MINIVAP ON-LINE can be configured according to your needs:

<table>
<thead>
<tr>
<th>Single Stream</th>
<th>Dual Stream</th>
</tr>
</thead>
<tbody>
<tr>
<td>GASOLINE &amp; LPG</td>
<td>Crude Oil</td>
</tr>
<tr>
<td>EXPLOSION PROOF</td>
<td>BASIC (non ex)</td>
</tr>
<tr>
<td>US VERSION</td>
<td>EU VERSION</td>
</tr>
<tr>
<td>Gönnheimer</td>
<td>GRABNER METHOD</td>
</tr>
</tbody>
</table>

For fast and easy service of the MINIVAP ON-LINE, our customers recommend to purchase:

- Easy attachment to a service unit for error diagnosis and recalibration
- Cell can be mounted on any MINIVAP ON-LINE analyzer without additional calibration
- No tools required to replace measuring cell
- Easy access to measuring unit
- Only 5 quick connectors to detach the cell
- No down time in process
- Advantages of an additional measuring cell
- Fast and easy maintenance
- Data transfer - full networking capabilities

TECHNICAL DETAILS / SPECIFICATIONS

- Vapor Pressure of LPG: ASTM D6897, D1267 (corr.)
- Vapor Pressure of Crude Oil: ASTM D6377 (VPCR4), D323 (corr.)
- Vapor Pressure of Gasoline: ASTM D6378 (Triple Expansion), D5191 (DVPE), D4953 (corr.) and D323 (corr.)

FEATURES

- MODBUS RTU (RS 232), 4-20 mA or remote control with central controller
- Data transfer Options MODBUS RTU (RS 232), 4-20 mA or remote control with central controller
- Fast and easy maintenance
- Fast loop sample stream
- Minimum flow: 2 L/min,
- Minimum pressure: Gasoline - 50 kPa (7 psi), LPG - 500 kPa (70 psi),
- Maximum pressure: 7,000 kPa (1000 psi)
- Weight: Approx. 50 kgs (110 lbs)
- Maximum physical dimensions: W x H x D = 650 x 1380 x 400 mm (25.6 x 54.4 x 15.8 inches)
- Power requirements: 100/120/230/240 V AC, 50/60 Hz, 110 W
- Repeatability: 0.7 kPa (0.10 psi) @ 37.8°C, 70 kPa
- Pressure Range: Gasoline, Crude Oil: 0 to 1000 kPa (0 to 145 psi)
- Temperature Range: Internal operation: 5 to 60°C (41 to 140°F) - Measurement temperature 20 to 60°C (68 to 140°F)

STANDARDS

- Vapor Pressure of LPG: ASTM D6897, D1267 (corr.)
- Vapor Pressure of Crude Oil: ASTM D6377 (VPCR4), D323 (corr.)
- Vapor Pressure of Gasoline: ASTM D6378 (Triple Expansion), D5191 (DVPE), D4953 (corr.) and D323 (corr.)

Grabner Instruments
Meidachstr. 11
A-4230 Kremfelde
Gönnheimer Grabner-Method
www.grabner-instruments.com
5. Data transfer - full networking capabilities

MINIVAP ON-LINE can be configured according to your needs:

- **Basic**: no remote control
- **Basic Kit**: with remote control

Data can be transferred automatically to a monitoring system via preinstalled MODBUS RTU to be displayed on a screen. Alternatively, 4-20 mA data transfer is possible via modem or central controller unit. With this information readily accessible, corrections (e.g. for the blending system) can be initiated immediately, if a fixed limit is exceeded – for multiple MINIVAP ON-LINE analyzers in one central command place!

MODULAR DESIGN

MINIVAP ON-LINE can be configured according to your needs:

- Basic
- Basic Kit

No tools required to replace measuring cell

7. Fast and easy maintenance

For fast and easy service of the MINIVAP ON-LINE our customers recommend to purchase additional measuring cells along with the analyzer. The measuring cell is mounted in 1 minute! No down times are experienced in the additional measuring cell along with the analyzer. The measuring cell is mounted in 1 minute! No down times are experienced.

Advantages of an additional measuring cell

- Easy access to measuring unit
- Easy attachment to a service unit for error diagnosis and recalibration
- No down time in process!
- No tools required to replace measuring cell
- Simple stream switching

6. Fast and easy maintenance

MINIVAP ON-LINE incorporates an automatic piston lubrication and extensive self-diagnostics, thus virtually eliminating all problems that require maintenance and reducing maintenance to a minimum.

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- No down time in process!
- No tools required to replace measuring cell
- Simple stream switching

7. Data transfer - full networking capabilities

MINIVAP ON-LINE allows your process monitors to form a local area network and communicate with each other. Moreover, the MINIVAP ON-LINE analyzer supports the same measuring process for the determination of vapor pressure as the MINIVAP lab analyzer. As a result, the measurements results are all with the best available vapor pressure laboratory instrument - the MINIVAP lab analyzer.

STANDARD COMPLIANT VAPOR PRESSURE PROCESS ANALYZER

MINIVAP ON-LINE:

- RVP profit analyzer

TECHNICAL DETAILS / SPECIFICATIONS

- Fully automatic calibration, verification and data update
- Highest precision and performance
- Modular design
- Remote control via central controller
- Optional analyzer shelters
- Optional sample recovery system
- Optional 4-20 mA analog data output
- Optional sample conditioning systems
- Maintenance free sample conditioning systems
- Dynamic sample switching
- 7 minutes cycle time
- Peltier cooling
- Built-in diagnostic and safety features
- Data transfer via serial interface RS 232
- ASCII code and MODBUS communication protocol
- Data transfer Options MODBUS RTU (RS 232), 4-20 mA or remote control with central controller
- Reproducibility 0.7 kPa (0.10psi) @ 37.8°C, 70kPa
- Repeatability 0.3 kPa (0.04psi) @ 37.8°C, 70kPa
- Pressure Range Gasoline, Crude Oil: 0 to 1000 kPa (0 to 145 psi)
- Temperature Range Internal operation: 5 to 60°C (41 to 140°F) - Measurement temperature 20 to 60°C (68 to 140°F)
- Minimum physical dimensions W x H x D  = 650 x 1380 x 400  mm (25.6 x 54.4 x 15.8 inches)
- Power requirements 100/120/230/240 V AC, 50/60 Hz, 110 W
- Maximum pressure: 7,000 kPa (1000 psi)
- Minimum flow: 2 L/min, Minimum pressure: Gasoline - 50 kPa (7 psi), LPG - 500 kPa (70 psi), NPG - 50 kPa (7 psi)
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  - Vapor Pressure of LPG ASTM D6897, D1267 (corr.)
  - Vapor Pressure of Crude Oil ASTM D6377 (VPCR4), D323 (corr.)
  - Vapor Pressure of Gasoline ASTM D6378 (Triple Expansion), D5191 (DVPE), D4953 (corr.) and D323 (corr.)
- Weight Approx. 50 kgs (110 lbs)

SPECIAL OFFERS

- GASOLINE & LPG CRUDE OIL
- BASIC (non ex) US EX BEBCO
- EU EX Gönnheimer
- 1 or 2 sample streams
- Explosion proof or basic type
- US or EU version
- T6, Type X
- NEMA Class 1, Div 1, BCD, E08 8; EN95 4-1 Cat. 3
- EN 60079:BVS 06 ATEX EU EX purge control F850S:
- Minimum technical, economic and ecological measure for the production and transportation of crude oil, LPG and NPG. Its core shares the same triple expansion principle, ther e is no ne e d to v al idate me a sur eme nt r e sult s again s t l ab or ator y te s t s: Re sult s ar e jus t a s pr e cis e e v e r y refiner y all over the world. Because the MINIVAP ON-LINE analyzer is using exactly the same measuring principle, the additional measuring cell along with the analyzer. The measuring cell is mounted in 1 minute! No down times are experienced in the additional measuring cell along with the analyzer. The measuring cell is mounted in 1 minute! No down times are experienced.
**Triple Expansion for direct measurement of physical properties without sample preparation**

The manual sample preparation and subsequent analysis represent a time-consuming task. In order to provide a faster and more accurate measurement of physical properties, Triple Expansion Method is used. This method is based on the assumption that the vapor pressure of liquids remains more or less constant with increasing temperature whereas the heat of combustion remains unchanged.

**Savings at a glance**

Robin proven!

- The MINIVAP ON-LINE method as the laboratory analyzer, which are US EPA reference analyzers for highest precision. And precision of the fuels and to reduce production costs. By blending C4-compounds, profit margins can be increased.

**Good reasons to good decisions for a MINIVAP ON-LINE**

1. **Profit from best precision**
   - Good reasons to decide for a MINIVAP ON-LINE.
   - Triple Expansion Method for direct measurement of physical properties without sample preparation.
   - The Triple Expansion Method as the laboratory analyzer, which are US EPA reference analyzers for highest precision. And precision of the fuels and to reduce production costs. By blending C4-compounds, profit margins can be increased.

2. **Fuel quality inspection for batch delivery**
   - Reproducibility: 0.7 kPa (0.10 psi)
   - The MINIVAP ON-LINE Vapor Pressure analyzer resulted in savings of more than 600.000 US$ per quarter, per year. Refinery industry experts working a medium sized plant have told GRABNER Industry estimates that for every 0.6 kPa (0.1 psi) better precision, a typical plant can save up to 1 million US$ per year.

3. **Testing Crude Oil, TVP and Bubble Point**
   - On-line tester, the repeatability and reproducibility are significantly better than ASTM D323 - Round Robin.
   - The new standard for vapor pressure determination of crude oil and other petroleum products is ASTM Round Robin.
   - Due to its composition, life crude oil is extremely sensitive to the exposure to barometric pressure at the air saturation condition.

4. **Automatic calibration schedule**
   - Self-calibrating analyzer, instrument recalibration related, not measured.
   - The MINIVAP ON-LINE also allows for automatic operation, to monitor the most important physical properties of crude oil like RVP, RVP gas phase and other properties.

**Features CRUDE OIL**

- Self-calibrating analyzer, instrument recalibration related, not measured.
- Easily accessible to SCS without any further tools.
- Stainless steel housing for crude oil application to accommodate sample conditioning system (avoids wax appearance)
- Heated and temperature controlled sample conditioning system (avoids wax appearance)
- Bypass flow system for flow attenuation, inlet and outlet bypass systems.
- Easy access to SCS without any further tools.
- Stainless steel housing for crude oil application to accommodate sample conditioning system (avoids wax appearance)
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- Automatic calibration schedule
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- Self-calibrating analyzer, instrument recalibration related, not measured.
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- Heated and temperature controlled sample conditioning system (avoids wax appearance)
- Bypass flow system for flow attenuation, inlet and outlet bypass systems.
Triple Expansion for direct measurement of physical properties without sample preparation

The manual sample preparation is laborious and can impact the results. In contrast, the MINIVAP ONLINE incorporates the ASTM D6377 method, the standard test procedure for the measurement of the vapor pressure of crude oils, as an alternative method for the measurement of the vapor pressure of crude oils. Consequently, US EPA acknowledged the broad use of ASTM D6377 in the petroleum industry and confirmed the Round Robin proven and significantly better than the traditional method of D323, which does not give a precision statement for crude oils at all.

Good reasons to decide for a MINIVAP ON-LINE

1. Profits from best precision

Triple Expansion Method has a significant advantage: Only the Tripple Expansion Method can accurately measure the vapor pressure of the liquid (Pabs) are calculated. The MINIVAP ONLINE is able to determine irregularities in the transportation system.

2. Fast quality inspection for batch delivery

The MINIVAP ONLINE incorporates the ASTM D323-06 and other single expansion methods, which is replacing the 80+ year old ASTMD 323. The MINIVAP ONLINE incorporates the ASTM D6377 method, the standard test procedure for the measurement of the vapor pressure of crude oils, as an alternative method for the measurement of the vapor pressure of crude oils.

3. Testing Crude OIL, TBP and Bubble Point

The MINIVAP ONLINE incorporates the ASTM D323-06 and other single expansion methods, which is replacing the 80+ year old ASTMD 323. The MINIVAP ONLINE incorporates the ASTM D6377 method, the standard test procedure for the measurement of the vapor pressure of crude oils, as an alternative method for the measurement of the vapor pressure of crude oils.

4. Automatic calibration schedule

The MINIVAP PLUS also incorporates a heuristic model to the Bubble Point process and is able to adjust the bubble point pressure of the sample by vacuum. The calibration corrections are performed fully automatically.

The MINIVAP ONLINE extends the capabilities of the MINIVAP PLUS by adding online analysis, which only requires a number of samples to be tested in the laboratory. Online analysis, a number of samples have to be tested in the laboratory. This method uses automated system for the measurement of a large number of samples and is faster than the manual analysis in the laboratory. The results are field proven!
Good reasons to decide for a MINIVAP ON-LINE

1. Profit from best precision

When oil is blended it cannot be done in process without the aid of a crude oil vapour pressure analyzer. A single expansion analyzer can only measure one value but the MINIVAP ONLINE is able to take triple expansion readings per cycle. Triple expansion sampling is necessary for a truly representative sample which provides the best possible precision. The MINIVAP ONLINE uses the Triple Expansion Method which reaches highest Round Robin proven precision – online, not just offline. Since there is no operator bias in a MINIVAP ONLINE is the only vapor pressure process analyzer to perform Triple Expansion and thus rightly enjoys repeatability and reproducibility of the MINIVAP ONLINE is higher than with other vapor pressure process analyzers.

2. Fuel quality inspection for batch delivery

A fuel supplier who needs to test the quality of its gasoline must have the necessary equipment to ensure the gasoline is in compliance. The MINIVAP ONLINE uses the Triple Expansion Method to perform on-line measurement. The innovative measuring technique leads to an improved accuracy allowing to blend as much butanes have already been blended into the lot delivered to the transportation system.

3. Testing Crude Oil, THP and Bubble Point

The important standard ASTM D6377 is now approved in the US and is currently pending in Canada. In this method the TVP of crude oil is determined on the API nomograph. Consequently US EPA acknowledged the broad use of ASTM D6377 in the petroleum industry and confirmed the standard to be the new standard for vapor pressure determination of crude oil.

4. Automatic calibration schedule

Calibrating every 30 days is too short. It is also not possible to replace the calibration fluid to have the same barometric pressure as in the lab. A calibrating interval of 6 months is more realistic and the MINIVAP ONLINE can be set to automatically recalibrate. To avoid bias correction, an internal low pressure pump is used to change the pressure stream to a new fluid in programmable intervals. The pressure reading is displayed and can be used as the basis for the bias correction. The re-calibration is fully automatic and there is no need to change the fluid. The bias correction model is still valid if stream composition changes.

5. Good test results for crude oils

The latest results of an interlaboratory measurement shows that : The MINIVAP ONLINE is able to transfer the results of the lab test to the on-line test without any loss of accuracy and the results can be compared directly. A large number of interlaboratory measurements showed the following result:

<table>
<thead>
<tr>
<th>Method/Standard</th>
<th>Pabs</th>
<th>Ptot</th>
<th>Pgas</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTM D6377-00</td>
<td>65.1</td>
<td>72.3</td>
<td>7.2</td>
</tr>
<tr>
<td>ASTM D6377-01</td>
<td>68.6</td>
<td>72.3</td>
<td>3.7</td>
</tr>
<tr>
<td>Triple Expansion Method</td>
<td>68.4</td>
<td>72.2</td>
<td>3.8</td>
</tr>
</tbody>
</table>

The MINIVAP ONLINE also includes a TVP extrapolation method which can be used to test crude oils which can not be directly transferred to the chart. This method uses multiple extrapolation of a large number of crude samples using the ASTM procedure with a new reference fluid and fine-tunes the bias correction.

Crude oil precision at a glance

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<td>Triple Expansion Method</td>
<td>68.4</td>
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</table>

Best precision for best profit

In this test example a normal RVP was determined at 0.7 kPa baseline pressure. A second test was then performed at 0.3 kPa baseline pressure. The results were very similar, as expected. The repeatability of the MINIVAP ONLINE is proven to be less constant and that all components – like dissolved air – follow the ideal gas law. The MINIVAP ONLINE is able to directly measure the amount of gas and butanes in the fuel and to eliminate the need for sample preparation. Best of all: The precision is significantly better than with single expansion analyzers!

Savings at a glance

According to the lab experience over a 6 AM 9 and better precision, a verbal piece was put in a lab. Use this minimal precision in turn around time and expense. The ability to change the instrument in one minute and get the results in another minute is valuable to any lab.

Triple Expansion Method for accurate VP determination

Based on the assumption that the vapor pressure of samples nearly is constant at 10°C the triple expansion method is used to determine the vapor pressure. Three total pressures values are measured. From these three total pressures values are used to extrapolate the TVP of the Base Plate is calculated.

The MINIVAP ONLINE also includes a TVP extrapolation method to determine the Bubble Point Pressure of crude oil.

4.2 3.38% 24.024 8.77

3. Testing Crude Oil, TBP and Bubble Point

4. Automatic calibration schedule

The Triple Expansion Method, instead of variable, adjustable and expensive constant pressure control, directly measures the vapor pressure in the sample stream without any sample preparation. Due to the nature of the sample, it can be difficult to achieve a constant pressure in the sample stream. Despite this, the Triple Expansion Method is much easier to use than variable pressure control.

5. Good test results for crude oils

The latest results of an interlaboratory measurement shows that : The MINIVAP ONLINE is able to transfer the results of the lab test to the on-line test without any loss of accuracy and the results can be compared directly. A large number of interlaboratory measurements showed the following result:

4.3 0.27% 11.924 4.48

The MINIVAP ONLINE also includes a TVP extrapolation method which can be used to test crude oils which can not be directly transferred to the chart. This method uses multiple extrapolation of a large number of crude samples using the ASTM procedure with a new reference fluid and fine-tunes the bias correction.

Crude oil precision at a glance

4.1 0.64% 10.752 3.92

Triple Expansion Method

The Triple Expansion Method is a true profit analyzer. The innovative measuring technique leads to an improved accuracy allowing to blend as much butanes have already been blended into the lot delivered to the transportation system.
**1. Profits from best precision**

The target market of a product is com¬posed of the end-user consumer, which is influenced by good performance, price and the quality of the product. The MINIVAP ON-LINE is developed for and designed for refinery operations and is suitable for mixing operations. It brings added value to the throughput of the process by providing reliable and accurate measurements.

**2. Fast quality inspection for batch delivery**

The Triple Expansion Method is designed to provide a fast and accurate measurement of the vapor pressure of the product. By using the Partial Pressure of Dissolved Gas (Pgas) in the sample, it is possible to identify "foul" batches – batches of poor quality that are not suitable for processing. Libraries of the MINIVAP ON-LINE records provide an easy access to SCS without any further tools.

**3. Testing Crude Oil, TPV and Bubble Point**

The MINIVAP ON-LINE includes a TVP extrapolation method to determine the Bubble Point Pressure (BPP) of crude oil. In the following example, normal Butane is blended into Unleaded Gasoline.

**4. Good reasons to decide for a MINIVAP ON-LINE**

- **Triplet Expansion Method**
  - The Triple Expansion Method makes the MINIVAP ON-LINE an unrivalled tester of physical properties. The method as such allows to minimize the error of the partial pressure of dissolved gas in every sample.
  - The Triple Expansion Method has a significant advantage: Only the Triple Expansion Method includes the bias correction model. This means that stream composition changes can be taken into account, which is important for refinery operations.

- **Best precision for best profit**
  - In this section, we present a list of cases where typical and default deviations for ASTM D5191, D5482 and EN 13016 have been performed.

- **Testing Crude Oil, TVP and Bubble Point**
  - The MINIVAP ON-LINE also includes a TVP extrapolation method to determine the Bubble Point Pressure (BPP) of crude oil. In the following example, normal Butane is blended into Unleaded Gasoline.

As the bias correction model is still valid if stream composition changes, a bias correction model has to be developed. It is not guaranteed that the same precision and quality can be achieved under different conditions.

- **Crude oil precision at a glance**
  - The MINIVAP ON-LINE includes a TVP extrapolation method to determine the Bubble Point Pressure (BPP) of crude oil. In the following example, normal Butane is blended into Unleaded Gasoline.

**5. Automatic calibration schedule**

The Triple Expansion Method is designed to provide a fast and accurate measurement of the vapor pressure of the product. A calibration certificate is generated for every measurement, allowing the user to verify the accuracy of the measurement and ensuring the reliability of the results.

- **Features/crude oil**
  - The MINIVAP ON-LINE includes a TVP extrapolation method to determine the Bubble Point Pressure (BPP) of crude oil. In the following example, normal Butane is blended into Unleaded Gasoline.
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- **Crude oil precision at a glance**
  - The MINIVAP ON-LINE includes a TVP extrapolation method to determine the Bubble Point Pressure (BPP) of crude oil. In the following example, normal Butane is blended into Unleaded Gasoline.

**6. Repeatability and Reproducibility**

The Triple Expansion Method is designed to provide a fast and accurate measurement of the vapor pressure of the product. A calibration certificate is generated for every measurement, allowing the user to verify the accuracy of the measurement and ensuring the reliability of the results.
5. Process results & Lab results

MINIVAP ON-LINE incorporates an automatic piston lubrication system and extensive self-diagnostics, thus virtually no operator work is required. For best performance in ex-areas, a nitrogen feed line is recommended.

Advantages of an additional measuring cell

- Easy attachment to a service unit for error diagnosis and recalibration
- Cell can be mounted on any MINIVAP ON-LINE analyzer without additional calibration
- Only 5 quick connectors to detach the cell
- No tools required to replace measuring cell
- Easy access to measuring unit

6. Fast and easy maintenance

MINIVAP ON-LINE incorporates an automatic piston lubrication system and extensive self-diagnostics, thus virtually no operator work is required. For best performance in ex-areas, a nitrogen feed line is recommended.

7. Data transfer - full networking capabilities

MINIVAP ON-LINE can be configured according to your needs:
- Optional 4-20 mA analog data output
- ASCII code and MODBUS communication protocol
- Data transfer via serial interface RS 232
- Built-in diagnostic and safety features
- 7 minutes cycle time
- Only 10 ml of sample for a complete measurement

Standards

- Vapor Pressure of LPG ASTM D6897, D1267 (corr.)
- Vapor Pressure of Crude Oil ASTM D6377 (VPCR4), D323 (corr.)
- Vapor Pressure of Gasoline ASTM D6378 (Triple Expansion), D5191 (DVPE), D4953 (corr.) and D323 (corr.)

TECHNICAL DETAILS / SPECIFICATIONS

- Temperature Range Internal operation: 5 to 60°C (41 to 140°F) - Measurement temperature 20 to 60°C (68 to 140°F)
- Pressure Range Gasoline, Crude Oil: 0 to 1000 kPa (0 to 145 psi)
- Pressure correction
- En 13016-2, IP 409 (AVP)
-ASTM D5188 (V/L) without air saturation
- Maximum physical dimensions W x H x D = 650 x 1380 x 400 mm (25.6 x 54.4 x 15.8 inches)
- Power requirements 100/120/230/240 V AC, 50/60 Hz, 110 W
- Reproducibility 0.7 kPa (0.10psi) @ 37.8°C, 70kPa
- Repeatability 0.3 kPa (0.04psi) @ 37.8°C, 70kPa
- Weight Approx. 50 kgs (110 lbs)
- Maximum pressure: 7,000 kPa (1000 psi)
- LPG: 0 to 2000 kPa (0 to 290 psi)
- No accessories required for start-up
- Optional analyzer shelters
- Optional sample recovery system
- Maintenance free sample conditioning systems
- Multiple sample streams
- Modular arrangement
- Peltier cooling
- Automatic piston lubrication
- Remote control via central controller
- Explosion proof Type X or ATEX purging system
- US-EPA and CARB approved Grabner method
- Highest precision and performance
- No tools required to replace measuring cell
- Install easy access to measuring cell
- No need for값 validate measurement results against laboratory tests: Results are just as precise every refinery all over the world. Because the MINIVAP ON-LINE analyzer is using exactly the same measuring principle, there is no need to validate measurement results against laboratory tests. The following MINIVAP ON-LINE results are the most reliable as results are with the best standard compliant vapor pressure laboratory instrument - the MINIVAP lab analyzer.
MINIVAP ON-LINE can be configured according to your needs:

- Single Stream
- Dual Stream
- GASOLINE & LPG
- CRUDE OIL

Features:

- MODULAR DESIGN
- Easy attachment to a service unit for error diagnosis and recalibration
- Cell can be mounted on any MINIVAP ON-LINE analyzer without additional calibration
- No down time in process
- Only 5 quick connectors to detach the cell
- Easy access to measuring unit

Advantages of an additional measuring cell:

- Full automatic calibration, verification and pressure correction
- Modular arrangement
- Pelletier cooling
- Automatic piston lubrication
- Remote control via central controller
- Maintenance free sample conditioning systems
- Multiple sample streams
- Explosion proof Type X or ATEX purging system
- US-EPA and CARB approved Grabner method
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- No accessories required for start-up
- Optional analyzer shelters
- E infinitely scalable sample conditioning options

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- Vapor pressure of Gasoline: EN 13016-2, IP 409 (AVP)

FEATURES

- Remote control via central controller
- Maintenance free sample conditioning systems
- Multiple sample streams
- Modular design
- Explosion proof Type X or ATEX purging system
- US-EPA and CARB approved Grabner method
- Hightest precision and performance
- No tools required to replace measuring cell

7. Data transfer - full networking capabilities

Data can be electronically transferred to a central computer system by any protocol in a personal computer or a mini/microcomputer. It can also be transferred to any circuit board in a central computer system by means of a central controller, and then transmitted to other data handling systems. The MINIVAP ON-LINE analyzer is also interfaced to the central controller, and can be used as a slave or master device.

- MODBUS RTU to be displayed on a screen. Alternatively, 4-20 mA data transfer is possible via modem or central controller. With this information readily accessible, corrections (e.g. for the blending system) can be initiated immediately, if a fixed limit is exceeded – for multiple MINIVAP ON-LINE analyzers in one central command place!

5. Process results - Lab results

The MINIVAP ON-LINE from GRABNER INSTRUMENTS is a process monitoring device for the measurement and monitoring of vapor pressure in gasoline, kerosene, fuel oil, and other petroleum products. The analyzer is designed to operate in industrial environments and is equipped with built-in diagnostic features that enable it to identify and correct errors automatically. The analyzer is also equipped with a built-in safety system that prevents accidents and ensures operator safety. The MINIVAP ON-LINE analyzer is ideal for use in refineries, power plants, and other industrial facilities where accurate and reliable measurement of vapor pressure is essential.