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ABB MEASUREMENT & ANALYTICS

## **MB3600-HP10**

Laboratory FT-NIR analyzer  
for hydrocarbon applications



## Measurement made easy

ABB has been a world leader in FT-NIR analysis solutions for the hydrocarbon-petrochemical industry for many years. The MB3600-HP10 analyzer is pre-calibrated for blended gasoline, diesel, reformate and naphtha.

## Hydrocarbon applications built on customer demand

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01 ABB employees at a hydrocarbon plant

### Rapid, reliable hydrocarbon quality determination

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

02 MB3600-HP10 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.



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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.

- 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, reformat 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.

# Pre-installed calibration models specifications

03 HorizonMB QA software interface

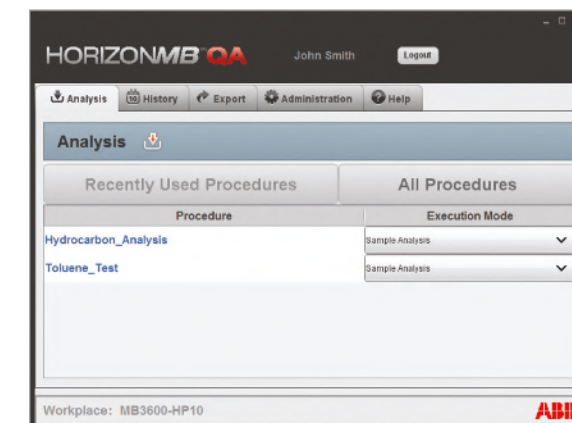
Pre-installed calibration models for gasoline, diesel, reformat and naphtha are built from ABB's extensive refinery hydrocarbons database

Property table

|                 | Properties       | Units  | SECV (1 Sigma) | R <sup>2</sup> | Range min. | Range max. |
|-----------------|------------------|--------|----------------|----------------|------------|------------|
| <b>Gasoline</b> | 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        |
| <b>Diesel</b>   | 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      | OAPI   | 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       |

### 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.

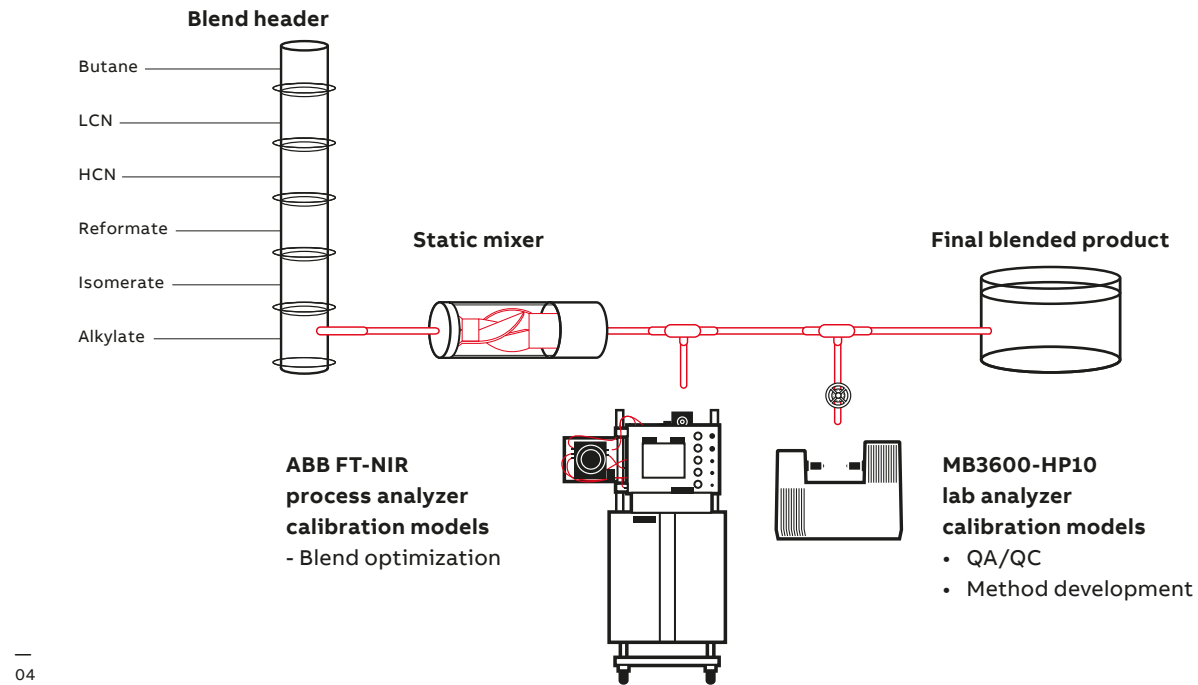


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# MB3600-HP10 FT-NIR laboratory hydrocarbon analyzer

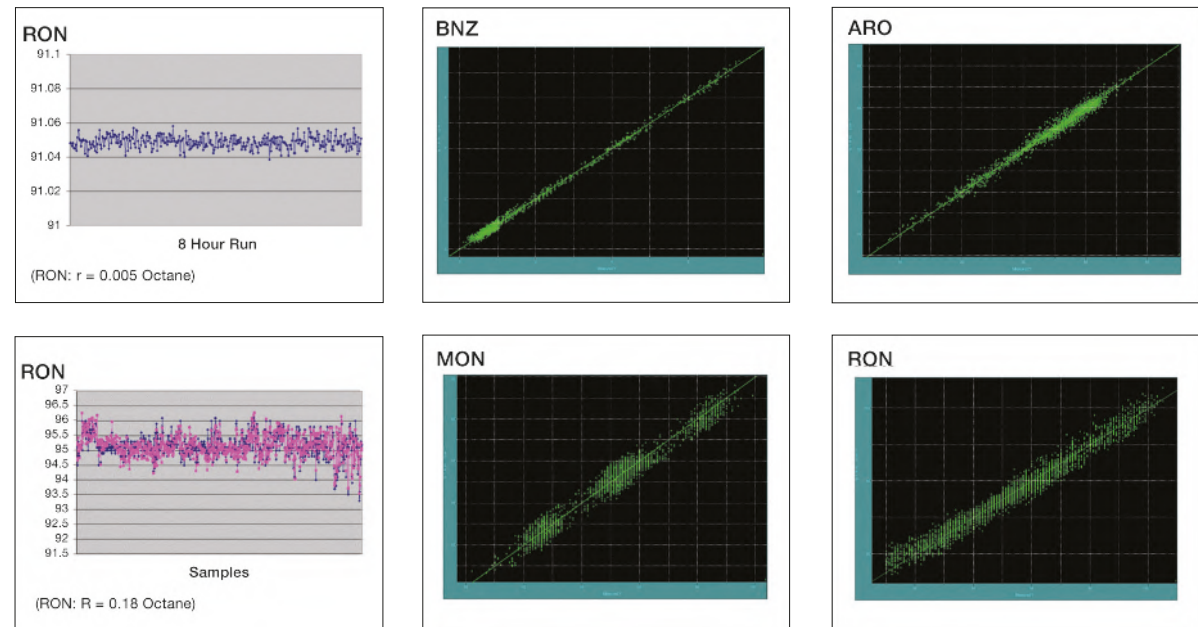
04 FT-NIR process analyzer calibration process

05 QA/QC analysis and chemometrics results



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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.



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