



922 HAND-HELD SIGN RETROREFLECTIVITY ASSESSMENT SOLUTION

The MUTCD minimum sign retroreflectivity requirements presents a challenge to all agencies. The 922's smart, **field-proven** technology delivers a simple, economic solution for improving and maintaining the safety of your roadways by providing a zero-error means of meeting the minimum retroreflectivity of the MUTCD. Agencies using the 922 can accurately **identify signs** needing replacement, and just as important, identify the signs that do not need replacement.



Safe Workers to Motorists

- The safe solution with its exclusive annular optics, providing accurate, instant measurement from all directions in each reading
- Reduces a worker's time in the roadway, while offering a zero-error method of meeting the MUTCD retroreflectivity requirements, which ensures adequate night time visibility of signs by motorists



Smart Optics to Build

- The smart solution with its superior light source, annular optics, multi-channel GPS, barcode reader, and commercial-grade rechargeable battery, brought together in the 922's compact, field-proven, 6 lb ergonomic, lightweight casing



Simple Setup to Reporting

- The simple solution, automatically recording 10 precise data points with the simple squeeze of the trigger
- Offers 7 additional user-defined data points, all visible on the user-friendly color touch screen and transferable to Excel, Google and GIS software

ULTRA-ACCURATE OPTICS

Omni-directional measurement

USER-FRIENDLY OPERATION

Full color touchscreen

COMPREHENSIVE DATA

17 crucial data points

PROVEN DURABILITY

1000s of units in the field



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922 Retroreflectometer Specifications

Annular measurement geometry, eliminating 2nd measurement required by devices with point geometry

WAAS-enabled multi-channel GPS

Built-in bluetooth and latest NMEA0183 format output for direct communication with Trimble and other GPS systems

Conveniently located full color TFT touch screen with intuitive data display and menus

USB computer interface and built-in data integration software with Microsoft Excel export and Google Earth mapping

Internal storage for approximately 4,500 readings

Built-in barcode reader

Durable 6 lb ergonomic casing

Standard rechargeable 12-volt batteries with 1-hour wall or car charger (choose one)

Performance

- Measures all sign materials accurately, reading beaded and prismatic types
- Measures all sign material colors, with no adjustments or filters
- Measures with dual observation angles of 0.2° and 0.5° simultaneously, for current and future needs
- Auto-averaging of legend and background separately for MUTCD compliance
- Measurements are omnidirectional, reducing the number of measurements required for accurate analysis
- Reads and records barcodes for simplified inventory management
- Determines and records global positioning (GPS) for clear location and mapping
- Communicates with other devices via Bluetooth for use with Trimble and other GPS Systems
- Stores approximately 5,600 readings, reducing download requirements
- Displays operation menus and data on full-color high-visibility touch screen
- Operates all day with two rechargeable, 12-volt batteries, eliminating operation interruption
- Protected in a lightweight, ergonomic, durable polymer casing; reducing labor fatigue and accidental damage

Meets ASTM E1709 and E2540, CIE, CEN & DIN specifications.

Standard Accessories

- Foam-lined protective carrying case
- Measurement area reducers
- Battery charger
- Calibration standard
- Calibration certificate
- Windows software with mapping
- 2 12-volt batteries

Optional Accessories

- Annual calibration service
- Fixed 30° entrance angle attachment
- Extension pole kit with remote
- IrDA trigger



Geometry

| | Model 922 (ASTM E1709 & E2540) | Model 922D (DIN 67520 & EN 12899-1) | Model 922EA30 (EN ISO 20471 & ANSI-107 for Clothing) |
|-------------------------------------|-----------------------------------|--|---|
| Entrance angle: | -4° | +5° | +5° |
| Observation angle: | 0.2° and 0.5° | 0.33° | 0.2° and -0.5° |
| Light source angular aperture | 0.1° | 0.1° | 0.1° |
| Receiver angular aperture (annular) | 0.1° | 0.1° | 0.1° |
| Field of measurement | 1-in. (25 mm) diameter spot | 1-in. (25 mm) diameter spot | 1-in. (25 mm) diameter spot |

Specifications (applies to all models)

| | |
|-------------------------------|---|
| Detector responsivity | Photopic response in accordance with ASTM E1709 and ASTM E2540 paragraph 6.4.2 |
| Range (cd/lx/m ²) | 0-2000 |
| Data memory | > 5,600 measurements |
| Computer interface | USB; Bluetooth |
| GPS | 12-channel WAAS enabled for <3 meter position fix uncertainty |
| Barcode reader | Programmable symbologies laser scanner |
| Power supply | Removable and rechargeable 12 VDC, 3.3 Ah battery (DeWalt P/N DC9071 or equivalent) |
| Charger | 100-240 VAC, 50/60Hz (add -1 after model number); 12 VDC cigarette lighter (add -2 after model number); |
| Operating temperature | 0°C to 50°C (32°F to 122°F) |
| Operating hh | Approx. 11.5-in. (290 mm) |
| Width | Approx. 4.5-in. (115 mm) |
| Height | Approx. 12.75-in. (325 mm) with battery |
| Weight | Approx. 5.9 lbs (2.7 kg) with battery |