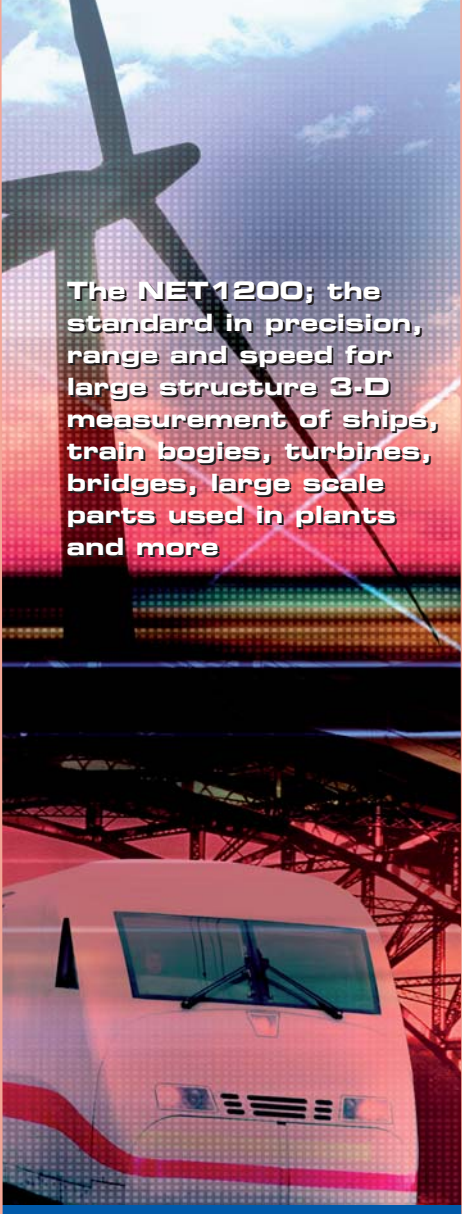


SOKKIA

NET 1200

INDUSTRIAL 3-D STATION

MONMOS



The NET 1200; the standard in precision, range and speed for large structure 3-D measurement of ships, train bogies, turbines, bridges, large scale parts used in plants and more



Ultra-high performance 3-D station NET1200

NET1200 incorporates an ultra-high performance EDM and reliable absolute encoders. Sokkia has established the standard in precision, range and speed.

Ultra-high performance EDM broadens the boundaries of 3-D measurement

NET1200's EDM features state-of-the-art digital signal processing and sophisticated optical technologies. It set the standard in all fields: precision, range and speed.

Higher precision and longer range with reflective sheet targets

The distance accuracy of the NET1200 is $\pm(0.6 + 2\text{ppm} \times D)\text{mm}$, the typical distance accuracy is 0.2-0.3mm. By using a 50x50mm target, the measuring range has been doubled to 200m (650ft.), which enables 3-D measurement of larger objects. Thanks to this new EDM, the need to constantly relocate the instrument point is reduced, and therefore total precision of 3-D measurement is improved.

Reflectorless measurement capability

NET1200 incorporates the reflectorless measurement function to measure objects without using any target. Even points where a target cannot be manually affixed can still be measured. The visible laser beam is ultranarrow allowing the NET1200 to measure with pinpoint accuracy those points whose complex or convoluted situation had previously hampered accurate measurement. The measuring range is 40m (130ft.) with white surfaces (90% reflective) and accuracy is exceptionally high at $\pm(1 + 2\text{ppm} \times D)\text{mm}$ - equal to 1.08mm (0.04in.) at 40m (130ft.).

High-speed measurement

Distance is measured every 0.9 seconds (initial 4.8s) with a reflective sheet or reflectorless.

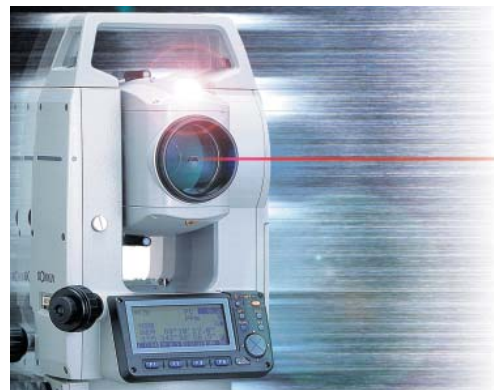
Angle accuracy: 1 arc-second (0.3 mgon)

NET1200 features one-arc second (0.3mgon) accuracy that is equal to 0.5mm (0.02in.) at 100m (330ft.) and 1mm (0.04in.) at 200m (650ft.). Accurate angle measurement remarkably improves total 3-D coordinate accuracy.

Laser-pointer and target illumination functions for easy aiming

These two functions greatly facilitate operation in the field.

Target illumination A white LED is built into the upper part of the telescope section. 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. You can select "on" or "blinking", and the brightness can be adjusted to suit the environmental conditions.

Laser-pointer function

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

Ideal telescope

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

Weather-proof compact body

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

Long-life detachable battery

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



GLM, Sokkia's industrial business partner

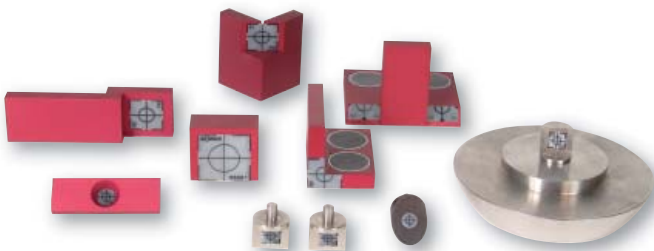
GLM, our Germany based official worldwide industrial business partner is specialized in complete tailor-made systems to meet the requirements of the customer, offering both complete optical 3-D solutions and software. Being active for over a decade GLM has gained experience in many industrial applications.

Sokkia's superior accuracy measurement 3-D stations in combination with GLM's 3-DIM software and range of reflective targets offer a solution for almost every industrial measuring job.

3-DIM Observer

The new data logger for Sokkia 3-D stations.

A robust hardware and software solution, fit to withstand the most rugged environments with a quality already proven in practical global applications, is the foundation for a new generation of data loggers featuring many advantages compared to all predecessors. 3-DIM Observer brings software solutions for many industrial applications and is developed to save time in measuring objects. Using the user-defined measurement routines reduces the measuring work to a minimum.



3-DIM PC-Basic

The tool for preparation, measurement and documentation.

The 3-DIM PC-Basic package is especially developed for industrial surveying applications. For shipbuilders, railway engineers, bridge builders and many others, 3-DIM is an essential tool for preparation and documentation of dimensional control tasks. Since the first release 3-DIM has been continuously improved, considering new requirements of customers and supported by the experience of GLM's industrial surveying engineers.



A complete range of reflective target adapters

To make measuring with Sokkia's MONMOS systems easier and more accurate GLM developed a complete range of reflective target adapters. This range of adapters is very economic in comparison to the use of prisms; prisms break easily and are much more expensive. The range includes all kind of adapters including shipbuilder's target adapters, spherical adapters, target adapters for front and rear faces, etc. Of course any other adapter can be developed and manufactured on request.

| Benefits of Monmos with 3-DIM Observer | |
|--|---|
| • | A complete solution |
| • | Cost reduction for industrial processes |
| • | 3-DIM's user-defined working templates make measuring easier than ever |
| • | A range of reflective targets for measuring almost everything |
| • | Continuous improvement and development of software and hardware |
| • | Over a decade of market experience |

| Market | Applications |
|------------------------------|--|
| Railway industry | Periodic dimension-tolerance control measurements |
| Shipbuilding industry | Control measurement of design and final coordinates of prefab ship compartments |
| Wind energy industry | Control measurement on roundness, flanges and erection of wind towers |
| Paper industry | Alignment measurements of pressing cylinders and rollers |
| Steel industry | Roundness of pipes, measurement of flanges |

NET 1200 SPECIFICATIONS

| | | |
|--|--|---|
| Telescope | | Fully transiting, coaxial sighting and distance measurement optics. Length: 171 mm (6.7 in.), Objective aperture: 45 mm (1.8 in.), (EDM: 48 mm (1.9 in.)), Magnification: 30x, Resolving power: 2.5" or better, Image: Erect, Field of view: 1°30' (26 m/1,000 m), Minimum focus: 1.3 m (4.3 ft.), Reticle illumination: 5 brightness levels |
| Angle measurement | | Photoelectrical absolute encoder scanning. Both circles adopt diametrical detection. |
| Unit (selectable) | H / V | Degree / Gon / Mil |
| Display resolutions (selectable) | | 0.5" / 1", 0.1 / 0.2 mgon, 0.002 / 0.005 mil |
| Accuracy (ISO12857-2:1997) | | 1" / 0.3 mgon / 0.005 mil |
| Measuring time | | 0.5 s or less, continuous |
| Measurement mode | H / V | Clockwise / Counterclockwise, selectable. 0 set, Hold, Angle input, Repetition, available. |
| Automatic dual-axis compensator | | Zenith 0 / Horizontal 0 / Horizontal 0± / Slope in %, selectable. |
| Collimation compensation | | Dual-axis liquid tilt sensor. Working range: ± 3' (± 55 mgon) |
| Fine motion screws | | On / Off selectable |
| Distance measurement | | Fine / Coarse 2-speed motion |
| Measuring range (slope distance) | With reflective sheet ¹ Reflectorless ² | Modulated laser, phase comparison method with red laser diode, coaxial optics 1.3 to 200 m (4.3 to 650 ft.) (using 50x50 mm sheet) 1.3 to 40 m (4.3 to 130 ft.) |
| Display resolutions (selectable) | With CPS12 prism With 1 AP prism | 1.3 to 350 m (4.3 to 1,140 ft.) (under good conditions ³) 1.3 to 2,000 m (4.3 to 6,500 ft.) (under good conditions ³) |
| Accuracy (D=measuring distance, unit: mm) | Fine mode Tracking mode With reflective sheet ¹ Reflectorless ² | 0.0001 m / 0.1 mm / 0.001 ft. / 0.01 in. 0.001 m / 1 mm / 0.01 ft. / 0.1 in. ± (0.6 + 2 ppm x D) mm ± (1 + 2 ppm x D) mm |
| Measuring time | With CPS12 prism With 1 AP prism Fine mode Tracking mode | ± (1 + 2 ppm x D) mm (4 to 350 m), ± (5 + 2 ppm x D) mm (1.3 to 4 m) ± (2 + 2 ppm x D) mm (4 to 2,000 m), ± (5 + 2 ppm x D) mm (1.3 to 4 m) With reflective sheet or reflectorless: Every 0.9 s (initial 4.8 s), With prism: every 1s (initial 5.2 s) Every 0.3 s (initial 1.6 s) |
| Measuring mode (selectable) | | Fine (single / repeat / average), Tracking |
| Atmospheric correction / Prism constant correction | | Temperature, pressure, ppm input available / -99.9 to +99.9 mm (0.1 mm steps), 0 fixed in reflectorless mode |
| Refraction & earth-curvature correction | | On (K=0.142 / 0.20) / Off, selectable |
| Laser output | | Reflective sheet / prism mode: Class 1 equivalent (max. 0.22 mW) Reflectorless mode: Class 2 (max. 0.99 mW) |
| Data storage and transfer | | |
| Internal memory | | Approx. 10,000 points |
| Scale factor setting | | 0.5 to 2.0 |
| Interface | | Asynchronous serial, RS-232C compatible, baud rate: 1,200 to 38,400 bps |
| Printer output | | Centronics compatible (w/optional DOC46 printer cable) |
| General | | |
| Laser-pointer function | | On / Off, selectable |
| Target illumination | | White LED, Blink / On / Off, selectable, Brightness selection available |
| 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"/2 mm, Circular level: 10"/2 mm, Graphic LCD: 3"/outer circle |
| Optical plummet | | Image: Erect, Magnification: 7x, Minimum focus: 0.3 m (0.98 ft.) |
| Tribrach | | Detachable |
| Dust and water resistance / Operating temperature | | Conforms to IP66 (IEC 60529:1989) / -10 to +50 °C (+14 to +122 °F) |
| Instrument height / Size with handle and battery | | 236 mm (9.3 in.) 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 | Continuous use per battery Recharging time per battery | Li-ion rechargeable battery, 2 BDC46A are included as standard accessories. About 6 hours (single measurement every 30 seconds at 25°C (77 °F)), (laser-pointer and target illumination off) Less than 2 hours with CDC68 |
| BDC57 external Ni-Cd battery (Option) | | Continuous use about 22.5 hours (single measurement every 30 seconds at 25 °C (77 °F)), (laser-pointer and target illumination off) |
| Automatic power cut-off | | Auto-off time is selectable from 30, 15, 10, 5 minutes or none. |

1. When facing the target
2. 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.
3. No haze, visibility about 40km (25 miles), overcast, no scintillation.

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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SOKKIA's line-up of surveying instruments includes everything from Global Positioning Systems (GPS), software, electronic total stations and distance meters, to electronic and optical theodolites, levels and laser products. Whether you're involved in construction, building a highway, bridge or tunnel, or charting a nationwide map, SOKKIA surveying instruments and systems always provide the best solution.

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