

# Concentration

On the next pages you will find various Digital Hand Refractometers which are available as single and dual scale models for a broad application range. In addition, we have a Salt Meter for measuring the salt content for example in fluid and semi solid food in our range.



## Refractometer

### Description:

Digital handheld refractometer for measuring the concentration of different substances in liquid and semi-solid products. The device features an automatic temperature compensation and is easy to use.

### Applications:

Concentration measurement of:

- Sugar
- Salt
- Alcohol
- Various others



## Salt Meter

### Description:

The SSX 210 Salt Meter is used to measure the salt content in fluid and semi-solid food products, such as meat, cold cuts, cheese, salads etc. The measurement is performed by determination of the electrical conductivity, as it is dependent on the salt content.

### Applications:

Concentration measurement of:

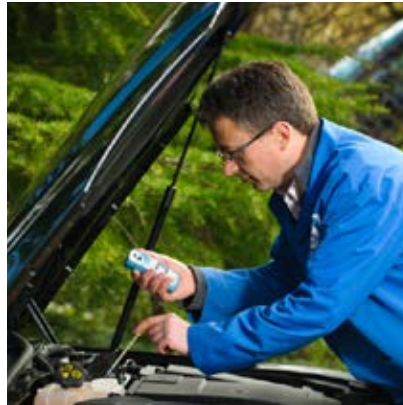
- Salt



## OPTi-M Hand Refractometer with internal light source



**NEW** The digital refractometers determine the concentration of various matters, which are solved in fluid or semi-solid substances. They have two decisive advantages to the common, optical refractometers. Thanks to the internal light, they can be used independent from the ambient light. In addition, they calculate and show the measurement values automatically in the display - no reading or converting a scale is necessary any more!



Straight out-of-the box, OPTi-M is programmed as a Brix refractometer, the most widely used scale covering sugar, food, beverage, wine and even some industrial applications, where it is used as an arbitrary value.

But that's not it. The OPTi-M has a further two channels that can, if desired, be programmed by the user with application specific scales such as those used in veterinary, wine, industrial, etc. Additionally, if the Brix scale is not required, it too can be overwritten. And if you want to change the scale to something different in the future, or regularly, redefining the channels is just a matter of a few simple button presses; making the OPTi-M a most versatile instrument on the market.

*Please see the following page for the available scales.*



- Precise digital LCD readout
- Over 45 scales to choose from
- Ergonomic IP65 rated design
- Shallow stainless steel prism dish
- Rapid temperature stabilisation

### Technical Data

#### Measurement Performance

Automatic Temperature Compensation (ATC)	ICUMSA (depending on model)
Working temperature range	+5 °C ... +40 °C (+41 °F ... +104 °F)
Sample temperature range	+5 °C ... +60 °C (+41 °F ... +140 °F)
Temperature sensor accuracy	±1 °C (+5 °C ... +40 °C)
Measurement time	2 sec.
Sample indicator	High, Low or No sample
Protection class	IP65 (water resistant)
Battery	3V 2 x AAA (LR03)
Battery lifetime	10,000 readings (minimum)

#### Construction

Prism material	Optical glass
Prism seal	Silicon rubber and Viton
Sample dish	316 stainless steel
Sample surface diameter	8 mm
Sample volume	0.3 ml
Case material	ABS

Type	Description	Part No.
OPTi-M	Universal Digital Handheld Refractometer	Available upon request

Each OPTi-M has an extensive on-board library of scales to choose from

Application	Scale	Range	Resolution	Accuracy	ATC
General	Refractive Index (RI)	1.33 - 1.54	0.0001	±0.0003	Brix
General	Refractive Index (RI) No ATC	1.33 - 1.54	0.0001	±0.0003	None
General	Brix	0 - 95	0.1	±0.2	Brix
Food & Beverage	°Butyro	0 - 100	0.1	±0.5	Butyro
Food & Beverage	42 HFCS (high fructose corn syrup)	0 - 95	0.1	±0.2	Brix
Food & Beverage	55 HFCS (high fructose corn syrup)	0 - 95	0.1	±0.2	Brix
Food & Beverage	90 HFCS (high fructose corn syrup)	0 - 95	0.1	±0.2	Brix
Food & Beverage	Salinity % (NaCl)	0 - 28	0.1	±0.2	NaCl
Food & Beverage	Total Solids % of Waste Milk	5 - 15	0.1	±0.5	Brix
Food & Beverage	Water in Honey %	10 - 30	0.1	±0.2	Honey
Wine & Beer	Sugar % / % Mass w/w (°Brix)	0 - 95	0.1	±0.2	Brix
Wine & Beer	Sugar % / % Mass w/w (°Brix) No ATC	0 - 95	0.1	±0.2	None
Wine & Beer	Oechsle (German)	30 - 130	1	±1	Brix
Wine & Beer	Oechsle (Swiss)	0 - 130	1	±1	Brix
Wine & Beer	°Baumé	0 - 28	0.1	±0.2	Brix
Wine & Beer	Alcohol Probable (AP)	0 - 22	0.1	±0.2	Brix
Wine & Beer	KMW (Babo)	0 - 25	1	±1	Brix
Wine & Beer	°Plato	0 - 30	0.1	±0.2	Brix
Wine & Beer	Wort SG	1.000 - 1.120	0.0005	±0.001	Brix
Wine & Beer	ABV (°Zeiss)	10 - 135	0.1	±0.5	Brix
Life Science	Colostrum Quality	Poor -PASS	Poor -PASS	±0.2	Brix
Life Science	Seawater PPT	0 - 180	1	±1	NaCl
Life Science	Seawater Specific Gravity	1.000 - 1.090	0.0005	±0.001	NaCl
Life Science	Serum (SG)	0 - 30	0.1	±0.2	Brix
Life Science	Urine Specific Gravity (SG) Human (not IVD)	1.000 - 1.050	0.0005	±0.0010	Brix
Life Science	Urine Specific Gravity Large Mammal	1.000 - 1.050	0.0001	±0.0010	Brix
Life Science	Urine Specific Gravity Small Mammal	1.000 - 1.050	0.0005	±0.0010	Brix
Industrial	Calcium Chloride %	0 - 40	0.1	±0.2	CaCl <sub>2</sub>
Industrial	Ethanol %	0 - 20	0.5	±1	Ethanol
Industrial	Ethylene Glycol % by volume	0 - 60	0.1	±0.4	EG
Industrial	Ethylene Glycol (wt%)	0 - 60	0.1	±0.4	EG
Industrial	FSII DiEGME (ASTM D 5006)	0.0 to 0.25	0.01	±0.02	Brix
Industrial	Methanol	0 - 40	1	±0.2	Meth
Industrial	Propylene Glycol % by volume	0 - 60	0.1	±0.4	PG
Industrial	Sodium Sulphate %	0 - 22	0.1	±0.2	Na <sub>2</sub> SO <sub>4</sub>
Industrial	Starch %	0 - 30	0.1	±0.2	Brix
Industrial	Sulfuric Acid SG (d <sub>20</sub> /20) Battery Acid	1.000 to 1.501	0.001	±0.003	SA
Industrial	Urea % (CRC data)	0 - 40	0.1	±0.2	AUS32
Automotive	AdBlue®/DEF (NOx reduction)	0 - 40	0.1	±0.2	AUS32
Automotive	Ethylene Glycol °C Protection	0 to -50	1	±1	EG
Automotive	Ethylene Glycol °F Protection	30 to -40	1	±1	EG
Automotive	Propylene Glycol °C Protection	0 to -50	1	±1	PG
Automotive	Propylene Glycol °F Protection	30 to -40	1	±1	PG

DEF is used to describe an aqueous urea solution scale for measuring diesel exhaust fluids such as AdBlue®. AdBlue® is a registered trademark of the VDA Verband der Automobilindustrie e.V.

## SSX 210 Salt Meter Set with gold-plated electrodes probe



### Technical Data

Measurement range	0 ... 100
Resolution	1 Digit
Accuracy (at +25 °C / 77 °F)	±1 Digit
Operating temperature	+10 °C ... +40 °C (+50 °F ... +104 °F)
Measurement rate	1 s to 15 s, adjustable
Deactivation	Automatically after 5 min., deactivatable
Protection class	IP67
Dimensions (L x W x H)	100 x 46 x 25 mm
Housing material	ABS
Probe	2-conductor-measurement probe with gold-plated electrodes
Probe cable	Silicone
Weight	Approximately 200 g
Battery	Lithium 3 V / 1 Ah, type CR2477
Battery lifetime	Up to 5 years, depending on use

- Automatic deactivation
- Approximately 5 years battery life time

Type	Description	Part No.
SSX 210-Set	Salt meter set (consisting of salt meter and case)	1340-5211

## Accessories for SSX 210



**AG 140** Protective cover for handheld devices, red



**AG 160** Stainless steel bracket



**AG 161** Stainless steel bracket for TFN devices

Type	Description	Part No.
AG 140	Protective cover for handheld devices, red	1340-5005
AG 160	Stainless steel bracket	1340-0595
AG 161	Stainless steel bracket for TFN devices with protective cover AG 140	1340-0596