

250 SERIES

- Correlation to:
ASTM D1657
ASTM D1250
- Calculation of Propane/Butane
percentage



Portable/Laboratory Density Meter For Liquefied Petroleum Gases (LPG) **DM-250.3 (LPG Di)**



Principle of Operation

Density and Viscosity

For Density and Viscosity measurements a vibrating sensor is used. The sensor consists of a compact cylindrical tube that is vibrated in a hoop mode which delivers a balanced drive. This unique quality of the sensor allows for it to be installed not only with a rigid mounting, but also suspended on cables or using tape measures.

Density is determined using the well established resonant frequency principle. By alternately driving the sensor into vibration at the upper and lower half power (3dB) frequencies the bandwidth can be determined, which is also a function of the dynamic viscosity of the fluid.

Thus a single sensor will report the density, dynamic viscosity and temperature (from an integral RTD sensor) and thus kinematic viscosity can also be determined.

By using calculations based on the ASTM D341 equations, the kinematic viscosity can be calculated at a reference temperature. Base density can be calculated based on the methods defined in the Manual of Petroleum Measurement Standards.

DM-250.3 (LPG Di) Overview

OLED display

Device controller with
Built-in Bluetooth

Probe safety body

Manometer

Temperature
sensor
Density
sensor

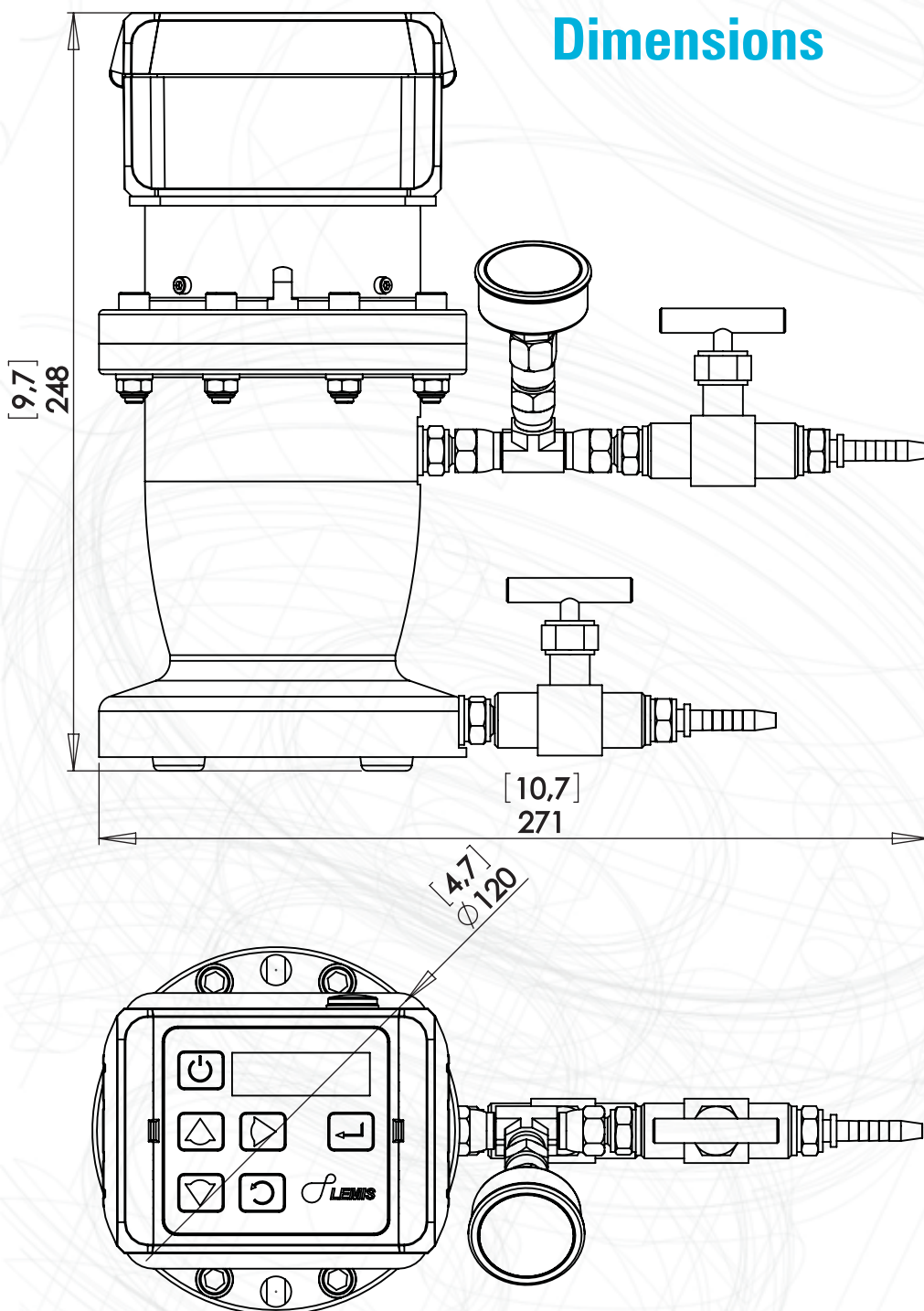
Measuring chamber
housing

Outlet valve

Inlet valve



Dimensions

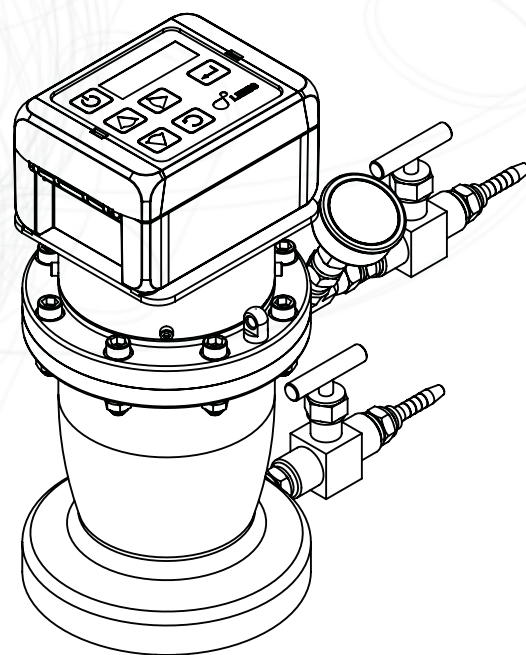


Advantages

- Direct density measurement
- Rigorous factory calibration and testing
- Automatic temperature compensation
- Small and compact
- Maintenance free
- Excellent correlation to ASTM D1657
- Readings on OLED Display
- Easy to operate
- Data transfer to PC

Applications

- LPG filling stations
- LPG fiscal transfer
- LPG storage
- Petroleum industry
- Concentration control at outlets and delivery points



Easy Measurement Visualization

Date and Time of measurement



Referred Density



Density and Temperature



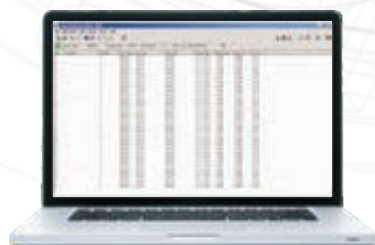
Tank Nr. and Propan/Butane percentage



Specifications

Measuring range:	
Density	0... 3 g/cm ³ (0... 3000 kg/m ³)
Density Standard calibration	0.475... 1.0 g/cm ³ (475... 1000 kg/m ³)
Temperature	-40... +85°C (-40... +185°F)
Accuracy:	
Density	±0.0003 or ±0.0005 g/cm ³ (±0.3 or ±0.5 kg/m ³)
Temperature	±0.1°C (±0.2°F) or ±0.2°C (±0.4°F)
Repeatability:	
Density	±0.00015 or ±0.00025 g/cm ³ (±0.15 or ±0.25 kg/m ³)
Temperature	±0.1°C (±0.2°F)
Resolution:	
Density	0.0001 g/cm ³ (0.1 kg/m ³)
Temperature	0.01°C (0.02°F)
Supported measuring units	
Real Density: g/cm ³ , kg/m ³ , lb/gal, lb/ft ³ ; API; SG	
Referred Density: at 15°C, 20°C, 60°F; API60; SG60	
Tables ASTM D 1250	
Temperature in °C or °F	
Ambient temperature	-40... +50°C (-40... +122°F)
Maximum Pressure	16 bar (1.6 MPa)
Testing Pressure	25 bar (2.5 MPa)
Sensor:	
Type	Vibrating element (Resonance principle)
Material	Stainless steel SS 316 L; NiSpan C; Hastelloy C22; Teflon
Hazardous environment Approvals	
Controller	II 2G (1G) Ex ib [ia Ga] IIB T4 Gb
Sensor	II 1G Ex ia IIB T4 Ga
Power supply	NiMH 3.6V-2500 mAh
Charging device	Input: AC 100-240 V AC; Output: 4,5 – 9,5 V DC Charge: 0.8 A
Operating time without charging	up to 24 hours
Continuous operating time	No less than 10 hours
Dimensions, weight:	
Density Meter	247 x 271 x 120 mm (9.7 x 10.6 x 4.72 in) 5.5 kg (12.1 lb)
Connections	Adapter ø6mm; other connections is customized
Temperature compensation	Automatic
Sample volume	250 ml
Data handling	
OLED Display (2x12) with backlight	
Local memory up to 2000 results with date/time stamped	
Build in Bluetooth or USB for data transfer to printer or PC	
Optional Windows - based software	
Delivery	Delivered in compact carrying case

* optional



Multifunctional software
compatible for Windows 7/8/10



Immediate printout of the
measurements by Bluetooth
No need for PC*



Delivered in compact carrying case

For more information please visit www.lemis-process.com



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