



## Fast, accurate EDM and superior Nikon optics

 The Nikon® DTM-502 Series total stations from Tripod Data Systems™ (TDS)—including the DTM-522, the best-selling 3-second total station in America—deliver a versatile, easy-to-use platform to help you get the job done right. Popular features include Nikon’s world-renowned optics that give you brighter, clearer images. Fast, accurate Electronic Distance Measurement (EDM) helps you move quickly from point to point. A long-lasting 10.5-hour battery means you can work all day with no battery changes. And its lightweight, all-weather construction ensures reliable performance in tough field conditions.

### Faster, more accurate distance measurement

The 502 Series is one of the fastest total stations in its class, with 1.0-second initial measurement and 0.5-second updates in normal mode. This fast EDM helps you move quickly through your survey routines so you spend less time in the field.

The 502 Series is also extremely precise, with accuracy of  $\pm(2+2 \text{ ppm} \times D)$  mm in precise mode. Advanced software ensures measurements taken using reflector sheets are as fast and accurate as those taken with glass prisms.

The 502 Series features a new horizontal axis with a zero-clearance ball bearing and a nitride finish. This design ensures the most accurate angle measurements and stability under all field conditions.

### See brighter, sharper, clearer images

You’ll see the difference when you look through a Nikon total station. Nikon’s legendary optics effectively let in more light. The result is brighter, sharper images, even in the low-visibility conditions typical in the field. You’ll see much more detail and much less distortion, especially over longer distances. Better optics help you aim more precisely, and they’re much easier on your eyes—something you’ll really appreciate on long workdays.

All Nikon telescopes use a unique linear focusing mechanism that improves focusing at both short and long distances. And the large focusing knob is easy to use even when you’re wearing gloves.



Data Collection



GPS/GIS



Office Software



Construction

# Boost your productivity with fast EDM,



## 10.5-hour long-life battery

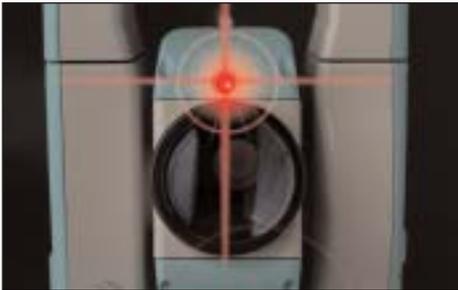
The 502 Series' 10.5-hour battery lets you work all day without having to change batteries.

## Long-life battery and powerful EDM help speed field work

The 502 Series includes multiple features to help you work more quickly and productively in the field. The BC-80 clip-on battery gives you up to 10.5 hours of continuous distance/angle measurement; with one measurement every 30 seconds, battery life extends to 24 hours. That means you can work all day without having to stop and change the battery. The BC-80 recharges in

less than two hours, and you can recharge it in your vehicle with the optional 12-volt battery charger.

If there's dense foliage at the site you're surveying, you'll appreciate the extra "zip" built into the 502 Series EDM. It punches through the brush better than most total stations, saving you time while taking measurements.



## Lumi-Guide tracking light

The Lumi-Guide red tracking light helps the rodman locate the correct lines quickly for more efficient stakeout.

## Lumi-Guide helps locate lines for faster, more efficient stakeout

All 502 Series models feature a Lumi-Guide tracking light above the telescope objective lens. It emits one steady and one blinking beam of coherent red light, allowing the rodman to locate the correct line quickly and easily by finding the position where

both are visible. During stakeout, the blinking cycle changes to indicate the stakeout direction, helping the rodman reach the next point more quickly. It also assists in one-man clearing of lines and works as a prism illuminator for night surveying.

## DTM-502 Series system diagram

The DTM-502 Series is available with a variety of accessories.



# 10.5-hour battery and one-touch keys

## Part of the complete data collection system from TDS

The 502 Series total stations are part of the complete data collection system from TDS. For example, you can connect your total station to a rugged Ranger™ or Recon™ handheld for more flexible, powerful data collection capabilities. Both the Ranger and Recon meet military standards for durability, so you can count on them in the field.

Easy-to-use Survey Pro™ software has been the #1 choice of surveyors since 1995.<sup>1</sup> All TDS products are designed to meet surveyors' demanding requirements, helping you capture data accurately, work with it efficiently and present it to your clients professionally.

<sup>1</sup> Business News Publishing Company, "Surveying and Mapping Industry Study" 1995-2002.



**Connect a TDS Recon for more data collection capabilities**  
You can expand your data collection capabilities by connecting a TDS Recon (shown) or Ranger data collector to the 502 Series total station.

## Large, easy-to-read display, ergonomic keypad and one-touch codes speed data input

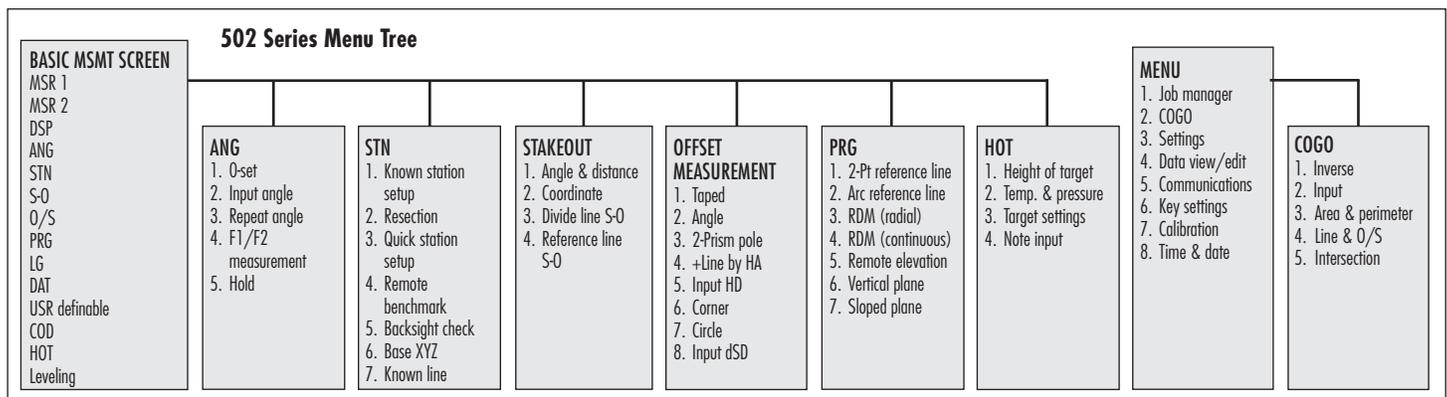
All 502 Series models feature a large, easy-to-read LCD graphic display and an ergonomic keypad for efficient field operation. MENU, MODE and HOT keys give you easy access to frequently adjusted settings and job management functions. The full numeric keypad makes it fast and easy to input angle and height of target data. Multiple code-input methods help

speed data input as well. You can assign specific functions to the two USR keys for one-touch access to the functions you use most. You can also assign up to 10 one-touch Quick Codes to the numeric keys 0 through 9. Once you've defined your codes, you simply aim at the target and press one of the Quick Code keys to measure and record a point with full coding.

The 502 Series' internal memory can store up to 10,000 data records in up to 32 separate jobs. You can check, edit, delete, input and search for job file data directly on the total station. Plus, you can save survey control point coordinates in a job file, then access that data from other jobs.

### Easy-to-use keypad features USR, Quick Code keys

To speed up data input, you can assign frequently used functions to the two USR keys. You can also define up to 10 one-touch Quick Codes; simply aim at the target and press one of the Quick Code keys to measure and record a point with the assigned code.



# DTM-502 Series Specifications

## DTM-552/DTM-532/DTM-522

	DTM-552	DTM-532	DTM-522
<b>TELESCOPE</b>			
Tube Length:	6.22 in (158 mm)	6.22 in (158 mm)	6.22 in (158 mm)
Image:	Erect	Erect	Erect
Effective diameter of objective:	1.77 in (45 mm) EDM: 1.97 in (50 mm)	1.77 in (45 mm) EDM: 1.97 in (50 mm)	1.77 in (45 mm) EDM: 1.97 in (50 mm)
Magnification:	33x (21x/41x w/optional eyepieces)	33x (21x/41x w/optional eyepieces)	33x (21x/41x w/optional eyepieces)
Field of view:	1°20' 2.3 ft @ 100 ft (2.3 m @ 100 m)	1°20' 2.3 ft @ 100 ft (2.3 m @ 100 m)	1°20' 2.3 ft @ 100 ft (2.3 m @ 100 m)
Resolving power:	2.5"	2.5"	2.5"
Minimum focusing distance:	4.26 ft (1.3 m)	4.26 ft (1.3 m)	4.26 ft (1.3 m)
Reticle illumination:	3-level variable	3-level variable	3-level variable
<b>DISTANCE MEASUREMENT</b>			
<b>Range with Nikon-specified prisms</b>			
Under good conditions	No haze with visibility over 25 miles (40 km)		
With reflector sheet:	16.4 to 328 ft (5 to 100 m)	16.4 to 328 ft (5 to 100 m)	16.4 to 328 ft (5 to 100 m)
With mini prism:	3,600 ft (1,100 m)	3,600 ft (1,100 m)	3,600 ft (1,100 m)
With single prism:	8,900 ft (2,700 m)	8,900 ft (2,700 m)	8,900 ft (2,700 m)
With triple prism:	11,800 ft (3,600 m)	11,800 ft (3,600 m)	11,800 ft (3,600 m)
With nine prisms:	14,400 ft (4,400 m)	14,400 ft (4,400 m)	14,400 ft (4,400 m)
Under normal conditions	Ordinary haze with visibility about 12.5 miles (20 km)		
With reflector sheet:	16.4 to 328 ft (5 to 100 m)	16.4 to 328 ft (5 to 100 m)	16.4 to 328 ft (5 to 100 m)
With mini prism:	3,100 ft (950 m)	3,100 ft (950 m)	3,100 ft (950 m)
With single prism:	7,900 ft (2,400 m)	7,900 ft (2,400 m)	7,900 ft (2,400 m)
With triple prism:	10,200 ft (3,100 m)	10,200 ft (3,100 m)	10,200 ft (3,100 m)
With nine prisms:	12,100 ft (3,700 m)	12,100 ft (3,700 m)	12,100 ft (3,700 m)
<b>ACCURACY</b>			
Precise mode:	±(2+2 ppm x D) mm	±(2+2 ppm x D) mm	±(2+2 ppm x D) mm
Normal mode:	±(4+2 ppm x D) mm	±(4+2 ppm x D) mm	±(4+2 ppm x D) mm
<b>LEAST COUNT</b>			
Precise mode:	0.0005 to 0.002 ft selectable (0.1 mm to 1 mm)	0.0005 to 0.002 ft selectable (0.1 mm to 1 mm)	0.0005 to 0.002 ft selectable (0.1 mm to 1 mm)
Normal mode:	0.002 to 0.02 ft selectable (1 mm to 10 mm)	0.002 to 0.02 ft selectable (1 mm to 10 mm)	0.002 to 0.02 ft selectable (1 mm to 10 mm)
<b>MEASURING INTERVALS</b>			
Precise mode:	1.0 sec (initial 1.0 sec)	1.0 sec (initial 1.0 sec)	1.0 sec (initial 1.0 sec)
Normal mode:	0.5 sec (initial 1.0 sec)	0.5 sec (initial 1.0 sec)	0.5 sec (initial 1.0 sec)
<b>ANGLE MEASUREMENT</b>			
Reading system:	Photoelectric detection by incremental encoder (diametrical detection H/V)		
Circular diameter:	3.11 in (79 mm)	3.11 in (79 mm)	3.11 in (79 mm)
Minimum increment			
(Degree):	0.5/1/5"	1/5/10"	1/5/10"
(Gon):	0.1/0.2/1 mgon	0.2/1/2 mgon	0.2/1/2 mgon <sup>1</sup>
(MIL6400):	0.002/0.005/0.02 mil	0.005/0.02/0.05 mil	0.005/0.02/0.05 mil
DIN 18723 accuracy:	1"/0.3 mgon	2"/0.5 mgon	3"/1 mgon

### READOUT DISPLAY

29,999.999 ft (9,999.999 m)

### AMBIENT TEMPERATURE RANGE

-4 to 122 °F (-20 to 50 °C)

### ATMOSPHERIC CORRECTION

Temperature range: -40 to 140 °F (-40 to 60 °C)

Barometric pressure: 15.8 to 39.3 inHg

(400 to 999 mmHg/533 to 1332 hPa)

Prism offset correction: -999 to 999

### TILT SENSOR

Type: Dual-axis

Method: Liquid-electric detection

Compensation range: ±3°

Setting accuracy: ±1°

### LUMI-GUIDE

Light source: LED

Visible range: 330 ft (100 m)

Positioning accuracy: ~2.4 in @ 330 ft (6 cm @ 100 m)

Beam spread: ~1.5°/8.5 ft @ 330 ft (2.6 m @ 100 m)

### LEVEL VIAL SENSITIVITY

Plate level vial: 20"/2 mm (DTM-552)

30"/2 mm (DTM-532/DTM-522)

Circular level vial: 10'/2 mm

### OPTICAL PLUMMET

Image: Erect

Magnification: 3x

Focusing range: 1.6 ft (0.5 m) to ∞

### DISPLAY

Type: Graphic LCD (128 x 64 pixel)

Both sides

### POINT MEMORY

Raw/coordinates: 10,000 records

### DIMENSIONS (W x D x H)

6.5 x 6.1 x 14.4 in (166 x 156 x 365 mm)

### WEIGHT

Main unit (w/o battery): 10.8 lbs (4.9 kg)

BC-80 clip-on battery: 1.3 lbs (0.6 kg)

Battery charger: 1.3 lbs (0.6 kg)

Carrying case: 6.8 lbs (3.1 kg)

### POWER SUPPLY

Clip-on NiMH battery BC-80

Output voltage: 7.2V DC

Operating time: ~10.5 hours (cont. distance/angle measurement)

~24 hours (distance/angle measurement every 30 seconds)

~30 hours (angle measurement)

Quick charger Q-75U (115V)/Q-75E (220/240V)/Q-70C (12V DC)

Recharging time: ~2.0 hours for full recharge

Discharging time: ~7.5 hours (Q-75U/Q-75E)

<sup>1</sup> 0.1/0.2/1 mgon available as an option.

Your local TDS dealer



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P.O. Box 947, Corvallis, OR 97339

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