



Range of Optical Refractometers
for Agri-food Applications

The **MR** series refractometers are precision optical Instruments used for measuring concentrations of substances in aqueous solutions.

They work using the principle of light refraction through liquids. When passing light through a liquid the refracted angle will be shown on the scale determining the amount of dissolved solids in the liquid.

Very simple to use: simply place one drop of your sample on the prism and read the results on the scales immediately! They have adjustable focus and they provide direct readings and can measure concentrations of all kinds of solutions such as: fruit juices, beverages, wine, jam, honey, milk, salt water, brine, canned foods, cleaning fluids, battery fluids, antifreeze etc.

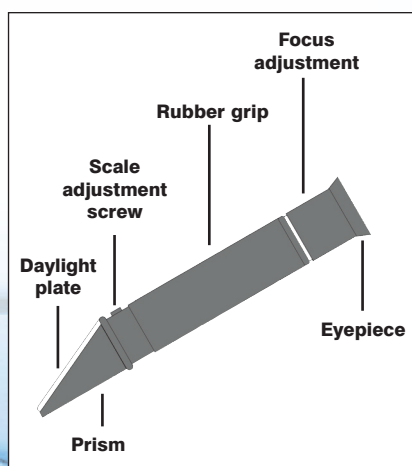
Models with automatic temperature compensation (ATC) are suitable for applications where the temperature of the samples varies.

Brix	Range	Resolution	Accuracy
MR10ATC	0 to 10% Brix	0.1%	±0.1%
MR18ATC	0 to 18% Brix	0.1%	±0.1%
MR32ATC	0 to 32% Brix	0.1%	±0.2%
MR55ATC	0 to 55% Brix	1%	±1%
MR62ATC	28 to 62% Brix	0.2%	±0.2%
MR80	0 to 80% Brix	0.5%	±0.5%
MR82ATC	45 to 82% Brix	0.5%	±0.5%
MR92ATC	58 to 92% Brix	0.2%	±0.2%
Grape Must	Range	Resolution	Accuracy
MR200ATC	0 to 140°Oe 0 to 25KMWBabo 0 to 32% Brix	1°Oe 0.2°KMWBabo 0.1% Brix	±1°Oe ±0.2°KMWBabo ±0.1%
MR210ATC	0 to 190°Oe 0 to 40KMWBabo 0 to 44% Brix	2.0°Oe 0.5°KMWBabo 0.5% Brix	±2.0°Oe ±0.5°KMWBabo ±0.5%
MR325ATC	0 to 25% Alcohol	0.2%	±0.2%
MR330ATC	0 to 20% Baume 0 to 25% Alcohol	0.2Be' 0.2%	±0.2Be' ±0.2%
MR380ATC	0 to 80% Alcohol	1%	±1%
Salinity	Range	Resolution	Accuracy
MR100ATC	0 to 100‰ Salinity 1.000 to 1.070 SG	1‰ 0.001	±1‰ ±0.001
MR110ATC	0 to 10% Salinity	0.1%	±0.1%
MR128ATC	0 to 28% Salinity	0.2%	±0.2%
Honey	Range	Resolution	Accuracy
MR90ATC	58 to 90% Brix 38 to 43Be' 12 to 27% Water	0.5% 0.5Be' 1%	±0.5% ±0.5Be' ±1%
Serum Protein Clinical / Veterinary	Range	Resolution	Accuracy
MR514ATC	0 to 12 g/100 mL 1.000 to 1.050 SG 1.330 to 1.360 RI	0.2 g/100 mL 0.005 SG 0.0005 RI	±0.2 g/100 mL ±0.005 SG ±0.0005 RI
Contact Lens	Range	Resolution	Accuracy
MR635ATC	35 to 80% Water	1%	±1%
Freezing Point	Range	Resolution	Accuracy
MR410ATC	0 to -50°C PG 0 to -50°C EG 1.10 to 1.40 SG	5°C 5°C 0.01 SG	±5°C ±5°C ±0.01 SG



Range of Optical Refractometers for Agri-food Applications

Milwaukee refractometers work in ambient light with no battery or other power source necessary. They can be used in labs or in the field. Simply place a couple of drops of the sample on the prism and read the results immediately. The refractometers have rubber coated hand grip and construction to insulate the test solution and avoid inaccuracy caused by the body heat of the user. All of our refractometers have Automatic Temperature Compensation (ATC): when temperature of product sample varies from 68°F (20°C), readings are automatically adjusted to compensate for temperature variance between 50°F to 86°F (10°C to 30°C). Easy to recalibrate with distilled water. Covered eyepiece and bright clearly defined scale, with large easy to read measurements.

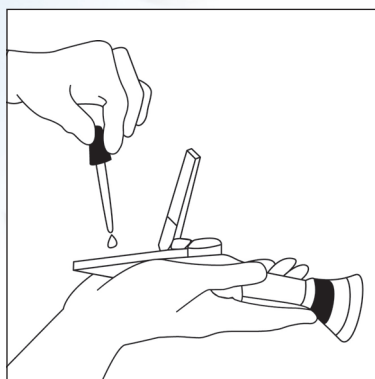


They are supplied in a hard carrying case, instructions and screwdriver for calibration.

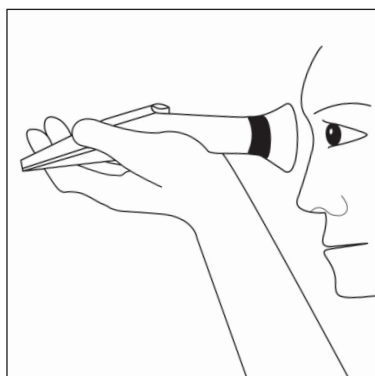


Calibration

1. Lift up the daylight and put one or two drops of distilled water on the prism. Close the daylight, confirm that distilled water has spread over the entire prism surface.



2. Turn the bright direction and look at the scale through the eyepiece. If the boundary line doesn't coincide with 0% turn the scale adjustment screw with a screwdriver until it does.



Ideal Brix Concentration of Known Substances

Fruit	% Concentration
Oranges, pears	6-13%
Tomato	3-6%
Apples, melons	12-18%
Strawberries, peaches	6-12%
Grape seeds	13-24%
Concentrated fruit juices	42-68%
Fruit juice	12-18%
Strained tomato	7-16%
Tomato juice	5-9%
Aerated drinks	6-15%
Nectars	16-23%
Drinks with lactic acid	16, 5-21, 5%
Foods	% Concentration
Condensed milk	52-68%
Liquid sugar	58-80%
Canned fruit	14-28%
Egg yoke	45-48%
Milk	12-17%
Marmalade, flour	60-70%
Vegetable oils	57-90%
Industry	% Concentration
Oils emulsions	0-7%
Oils for soluble temper	0-20%

Ordering Information

Each refractometer is supplied complete with hard carrying case, calibration screwdriver, dosing pipette and instruction manual.