MB3600-HP10

Laboratory FT-NIR Analyzer for Hydrocarbon Applications Pre-calibrated for Blended Gasoline, Diesel, Reformate and Naphtha

Hydrocarbon Applications Built on Customer Demand

"Our industry requires rapid laboratory and on-line determination of hydrocarbon sample properties. Calibrations developed in the lab must be directly transferable to the process."
Blend Optimization Engineer

Rapid, reliable hydrocarbon quality determination

ABB has been a world leader in FT-NIR analysis solutions for the hydrocarbon-petrochemical industry for many years. Our on-line process analyzers and laboratory analyzers allow refineries to achieve fast, on-target product quality release and realize process optimization benefits.

Real-time data for process optimization

ABB's on-line analyzers supply real-time quality data for process unit and final blend optimization. This includes blended gasoline and diesel products and intermediate process conversion unit feeds and rundowns.

Simplified analysis and calibration development in the lab

The MB3600-HP10 laboratory analyzer simplifies hydrocarbon sample determination in the laboratory. It comes with easy-to-use software and pre-calibrated analytical procedures. Additional custom calibrations can easily be developed for a wide range of products.

Guaranteed laboratory-to-process calibration transfer

ABB has developed manufacturing methods which ensure that all of our laboratory and process FT-NIR analyzers are highly stable, have a highly linear photometric response, and provide identical absorbance spectra. This guarantees calibration transferability from lab to process without any additional calibration effort or data manipulation.

MB3600-HP10 FT-NIR Laboratory Hydrocarbon Analyzer

Easy-to-use QA/QC workflow software

1. Select an analytical procedure from the menu.
2. Follow the on-screen instructions, placing the sample when requested.
3. The software displays the analysis results and generates a report.

The MB3600-HP10 Laboratory Hydrocarbons Analyzer is not only a valuable and reliable laboratory analyzer in its own right, it also allows custom calibration model development for on-line hydrocarbon process optimization.

ABB's world-renowned range of on-line and laboratory FT-NIR analyzers provide guaranteed transferability of calibration models between laboratory and process applications

– Robust, stable FT-NIR analyzer platform allowing rapid project start-up for on-line process optimization projects through fast-track method development in the laboratory.

– Pre-installed with a set of functional calibration models for gasoline, diesel, reformate and naphtha.

– Robust sample cell for hydrocarbons. Adaptable for a wide range of accessories including liquid flow cells, sample flow pumps and sample cell temperature control.

– ASTM compatible accuracy and precision guaranteed for both pre-installed calibration models and ABB custom developed models.

Go to www.abb.com/analytical to discover how ABB can help you to optimize refinery operations

# Pre-installed Calibration Models Specifications

Pre-installed calibration models for gasoline, diesel, reformate and naphtha are built from ABB's extensive refinery hydrocarbons database

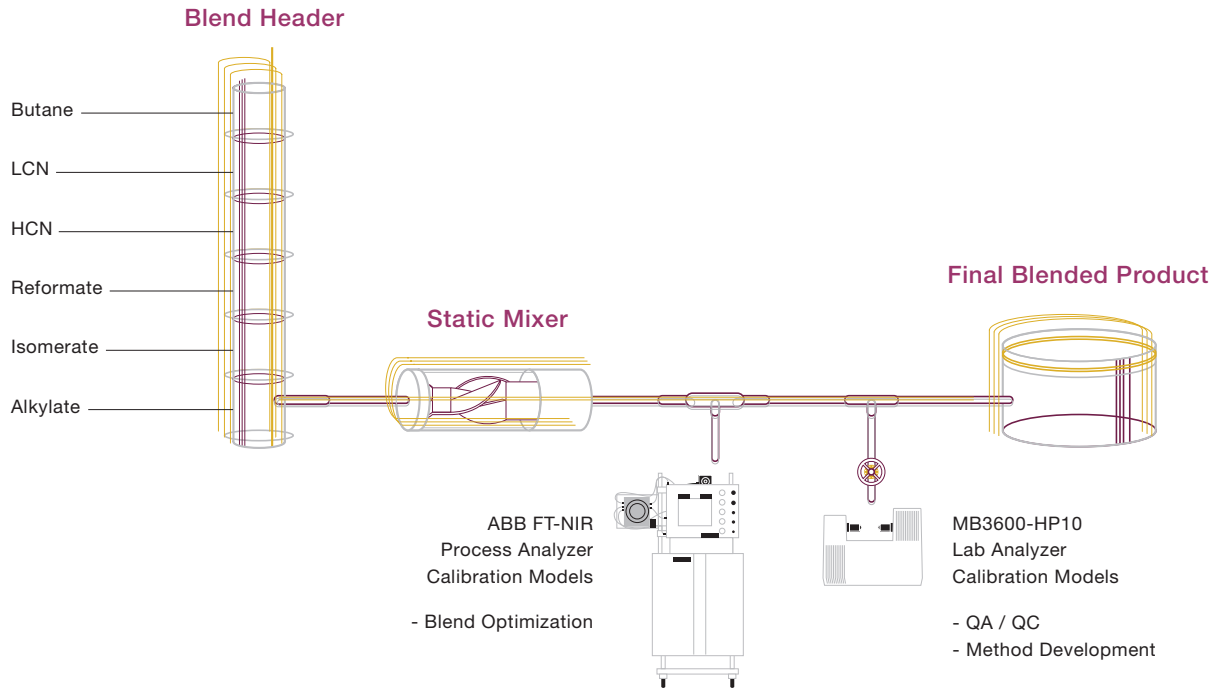|	Properties	Units	SECV (1 Sigma)	R^2	Range Min	Range Max
Gasoline	RON	Octane	0.36	0.967	91	100.5
	MON	Octane	0.32	0.963	80.2	89.9
	Aromatic	vol%	0.9	0.991	6.4	53
	Benzene	vol%	0.09	0.995	0.1	7.6
	Benzene (low)	vol%	0.05	0.712	0.4	1.3
Diesel	Cloud Point	degC	2.2	0.93	-47	2
	Flash point	degC	5.6	0.652	31	129
	Aromatics	vol%	0.23	0.937	19	24
	API Gravity	^{0}API	0.13	0.996	30	42
	Viscosity (KV40)	cSt	0.008	0.97	1.4	3.7
	D05	degC	4.3	0.90	155	237
	D90	degC	4.1	0.80	260	370
	D95	degC	5.9	0.95	256	396
	Cetane index	Cetane	0.26	0.949	49.8	56.4
Naphtha	Paraffin	vol%	0.74	0.984	17.8	55.9
	Iso-Paraffin	vol%	1.04	0.967	19.1	63.9
	Olefin High	vol%	0.17	0.991	0	12.6
	Olefin	vol%	0.08	0.872	0	1.8
	Naphthene	vol%	0.84	0.984	3.1	58.6
	Aromatic	vol%	0.6	0.981	0.9	35.1
	Aromatic Low	vol%	0.31	0.983	1	14
Reformate	RON (high)	Octane	0.4	0.926	94.5	103.2
	RON (low)	Octane	0.46	0.959	86.5	99

Custom calibration models

The MB3600-HP10 simplifies the development of local site-data based calibration models, allowing the analyzer to be used for a wide range of process streams and properties. Many of our customers have successfully developed their own rigorous and stable calibration models.
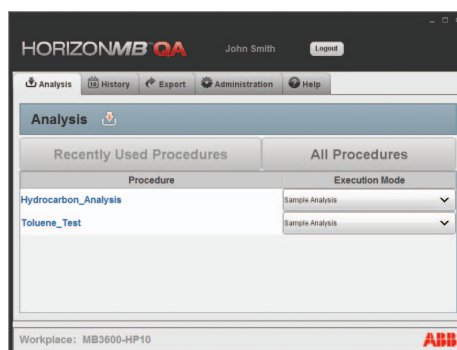
ABB's calibration modelling and training services

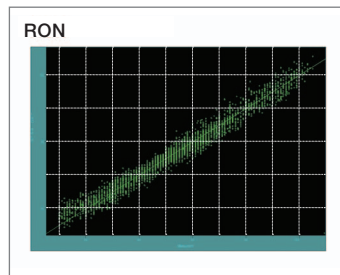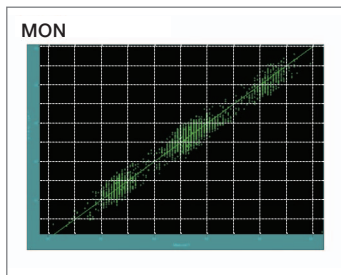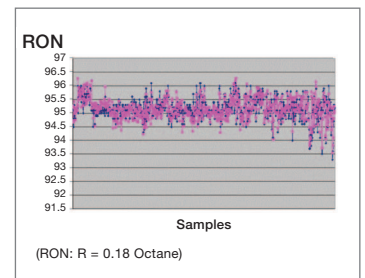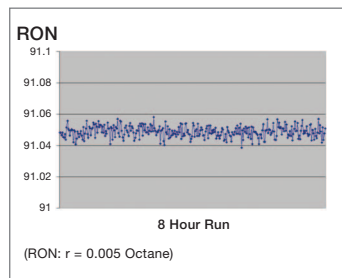ABB offers a full range of custom modelling services and chemometrics training for our customers.

MB3600-HP10 FT-NIR Laboratory Hydrocarbon Analyzer

Blend Header

Butane

LCN

HCN

Reformate

Isomerate

Alkylate

Static Mixer

Final Blended Product

ABB FT-NIR
Process Analyzer
Calibration Models

- Blend Optimization

MB3600-HP10
Lab Analyzer
Calibration Models

- QA / QC
- Method Development

The MB3600-HP10 laboratory analyzer is designed and configured for routine hydrocarbon analysis and for easy calibration modelling and method preparation. It includes all the hardware, software and accessories required for both QA/QC analysis and chemometrics development.

"Routine control of our catalytic reforming unit was made very simple with the pre-installed RON model."

Process Unit Engineer

BNZ

ARO

MON

RON

RON

91.1
91.08
91.06
91.04
91.02
91

8 Hour Run

(RON: r = 0.005 Octane)

RON

97
96.5
96
95.5
95
94.5
94
93.5
93
92.5
92
91.5

Samples

(RON: R = 0.18 Octane)
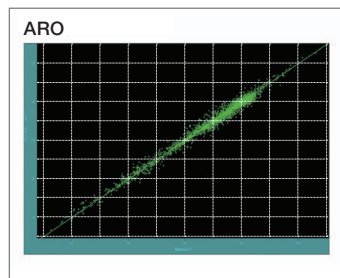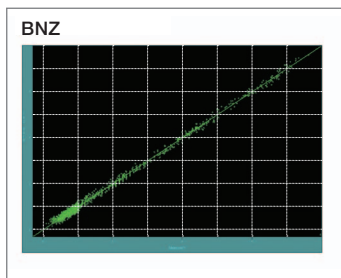
"ABB's FT-NIR analyzer for refinery hydrocarbons is the perfect tool for building our blend optimization models."

"We have been able to develop and maintain a robust calibration database for our gasoline blending operation."

"It is a totally reliable tool that we use every day in the laboratory."

Laboratory Manager

Contact us

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ABB Analytical is one of the major ABB manufacturing centers for laboratory and process analytical systems with more than 35 years of experience in developing FT-IR and FT-NIR spectrometers for industrial, military and space applications.

As part of our portfolio of products and services for process optimization, we are able to offer a full range of custom calibration modeling services and application support for industrial applications.

ABB also provides extensive, globally distributed after-sales support and engineering services, as well as a full customer training program.

IR & NIR Spectroscopy Knowledge Management
– Application support and
  spectroscopy training
– Calibration and chemometrics
  development training
– On-site services including hardware
  and calibration maintenance

Up-Time Insurance Program
– Preventive maintenance
– Extended warranty services
– Tailor-made service contracts
– Chemometrics services

Installations / Start-ups & Analyzer Life Cycle Program
– Process spectrometer start-ups
– Laboratory spectrometer installations
– Spectrometer and laboratory / process
  software exchanges / upgrades
– Extended process and
  lab spectrometer warrantees

Power and productivity
for a better world™

ABB