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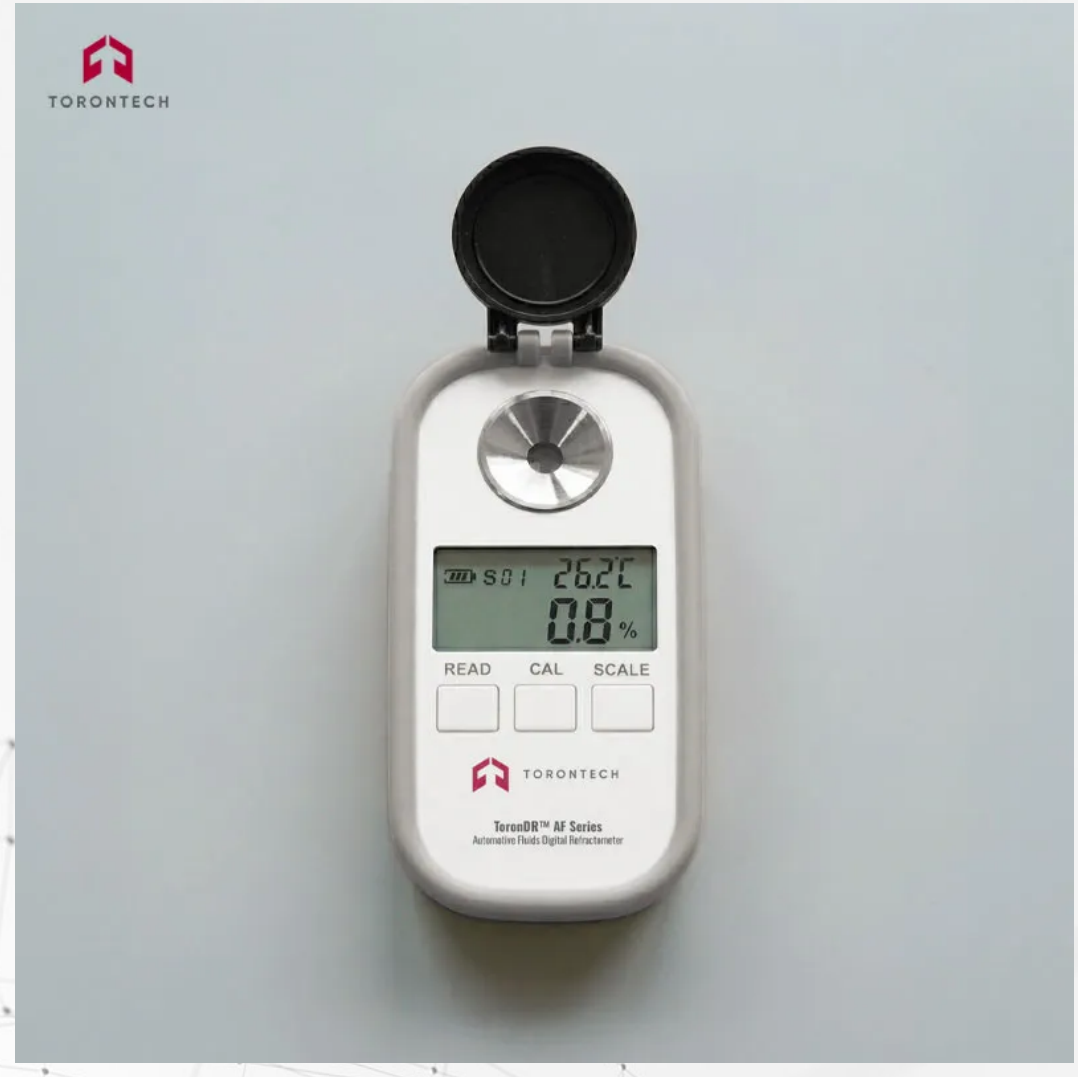


AUTOMOTIVE FLUIDS DIGITAL REFRACTOMETER

Automotive Fluids Digital Refractometer – ToronDR™ AF Series

A Digital Refractometer in the ToronDR™ AF Series is designed for automotive-fluid screening with direct digital readout instead of a manual optical scale. Based on the linked models, this family covers coolant, ethylene glycol, propylene glycol, battery specific gravity, urea / DEF, brake fluid, IPA, and refractive index, depending on the model.

The ToronDR™ AF 603 for ethylene glycol and propylene glycol, ToronDR™ AF 602 for urea, ToronDR™ AF 604 / ToronDR™ AF 610 for brake fluid, and broader combo models such as ToronDR™ AF 601, ToronDR™ AF 605, ToronDR™ AF 606, and ToronDR™ AF613 for multi-fluid automotive service.

This makes ToronDR™ AF suitable for workshops, fleet maintenance, coolant service, DEF verification, brake-fluid checks, and general service-bay inspection. Compared with a manual automotive refractometer, the digital format is easier to read during repeated testing and reduces operator interpretation of boundary lines through an eyepiece. That ease-of-reading point is an inference from the digital handheld format and the application-specific scales.

ToronDR™ AF is a handheld automotive Refractometer platform built for service fluids rather than food or laboratory concentration work. The lineup includes dedicated coolant models, urea / DEF models, brake-fluid models, IPA models, and multi-function service models that combine cleaner fluid, glycol, battery, and urea interpretation in one unit.

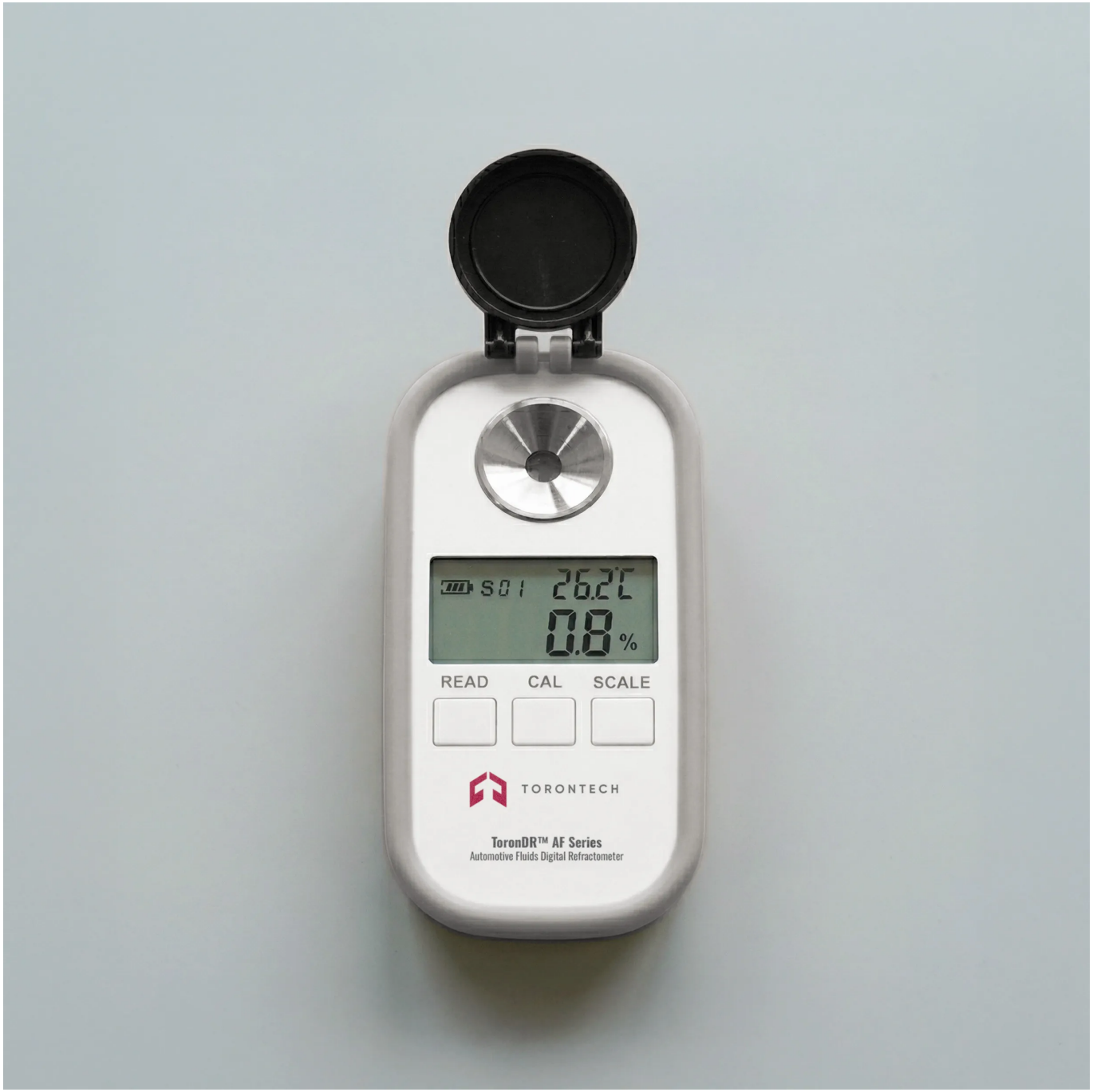
APPLICATIONS

Automotive Fluids Digital Refractometer – ToronDR™ AF Series Application

- Coolant and antifreeze service: the coolant-focused models support ethylene glycol and propylene glycol concentration or freeze-protection screening. ToronDR™ AF 603 covers ethylene glycol 0–100%, ethylene glycol 0 to -50°C, propylene

glycol 0–100%, and propylene glycol 0 to -50°C, while DR-613 covers ethylene glycol 0.0–100.0%, ethylene glycol 0.0–50.0°C, propylene glycol 0.0–70.0%, and propylene glycol 0.0–70.0°C. These models fit radiator service, coolant mixing checks, and workshop maintenance.

- DEF and urea verification: the urea-focused models help service teams verify DEF / AUS 32 concentration. ToronDR™ AF 602 is listed as Urea 0–51% with Refractive Index 1.3330–1.4056 nD, while ToronDR™ AF 602SG is described as Urea / Urea Density / Refractive Index. Broader combo models such as ToronDR™ AF 605 and ToronDR™ AF 606 also include urea within a multi-fluid automotive-service format.
- Brake-fluid condition checks: the brake-fluid models are aimed at DOT-type service screening. ToronDR™ AF 604 lists DOT3 121–160°C, DOT3 HT 121–299°C, DOT4 125–275°C, and DOT4 Plus 150–275°C, while DRH-604 is presented as DOT3 / DOT4 / Refractive Index. These models fit garages and maintenance shops that want quick brake-fluid condition screening.
- Multi-fluid service-bay testing: some models are designed to reduce the number of separate tools needed in a workshop. ToronDR™ AF 601 combines Cleaner (°C) / Ethylene Glycol (°C) / Propylene Glycol (°C) / Battery (sg). ToronDR™ AF 605 adds urea and battery to a similar multi-fluid format, and ToronDR™ AF 606 focuses on ethylene glycol and propylene glycol in a combined car DR layout. These models are useful where technicians regularly handle several automotive fluids during routine inspection.


S01
26.2°C
0.8%
READ
CAL
SCALE
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ToronDR™ AF Series
Automotive Fluids Digital Refractometer

FEATURES

Automotive Fluids Digital Refractometer – ToronDR™ AF Series Key Features

- Handheld Digital Refractometer platform for coolant, DEF, brake fluid, battery, IPA, and cleaner-fluid service checks.
- Dedicated coolant models for ethylene glycol and propylene glycol concentration and freeze-protection interpretation.
- Dedicated urea / DEF models with urea concentration, urea density, and refractive index options.
- Brake-fluid models for DOT3, DOT4, and related high-temperature interpretations.
- Multi-function models that combine cleaner fluid, glycol, battery specific gravity, and urea in one handheld unit.
- Easy Calibration: Single-point calibration using distilled or deionized water.
- Durable Design: Stainless steel sample well and high-precision optical glass prism.
- User-Friendly: Large digital display for instant readings of both concentration and refractive index.
- Portability: Handheld design with protective carrying case included.
- Standard package includes 1× ATC Digital Refractometer, 1× mini screwdriver, 1× protective carrying case, and 1× manual.

THEORY & METHOD

Theory and Method

A Digital Refractometer measures how light changes as it passes through a liquid sample, then converts that optical response into a direct digital value. In the ToronDR™ AF Series, that same refractometric principle is expressed through application-specific automotive scales such as coolant freeze-protection interpretation, urea concentration, brake-fluid condition, battery specific gravity, IPA, or refractive index.

In practical service work, this digital format helps technicians compare multiple samples quickly without reading a light/dark boundary through an eyepiece. That makes the platform well suited to workshops and fleet environments where speed and repeatability matter. This usability point is an inference from the digital handheld format.

TECHNICAL SPECIFICATIONS

Automotive Fluids Digital Refractometer – ToronDR™ AF Series Technical Specification

Feature	Specification
Resolution	0.1% / 1°C / 0.001 sg / 0.0001 nD
Accuracy	±0.2% / ±1°C / ±0.002 sg / ±0.0003 nD
Automatic Temperature Compensation	10°C to 40°C (50°F to 104°F)
Measurement Time	Approximately 1.5 seconds
Min. Sample Volume	2 metric drops
Light Source	Yellow LED
Sample Cell	Stainless steel ring and flint glass prism
Voltage	1 x 9V Battery (approx. 5,000 readings)

Feature	Specification
Automatic Shut-off	After 3 minutes of non-use
Dimension	121 x 58 x 25 mm
Weight	0.4 kg

Model	Application / Substance	Measurement Range	Refractive Index (nD) Range
ToronDR™ AF 605	Multi-Fluid Tester (Cleaner, EG, PG, Battery, Urea)	Cleaner: -40–0°C; EG/PG: -50–0°C; Battery: 1.100–1.400 sg; Urea: 0–40%	1.3330 – 1.4200 nD
ToronDR™ AF 605JIS	Multi-Fluid (JIS Standard)	Cleaner: -40–0°C; EG/PG: -50–0°C; Urea: 0–40%	1.3330 – 1.4200 nD
ToronDR™ AF 604	Brake Fluid (DOT 3 / DOT 4)	High Range Concentration / RI monitoring	1.3330 – 1.5040 nD
ToronDR™ AF 408	Isopropanol (IPA-W)	0 – 100% (IPA concentration)	1.3330 – 1.4200 nD
ToronDR™ AF 602	Urea $(NH_2)_2CO$	0 – 51%	1.3330 – 1.4056 nD
ToronDR™ AF 603	Ethylene & Propylene Glycol	Concentration (v/v): 0 – 100%; Freezing Point: 0 to -50°C	1.3330 – 1.4200 nD
ToronDR™ AF 610	Brake Fluid Tester	DOT 3: 121–160°C; DOT 3 HT: 121–299°C; DOT 4: 125–275°C; DOT 4 Plus: 150–275°C	1.3330 – 1.4200 nD
ToronDR™ AF 613	Ethylene & Propylene Glycol	EG: 0–100% (0–50°C); PG: 0–70% (0–70°C)	1.3330 – 1.4200 nD

TORONTECH.com

TORONTECH

Torontech Inc.
251 Consumers Road, Suite 1200
Toronto, Ontario, M2J 4R3, Canada

Phone: +1 416 368 2721 | Fax: +1 416 981 7652
Email: info@torontech.com

Torontech, LLC
601 Brickell Key Drive, Suite 700
Miami, FL 33131, USA

Toll-Free: 1-866-383-7919
Email: sales@torontech.com

Torontech ME FZE
Meydan Grandstand, 6th Floor,
Meydan Road, Nad Al Sheba,
Dubai-261440, UAE

Phone: +971 488 19252
Email: me@torontech.com

USA | Canada | EU | UAE | GCC | KSA | India | Africa | Latin America | Asia