

# EXTECH USER MANUAL

## Battery/Coolant Refractometer with ATC

### Model RF40

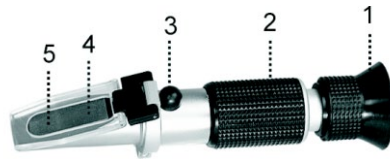


#### Introduction

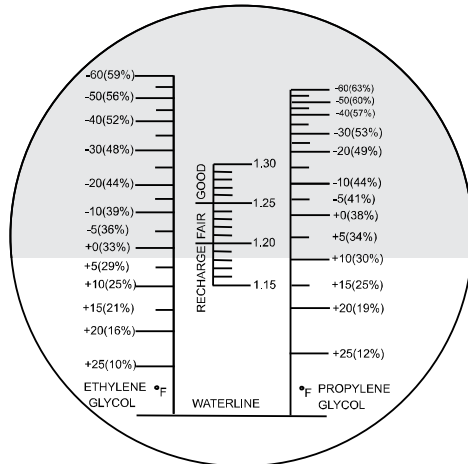
Congratulations on your purchase of the RF40 Battery and Coolant Refractometer with automatic temperature compensation. Handle this precision optical instrument gently and avoid touching the optical surface. Careful use will provide years of reliable service.

#### Description

1. Eyepiece
2. Mirror tube
3. Zero Adjustment
4. Cover plate
5. Prism



#### Field of View



#### Operation

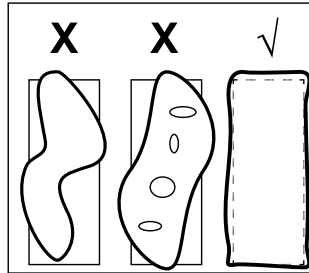
This instrument measures the refractive index of a sample.

##### 1. Zero Adjustment

Cover the prism with a few drops of distilled water from the supplied vial. Close the cover plate and rotate the adjustment screw so that the light/dark boundary aligns with the 'waterline'. When finished, clean the prism with a soft cloth.

##### 2. Sample Preparation and Measurement

To take a reading, open the prism cover and place 2 or 3 drops on the prism surface. Close the cover so that the liquid spreads across the entire surface of the prism without air bubbles or dry spots (as shown). Allow the sample to remain on the prism for 30 secs.



Three examples of a sample on the prism. The image at right shows the correct method.

While holding the instrument under a light source, look through the eyepiece. The freeze point of the liquid or the specific gravity of the battery liquid is determined by the intersection of the light and dark boundary (shadowline) on the scale. If the scale appears out of focus, adjust the eyepiece by rotating the knurled collar. The instrument has an eye guard to prevent stray light from entering the eyepiece and causing reflections. It may be necessary to adjust the position of the light source to maximize the contrast of the shadowline. Under normal conditions, optimal contrast is obtained by holding the instrument underneath and perpendicular to a light source.

Once a reading has been taken, wash the prism with a clean cloth and mild soap and water. Then, rinse with distilled water and store in the supplied case. Store in a secure, dry environment.

##### 3. Automatic Temperature Compensation (ATC)

Temperature greatly affects accuracy, and for this reason ATC is employed in this instrument. When the ambient temperature is higher or lower than 68°F (20°C), the readings are automatically compensated. ATC is active in the range of 50 to 86°F (10 to 30°C).

#### Specifications

Range	-60 to 32°F for the freeze point of propylene and ethylene glycol. 1.15 to 1.30 for specific gravity of battery acid
Resolution	2°F (glycol freeze point). 0.01 (specific gravity of battery acid)
Dimensions	6.2 x 1.6 x 1.2 in. (160 x 40 x 30 mm)
Weight	7 oz. (200 g)

#### Two-year Warranty

Teledyne FLIR warrants this Extech brand instrument to be free of defects in parts and workmanship for **two years** from date of shipment. To view the full warranty text please visit: <https://www.flir.com/support-center/warranty/instruments/extech-product-warranty/>

#### Customer Support

Local Telephone Support List: <https://support.flir.com/contact>

Return Material Authorization (RMA):

<https://customer.flir.com/Home>

Customer Service: <https://support.flir.com/ContactService>

Technical Support: <https://support.flir.com>

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