



THE CONNECTED CONSTRUCTION SITE: TRIMBLE BUILDING CONSTRUCTION POSITIONING SOLUTIONS

CONNECTING YOUR OFFICE WITH THE JOB SITE: BUILD IT ONCE. BUILD IT RIGHT. BUILD IT NOW.

THE CONNECTED CONSTRUCTION SITE: LAYOUT DATA WHERE AND WHEN YOU NEED IT

Trimble Building Construction Positioning Solutions have given contractors more control of their job sites... allowing significant improvements in construction accuracy and productivity. Now, Trimble introduces the next level in construction productivity... the Connected Construction Site.

By connecting your office and job site through wireless data transfer, design updates can flow between field and office in real time. Jobs can be created and maintained by someone in the main office and emailed to various sites. Daily layout progress can be monitored. Every question can be answered instantly. Every decision is an informed one. And, every change is immediately known.

Combined with the Trimble portfolio of building construction positioning solutions, the bottom line is even greater control... and maximized productivity.

SUPERIOR LAYOUT CONTROL

Whether your projects are commercial or residential, the Trimble portfolio of powerful, easy-to-use layout tools let you take control and perform your layout tasks more efficiently:

- LM80 Layout Manager
- SPS710 Robotic Total Station
- SPS610 Robotic Total Station
- TS515 Mechanical Total Station
- TS415 Mechanical Total Station

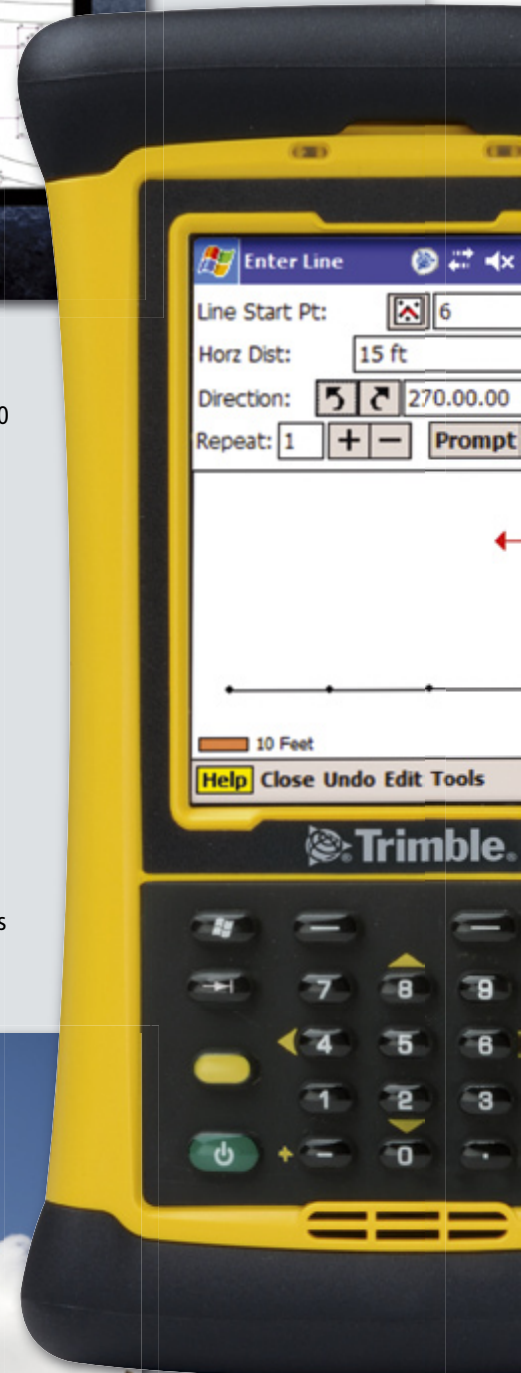
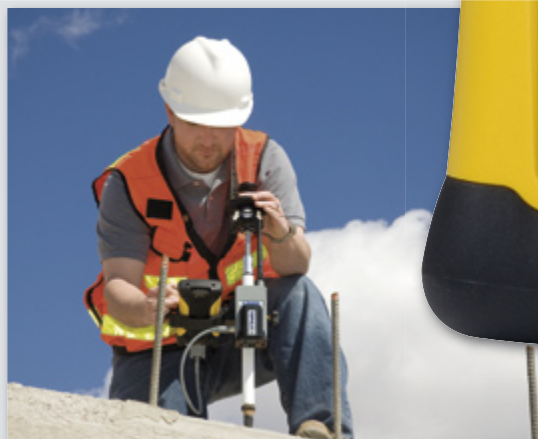


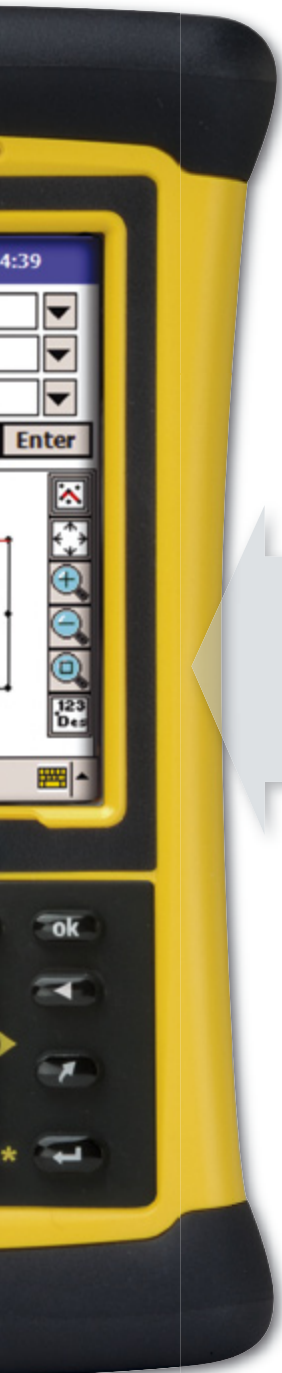
DESIGN

Easily enter your blueprint into the LM80 Layout Manager or LM80 Desktop to build a digital replica of your project. Import CAD linework to generate a visual reference for your layout tasks.

LAYOUT

The LM80 Layout Manager graphically guides you through the setup of your total station. It also navigates you to your critical building locations and creates as-built records of all layout points. You can also use the LM80 to inspect the location of building elements after they are installed.





CONTROL POINTS AND OFFSET HUBS

Lay out control points and offset hubs faster and more cost-effectively. Work on your schedule.



CHECKING OR TYING INTO PROPERTY BOUNDARIES

Forget about tapes or calling a third party when tying into boundaries. Use the LM80 to make minor adjustments to the building position as needed without waiting or paying subcontractor fees.



EXCAVATION LINES

Lay out all lines from one reference location with no string lines, transits or theodolites. You don't need to set up on each control line, making Trimble Building Construction Positioning Solutions much faster and easier to use.



CONCRETE FORMS AND ANCHOR BOLTS

Lay out complex concrete forms or anchor bolts from any location by referencing any two known points. The application software makes this process simple for even novice users, making layout straightforward and much more productive.



AS-BUILT CHECKS

Check the work of others and create documentation for change orders when necessary. Direct Reflex capabilities make as-built checks a one-person job.



SET CONTROL LINES FOR SUBCONTRACTORS

Lay out control lines for subcontractors faster and more accurately than with tapes and theodolites. It's easy to work around obstructions so there's no need to set up on each line.



TOPOGRAPHICAL MEASUREMENTS

Easily collect topographical data and import it into third-party software for elevation and cut and fill analysis.

TOTAL STATIONS AT WORK

Get the job done fast and under budget! Compared to traditional methods, Trimble products quickly help you measure and position. Setup is easier than ever—just position the total station where you can easily see the layout area, measure two known points and start to lay out all excavation lines, column lines, concrete forms and anchor bolts from a single location. Plus, the LM80's graphical display makes creating and staking the layout points simple.

Specific construction layout workflows let you solve any layout and measuring challenges on your job site. And because Trimble products are designed for a contractor's needs, the logical, easy-to-follow workflow maximizes the range of applications...and the payback.

Trimble construction layout products feature compensated angle measurements and exceptionally accurate distance measurement so you can focus on getting the job done without worrying about accuracy.

Having the ability to perform work that you may have previously outsourced eliminates your dependency on others and makes Trimble products your best choice. And with tools designed for tough job site conditions, you'll minimize downtime and repair costs. Trimble construction layout product features deliver outstanding cost savings and productivity.





ROBOTIC OPERATION

The SPS710 and SPS610 Robotic Total Stations which track you and continuously update measurement information at the pole increase productivity by 80% over a conventional, mechanical system.



CONVENTIONAL OPERATION

The TS515 and TS415 total stations use a mechanical system that helps you carry out layout tasks efficiently. This two-person system increases productivity and provides consistent and accurate measurements over long distances, slopes and elevational changes.



REFLECTORLESS OPERATION

The SPS710, SPS610 and TS515 total stations feature reflectorless distance and measure capability for a one-person operation. Because a prism is no longer needed, hard-to-reach or dangerous places can be safely and easily measured.



SET UP ANYWHERE— TOTAL STATION AND LM80

Just set up at a convenient location and:

Measure the first known point

Measure the second known point

Begin your layout

CONSTRUCTION TOTAL STATIONS

TRIMBLE SPS710 AND SPS610 ROBOTIC TOTAL STATIONS

The SPS710 and SPS610 Robotic Total Stations are designed specifically for the construction market and offer easy, one-person operation for all your layout needs.



POWERFUL FEATURES FOR IMPROVED PRODUCTIVITY

MAXIMUM FLEXIBILITY AND COST SAVINGS

Application programs let you set up anywhere faster and perform all job site layout and measurement tasks yourself. You'll reduce your need for outsourcing and lower your costs.

EASY TO LEARN AND USE

Easy-to-follow user interface shortens the learning curve and speeds up operation. With minimal training, you'll find you don't need to be a surveyor to use these total stations.

ONE-PERSON OPERATION

Handle all layout tasks with only one person. Regardless of the complexity, your layout will be quick and accurate.



SPECTRA PRECISION TS515 AND TS415 MECHANICAL TOTAL STATIONS

The TS415 and TS515 Mechanical Total Stations feature large graphical display and alphanumeric keypad. Easy-to-learn onboard programs and full keypad let you quickly enter information or layout dimensions for efficient equipment use.



NO MISTAKES

With Trimble Building Construction Positioning Solutions, storage of all relevant data and built-in checks for all layout functions clearly display any errors to eliminate mistakes.

BUILT FOR THE JOB

Withstands harsh job site conditions and minimizes downtime due to repair.

EASY SETUPS

Application programs let you set up anywhere, without worrying about positioning over a control point.

TRIMBLE LM80 LAYOUT MANAGER

THE CORE OF THE CONNECTED SITE

The pocket-sized Trimble LM80 Layout Manager lets you carry, manage, work with, and lay out your job site blueprint, regardless of the method and instrument you use. This convenience, combined with the power of wireless communication for design updates, a common user interface and specialized software make the LM80 a revolutionary tool and the heart of The Connected Construction Site.

Using the LM80, you can:

- input blueprint dimensions to build a digital replica of the layout plan
- import LM80 Desktop and CAD data to automatically create your layout plan
- guide the layout of the major points, add string dimensions on the plan or calculate diagonals or angles
- send and receive design updates and progress data
- reduce your reliance on third-party specialists
- standardize on a common user interface that can be used with multiple positioning products and methods
- reduce training time

When combined with Trimble construction total stations, the LM80 significantly increases accuracy, reliability, and productivity.

With Microsoft® Windows Mobile® software, the LM80 can support the wide range of application software available today for Windows mobile devices. Built-in functions include: Microsoft Outlook® with contacts, email, calendar and tasks, as well as versions of Microsoft Word® and Microsoft Excel®.





LM80 DESKTOP SOFTWARE

The LM80 Desktop software is a valuable, easy-to-use tool for the LM80 or construction total station. Featuring an intuitive graphical user interface, the LM80 Desktop makes it easy to draw in your blueprint and create a digital replica of your project. You can also create points quickly from a digital CAD drawing and upload them to the LM80, as well as download CAD background file to your LM80 for easy reference on the job site. The LM80 Desktop can send a point file directly to a total station for onboard layout.

Standard View Controls: Common user interface features Pan, Zoom Window, Zoom In, Zoom Out controls designed for anyone with a limited understanding of CAD.

Multiple Point Selection: Individual, Window, Current View point selection techniques give you maximum control to select points.



COMPUTATIONS FROM THE DIGITAL BLUEPRINT

Quickly and easily add stringline dimensions, calculate areas, and diagonals with no errors.

LONG BATTERY LIFE

Operates for an entire workday on a single charge.

COMMON INTERFACE FOR MANY LAYOUT INSTRUMENTS

Lower learning curve, lower training costs, faster integration with your current instruments and methods.

RUGGED DESIGN

Withstands multiple drops of up to 1 meter (3 feet) and can be submerged in or cleaned with water. Designed with the harsh conditions of a construction job site in mind.



SPECIFICATIONS

PERFORMANCE SPECIFICATIONS	TRIMBLE SPS710 ROBOTIC TOTAL STATION	TRIMBLE SPS610 ROBOTIC TOTAL STATION	SPECTRA PRECISION TS515 MECHANICAL TOTAL STATION	SPECTRA PRECISION TS415 MECHANICAL TOTAL STATION
Type	Robotic, Autolock, Servo	Robotic, Autolock, Servo	Conventional mechanical	Conventional mechanical
ANGLE MEASUREMENT				
Accuracy (Standard deviation based on DIN 18723)	Horizontal: 3" (1.0mgon) Vertical: 2" (0.6 mgon)	Horizontal: 5" (1.5 mgon) Vertical: 5" (1.5 mgon)	5" (1.5 mgon)	5" (1.5 mgon)
Angle reading increments	Standard: 1" (0.1 mgon) Tracking: 1" (0.1 mgon)	Standard: 1" (0.1 mgon) Tracking: 1" (0.1 mgon)	1"/5"/10" (0.2 mgon/1 mgon/2 mgon)	1"/5"/10" (0.2 mgon/1 mgon/2 mgon)
Automatic level compensator	Dual-axis compensator	Dual-axis compensator	Dual-axis compensator	Dual-axis compensator
DISTANCE MEASUREMENT				
PRISM MODE				
Standard Measurement	± 3 mm + 2 ppm (0.01 ft + 2 ppm)	± 2 mm + 2 ppm (0.01 ft + 2 ppm)	± 3 mm + 2 ppm (0.01 ft + 2 ppm)	± 3 mm + 2 ppm (0.01 ft + 2 ppm)
Tracking	± 10 mm + 2 ppm (0.032 ft + 2 ppm)	± 5 mm + 2 ppm (0.16 ft + 2 ppm)	± 10 mm + 3 ppm (0.032 ft + 3 ppm)	± 10 mm + 2 ppm (0.032 ft + 2 ppm)
DIRECT REFLEX				
Standard Measurement	± 3 mm + 2 ppm (0.01 ft + 2 ppm)	± 3 mm + 3 ppm (0.1 ft + 3 ppm)	± 5 mm + 2 ppm (0.016 ft + 2 ppm)	N/A
Tracking	± 10 mm + 2 ppm (0.032 ft + 2 ppm)	± 10 mm + 3 ppm (0.032 ft + 3 ppm)	± 5 mm + 3 ppm (0.016 ft + 3 ppm)	N/A
Shortest Possible range	2.0 m (6.56 ft)	1.5 m (4.9 ft)	1.6 m (5.2 ft)	N/A
MEASURING TIME				
PRISM MODE				
Standard Measurement	1.2 s	2.0 s	1.3 s	1.6 s
Tracking	0.4 s	0.4 s	0.5 s	1.0 s
DIRECT REFLEX MODE				
Standard Measurement	1-5 s	3-15 s	1.6 s	N/A
Tracking	0.4 s	0.4 s	0.8 s	N/A
RANGE (AT STANDARD CLEAR*)				
MEASUREMENT TO PRISM				
1 Prism (50 mm dia.)	2,500 m (8,202 ft)	3,000 m (9,800 ft)	2,300 m (7,500 ft)	2,300 m (7,500 ft)
3 Prisms	3,500 m (11,482 ft)	5,000 m (16,400 ft)	3,000 m (9,800 ft)	3,000 m (9,800 ft)
RANGE (AT STANDARD CLEAR*)				
RANGE DIRECT REFLEX MEASUREMENT				
Kodak Gray (18% reflective)	>300 m (984 ft)	>120 m (394 ft)	>70 m (229 ft)	N/A
Kodak Gray (90% reflective)	>800 m (2625 ft)	>150 m (492 ft)	>100 m (328 ft)	N/A

GENERAL SPECIFICATIONS				
Optical Plummet	Optical 2.4x	Optical 2.4x	Optical 2x	Optical 2x
TELESCOPE				
Magnification	30x	30x	26x	26x
Aperture	40 mm (1.57 in)	40 mm (1.57 in)	40 mm (1.57 in)	45 mm (1.77 in)
Illuminated Crosshair	Variable (10 steps)	Variable (10 steps)	Yes	Yes
Display Screen	LM80	LM80	Backlighted graphical LCD 128 x 32 pixels	Backlighted graphical LCD 128 x 32 pixels
Operating Temperature	-20 °C to + 50 °C (-4 °F to + 122 °F)	-20 °C to +50 °C (-5 °F to +122 °F)	-20 °C to +50 °C (-5 °F to +122 °F)	-20 °C to +50 °C (-5 °F to +122 °F)
BATTERY				
Type	Rechargeable Li-Ion battery 11.1 V, 4.4 Ah	Rechargeable Li-Ion battery 11.1 V, 4.4 Ah	Internal NiMH battery pack, rechargeable	Internal NiMH battery pack, rechargeable
Charge time	6-hour charging time	6-hour charging time	2-hour charging time	2-hour charging time
Operating time	Approx. 6 hours on a single battery	Approx. 6 hours on a single battery	Approx. 27 hours	Approx. 27 hours
Class II laser product label	Yes	Yes	No	No

DATA TRANSFER AND RECORDING				
Memory Capacity	Via LM80	Via LM80	Recording; internal data memory 10,000 data lines, 32 jobs	Recording; internal data memory 10,000 data lines, 32 jobs
Data input/output	RS232	RS232	RS232	RS232
LM80 Interface	Required	Required	Optional	Optional

* Standard clear: No haze, overcast or moderate sunlight with very light heat shimmer. Range and accuracy are dependent on atmospheric conditions and background radiation.



SELECT THE RIGHT CONTROLLER TO MEET YOUR REQUIREMENTS.



TRIMBLE LM80 (RECON) SPECIFICATIONS
Microsoft Windows Mobile 6.0 software
400 MHz Xscale Processor
256 MB nonvolatile NAND Flash storage
Sunlight-readable color TFT display (240 x 320 pixel) with front light
Over 15 hours of continuous operation at 20 °C (68 °F)
Standard 9-pin RS-232 and USB ports
NiMH rechargeable battery pack
Weight: 490 g (17oz)
Operating temperature: -30 °C to +60 °C (-22 °F to +140 °F)
IP67 dust and waterproof (temporary immersion)
Survives multiple drops up to 1 m (3 ft)

TRIMBLE LM80 - WIRELESS (NOMAD) SPECIFICATIONS
Microsoft Windows Mobile 6.0 software
806 MHz Xscale Processor
1GB nonvolatile Flash storage
Sunlight-readable color TFT display (480x640) with LED backlight
Over 15 hours of continuous operation at 20 °C (68 °F)
Standard 9-pin RS-232 and USB ports
Li-Ion rechargeable battery pack
Weight: 596 g (21 oz)
Operating Temperature: -30 °C to +60 °C (-22 °F to +140 °F)
IP67 dust and waterproof (temporary immersion)
Survives multiple drops up to 1.22 m (4 ft)
1 x Compact Flash / 1 x Secure Digital slot expansion
Backlight numeric style keypad
Integrated Bluetooth 2.0
Integrated 802.11b/g wireless capabilities
Integrated GPS (SiRFStar III, WAAS capable)



Productivity is...

Site Prep

that is faster and more accurate with laser-guided machines.

Layout

tools that let you take control of your job site and reduce errors.

Level

with precision tools that can stand up to tough job site conditions.

Align

with portable tools that give you convenience, speed and accuracy.

Productivity is the key to profitability... getting the job done faster with less machine time and personnel. Only one company can support your productivity with the broadest, deepest and most advanced construction solutions in the industry. Productivity is... Trimble.

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