

SOKKIA

NET 1200

3-D STATION

3-D Coordinate Measuring System **MONMOS**

 **Bluetooth®**

**High-Performance 3-D Station
with *Bluetooth®*
Wireless Technology***

*Bluetooth® is a factory option.

*MONMOS offers 0.1mm resolution
measurement for industrial and
construction applications.*



Ultra-high performance 3-D station **NET1200**

MONMOS features an ultra-high performance EDM and reliable absolute encoders. Now with *Bluetooth*[®]* wireless technology for cable-free control, NET1200 sets the new standard in precision, speed, operability, portability and environmental protection.

*Bluetooth[®] is a factory option.

Ultra-High Performance EDM Broadens the Boundaries of 3-D Measurement

NET1200's EDM features state of the art digital signal processing. Sophisticated optical technologies offer the best performance in precision, range and speed.

Higher Precision and Longer Range with Reflective Sheet Targets

NET1200 distance accuracy is $\pm(0.6+2\text{ppm}\times D)\text{mm}$ which is equal to $\pm 0.8\text{mm}$ (0.03in.) at 100m (330ft.) and $\pm 1\text{mm}$ (0.04in.) at 200m (650ft.)*. A measuring range of 200m (650ft.) enables 3-D measurement of larger objects from farther away, reducing the need to relocate and improving overall 3-D measurement accuracy. *Using a 50x50mm target.

Reflectorless Measurement

Net1200 uses a visible ultra-narrow laser beam to measure points where targets cannot be attached with pinpoint accuracy. The measuring range is 40m (130ft.) for white surfaces (90% reflective) with $\pm(1+2\text{ppm}\times D)\text{mm}$ accuracy, equal to 1.08mm (0.04in.) at 40m (130ft.)*. *Brightness 5,000lx or less

Long Range Measurement with Prisms

A CPS12 high precision prism provides $\pm(1+2\text{ppm}\times D)\text{mm}$ accuracy up to 350m (1,140ft.). Measurement up to 2,000m (6,500ft.) is possible using SOKKIA's AP surveying prism.

High-Speed Measurement

Distance is measured every 0.9 seconds (initial 4.8 s) with reflective sheets or reflectorless, further improving operating efficiency.

Angle Accuracy: 1 arc-second (0.3mgon)

NET1200 features SOKKIA's original absolute encoders that realize one arc-second (0.3mgon) accuracy equal to 0.5mm (0.02in.) at 100m (330ft.) and 1mm (0.04in.) at 200m (650ft.). Accurate angle measurement results in high overall 3-D coordinate accuracy.

Ideal Telescope

The NET1200's telescope provides a view unrivaled in both brightness and sharpness. Its compact size allows operators wearing hardhats to perform sighting with greater comfort and ease. Telescope magnification can be increased to 40x with the optional EL7 eyepiece.

Target Illumination and Laser Pointer for Easy Aiming

These two functions greatly facilitate operation in the field.

Target Illumination

A white LED is built into the top of the telescope unit. This LED illuminates the direction in which the telescope is aimed allowing the operator to easily sight a target at long range even in poor light. Selectable modes and brightness settings allow the operator to adjust to any lighting condition.



Laser Pointer

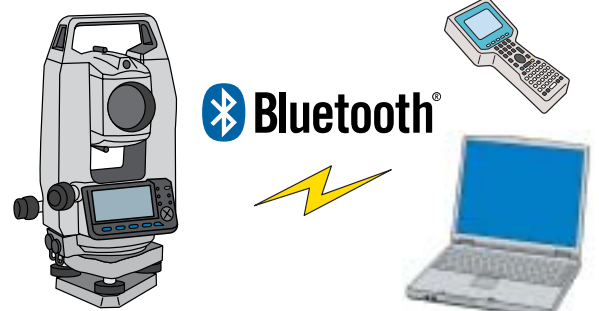
The EDM beam also serves as a convenient laser pointer. This function boosts the efficiency of setting-out tasks under considerably low light conditions such as inside a factory building.

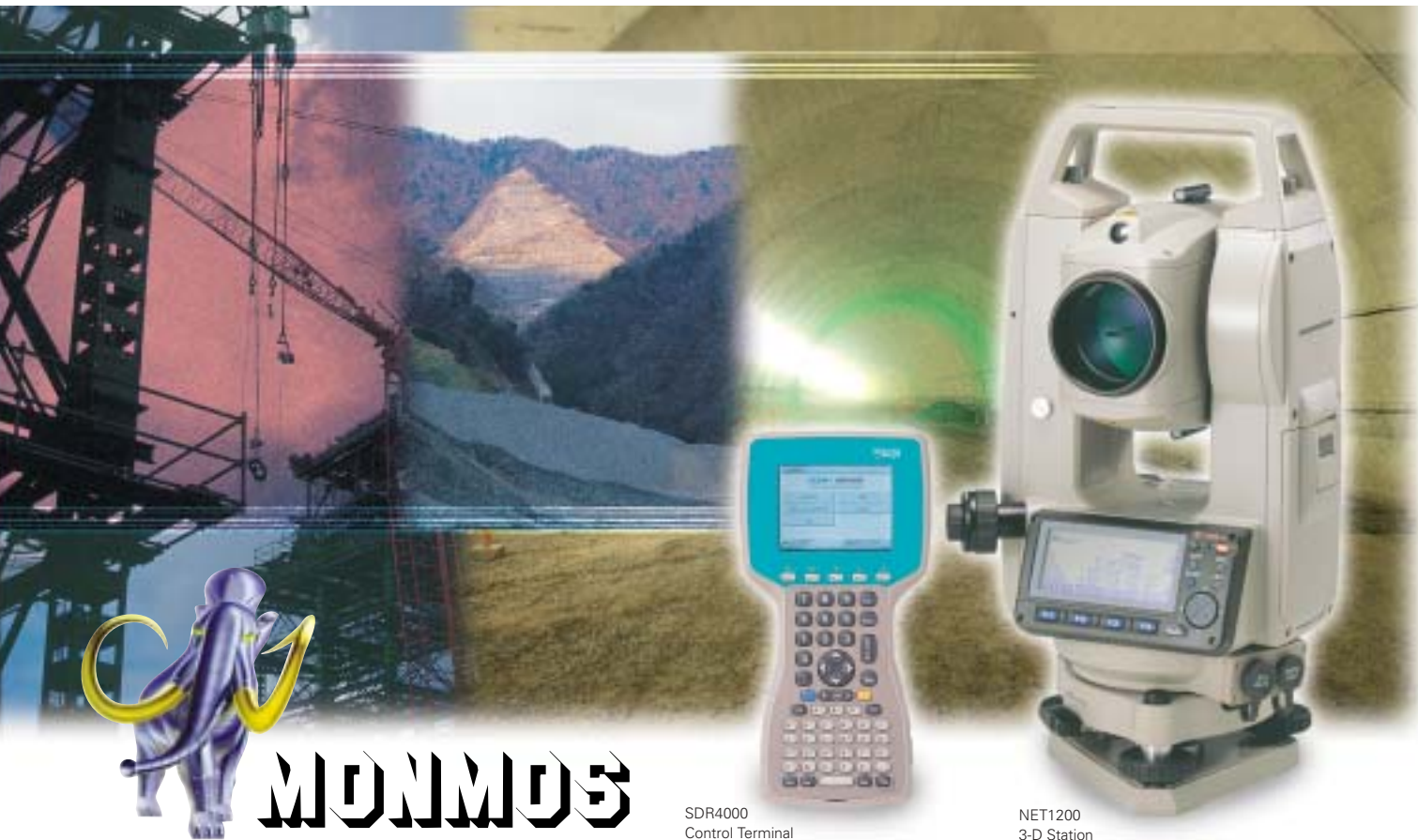


Wireless Communication Using *Bluetooth*[®]*

NET1200 is *Bluetooth*[®] enabled for wireless connection to PCs and control terminals. The stress of dealing with cables has become a thing of the past.

*Bluetooth[®] is a factory option. Please consult your local SOKKIA representative for option availability.





MONMOS

SDR4000
Control Terminal

NET1200
3-D Station

Weatherproof Compact Body

IP 66 Thanks to its superior IP66 construction, the NET1200 is reliable in the rain, on dusty sites, and in other harsh weather working environments. Its compact body weighs in at only 5.5kg (12.1lb.), making NET1200 more portable than ever.

The International Electrotechnical Commission standard IEC 60529 describes a system for classifying degrees of protection provided by enclosures of electrical equipment. The IP Code consists of the letters IP and two numerals. Larger numbers represent greater levels of protection.

Protection against ingress of solid foreign objects
Highest level: 6
7 levels: 0 to 6.
X: unspecified.



Protection against ingress of water
Highest level: 8
9 levels: 0 to 8.
X: unspecified.

Long-life Detachable Battery

One detachable Li-ion battery supplies power for approx. 6 hours of continuous operation*. Two batteries, which provide enough power for one full day of work, are supplied as standard. Recharging time is under 2 hours per battery with the quick charger included as a standard accessory.

*With Target illumination and laser pointer functions switched OFF.

Perform any Operation via Control Terminal

Connected to the NET1200, all operations with the exception of target sighting can be performed using a control terminal. Use a **Bluetooth**-enabled control terminal to create a hassle-free wireless connection*. Once the object has been sighted, the operator does not even have to touch the NET1200, ensuring the highest possible precision.

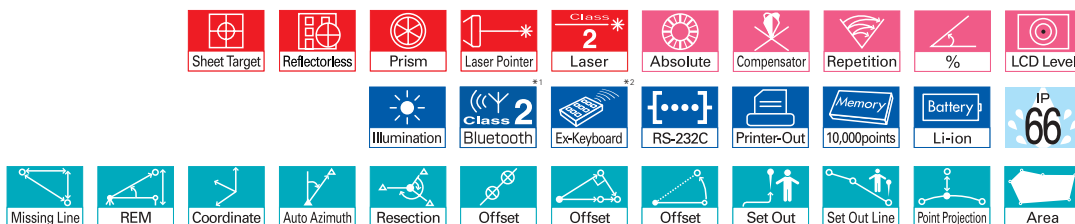
***Bluetooth**® is a factory option for NET1200.

Data Comparison Measurement

Design data and actual measurement values are easily compared. Set the coordinate system by measuring two to six random points referencing structural design data allowing actual measurement values to be compared to the design data. Even objects that are in difficult locations can be measured with the design data coordinate system allowing the component shapes of large structures such as ships and bridges to be effectively measured.

Positioning (Setting-Out)

Positioning (Setting-Out) creates a coordinate set by measuring two to six random points referencing structural design data. Once the coordinate set has been created, the location of points from the design data is guided by inducing dX, dY, dZ from the design data and measured data. This is an effective measurement procedure for determining the positions of objects such as pillars at building sites.



*1 Factory Option *2 Option

NET 1200 SPECIFICATIONS

Telescope		Fully transiting, coaxial sighting and distance measurement optics. Length: 171mm (6.7in.), Objective aperture: 45mm (1.8in.) (EDM: 48mm (1.9in.)), Magnification: 30x, Resolving power: 2.5" or better, Image: Erect, Field of view: 1° 30' (26m/1,000m), Minimum focus: 1.3m (4.3ft.), Reticle illumination: 5 brightness levels
Angle measurement		Absolute encoder scanning. Both circles adopt diametrical detection.
Unit		Degree / Gon / Mil, selectable
Display resolutions		0.5" / 1", 0.1 / 0.2mgon, 0.002 / 0.005mil, selectable
Accuracy (ISO17123-3:2001)		1" / 0.3mgon / 0.005mil
Measuring time		0.5s or less, continuous
Measurement mode		H V
Clockwise / Counterclockwise, selectable. 0 set, Hold, Angle input, Repetition, available.		
Zenith 0 / Horizontal 0 / Horizontal 0± / Slope in %, selectable.		
Automatic dual-axis compensator		Dual-axis liquid tilt sensor. Working range: ±3' (±55mgon)
Collimation compensation		Yes / No selectable
Fine motion screws		Fine / Coarse 2-speed motion
Distance measurement		Modulated laser, phase comparison method with red laser diode
Measuring range*1 (slope distance)	With reflective sheet*2	1.3 to 200m (4.3 to 650ft.) (using 50 x 50mm sheet)
	Reflectorless*3	1.3 to 40m (4.3 to 130ft.)
	With CPS12 high precision prism	1.3 to 350m (4.3 to 1,140ft.)*4
	With 1 AP prism	1.3 to 2,000m (4.3 to 6,500ft.)*4
Unit		m / mm / ft. / in., selectable
Display resolutions	Fine mode	0.0001m / 0.1mm / 0.001ft. / 0.01in., selectable
	Tracking mode	0.001m / 1mm / 0.01ft. / 0.1in., selectable
Accuracy (D=measuring distance, unit: mm)	With reflective sheet*2	±(0.6 + 2ppm x D)mm (using RT1A)
	Reflectorless*3	±(1 + 2ppm x D)mm
	With CPS12 high precision prism	±(1 + 2ppm x D)mm (4 to 350m), ±(5 + 2ppm x D)mm (1.3 to 4m)
	With 1 AP prism	±(2 + 2ppm x D)mm (4 to 2,000m), ±(5 + 2ppm x D)mm (1.3 to 4m)
Measuring time	Fine mode	With reflective sheet or reflectorless: Every 0.9s (initial 4.8s), With prism: every 1s (initial 5.2s)
	Tracking mode	Every 0.3s (initial 1.6s)
Measuring mode		Fine (single / repeat / average), Tracking, selectable
Atmospheric correction / Prism constant correction		Temperature, pressure, ppm input available / -99.9 to +99.9mm (0.1mm steps), 0mm fixed in reflectorless mode
Refraction & earth-curvature correction		Yes (K=0.142 / 0.20) / No, selectable
Laser output*5		Reflective sheet / prism mode: Class 1 equivalent (max. 0.22mW) Reflectorless mode: Class 2 (max. 0.99mW)
Data storage and transfer		
Internal memory		Approx. 10,000 points
Scale factor setting		0.5 to 2.0
Bluetooth®*6 (Ver.1.2 compatible)	Powerclass	Class 2
	Usable range	Approx. 2m (usable range may vary with different operating conditions)
Calendar / clock		Provided
Interface		Asynchronous serial, RS-232C compatible, baud rate: 1,200 to 38,400 bps
Printer output		Centronics compatible (w/optional DOC46 printer cable)
General		
Target illumination		White LED, Blink / On / Off, selectable, Brightness selection available
Laser pointer function		On / Off, selectable
Display		Alphanumeric/graphic dot matrix LCD, 192 x 80 dots, w/backlight, w/contrast adjustment, on both faces
Keyboard		4 soft keys and 11 keys on both faces
SF14 Wireless keyboard		Optional
Sensitivity of levels		Plate level: 20"/2mm, Circular level: 10"/2mm, Graphic LCD: 3"/outer circle
Optical plummet		Image: Erect, Magnification: 7x, Minimum focus: 0.3m (0.98ft.)
Tribrach		Detachable
Dust and water resistance / Operating temperature		Conforms to IP66 (IEC 60529:2001) / -10 to +50°C (+14 to +122°F)
Instrument height / Size with handle and battery		236mm (9.3in.) from tribrach bottom / W 165 x D 171 x H 341 mm (W 6.5 x D 6.7 x H 13.5 in.)
Weight with handle and battery		Approx. 5.5kg (12.1 lb.)
Power supply		7.2V DC
BDC46A detachable battery		Li-ion rechargeable battery, 2 BDC46A are included as standard accessories.
Continuous use per battery		Approx. 6 hours (single measurement every 30s at 25°C (77°F)), (target illumination and laser pointer off)
Recharging time per battery		Less than 2 hours with CDC68
BDC57 external Ni-MH battery (Option)		Continuous use approx. 22.5 hours (single measurement every 30s at 25°C (77°F)), (target illumination and laser pointer off)
Automatic power cut-off		Auto-off time is selectable from 30, 15, 10, 5 minutes or none.

*1 Average conditions: Slight haze, visibility about 20km (12 miles), sunny periods, weak scintillation.

*2 When facing the target

*3 With white side of a KODAK Gray Card (90% reflective), brightness 5,000lx or less. Range and/or accuracy may be varied according to measuring objects, observation situations and environmental conditions.

*4 Good conditions: No haze, visibility about 40km (25 miles), overcast, no scintillation.

*5 IEC 60825-1:2001 / FDA CDRH 21 CFR Part1040.10 and 1040.11 (Complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No. 50, dated July 26, 2001.)

*6 Bluetooth® is a factory option.

Standard accessories

BDC46A Li-ion rechargeable battery x 2, CDC68 quick charger with EDC113A/113B/113C power cable, Lens hood, Lens cap, Tool kit, Wiping cloth, Operator's manual, Carrying case, Shoulder strap

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