TORONTECH

BASIC DESKTOP DIGITAL REFRACTOMETER

Basic Desktop Digital Refractometer – ToronDR™ DB Series

A Digital Refractometer in the ToronDR™ DB Series is a bench-style Refractometer designed for stable desktop measurement across food, beverage, clinical, salinity, honey, wine, and automotive applications. The ToronDR™ DB platform is a desktop instrument that uses a linear CMOS sensor for high precision and repeatability, with a scratch-resistant sapphire glass measuring surface and a 5-inch LCD screen for easier reading.

This series is built for users who want a more stable desktop format than a handheld unit. The ToronDR™ DB Series uses a replaceable 18650 lithium battery and supports PC software so users can customize line programming and create their own lines.

Basic Desktop Digital Refractometer – ToronDR™ DB Series is a bench instrument for direct digital concentration and refractive-style measurement. Unlike manual optical refractometers that rely on eyepiece interpretation, this series uses a digital sensor-based approach and presents results on a large screen. The ToronDR™ DB for scientific research, food and beverage, medical, automobile, and other industries.

The strength of this platform is its model flexibility. The visible lineup includes models for Brix, dextran, fructose, glucose, lactose, maltose, sodium chloride salinity, seawater salinity, honey, wine, clinical urine/serum, urea, engine coolant, and brake fluid. That makes ToronDR™ DB Series a practical desktop option for labs and QC teams that want one instrument family across multiple workflows.

APPLICATIONS

Basic Desktop Digital Refractometer – ToronDR™ DB Series Application

- Food and beverage concentration checks: the series includes dedicated models for Brix, dextran, fructose, glucose, lactose, and maltose, which makes it suitable for soluble-solids testing, ingredient handling, and general food or beverage quality control. For this type of work, ISO 2173 is a useful standard reference because it covers refractometric determination of soluble solids in fruit and vegetable products.
- Salinity and marine / brine testing: the ToronDR™ DB 201 and ToronDR™ DB 202 models support NaCl salinity, salinity in ppt, chlorinity, and specific gravity, which makes the platform suitable for brine preparation, seawater monitoring, aquarium support, and salt-solution QC.
- Honey measurement: the ToronDR™ DB 301 model combines Brix, water, and Baumé scales for honey work. This makes it suitable for honey moisture-related screening, packing QC, and incoming lot comparison.
- Wine and beverage production: the ToronDR™ DB 401 model includes Brix, %VOL ap, Oe, and KMW, which makes it suitable for wine and grape-must evaluation, cellar checks, and process monitoring.
- Clinical screening: the ToronDR™ DB 501 model includes urine specific gravity and serum protein, so it can support routine clinical screening where a bench unit is preferred over a handheld format.
- Automotive and workshop fluid testing: the ToronDR™ DB 601, 602, 603, and 604 models cover cleaner fluid, ethylene glycol, propylene glycol, battery specific gravity, urea, engine coolant, and brake fluid. That makes the series suitable for workshop QC, coolant verification, and brake-fluid screening. ASTM D3321 is the strongest coolant refractometer reference, while FMVSS 116 is the most relevant U.S. brake-fluid standard context.


ToronDR™ DB Series
ON/OFF
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SCALE
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Basic Desktop Digital Refractometer
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FEATURES

Basic Desktop Digital Refractometer – ToronDR™ DB Series Key Features

- Desktop Digital Refractometer platform using a linear CMOS sensor for high precision and repeatability.
- Hard scratch-resistant sapphire glass measuring surface.
- 5-inch LCD screen for easier reading.
- Replaceable 18650 lithium battery.
- PC software application that allows custom line programming.
- Suitable for scientific research, food and beverage, medical, automobile, and other industries.
- Available in multiple application-focused models covering food, salinity, honey, wine, clinical, urea, coolant, and brake-fluid measurement.

THEORY & METHOD

Theory and Method

The ToronDR™ DB Series uses a linear CMOS sensor to capture the optical response of the sample and convert it into a digital result. The ToronDR™ DB Series gives the platform high precision and great repeatability.

The measuring surface is made from hard scratch-resistant sapphire glass, and the 5-inch LCD screen is intended to make readings easier. The system supports PC software line customization, which means users can tailor the platform beyond the preloaded scales.

TECHNICAL SPECIFICATIONS

Basic Desktop Digital Refractometer – ToronDR™ DB Series Technical Specification

Specification	Basic Desktop Digital Refractometer – ToronDR™ DB Series
Product type	Desktop digital refractometer
Sensor type	Linear CMOS sensor
Measuring surface	Hard scratch-resistant sapphire glass
Display	5-inch LCD screen
Battery type	18650 lithium battery, user replaceable
Software	PC software application with custom line programming capability
Stated industries	Scientific research, food and beverage, medical, automobile, and other industries

Available Model Lineup

Model	Scale name	Range	Resolution	Accuracy
ToronDR™ DB 102	Brix	0.0–90.0%	0.1%	±0.1%
ToronDR™ DB 103	Dextran	0.0–10.6%	0.1%	±0.1%
ToronDR™ DB 104	Fructose	0.0–68.9%	0.1%	±0.1%
ToronDR™ DB 105	Glucose	0.0–59.9%	0.1%	±0.1%
ToronDR™ DB 106	Lactose	0.0–16.5%	0.1%	±0.1%

Model	Scale name	Range	Resolution	Accuracy
ToronDR™ DB 107	Maltose	0.0–15.6%	0.1%	±0.1%
ToronDR™ DB 201	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
ToronDR™ DB 202	Sea salinity	0–100‰	1‰	±1‰
	Chlorinity	0–57‰	1‰	±1‰
	Specific gravity	1.000–1.070	0.001	±0.001
ToronDR™ DB 301	Brix	0.0–90.0%	0.1%	±0.1%
	Water	38.0%–5.0%	0.1%	±0.1%
	Be'	33.0–48.0	0.1	±0.1
ToronDR™ DB 401	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
ToronDR™ DB 501	URINE SP.G.	1.000–1.050	0.001	±0.001
	SERUM P.	-0.1–12.0	0.1	±0.1
ToronDR™ DB 601	Cleaner	0 to -60°C	0.1°C	±0.3°C
	Ethylene Glycol	0 to -60°C	0.1°C	±0.3°C
	Propylene Glycol	0 to -70°C	0.1°C	±0.3°C
	Battery	1.000–1.500 sg	0.001	±0.003 sg

Model	Scale name	Range	Resolution	Accuracy
ToronDR™ DB 602	Urea $(NH_2)_2CO$	0–51.0%	0.1%	±0.1%
ToronDR™ DB 603	Ethylene Glycol	0–60%	0.1%	±0.3%
	Ethylene Glycol (°C)	0 to -60°C	0.1°C	±0.3°C
	Propylene Glycol	0–70%	0.10%	±0.3%
	Propylene Glycol (°C)	0 to -70°C	0.1°C	±0.3°C
ToronDR™ DB 604	DOT3	121–260°C	1°C	±3°C
	DOT4	125–275°C	1°C	±3°C

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