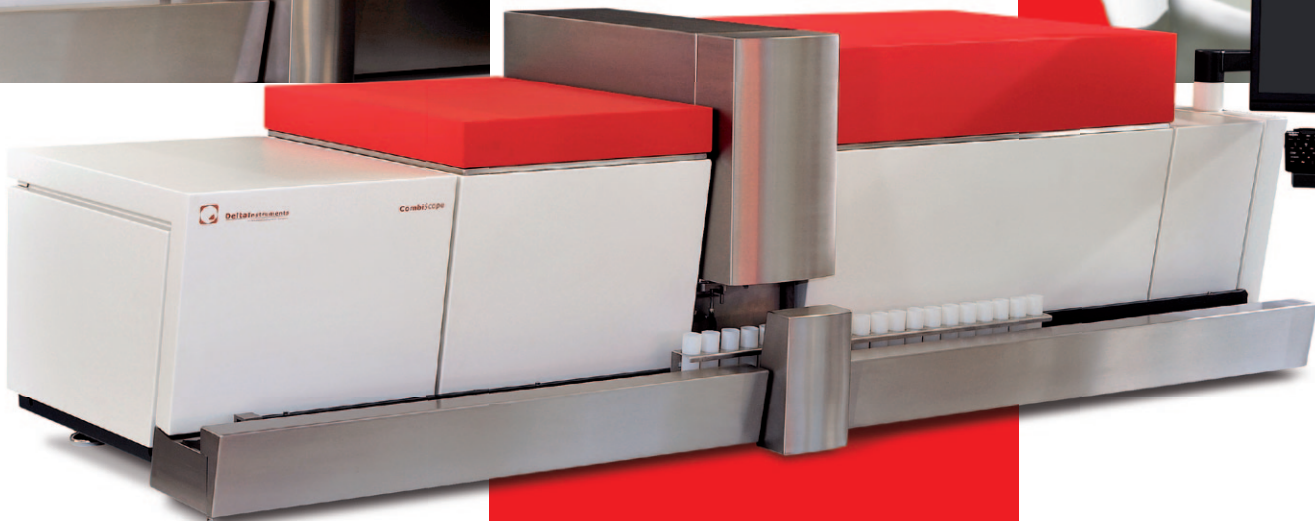
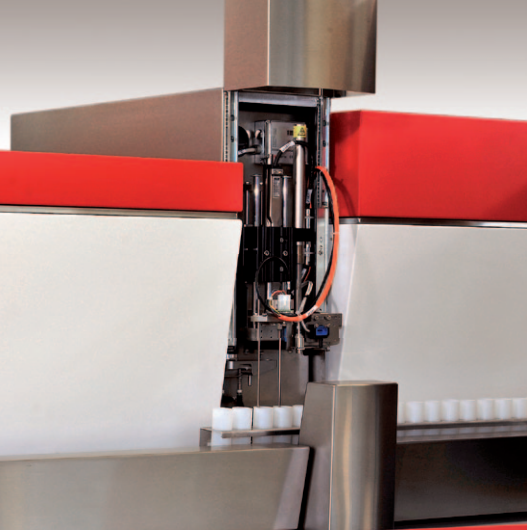


CombiScope FTIR

300 HP



Quality by design



Specification Combiscope FTIR 300 HP

Sample data

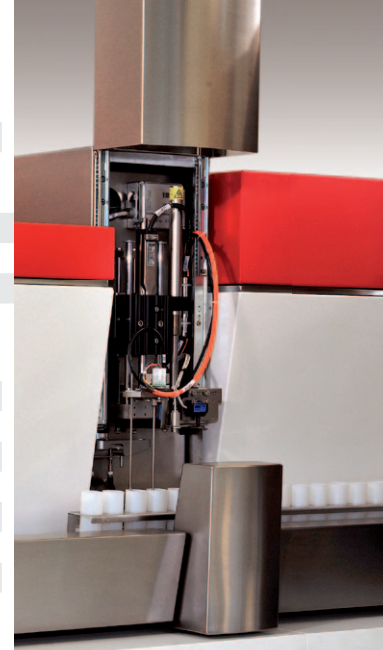
Analysis capacity (Instrument speed)	300 samples/hour
IR principle	- Rotation scanning mechanism - Fourier Transform Infra Red
Somatic Cell counter principle	LED flowcytometer
Sample intake	9 ml (programmable 7 -10 ml)
Carry over	< 1% for Fat, Protein, Lactose, Total solids
Required sample temperature	35 - 41 °C

Instrument data

Operating system	Windows 7
Operating interface	Touchscreen, keyboard, mouse
Data transfer	UTP
Weight	Approx. 330 kg
Dimensions	230 X 80 X 70 cm
Type	Desktop
Power Consumption	750 nominal (1200 VA Max)
IP classification	IP22

Instrument options

Stainless steel system table on wheels	360 degr. Barcode camera system for sample ID
Barcode reader for sample ID	Freezing Point Depression (FPD)



Performance specifications FTIR Calibrations models (filter and full spectrum PLS) - All parameters calculated conform IDF141C/ISO9622 and expressed in % m/m if not specified

Component	Measurement range	Performance range	Repeatability specification	Repeatability precision	Within lab reproducibility specification	Within lab reproducibility typical	Accuracy bulk specification	Accuracy bulk typical
Fat	0 - 15%	2.0 - 10.0%	Sr < 0.010	Sr = 0.004	SR < 0.020	SR = 0.010	* Sy,x% < 1.0%	* Sy,x% = 0.40%
Protein	0 - 10%	2.0 - 7.0%	Sr < 0.010	Sr = 0.004	SR < 0.020	SR = 0.010	* Sy,x% < 1.0%	* Sy,x% = 0.50%
Lactose	0 - 10%	2.0 - 6.0%	Sr < 0.012	Sr = 0.006	SR < 0.020	SR = 0.014	* Sy,x% < 1.0%	* Sy,x% = 0.70%
Total Solids	0 - 20%	6.0 - 20.0%	Sr < 0.025	Sr = 0.012	SR < 0.050	SR = 0.025	* Sy,x% < 1.0%	* Sy,x% = 0.40%
NPN-CU	10 -100 mg /100g	10-70 mg /100g	Sr < 1.5 mg /100g	Sr = 0.9 mg /100g	SR < 2.8 mg /100g	SR = 2.0 mg /100g	Sy,x < 4 mg /100g	Sy,x = 2.5 mg /100g
FPD	450 - 600 m°C	450 - 550 m°C	Sr < 0.5 m°C	Sr = 0.27 m°C	SR < 1.5 m°C	SR = 0.85 m°C	Sy,x < 4 m°C	Sy,x = 2.8 m°C

Sr = standard deviation of repeatability conform IDF141C

SR = standard deviation of reproducibility conform IDF141C/ISO9622

Sy,x = standard deviation of accuracy conform IDF141C/ISO9622

Sy,x% = relative standard deviation of accuracy conform IDF141C/ISO9622

Typical accuracy results based on combined tests.
Reference methods: Fat; ether extraction, Protein; Kjeldahl, Total Solids; oven method, NPN-CU; pH method, FPD; cryoscopic method

Typical Performance on a selected group of milk fatty acid components (Full Spectrum PLS)

	Calibration range	Validation range	Validated repeatability individual cow milk	Validation accuracy individual cow milk (n=703)	Calibration accuracy individual cow milk (n=268)
	% m/m	% m/m	Sr, % m/m	Sd, % m/m	Sd, % m/m
Saturated	0.13 - 4.09	1.02 - 3.68	0.017	0.086	0.027
Unsaturated	0.06 - 1.98	0.59 - 2.28	0.019	0.054	0.030
Mono Unsaturated	0.05 - 1.76	0.52 - 2.02	0.016	0.052	0.029
Poly Unsaturated	0.01 - 0.24	0.05 - 0.29	0.005	0.016	0.015
C16:0	0.06 - 1.88	0.40 - 1.68	0.014	0.091	0.038
C18:0	0.02 - 0.83	0.16 - 0.93	0.015	0.060	0.037
C18:1 C9	0.04 - 1.53	0.41 - 1.67	0.017	0.057	0.030

Somatic Cell counting

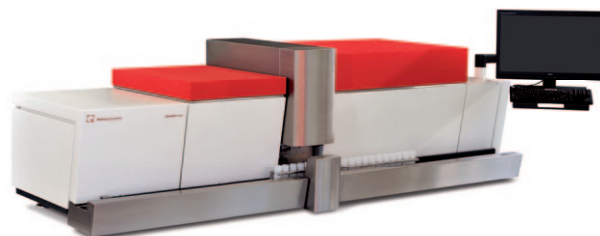
Range 0-10000K cells/ml, performance range 0-2000K cells - all parameters calculated conform IDF148-2/ISO13366-2

Level	Repeatability specifications	Repeatability precision	Accuracy specifications
	Sr%	Sr%	Sx,y%
100K cells/ml	4.5% *	3.5% *	* <10%
300K cells/ml	3.0% *	2.0% *	* <10%
500K-2000K cells/ml	2.0% *	1.5% *	* <10%

Sr% = relative standard deviation of repeatability conform IDF148-2/ISO13366-2

Sd = standard deviation of differences of the uncorrected signals conform IDF141C/ISO9622

* Unit : Somatic cell Repeatability: Sr% = Cv * Unit : Milk component Accuracy: Sy,x% = Cv * Unit : Somatic cell Accuracy: Sx,y % = Cv



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