

Automotive Digital Refractometer



Note: It is our policy to continually improve products and as such we reserve the right to alter data, specifications and component parts without prior notice.

Important: No Liability is accepted for incorrect use of this product.

Warranty: Guarantee is 12 months from purchase date, proof of which is required for any claim.

Thank you for selecting the ET5674 Automotive Digital Refractometer. We ship this refractometer fully tested. Before operating your instrument, please read this manual carefully. With proper use, it will provide years of reliable service.

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1. Introduction

The Endeavour ET5674 Automotive Digital Refractometer is designed to accurately measure the strength of battery fluid, screenwash, antifreeze and AdBlue® by measuring the refractive index of light passing through the mixture and digitally display on the colour LCD TFT. It is suitable for synthetic antifreeze mixtures including long life OAT (Organic Acid Technology), G13 and aqueous/urea content of AdBlue®. This tool is designed for the professional workshop.

Features

- The Digital Refractometer is an accurate and maintenance free digital handheld refractometer.
- The typical and practical design is suitable for quick and convenient everyday use and is characterized by its ease of use and robustness.
- The large display is easy to read. Mistakes in reading are avoided.
- A large selection of models is available with single or multiple scales.
- The instrument comes with an optimized software that can show a result in different scales.
- The integrated automatic temperature compensation (ATC), avoids the manual conversion of the measurement. This allows for quick and efficient usage of the instrument.

Technical Specifications

Scales and specifications

Scale's Name	Range	Resolution	Accuracy	Automatic Temperature Compensation(ATC)
Ethylene Glycol %	0.0~60.0%	0.1%	±0.3%	5~40°C/41~104°F
Ethylene Glycol	-50.0~0.0°C/ -60.0~32.0°F	0.1°C/0.1°F	±0.5°C/±0.9°F	5~40°C/41~104°F
Propylene Glycol %	0.0~70.0%	0.1%	±0.3%	5~40°C/41~104°F
Propylene Glycol	-70.0~0.0°C/ -94.0~32.0°F	0.1°C/0.1°F	±0.5°C/±0.9°F	5~40°C/41~104°F
Screenwash Fluid	-70.0~0.0°C/ -94.0~32.0°F	0.1°C/0.1°F	±0.5°C/±0.9°F	5~40°C/41~104°F
AdBlue	0.0~51.0%	0.1%	±0.2%	5~40°C/41~104°F
Battery Fluid	1.000~1.500	0.001	±0.002	5~40°C/41~104°F
Refractive Index	1.3330~1.4200	0.0001	±0.0003	5~40°C/41~104°F

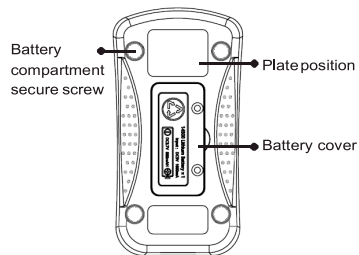
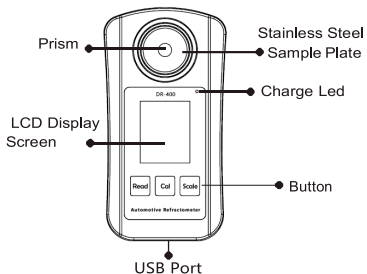
Auto Temperature Compensation (ATC)

Unit	Measuring Scope	Resolution	Accuracy
°C	0.0 ~ 50.0	0.1	±0.5
°F	32.0 ~ 122.0	0.1	±0.9

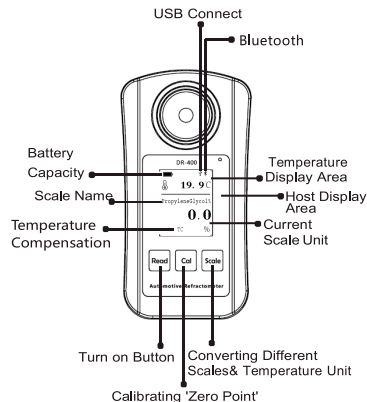
- Display 1.8" TFT color display (128 x 160dpi)
- Sensor Element is Photodiode Array Detector
- All series of zero calibration function with distilled water.
- Instantaneous reading
- Stainless steel sample plate
- Lifetime of the battery is 30,000 measurements
- The battery can be charged 500 times
- Auto Temperature Compensation (ATC)
- Minimum sample volume is 2-4 drops
- Operation sea level lower than 2000m.
- Operation temperature is 5~40°C / 41~104°F < 80% RH.
- Storage temperature is 0~50°C / 32~122°F < 80% RH
- Response time 2 seconds
- IP rating IP65 splash/dust-proof
- Automatic shut off after 60 seconds
- Power supply is 14500 Polymer lithium battery
- Battery Charge is MicroUSB charging interface 5V 1A
- Dimensions are 132*69*30mm
- Weight is 125g without battery


2. Product Descriptions

2-1 Meter Description



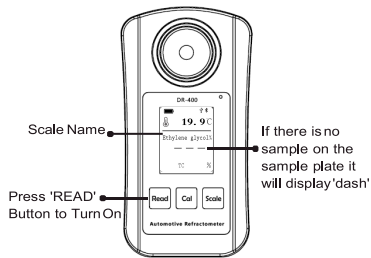
2-2 Display Areas and Buttons



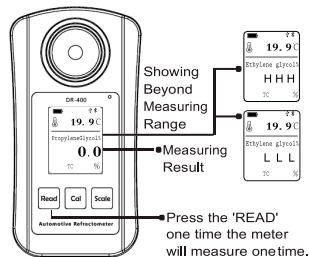
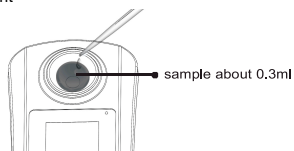
⚠ Note: Please charge the instrument when the  is displayed

3. Operation Procedures

3.1 Turn on

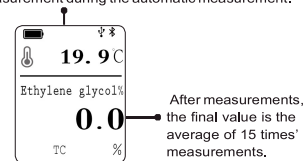


3.2 Start to the measurement



If press the 'Read' button for 2 seconds, the instrument would make the automatic measurements upon programmed times (default 15 times).

The multi-function area would show remaining times which is reduce the number by 1 for each measurement during the automatic measurement.



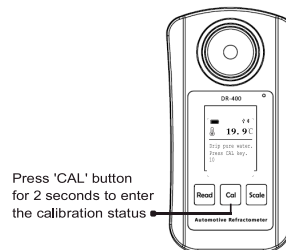
Note :

1. When used outdoors, please avoid strong light so as not to affect the measurement accuracy.
2. Before dropping the sample please wipe the drain well the sample plate with a soft clean cloth or a clean paper towel.
3. Please keep the instrument in a stable status to measure.

4. Zero Calibration

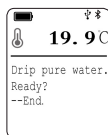
The meter only supports pure water calibration.

The calibration method is as following drop 0.2-0.3ml pure water into the sample plate for calibration.



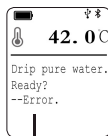
Press 'Cal' button once again to start to calibrate.

When the calibration is completed showing as following.



Note:

After entering the calibration state, press other keys or no operation for 10 seconds the instrument would return back to the starting state.

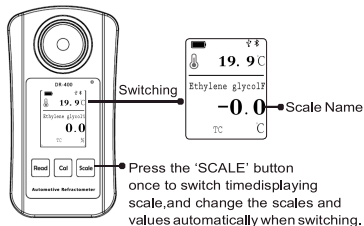


If fail to complete the calibration, multi-function display area would show 'Error'

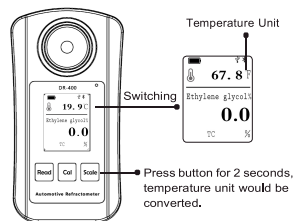
5. Switch the scales and temperature units

5.1 Scales Converting

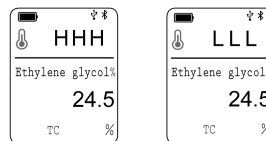
The instrument could support 10 scales maximally.



5.2 Temperature System Converting



If the temperature is out of range, "HHH" or "LLL" will be displayed.



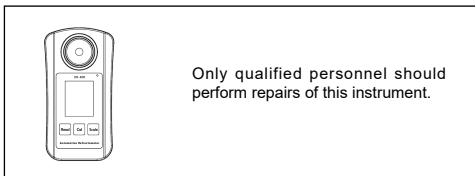
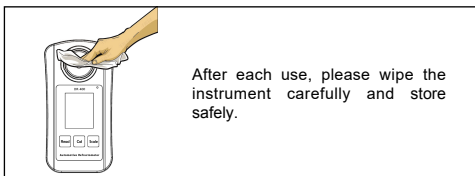
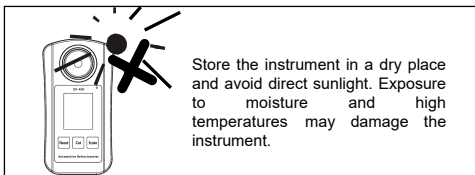
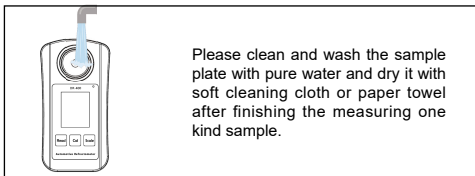
6. Turn Off the Meter

After the instrument is turned on, if without any operations for 1 minute, the instrument will automatically turn off.


Note:

Press 'Scale' for 8 seconds, the instrument would be forced to reset.

7. Maintenance and Preservation

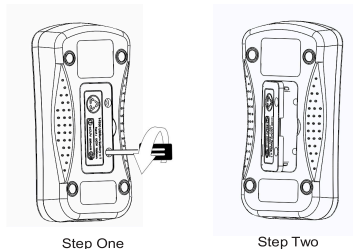


8. Battery Replacement

One 'AAA' battery power the meter. When the  symbol flashes, replace the battery.

1. Turn the meter off
2. Open the rear battery cover as shown in the diagrams below
3. Replace the batteries observing correct polarity
4. Close the battery cover
5. Fasten the compartment before use

CAUTION: Close the cover tightly in order to prevent liquid ingress.



9. Stand Delivery



1. ET5672 Automotive Digital Refractometer
2. Calibration Liquids
3. Pipette
4. 1 × AAA battery
5. Small screwdriver
6. Cleaning tissue
7. Storage box