

System 1200 Newsletter – No. 51

TPS1200+ The Total Station with the Plus

INTRODUCTION

Pressure to complete surveys faster and faster continues to increase.

To satisfy this ever-growing demand, solutions are needed which not only meet, but exceed your requirements.

In a leading move, Leica Geosystems has added a Plus to their well-known Leica TPS1200 to create a new total station - the **Leica TPS1200+**. This outstanding instrument sets new standards in scalability, accuracy, productivity and ultimately, in productivity.



PLUS: RANGE AND ACCURACY

UP TO 1000M REFLECTORLESS RANGE!

TPS1200+ offers the choice between two reflectorless EDMs with different ranges – the new **PinPoint R400** and **PinPoint R1000**.

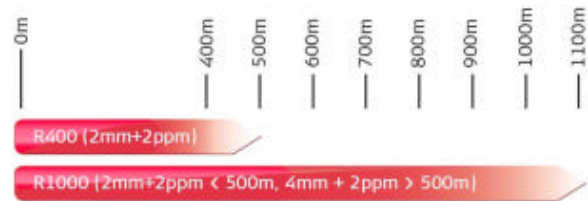
Both PinPoint EDMs use a new generation of Leica Geosystems' unique **System Analyser** technology. This technology determines the correct distance by using a new optical-mechanical hardware design and finely tuned signal processing software algorithms. But what does this actually mean for the user?

The new technology allows the **Pinpoint R400** EDM to measure targets (Kodak white, 90% reflective) which are more than 400 m away.

With **PinPoint R1000**, some customers are finding, that in good conditions they can even measure more than 1000 m without reflector!

With this extended range, there is less need for additional instrument setups to reach missing points. For surveying to difficult-to-measure surfaces, such as rocks, roads or dark objects the

PinPoint EDM has a very strong performance and can measure where other instruments cannot.



However, long range is not all that counts - **accuracy** and **reliability** are just as important as the range.

Besides the sensational increase in reflectorless measurement range, the new EDM system provides many other advantages such as a very high measurement quality and reliability even when measuring in rain, fog, dust or snow.

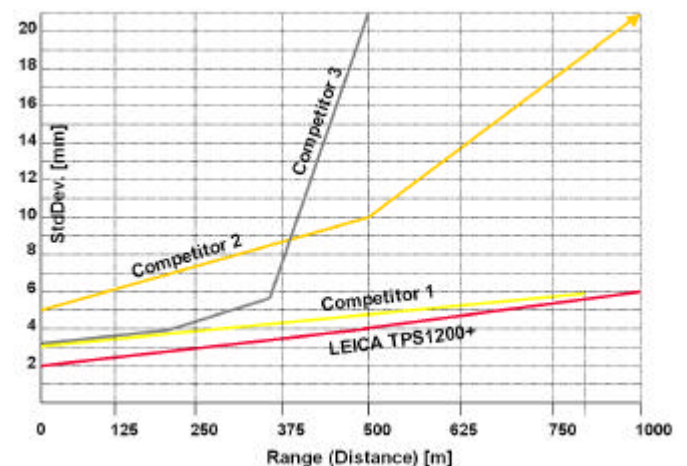
In addition, the measurement system helps to prevent errors, by detecting if there are multiple targets within the measurement beam.

Another advantage of the new optical / mechanical telescope design is that the stability of the laser beam has been improved - there is no longer a need to adjust the beam. The alignment of the beam is made prior to the instrument leaving the factory and stays stable throughout the life-time of the instrument.

HIGHEST ACCURACY REFLECTORLESS MEASUREMENTS – 2MM + 2PPM

Both PinPoint EDMs have a very high measurement performance accuracy: **2 mm + 2 ppm** up to 500 m range.

The diagram below shows the specified accuracy of PinPoint EDM measurements compared to that of the competition.



System 1200 Newsletter – No. 51

TPS1200+ The Total Station with the Plus

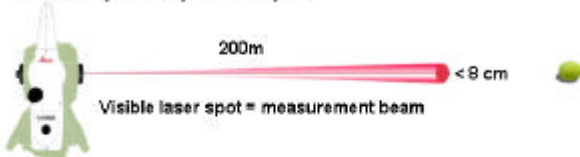
It can be seen that against all competition (yellow, orange and grey instruments) the highest accuracy is achieved for all reflectorless measurements – regardless of the surface and range.

When measuring directly to smaller objects or to building corners for example then another characteristic of the **TPS1200+** EDM becomes very important: the laser spot size.

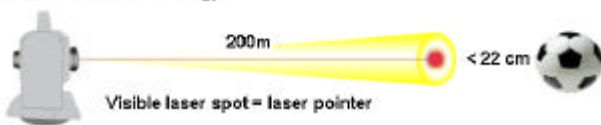
The laser spot of the PinPoint EDM is significantly smaller than those competitors using pulsed laser and phase shift technologies.

At a distance of 200 m Leica's TPS1200+ laser spot size can be compared to a tennis ball. The laser spot size of the orange competition is as big as a football!

Leica Geosystems System Analyser



Pulsed Laser Technology



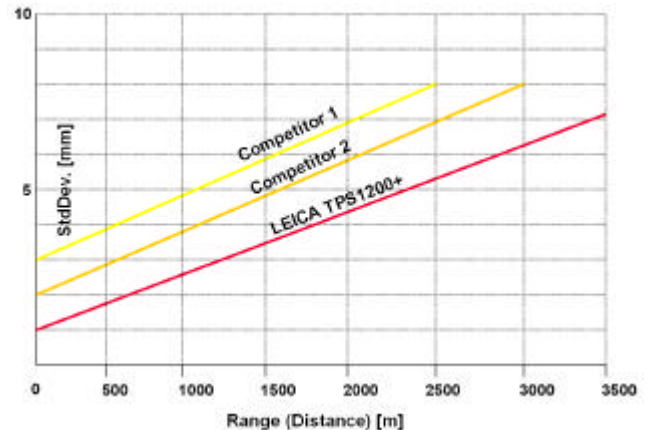
The narrow TPS1200+ laser dot allows measuring to small objects or building corners - quickly and directly with only one measurement.

In fact, competitors even recognize that they have a problem to measure accurately to such corners. There are special routines built into competitor's instruments, which allow the true corner of the building to be measured by measuring multiple points on the walls in order to correctly calculate the corner's coordinates! This obviously requires additional measurements and therefore more time.

HIGHEST ACCURACY FOR MEASUREMENTS TO REFLECTORS – 1MM + 1.5PPM

With the new telescope which is fitted to all Leica **TPS1200+** instruments, the highest accuracy of **1 mm + 1.5 ppm** of measurements to reflectors is achieved.

The diagram below compares the specified accuracy of the TPS1200+ instrument compared to those of Leica's yellow and orange competitors – who are only using pulsed laser or phase shift technology without System Analyser technique.



This high accuracy ensures the best results for measurements to reflectors, even over long ranges.

In summary, Leica is very proud to be able to say, that with its combination of range, accuracy, laser dot size and measurement time, the **TPS1200+** represents the market's best EDM – for measurements to both reflectors and other targets.

PLUS: SPEED AND PRODUCTIVITY

One person is all it takes to search, lock, and measure points – more efficient and faster than any other robotic station in the world.

The TPS1200+ works with an improved **Automatic Target Recognition** (ATR) sensor which tracks and follows the prism with higher accuracy and greater reliability than ever before.

The new hardware, consisting of highest quality optics and a high resolution CMOS camera, combined with improved software, ensures a superior angular accuracy of 1" and a base positioning accuracy of 1mm.

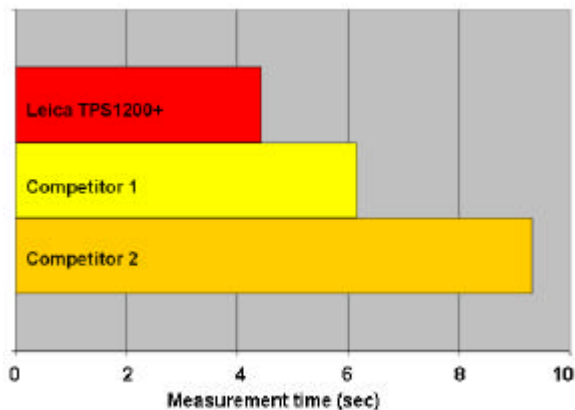
In addition, the instrument's firmware is further optimized to guarantee robust prism tracking at high speeds, in difficult conditions and/or close to the total station – initial market feedback is very positive.

If lock is interrupted, then the unmatched **PowerSearch** sensor quickly finds the prism automatically.

With regards to how long it takes to make an automated measurement then **TPS1200+** is the best in class as well. As in the diagram below, tests show the time spent for the measurement process, which is the combined ATR search, ATR measurement and EDM measurement is almost 50% to that of the competition.

System 1200 Newsletter – No. 51

TPS1200+ The Total Station with the Plus



If measuring even only 500 points per day this could mean wasting up to 30 min a day waiting for the instrument to complete the measurement.

So, do not be fooled by instruments that turn very quickly. It is the smart combination of motorization with reliable and fast measurement routines is what must be taken into account when deciding which instrument to buy.

With finely tuned and highly harmonised motorization and measurement performance of the **TPS1200+** you will measure more points and increase your productivity.

PLUS: FLEXIBILITY AND PRODUCTIVITY

The scalability and flexibility within System1200 lets you think big, start small, and grow fast.

With Leica's SmartStation, SmartRover and SmartPole options, you can add full GNSS functionality to your TPS1200+ Total Station whenever you want.

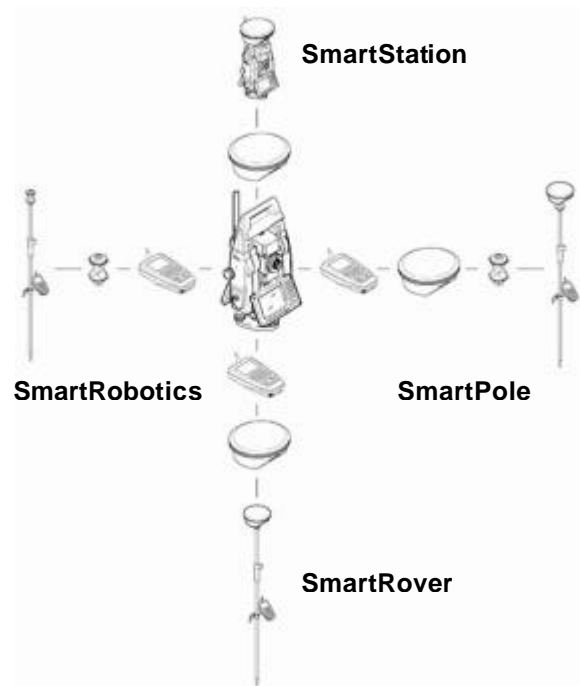
Customize your surveying equipment to your specific tasks, crews and budget. Combine TPS and GNSS in the most efficient way. Invest in flexibility whilst at the same time increase productivity.

SMARTROBOTICS

Remote control your TPS1200+ with a controller and 360° reflector on a pole. Benefit from the perfect one-person-surveying system by saving manpower.

SMARTSTATION

Add an interchangeable SmartAntenna to your TPS1200+ and you have a SmartStation. Benefit from a TPS1200+ setup without the need of control points, traverses and resections.



SMARTPOLE

Use the interchangeable SmartAntenna on a pole with controller and 360° reflector as SmartPole. Benefit from On-the-Fly setups and easily switch between TPS and GNSS survey.

SMARTROVER

Use the interchangeable SmartAntenna on a pole with controller as SmartRover. Benefit from double productivity by measuring parallel TPS and GNSS.

SUMMARY

It is easy to think that we are making a lot of marketing noise and hype about the new **Leica TPS1200+**.

But try it! Compare a TPS1200+ to an existing TPS1200 – you will see an increase in performance and productivity.

Compare it side by side to any other manufacturer's total stations – you will see a big difference in performance and productivity.

The Leica TPS1200+ will allow you to complete your surveys faster, more precisely, and with greater flexibility and reliability than ever before. Leica Geosystems TPS1200+ delivers a **Big Plus** to your business.