Sensor

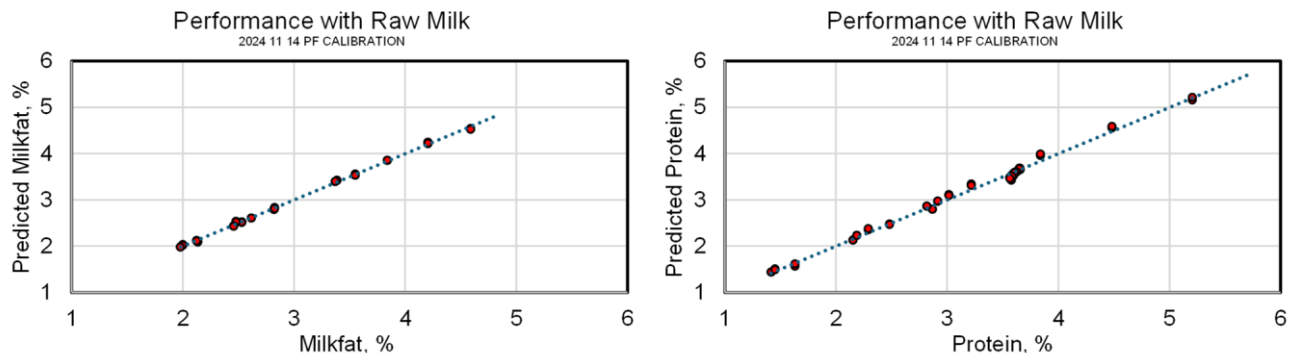
Measures Protein and Fat in Milk

Technology

The monitoring and process control functions of many dairy operations could be improved with an inline sensor that measures the concentration of both milk protein and milkfat. The FluorLite-PF sensor combines Reflectronics' unique fluorescence sensor technology for measuring protein with traditional Vis-NIR technologies for measuring milkfat in one sensor. The fluorescence technology relates the fluorescence of the amino acid tryptophan to the protein content of milk.

Performance

The FluorLite-PF sensor measures liquid milk protein and milkfat contents in the range up to 6% with a SEP less than 0.05% for both protein and milkfat between 2 and 6%. There is only a small correction factor needed to adjust for raw milkfat in the plant to account for differences in milkfat globule size distribution. The following is typical performance:



Calibration

The FluorLite-PF protein sensor is calibrated at the manufacturer's laboratory to measure protein up to 6% for fresh raw milk. A plant recalibration is not needed unless applied to a milk, for example, such as rehydrated dried skim milk where the tryptophan fluorescence of the milk is altered by the heating and spray drying process.

The milkfat sensor is calibrated to measure milkfat up to 6% using raw silo milk. The milkfat particle size distribution changes as milk is processed. Generally, the milkfat particle size decreases with processing, the light extinction in the samples increase, and the milkfat content predicted from the algorithm increases. Thus, a calibration entry at the PLC for milkfat content will be needed for the specific sensor location in the plant.

Sensor Output

The sensor outputs two 4-20 mA signals with ranges of 0 to 6% for both protein and milkfat.

FluorLite-PF™ Technical Specifications

❖ Standard Compliance:	3A Sanitary Standard 46-04 EC 1935/2004 CE
❖ Product Contact O-Rings	Viton
❖ Sensor housing	316 SS
❖ Optical Window	Sapphire and Grade 2 Titanium
❖ Cable	M12, Quick disconnect, watertight, IP 68 Rated
❖ Operating Temperature Limits	Product 15 - 45°C; Sensor 100°C
❖ Connections	3" Tri-Clamp
❖ Power Supply	Isolated +24 VDC, 500 mA max., grounded
❖ Output Signal	Two 4-20 mA signal proportional to protein and fat
❖ Serial Number	S/N and date etched onto SS (444-20251231)

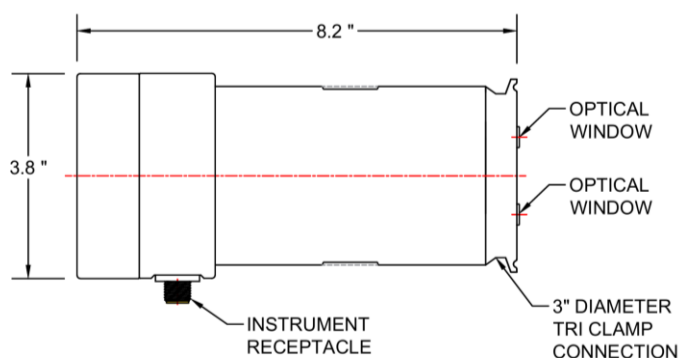


Fig. 1. Side view of the FluorLite-PF sensor.



Fig. 2. FluorLite-PF sensor.



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