EASYDENS &
SMARTREF

BY ANTON PAAR

Anton Paar

CONSUMERTEC GMBH

Anton Paar develops, produces and distributes highly accurate laboratory instruments and process measuring systems, and provides custom-tailored automation and robotic solutions. We are the world leader in the measurement of density, concentration and CO_2 and in the field of rheometry.

With the **digital density meter EasyDens and digital refractometer SmartRef** Anton Paar ConsumerTec GmbH makes the cutting-edge technologies which Anton Paar has gained a reputable name in industry and research for accessible to end consumers.

We offer big science in a small box!

EasyDens
DIGITAL DENSITY METER

Smart technology for consistent measurement results & convenient monitoring:

- ✓ Density measurement from 0.7 to 1.2 g/cm³
- ✓ High accuracy of 0.001 g/cm³
- ✓ Automatic temperature compensation
- ✓ Applications: Beer, wine & spirits
- ✓ Free mobile app for iOS & Android

Anton Paar has been a partner in the beverage industry for decades and is the world's leading provider of density and concentration meters in this industry.

EasyDens determines the extract content of beer, the sugar content in wine, and the alcohol content in spirits.

The smart compact density meter is the result of high-precision craft and passion for research. Made in Austria.

More info
www.easydens.com

EasyDens
S M A R T   T E C H N O L O G Y

iOS & Android app
EasyDens is used in combination with a free mobile app for iOS and Android via Bluetooth Low Energy and enables intelligent handling of the measurement results.
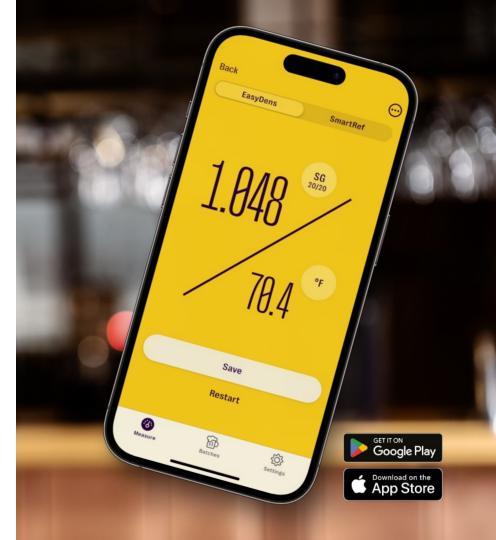
Smart data management
The app allows easy storage, visualization, management, and sharing of measurement data.

Multiple measurement modes
In addition to the quick measurement mode, measurements in continuous mode allow a more detailed understanding of the samples' properties.

Over-the-air updates
Constant app development keeps the digital density meter up to date with the latest features.

EasyDens
MEASUREMENT

Density measurement
The EasyDens density meter measures the density of fluids. This allows to retrieve relevant sample properties in a variety of applications.

Instant results
Automatic temperature compensation and application-specific adaptions of the measurement results make additional calculations and correction tables obsolete.

Easy maintenance
The unit has an IP65 rating and is easy to clean.

Small sample volume
With only 2 mL sample volume EasyDens displays results in seconds and has a measurement range of 0.7 to 1.2 g/cm³ with an accuracy of 0.001 g/cm³.

EasyDens
FOR BEER BREWING

Connected to the **Brew Meister smartphone app** for iOS and Android, the EasyDens determines highly accurate results for the extract content of wort, follows the fermentation process, and calculates the estimated alcohol content of beer with digital accuracy.

Brew Meister takes care of all the necessary calculations. The **results are already compensated for temperature** – allowing full focus on brewing beer without the hassle of additional calculation steps.

With a small sample volume of only 2 mL, the EasyDens delivers accurate results for:

- ✓ Brix [°B]
- ✓ Plato [°P]
- ✓ Specific gravity [SG]
- ✓ Specific gravity 20/20 [SG 20/20]
- ✓ Specific gravity 15/15 [SG 15/15]
- ✓ Specific gravity 20/4 [SG 20/4]
- ✓ Est. ABV [% v/v] (calculated from OG & FG)
- ✓ Density [g/cm³]
- ✓ Temperature [°C], [°F]

EasyDens

FOR WINEMAKING

Connected to the **Wine Meister smartphone app** for iOS and Android, the EasyDens determines highly accurate results for the sugar content of must, follows the fermentation process, and calculates the estimated alcohol content of wine with digital accuracy.

Wine Meister takes care of all the necessary calculations. The **results are already compensated for temperature** – allowing full focus on winemaking without the hassle of additional calculation steps.

With a small sample volume of only 2 mL, the EasyDens delivers accurate results for:

- ✓ Babo [°Babo]
- ✓ Baumé [°Bé]
- ✓ Brix [°Bx]
- ✓ Klosterneuburger Mostwaage [°KMW]
- ✓ Nihonshu-do [SMV]
- ✓ Oechsle [°Oe]
- ✓ Specific Gravity [SG 20/20]
- ✓ Sugar concentration [g/L]
- ✓ Est. ABV [% v/v] (calculated from OG & FG)
- ✓ Density [g/cm³]
- ✓ Temperature [℃], [°F]

EasyDens
F O R   D I S T I L L I N G

Connected to the **Proof Meister smartphone app** for iOS and Android, the EasyDens determines highly accurate results for the alcohol content of spirits.

Brew Meister takes care of all the necessary calculations. The **results are already compensated for temperature** – allowing full focus on distilling without the hassle of additional calculation steps.

With a small sample volume of only 2 mL, the EasyDens delivers accurate results for:

- ✓ Alcohol by volume [% v/v]
- ✓ Alcohol by volume at 15 °C [% v/v @15]
- ✓ Alcohol by volume at 20 °C [% v/v @ 20]
- ✓ Alcohol by weight [% w/w]
- ✓ Alcohol Proof UK [°Proof UK]
- ✓ Alcohol Proof US [°Proof US]
- ✓ Density [g/cm³]
- ✓ Temperature [°C], [°F]

EasyDens
SPECIFICATIONS

Unit	Accuracy	Resolution	Range	ATC
Alcohol (% v/v)	0.5	0.1	0 to 100	-
Alcohol at 15 ˚C (% v/v)	0.5	0.1	0 to 100	✓
Alcohol at 20 ˚C (% v/v)	0.5	0.1	0 to 100	✓
Alcohol (% w/w)	0.5	0.1	0 to 100	✓
Babo (˚Babo)	0.3	0.1	0 to 30	✓
Baumé (˚Bé)	0.3	0.1	0 to 45	✓
Brix (˚Bx)	0.3	0.1	-10 to 80	✓
Density (g/cm³)*	0.001	0.001	0.7 to 1.2	-
KMW (˚KMW)	0.3	0.1	0 to 30	✓
Nihonshu-do (SMV)	2	1	-10 to 15	-
Oechsle (˚Oe)	2	1	-50 to 400	✓
Plato (˚P)	0.3	0.1	-10 to 40	✓
Proof UK (˚Proof UK)	1	1	0 to 175	✓
Proof US (˚Proof US)	1	1	0 to 200	✓
Salinity specific gravity 20/20 (SG)	0.001	0.001	0.7 to 1.2	✓
Specific gravity (SG)	0.001	0.001	0.7 to 1.2	-
Specific gravity 15/15 (SG)	0.001	0.001	0.7 to 1.2	✓
Specific gravity 20/20 (SG)	0.001	0.001	0.7 to 1.2	✓
Specific gravity 20/4 (SG)	0.001	0.001	0.7 to 1.2	✓
Sugar concentration (g/L)	3	1	0 to 500	✓
Temperature (˚C)	0.2	0.1	5 to 30	-
Temperature (˚F)	0.4	0.1	41 to 86	-

Data	
Dimensions (L x W x H)	101 x 58 x 44 mm (4 in x 2.3 in 1.7 in)
Weight (incl. batteries)	~190 g (0.42 lbs.)
Power supply	2x 1.5 V LR6 AA alkaline batteries or AA NiMH rechargeable batteries
Battery operation lifetime	> 40 hours
Interface	Bluetooth Low Energy
Enclosure rating	IP65 according to IEC 60529

Further Specifications	
Sample volume	2 mL
Humidity	5 % to 90 %, non-condensing
Ambient temperature	5 ˚C to 35 ˚C / 41 ˚F to 95 ˚F
Storage temperature	5 ˚C to 35 ˚C / 41 ˚F to 95 ˚F
Mobile operating system	iOS & Android

DIGITAL REFRACTOMETER
SMARTREF BY ANTON PAAR

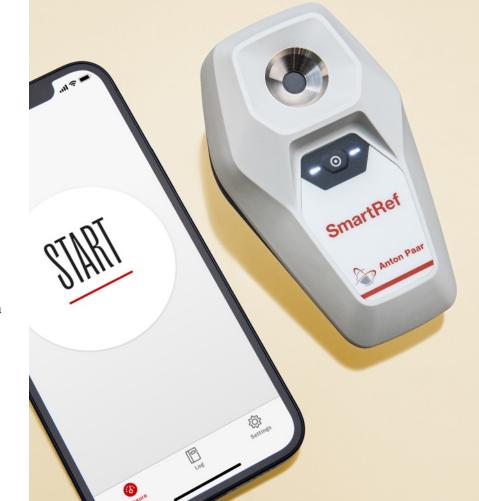Anton Paar

SmartRef

DIGITAL REFRACTOMETER

Smart technology for consistent measurement results & convenient monitoring:

- ✓ Compact & lightweight
- ✓ Stainless steel sample well
- ✓ Superior lab-grade precision (accuracy of 0.2 °Brix)
- ✓ SmartGuide+ for reliable results
- ✓ Automatic temperature compensation (ATC)
- ✓ Versatile measurement units: °Brix, ppt, SG, <u>40+ more</u>
- ✓ Simple zero adjustment with distilled water
- ✓ Water resistant (IP66)
- ✓ Free mobile app for iOS & Android

The SmartRef Digital Refractometer is a portable smart device suitable for a wide range of requirements. In combination with a free mobile app, this refractometer offers more than 40 different measurement units.

SmartRef is the result of high-precision craft and passion for research. Made in Austria.

More info
www.my-smartref.com

SmartRef
S M A R T   T E C H N O L O G Y

iOS & Android app
The SmartRef is used in combination with a free mobile app via Bluetooth Low Energy, enabling intelligent handling of the measurement results.

Instant results
In-app calculations and automatic temperature compensation of the measurement results make manual corrections obsolete.

Smart data management
The app allows easy storage, visualization, management, and sharing of measurement data.

SmartGuide+
The integrated SmartGuide+ detects and helps to eliminate any measurement problems through high ambient light detection, continuous check of prism and sample condition, and more.

Multiple measurement modes
In addition to the quick measurement mode, measurements in continuous mode allow a more detailed understanding of the samples' properties.

Over-the-air updates
Constant app development keeps the digital refractometer up to date with the latest features.

SmartRef
MEASUREMENT

Compact & lightweight design
With its pocket-sized design the SmartRef is suitable for quick measurements on the go.

Refractive index measurement
The SmartRef refractometer measures the refractive index of fluids. This allows to retrieve relevant sample properties in a wide variety of applications.

Easy maintenance with stainless steel sample well
The unit is water- and dust-protected (IP66) and has an easy-to-clean stainless steel sample well.

Zero with distilled water
SmartRef supports an one-point zero adjustment with distilled water and requires only a few drops of sample (0.4 mL).

Fast, easy & highly accurate results
The SmartRef measurement cell is based on a high-resolution CMOS sensor with more than 1.500 high-definition elements providing fast results. It displays results in under 2 seconds and has a measurement range of 0 to 85 °Brix with an accuracy of 0.2 °Brix.

SmartRef

FOR BEER BREWING

Connected to the **Brew Meister smartphone app** for iOS and Android, the SmartRef determines highly accurate results for the extract content of wort, follows the fermentation process, and calculates the estimated alcohol content of beer with digital accuracy.

Brew Meister takes care of all the necessary calculations. The **results are already compensated for temperature, wort and alcohol** – allowing full focus on brewing beer without the hassle of additional calculation steps.

SmartRef is the first refractometer with automatic wort and alcohol correction. The correction factors can be adjusted universally within the app or individually for each batch to get precise values for different beer styles.

With a small sample volume of only 0.4 mL the SmartRef delivers accurate results for:

- ✓ Brix [°B]
- ✓ Plato [°P]
- ✓ Specific gravity [SG 20/20]
- ✓ Est. ABV [% v/v]
- ✓ Temperature [°C], [°F]

SmartRef
FOR WINEMAKING

Connected to the **Wine Meister smartphone app** for iOS and Android, the SmartRef determines the sugar content of grapes in seconds and enables quick measurements in the vineyard to determine grape ripeness.

The corresponding Wine Meister app is specially adapted to the needs of winemakers and allows efficient handling of measurement data through easy data storage, management, visualization, and export.

With a small sample volume of only 0.4 mL the SmartRef delivers accurate results for:

- ✓ Babo [°Babo]
- ✓ Baumé [°Bé]
- ✓ Brix [°Bx]
- ✓ Klosterneuburger Mostwaage [°KMW]
- ✓ Oechsle CH [°Oe CH]
- ✓ Oechsle GER [°Oe GER]
- ✓ Temperature [°C], [°F]

SmartRef

FOR SALTWATER TANKS

Connected to the **Reef Meister smartphone app** for iOS and Android, the SmartRef determines the salt content of saltwater aquariums in seconds to ensure the health of fish and the thriving of plants.

The corresponding Reef Meister app is specially adapted to the needs of saltwater tank owners and allows efficient handling of measurement data through easy data storage, management, visualization, and export.

With a small sample volume of only 0.4 mL the SmartRef delivers accurate results for:

- ✓ Practical salinity units [PSU]
- ✓ Salinity in parts per thousand [ppt]
- ✓ Salinity specific gravity [SG 20/20]
- ✓ Temperature [°C], [°F]

SmartRef
F O R   B E E K E E P E R S

Checking if the moisture in honey is at the right level is important for quality assurance in beekeeping. Too much moisture could cause the honey to start fermenting and taste sour. And since it is not easy to find completely sealed frames, a measurement with a refractometer is essential.

In combination with the **Lab Meister mobile app**, the SmartRef digital refractometer determines % water in seconds and additionally allows easy storage and visualization of the measurement results.

With a small sample volume of only 0.4 mL the SmartRef delivers accurate results for:

- ✓ Brix [°Bx]
- ✓ Moisture in honey [% water]
- ✓ Refractive index [nD]
- ✓ Refractive index at 20 °C [nD @20]
- ✓ Temperature [°C], [°F]

SmartRef
F O R   C O F F E E

Coffee goal: a perfectly balanced taste! The digital refractometer SmartRef determines coffee %TDS in seconds and helps you find the right balance between strength, sourness and sweetness for your coffee.

In combination with the **Lab Meister mobile app** measurement results can be managed and stored for later reference.

With a small sample volume of only 0.4 mL the SmartRef delivers accurate results for:

- ✓ Brix [°Bx]
- ✓ Total dissolved solids [% TDS]
- ✓ Refractive index [nD]
- ✓ Temperature [°C], [°F]

SmartRef

F O R   F R U I T S   &   V E G E T A B L E S

Measuring the sweetness of fruits and vegetables provides information about their quality. The sugar content can not only be used as an indicator for best timing in harvesting but also for the market value of fruits and vegetables or to decide whether they should better be used as a fresh or preserved product.

In combination with the **Lab Meister mobile app**, the SmartRef digital refractometer determines the sugar content in °Brix and additionally allows easy storage and visualization of the measurement results.

With a small sample volume of only 0.4 mL the SmartRef delivers accurate results for:

- ✓ Brix [°Bx]
- ✓ Corn syrup AC DE (28, 42, 55) [% w/w]
- ✓ Corn syrup DC DE (32, 63, 70, 95) [% w/w]
- ✓ Fructose [% w/w Fru]
- ✓ Glucose [% w/w Glc]
- ✓ HFCS (42, 55, 90) [% w/w]
- ✓ HMCS (42, 50) [% w/w]
- ✓ Invert sugar [% w/w IS]
- ✓ Refractive index [nD]
- ✓ Refractive index at 20 °C [nD @20]
- ✓ Temperature [°C], [°F]

SmartRef
FOR KETCHUP & DIPS

With the SmartRef digital Brix refractometer, the Brix value of fruits and vegetables can be used for further processing into ketchup, sauces, and dips and make decisions regarding dilution based on that.

Connected to the **Lab Meister mobile app**, the SmartRef digital refractometer determines the sugar content of the raw ingredients in °Brix and additionally allows easy storage and visualization of the measurement results.

With a small sample volume of only 0.4 mL the SmartRef delivers accurate results for:

- ✓ Brix [°Bx]
- ✓ Corn syrup AC DE (28, 42, 55) [% w/w]
- ✓ Corn syrup DC DE (32, 63, 70, 95) [% w/w]
- ✓ Fructose [% w/w Fru]
- ✓ Glucose [% w/w Glc]
- ✓ HFCS (42, 55, 90) [% w/w]
- ✓ HMCS (42, 50) [% w/w]
- ✓ Invert sugar [% w/w IS]
- ✓ Refractive index [nD]
- ✓ Refractive index at 20 °C [nD @20]
- ✓ Temperature [°C], [°F]

SmartRef
F O R   J A M   &   J E L L Y

The sweetness of jam and jelly is not only an indication of the unique taste but also gives information about the preservation of the finished products. Therefore, it is necessary to measure the sugar content of the products for quality assurance.

Connected to the **Lab Meister mobile app**, the SmartRef digital refractometer determines the sugar content in °Brix and additionally allows easy storage and visualization of the measurement results.

With a small sample volume of only 0.4 mL the SmartRef delivers accurate results for:

- ✓ Brix [°Bx]
- ✓ Corn syrup AC DE (28, 42, 55) [% w/w]
- ✓ Corn syrup DC DE (32, 63, 70, 95) [% w/w]
- ✓ Fructose [% w/w Fru]
- ✓ Glucose [% w/w Glc]
- ✓ HFCS (42, 55, 90) [% w/w]
- ✓ HMCS (42, 50) [% w/w]
- ✓ Invert sugar [% w/w IS]
- ✓ Refractive index [nD]
- ✓ Refractive index at 20 °C [nD @20]
- ✓ Temperature [°C], [°F]

SmartRef
FOR CUTTING OIL

The SmartRef digital refractometer allows quick measurements of a cutting oil-water mixture to ensure its appropriate concentration. To verify the required dilution ratio and quality, it is recommended to take regular measurements of the cutting oil concentration. This can reduce hazards for employees, machine wear, as well as problems during the machining process.

Connected to the **Lab Meister mobile app**, the SmartRef allows easy measurement, storage and visualization of the measurement results for later reference.

With a small sample volume of only 0.4 mL the SmartRef delivers accurate results for:

- ✓ Brix [°Bx]
- ✓ Cutting oil concentration [% Oil]
- ✓ Refractive index [nD]
- ✓ Refractive index at 20 °C [nD @20]
- ✓ Temperature [°C], [°F]

SmartRef

FOR HEAT TRANSFER FLUIDS

The SmartRef digital refractometer helps control the blend ratio of heat transfer fluids consisting of glycol and water with highly accurate measurement results. This makes the SmartRef a perfect tool for engineers working with air conditioners, heat exchangers, or even pasteurizers.

Connected to the **Lab Meister mobile app**, the SmartRef allows easy measurement, storage and visualization of the measurement results for later reference.

With a small sample volume of only 0.4 mL the SmartRef delivers accurate results for:

- Ethylene glycol [% v/v], [% w/w]
- Ethylene glycol freezing point [°C], [°F]
- Propylene glycol [% v/v], [% w/w]
- Propylene glycol freezing point [°C], [°F]
- Refractive index [nD]
- Refractive index at 20 °C [nD @20]
- Temperature [°C], [°F]

SmartRef

FOR AUTOMOTIVE INDUSTRY

Testing engine coolants at regular intervals can reveal serious problems that could lead to expensive engine damage if not corrected.

The SmartRef digital refractometer determines the freezing point for coolant and antifreeze based on ethylene glycol or propylene glycol.

Connected to the **Lab Meister mobile app**, the SmartRef allows easy measurement, storage and visualization of the measurement results for later reference.

With a small sample volume of only 0.4 mL the SmartRef delivers accurate results for:

- ✓ Ethylene glycol [% v/v], [% w/w]
- ✓ Ethylene glycol freezing point [°C], [°F]
- ✓ Propylene glycol [% v/v], [% w/w]
- ✓ Propylene glycol freezing point [°C], [°F]
- ✓ Refractive index [nD]
- ✓ Refractive index at 20 °C [nD @20]
- ✓ Temperature [°C], [°F]

SmartRef
SPECIFICATIONS

Unit	Accuracy	Resolution	Range	ATC
Babo (°Babo)	0.2	0.1	0 to 30	✓
Baumé (°Bé)	0.2	0.1	0 to 40	✓
Brix (°Bx)	0.2	0.1	0 to 85	✓
Cutting Oil (% Oil)	0.2	0.1	0 to 100	✓
Ethylene Glycol (% v/v, % w/w)	0.4	0.1	0 to 60	✓
Freezing Point Ethylene Glycol (°C)	0.5	0.1	0 to -40	✓
Freezing Point Ethylene Glycol (°F)	1	0.1	32 to -40	✓
Freezing Point Propylene Glycol (°C)	0.5	0.1	0 to -40	✓
Freezing Point Propylene Glycol (°F)	1	0.1	32 to -40	✓
Honey Moisture (% Water)	0.2	0.1	13 to 25	✓
Klosterneuburger Mostwaage (°KMW)	0.2	0.1	0 to 30	✓
Oechsle CH (°Oe CH)	1	1	0 to 205	✓
Oechsle GER (°Oe GER)	1	1	20 to 205	✓
Plato (°P)	0.2	0.1	0 to 40	✓
Practical Salinity Units (PSU)	2	1	0 to 50	✓
Propylene Glycol (% v/v)	0.4	0.1	0 to 50	✓
Propylene Glycol (% w/w)	0.4	0.1	0 to 60	✓
Refractive index (nD)	0.0003	0.0001	1.3330 to 1.5040	✓
Refractive index at 20 °C (nD)	0.0003	0.0001	1.3330 to 1.5040	-
Salinity (ppt)	2	1	0 to 150	✓
Salinity specific gravity at 20 °C (SG)	0.002	0.001	1.000 to 1.114	✓
Specific gravity at 20 °C (SG)	0.002	0.001	1.000 to 1.114	✓
Temperature (°C)	0.2	0.1	5 to 30	-
Temperature (°F)	0.4	0.1	41 to 86	-

Unit*	Accuracy	Resolution	Range	ATC
Corn syrup AC DE (28, 42) (% w/w)	0.3	0.1	0 to 70	✓
Corn syrup AC DE (55) (% w/w)	0.3	0.1	0 to 84	✓
Corn syrup DC DE (32, 63, 70) (% w/w)	0.3	0.1	0 to 84	✓
Corn syrup DC DE (95) (% w/w)	0.3	0.1	0 to 74	✓
Fructose (% w/w Fru)	0.2	0.1	0 to 85	✓
Glucose (% w/w Glc)	0.2	0.1	0 to 85	✓
HFCS (42) (% w/w)	0.5	0.1	0 to 84	✓
HFCS (55, 90) (% w/w)	0.3	0.1	0 to 84	✓
HMCS (42, 50) (% w/w)	0.3	0.1	0 to 84	✓
Invert sugar (% w/w IS)	0.2	0.1	0 to 85	✓

Data

Dimensions (L x W x H)	108 x 64 x 35 mm (4.3 in x 2.5 in 1.4 in)
Weight (incl. batteries)	~135 g (0.31 lbs.)
Power supply	2x AAA 1.5V LR03 alkaline batteries or AAA NiMH rechargeable batteries
Enclosure rating	IP66 according to IEC 60529

Further Specifications

Sample volume	0.4 mL
Measurement time	< 2 s
Auto. temp. compensation 20 °C %Brix	10 °C – 100 °C (50 °F – 212 °F)
Auto. temp. compensation 20 °C PSU, ppt, S.G. (20/20)	10 °C – 40 °C (50 °F – 104 °F)
Mobile operating system	iOS & Android

www.my-smartref.com

*Additional measurement units with Lab Meister Pro mobile app.

EASYDENS & SMARTREF
BY ANTON PAAR

Smart Technology
MOBILE APPS

iOS & Android app
EasyDens and SmartRef are used in combination with a free mobile via Bluetooth Low Energy, enabling intelligent data handling.

Instant results
In-app calculations and automatic temperature compensation of the measurement results make manual corrections obsolete.

Smart data management
The app allows easy storage, visualization, management, and sharing of measurement data.
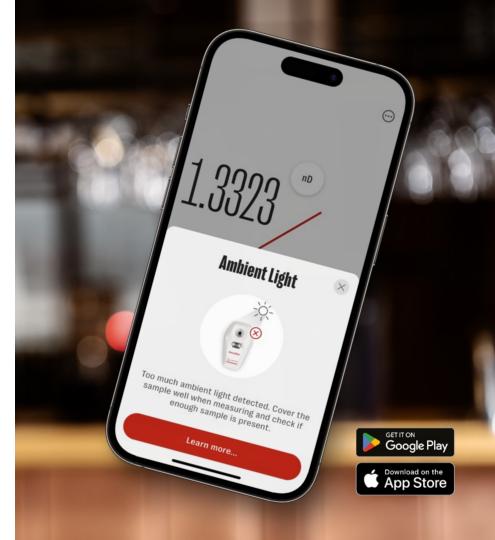
Multiple measurement modes
In addition to the quick measurement mode, measurements in continuous mode allow a more detailed understanding of the samples' properties.

Over-the-air updates
Constant app development keeps the digital density meter up to date with the latest features.

SmartGuide+
For the SmartRef, the mobile apps additionally offer an integrated SmartGuide+ which detects and helps to eliminate any measurement problems through high ambient light detection, continuous check of prism and sample condition, and more.

Applications

EasyDens can be used for
- ✓ Beer & kombucha brewing: Extract content of wort, fermentation tracking & est. ABV
- ✓ Winemaking: Sugar content in wine, fermentation tracking & est. ABV
- ✓ Distilling: Alcohol content in spirits

SmartRef applications are
- ✓ Saltwater aquariums & pools: Salinity
- ✓ Beer: Extract content of wort, fermentation tracking & est. ABV
- ✓ Fruits & vegetables: Sugar content
- ✓ Honey: Moisture
- ✓ Coffee: Total dissolved solids
- ✓ Cutting oil: Concentration
- ✓ Heat transfer fluids: Ethylene/Propylene glycol, Ethylene/Propylene glycol freezing point

EasyDens & SmartRef Combo delivers incredible results for
- ✓ Beer: Alcohol content, original gravity, real extract, final gravity
- ✓ Wine: Alcohol content, total extract
- ✓ Sake: Alcohol content, total extract
- ✓ Kombucha: Alcohol content

Beer Brewing

E A S Y D E N S   &   S M A R T R E F

Instant results
While EasyDens can determine °Plato and specific gravity (SG) directly from a density measurement, SmartRef and the Brew Meister App need to make adjustments to the original measurement result to enable fermentation progress control.

EasyDens is a digital density meter that measures density and temperature according to the renowned oscillating U-tube principle to directly determine parameters such as °Plato or SG. EasyDens provides highly accurate measurement results throughout the brewing process, ideal for passionate home and craft brewers who are looking for a precise measuring device to optimize the brewing process and exploit the full potential of their beer.

SmartRef is a digital refractometer that measures the refractive index of liquids and determines measurement parameters such as °Brix. Per definition, °Brix refers to sucrose-water mixtures. Since wort is not just a composition of sucrose and water, adjustments such as wort and alcohol correction must be applied to correctly determine °Plato and SG to follow the fermentation process with a refractometer. The Brew Meister App already performs these calculations automatically. Due to its simple operation, the SmartRef is suitable for measurements during the entire brewing process, especially for beginners.

Overview	EasyDens	SmartRef
Sample volume	2 mL	0.4 mL
Accuracy		
°Brix	± 0.3	± 0.2
°Plato	± 0.3	± 0.2 *Sucrose-water mixture
Specific gravity (SG 20/20)	± 0.001	± 0.001 *Sucrose-water mixture
Weight	190g	135g
Protection	IP65 (IEC 60529)	IP66 (IEC 60529)
Calibration & adjustment	Rarely (Once per year)	Before measurement

Beer Combo

SMARTREF & EASYDENS

Precise readings for fermenting or finished beer:

- ✓ Alcohol by volume [% v/v]
- ✓ Original gravity [°P] or [SG]
- ✓ Real extract [°P] or [SG]
- ✓ Final gravity [°P] or [SG]

With the combined measurement of EasyDens & SmartRef it is now possible to determine the alcohol content of fermenting and finished beer with an accuracy of 0.5 %v/v.

The new measurement is based on a method that combines density and refractive index measurement and thus enables precise determination of the alcohol content, real extract & original gravity.

video

‹ Back

4.9% vol

Beer

Original Gravity
1.008 g/cm³

Refractive index
1.3420 at 24°C

Original Gravity
1.048

Real Extract
1.018 SG

Save

Restart

Winemaking

E A S Y D E N S   &   S M A R T R E F

The digital refractometer SmartRef in compact pocketsize is suitable for quick measurements in the vineyard to precisely determine the best time for harvest of the grapes.

With the digital density meter EasyDens, the entire fermentation process can be monitored and the alcohol content calculated at any point during fermentation.

Thus, both devices are suitable for winemakers depending on the area of application in the production process.

Overview	EasyDens	SmartRef
Sample volume	2 mL	0.4 mL
Accuracy Brix / KMW / Baumé / Babo Specific gravity	 ± 0.3 ± 0.001	 ± 0.2 ± 0.001
Fermentation tracking	Even when alcohol is present	-
Weight	190g	135g
Protection	IP65 (IEC 60529)	IP66 (IEC 60529)
Calibration & adjustment	Rarely (Once per year)	Before measurement

Wine Combo

E A S Y D E N S   &   S M A R T R E F

Direct precise readings for fermenting or finished wine:

- ✓ Alcohol by volume [% v/v]
- ✓ Total extract [g/L]

With the combined measurement of EasyDens & SmartRef it is now possible to determine the alcohol content of fermenting and finished wine with an accuracy of ±0.5 %v/v. Further you receive results for the total extract with an accuracy of ±2 g/L.

The new measurement is based on a method that combines density and refractive index measurement and thus enables precise determination of the alcohol & total extract content.

Kombucha Combo

SMARTREF & EASYDENS

Direct precise readings for fermenting or finished kombucha:

✓ Alcohol by volume [% v/v]

With the combined measurement of EasyDens & SmartRef it is now possible to determine the alcohol content of fermenting and finished kombucha with an accuracy of ±0.5 %v/v.