



TORONTECH



LED OPTICAL REFRACTOMETER

LED Optical Refractometer - ToronOR™ LED Series

An Optical Refractometer in the ToronOR™ LED Series is a handheld analog Refractometer with built-in LED illumination for easier reading in dark, low-light, or twilight environments. The ToronOR™ LED Series is the manual refractometer platform with an integrated LED daylight plate, pure aluminum construction, and compatibility with multiple refractometer types and scales.

This series is designed for users who want the simplicity of a traditional optical refractometer but need better visibility than a standard ambient-light-only model. The LED plate can be fitted across many common refractometer types, including Brix, honey, salinity, automotive fluid, wine, clinical, milk, and beer models.

A handheld Optical Refractometer measures how light bends through a liquid sample, then converts that change into a direct reading on the internal scale. The LED version keeps the same manual prism-based reading method as a standard optical refractometer, but adds built-in illumination so the scale remains clear when ambient light is poor. One press turns the LED on and keeps it on, and a second press turns it off.

The series is built around a modular concept. Instead of being limited to one application, the LED daylight plate can be used across many refractometer types, which makes the ToronOR™ LED Series suitable for broader OEM/private-label or multi-application supply programs. The ToronOR™ LED Series design with five LED cover button color options and multiple box colors.

APPLICATIONS

LED Optical Refractometer - ToronOR™ LED Series Application

- Low-light field and workshop testing: The LED system is the biggest advantage of this series. The ToronOR™ LED Series is built-in bright LED light allows testing in dark or twilight environments and makes the scale easier to see. This is useful for service work, mobile inspections, outdoor checks, and plant-floor testing where lighting is not always stable.
- Food and beverage concentration checks: The model table includes LED versions for Brix, honey, wine, beer, and milk applications. That makes the series suitable for sugar concentration checks, honey moisture screening, winery process monitoring, brewing checks, and dairy-related refractometer work, depending on the model selected.
- Automotive and industrial fluid testing: including antifreeze, battery electrolyte, cleaning fluid, washer fluid, DEF/AdBlue, and alcohol concentration. This makes the platform suitable for workshops and maintenance teams that want the readability benefit of LED lighting during field checks.
- Clinical and laboratory screening: for serum protein, urine specific gravity, refractive index, and veterinary dog/cat scales. These models fit settings where fast manual refractometer readings are still useful, especially when lighting conditions are inconsistent.



Standards

- EN 61000-6-1: 2007
- EN 61000-3-2: 2014
- EN 61000-3-3: 2013
- EN 61000-6-3: 2007+A1:2011+AC:2012
- EN 61000-4-2: 2009
- EN 61000-4-3: 2006+A1:2008+A2:2010
- EN 61000-4-4: 2012
- EN 61000-4-5: 2014
- EN 61000-4-6: 2014
- EN 61000-4-8: 2010
- EN 61000-4-11: 2004

FEATURES

LED Optical Refractometer - ToronOR™ LED Series Key Features

- Built-in bright LED light for testing in dark or twilight conditions.
- One-touch LED control that stays illuminated until pressed again.
- Compatible with many refractometer types by changing the cover plate.
- Pure aluminum body construction with durable manual design.
- Uses ambient light for optical reading, with added LED support for low-light use.
- Easy focus and calibration design with soft non-slip rubber grip.
- ATC function with compensation range of 10°C to 30°C (50°F to 86°F).
- Large scale plate for easier reading.
- Calibrated before shipment for direct use after receipt.

- Multiple LED button colors and multiple box colors available.

THEORY & METHOD

Theory and Method

The ToronOR™ LED Series uses the same prism-based optical method as a conventional handheld refractometer. A small sample is placed on the prism, the cover plate is closed, and the user reads the scale at the light/dark boundary through the eyepiece. The difference is that the LED daylight plate adds internal illumination, which improves contrast and readability in poor lighting. The main components were the LED daylight plate, prism assembly, calibration screw, rubber grip, focus adjustment, and eyepiece.

This means the LED feature improves usability rather than changing the core refractometric principle. The LED plate can be adapted to most refractometer types on the market by changing the cover plate, which supports retrofit-style use as well as complete instrument supply.

TECHNICAL SPECIFICATIONS

LED Optical Refractometer - ToronOR™ LED Series Technical Specification

Model	What this model is for	Scale details	Min. division	Best-fit use case
ToronOR™ LED B5	LED low-range Brix refractometer	0-5% Brix	0.10% Brix	Dilute sugar solutions, low-Brix beverages, light process liquids
ToronOR™ LED B10	LED low-range Brix refractometer	0-10% Brix	0.10% Brix	Juice, beverage, and low-solids process checks

Model	What this model is for	Scale details	Min. division	Best-fit use case
ToronOR™ LED B18	LED mid-low Brix refractometer	0–18% Brix	0.10% Brix	Fruit juice and general soluble-solids checks
ToronOR™ LED B20	LED general Brix refractometer	0–20% Brix	0.10% Brix	Beverages and syrup process screening
ToronOR™ LED B32	LED broad Brix refractometer	0–32% Brix	0.20% Brix	Broader food and beverage concentration checks
ToronOR™ LED B50	LED higher-range Brix refractometer	0–50% Brix	0.50% Brix	Syrups, sauces, jam-related solutions
ToronOR™ LED B55	LED higher-range Brix refractometer	0–55% Brix	0.50% Brix	Higher-solids food process checks
ToronOR™ LED B62	LED upper-mid Brix refractometer	28–62% Brix	0.20% Brix	Concentrated liquids needing better mid-high resolution
ToronOR™ LED B82	LED high-range Brix refractometer	45–82% Brix	0.20% Brix	Honey solutions, jam, high-solids foods
ToronOR™ LED B90	LED very high-range Brix refractometer	58–90% Brix	0.50% Brix	Honey and very concentrated sugar products
ToronOR™ LED B90D	LED very high-range Brix refractometer	0–90% Brix	0.50% Brix	Very wide Brix coverage in one model
ToronOR™ LED HM90	LED honey refractometer	58–90% Brix / 38–43°Bé / 12–27% water	1% water	Honey ripeness and moisture checks
ToronOR™ LED HM92T	LED honey refractometer	58–92% Brix / 38–43°Bé / 12–27% water	0.50% Brix / 1% water	Wider-range honey concentration and moisture work
ToronOR™ LED HM30	LED honey moisture refractometer	10–30% water	0.10% water	Direct honey moisture screening
ToronOR™ LED S10	LED salinity refractometer	0–10% salinity / 1.000–1.0 70 SG	0.10% / 0.001 sg	Brine and salt-water checks

Model	What this model is for	Scale details	Min. division	Best-fit use case
ToronOR™ LED S25	LED salinity refractometer	0–25% salinity	0.20% salinity	Higher-range salt concentration checks
ToronOR™ LED AI300	LED automotive fluid refractometer	-50°F to 32°F / -50°F to 32°F / B 1.15–1.30 sg	10°F / 0.01 sg	Antifreeze and battery checks in Fahrenheit scales
ToronOR™ LED AI403	LED automotive fluid refractometer	E -50°C to 0°C / P -50°C to 0°C / C -40°C to 0°C / B 1.15–1.30 sg	0.01 sg / 5°C	Coolant, cleaning fluid, and battery service
ToronOR™ LED AI503	LED automotive fluid refractometer	B 1.100–1.400 sg / E -50°C to 0°C / P -50°C to 0°C / C -40°C to 0°C	0.01 sg / 5°C	Workshop multi-fluid checks
ToronOR™ LED AI701	LED automotive/DEF refractometer	DEF 30–35% / B 1.100–1.400 sg / E -50°C to 0°C / P -50°C to 0°C / C -40°C to 0°C	0.10 sg / 5°C	DEF plus coolant, battery, and cleaning fluid checks
ToronOR™ LED AI801	LED DEF refractometer	DEF / AUS 32 concentration 0–40%	0.25% Urea	DEF concentration verification
ToronOR™ LED WA80	LED alcohol refractometer	Alcohol 0–80% w/w	1% vol	Alcohol concentration checks
ToronOR™ LED WA25Brix	LED wine refractometer	0–25% vol / 0–40% Brix	0.20% vol / 0.20 Brix	Wine and must checks using alcohol + Brix scales
ToronOR™ LED WA22.5Be	LED wine refractometer	0–22.5°Baumé / 0–25% vol / 0–40% Brix	0.50% vol / 0.50 Brix / 0.50°Be	Wine and alcohol process control using Baumé plus Brix/vol
ToronOR™ LED WA25Vol	LED wine refractometer	0–25% vol / 0–170°Oe	0.50% vol / 0.50°Oe	Winery checks using alcohol + Oechsle
ToronOR™ LED B32S	LED wine/must refractometer	0–140°Oe / 0–27 KMW(Baumé) / 0–32% Brix	0.20 KMW / 0.20% Brix / 2°Oe	Wine and grape must multi-scale checks
ToronOR™ LED B44S	LED wine/must refractometer	0–190°Oe / 0–38 KMW(Baumé) / 0–44% Brix	0.20 KMW / 0.20% Brix / 0.50°Oe	Wider-range wine and must monitoring
LED-RHC-200	LED clinical refractometer	Clinical 1.2 g/dL / 1.000–1.050 sg / 1.3300–1.3600 RI	0.20 g/dL / 0.005 sg / 0.0005 RI	Serum protein, urine SG, and RI screening

Model	What this model is for	Scale details	Min. division	Best-fit use case
LED-RHC-300	LED veterinary refractometer	Clinical 2-14 g/dL / Dog 1.000-1.0 60 / Cat 1.000-1.0 60	0.20 g/dL / 0.001 Dog / 0.001 Cat	Veterinary urine and protein screening
ToronOR™ LED B611	LED milk refractometer	Milk 0-20%	0.10% milk	Milk screening applications
ToronOR™ LED B612	LED milk/soybean refractometer	Milk 0-25% / Soybean 0-32% Brix	0.50% milk / 0.20% Brix	Milk and soybean beverage checks
ToronOR™ LED B326G-1	LED beer refractometer	Beer 0-25% Brix / Wort SG 1.000-1.1 20	0.25% Brix / 0.001 SG	Brewing and wort concentration checks
ToronOR™ LED B326G-2	LED beer refractometer	Beer 0-32% Brix / Wort SG 1.000-1.1 30	0.25% Brix / 0.001 SG	Brewing checks with wider wort SG range



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