iTD Series

icoe

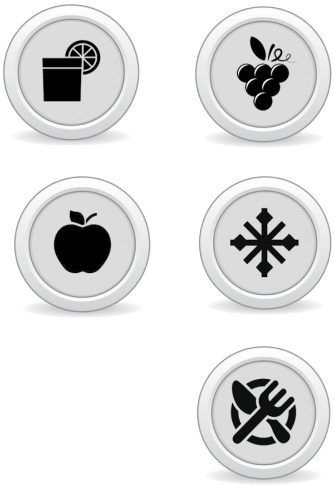
Portable Digital Refractometer

● Measurement Range	Birx 0.0~94.0%	● Resolutions	(Brix) 0.1%
● Acuracy	(Brix) ±0.1%		0.1°C
	±0.3°C	● Sample Volume	>0.4ml
● Measurement Temp.	0~40°C (ATC)	● Power Supply	18650 rechargeable battery
● Measure time	2S	● Dimensions	WxDxH: 180x100x55mm
● Protection Class	IP67 for the sensor	● Weight:	365g (excluding Battery)
● Environment Temp.	0~40°C		

iPDA Series Portable Digital Refractometer

icoe
OPTICA EXPERT

Scope of application: Sugar



The following models are particularly suitable for the measurement of the "BRIX" value. They are used to determine the sugar content in food, especially in fruit, vegetables, juice and soft drinks. In the same ideal way these refractometers serve for monitoring processes in the industry (coolant monitoring, oils, lubricants and fats).

The main scope of applications is:
· Industry: Monitoring of lubricants for process and quality control
· Food industry: Beverages, fruits and sweets
· Agriculture: Determination of the degree of ripeness of fruits for quality control in harvesting
· Restaurants and large-scale catering establishment

Model	Scales	Range	Resolution	Accuracy
iTD B1	Brix	0.0-50.0%	0.1%	±0.1%
	Refractive Index	1.3330-1.4200nD	0.0001nD	±0.0002nD
iTD B2	Brix	0.0-94.0%	0.1%	±0.1%
	Refractive Index	1.3330-1.5290nD	0.0001nD	±0.0002nD
iTD B3	Dextran	0.0-10.6%	0.1%	±0.1%
	Refractive Index	1.3330-1.4200nD	0.0001nD	±0.0002nD
iTD B4	Fructose	0.0-68.9%	0.1%	±0.1%
	Refractive Index	1.3330-1.5290nD	0.0001nD	±0.0002nD
iTD B5	Glucose	0.0-59.9%	0.1%	±0.1%
	Refractive Index	1.3330-1.5290nD	0.0001nD	±0.0002nD
iTD B6	Lactose	0.0-16.5%	0.1%	±0.1%
	Refractive Index	1.3330-1.4200nD	0.0001nD	±0.0002nD
iTD B7	Maltose	0.0-15.6%	0.1%	±0.1%
	Refractive Index	1.3330-1.4200nD	0.0001nD	±0.0002nD

Scope of application: Wine, Alcohol

The following models are particularly suitable for the measurement of the content of sugar in fruits. It indicates the expected °Alcohol of the fruit. The degree of ripeness of fruit (fruit-sugar) can also be determined, such as e.g. grapes.

The main scope of applications is:
· Agriculture: Wine-growing and fruit-growing
· Wine-production
· Must and alcohol production

°Oe = Degree Oechsle, °KMW = Klosterneuburger Must balance

Model	Scales	Range	Resolution	Accuracy
iTD W1	Brix%	0.0-50.0%	0.1%	±0.1%
	%VOL ap	0.0-22.0%	0.1%	±0.1%
	Oe	0-150	1	±1%
	KMW	0.0-25.0	0.1	±0.1

iPDA Series Portable Digital Refractometer

Scope of application: Honey

The following models are particularly suitable for the measurement of the “BRIX” value, as well as the water content in honey and “degrees Baumé” to determine the relative density of liquids.

The main scope of applications is:

· Beekeeping

· Honey production

Model	Scales	Range	Resolution	Accuracy
iTD H1	Brix	0.0-94.0%	0.1%	±0.1%
	Water	38.0%-5.0%	0.1%	±0.1%
	Be'	33.0-48.0	0.1	±0.1%
	Refractive Index	1.3330-1.5290nD	0.0001nD	±0.0002nD

Scope of application: Salinity

The following models are particularly suitable for the measurement and concentration control of the mass fraction of natrium chloride in water as well as of the content of NaCl (salt) in water. This is often used in the preparation and the cooking of sauces, bases for pastries, the production of brines (e.g. for white cheese) and the preparation of seafood and marinades for meat.

The following models are particularly suitable for the measurement of the content of sugar in fruits. It indicates the expected °Alcohol of the fruit. The degree of ripeness of fruit (fruit-sugar) can also be determined, such as e.g. grapes.

The main scope of applications is:

· Food industry

· Restaurants and large-scale catering establishment

· Aquaristic: Fishkeepers/Fishfarmers in sea and sweetwater

Model	Scales	Range	Resolution	Accuracy
iTD S1 (sodium chloride NaCl)	Salinity	0.0-28.0%	0.1%	±0.1%
	Salinity	0-280‰	1‰	±1‰
	Specific gravity	1.000-1.217	0.001	±0.001
	Refractive Index	1.3330-1.4200nD	0.0001nD	±0.0002nD
iTD S2 (sea water)	Salinity	0-100‰	1‰	±1‰
	Chlorinity	0-57‰	1‰	±1‰
	Specific gravity	1.000-1.070	0.001	±0.001
	Refractive Index	1.3330-1.4200nD	0.0001nD	±0.0002nD

iPDA Series Portable Digital Refractometer

icoe
OPTICA EXPERT

Scope of application: Clinical Protein, Urine

The following models are particularly suitable for the measurement of the specific gravity (sg) in urine, the quantitiy of serum (serumproteine) in urine (doping control among athletes), and the refractive index.

The main scope of applications is:

· Hospitals
· Doctor's surgeries/Physicians
· Medical training institutions
· Nursing homes
· Sports medicine (doping test)
· Veterinary

Model	Scales	Range	Resolution	Accuracy
iTD P1	URINE SP. G.	1.000-1.050	0.001	±0.001
	SERUM P.	-0.1-12.0	0.1	±0.1
	Refractive Index	1.3330-1.4200nD	0.0001nD	±0.0001nD

Scope of application: Industry/Automotive

The following models are particularly suitable for the measurement and determination of AdBlue, glycol concentration (ethylene (EG) and propylene (PG)), battery fluid (BF), urea, the freezing point of fountain solution (CW). Furthermore these models are suitable for the measurement of thermal exchange systems.

The main scope of applications is:

· Automotive industry: Car-workshops and producers
· Chemical industry
· Solar industry: Antifreeze monitoring
· Geothermal industry: Brine-concentration-measurement for ground heat
· Forestry/Lumbermen

Model	Scales	Range	Resolution	Accuracy
iTD A1	Cleaner	(0)-(-60)°C	0.1°C	±0.3°C
	Ethylene Glycol	(0)-(-60)°C	0.1°C	±0.3°C
	Propylene Glycol	(0)-(-70)°C	0.1°C	±0.3°C
	Battery	1.000-1.500sg	0.001	±0.003sg
iTD A2 (Urea Tester)	Urea (NH2)2C0	0-51.0‰	0.1%	±0.1%
	Refractive Index	1.3330-1.4200nD	0.0001nD	±0.0002nD
iTD A3 (Engine Coolant Tester)	Ethylene Glycol	0-60%	0.1%	±0.3%
	Ethylene Glycol (°C)	(0)-(-60)°C	0.1°C	±0.3°C
	Propylene Glycol	0-70%	0.10%	±0.3%
	Propylene Glycol (°C)	(0)-(-70)°C	0.1°C	±0.3°C
iTD A4 (Brake Fluid Tester)	DOT3	(121)-(260)°C	1°C	±3°C
	DOT4	(125)-(275)°C	1°C	±3°C
	Refractive Index	1.3330-1.5290nD	0.0001nD	±0.0002nD