



# Nikon Product Catalog



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# Total Stations



- 1", 2", 3" and 5" angle accuracies
- Survey Basic with Roads, Survey Pro and Layout Pro software options
- Color touch-screen
- High quality Nikon optics
- Prism and reflectorless measurements
- Easy-to-use 2nd face keypad
- Hot swappable batteries
- Compact, rugged, and lightweight
- Cable-free Bluetooth®
- Optional laser plummet

Nikon's Nivo™ Total Station is available in two exciting lines: the Nivo C Series and Nivo M Series.

The Nivo series instruments are the absolute leaders for go anywhere measurement tools. Compact in size and lightweight, they are convenient to carry over long distances. All Nivo models feature legendary Nikon high clarity optics, allowing clearer images in bright and low light conditions, making measurements easy and reducing eye stress.

The fast, long range EDM measures in both prism and reflectorless modes. Make reflectorless measurements precisely to objects up to 500 m (1,640 ft) away.\*

Nivo models come standard with a traditional optical plummet which can be upgraded to a laser plummet. All Nivo C Series instruments include LumiGuide for stakeout assistance.

\* Objects with high reflectivity (90%).

# Nivo C Series

The Nivo C Series is designed with a feature-packed Windows® CE touch-screen interface. Three powerful field software applications cater for all levels of your surveying and construction measurement needs

- Spectra Precision® Survey Pro™ software is the market-leading software for Survey professionals
- Survey Basic with Roads software is full-featured but easy-to-use, allowing surveyors to get up and running quickly
- Layout Pro software turns the Nivo C instrument into a highly productive construction layout tool

All Nivo C Series solutions are designed with high productivity in mind, including dual displays for efficient high precision angle and distance measurements. There is no need to worry about interrupting your workflow when power gets low, thanks to hot-swappable batteries.

Nivo C Series capabilities include:

- Support for USB memory sticks
- Wireless cable-free Bluetooth connections to external data collectors
- A USB High-speed data transfer port
- LumiGuide for stakeout assistance

The Nivo C Series is available in 1", 2", 3" and 5" models to meet your specific accuracy needs.

The Nivo 1.C has tangent clamps, Nivo 2.C is available with tangent clamps or endless tangents and Nivo 3.C and Nivo 5.C feature endless tangents.

# Total Stations

SPECIFICATIONS	NIVO 1.C / NIVO 2.C		NIVO 3.C / NIVO 5.C	
	NIVO 1.C	NIVO 2.C	NIVO 3.C	NIVO 5.C
<b>ANGLE MEASUREMENT</b>				
Minimum increment	0.5"	1"	1"	1"
ISO 17123-3 accuracy (horizontal and vertical)	0.1 mgon 1"/0.3 mgon	0.1 mgon 2"/0.6 mgon	0.1 mgon 3"/1 mgon	0.1 mgon 5"/1.5 mgon
<b>TELESCOPE</b>				
Magnification	30× (18×/36× with optional eyepieces)		30× (18×/36× with optional eyepieces)	
Effective diameter of objective	40 mm (1.6 in)		45 mm (1.8 in)	
Minimum focusing distance	1.5 m (4.9 ft)		1.5 m (4.9 ft)	
Reticle illumination	Yes, 3 levels		Yes, 3 levels	
Lumiguide	Yes		Yes	
<b>DISTANCE MEASUREMENT</b>				
Reflectorless mode (KGC 18%)	Good <sup>5</sup>	Difficult <sup>7</sup>	Good <sup>5</sup>	Difficult <sup>7</sup>
Reflectorless mode (KGC 90%)	350 m (1,148 ft) 500 m (1,640 ft)	200 m (656 ft) 250 m (820 ft)	280 m (920 ft) 500 m (1,640 ft)	200 m (656 ft) 300 m (984 ft)
With single prism (Good conditions)	3,000 m (9,843 ft)		5,000 m (16,404 ft)	
Accuracy (Prism/Precise mode) 1, 2	(2+2 ppm × D) mm (3+2 ppm × D) mm		(2+2 ppm × D) mm (3+2 ppm × D) mm	
Accuracy (Reflectorless/Precise mode) 1, 2				
<b>MEASURING INTERVAL<sup>3</sup></b>				
Prism mode	Precise mode Normal mode		1.5 sec 0.8 sec	
Reflectorless mode	Precise mode Normal mode		1.8 sec 1.0 sec	
Least count	Precise mode Normal mode		1 mm (0.002 ft) 10 mm (0.02 ft)	
<b>ENVIRONMENTAL SPECIFICATIONS</b>				
<b>OPERATING TEMPERATURE RANGE</b>	-20 °C to +50 °C (-4 °F to +122 °F)			
<b>ATMOSPHERIC CORRECTION</b>				
Temperature range	-40 °C to +60 °C (-40 °F to +140 °F)			
Barometric pressure	400 mmHg to 999 mmHg 533 hPa to 1,332 hPa			

# Nivo C Series

<b>TILT SENSOR</b>	15.8 inHg to 39.3 inHg
<b>LEVEL VIALS</b>	Dual axis
Sensitivity of Circular level vial	10/12 mm
<b>OPTICAL PLUMMET</b> Magnification	3×
<b>DISPLAY</b>	
Face 1	QVGA, 16 bit color, TFT LCD, backlit (320x240 pixel)
Face 2	Backlit, graphic LCD (128x64 pixel)
<b>MEMORY</b>	128 MB RAM, 1 GB Flash memory
<b>DIMENSIONS (W X D X H)</b>	149 mm x 145 mm x 306 mm (5.8 in x 5.7 in x 12.0 in)
<b>WEIGHT (APPROX.)</b>	
Main unit (without batteries)	3.8 kg (8.4 lb)
Battery	0.1 kg (0.02 lb)
Carrying case	2.3 kg (5.1 lb)
<b>INTERNAL LI-ION BATTERY (X2)</b>	
Operating time <sup>4</sup>	approx. 12 hours (continuous distance/angle measurement) approx. 26 hours (distance/angle measurement every 30 seconds)
Output voltage	3.8 V DC
Recharging time	4 hours
<b>COMMUNICATION PORTS</b>	1 x serial (RS-232C), 2 x USB (host and client)
<b>WIRELESS COMMUNICATIONS</b>	Integrated Bluetooth

1 (3+3 ppm x 0) mm -20 °C to -10 °C, +40 °C to +50 °C (-4 °F to +14 °F, +104 °F to +122 °F).

2 Standard deviation based on ISO 17123-4

3 Measuring time may vary depending on measuring distance and conditions. For the initial measurement, it may take a few more seconds.

4 Battery life specification at 25 °C (77 °F). Operation time may be shorter in low temperatures and if the battery is not new.

5 Good conditions (good visibility, overcast, twilight, underground, low ambient light).

6 Normal conditions (normal visibility, object in the shadow, moderate ambient light).

7 Difficult conditions (haze, object in direct sunlight, high ambient light).

approx. 7.5 hours (continuous distance/angle measurement)

approx. 16 hours

(distance/angle measurement every 30 seconds)

approx. 20 hours (continuous angle measurement)

3.8 V DC

4 hours

1 x serial (RS-232C), 2 x USB (host and client)

Integrated Bluetooth

# Total Stations



- 2", 3" and 5" angle accuracies
- High quality Nikon optics
- Intuitive powerful software
- Fast, accurate EDM
- Prism and reflectorless measurements
- Easy-to-use dual display
- Hot swappable batteries
- Compact, rugged, and lightweight
- Cable-free Bluetooth
- Optional laser plummet

Nikon total stations are available in two exciting lines: the Nivo C Series and Nivo M+ Series.

The Nivo series instruments are the absolute leaders for go anywhere measurement tools. Compact in size and lightweight, they are convenient to carry over long distances. All Nivo models feature legendary Nikon high clarity optics, allowing clearer images in bright and low light conditions, making measurements easy and reducing eye stress.

The fast, long range EDM measures in both prism and reflectorless modes. Make reflectorless measurements precisely to objects up to 500 m (1,640 ft) away.\*

Nivo M+ Series instruments support Bluetooth communications to external data collectors and have a USB port for portable data transfer via USB stick. In addition, all models come standard with dual displays and traditional optical plummets (which can be upgraded to laser plummets).

\* Objects with high reflectivity (90%).

\*\* Low temperature model available.



# Nivo M+ Series

Nikon has combined simplicity and quality together in perfect harmony to produce the Nikon M+ Series.

These compact and efficient products use a field-proven Nikon interface and field software that is quick to learn and easy-to-use.

Supporting both prism-based and reflectorless technologies, you can be assured of accurate repeatable measurements all day long to any point.

The distance measurements are fast and flexible with the Nivo M+ Series. Use the MSR1 & MSR2 keys to separately configure different prism or reflectorless measurement parameters, eliminating the time taken switching between measurement modes.

Nivo M+ Series field software highlights include:

- A complete set of CoGo functions
- Simple data management of files
- Quick-coding for convenient one-button data collection of point features and your raw target data.

The ultimate in quality for hardworking conditions all day, every day.

The Nivo M+ Series is available in 2", 3" and 5"\*\*\* models to meet your specific accuracy needs.

The Nivo 2.M+ model is available with tangent clamps or endless tangents and the Nivo 3.M+ and Nivo 5.M+ models feature endless tangents.

# Total Stations

SPECIFICATIONS	NIVO 2.M+	NIVO 3.M+	NIVO 5.M+
<b>ANGLE MEASUREMENT</b>			
Minimum increment	Degree: 1/5/10" Gon: 0.2/1/2 mgon MIL6400: 0.005/0.02/0.05 mil 2"/0.6 mgon	Degree: 1/5/10" Gon: 0.2/1/2 mgon MIL6400: 0.005/0.02/0.05 mil 3"/1 mgon	Degree: 1/5/10" Gon: 0.2/1/2 mgon MIL6400: 0.005/0.02/0.05 mil 5"/1.5 mgon
ISO 17123-3 accuracy (horizontal and vertical)	2"/0.6 mgon	3"/1 mgon	5"/1.5 mgon
<b>TELESCOPE</b>			
Magnification	30× (18×/36× with optional eyepieces)	30× (18×/36× with optional eyepieces)	30× (18×/36× with optional eyepieces)
Effective diameter of objective	40 mm (1.6 in)	45 mm (1.8 in)	45 mm (1.8 in)
Minimum focusing distance	1.5 m (4.9 ft)	1.5 m (4.9 ft)	1.5 m (4.9 ft)
Reticle illumination	No	No	No
<b>DISTANCE MEASUREMENT</b>			
Reflectorless mode (KGC 18%)	Good <sup>5</sup> 350 m (1,148 ft) Normal <sup>6</sup> 250 m (820 ft)	Good <sup>5</sup> 280 m (920 ft) Normal <sup>6</sup> 250 m (820 ft)	Good <sup>5</sup> 250 m (820 ft) Normal <sup>6</sup> 250 m (820 ft)
Reflectorless mode (KGC 90%)	500 m (1,640 ft) 3,000 m (9,843 ft)	500 m (1,640 ft) 5,000 m (16,404 ft)	500 m (1,640 ft) 5,000 m (16,404 ft)
With single prism (Good conditions)	3,000 m (9,843 ft)	5,000 m (16,404 ft)	5,000 m (16,404 ft)
Accuracy (Prism/Precise mode) <sup>1,2</sup>	(2+2 ppm × D) mm	(2+2 ppm × D) mm	(2+2 ppm × D) mm
Accuracy (Reflectorless/Precise mode) <sup>1,2</sup>	(3+2 ppm × D) mm	(3+2 ppm × D) mm	(3+2 ppm × D) mm
<b>MEASURING INTERVAL<sup>3</sup></b>			
Prism mode	Precise mode 1.6 sec. Normal mode 0.8 sec.	1.5 sec. 0.8 sec.	1.5 sec. 0.8 sec.
Reflectorless mode	Precise mode 2.1 sec. Normal mode 1.2 sec.	1.8 sec. 1.0 sec.	1.8 sec. 1.0 sec.
Least count	1 mm (0.002 ft) 10 mm (0.02 ft)	1 mm (0.002 ft) 10 mm (0.02 ft)	1 mm (0.002 ft) 10 mm (0.02 ft)
<b>ENVIRONMENTAL SPECIFICATIONS</b>			
<b>OPERATING TEMPERATURE RANGE</b>	-20 °C to +50 °C (-4 °F to +122 °F)	-20 °C to +50 °C (-4 °F to +122 °F)	-20 °C to +50 °C (-4 °F to +122 °F)*
<b>ATMOSPHERIC CORRECTION</b>			
Temperature range	-40 °C to +60 °C (-40 °F to +140 °F)	-40 °C to +60 °C (-40 °F to +140 °F)	-40 °C to +60 °C (-40 °F to +140 °F)

# Nivo M+ Series

Barometric pressure	400 mmHg to 999 mmHg 533 hPa to 1,332 hPa 15.8 inHg to 39.3 inHg	400 mmHg to 999 mmHg 533 hPa to 1,332 hPa 15.8 inHg to 39.3 inHg	400 mmHg to 999 mmHg 533 hPa to 1,332 hPa 15.8 inHg to 39.3 inHg
<b>TILT SENSOR</b>	Dual axis	Dual axis	Dual axis
<b>LEVEL VIALS</b>	10°/2 mm	10°/2 mm	10°/2 mm
Sensitivity of Circular level vial	3×	3×	3×
<b>OPTICAL PLUMMET Magnification</b>	Dual, backlit, graphic LCD (128x64 pixel)	Dual backlit, graphic LCD (128x64 pixel)	Dual backlit, graphic LCD (128x64 pixel)
<b>DISPLAY</b>	25,000 records	25,000 records	25,000 records
<b>POINT MEMORY</b>	149 mm x 145 mm x 306 mm (5.8 in x 5.7 in x 12.0 in)	149 mm x 145 mm x 306 mm (5.8 in x 5.7 in x 12.0 in)	149 mm x 145 mm x 306 mm (5.8 in x 5.7 in x 12.0 in)
<b>DIMENSIONS (W X D X H)</b>	3.8 kg (8.4 lb) 0.1 kg (0.2 lb) 2.3 kg (5.1 lb)	3.7 kg (8.1 lb) 0.1 kg (0.2 lb) 2.3 kg (5.1 lb)	3.7 kg (8.1 lb) 0.1 kg (0.2 lb) 2.3 kg (5.1 lb)
<b>WEIGHT (APPROX.)</b>	Main unit (without batteries)		
Battery			
Carrying case			
<b>INTERNAL LI-ION BATTERY (x2)</b>	approx. 19 hours (continuous distance/angle measurement)	approx. 10 hours (continuous distance/angle measurement)	approx. 10 hours (continuous distance/angle measurement)
Operating time <sup>4</sup>	approx. 57 hours (distance/angle measurement every 30 seconds) approx. 62 hours (continuous angle measurement)	approx. 26 hours (distance/angle measurement every 30 seconds) approx. 31 hours (continuous angle measurement)	approx. 26 hours (distance/angle measurement every 30 seconds) approx. 31 hours (continuous angle measurement)
Output voltage	3.8V DC	3.8V DC	3.8V DC
Recharging time	4 hours	4 hours	4 hours
<b>COMMUNICATION PORTS</b>	1 x serial (RS-232C), 1x USB (host)	1 x serial (RS-232C), 1x USB (host)	1 x serial (RS-232C), 1x USB (host)
<b>WIRELESS COMMUNICATIONS</b>	Integrated Bluetooth	Integrated Bluetooth	Integrated Bluetooth

1 (3+3 ppm x 0) mm -20 °C to -10 °C, +40 °C to +50 °C (-4 °F to +14 °F, +104 °F to +122 °F).

2 Standard deviation based on ISO 17123-4.

3 Measuring time may vary depending on measuring distance and conditions. For the initial measurement, it may take a few more seconds.

4 Battery life specification at 25 °C (77 °F). Operation time may be shorter in low temperatures and if the battery is not new.

5 Good conditions (good visibility, overcast, twilight, underexposed, low ambient light).

6 Normal conditions (normal visibility, object in the shadow, moderate ambient light).

7 Difficult conditions (haze, object in direct sunlight, high ambient light).

\* Low temperature model available -30 °C (-22 °F).

# Total Stations



- 2" and 5" angle accuracies
- Prism and reflectorless measurement
- Fast, accurate EDM
- Legendary Nikon optics
- Convenient and long-lasting Li-ion battery
- Easy-to-use keypad
- Rugged and lightweight
- Bluetooth enabled

The NPL-322+ Total Station is an economic, versatile, and easy-to-use platform that ensures you get the job done right. Nikon's legendary optics effectively allow in more light to give you brighter, clearer images.

The NPL-322+ is available in a 2" dual face model and a 5" single face model to meet your specific accuracy needs. Both NPL-322+ total station models feature a reflectorless EDM with up to 400 m (1,312 ft) range. Using the same rechargeable long life Li-ion battery as the Nivo series, combined with low power consumption design, the NPL-322+ provides over 11 hours of operating time per battery.

You'll see the difference when you look through a Nikon Total Station 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.

For convenience, the Nikon NPL-322+ total stations include two batteries and a dual charger, to support even the longest of working days.

The Nikon NPL-322+ is built tough for all occasions.

SPECIFICATIONS	NPL-322+
<b>DISTANCE MEASUREMENT</b>	
Range with Nikon specified prisms	
Good conditions (No haze, visibility over 40 km (25 miles))	
Reflectorless <sup>1</sup>	1.5 m to 400 m (4.9 ft to 1,312 ft)
With single prism 6.25 cm (2.5 in)	1.5m to 3,000 m (4.9ft to 9,842 ft)
Normal conditions (Ordinary haze, visibility approx. 20 km (12.4 miles))	
Reflectorless <sup>1</sup>	1.5 m to 150 m (4.9 ft to 492 ft)
With single prism 6.25 cm (2.5 in)	1.5m to 3,000 m (4.9ft to 9,842 ft)
Accuracy (Prism/Precise mode) <sup>2,3</sup>	±(2+2 ppm × D) mm
Reflectorless/Precise mode	±(3+3 ppm × D) mm
Measuring interval <sup>4</sup>	Precise mode                      Normal mode
Prism mode	1.8 sec.                              0.8 sec.
Reflectorless	1.8 sec.                              1.0 sec.
Least count (Precise mode/Normal mode)	1 mm (0.002 ft)                      10 mm (0.02 ft)
<b>ANGLE MEASUREMENT</b>	
ISO 17123-3 accuracy (horizontal and vertical)	2"/0.6 mgon      5"/1.5 mgon
Circle diameter	88 mm (3.46 in)
Horizontal angle	2"/Diametrical      5"/Single
Vertical angle	2"/Single      5"/Single
Minimum increment	Degree: 1/5/10"; Gon: 0.2/1/2 mgon; MIL6400: 0.005/0.02/0.05 mil
<b>TELESCOPE</b>	
Magnification	30× (18×/36× with optional eyepieces)
<b>TILT SENSOR – TYPE</b>	
	Single-axis
<b>COMMUNICATIONS – PORTS</b>	
	1 x serial (RS-232C)
<b>WIRELESS COMMUNICATIONS</b>	
	Integrated Bluetooth
<b>POWER</b>	
Clip-on rechargeable battery system	Li-ion Battery (×2 incl.)
Operating time <sup>5</sup>	approx. 11 hours (distance/angle measurement every 30 s.)
<b>GENERAL SPECIFICATIONS</b>	
Level vials – Sensitivity of Plate level vial	30"/2 mm
Sensitivity of Circular level vial	10"/2 mm
Optical plummet	
Magnification	3×
Focusing range	0.5 m (1.6 ft) to ∞
Display	2"/Dual face, graphic LCD (128x64 pixel) 5"/Single face, graphic LCD (128x64 pixel)
Point memory	25,000 records
Dimensions (L x H x W)	168 mm × 173 mm × 335 mm (6.6 in × 6.8 in × 13.2 in)
Weight	
Main unit (without battery)	4.9 kg (10.8 lb)
Battery / Carry case	0.1 kg (0.2 lb) / 2.4 kg (5.3 lb)
<b>ENVIRONMENTAL</b>	
Ambient temperature range	–20 °C to +50 °C (–4 °F to +122 °F)
Atmospheric correction	
Temperature range	–40 °C to +55 °C (–40 °F to +131 °F)
Barometric pressure	400 mmHg to 999 mmHg / 533 hPa to 1,332 hPa / 15.8 inHg to 39.3 inHg
Dust and water protection	IP54
<b>CERTIFICATION</b>	
	Class B Part 15 FCC certification, CE Mark approval, C-Tick.

1 KGC 90%

2 ±(3+3 ppm × D) mm –20 °C to –10 °C, +40 °C to +50 °C  
(–4 °F to +14 °F, +104 °F to +122 °F).

3 Standard deviation based on ISO 17123-4

4 Measuring time may vary depending on measuring distance and conditions.

5 Battery life specification at 25 °C (77 °F).

# Total Stations



- 2" and 5" accuracies
- Legendary Nikon optics
- Fast, accurate EDM
- Convenient and long-lasting rechargeable AA batteries
- Easy-to-use keypad
- Rugged and lightweight
- Linear focusing mechanism
- Bluetooth enabled

The Nikon DTM-322+ Total Station delivers an economic, versatile, and easy-to-use platform to make sure you get the job done right.

Nikon's legendary optics effectively allow in more light to give you brighter, clearer images. You'll see the difference when you look through a Nikon Total Station 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.

The Nikon DTM-322+ Total Station is among the fastest total stations in its class, so you can move quickly through your routines and spend less time in the field. The DTM-322+ is rugged and lightweight – at 5kg (11 lb) including the battery.

Using rechargeable AA batteries, the DTM-322+ is designed to consume low power and provide the longest possible time in the field. Off-the-shelf AA batteries can also be used as a back-up to provide even longer life.

DTM-322+ is available in a 2" dual face model and a 5" single face model to meet your specific accuracy needs.

The Nikon DTM-322+ is built tough for all occasions.

SPECIFICATIONS	DTM-322+	
<b>DISTANCE MEASUREMENT</b>		
Range with Nikon specified prisms		
Good conditions (No haze, visibility over 40 km (25 miles))		
With reflector sheet (5 × 5 cm)	5 m to 100 m (16.4 ft to 328 ft)	
With single prism 6.25 cm (2.5 in)	2,300 m (7,540 ft)	
Normal conditions (Ordinary haze, visibility approx. 20 km (12.4 miles))		
With reflector sheet (5 × 5 cm)	5 m to 100 m (16.4 ft to 328 ft)	
With single prism 6.25 cm (2.5 in)	2,000 m (6,560 ft)	
Accuracy (Prism/Precise mode) 1, 2	±(3+2 ppm × D) mm	
Measuring interval <sup>3</sup>	Precise mode	Normal mode
Prism mode	1.6 sec.	1.0 sec.
Least count (Precise mode/Normal mode)	1 mm (0.002 ft)	10 mm (0.02 ft)
<b>ANGLE MEASUREMENT</b>		
ISO 17123-3 accuracy (horizontal and vertical)	2"/0.6 mgon	5"/1.5 mgon
Circle diameter	88 mm (3.46 in)	
Horizontal angle	2"/Diametrical	5"/Single
Vertical angle	2"/Single	5"/Single
Minimum increment	Degree: 1/5/10"; Gon: 0.2/1/2 mgon; MIL6400: 0.005/0.02/0.05 mil	
<b>TELESCOPE</b>		
Magnification	33× (21×/41× with optional eyepieces)	
Minimum focusing distance	1.5 m (4.92 ft)	
<b>TILT SENSOR – TYPE</b>	Single-axis	
<b>COMMUNICATIONS – PORTS</b>	1 x serial (RS-232C)	
<b>WIRELESS COMMUNICATIONS</b>	Integrated Bluetooth	
<b>POWER</b>		
Clip-on rechargeable battery system	4x AA Ni-MH Battery	
Operating time <sup>4</sup>	approx. 15 hours (distance/angle measurement every 30 s.)	
<b>GENERAL SPECIFICATIONS</b>		
Level vials – Sensitivity of Plate level vial	30"/2 mm	
Sensitivity of Circular level vial	10"/2 mm	
Optical plummet		
Magnification	3×	
Focusing range	0.5 m (1.6 ft) to ∞	
Display	2"/Dual face, graphic LCD (128x64 pixel) 5"/Single face, graphic LCD (128 × 64 pixel)	
Point memory	25,000 records	
Dimensions (L x H x W)	168 mm × 173 mm × 335 mm (6.6 in × 6.8 in × 13.2 in)	
Weight		
Main unit (without battery)	4.8 kg (10.6 lb)	
Battery / Carry case	0.2 kg (0.4 lb) / 2.4 kg (5.3 lb)	
<b>ENVIRONMENTAL</b>		
Ambient temperature range	–20 °C to +50 °C (–4 °F to +122 °F)	
Atmospheric correction		
Temperature range	–40 °C to +55 °C (–40 °F to +131 °F)	
Barometric pressure	400 mmHg to 999 mmHg / 533 hPa to 1,332 hPa / 15.8 inHg to 39.3 inHg	
Dust and water protection	IP55	
<b>CERTIFICATION</b>	Class B Part 15 FCC certification, CE Mark approval, C-Tick.	

1 ±(3+3 ppm × D) mm –20 °C to –10 °C, +40 °C to +50 °C (–4 °F to +14 °F, +104 °F to +122 °F).

2 Standard deviation based on ISO 17123-4

3 Measuring time may vary depending on measuring distance and conditions.

4 Battery life specification at 25 °C (77 °F).

# Theodolites



- 5", 7" and 10" accuracies available
- Four models to choose from: NE-100/101/102/103
- Accurate, affordable, easy-to-use
- Ergonomic keypad
- One-touch function keys
- Large, backlit LCD display
- NE-100/101 models are water-resistant
- NE-102/103 models are waterproof

Designed for general construction and survey applications, Nikon NE-100 Series electronic digital theodolites give you accurate measurements in an affordable, easy-to-use platform. Each of the four models has an ergonomic keypad with one-touch keys for all functions, and a large backlit LCD display helps you work productively in the field.

You can instantly convert vertical angles to percent of grade, reset the horizontal angle to zero and lock the horizontal angle displayed on the LCD while you reposition or repeat a measurement. Angle accuracies differ between the models. The NE-100 offers 10" angle accuracy, while the NE-101 offers 7". Both the NE-102 and 103 models offer 5" angle accuracy with the NE-103 featuring vertical axis compensation. NE-102 and NE-103 also have a rear display and keypad.

NE-100 series theodolites feature five easy-to-use, one-touch keys: four to perform all common functions and a fifth to control the backlit LCD display and reticle illumination. NE-100 Series theodolites feature a built-in reticle illuminator and backlit LCD



display that allow you to work inside buildings as well as in tunnels, mines and other environments with little or no light. These features also come in handy during low light conditions outdoors, such as near dawn or dusk.

Unlike other instruments that require specialized batteries, NE-100 Series theodolites use six standard AA batteries. What's more, those batteries can power all models for about 48 hours. A three-level bar graph on the LCD screen displays remaining battery power.

With the Nikon NE-100 Series theodolite models, you can count on reliable performance in tough conditions. The NE-100/101 models have an IP54 rating, meaning water can splash on them from any direction with no harmful effects. Nikon NE-102/103 models have a higher rating of IP56 which means they're waterproof and dustproof.

SPECIFICATIONS		NE-100	NE-101	NE-102	NE-103
<b>ANGLE MEASUREMENT</b>					
Reading system		photoelectric incremental encoder	photoelectric incremental encoder	photoelectric incremental encoder	photoelectric incremental encoder
Circle diameter		79 mm (3.1 in)	79 mm (3.1 in)	79 mm (3.1 in)	79 mm (3.1 in)
Unit of reading		degree/gon/mil	degree/gon/mil	degree/gon/mil	degree/gon/mil
Minimum digital reading		10/20", 2/5 mgon, 0.05/0.1 mil	5/10", 1/2 mgon, 0.02/0.05 mil	5/10", 1/2 mgon, 0.02/0.05 mil	5/10", 1/2 mgon, 0.02/0.05 mil
Accuracy (DIN 18723)		10"/3 mgon	7"/2 mgon	5"/1 mgon	5"/1 mgon
<b>TELESCOPE</b>					
Effective diameter of objective		45 mm (1.8 in)	45 mm (1.8 in)	45 mm (1.8 in)	45 mm (1.8 in)
Magnification		30x	30x	30x	30x
Image		erect	erect	erect	erect
Field of view		1°20' (2.3 m @ 100 m/2.3 ft @ 100 ft)	1°20' (2.3 m @ 100 m/2.3 ft @ 100 ft)	1°20' (2.3 m @ 100 m/2.3 ft @ 100 ft)	1°20' (2.3 m @ 100 m/2.3 ft @ 100 ft)
Minimum focusing distance		0.7 m (2.3 ft)	0.7 m (2.3 ft)	0.7 m (2.3 ft)	0.7 m (2.3 ft)
Stadia multiplier constant		100	100	100	100
Stadia additive constant		0	0	0	0
Reticle Illuminator		Yes	Yes	Yes	Yes
<b>AUTOMATIC VERTICAL COMPENSATOR</b>					
Type		—	—	—	liquid-electric detection
Working range		—	—	—	±3' (out-of-range warning provided)
<b>DISPLAY/KEYPAD</b>					
Front					
Type		dot-matrix LCD (20 characters x 2 lines)	dot-matrix LCD (20 characters x 2 lines)	dot-matrix LCD (20 characters x 2 lines)	dot-matrix LCD (20 characters x 2 lines)
Backlight		1-level illumination	1-level illumination	1-level illumination	1-level illumination
Keypad		5 buttons	5 buttons	5 buttons	5 buttons

# Theodolites

Rear Type	—	—	dot-matrix LCD (20 characters x 2 lines)	dot-matrix LCD (20 characters x 2 lines)
Backlight	—	—	1-level illumination	1-level illumination
Keypad	—	—	5 buttons	5 buttons
<b>OPTICAL PLUMMET</b>				
Magnification	2.2x	2.2x	3x	3x
Field of view	5°	5°	5°	5°
Focus range	1.3 m (4.3 ft) fixed	1.3 m (4.3 ft) fixed	0.5 m (1.6 ft) to infinity	0.5 m (1.6 ft) to infinity
<b>LEVEL SENSITIVITY</b>				
Plate level	60"/2 mm	40"/2 mm	30"/2 mm	30"/2 mm
Circular level	10"/2 mm	10"/2 mm	10"/2 mm	10"/2 mm
<b>LEVELING BASE Type</b>	detachable	detachable	detachable	detachable
<b>AMBIENT TEMPERATURE RANGE</b>	-20 to 50 C (-4 TO 122 °F)	-20 to 50 C (-4 TO 122 °F)	-20 to 50 C (-4 TO 122 °F)	-20 to 50 C (-4 TO 122 °F)
<b>ENVIRONMENTAL RATING</b>	IP54	IP54	IP56	IP56
<b>DIMENSIONS Instrument</b>	153.5 x 172 x 334 mm (6.0 x 6.8 x 13.1 in)	153.5 x 172 x 334 mm (6.0 x 6.8 x 13.1 in)	153.5 x 172 x 334 mm (6.0 x 6.8 x 13.1 in)	153.5 x 172 x 334 mm (6.0 x 6.8 x 13.1 in)
<b>WEIGHT</b>				
Instrument	4.5 kg (9.8 lb)	4.5 kg (9.8 lb)	4.5 kg (9.9 lb)	4.6 kg (10.1 lb)
Carrying case	2.5 kg (5.4 lb)	2.5 kg (5.4 lb)	3.9 kg (8.6 lb)	3.9 kg (8.6 lb)
<b>POWER SUPPLY</b>				
Battery type	1.5V AA x 6	1.5V AA x 6	1.5V AAA x 6	1.5V AA x 6
Continuous operating time (at 68 °F/20 °C)	48 hours	48 hours	48 hours	48 hours

# Auto Levels



- Three models to choose from: AP-8/AC-2S/AX-2S
- Compact and lightweight
- Water-resistant construction
- Magnetic-dampened automatic compensator
- Horizontal tangent knobs with unlimited range
- Smooth, precise pointing and angular measurement
- Detachable eyepiece lens

AP/AC/AX Series auto levels are easy to set up and use. All three models can attach to both flat- and spherical-head tripods. Horizontal tangent knobs with an unlimited range ensure smooth, precise pointing and angular measurement, and you can operate them with either hand. The detachable eyepiece lens lets you use an optional diagonal eyepiece prism for working in extremely close or steep quarters.

Nikon optics effectively let in more light, so you see brighter, sharper images—especially in low-light conditions. The AP-8 model auto level features a 28x high-magnification telescope, the AC-2S has a 24x telescope, and the AX-2S has a 20x telescope. All three models offer minimum focusing down to 2.46 ft (0.75 m) for better performance in tight spots or on steep slopes.

# AP/AC/AX Series

<b>SPECIFICATIONS</b>	<b>AP-8</b>	<b>AC-25</b>	<b>AX-25</b>
<b>TELESCOPE</b>			
Tube length	190 mm (7.5 in)	190 mm (7.5 in)	190 mm (7.5 in)
Image	erect	erect	erect
Magnification	28x	24x	20x
Effective diameter of objective lens	30 mm (1.2 in)	30 mm (1.2 in)	30 mm (1.2 in)
Field of view	1°30' (2.6 ft @ 100 ft)	1°30' (2.6 ft @ 100 ft)	1°30' (2.6 ft @ 100 ft)
Minimum focusing distance	.75 m (2.46 ft)	.75 m (2.46 ft)	.75 m (2.46 ft)
Stadia ratio	1:100	1:100	1:100
Stadia additive constant:	0	0	0
<b>LEVEL VIAL SENSITIVITY</b>			
Circular level	10'/2 mm	10'/2 mm	10'/2 mm
<b>STANDARD DEVIATION</b> (1 km double-run leveling)			
Without micrometer	±1.5 mm	±2.0 mm	±2.5 mm
<b>AUTOMATIC COMPENSATOR</b>			
Type	wire-hung, magnetic damper	wire-hung, magnetic damper	wire-hung, magnetic damper
Compensation range	±16'	±16'	±16'
Setting accuracy	±0.5"	±0.5"	±0.5"
<b>HORIZONTAL CIRCLE</b>			
Diameter of circle	110 mm (4.3 in)	110 mm (4.3 in)	110 mm (4.3 in)
Minimum increment	1°/1 g	1°/1 g	1°/1 g
Reading estimation	0.1°/0.1g	0.1°/0.1g	0.1°/0.1g
<b>DIMENSIONS</b>			
Instrument (L x H x W)	190 x 128 x 123 mm (7.5 x 5.0 x 4.8 in)	190 x 128 x 123 mm (7.5 x 5.0 x 4.8 in)	190 x 128 x 123 mm (7.5 x 5.0 x 4.8 in)
Carrying case	292 x 170 x 163 mm (11.5 x 6.7 x 6.4 in)	292 x 170 x 163 mm (11.5 x 6.7 x 6.4 in)	292 x 170 x 163 mm (11.5 x 6.7 x 6.4 in)
<b>WEIGHT</b>			
Instrument	1.25 kg (2.8 lb)	1.25 kg (2.8 lb)	1.25 kg (2.8 lb)
Carrying case	1.2 kg (2.7 lb)	1.2 kg (2.7 lb)	1.2 kg (2.7 lb)

# Auto Levels



- Four models to choose from: AS-2/2C, AE7/7C
- Compact and lightweight
- Waterproof construction
- Automatic air-dampened compensator
- Standard optical sight lens
- Powerful telescopes with improved minimum focusing
- Carrying case, adjusting pins and lens cap included

Nikon AS/AE Series auto levels feature waterproof, nitrogen-filled, high-power telescopes that help you make precise measurements even in the wettest conditions. They feature a unique automatic air-dampened compensator to prevent magnetic interference, and an endless horizontal fine drive to ensure smooth, precise pointing and angular measurement. AS/AE Series auto levels are easy to set up and easy-to-use. All four models can attach to both flat- and spherical-head tripods, and the standard optical sight lens helps you find your target quickly, easily and accurately. A mirror with a pentaprism lets you view the circular bubble as an erect image during setup and sighting.

# AS/AE Series

<b>SPECIFICATIONS</b>	<b>AS-2/2C</b>	<b>AE-7/7C</b>
<b>TELESCOPE</b>		
Tube length	259 mm (10.2 in)	220 mm (8.7 in)
Image	erect	erect
Magnification	34x	30x
Effective diameter of objective lens	45 mm (1.8 in)	40 mm (1.6 in)
Field of view	1°20' (2.3 ft @ 100 ft)	1°30' (2.6 ft @ 100 ft)
Minimum focusing distance	1.0 m (3.28 ft)	0.3 m (0.98 ft)
Stadia ratio	1:100	1:100
Stadia additive constant:	0	0
Resolution power	2.5"	3"
<b>LEVEL VIAL SENSITIVITY</b>		
Circular level	10'/2 mm	10'/2 mm
<b>STANDARD DEVIATION</b> (1 km double-run leveling)		
Without micrometer	±0.8 mm	±1.0 mm
With micrometer	±0.4 mm	±0.45 mm
<b>AUTOMATIC COMPENSATOR</b>		
Type	wire-hung, air damper	wire-hung, air damper
Compensation range	±12'	±16'
Setting accuracy	±0.3"	±0.35"
<b>HORIZONTAL CIRCLE</b>		
Diameter of circle	80 mm (3.2 in) (AS-2C only)	118 mm (4.6 in) (AE-7C only)
Minimum increment	1°/1 g	1°/1 g
Reading estimation:	1'/1 cg	0.1°/0.1 g
<b>DIMENSIONS</b>		
Instrument (L x H x W)	259 x 136 x 142 mm (10.2 x 5.4 x 5.6 in)	220 x 136 x 142 mm (8.7 x 5.4 x 5.6 in)
Carrying case	379 x 195 x 197 mm (14.9 x 7.7 x 7.8 in)	379 x 195 x 197 mm (14.9 x 7.7 x 7.8 in)
<b>WEIGHT</b>		
Instrument	1.8 kg (4.0 lb)/1.9 kg (4.2 lb)	1.7 kg (3.7 lb)
Carrying case	1.8 kg (4.0 lb)/1.9 kg (4.2 lb)	1.8 kg (4.0 lb)/1.9 kg (4.2 lb)



## TOTAL STATION ACCESSORIES

### DATA TRANSFER CABLES

RS232C: Cable TS to PC (9 pin)

Connects Nikon Total Station serial port to PC serial port

RS232C: Cable TS to PC(USB)

Connects Nikon Total Station serial port to USB port

Mini USB Cable

Connects Nikon Total Station USB port to PC USB port

### POWER SUPPLIES

Nivo C, M & M+ Series, NPL-322 & NPL-322+

On-board Li Ion battery

Dual battery charger

AC adapter for battery charger

DTM-322 & DTM-322+

(4) NiMH AA batteries

4 x AA battery charger

Input cord and adapter

### PRISMS AND EYEPIECES

Diagonal Eyepiece Prism (Erect Image)

For telescope (black body)

Solar Filter (52 mm) Objective

Low-Power Eyepiece Lens

Mag. 18x with Nivo C, M, M+ & NPL-322/322+

Mag. 21x with DTM-322/322+

High-Power Eyepiece Lens

Mag. 36x with Nivo C, M, M+ & NPL-322/322+

Mag. 41x with DTM-322/322+

Lens Cap (Plastic snap-on)

### INSTRUMENT CASES

Plastic case for Nivo C, M and M+ Series  
endless tangent models

Plastic case for Nivo C, M and M+ Series  
tangent clamp models

Plastic case for NPL-322/322+ & DTM-322/322+



## TRIPODS, RANGE POLES, AND TRIBRACHS

### TRIPODS

Wooden, Heavy Duty, Round Head Tripod  
Aluminum, Heavy Duty, Quick Clamp Tripod  
Advanced Fiberglass Composite, Heavy Duty  
Tri-Max Tripod

### RANGE POLES

2 m Aluminum Range Pole  
2 m Carbon Fiber Range Pole  
2 m Carbon Fiber Snap-Lock Range Pole  
2.6 m Telescopic Range Pole

### TRIBRACHS

**Tribrach Type W30**  
White, no optical plummet, circular level  
**Tribrach Type W30b**  
Black, no optical plummet, circular level  
**Tribrach Type W31**  
White, optical plummet, circular level  
**Tribrach Type W31b**  
Black, optical plummet, circular level

## ELECTRONIC THEODOLITE ACCESSORIES

### PRISMS AND EYEPIECES

**Diagonal Eyepiece Prism (Erect Image)**  
Used for steep sighting, plumbing and when using the instrument in confined areas  
For Main Telescope of Theodolite NE-100 Series

**Low-Power Eyepiece Lens**  
18X when attached to NE-100 Series

**High-Power Eyepiece Lens**  
36x when attached to NE-100 Series  
Theodolite

**Tubular Compass Adapter for NE-100 Series**  
To mount HEC21001 Tubular Compass onto NE-100 Series  
Carrying Handle

### INSTRUMENT CASES

Plastic Instrument Case for  
NE-100/101/102/103

## AUTOMATIC LEVEL ACCESSORIES

### PRISMS AND EYEPIECES

**Optical Micrometer in Meters for AS/AE Series**  
**Plane Parallel Micrometer for AS-2/AS/AE-7 Series** with leatherette case

**Diagonal Eyepiece Prism (Erect Image)**

**Low-Power Eyepiece Lens**  
22x when attached to AS-2/AS-2C  
19x when attached to AE-7/AE-7C  
17x when attached to AC-2S

**High-Power Eyepiece Lens**  
43x when attached to AS-2/AS-2C  
37x when attached to AE-7/AE-7C  
35x when attached to AC-2S





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