

# PLANTWEB ADVISOR FOR METROLOGY

Verify the Integrity of Flow Measurement Calculations

## Plantweb Advisor for Metrology Functionality

Plantweb Advisor for Metrology is Emerson's new modular analytics platform. It is built upon the latest technologies, providing a suite of functions and flexibility that are unprecedented within the measurement world today. This next-generation platform provides a level of standardization and automation of complex tasks that integrate seamlessly across measurement assets and engineering support locations.

The enhanced diagnostic, remote monitoring, predictive capabilities and validation provide greater insight into both process and instrumentation, driving clarity and reducing financial exposure and risk.

## Calculation Verification Module

Flow computer calculations require periodic verification to ensure optimal performance. Having an automated, online tool provides an added degree of confidence in the performance of the device. For this purpose, Plantweb Advisor for Metrology offers calculation verification software.



Plantweb Advisor for Metrology gives added confidence in flow computer calculations and detects human errors, such as incorrectly entered constant values.

A screenshot of the Plantweb Advisor for Metrology software interface. The interface is a web-based form with a dark blue header and a light blue body. The header includes the Emerson logo, the product name "Plantweb Advisor for Metrology", and the "PLANTWEB advisor" logo. The user name "Admin" is visible in the top right. The main content area is divided into several sections: "Meter Type" (Orifice), "Product Type" (Crude Oil), and "Calculation Method" (NGL - GPA TP 25, 1998). Below these are tabs for "Orifice" and "Calculate". The "Orifice" section contains input fields for "Observed Density" (620 kg/m³), "Temperature" (15 °C), "Gauge Pressure" (1 kPa), and a radio button for "Glass Hydrometer Used" (Yes). The "Flowing Conditions" section includes "Gauge Pressure" (4000 kPa), "Flowing Temperature" (32 °C), and "Atmospheric Pressure" (101.325 kPa). The "Equilibrium Vapor Pressure" section has "Calculation Mode" (Automatic) and "Absolute Pressure" (101.325 kPa). The "Results" section displays calculated values: "Density At Base Conditions" (1 kg/m³), "Density At Meter Conditions" (73.4574 kg/m³), "CPL" (1.00174), "CTL" (73.3298), "CSW" (1), "HYC" (1), and "F" (4.33E-07). The "Fluid Viscosity" section shows "Absolute Viscosity" (0.010268 cP). The "Other Fluid Properties" section includes "Sediment And Water Content %" (0). The footer contains the "PLANTWEB" logo and the version number "Emerson Plantweb Advisor for Metrology 1.0.0.0".

For more information, visit [Emerson.com](http://Emerson.com) or contact your local Emerson Sales Representative



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This software module interfaces to the flow computer directly and offers dynamic run time and off-line calculations. The following calculations are offered in the software suite:

| Gas Calculations                   | Liquid Calculations    |
|------------------------------------|------------------------|
| GPA 2172                           | ASTM D1250 / IP 200    |
| ISO 6976                           | API MPMS 11.1          |
| AGA 5                              | API 11.2.1             |
| GPA 2145                           | API 11.2.2             |
| AGA 8                              | API 11.2.4 / GPA TP 27 |
| NDC 19, Redlich-Kwong              | API 11.2.5 / GPA TP 15 |
| AGA 3 / API MPMS 14.3 Part 1,2,3,4 | API 12.2               |
| ISO 5167                           |                        |
| AGA 7                              |                        |
| AGA 10                             |                        |
| ISA 1932                           |                        |

| Result | Date        | Time  | Custom Name | Internal Name | Meter Name   | Product Type | User Name | IVOL          | GSV          | MASS          | NSVOL           | CPL          | CTL          |
|--------|-------------|-------|-------------|---------------|--------------|--------------|-----------|---------------|--------------|---------------|-----------------|--------------|--------------|
| +      | 21-Mar-2019 | 11:03 | Liquid      | LT2_290-00000 | Turbine.2    | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 0.000000000  | 0.000000000  |
| +      | 21-Mar-2019 | 11:03 | Liquid      | LV2_290-00000 | V.Cone.2     | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 0.000000000  | 0.000000000  |
| +      | 21-Mar-2019 | 11:03 | Liquid      | LE2_290-00000 | Elbow.2      | NGL          | Admin     | 275.117000000 | 6.6938220000 | 47.9095000000 | 6693.8200000000 | 1.0046700000 | 1.0090700000 |
| +      | 21-Mar-2019 | 11:03 | Liquid      | LO2_290-00000 | Orifice.2    | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 0.000000000  | 0.000000000  |
| +      | 21-Mar-2019 | 11:03 | Liquid      | LN2_290-00000 | Nozzle.2     | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 1.0072200000 | 0.9927700000 |
| +      | 21-Mar-2019 | 11:03 | Liquid      | LP2_290-00000 | Pipeprover.2 | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 0.000000000  | 0.000000000  |
| +      | 21-Mar-2019 | 10:03 | Liquid      | LT2_273-00000 | Turbine.2    | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 0.000000000  | 0.000000000  |
| +      | 21-Mar-2019 | 10:03 | Liquid      | LV2_273-00000 | V.Cone.2     | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 0.000000000  | 0.000000000  |
| +      | 21-Mar-2019 | 10:03 | Liquid      | LE2_273-00000 | Elbow.2      | NGL          | Admin     | 275.117000000 | 6.6938220000 | 47.9095000000 | 6693.8200000000 | 1.0046700000 | 1.0090700000 |
| +      | 21-Mar-2019 | 10:03 | Liquid      | LO2_273-00000 | Orifice.2    | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 0.000000000  | 0.000000000  |
| +      | 21-Mar-2019 | 10:03 | Liquid      | LN2_273-00000 | Nozzle.2     | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 1.0072200000 | 0.9927700000 |
| +      | 21-Mar-2019 | 10:03 | Liquid      | LP2_273-00000 | Pipeprover.2 | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 0.000000000  | 0.000000000  |
| +      | 21-Mar-2019 | 09:03 | Liquid      | LT2_256-00000 | Turbine.2    | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 0.000000000  | 0.000000000  |
| +      | 21-Mar-2019 | 09:03 | Liquid      | LV2_256-00000 | V.Cone.2     | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 0.000000000  | 0.000000000  |
| +      | 21-Mar-2019 | 09:03 | Liquid      | LE2_256-00000 | Elbow.2      | NGL          | Admin     | 275.117000000 | 6.6938220000 | 47.9095000000 | 6693.8200000000 | 1.0046700000 | 1.0090700000 |
| +      | 21-Mar-2019 | 09:03 | Liquid      | LO2_256-00000 | Orifice.2    | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 0.000000000  | 0.000000000  |
| +      | 21-Mar-2019 | 09:03 | Liquid      | LN2_256-00000 | Nozzle.2     | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 1.0072200000 | 0.9927700000 |
| +      | 21-Mar-2019 | 09:03 | Liquid      | LP2_256-00000 | Pipeprover.2 | NGL          | Admin     | 0.000000000   | 0.000000000  | 0.000000000   | 0.000000000     | 0.000000000  | 0.000000000  |

Example of Calculation Verification for Liquid Orifice Meter

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