



## Mobile Density Meter (MDM150)

### Technology Overview

BeerSense™ is powered by Integrated Sensing Systems (ISS), a proven leader with over 20 years of experience with MEMS vibrating silicon technology. Our BeerSense™ Mobile Density Meter (MDM150) is a rugged, accurate, low-cost instrument for measuring liquid density and viscosity in brewery environments, such as the cellar or laboratory. At the heart of the MDM150 is an ISS patented\* microCoriolis™ digital liquid sensor. That has a resonating u-shaped tube. This sensor is naturally resistant to bubbles and dissolved gas found in highly carbonated beverages. The MDM150 is a portable density meter and is packaged in a small, rugged plastic carrying case.

**The MDM150 is so durable, it even withstands waist high drops onto concrete without any damage other than cosmetic.**

A built-in rechargeable battery can operate the system continuously for many days. For portable use an integrated back-lit 4 line LCD displays, °Plato, density, specific gravity, viscosity and temperature. Our easy-to-use software can be used to communicate with the MDM150 to configure, display, trend and store measurements from any of the measured tanks directly to your computer. With the MDM150 you can keep track of individual tanks day by day and it will display the ABV. MDM150 measures liquid density to a resolution of 0.0001 gram/cc and an accuracy of 0.0005 gram/cc. Liquid temperature is measured with a range from 5° to 70° C.

### BeerSense™ MDM150 Applications

#### Fermentation Monitoring

In a brewery operations the periodic measurement of density is used to track the progress of fermentation of beer. Manual samples are easily collected from the fermentation vessel and the measurement made without going through a time-consuming degassing or filtering step.

#### Alcohol by Volume Calculation (ABV)

Using the MDM150 software on a PC, each sample displays the increasing ABV as the fermentation progresses for each tank.

#### Viscosity

Fluid viscosity is used to determine the quality of the malt extract.



### Features

#### ■ Rugged and Portable Design

Withstands the abuses found in a brewery environment. No more concerns about damage due to mishandling. Our design can withstand waist-high drops onto solid concrete.

#### ■ Bubble and Gas Resistant Measurement

The micro density sensor's small dimensions result in a sensor that rejects bubbles to lock onto the correct density measurement extremely fast. No filtration is required for samples with particles less than 150 micron size.

#### ■ Independent Operation

A rechargeable battery is included that will hold a charge for up to a month with normal daily use.

#### ■ Minimal Calibration Required

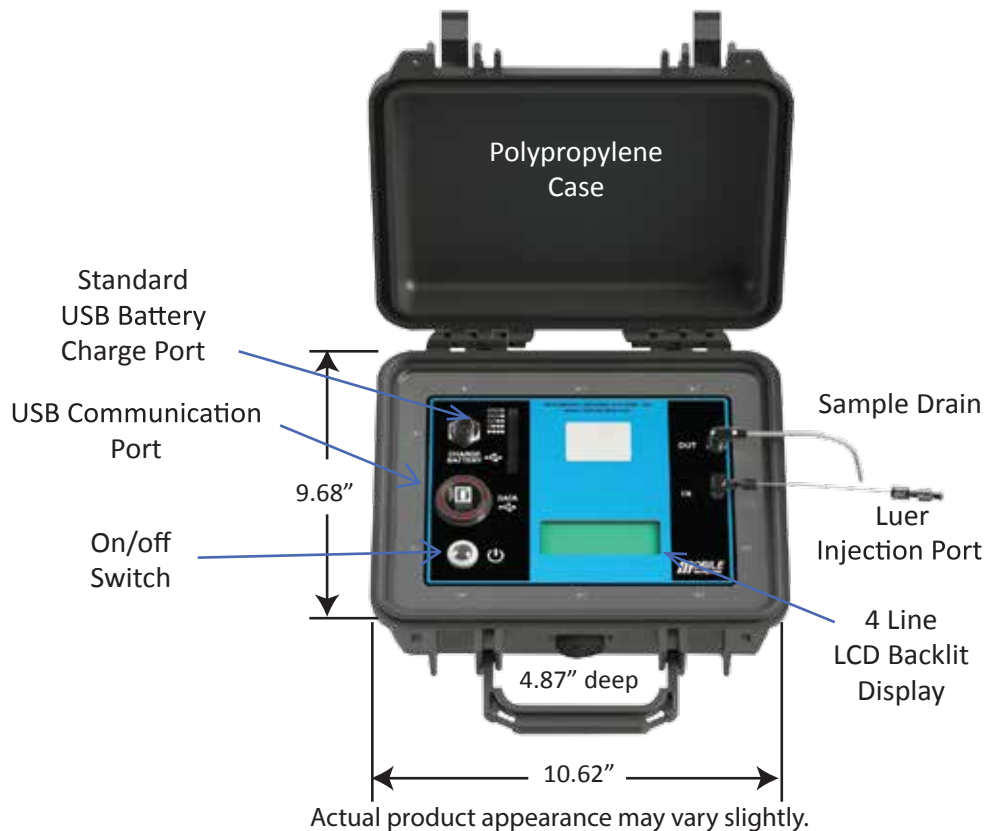
The sensor is extremely stable. Regular maintenance consists of rinsing with water daily, cleaning with caustic and checking the zero monthly. Recalibration can be performed with deionized water.

#### ■ Simple Operation

Samples are injected into the MDM150 using standard Luer syringes. Liquid waste is collected in a container.

**High Performance, Mobile Density Measurement**

## Features and Dimensions



## Specifications

General	
Density Range	0.6-1.3 gram/cc
Accuracy	Digital density: 0.0005 gram/cc Temperature: +/- 0.3 C (0.6F) °Plato: 0.1
Max Pressure	Internal 50 psig
Operating Temperature	41-140° F (5 to 60°C)
Materials	Case: Polypropylene Sensor wetted surfaces; Stainless steel, silicon, glass, high performance epoxy
Dimensions	10.62" x 9.68" x 4.97" (27 cm x 25 cm x 12 cm)
Weight	6 lbs. (2.72 kg)
Chemical Compatibility	MDM150 can withstand harsh acids and bases
Power	
Battery Recharging	USB Recharger 5 VDC / 2.0 A
Communication	
To PC	USB
Options	
Viscosity	0-50cP

## LCD Display



## Order Information

The BeerSense™ MDM150 is housed in a rugged poly case with latch and handle, a Luer inlet injection tube, drain tube and USB stick with optional Fluidic Software.

### Model

BeerSense™ MDM150

180006 Rev: B

\*US Patents 6,477,901, 6,499,354, 6,637,257, 6,647,778, 6,923,625, 6,932,114, 6,935,010, 7,059,176, 7,228,735, 7,263,882, 7,351,603, 7,381,628, 7,437,912, 7,568,399, 7,581,429, 7,628,082, 7,789,949, 7,823,445, 7,921,737B2, 8,016,798, 8,021,961, Japanese Patent 4,568,763 and more patents pending

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## Integrated Sensing Systems, Inc.

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