





Total Stations Nivo C Series

- Survey Pro software on-board
- Windows CE touch-screen
- High quality Nikon optics
- 1", 2", 3" and 5" angle accuracies
- 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 next generation total station is the Nivo™ Total Station, available in two exciting lines: the Nivo C Series and Nivo M Series.

Both of the Nivo series 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 are supported with 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. Measure precisely to objects up to up to 500 m (1,640 ft) reflectorless measurements.*

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

The Nivo C Series is designed with a feature-packed Windows® CE touch-screen interface. Field application software functions are supported by the world class Spectra Precision® Survey Pro™ field software for all your surveying and construction measurement needs.

All Nivo C Series solutions are designed with high productivity in mind, including a dual face display for efficient high precision angle and distance measurements. Work all day long with endless power using hot swappable batteries, you'll never need to worry about interrupting your workflow to change a battery again.

To assist you with the multitude of data needs of the 21st century, the Nivo C Series includes:

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

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

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* Objects with high reflectivity (90%).



Total Stations Nivo M Series

- High quality Nikon optics
- Intuitive powerful software
- Fast, accurate EDM
- Prism and reflectorless measurements
- Easy-to-use keypad
- Hot swappable batteries
- Compact, rugged, and lightweight
- Cable-free Bluetooth
- Optional laser plummet

Nikon's next generation total station is Nivo and it is available in two exciting lines: the Nivo C Series and Nivo M Series.

Both of the Nivo series 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 are supported with 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. Measure precisely to objects up to 500 m (1,640 ft) reflectorless measurements.*

Nivo M Series models support Bluetooth communications to external data collectors. In addition all models come standard with a traditional optical plummet which can be upgraded to a laser plummet. The Nivo^{2M} features dual displays.

* Objects with high reflectivity (90%).

** Low temperature model available.

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 time 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.

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	NIVO 1.C. / NIVO 2.C		NIVO 1.C. / NIVO 5.C	
SPECIFICATIONS				
ANGLE MEASUREMENT				
Minimum increment	NIVO 1.C 0.5" 0.1 mgon 1°/0.3 mgon	NIVO 2.C 1" 0.1 mgon 2°/0.6 mgon	NIVO 3.C 1" 0.1 mgon 3°/1 mgon	NIVO 5.C 1" 0.1 mgon 5°/1.5 mgon
ISO 17123-3 accuracy (horizontal and vertical)	Degree: Gon:	Degree: Gon:	Degree: Gon:	Degree: Gon:
TELESCOPE				
Magnification	30× (18×/36× with optional eyepieces)	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)	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)	1.5 m (4.9 ft)
Reticle illumination	Yes	Yes	Yes	Yes
DISTANCE MEASUREMENT				
Reflectorless mode (KGC 189%)	Normal ⁶	Normal ⁶	Normal ⁶	Normal ⁶
Reflectorless mode (KGC 90%)	250 m (820 ft)	200 m (656 ft)	200 m (656 ft)	200 m (656 ft)
With single prism (Good conditions)	400 m (1,312 ft)	250 m (820 ft)	300 m (984 ft)	300 m (984 ft)
Accuracy (Prism/Precise mode) ^{1,2}	3,000 m (9,843 ft)	5,000 m (16,404 ft)	5,000 m (16,404 ft)	5,000 m (16,404 ft)
Accuracy (Reflectorless/Precise mode) ^{1,2}	(2+2 ppm × D) mm (3+2 ppm × D) mm	(2+2 ppm × D) mm (3+2 ppm × D) mm	(2+2 ppm × D) mm (3+2 ppm × D) mm	(2+2 ppm × D) mm (3+2 ppm × D) mm
MEASURING INTERVAL³				
Prism mode	1.6 sec.	1.6 sec.	1.5 sec.	1.5 sec.
Precise mode	0.8 sec.	0.8 sec.	0.8 sec.	0.8 sec.
Normal mode	2.1 sec.	2.1 sec.	1.8 sec.	1.8 sec.
Reflectorless mode	1.2 sec.	1.2 sec.	1.0 sec.	1.0 sec.
Normal mode				
Precise mode	1 mm (0.002 ft)	1 mm (0.002 ft)	1 mm (0.002 ft)	1 mm (0.002 ft)
Normal mode	10 mm (0.02 ft)	10 mm (0.02 ft)	10 mm (0.02 ft)	10 mm (0.02 ft)
ENVIRONMENTAL SPECIFICATIONS				
OPERATING TEMPERATURE RANGE	-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)	-20 °C to +50 °C (-4 °F to +122 °F)
ATMOSPHERIC CORRECTION				
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)	-40 °C to +60 °C (-40 °F to +140 °F)
Barometric pressure	400 mmHg to 999 mmHg 533 hPa to 1,332 hPa	400 mmHg to 999 mmHg 533 hPa to 1,332 hPa	400 mmHg to 999 mmHg 533 hPa to 1,332 hPa	400 mmHg to 999 mmHg 533 hPa to 1,332 hPa
TILT SENSOR	15.8 inHg to 39.3 inHg	15.8 inHg to 39.3 inHg	15.8 inHg to 39.3 inHg	15.8 inHg to 39.3 inHg
LEVEL WIALS	Dual axis	Dual axis	Dual axis	Dual axis
Sensitivity of Circular level vial	10/2 mm	10/2 mm	10/2 mm	10/2 mm
OPTICAL PLUMMET MAGNIFICATION	3×	3×	3×	3×
DISPLAY				
Face 1	QVGA, 16 bit color, TFT LCD, backlit (320x240 pixel)	QVGA, 16 bit color, TFT LCD, backlit (320x240 pixel)	QVGA, 16 bit color, TFT LCD, backlit (320x240 pixel)	QVGA, 16 bit color, TFT LCD, backlit (320x240 pixel)
Face 2	Backlit, graphic LCD (128x64 pixel)	Backlit, graphic LCD (128x64 pixel)	Backlit, graphic LCD (128x64 pixel)	Backlit, graphic LCD (128x64 pixel)
MEMORY	128 MB RAM, 128 MB Flash memory	128 MB RAM, 128 MB Flash memory	128 MB RAM, 128 MB Flash memory	128 MB RAM, 128 MB Flash memory
DIMENSIONS (W × D × H)	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)	149 mm x 145 mm x 306 mm (5.8 in x 5.7 in x 12.0 in)
WEIGHT (APPROX.)				
Main unit (without batteries)	3.9 kg (8.6 lb)	3.9 kg (8.6 lb)	3.8 kg (8.4 lb)	3.8 kg (8.4 lb)
Battery	0.1 kg (0.02 lb)	0.1 kg (0.02 lb)	0.1 kg (0.02 lb)	0.1 kg (0.02 lb)
Carrying case	2.3 kg (5.1 lb)	2.3 kg (5.1 lb)	2.3 kg (5.1 lb)	2.3 kg (5.1 lb)
INTERNAL LITHIUM BATTERY (x2)				
Operating time ⁴	approx. 12 hours (continuous distance/angle measurement) approx. 26 hours (distance/angle measurement every 30 seconds)	approx. 12 hours (continuous distance/angle measurement) approx. 26 hours (distance/angle measurement every 30 seconds)	approx. 16 hours (distance/angle measurement every 30 seconds)	approx. 16 hours (distance/angle measurement every 30 seconds)
Output voltage	3.8 V DC	3.8 V DC	3.8 V DC	3.8 V DC
Recharging time	4 hours	4 hours	4 hours	4 hours
COMMUNICATION PORTS	1 x serial (RS-232C), 2 x USB (host and client)	1 x serial (RS-232C), 2 x USB (host and client)	1 x serial (RS-232C), 2 x USB (host and client)	1 x serial (RS-232C), 2 x USB (host and client)
WIRELESS COMMUNICATIONS	Integrated Bluetooth	Integrated Bluetooth	Integrated Bluetooth	Integrated Bluetooth

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. 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)

SPECIFICATIONS	NIVO 2-M	NIVO 3-M	NIVO 5-M
ANGLE MEASUREMENT Minimum increment	Degree: 1/5/10" Gon: 0.2/1/2 mgon MIL 6400: 0.005/0.02/0.05 mil 2"/0.6 mgon	Degree: 1/5/10" Gon: 0.2/1/2 mgon MIL 6400: 0.005/0.02/0.05 mil 3"/1 mgon	Degree: 1/5/10" Gon: 0.2/1/2 mgon MIL 6400: 0.005/0.02/0.05 mil 5"/1.5 mgon
ISO 17123-3 accuracy (horizontal and vertical)	30× (18×/36× with optional eyepieces) 40 mm (1.6 in) 1.5 m (4.9 ft)	30× (18×/36× with optional eyepieces) 45 mm (1.8 in) 1.5 m (4.9 ft)	30× (18×/36× with optional eyepieces) 45 mm (1.8 in) 1.5 m (4.9 ft)
TELESCOPE Effective diameter of objective Minimum focusing distance Reticle illumination	30× (18×/36× with optional eyepieces) 40 mm (1.6 in) 1.5 m (4.9 ft)	30× (18×/36× with optional eyepieces) 45 mm (1.8 in) 1.5 m (4.9 ft)	30× (18×/36× with optional eyepieces) 45 mm (1.8 in) 1.5 m (4.9 ft)
DISTANCE MEASUREMENT Reflectorless mode (KGC 1896) Reflectorless mode (KGC 9096) With single prism (Good conditions) Accuracy (Prism/Precise mode) ^{1,2} Accuracy (Reflectorless/Precise mode) ^{1,2}	Good ⁵ 350 m (1,148 ft) 500 m (1,640 ft) 3,000 m (9,843 ft) (2+2 ppm x D) mm (3+2 ppm x D) mm	Good ⁵ 250 m (820 ft) 400 m (1,312 ft) 5,000 m (16,404 ft) (2+2 ppm x D) mm (3+2 ppm x D) mm	Good ⁵ 250 m (820 ft) 400 m (1,312 ft) 5,000 m (16,404 ft) (2+2 ppm x D) mm (3+2 ppm x D) mm
MEASURING INTERVAL³ Prism mode Precise mode Normal mode Reflectorless mode Normal mode Least count	1.6 sec 0.8 sec 2.1 sec 1.2 sec 1 mm (0.002 ft) 10 mm (0.02 ft)	1.5 sec 0.8 sec 1.8 sec 1.0 sec 1 mm (0.002 ft) 10 mm (0.02 ft)	1.5 sec 0.8 sec 1.8 sec 1.0 sec 1 mm (0.002 ft) 10 mm (0.02 ft)
ENVIRONMENTAL SPECIFICATIONS OPERATING TEMPERATURE RANGE ATMOSPHERIC CORRECTION Temperature range	-20°C to +50°C (-4°F to +122°F) -40°C to +60°C (-40°F to +140°F)	-20°C to +50°C (-4°F to +122°F) -40°C to +60°C (-40°F to +140°F)	-20°C to +50°C (-4°F to +122°F) -40°C to +60°C (-40°F to +140°F)
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
TILT SENSOR	Dual axis	Dual axis	Dual axis
LEVEL VIALS Sensitivity of circular level vial	10/2 mm	10/2 mm	10/2 mm
OPTICAL PLUMB LINE Magnification	3×	3×	3×
DISPLAY	Dual, backlit, graphic LCD (128×64 pixel)	Single-side, backlit, graphic LCD (128×64 pixel)	Single-side, backlit, graphic LCD (128×64 pixel)
POINT MEMORY	10,000 records	10,000 records	10,000 records
DIMENSIONS (W x D x H)	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)
WEIGHT (APPROX.) Main unit (without batteries) Battery Carrying case	3.8 kg (8.4 lb) 0.1 kg (0.2 lb) 2.3 kg (5.1 lb)	3.6 kg (8.0 lb) 0.1 kg (0.2 lb) 2.3 kg (5.1 lb)	3.6 kg (8.0 lb) 0.1 kg (0.2 lb) 2.3 kg (5.1 lb)
INTERNAL LITHIUM BATTERY (x2) Operating time ⁴	approx. 19 hours (continuous distance/angle measurement) approx. 57 hours (distance/angle measurement every 30 seconds) approx. 62 hours (continuous angle measurement)	approx. 10 hours (continuous distance/angle measurement) approx. 26 hours (distance/angle measurement every 30 seconds) approx. 31 hours (continuous angle measurement)	approx. 10 hours (continuous distance/angle measurement) approx. 26 hours (distance/angle measurement every 30 seconds) approx. 31 hours (continuous angle measurement)
OUTPUT VOLTAGE Recharging time	3.8V DC 4 hours	3.8V DC 4 hours	3.8V DC 4 hours
COMMUNICATION PORTS WIRELESS COMMUNICATIONS	1 x serial (RS-232C) Integrated Bluetooth	1 x serial (RS-232C) Integrated Bluetooth	1 x serial (RS-232C) Integrated Bluetooth

1 G+3 ppm x 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. 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).
 * Low temperature mode available -30°C (-22°F).

Total Stations

DTM-322



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

Nikon introduces the DTM-322 Total Station that 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 3" 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	
DISTANCE MEASUREMENT		
Range with Nikon special prisms	5 m to 100 m (16.4 ft to 328 ft)	
Good conditions (No haze, visibility over 40 km (25 miles))	2,300 m (7,540 ft)	
With reflector sheet (5x5 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)	
Normal conditions (Ordinary haze, visibility approx. 20 km (12.4 miles))	5 m to 100 m (16.4 ft to 328 ft)	
With reflector sheet (5x5 cm)	2,000 m (6,560 ft)	
With single prism (6.25 cm (2.5 in))	2,000 m (6,560 ft)	
Accuracy (Prism/Pedestal mode) ^{1,2}	±(3+2 ppm × D) mm	
Measuring interval ³	Prism mode	Normal mode
Prism mode	1.6 sec	1.0 sec
Least count (Prism mode/Normal mode)	1mm (0.002 ft)	10 mm (0.02 ft)
ANGLE MEASUREMENT		
ISO 1712-3 accuracy (horizontal and vertical)	3"/10 mgon	5"/15 mgon
Circle diameter	88 mm (3.46 in)	
Horizontal angle	3" (Diameterical) 5" (Single)	
Vertical angle	3" (Single) 5" (Single)	
Minimum increment	Degree: 15"/10; Gon: 0.2/12 mgon; MIL: 4/10; 0.005/0.02/0.05 mil	
TELESCOPE		
Magnification	33x (21x/41x with optional eyepiece)	
Minimum focusing distance	15 m (49.2 ft)	
TILT SENSOR – TYPE	Single-axis	
COMMUNICATIONS – PORTS	1x serial (RS-232C)	
POWER		
On-in recharging cable battery system	4x AA Ni-MH Battery	
Operating time ⁴	approx. 15 hours (continuous distance/angle measurement every 30 s)	
GENERAL SPECIFICATIONS		
Level vial – Sensitivity of Plate level vial	30"/2 mm	
Sensitivity of Circular level vial	10"/2 mm	
Optical plummet		
Magnification	3x	
Focusing range	0.5m (1.6 ft) to ∞	
Display	3" Dual face, graphic LCD (128x46 pixel) 5" Single face, graphic LCD (128 x 64 pixel)	
Point memory	10,000 records	
Dimensions (L x H x W)	168 mm x 173 mm x 335 mm (6.6 in x 6.8 in x 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)	
ENVIRONMENTAL		
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 / 53.3 hPa to 1,332 hPa 15.8 inHg to 39.3 inHg	
Dust and water protection	IP55	
CERTIFICATION	Class B Part 15 FCC certification, CE Mark approval, C-Tick	

1. ±(3+2 ppm × D) mm -20 °C to -10 °C, +40 °C to +50 °C (-4 °F to +4 °F, +104 °F to +122 °F)

2. Standard deviation based on ISO 1712-4

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

4. Battery life depends on use at 25 °C (77 °F)

Theodolites



- 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
- 5", 7" and 10" accuracies available

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 many directions with no harmful effects. Nikon NE-102/103 models have a higher rating of IP56 which means they're waterproof and dustproof.

Nikon Theodolites

SPECIFICATIONS		NE-100	NE-101	NE-102	NE-103
ANGLE MEASUREMENT					
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"/3 mgon	5"/1 mgon	5"/1 mgon
TELESCOPE					
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 erect	30x erect	30x erect	30x erect
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
AUTOMATIC VERTICAL COMPENSATOR					
Type		—	—	—	liquid—electric detection
Working range		—	—	—	±3° (out-of-range warning provided)
DISPLAY/KEYPAD					
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
Rear					
Type		—	—	—	—
Backlight		—	—	—	—
Keypad		—	—	—	—
OPTICAL PLUMMET					
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
LEVEL SENSITIVITY					
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
LEVELING BASE type					
		detachable	detachable	detachable	detachable
AMBIENT TEMPERATURE RANGE					
		—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)
DIMENSIONS instrument					
		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)
WEIGHT					
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)
POWER SUPPLY					
Battery type		1.5V AA x 6	1.5V AA x 6	1.5V AA x 6	1.5V AA x 6
Continuous operating time (at 68 °F/20 °C)		48 hours	48 hours	48 hours	48 hours