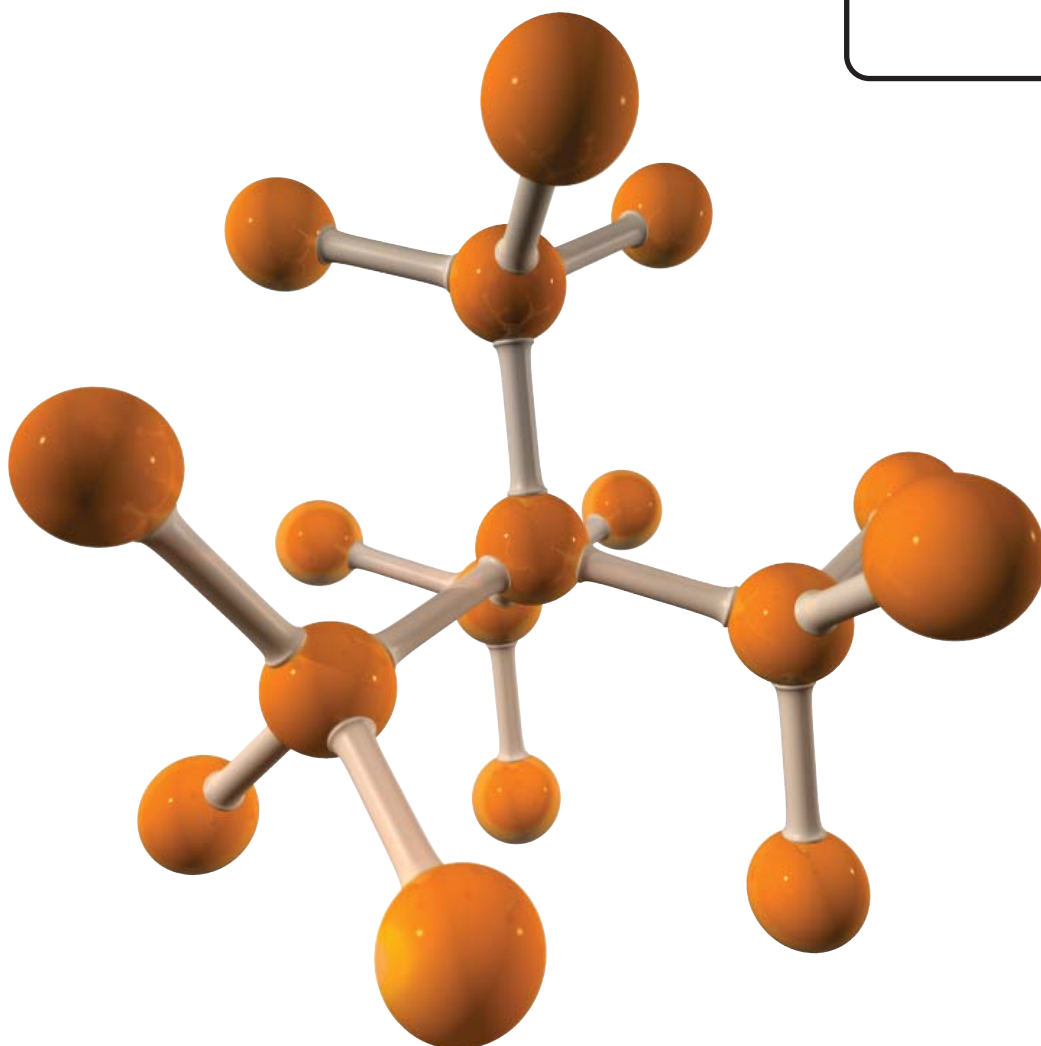


NitFom™

Instant On-line Analysis of Iodine Value and Fatty Acids

NEW



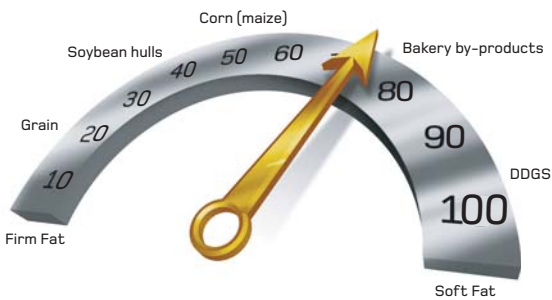
NitFom™

On-line management of fat quality in your production

Features include

The new NitFom™ from Carometec represents a breakthrough in bringing analysis of fat quality traits, such as iodine value and fatty acid profile, to work directly on the kill floor at line speeds up to 1200 per hour.

Iodine Value



NitFom™ sensor unit

Fast & Accurate

The NitFom™ can provide on-line iodine value (IV) at line speeds up to 1200 carcasses per hour. It does so with an extremely high precision, typically with an accuracy of RMSECV=1.8 IV and RMSEP=1.5 IV. Probing cold carcasses results in RMSECV=1.8 IV and RMSEP=2.0 IV. As the NitFom™ calibration procedure is easy and robust, it brings a very reliable Process Analytical Tool to manage and control fat quality onto the production floor.

Feedback on Feed Regime

The NitFom™ allows the slaughterhouse to manage and control fat quality in relation to all aspects of pork production. The instrument provides producers with a valuable tool for an intelligent feedback system on feeding regimes. Iodine value and fatty acid composition are largely the results of the feeding regime used to bring the animal to slaughter weight, but factors such as gender, weight and age do have an impact. By measuring up to 100% of the carcasses, it allows for an intelligent optimization for both slaughterhouse and producer.

Cut-floor Optimization

The NitFom™ provides the opportunity to pre-sort carcasses for optimal cutting recipes by using iodine value or fatty acids as a sorting parameter. An example could be a "bin-sorting" style of approach to bacon products on the basis of the iodine value of the carcass.

Options

More prediction models will be available, including:

- Individual fatty acids
- Melting point
- Backfat thickness measure

The Theory Behind

Porcine adipose fat tissue consists primarily of four fatty acids: the two saturated fatty acids stearic acid (C18:0) and palmitic acid (C16:0) and the two polyunsaturated fatty acids linoleic acid (C18:2) and α -linolenic acid (C18:3). It has been known for a long time that the softness of porcine fat is correlated to the concentration of linoleic (C18:2) and α -linolenic (C18:3) acid, and inversely that the hardness correlates with concentrations of stearic (C18:0) and palmitic (C16:0) acids. A high iodine value results in a lower melting point whereas a low iodine value results in a higher melting point. Fat with a high iodine value results in poorer technological quality.

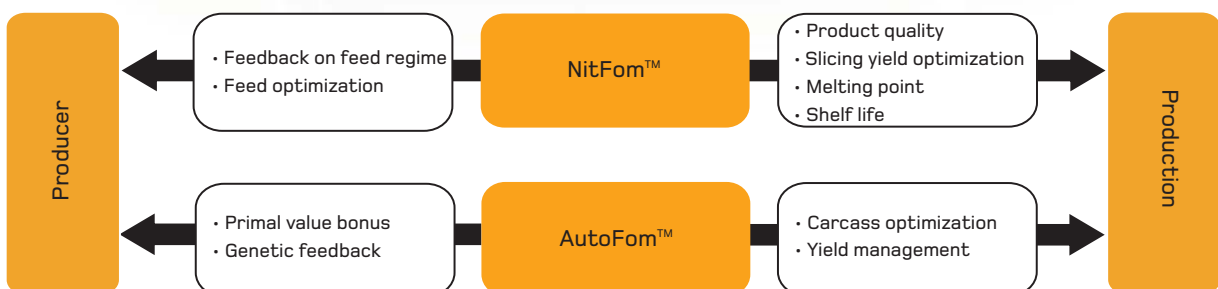
The NitFom™ uses Near-Infrared-Transmission spectroscopy in combination with highly advanced chemometric modeling. The ultra fast measurements in combination with depth resolved spectra provides for a normalization of results giving very precise and robust measurements.

Highlights:

- The world's first on-line instrument for grading iodine value and fatty acids
- The NitFom™ makes sorting of and payment for carcasses possible through 100% testing
- Iodine value in real-time with a precision of ± 1.5 iodine values in hot carcass classification and ± 2.0 iodine values in cold carcass classification
- Determines concentration of fatty acids in real-time
- Measurement cycle: 3 seconds
- Robust and reliable equipment designed for the kill floor
- "Easy-to-use" calibration and low operating costs



Iodine value and depth profile displayed in real-time at the Carometec Touch Panel i15



NitFom™ can be used with the AutoFom™ array or as a stand-alone unit

Technical Data

Probe

Dimensions (H x W x D)	35 x 20 x 15 cm (12 x 8 x 6")
Measurement speed	3.0 sec cycle
Line speed	Up to 1200 carcasses per hour
Measurement depth	30 mm (1.18")
Supply voltage	110/240 VAC
Probe interface	RS-485
Results	Iodine value, fatty acid profile
Power up time	2 hours
Temperature (The probe sensor only tolerates 40°C (104°F))	0 - 70°C (32°F - 158°F)
Power consumption	175 W
Diagnostics supervisors	Watchdog timer, temperature, supply voltage
Power down	Between measurements
Ingress protection	IP64
Weight	12 kg

Terminal

Dimensions (H x W x D)	40 x 53 x 13 cm (16 x 21x 5")
Screen size	15"
Touch	Projected Capacitive Touch (PCT)
CPU	Intel® Atom™
CPU Speed	1.6 GHz Hyper-Threading or higher
Ingress protection	IP69K
Data ports	ID, results, log printer, Ethernet
Operating temperature	0 - 45°C (32°F - 113°F)
Supply voltage	110/240 VAC
Weight	18 kg (39 lbs)

Mechanical Stand

Dimensions (H x W x D)	120 x 80 x 25 cm (47 x 23 x 10")
Power Supply	110/240 VAC
Mounting	Wall mounted

Models

		R ² _{cv}	RMSECV	RMSEP
Iodine value (hot*)	Standard	0.94	1.8 IV	1.5 IV
Iodine value (cold**)	Optional	0.93	1.8 IV	2.0 IV
Omega 6 (hot*)	Optional	0.91	1.2 %	1.1 %
Omega 3 (hot*)	Optional	0.73	0.4 %	0.5 %
Polyunsaturated fatty acids (hot*)	Optional	0.94	1.2 %	1.3 %
Monounsaturated fatty acids (hot*)	Optional	0.56	1.5 %	2.1 %
Saturated fatty acids (hot*)	Optional	0.82	1.5 %	1.4 %
C18:3 (hot*)	Optional	0.73	0.3 %	0.3 %
C18:2 (hot*)	Optional	0.92	1.1 %	1.1 %
C18:1 (hot*)	Optional	0.46	1.4 %	1.7 %
C18:0 (hot*)	Optional	0.66	1.0 %	1.1 %
C16:0 (hot*)	Optional	0.81	0.8 %	0.7 %
Fatty acids (cold**)	Future	-	-	-
Back fat thickness (hot* + cold**)	Future	-	-	-
Melting point (hot* + cold**)	Future	-	-	-

*Hot carcass classification
**Cold carcass classification

Development

The NitFom has been developed in co-operation with the Danish National Advanced Technology Foundation and the University of Copenhagen (Faculty of Science, Department of Food Science).



Tried & Tested

The Carometec Touch Panel i15 has been tested and approved by an independent, accredited third party test facility (DELTA) as per EN60529 (IP69K) for water and dustproof capabilities, and for its EMC compliance under EN61326-1:2001, as well as for the FCC compliance part 15, subpart B, class A.



Denmark: Carometec A/S · Hassellunden 9 · 2765 Smørum · Denmark · Tel.: +45 44 50 37 00 · Fax: +45 44 92 37 10 · info@carometec.com · www.carometec.com

Germany: Carometec GmbH · Im Brok 10a · 44534 Lünen · Germany · Tel.: +49 2306-756068-0 · Fax: +49 2306-756068-18 · info.de@carometec.com · www.carometec.com

Poland: Carometec Sp. z o.o. · Ul. Królewska 12 · 05-827 Grodzisk Maz. · Poland · Tel.: +48 22 734 55 51 · Fax: +48 22 734 41 26 · info.pl@carometec.com · www.carometec.com

USA: Carometec Inc. · 8548 Kapp Dr. · P.O. Box 99 · Peosta · Iowa 52068 · USA · Tel.: +1 (563) 582-4230 · Fax: +1 (563) 582-4130 · info.us@carometec.com · www.carometec.com

Spain: Carometec Spain S.L. · C/Carretera No. 67 · 08650 Sallent (Barcelona) · Spain · Tel.: +34 938 380 835 · Fax: +34 938 381 500 · comercial@carometec.net · www.carometec.net