TORONTECH

BINOCULAR ABBE REFRACTOMETER

Binocular Abbe Refractometer – ToronAR™ B

A Binocular Abbe Refractometer is a laboratory Refractometer used to measure refractive index and related optical properties of transparent or semi-transparent samples. Binocular Abbe Refractometer – ToronAR™ B is designed for measuring refractive index ND, average dispersion NF–NC, and sugar concentration, with a refractive-index range of 1.300 to 1.700 ND and a sugar scale range of 0 to 95%.

This model is positioned for use across petroleum, pharmaceutical, paint, food, sugar, geology, teaching, and research environments. It can be connected to a constant-temperature device for refractive-index measurement from 0°C to 70°C.

Binocular Abbe Refractometer – ToronAR™ B is a bench-style optical instrument built for laboratory refractive-index measurement rather than quick field screening. Compared with handheld refractometers that usually display one application-specific scale such as Brix, salinity, or coolant protection, a binocular Abbe Refractometer provides broader lab flexibility and improved observation comfort through a binocular viewing design.

The ToronAR™ B is suitable for measuring ND refractive index, average color dispersion NF–NC, and sugar percentage. It is also positioned as a common tool for quality control, teaching, and scientific research where a wider refractive-index range and more stable observation are needed than a simple handheld Refractometer can provide.

APPLICATIONS

Binocular Abbe Refractometer – ToronAR™ B Application

- Petroleum and hydrocarbon liquid testing: refractive index is a useful physical-property parameter for transparent and light-colored hydrocarbon liquids.

- Pharmaceutical and chemical quality control: the pharmaceutical industry and daily-use chemical industry. In these settings, refractive index can support incoming inspection, raw-material verification, and batch comparison when optical-property changes reflect composition or concentration differences.
- Paint, coating, and materials work: a binocular Abbe Refractometer can support refractive-index checks on liquid raw materials and transparent or semi-transparent materials used in formulation and development work.
- Food and sugar analysis: this instrument includes a 0 to 95% sugar scale, which makes it suitable for food-processing and sugar-related checks where a bench refractometer is preferred over a simple handheld model.
- Teaching, geology, and research: geological survey, factory laboratories, schools, and scientific research units. This makes the ToronAR™ B suitable for instructional use and general laboratory refractive-index work.

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TorosAR™ B
Binocular Abbe Refractometer

FEATURES

Binocular Abbe Refractometer – ToronAR™ B Key Features

- Binocular bench-style Abbe Refractometer for measuring ND refractive index and NF–NC average dispersion.
- Wide refractive-index range of 1.300 to 1.700 ND.
- Sugar concentration range of 0 to 95%.
- Compatible with a constant-temperature device for refractive-index measurements from 0°C to 70°C.
- Suitable for transparent and semi-transparent liquid or solid samples.
- Designed for use in oil, pharmaceuticals, paint, food, sugar, geology, teaching, and research.
- Binocular viewing format for more comfortable observation during laboratory use.
- Supplied with a complete accessory set including thermometer, gauge block, contact liquid, screwdriver, manual, and carry case.

THEORY & METHOD

Theory and Method

A binocular Abbe Refractometer works by placing a sample between prisms and observing the optical boundary through the viewing system to determine refractive index. This model measures refractive index ND and average dispersion NF–NC, and can also measure sugar percentage directly.

The instrument can also be connected to a constant-temperature bath or oven for refractive-index testing from 0°C to 70°C. That makes the ToronAR™ B more versatile than a simple handheld Refractometer, especially in laboratory settings where temperature-controlled optical measurement is important.

TECHNICAL SPECIFICATIONS

Binocular Abbe Refractometer – ToronAR™ B Technical Specification

Specification	Binocular Abbe Refractometer – ToronAR™ B
Product type	Binocular bench Abbe Refractometer
Refractive index range	1.300 to 1.700 ND
Refractive index accuracy	±0.0002
Refractive index minimum division	0.0005
Dispersion measurement	NF–NC average dispersion measurement supported
Sugar concentration range	0 to 95%
Sugar minimum division	0.5%
Temperature-controlled use	Can be connected to constant-temperature equipment for 0°C to 70°C measurement
Dimensions	100 × 200 × 240 mm
Weight	3 kg
Standard accessories	1 refractometer, 1 thermometer, 1 gauge block, 1 bottle of contact liquid, 1 screwdriver, 1 manual, 1 carry case

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