



TORONTECH

CLINICAL & VETERINARY OPTICAL REFRACTOMETER



Clinical & Veterinary Optical Refractometer – ToronOR™ CV Series

An Optical Refractometer in the ToronOR™ CV Series is a handheld analog instrument for fast screening of urine specific gravity, serum or plasma protein, refractive index, and selected veterinary urine parameters. The ToronOR™ CV Series are positioned for both human clinical and veterinary use, with model-specific scale combinations for urine SG, serum protein, refractive index, and dog/cat urine reading. The Clinical & Veterinary Optical Refractometer is optical refractometer clinical refractometers built with pure aluminum construction, ambient-light operation, and a standard field accessory kit.

A clinical Refractometer works by measuring how light bends through a small liquid sample, then converting that optical change into a direct scale reading. In this series, the scale is already calibrated for clinical-style parameters such as urine specific gravity, serum protein, or refractive index, so the operator can read the result directly through the eyepiece without converting from raw refractive index. The ToronOR™ CV Series is suitable for quick and accurate indication of vital fluid levels in both veterinary and human settings.

This type of Optical Refractometer is different from a general Brix or coolant refractometer because the scales are designed around biological or clinical sample interpretation rather than food, beverage, or automotive fluids. For example, ToronOR™ CV 100 focuses on urine serum protein and urine specific gravity, ToronOR™ CV 200 adds refractive index, and ToronOR™ CV 300 is configured around serum protein plus separate dog and cat urine scales.

APPLICATIONS

Clinical & Veterinary Optical Refractometer – ToronOR™ CV Series Application

- Human urine specific gravity screening: Urine specific gravity is one of the most common screening uses for a clinical refractometer. The ToronOR™ CV Series are intended for clinical use and provide rapid indication of vital fluid levels, while veterinary literature and clinical product references show that refractometers are widely used for in-house urine specific gravity checks.
- Serum or plasma protein checks: ToronOR™ CV 100 and ToronOR™ CV 200 include a serum protein scale, and ToronOR™ CV 300 uses a higher serum-protein range. This supports quick screening of total serum or plasma protein from a very small sample volume, which is a common use case for handheld clinical refractometers in routine lab or clinic work.
- Veterinary urine assessment: The ToronOR™ CV 200 and ToronOR™ CV 300 are intended for both veterinary and human use. ToronOR™ CV 300 is especially relevant for animal work because it provides separate dog and cat urine scales, which makes it better suited to veterinary clinics that want species-specific interpretation rather than a single general SG scale.
- Refractive index-based fluid screening: ToronOR™ CV 200 adds a refractive index scale, which can be useful when users want a broader optical reference alongside urine SG and serum protein. This makes the model more flexible for users who want a tri-scale clinical Refractometer rather than a simpler dual-scale format.



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

Clinical & Veterinary Optical Refractometer – ToronOR™ CV Series Key Features

- Handheld analog Optical Refractometer design for human clinical and veterinary screening.
- Model lineup covering urine specific gravity, serum protein, refractive index, and species-specific veterinary urine scales.
- High-quality pure aluminum body construction.
- Uses ambient light only, so no battery or external power source is required.
- Easy manual focus and calibration for routine clinic use.
- Soft, comfortable non-slip rubber grip.
- Optical Refractometer function for more convenient day-to-day readings.

- Durable manual construction designed for repeated use.
- Large scale plate and pre-shipment calibration for easier reading and immediate use after delivery.

THEORY & METHOD

Theory and Method

A few drops of sample are placed on the prism, the cover plate is closed, and the reading is taken from the scale where the light/dark boundary appears. These instruments use ambient light only, which means no battery or external power is required for measurement.

Automatic temperature compensation is included to reduce the need for manual correction during routine work. The ToronOR™ CV 100 explicitly is an Optical Refractometer compensation range of 10°C to 30°C (50°F to 86°F) and explains that a temperature compensation table is not needed for urine SG measurement.

TECHNICAL SPECIFICATIONS

Clinical & Veterinary Optical Refractometer – ToronOR™ CV Series

Technical Specification

Model	What this model is for	Scale details	Best-fit use case	Common build / package details
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Toron OR™ CV 100	A dual-scale clinical refractometer for users who mainly need urine serum protein and urine specific gravity. This model has a serum-protein scale and a second scale for urine SG.	Urine serum protein: 0–12 g/100 mL with 0.2 g/100 mL resolution. Urine specific gravity: 1.000–1.050 with 0.005 resolution. Only a few drops of urine are needed and no temperature compensation table is required.	Best for basic human or veterinary screening where the main need is urine SG plus serum/plasma protein in a straightforward, easy-to-read format.	Pure aluminum body, ambient-light operation, easy focus/calibration, non-slip rubber grip, ATC 10°C–30°C, standard kit with refractometer, pipette, mini screwdriver, protective case, manual, and cleaning cloth.
Toron OR™ CV 200	A tri-scale clinical refractometer intended for both veterinary and human use. It provides quick indication of vital fluid levels and includes urine SG, total serum protein, and refractive index.	The model title shows 0–12 g/dL, 1.000–1.050 SG, and 1.3300 RI–1.3600 RI. The ToronOR™ CV 200 can be use for triple-scale unit for Urine Specific Gravity (SG), Total Serum Protein (SP), and Refractive Index.	Best for clinics that want a more flexible clinical Refractometer with a direct refractive-index scale in addition to urine SG and serum protein. This is the most versatile human/clinical model in the three-unit lineup.	Pure aluminum construction and the standard package includes refractometer, pipette, mini screwdriver, protective case, manual, and cleaning cloth.
Toron OR™ CV 300	A clinical and veterinary refractometer with a veterinary-oriented triple-scale layout. The ToronOR™ CV 300 is intended for both veterinary and human use.	2–14 g/dL, Dog 1.000–1.060 RI, and Cat 1.000–1.060 RI. This configuration makes it the most veterinary-specific model in the series.	Best for veterinary clinics that want species-oriented urine interpretation for dogs and cats together with serum-protein screening. This model is the strongest fit for companion-animal practice.	Pure aluminum construction and the standard package includes refractometer, pipette, mini screwdriver, protective case, manual, and cleaning cloth.



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