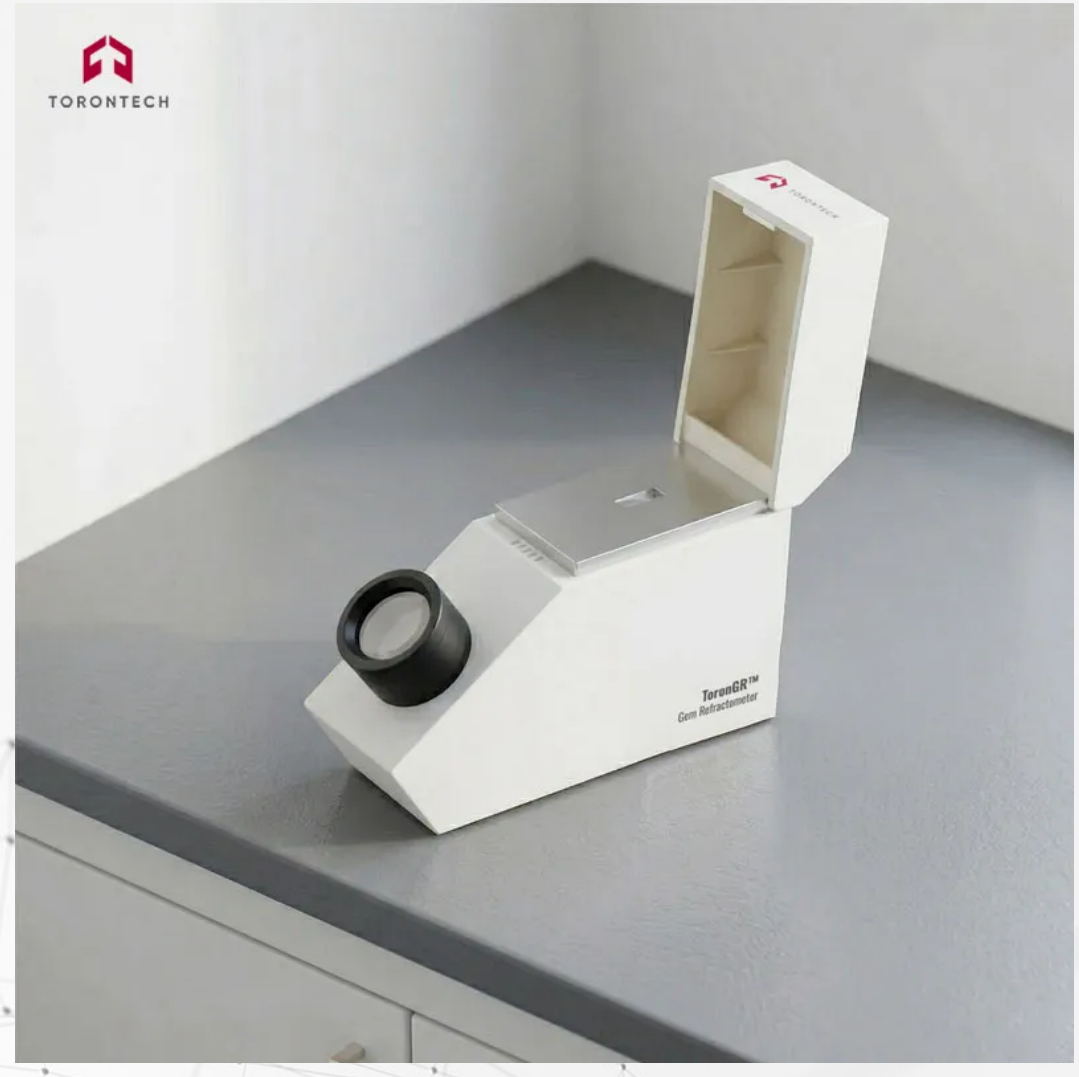
TORONTECH



GEM REFRACTOMETER

Gem Refractometer – ToronGR™

A Gem Refractometer is a specialized Refractometer used in gemology to measure the refractive index of polished gemstones for identification and comparison. Gem Refractometer – ToronGR™ is designed for jewelry and gem testing across a refractive-index range of 1.35 to 1.85, with 0.002 accuracy, a built-in quasi-monochromatic LED light source, a 4× eyepiece magnifier, and a synthetic cubic zirconia testing prism.

The instrument includes a polarizer, refraction oil, and a 2 mL refractive-index liquid (1.78 ± 0.005), and that it can operate from two AAA batteries or an external DC 3V adapter with 100V–240V input.

Gem Refractometer – ToronGR™ is a bench-style gemological instrument used to determine the refractive index of gemstones and jewelry materials. In gemology, refractive index is one of the main optical properties used to separate gem species and support identification, and CIBJO's gemmological laboratory guidance lists refractometer (refractive index) as a required or standard test method for many gemstone materials.

Compared with a general liquid refractometer, a Gem Refractometer is built around polished gem contact measurement and gemstone optics rather than Brix, salinity, or industrial liquid scales. This Gem Refractometer has clear straight shadow boundary, a corrosion-resistant stainless-steel stage, and a built-in quasi-monochromatic LED source around 589.5 nm, which aligns with typical gemological refractive-index reading practice.

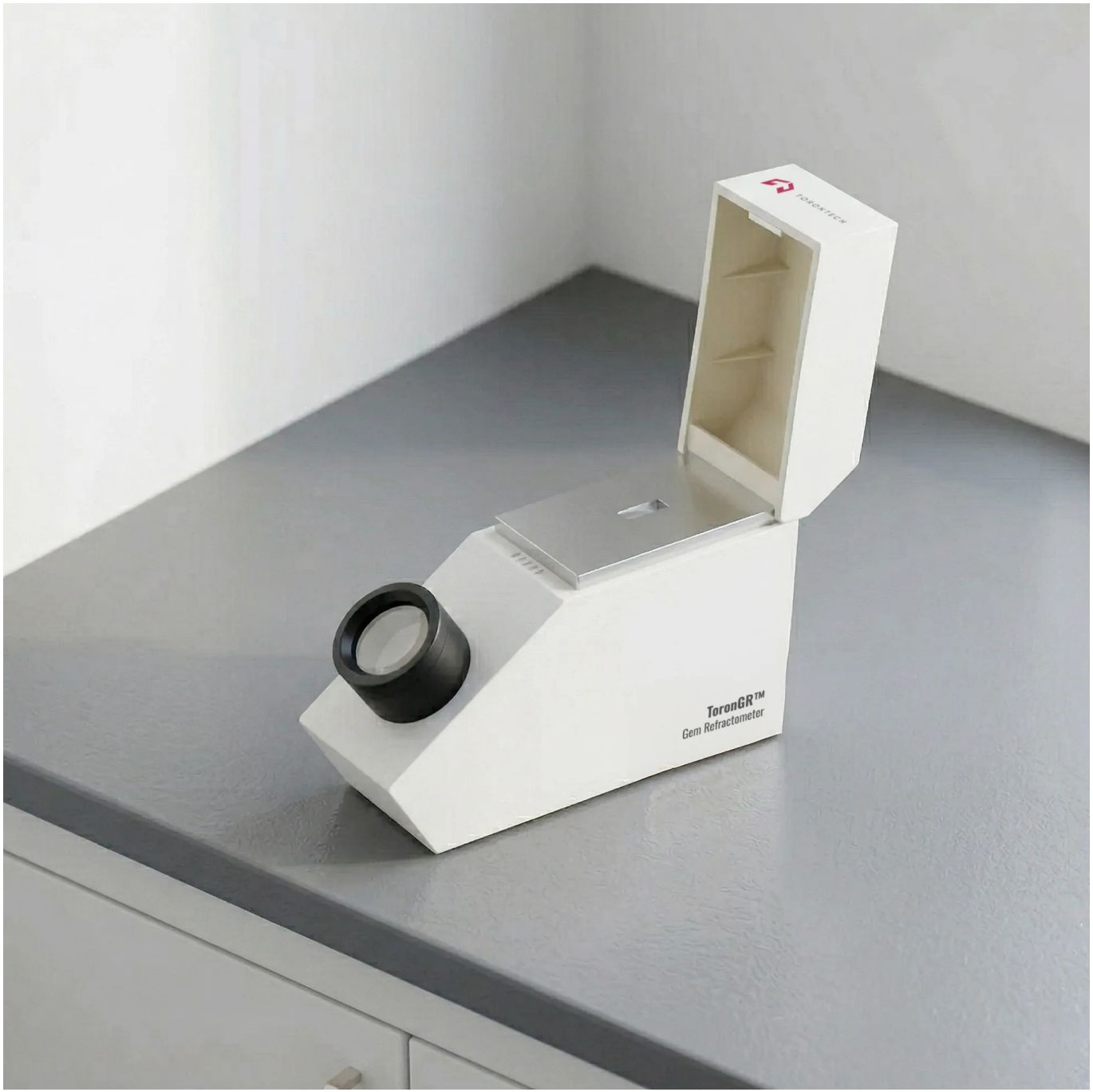
APPLICATIONS

Gem Refractometer – ToronGR™ Application

- Gemstone identification: the main use of a gem refractometer is gemstone identification through refractive-index measurement. Refractive index is widely used in gemology because many gem materials have characteristic RI ranges, and CIBJO's gemmological laboratory guidance includes refractometer testing among the standard methods used for

many gemstones.

- Jewelry testing and material comparison: this instrument is also useful for comparing mounted or loose jewelry stones against expected refractive-index ranges. The product for jewelry and gem use, which makes it suitable for gemstone screening, retail support, incoming inspection, and bench gemological work.
- Training, education, and gemmological laboratories: because refractive index is a core gemological property, a gem refractometer also fits educational and laboratory settings where users need a practical tool for learning or routine identification work.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ToronGR™
Gem Refractometer

FEATURES

Gem Refractometer – ToronGR™ Key Features

- Specialized Gem Refractometer for jewelry and gemstone refractive-index testing.
- Refractive-index measuring range of 1.35 to 1.85.
- Measurement accuracy of 0.002.
- Built-in quasi-monochromatic LED light source with wavelength around 589.5 nm.
- 4× eyepiece magnification with 32 mm eyepiece diameter for easier scale observation.
- Synthetic cubic zirconia testing prism sized 14 mm × 5 mm.
- All-stainless-steel table as corrosion resistant and easy to clean.
- Includes polarizer, refraction oil, and 2 mL RI liquid (1.78 ± 0.005).
- Can run on two AAA batteries or an external DC 3V power adapter with 100V–240V input.
- One-year warranty.

THEORY & METHOD

Theory and Method

A Gem Refractometer measures refractive index using the optical boundary created when light passes through a gemstone in contact with the measuring surface and refractive-index liquid. The ToronGR™ uses a synthetic cubic zirconia testing prism, a built-in quasi-monochromatic LED source at about 589.5 nm, and includes refractive-index liquid, which are all consistent with standard gemological RI measurement practice.

The reading is observed through the eyepiece and magnified by the built-in 4× viewing system. A polarizer is also included, which supports better optical interpretation when examining gem materials with different optical behavior.

TECHNICAL SPECIFICATIONS

Gem Refractometer – ToronGR™ Technical Specification

Specification	Gem Refractometer – ToronGR™
Product type	Gem & jewelry refractometer / gemological refractometer
Refractive index testing range	1.35–1.85
Accuracy	0.002
Color	White
Instrument weight	33 g
Instrument size	140 × 42 × 95 mm
Warranty	One year
Power supply	Two No. 7 batteries or external wide-voltage power adapter, 100V–240V input, DC 3V output
Eyepiece diameter	32 mm
Eyepiece magnification	4×
Prism size	14 mm × 5 mm
Prism type	Synthetic cubic zirconia (CZ) testing prism
Light source	Built-in quasi-monochromatic LED light source
Light wavelength	About 589.5 nm
Stage material / design	Stainless-steel table, corrosion resistant, easy to clean
Metal table size	37 mm × 68 mm

Specification	Gem Refractometer – ToronGR™
Included accessories	Polarizer, refraction oil, 2 mL RI liquid (1.78 ± 0.005), gift color box
Test environment	Room temperature 5–35°C, humidity ≤75%, no acid/alkali/corrosive gases in the room

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