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surveyequipment.com

product catalogue

ABOUT
OPTI-CAL

HOW TO ORDER   HIRE & SERVICING   SUPPORT & TRAINING   DISTO®   LEVELS   LASERS   TPS   IMAGING   SMARTWORX   TPS MONITORING   CONTROLLERS   GPS & GNSS   PACIFIC CREST   ICON   SOFTWARE   CABLE AVOIDANCE   RAIL   LEICA ACCESSORIES   ANCILLARY ITEMS   INDEX

About Opti-cal

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About Opti-cal Survey Equipment Ltd

Opti-cal Survey Equipment Ltd is a Fully Accredited Authorised Leica Geosystems Distributor & Service Partner and supplies precision measurement technology to the surveying and engineering industries. The company sell, hire and service new and re-conditioned land survey and laser equipment and provide training and support.

Over the years Opti-cal Survey Equipment Ltd have invested heavily in workforce and is now home to some of the most experienced and highly-trained service technicians in the country. With the acquisition of Swift Surveying Services in 2007 the company doubled its workforce and opened a new service facility at its second office at Pease Pottage, Crawley, near Gatwick. This service centre also provides the latest test software and test equipment enabling an extremely high standard of work to be carried out. In July 2010 they further expanded by opening a third office and service facility near Milton Keynes.

The company's reputation has recently expanded into Europe and further afield which has further supported the company's growth.

VAT Registration No. GB891610027
Company Registration No. 06246981

About Leica Geosystems

With close to 200 years of pioneering solutions to measure the world, Leica Geosystems products and services are trusted by professionals worldwide to help them capture, analyse, and present spatial information. Leica Geosystems is best known for its broad array of products that capture accurately, model quickly, analyse easily, and visualize and present spatial information.

Those who use Leica products every day trust them for their dependability, the value they deliver, and the superior customer support. Based in Heerbrugg, Switzerland, Leica Geosystems is a global company with tens of thousands of customers supported by more than 3,500 employees in 28 countries and hundreds of partners located in more than 120 countries around the world.

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ACCREDITED

- when it has to be **right**   **Leica**
Geosystems
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Radiodetection®
AN SPX COMPANY

THE SURVEY
ASSOCIATION
SUPPLIER

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surveyequipment.com

By Phone
01189 820 500
Overseas: +441189 820 500

In Person
At any of our office locations below.

By Email
sales@surveyequipment.com

By Fax
01189 820 509
Overseas: +441189 820 509

Opening Hours
8.00am - 5.30pm   Mon - Fri

READING
3 Orpheus House
Calleva Park, Aldermaston
Reading, Berkshire
RG7 8TA.

Tel: **01189 820 500**
Fax: **01189 820 509**

GATWICK
3 The Pavilions
Brighton Road, Pease Pottage
Crawley, West Sussex
RH11 9BJ

Tel: **01293 538 730**
Fax: **01293 526 468**

MILTON KEYNES
Field Barn, Plum Park Estate
Watling Street, Paulerspury
Northamptonshire
NN12 6LQ

Tel: **01327 811 008**
Fax: **01327 810 201**

FIND US ON
@opticalsurvey

Opti-cal Survey Equipment

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Authorised Distributor & Service Partner

Hire Rates

Our fleet of instruments located at our offices in Reading, Gatwick and Milton Keynes are maintained to a high quality due to the implementation of up-to-date service records and replacement schemes.

Nationwide next day delivery is offered as standard; however we are able to offer a same day delivery in some circumstances. **Please call to discuss equipment and pricing; long term hire rates are negotiable.**

Leica Optical Levels	Hire Rate Per Week
Automatic Level	£10.00
NA 2 Precise Automatic Level	£35.00
DNA 03 Precise Digital Level (+/-0.3mm)	£65.00

Leica Laser Equipment	Hire Rate Per Week
Rotating Laser - Rugby 100	£35.00
Interior Laser	£45.00
Dual Grade Laser - Rugby 400	£60.00
Pipe Laser - Piper 100	£40.00

Leica Total Stations	Hire Rate Per Week
Basic Total Station	£60.00
Reflectorless Total Station	£85.00
TCRP1205+ One Man Total Station Kit	£200.00
TCRP1201+ One Man Total Station Kit	£250.00
Viva TS15 5" One Man Total Station Kit	£250.00
Viva TS15 1" One Man Total Station Kit	£275.00
TS30/TM30 Monitoring Total Station	£300.00

Leica GNSS & GPS Equipment	Hire Rate Per Week
Viva NetRover (Includes SmartNet Licence & Vodafone GPRS data)	£350.00
Viva SmartRover (Includes SmartNet Licence & Vodafone GPRS data)	£400.00
GPS + Glonass Full RTK Base & Rover	£600.00
GPS Only Full RTK Base & Rover	£400.00
SmartStation (TST, SmartHandle, Antenna, GSM Module, SmartNet, Vodafone GPRS)	£450.00
SmartStation Accessories (Excludes TST)	£250.00
SmartNet Licence & Sim	£75.00

Accessories	Hire Rate Per Week
360 Degree Mini Prism (Including 4 x poles)	£10.00
Traverse Prism Station (Including Tripod)	£10.00
Diagonal Eyepiece	£10.00
CAT Detector	£25.00
Genny (To be used with CAT)	£25.00
Additional Laser Detector	£10.00

Servicing & Repair

With eight highly trained service technicians our service centres provide recognised top class calibration and repair to a wide range of survey equipment. Our technicians have been Leica factory trained, the workshops are fully accredited by Leica Geosystems, and we use only genuine components.

We also hold a large stock of Leica spare parts enabling us to complete required repairs quickly and efficiently. Opti-cal can offer you the best service for your instrument.

Our experience with working for equipment suppliers allow us to confidently issue certificates with the knowledge that it will provide accuracy and reliability in the workplace.

Understanding the rigors of the construction site and potential damages in transit, we will be pleased to talk you through the potential implications of using inaccurate instrumentation and how we can assist.

We can offer replacement instruments from our hire fleet during a service to minimise down time.

Prices

Levels	Price
Automatic Level	£30.00
Precise Level	£40.00
Digital Level	£65.00

Lasers	Price
Exterior Rotating Laser	£45.00
Interior Rotating Laser	£55.00
Grade Laser	£60.00
Pipe Laser	£50.00

Total Stations	Price
Electronic Theodolite	£55.00
Total Station	£95.00
Reflectorless Total Station	£110.00
Motorised Total Station	£195.00
One Man Total Station – c/w Controller Series	£225.00

Accessories	Price
Prism Station	£25.00
CAT Locator *Dependent on Make & Model	From £75.00
Genny/Transmitter *Dependent on Make & Model	From £65.00

Available on All Makes & Models

Hire Rates & Servicing

Technical Support

Over many years, Opti-cal has acquired the expertise of the leaders in the surveying field. We have built a service business with a full range of the best products in the world, combined with the best support people in the country.

Technical Support

At Opti-cal, we understand the importance of supporting our extensive range of surveying products.
With a highly committed and responsive technical support and training team who can answer your questions, whether simple or complex, and provide the required product training.

To this extent, we have recently invested in our support structure to expand our team, so that we can continue to provide the level of service that our clients demand. This new support and training structure comprises of a dedicated technical support phone line (and email) to quickly assist with your day to day support and training needs, and backed-up by field based product experts.

Our dedicated support number is available to new and existing customers: **01293 565 565**.

Our online support section includes the following items for your convenience:

- Documentation – Manuals, Quick Guides & Release Notes
- Software
- Instrument Firmware
- Drivers
- Instrument Application Programs
- Simulators
- Instrument Language Files
- Recovery Software
- Format Files
- Links to Leica Support

For online support visit: **surveyequipment.com/support**.

Training

In addition to technical support, we also understand that high quality training is critical and the key to unlocking the true potential of your survey equipment. Our structured training programs will enable you to take full advantage of your instruments capabilities, and improve your work flow, both in the field and in the office, with the goal of increasing your productivity and giving your company a competitive advantage. Opti-cal can offer a flexible selection of training packages to suit your company's needs, experience and time frame.

Training Courses

Total Stations (TPS)

Getting Started (1 day)
Workflow training for any Leica Total Station, including data exchange with popular CAD packages.

Learn the standard functions of your TPS instrument and be able to perform common survey tasks, including detail and set-out surveys.

Advanced TPS (1 day)
Understand how to customise your instrument, perform advanced field coding, create / edit data export formats and the more advanced on-board applications. Import data into Leica Geo Office (LGO), edit and export to required format and generate jobs using design to field.

GPS/GNSS

Getting Started (1 day)
Learn the basic concepts of GPS/GNSS positioning and the functionality of your Leica equipment, workflow training in RTK including detail surveys, coding and export of data, and perform site transformation to gain an understanding of coordinate systems.

Advanced (1 day)
Explore the advanced settings of the Leica GPS/GNSS. Learn complete equipment configuration, static data capture and basic processing, field coordinate transformation, the more advanced applications and how to create field data reports.

Leica Geo Office

Getting Started (1 day)
Workflow training in Leica Geo Office incorporating TPS/GPS data import, editing, simple processing, and basic analysis. This course provides a detailed explanation behind the settings and functionality enabling the user to get the most from the LGO software.

Advanced (1 day)
Develop your understanding of static post-processing, data analysis, reporting and network adjustment.

Learn new troubleshooting skills. Then further explore LGO looking at precise ephemeris, internet download and image referencing.

Additional Courses

Introduction to RoadRunner (1 day)

This course is designed for new users of the RoadRunner application. You will be taken through the practical procedures necessary for performing road setout within RoadRunner. The course will include an explanation of stringlines, RoadRunner elements and task development.

Customised Company Training

All published courses may be customised to your company's requirements, allowing you to get the most from your training investment.

Choose between training on-site, at your office or at one of our locations. Or let us know what training you need and we'll do our best to accommodate.

DISTO™ Laser Distancemeters

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Leica **DISTO™**

Leica DISTO™ – the innovative hand-held laser meter for fast and easy distance measurements of length, squares and volumes with the press of a button. Save time and money and emphasise your competence with modern measuring methods. Choose from the DISTO™ D210, DISTO™ X310, DISTO™ D3A BT, DISTO™ D5 and DISTO™ D8.

Leica **DISTO™ D210**

The compact and handy entry-level model has many interesting functions and is still simple to use. Addition and subtraction, area and volume calculations for rapid and reliable site measurement. The last 10 results are stored.

£129.00

Leica **DISTO™ X310**

The new Leica DISTO™ X310 is the only laser distance meter to be dust-tight and protected against water jets – to IP65. In addition, it passes drop tests of up to 2 m height. Thanks to the integrated tilt sensor, it can take indirect distance and height measurements absolutely precisely.

£209.00

Leica **DISTO™ D3a BT**

The Leica Disto D3a BT has all the funtions of the Disto D3a. In addition it offers the convenience of wireless, error free data transfer to PCs and pocket PCs.

£319.00

Leica **DISTO™ Accessories**

We supply the complete range of accessories please see page 71 for a selection.

Leica **DISTO™ D5**

World First: Digital Pointfinder with 4x Zoom! Designed with many functions and features to make measuring easier, particularly when you are working outdoors.

£349.00

Leica **DISTO™ D8**

The most versatile laser distance meter in the world! Equipped with a digital Pointfinder, high-res olution 2.4" colour display, 360° tilt sensor and bluetooth® technology.

£599.00

For accessories see page 71

Which **DISTO™** is right for you?

Are you measuring indoors and outdoors?
What is your measuring application?
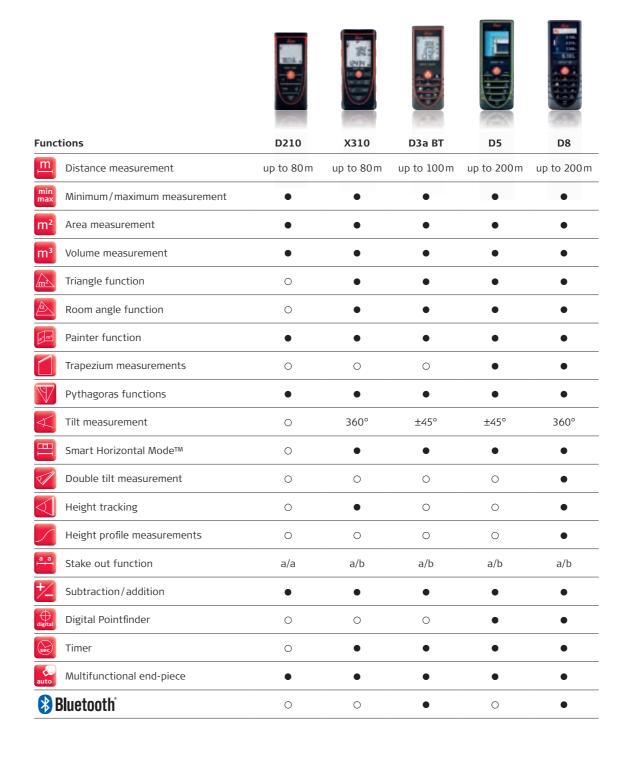What is the maximum distance that you would like to measure?
How often will you be using the laser measure?
How accurate do you need to measure to?
Does your job require the ability to measure angles, or measure over obstructions?
Are you measuring slopes, heights or checking levels?
Do you need to transfer your measurement to a PDA or laptop?

A laser distance meter is a hi-tech measuring device and depending on the application, the range of Leica DISTO™ will cover the measuring task in hand.

Functions	D210	X310	D3a BT	D5	D8
Distance measurement	up to 80 m	up to 80 m	up to 100 m	up to 200 m	up to 200 m
Minimum/maximum measurement	●	●	●	●	●
Area measurement	●	●	●	●	●
Volume measurement	●	●	●	●	●
Triangle function	○	●	●	●	●
Room angle function	○	●	●	●	●
Painter function	●	●	●	●	●
Trapezium measurements	○	○	○	●	●
Pythagoras functions	●	●	●	●	●
Tilt measurement	○	360°	±45°	±45°	360°
Smart Horizontal Mode™	○	●	●	●	●
Double tilt measurement	○	○	○	○	●
Height tracking	○	●	○	○	●
Height profile measurements	○	○	○	○	●
Stake out function	a/a	a/b	a/b	a/b	a/b
Subtraction/addition	●	●	●	●	●
Digital Pointfinder	○	○	○	●	●
Timer	○	●	●	●	●
Multifunctional end-piece	●	●	●	●	●
Bluetooth®	○	○	●	○	●

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Large room? No right angles? Skewed walls? Many details? Difficult to reach? No cause to worry: The Leica 3D Disto measures everything you need. Ladder? Mobile access platform? You can leave them back at base. No tripod on hand? Makes no difference – simply place the 3D Disto on a table or the floor. Levelling up? Not necessary. Photographs for the records? No problem, the in-built camera provides the pictures.

Leica 3D Disto™

Stay in control – in whatever shape of room. Capture and record distances, areas, inclinations, and angles effortlessly, even for inaccessible points. Forgotten measurements and handwriting errors are things of the past.

Room scan

Whether in fully automatic or manual mode: you can measure complete rooms, walls, windows, structural connections or stairs – from only one station point.

Projector

Right to the point. Whether ceiling grid or project layout for floors or walls – the Leica 3D Disto projects your design onto any surface – point for point.

Tools

Quick tools inspire the user: establish plumb, create level reference points, or precisely transfer offsets or locations.

It can do everything

- Measure plan position, height and distance, in all three spatial axes
- Intuitive user guidance from Assistants
- Measure from one station – every visible point can be measured by targeting with the visible laser dot – without the need to walk to the target
- Measure to difficult-to-reach points, such as roof edges
- As-built records of ceiling, floor and roof surfaces, volumes, inclination, falls, height differences, angles
- Plumbing of points, parallel offsetting of axis, levelling, transferring levels from wall to wall. Forget spirit level and measuring tapes!
- Realtime display of measurements as drawings on the screen
- Positionally accurate representation of the measured points in the camera display
- Pocket calculator
- Recording information in the form of standard tables, photos, DXF files, text files at the press of a button
- Remote control measurements
- Data import and export on PC and USB stick

Leica 3D Disto™ Package Please call for Price

Setup, Switch on, Ready! – Leica Linos project lines or points to millimeter accuracy, leaving your hands free to get on with the job. Making your work a lot easier! They automatically compensate for minor angular misalignments by levelling themselves over a range of ± 4°. So you avoid errors. The top quality optics and proven Power Range Technology™ ensure that the projected laser lines and points are highly visible and accurate. So they are simple to understand and easy to operate.

Leica Lino P3

The Leica Lino P3 is excellent for plumbing up and down and transfers all the points you need, quickly and accurately.

£149.00

Leica Lino P5

The Leica Lino P5 projects five laser beams, which are exactly at right angles to one another. This greatly simplifies setting out tasks and makes your interior fitting-out more precise and efficient.

£229.00

Leica Lino L2 Cross Line Laser – The perfect alignment tool

The time consuming and tedious drawing of lines on the wall is a thing of the past. The Leica LINO™ L2 projects exactly, quickly and easily – allowing you to concentrate on the job in hand.

£169.00

Leica Lino L2+

Simply perfect all along the line! The Leica Lino L2+ projects them exactly, quickly and easily – allowing you to concentrate on the job in hand.

£179.00

Leica Lino L2P5

The all in one layout and alignment tool. The Leica Lino L2P5 combines all the advantages of the Lino dot and line lasers. It has four points and two lines which are exactly at right angles to one another.

£319.00

Technical Data	Lino P3	Lino P5	Lino L2	Lino L2+	Lino L2P5
Range	up to 15m (depending on light conditions)				
Levelling accuracy @ 5m		+/-1.5mm @ 5m	+/-1mm	+/-1.5mm	
Accuracy of plumb point @ 5m		+/-1.5mm @ 5m	–	+/-1.5mm	
Accuracy of horizontal line @ 5m		–	+/-1.5mm		
Vertical accuracy @ 3m line length		–	+/-0.75mm		
Beam Direction	up,down,forward	up,down, forward	vertical, horizontal	vertical, horizontal	vertical, horizontal, up, down, right, left

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Scan Me

Leica **Runner Series**

The Leica Runner series represents a great value for money automatic builder's level. Designed to work hard on the jobsite, they are quick to set up, simple to use and very reliable.

Features	Runner 24
Magnification	24x
Angle Measurement	360o
Standard Deviation (per km double-run)	2.0mm
Dust/Water Protection	IP55
Weight	2 kg
Warranty	1 year
Level Only Price	£94.95
Level c/w Tripod & Staff	£154.95

Leica **NA700 Levels**

NA700 series combines reliability, accuracy and toughness to provide optimum results for an optical level. It's the ideal choice for engineers and surveyors and, the 'best in class' optics enable you to always work as precisely as possible, even in twilight.

Features	NA720	NA724	NA728	NA730
Magnification	20x	24x	28x	30x
Angle Measurement	360o/400gon	360o/400gon	360o/400gon	360o/400gon
Standard Deviation (per km double-run)	2.5mm	2.0mm	1.5mm	1.0mm
Dust/Water Protection	IP57	IP57	IP57	IP57
Weight	1.6 kg	1.6 kg	1.7 kg	1.7 kg
Warranty	2 years/3 years when registered within 8 weeks after purchase			
Level Only Price	£195.00	£225.00	£295.00	£320.00
Level c/w Tripod & Staff	£254.95	£284.95	£354.95	£379.95

Leica **NA2/NAK2**

The Leica NA2 meets all the requirements of precision levelling. As soon as it is set-up on a tripod and levelled with the bubble, the automatic compensator ensures that the line of sight is horizontal so that each staff reading is reliable. Leica's top-class optical quality gives the NA2 a bright, erect high contrast image. To improve accuracy a parallel plate micrometer can be fitted over the telescope objective. The parallel plate micrometer permits direct readings to 0.1mm and estimated readings to 0.01mm. This makes the NA2 the ideal precise level for deformation studies or industrial measuring tasks.

Features	NA2	NAK2
Magnification	32x	32x FOK eyepiece (optional): 40x
Angle Measurement	-	360o/400gon
Standard Deviation	0.7mm/km	0.7mm/km
(per km double-run)	(0.3mm with parallel-plate micrometer)	(0.3mm with parallel-plate micrometer)
Dust/Water Protection	IP53	IP53
Weight	2.4 kg	2.4 kg
Warranty	3 year	3 year
Level Only	£1,125.00	£1,470.00
Level c/w Tripod & Staff	£1,184.90	£1,529.90

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Leica Sprinter Digital Levels

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The Leica Sprinter Electronic Level offers everything that you would expect from a construction instrument. It enhances user benefits with a simple user interface and value-added functions:

- User-friendly menu
- Automatic height calculation and delta height
- The right levelling applications
- Built-in memory

Leica Sprinter for Advanced Levelling Work

The Sprinter is the perfect tool for advanced construction levelling tasks. Store up to 1000 measurements, download and transfer them for further calculations to Excel to a PC via USB.

Leica Sprinter Onboard Software:

- Delta height
- Line Levelling
- Cut & fill

Advanced Levelling:

- Aim and Focus: With its high-accuracy optical elements you simply aim and focus the staff as an optical level.
- Push the Button: With its easy one-button operation, Leica Sprinter does not need any intensive training. Simply push the red button to take the measurement. That's all you need to do.
- Read: Optical reading is no longer needed. The bar code on the staff determines height and distance which is displayed on a highly visible LCD display. There will be no misreading.
- Calculate: The Leica Sprinter takes on your calculations. Choose the right application in your language. The correct results will be displayed: Delta height, Line levelling, Cut & fill, Tracking & monitoring.
- Memorize: With their built-in memory for storing up to 1000 points, avoid transcription errors.
- Download: With Leica Sprinters data can be downloaded to your personal computer via USB Interface. The Sprinter Data Loader enables a smooth data transfer to Excel. Your measurements can also be transferred to an external data collector via RS232 interface.

Benefits:

- Increase Productivity
- Minimise Human Errors
- Operate in Low Light Conditions

	Sprinter 150M	Sprinter 250M
Height accuracies	Standard deviation height measurement per 1 km double run (ISO 17123-2)	
Electronic measurement*	1.5 mm	1.0/0.7* mm
Optical measurement	With standard aluminum E-scale/Numeral staff: 2.5 mm	
Single staff reading	Standard Deviation: 0.6 mm (electronic) and 1.2 mm (optical) at 30 m	
Range	2 –100 m (electronic)	
Time for single measurement	<3 sec	
Compensator	Magnet damped pendulum compensator (range +/- 10 min)	
Telescope	Magnification (optical) 24x	
Data storage	up to 1'000 points	
Environmental conditions	IP55	
Price (Level Only)	£695.00	£995.00

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Leica DNA Digital Levels

Leica digital levels DNA10 and DNA03 cover the entire range of applications from the construction site to the 1st order levelling tasks. The practice oriented solutions in the integrated measurement programs, the large display and the alphanumeric keyboard help to keep track of your work, make it faster and more productive.

- Up to a 50% time saving when compared with conventional levels.
- Measure & Rec function lets you easily measure and record height differences
- Compare the closing height quickly with a known point using Quick-Closure
- Use the complete onboard Line-Adjustment to erase errors
- Clear & Simple line levelling process

Link with Leica Geo Office

The level option processes your levelling data in a professional manner. The optional program contains functions such as line calculation, adjustment and the creation of reports. A second level option allows to adjust a complete Level Line Network.

Digital level data processing – the answer you've been waiting for!

The Digital Levelling Suite program has been designed in conjunction with Land Surveyors who use the Leica DNA/SPRINTER levels on a day to day basis.

It has been designed to overcome some of the short falls with the Leica DNA/SPRINTER software, to allow easy conversion from the raw data file to a standard Levelling Book format.

The software has been designed on the Microsoft Excel platform, thus giving the user the advantage of the Microsoft Excel interface which most surveyors will already be familiar with.

Provided with this software is the format file required to be loaded into the Leica DNA/SPRINTER, and instructions on how to accomplish this.

Features Include:

- Seamless data import
- Uses MS Excel
- All spreadsheets have your company logo, colours & details
- Produces familiar Level Book format
- Spreadsheets all formulated
- Merge level lines together for network levelling
- QA checks on each sheet
- Data ready to print & send to client in minutes
- Export adjusted data to 3rd party software

Prices:

Sprinter Only Processing
£100.00

DNA Only Processing
£300.00

Sprinter + DNA Processing
£350.00

	LEICA DNA03	LEICA DNA10
Accuracy Electronic measurements:	Standard deviation height measurement per 1km double-run	
with Invar staffs	0.3mm	0.9mm
with standard staffs	1.0mm	1.5mm
Telescope magnification	24x	
Compensator setting accuracy (SD)	0.3"	0.8"
Range Electronic measurement Optical measurement	1.8m - 110m from 0.6m	
Electronic measurement Resolution height measurement	0.01mm, 0.0001ft, 0.0005 inch	0.1mm, 0.001ft
Measurement modes	Single, average, median, repeated single measurements	
Measurement programs Coding Internal memory	Measure & Record, staff height/distance, intermediate BF, aBF, BFFB, aBFFB, onboard adjustment, quick closure, stakeout Remark, Free code, Quick code 6000 measurements or 1650 station	

Price (Level Only)	**£3,200.00**	**£2,600.00**

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Please contact us for further information or to arrange a demonstration

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OPTICAL & DIGITAL LEVELS

Leica Laser Levels

Authorised Distributor & Service Partner

Leica Rugby 50

The simple one-button Construction Laser

Rugged, reliable, accurate. The Leica Rugby 50 is the affordable "little brother" of the popular Leica Rugby 100.

The Rugby 50 provides value where ever it is used. Work gets done faster and more accurately, providing savings in labour, time and materials.

	Price
Laser Level, Detector & Bracket (Dry Cell Battery Pack)	£495.00
Laser Level Kit c/w Tripod & Staff	£545.00

Leica Rugby 100

High power, incredibly tough, automatic leveling, rotational laser ideal for all site work applications.

The Rugby 100 is an automatic self-levelling rotating laser for general construction.The Rugby 100 automatically levels in under 30 seconds, has a simple four-switch keypad that controls all the functions, plus a low-battery indicator.

	Price
Laser Level, Detector & Bracket (NiMH Batt Pack & Charger)	£610.00
Laser Level Kit c/w Tripod & Staff	£660.00

Features	Rugby 50	Rugby 100
Working Range	300m	300m
Accuracy	+/- 2.6mm @ 30m	+/- 1.5mm @ 30m
Elevation Alert	Yes	Yes
Self-Leveling	Horizontal	Horizontal
Dust/Water Protection	IP55	IP56
Manual Grade Capacity	–	Yes
Warranty	2 years with registration	

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Leica Single Grade Lasers

Authorised Distributor & Service Partner

Leica Rugby 260SG

A highly accurate, general construction laser with singlegrade capability. A rugged general construction laser with great accuracy, LCD grade readout and semi-automatic grade with bump alert.

	Price
Laser Level, Detector & Bracket (NiMH Batt Pack & Charger)	£945.00
(NiMH Batt Pack & Charger)	£995.00

Leica Rugby 270SG

A fully automatic, single grade laser. For the general construction contractor that needs a level or single slope for flat work, site preparation, septic installation, trenching and more.
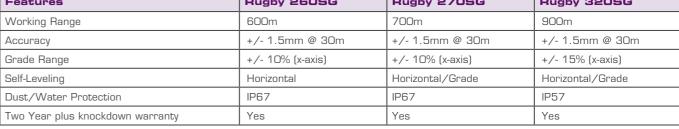
	Price
Laser Level, Detector & Bracket (NiMH Batt Pack & Charger)	£1,395.00
Laser Level Kit c /w Tripod & Staff	£1,445.00

Leica Rugby 320SG

Long Range Single Grade Laser with a -5 to +25% grade capability and a 900m operating diameter.

	Price
Laser Level, Detector & Bracket (NiMH Batt Pack & Charger)	£1,795.00
Laser Level Kit c /w Tripod & Staff	£1,845.00

Features	Rugby 260SG	Rugby 270SG	Rugby 320SG
Working Range	600m	700m	900m
Accuracy	+/- 1.5mm @ 30m	+/- 1.5mm @ 30m	+/- 1.5mm @ 30m
Grade Range	+/- 10% (x-axis)	+/- 10% (x-axis)	+/- 15% (x-axis)
Self-Leveling	Horizontal	Horizontal/Grade	Horizontal/Grade
Dust/Water Protection	IP67	IP67	IP57
Two Year plus knockdown warranty	Yes	Yes	Yes

Levelling Staves Page 72   **Tripods Page 73**

Leica Rugby 280DG

Multipurpose Plus. A horizontal, vertical and dual grade laser for any exterior or interior application. "Plus" with fully automatic, dual grade capability. It has a bright red beam, plumb beam, scan mode, horizontal and vertical selfleveling, plus dual grade up to 15% in both axes. Available with a two-way remote control, the Rugby 280DG fits well in any construction plan.

	Price
Laser Level, Detector & Bracket (NiMH Batt Pack & Charger)	£1,695.00
Laser Level Kit c/w Tripod & Staff	£1,745.00

Leica Rugby 410DG Laser Level

The Rugby 410 Dual Grade Laser is automatic and self leveling for jobs of any size, large or small. It can be used for any application involving precise grade.

- Large easy to see LCD display
- On Screen menus
- Variable head speeds

	Price
Laser Level & Detector Kit (NiMH Batt Pack & Charger)	£2,995.00
Laser Level Kit c/w Tripod & Staff	£2,345.00

Leica Rugby 420DG Laser Level

Long Range Dual Grade Laser the Rugby 420 Dual Grade Laser is automatic and self leveling for jobs of any size, large or small. It can be used for any application involving precise grade.

- Operating range of 1,100m diameter
- Simple to operate – only 5 buttons
- Direct Grade Entry, or Manual mode
- Ideal for use with machine control equipment

	Price
Laser Level & Detector Kit (NiMH Batt Pack & Charger)	£2,995.00
Laser Level Kit c/w Tripod & Staff	£2,345.00

Features	Rugby 280DG	Rugby 410DG	Rugby 420DG
Working Range	700m	800m	1100m
Accuracy	+/- 1.5mm @ 30m	+/- 1.5mm @ 30m	+/- 1.5mm @ 30m
Grade Range	+/- 15% (both axis)	-5 to +25% in either axis -5 to +15% in both axis	-5 to +25% in either axis -5 to +15% in both axis
Self-Leveling	Horizontal+Vetical+Grade	Horizontal+Grade	Horizontal+Grade
Dust/Water Protection	IP57	IP57	IP57
Two Year plus knockdown warranty	Yes	Yes	Yes

Levelling Staves Page 72   **Tripods Page 73**

The Rod Eye Basic

The Rod Eye Basic is a great receiver for those looking for value at a low price. Offering two accuracy settings, high/low audio output and a 150 m range, the Rod Eye Basic is a quality receiver that is ready to work for you.

Rod Eye Basic with Bracket
£105.95

The Rod Eye Plus

The Rod Eye Plus is a full featured receiver with proven performance in the field. Three bright LED's, nine channel arrow display and audio output provide the user with all the information needed to lock on the laser beam and get the job done right.

Rod Eye Plus with Bracket
£149.95

The Rod Eye Digital

The Rod Eye Digital is the top of the line receiver with digital readout, 0.5 mm accuracy, and strobe rejection. The Digital has a 127 mm (5 inch) pickup window which is the result of truly unique technology and provides the Digital with the best accuracy in the industry.

Rod Eye Digital with Bracket
£225.00

Receivers at a glance	Rod Eye Basic	Rod Eye Plus	Rod Eye Digital
Working Radius	150m	450 m	450 m
Detection Height	36 mm	50 mm	127 mm
Detection Accuracies	Two	Three	Five
Audio Volumes	Two	Two	Three
Arrow Display	Five channels	Nine channels	Twenty-one channels
LED Display	No	Yes, five channels	Yes, five channels
Warranty	One year	Two years	Three years

Leica Pipe Lasers

Leica Piper 100/200

Rock solid Construction, outstanding performance in a compact package.

Built with a rugged aluminium housing, these pipe lasers perform powerfully even in tough jobsite conditions. The Leica Piper is the only pipe laser that fits inside a 100 mm (four inch) pipe.

- Automatic grade compensation
- Long battery life
- Bright, powerful beam
- Large, easy to read display
- Alignmaster™ – Automatic target recognition (Piper 200)

Package as shown

Features	Piper 100	Piper 200
Beam	Highly visible red beam	Highly visible red beam
Display	Large, easy to read LCD display	Large, easy to read LCD display
Alignmaster*	No	Yes
Line and Grade Locks	Yes	Yes
Wide Line Adjustment	Yes	Yes
Self-levelling	Over full range	Over full range
Grade entry	Direct or by digit	Direct or by digit
Remote control	Yes, wireless	Yes, wireless
Housing	Rock solid metal	Rock solid metal
Battery pack	Rechargeable Lithium-Ion	Rechargeable Lithium-Ion
Waterproof	100%	100%
Warranty *Extendable to 5 years total	2 Years*	2 Years*
Price	**£1,695.00**	**£1,895.00**

Machine Control Sensors

AGATEC

Agatec MR240 Machine Receiver

Ideal for use with backhoes and mini-excavators, the Agatec MR240 offers the convenience of a machine-mounted display at an economical price. It features LED indicators to show the position of cutting edge in relation to laser reference beam. Three indicators in coarse mode, up to five in fine mode. Equipped with magnet mount with extra strong rare earth magnets.

- Accurate grade information for all visual machine control applications
- Extra strong rare earth magnets
- Rugged design, waterproof

Package Includes:

MR240 Machine Receiver
Alkaline batteries
Carry Case

Package Price **£450.00**

Agatec MR360R 360 Machine Mounted Receiver

The MR360R offers accurate grade information for all visual machine control applications. Large 360 degree detection windows pick up any rotating laser, from any angle.

Built-in vertical indicator monitors angle of the stick, signalling if it's plumb or under or over-extended. Vertical position ensures consistent and accurate grade readings, saving money by reducing over or under-cutting.

Package Includes:

MR360R Rechargeable Receiver with Magnet or Clamp Mount
110/240V Charger for MR360R
MD360R Remote Display
Suction Cup (for MD360R Mount)
MR360R User Manual
Carry Case

Package Price **£1,200.00**

Sensor   In Cab Display

Leica Flexline Plus Total Station

■ Authorised Distributor & Service Partner

For basic to advanced users with the need for flexibility and performance.

To ensure that you stay one-step-ahead, Leica Geosystems has developed a new generation of Total Stations using latest technology, the Leica FlexLine. For the first time, hardware and software options can be simply selected so that the FlexLine Total Station exactly meets your requirements.

The FlexLine family of Total Stations provide you with complete flexibility and performance. Simply select one of the pre-configured products, or compose your own Total Station by using the flexibility of adding specific hardware and software options to a base model. The choice is yours, and performance is guaranteed.

Leica FlexLine TS02 – Ideal Today, Perfect Tomorrow

The ideal Total Station for standard measurement tasks. Designed especially for mid-to-low accuracy applications. It comes complete with a standard set of application software that guides you through your daily work.

Instrument only from **£3,295.00**

Leica FlexLine TS06 plus – Flexibility that counts

For complete flexibility a Total Station that is ready for any challenge. Designed for mid accuracy applications. As standard, an alpha-numerical keyboard and a complete set of application software is included. If more convenient, use Bluetooth® wireless technology to connect any data collector, e.g. the Leica CS10/15. For additional flexibility, a wide range of options ensures that you can always count on your TS06 Total Station.

Instrument only from **£4,995.00**

Leica FlexLine TS09 plus – Performance Guaranteed

The Leica FlexLine TS09plus Manual Total Station is ideal for mid- to high-accuracy applications. The brilliant colour display with touch operation, offer the highest performance and ease of use. Equipped with all FlexLine features from removable USB memory, Bluetooth® wireless technology, Emitting Guide Light to a complete range of application software, your TS09 guarantees maximum performance. If more convenient, use Bluetooth® wireless technology to connect any data collector, e.g. the Leica CS10/15.

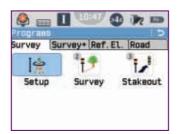Instrument only from **£6,495.00**
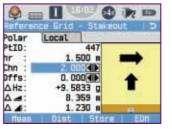
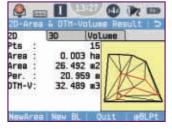Detail Kits Page 74 | Traverse Kits Page 75 | Other Accessories From Page 76

FlexField plus Onboard Software

The new Leica FlexField plus software is without a doubt a highlight of the FlexLine plus. Its advantages are immediately apparent with the extra-large, built-in colour & touch display.

- Low learning curve due to guided workflows
- Easy to understand graphics and icons
- Icons to quickly verify instrument status
- Fast navigation inside the software via touchscreen, tabs and icons
- High resolution colour display to show all information without misinterpretation
- Larger font size for fast and clear readability
- Fast operation through graphic guidance

*Colour Screen on TS09 plus only

The Leica FlexLine TS09plus Communication Side Cover enables cable-free connection to any data collector via Bluetooth®, for example the field-controllers Leica Viva CS10 or Leica Viva CS15 with SmartWorks Viva software. The USB-stick enables the flexible transfer of such data as GSI, DXF, ASCII, LandXML and CSV.

Leica Geosystems – mySecurity

mySecurity gives you total peace of mind. If your instrument is ever stolen, a locking mechanism is available to ensure that the device is disabled and can no longer be used.

	TS02	TS06PLUS	TS09PLUS
Accuracies Available	3", 5" & 7"	1",2",3", 5" & 7"	1",2",3" & 5"
1" angular accuracy	✕	O	O
Enhanced measurement accuracy to prism	1.5 mm + 2 ppm	1.5 mm + 2 ppm	1.5 mm + 2 ppm
Reflectorless measurement range	400 m option	500 m included / 1000 m option	500 m included / 1000 m option
Display with graphics and display illumination	Black & White high resolution	Black & White high resolution	Q-VGA Color & Touch
Full alpha-numerical keyboard with function keys	✕	✓	✓
Second Keyboard	O	O	O
Keyboard illumination	✕	✕	✓
Electronic Guide Light	✕	O	✓
USB Type A and mini B	✕	✓	✓
Bluetooth® Wireless	✕	✓	✓
Onboard software (package content)	FlexField plus (standard)	FlexField plus (advanced)	FlexField plus (full)

LEGEND: ✓ Included   O Option   ✕ Not available

Leica Viva TS11
Total Station

Authorised Distributor & Service Partner

Leica Viva TS11 Manual Total Station

The Leica Viva TS11 is the most advanced manual total station with the inclusion of advanced imaging functionality and the Leica SmartWorx Viva easy-to-use onboard software.

Leica Viva TS11 raises productivity to the next level with imaging and Leica SmartWorx Viva software. The unique capturesketch- link functionality enables high resolution total station images to be captured, enhanced with sketching and then linked to any point of interest. Costly revisits can be avoided to significantly improve productivity. Every vision on every scale becomes reality with ease.

Options Available:

Angular accuracy
1" (0.3 mgon), 2" (0.6 mgon), 3" (1 mgon), 5" (1.5 mgon)

Leica Viva Imaging
TS

PinPoint (Non Prism)
R30 / R400 / R1000

Leica Viva SmartStation
GS12/GS15

Key Facts:

Angular Measurement	
Display resolution	0.1" (0.1 mgon)
Compensation	Quadruple axis compensation
Distance Measurement	
Prism Range	Up to 5400m
Standard Accuracy	1 mm + 1.5 ppm
PinPoint Non Prism Accuracy	2 mm + 2 ppm
Display resolution	0.1 mm
General	
Magnification	30 x
Internal memory / Memory devices	1 GB (nonvolatile NAND Flash) / SD card, USB stick
Internal Battery	Internal Battery
Operating Time	5 – 8 h (GEB221)

TS11
Manual Total Station From **£7,995.00**

Leica Viva TS12
Total Station

Authorised Distributor & Service Partner

Leica Viva TS12 Total Station

The Leica Viva TS12 Performance Robotic package is a cost effective all in one solution enabling the user to begin efficient, cost effective one person engineering or surveying today.

Best-in-class Search-Lock-Measure

Leica Viva TS12 uses years of experience to optimally find, lock and measure to prisms with a single key press. With the unique PowerSearch sensor any prism type is found within seconds regardless of location.

Leica Viva CS10 Radio Controller

The ergonomic and light weight Leica CS10 Radio field controller with the fully integrated Intenna technology offers a long range, secure and fast wireless connectivity to your TS12 total station. With the Leica GRZ4 360° prism and a light weight pole users profit from a comfortable to carry solution for a full working day.

Options Available:

Angular accuracy
2"(0.6 mgon), 3" (1 mgon) or 7" (2 mgon)

PinPoint (Non Prism)
R400 or R1000

Prism Lock
ATR, PowerSearch

Leica SmartWorx Viva LT for Simplicity in the Field
SmartWorx Viva LT is designed with simplicity in mind using clear graphics, logical menu structures, non-technical terminology and simplified workflows.

Leica TS12
Performance Package from **£13,995.00**

Leica TPS1200+

Authorised Distributor & Service Partner

Scan Me

Leica 1200+ Total Station

Packed with features, built for speed, accuracy, ease-of-use and reliability Leica TPS1200+ total stations carry out even the most complex tasks, better and more efficiently than ever before.

Combine your TPS1200+ with a Leica Viva CS10/15 to give you a powerful surveying or setting out system.

There are many advantages to using Leica one-man technology, money saved in not having to employ an assistant, in total control of all your own work, and a dramatic increase in productivity.

Options Available:

Angular accuracy
1" (0.3 mgon), 2" (0.6 mgon), 3" (1 mgon), 5" (1.5 mgon)

Prism Lock
ATR, PowerSearch

PinPoint (Non Prism)
R400 / R1000

Key Facts:

Angular Measurement	
Display resolution	0.1" (0.1 mgon)
Compensation	Centralized dual axis compensator
Distance Measurement	
Prism Range	Up to 5400m
Standard Accuracy	1 mm + 1.5 ppm
PinPoint Non Prism Accuracy	2 mm + 2 ppm
Display resolution	0.1 mm
General	
Magnification	30 x
Free objective aperture	40mm
Operating Time	5 – 8 h (GEB221)

Reconditioned TPS1200 Packages are also available please call us on 01189 820 500

Leica Viva TS15 Total Station

Authorised Distributor & Service Partner

Scan Me

Leica TS15 – Robotic total station

The Leica Viva TS15 is a state-of the- art total station that provides advanced imaging functionality combined with dynamic tracking capabilities for one-person surveying or setting out.

Furthermore, Leica Viva TS15 features the easy-to-use Leica SmartWorx Viva onboard software. The Leica Viva TS15 adds a high resolution camera to further enhance total station productivity. In addition, the TS15 now also includes new grid scanning functionality. It is now easily possible to graphically define an area to be scanned on the total station view shown on the display. The total station will then rapidly scan the object to measure a true grid with survey accuracy.

Options Available:

Angular accuracy
1" (0.3 mgon), 2" (0.6 mgon), 3" (1 mgon), 5" (1.5 mgon)

Prism Lock
ATR, PowerSearch

PinPoint (Non Prism)
R30 / R400 / R1000

Leica Viva Imaging
TS & CS Controller

Leica Viva SmartStation
GS12/GS15

Key Facts:

Angular Measurement	
Display resolution	0.1" (0.1 mgon)
Compensation	Quadruple axis compensation
Distance Measurement	
Prism Range	Up to 5400m
Standard Accuracy	1 mm + 1.5 ppm
PinPoint Non Prism Accuracy	2 mm + 2 ppm
Display resolution	0.1 mm
General	
Magnification	30 x
Internal memory / Memory devices	1 GB (nonvolatile NAND Flash) / SD card, USB stick
Internal Battery	Internal Battery
Operating Time	5 – 8 h (GEB221)

TS15
Total Station From **£9,995.00**

TS15
Robotic Package From **£16,495.00**

Leica
Viva Imaging

Leica Viva Imaging

FULLY ACCREDITED
– when it has to be right   Leica Geosystems
■ Authorised Distributor & Service Partner

Enrich your Surveying Workflow

The Viva TPS TS11 I and TS15 I Imaging Total Stations have been designed to include imaging functionality for Image Assisted Surveying and Documentation. Through high quality optics, images from 2 m to infinity are transferred as sharp images to a high resolution 5 Megapixel CMOS camera. A dedicated image processing board precisely calculates the exact exposure time and white balance settings for capturing optimal camera images of the total station live view. In order to support 20 Hz live streaming, new high-speed slip rings were designed and a state-of-the-art multimedia image processing unit was integrated to instantly transfer images from the telescope to the total stations high resolution VGA display.

Visualize

Overlay points and features directly on the live image to exactly see the survey data. Use the overlay to show position and visualize features to be set-out.

Sketch

Any new or captured image can be enhanced through sketching with any colour, line style and width to uniquely transfer valuable information.

Panorama

Simply define a region, or 360° view, and the total station will automatically stitch images into a panoramic view.

Image assisted Surveying

With live streaming of the total station view, simply tap on the display and the total station will turn and measure to the desired target. Immediately visualize measured objects as you go.

Please contact us to arrange a demonstration of a Leica Viva Imaging Total Station

opti·cal
surveyequipment.com

Viva Imaging

Leica
SmartWorx Viva Software

Whether you want to stake-out an object on a construction site or you need accurate measurements of a tunnel, bridge or road; whether you want to carry out a topographic survey or calculate the volume of a stockpile – you need reliable and precise data SmartWorx Viva is the answer.

- Viva software on all platforms, One common learning curve for Viva GPS & TPS
- Simple and modern graphics
- Clear graphical assistance within the applications
- Easy to understand & intuitive
- Improved ease of use & productivity
- Powerful Applications for any requirements
- Import: ASCII, DXF, LandXML
- Export: Custom ASCII, DXF, LandXML, FBK, RW5, RAW

Survey

- User definable screens
- Smart & Quick Coding
- On Screen Image Sketch Notes
- 3D Point Overlay (Imaging)
- Measure Hidden points with BT DISTO™

Stake-Out

- Select Points from Map/List
- Customise Stake-Out Screen
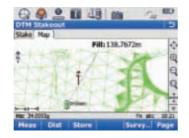- Pick Control and Working Job to to keep data clean

DTM Stakeout

- Stakeout 3D Terrain Models
- See live cut & fill values

Reference Line

- Ideal for marking/surveying grids
- Staking of linear and area objects: Lines, arcs, areas and simple alignments
- Staking of slopes relative to lines and arcs

On-Board Volume Calculation

- Quick, Accurate in field calculation
- No need to return to office
- Grid scan on surface + volumes application
- Dedicated applications to measure surfaces of an undefined shape (e.g. gravel hill)
- Comprehensive reporting / cut sheets

Survey Cross Sections

- Define automatic coding of a cross section
- Ideal for measuring road, rail or river cross sections where repetitive coding is needed

Traverse (TPS only)

- Measure, compute and adjust traverses including survey observations

Sets of Angles (TPS only)

- Measure multiple rounds of angles and distances
- Ideal application when many repeated measurements to the same targets are needed – dams, quarries, building facades etc
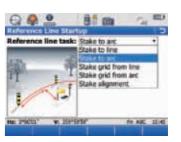
TPS Hidden Point (TPS only)

- Allows hidden points to be measured with a total station using a hidden point rod
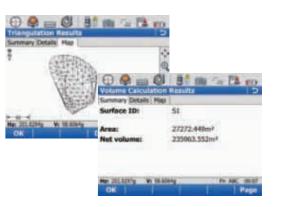- Ideal application for measuring into catch pits, drainage lines and other inaccessible places

Reference Plane / Face Scan

- Ideal application for building facade or quarry face measuring

RoadRunner – Road, Rail, Tunnel

- Ideal applications to specifically handle the demands of complex alignment based projects
- Clear graphical displays allowing the user full field data control

Other applications are available please contact us to discuss any requirements you may have.

SmartWorx Viva

ABOUT OPTI-CAL HOW TO ORDER HIRE & SERVICING SUPPORT & TRAINING DISTO® LEVELS LASERS TPS MONITORING CONTROLLERS GPS & GNSS PACIFIC CREST ICON SOFTWARE CABLE AVOIDANCE RAIL LEICA ACCESSORIES ANCILLARY ITEMS INDEX

SMARTWORX VIVA

ABOUT OPTI-CAL HOW TO ORDER HIRE & SERVICING SUPPORT & TRAINING DISTO® LEVELS LASERS TPS IMAGING SMARTL... ...TROLLERS GPS & GNSS PACIFIC CREST ICON SOFTWARE CABLE AVOIDANCE RAIL LEICA ACCESSORIES ANCILLARY ITEMS INDEX

TPS MONITORING

Leica TM30

■ Authorised Distributor & Service Partner

The Leica TM30 is designed to meet the highest accuracy standards. High precision measurements, combined with automatic, fast and silent operation ensures that the TM30 detects the smallest movement in all monitoring applications. This powerful combination of speed and accuracy allows engineers to effectively and cost efficiently measure and control the health of vital infrastructure. The combination of SmartEye vision technology and unique direct drive technology provides faster, more precise and longer range measurements than ever before.

Continuous operation
The TM30 meets the challenge of 24 hours, 7 days a week monitoring applications.
It is designed to withstand the roughest use in the most severe environments. The TM30 will operate throughout a wide temperature range and is protected against wind driven rain, sand and dust. The sensor is fully operational in bright sunlight and complete darkness.

Zero Noise Pollution
to install the TM30 in urban areas
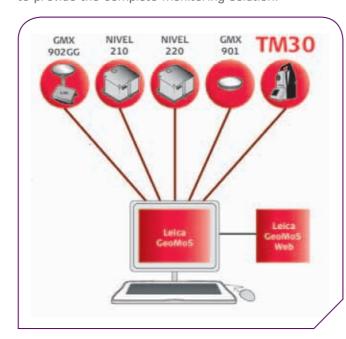
Long Service Intervals

Theft protection and keyboard lock

Long Range ATR
Up to 3000 m with 7mm accuracy

Target View
Narrows the field of view to detect the correct prism out of multiple prisms

Leica GeoMoS
Combine with GeoMoS software and other sensors to provide the complete monitoring solution.

Leica TM30 accuracy – the facts:

Angular accuracy – 0.5" or 1"

Pinpoint EDM accuracy
0.6 mm ± 1 ppm to prism
2 mm ± 2 ppm to any surface

Automatic Target Recognition
(ATR) accuracy – 1"

Leica TS30

■ Authorised Distributor & Service Partner

The Leica TS30 total station is unique. This total station redefines precise surveying by offering unmatched accuracy and quality. Never again will surveyors with demanding tasks need to make compromises, the TS30 total station is ready for any challenge. The TS30 is designed for when only 0.5" accuracy is acceptable.

Pride in accuracy
Surveyors take great pride in accuracy. The Leica TS30 delivers impressive performance in individual disciplines. But most importantly it is a champion in perfectly combining angle measurement, distance measurement, automatic target recognition and motorisation. The accuracy of the Leica TS30 is in a league of its own, a true companion for surveyors with pride.

Leica TS30 accuracy – the facts:

Angular accuracy – 0.5"

Pinpoint EDM accuracy
0.6 mm ± 1 ppm to prism
2 mm ± 2 ppm to any surface

Automatic Target Recognition
(ATR) accuracy – 1"

World's best Dynamic Tracking Performance
New direct drives using Piezo technology were developed specifically for the TS30 to achieve maximum acceleration and speed whilst still retaining accuracy.

Fastest Start-to-Finish Workflow

Long service intervals
Leica TS30 is designed to withstand the roughest use in the most severe environments.

It will operate throughout a wide temperature range and is protected against wind driven rain, sand and dust. The TS30 can operate for extremely long intervals without suffering from wear and tear.

Performance that counts
Achieving both high performance and high accuracy is challenging. The Leica TS30 has reached a level of performance, whereby high accuracy surveying can be achieved in an easy, fast and reliable way, regardless of the project demands.
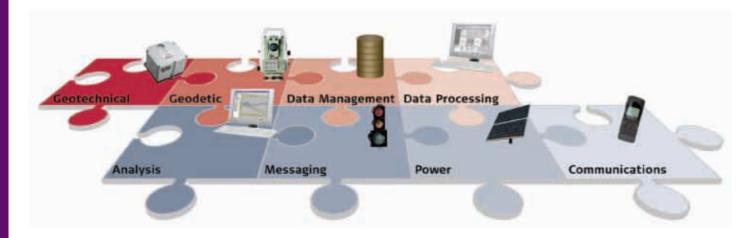

Leica GeoMoS

The Leica Automatic Deformation Monitoring System

Each monitoring project has specific measurement and accuracy requirements. The Leica GeoMoS software provides a highly flexible automatic deformation monitoring system that is able to combine geodetic, geotechnical and meteorological sensors to match the needs of your monitoring project, whether it is large or small, temporary or permanent.

Multi-Purpose

Leica GeoMoS is a multi-purpose automatic deformation monitoring software that can be used for:
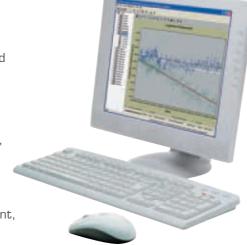
- Structural deformation monitoring (e.g. dams, tunnels, bridges, high-rise buildings, construction)
- Landslide and settlement detection (e.g. mining, rock falls, volcano slopes, subsidence)
- Automated surveys (e.g. continuous, automated measurements)
- And many more…

Scalable and flexible

The Leica GeoMoS software is comprised of two main applications called Monitor and Analyzer.

Leica GeoMoS Adjustment is an add-on software that allows the user to make decisions based on statistically optimized and validated data.

- Monitor is the online application responsible for the sensor control, collection of data, computation and event management.
- Analyzer is the offline application responsible for the analysis, visualization and post-processing of the data.
- Adjustment is the application responsible for the network adjustment, deformation analysis and network simulation.

Leica GeoMoS stores all measurements and results in an open SQL database. The data can be accessed both locally and remotely, using Leica GeoMoS Analyzer, Leica GeoMoS Adjustment or third party software.
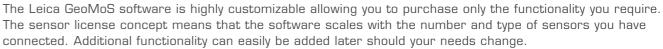
The Leica GeoMoS software is highly customizable allowing you to purchase only the functionality you require. The sensor license concept means that the software scales with the number and type of sensors you have connected. Additional functionality can easily be added later should your needs change.

Sensor Connections

Leica GeoMoS offers the ability to connect geodetic (Total Stations and GNSS sensors) and geotechnical sensors to understand the reasons of any detected movement and to improve the prediction of failure.

- Total Stations: Leica TS15, TM30, TS30, TPS1100, TPS1200, TPS1200Plus, TCA1201M, TPS1800 and TCA2003 Series
- GNSS sensors: Leica GS10, GR10, GPS System 1200, GMX900 Series, GPS System 500
- Connection to Leica GNSS Spider for advanced GNSS monitoring
- Levels: Leica DNA and Leica Sprinter
- Tilt sensors: Leica Nivel20 and Nivel200 Series
- Meteorological sensor (e.g. temperature, pressure)
- An interface to Campbell Scientific dataloggers, that can support most commercially available geotechnical sensors to measure environmental effects and conditions (e.g. extensometers, piezometers, strain gauges, inclinometers, thermometers, barometers, rain gauges, and many more)

Leica GeoMoS stores all measurements and results in an open SQL database. The data can be accessed both locally and remotely, using Leica GeoMoS Analyzer, Leica GeoMoS Adjustment or third party software.

The Leica GeoMoS software is highly customizable allowing you to purchase only the functionality you require. The sensor license concept means that the software scales with the number and type of sensors you have connected. Additional functionality can easily be added later should your needs change.
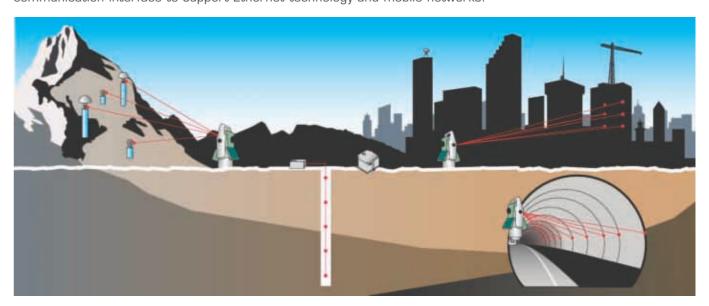
Communication

Leica Geosystems offers communication solutions via the new Leica M-Com series or standard accessories. The Leica M-Com series offers easy installation, reliable communication and the connection of multiple sensors and external devices.

In addition to the traditional serial based communication Leica GeoMoS also includes a direct TCP/IP communication interface to support Ethernet technology and mobile networks.

Please call us on 01189 820 500 for more information on Leica GeoMoS Monitoring Solutions and how they can work for your project

Leica Viva Controllers

Authorised Distributor & Service Partner

The CS10 and CS15 Leica Viva are the ideal partner for Leica Total Stations and GNSS instruments. They can be combined with both TPS and GNSS instruments to provide a fully integrated seamless surveying system partnered with Leica SmartWorx Viva surveying software, data collection has never been so easy.

Leica Viva CS10 Controller

26 alpha-numeric keys

Model	Price
CS10 GNSS	From £2,750.00
CS10 3.5G GNSS WLAN	From £3,495.00
CS10 TPS/GNSS WLAN	From £3,495.00

Leica Viva CS15 Controller

Full 65 key QWERTY keyboard

Model	Price
CS15 GNSS	From £2,995.00
CS15 3.5G GNSS WLAN	From £3,995.00
CS15 TPS/GNSS WLAN	From £3,495.00
CS15 3.5G TPS/GNSS WLAN	From £4,295.00

Simply productive surveying software
With clear graphics, non-technological terminology and simplified workflows SmartWorx Viva is incredibly easy to use.
– Survey, coding and linework
– Advanced coordinate system handling
– Wide range of apps for all surveying and staking tasks

Built for the field
Designed for extreme environments, you can always rely on your CS10 & CS15. Comfortable in the hand, and easy-to-use for all tasks.
– IP67 and operating temperature -30 to 60° C
– Tactile, fully illuminated, rubber keypad (numeric on CS10, alphanumeric QWERTY on CS15)
– 2 Megapixel camera (perfectly placed for taking pictures when in hand or mounted on pole)
– Colour, VGA touch screen, illuminated

Flexible communication and data handling
Stay connected with a wide range of communication and data storage options.

Your CS10 & CS15 is ready for all challenges.
– Fully integrated wireless Intenna technology (Bluetooth®, WLAN, TPS Radio)
– Choice of 2 connector modules

Lemo module: Lemo (USB and serial), USB A host, 7-pin connector, power

RS232 module: RS232, USB A host, USB mini AB OTG, 7-pin connector, power
– Data storage using SD Card, CF Card, USB memory stick

3.5G Modem
The Viva CS10 3.5G and CS15 3.5G field controllers can be supplied with a fully integrated high-speed 3.5G modem to connect to RTK reference networks and allow mobile broadband internet connectivity for field-to-office data transfer.

Work how you like
Designed as part of the Leica Viva series, but versatile to work with many instrument and software combinations.

Total Stations and GNSS sensors
– Ideal for use with all Leica Viva Series
– Perfectly designed to be used with SmartWorx Viva surveying software
– Powerful ARM core processor for many software applications

Leica CS25 – Take the Office to the Field

State of the art technology
The Leica CS25 is equipped with state of the art technology, running a Windows® 7 Ultimate OS allows you to trade in your desktop PC for a rugged tablet, having it with you wherever your work is.
- 17.8 cm/7 inch sunlight readable touchscreen
- 64 GB SSD hard drive, eliminating internal moving parts
- Integrated GPS, 3G modem, WiFi and Bluetooth®
- Ultra-rugged design – IP65, MIL-STD-810G

Built for the field
Designed for extreme environments – ultra-rugged, reliable and light-weight.
- Built for the most demanding field environments but nevertheless light-weight and compact
- Built to operate in extreme temperatures
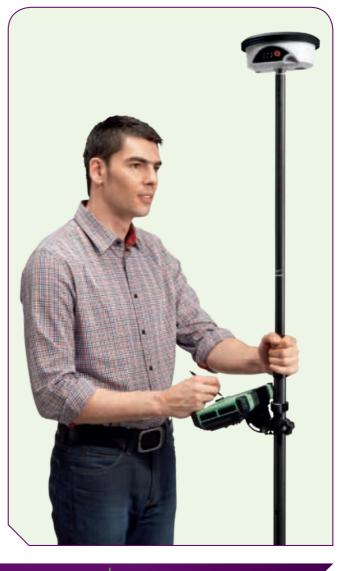- All-day-batteries, easily hot-swappable

Designed for versatility
Integrate the Leica CS25 tablet computer into the Leica Geosystems family of mobile solutions. Choose the field software, GNSS accuracy and the setup (pole or backpack) to suit your workflow and budget.
- Ready-to-use with Leica Zeno Field, Leica MobileMatriX (for GNSS as well as TPS)
- Ready-to-use with the Leica GNSS SmartAntenna – the Leica Zeno GG02plus
- Use Leica Zeno Connect to embed custom applications into Leica CS25 and Leica Zeno GG02plus

Model	Price
CS25 Ruggedized Win7 (Professional Edition) Ultra-Mobile PC	P.O.A

Controller Accessories Page 84 | **Batteries Page 80** | **Chargers Page 81**

Leica Viva GS08
GNSS NetRover

Scan Me

- when it has to be right *Leica* Geosystems
■ Authorised Distributor & Service Partner

Leica Viva GS08 NetRover

Leica Viva NetRover integrates the latest technology from Leica Geosystems, the world's leading measurement solutions provider. All the components of Viva NetRover work seamlessly together, creating a lightweight and cable-free network rover.

Turn-on & Measure

Leica Viva NetRover helps you to complete your measurement tasks. Just turn-on and a connection is made to your local reference network. With full support of RTCM 3.1 transformation message, positions are automatically supplied in local coordinates. Viva NetRover is always ready to measure!

Quick to learn

We know you want easy to use software. We therefore designed SmartWorx Viva LT with simplicity in mind using clear graphics, logical menu structures, non-technical terminology and simplified workflows. You and your field crews will be up to speed in a minimum of time.

Designed for networks

The future proof GNSS receiver provides best in class network performance. The field controller includes 3.5G mobile broadband for high-speed connection to the reference network, internet and your office. Work with confidence in your equipment and maximise your productivity.

Number of Channels	72 channels
Satellite Tracking	GPS & Glonass Horizontal: 5 mm + 0.5 ppm
RTK Static Mode	Horizontal: 5 mm + 0.5 ppm (rms) Vertical: 10 mm + 0.5 ppm (rms)
RTK Moving Mode	Horizontal: 10 mm + 1 ppm (rms) Vertical: 20 mm + 1 ppm (rms)
Data Storage	1 GB internal flash, SD-card slot, CF-card
Environmental Specification	IP67
Operation Time	7 hours
Battery Charging	2 Hours
Weight of pole setup	2.80 kg

Leica Viva GS08 NetRover
£10,995
Inc SmartNet Low User Licence & Sim Card

Leica Viva
GNSS GS10

- when it has to be right *Leica* Geosystems
■ Authorised Distributor & Service Partner

Leica Viva GS10 – Versatile, Rugged and Precise

The Leica GS10 gives any user the complete flexibility of a powerful modular solution without compromising on performance. Systems can be customised to suit individuals needs such as long term installations.

Proven GNSS technology

Built on years of knowledge and experience, the Leica GS10 delivers the hallmarks of Leica GNSS – reliability and accuracy.

- SmartCheck – RTK data-processing to guarantee correct results
- SmartTrack – advanced four constellation tracking of all GNSS satellites today and tomorrow
- SmartRTK – delivers consistent results in all networks

Work as you want to

The Leica GS10 is designed to suit any surveying task.

- Exchangeable communication devices for field base stations and RTK rovers with removable SIM cards
- Fully scalable sensor allows you to buy only what you need today and upgrade with additional functionality as you need it
- Integrated web server to configure the logging of Leica or RINEX raw data and measure with one button press in the field

Rugged

The Leica GS10 is built for the most demanding environments.

- IP67 protection against dust and immersion to 1m
- Built for extreme temperatures of -40°C to +65°C

Please call for more information and pricing

Leica Viva
GNSS GS12

Scan Me

Leica Viva GS12 offers complete freedom of choice.
From a GNSS Rover up to an integrated GNSS solution with
a Leica Viva Total Station (Leica Viva SmartPole or Leica Viva
SmartStation), the GS12 provides a solution to all applications.

Proven GNSS technology

Built on years of knowledge and experience, the Leica GS12 delivers
the hallmarks of Leica GNSS – reliability and accuracy.

- SmartCheck – RTK data-processing to guarantee correct results
- SmartTrack – advanced four constellation tracking of all GNSS
  satellites today and tomorrow
- SmartRTK – delivers consistent results in all networks

Light Weight and full functionality

The Leica GS12 delivers ultimate ergonomics through extreme light weight.

- Weight of only 1kg for ergonomic handling with ideal balance
- Full GNSS compatibility: GPS, GLONASS, Galileo and Compass
- Fully scalable sensor allows you to buy only what you need today
  and upgrade with additional functionality as you need it

Rugged

The Leica GS12 is built for the most demanding environments.

- IP67 protection against dust and immersion to 1m
- Built for extreme temperatures of -40°C to +65°C
- Withstands 2m pole topple over test
- Complete cable free operation

GNSS Technology

Number of Channels	120 channels
Satellite signals tracking (current)	GPS: L1, L2, L2C, L5 (C/A, P, C Code) GLONASS: L1, L2 (C/A, P narrow Code)
Satellite signals tracking (future)	Galileo, Compass

Measurement Performance

RTK Rapid static (phase) Static mode after initialization	Horizontal: 5 mm + 0.5 ppm (rms) Vertical: 10 mm + 0.5 ppm (rms)
RTK Kinematic (phase) Moving mode after initialization	Horizontal: 10 mm + 1 ppm (rms) Vertical: 20 mm + 1 ppm (rms)
Post Processing (phase) Static with long observations	Horizontal: 3 mm + 0.1 ppm (rms) Vertical: 3.5 mm + 0.4 ppm (rms)

GS12 SmartRover	From £14,995.00

Leica Viva
GNSS GS15

Leica GS15 – Integrated Performance GNSS Receiver

- Triple Frequency – GPS, Glonass, Galileo
- 120 Channels
- Leica patented SmartTrack+ technology
- Minimum acquisition time
- Excellent low elevation tracking
- Leica SmartNet Compatible
- Minimum acquisition time
- IP67 Protection
- On-Board Raw Data Logging
- Removable SD Card
- Fully Integrated UHF/GPRS Modem
- Hot Swappable Batteries

Leica Viva GNSS is a complete range of versatile
GNSS solutions for you. From completely integrated,
to totally modular solutions; Viva GNSS provides
a system to master all of your tasks.

Proven GNSS technology

Built on years of knowledge and experience, the Leica
GS15 delivers the hallmarks of Leica GNSS – reliability
and accuracy.

- SmartCheck – RTK data-processing
  to guarantee correct results
- SmartTrack – advanced four constellation
  tracking of all GNSS satellites today
  and tomorrow
- SmartRTK – delivers consistent results
  in all networks

Work as you want to

The Leica GS15 is designed to suit any surveying task.

- Exchangeable communication devices for field
  base stations and RTK rovers with removable
  SIM cards
- Fully scalable sensor allows you to buy
  only what you need today and upgrade
  with additional functionality as you need it
- Integrated web server to configure the
  logging of Leica or RINEX raw data and
  measure with one button press in the field

Rugged

The Leica GS15 is built for the most demanding
environments.

Item	Price
Leica Viva GNSS SmartRover	From £14.995.00
Leica Viva GNSS Base & Rover	From £26,995.00

opti·cal
surveyequipment.com

Leica GNSS Reference Networks

Reference station solutions are ideal for long term installations on site providing all your GNSS positioning requirements. Correction data can be simply distributed to all users such as surveyors, engineers and machines across site maintaining a precise control network and keeping costs down.

Proven GNSS technology

Leica GR10 is a next generation GNSS reference station receiver that combines the latest state-of-the-art technologies with a streamlined "plug and play" workflow. Designed for a wide variety of GNSS reference station applications, the Leica GR10 offers new levels of simplicity, reliability and performance. With a focus on ease of use and efficiency, the GR10 helps streamline day to day operation and administration.

Leica GR25

The Leica GR25 is a next generation GNSS reference station platform going far beyond traditional Reference Station receivers, serving many purposes and applications. With integrated internal and external device management, multi-user management, high end security, modular and scalable design, the new GR25 GNSS Reference Server will grow with your needs and keep your GNSS applications and networks fully up to date.

Designed for numerous permanent and semi-permanent GNSS network installations and monitoring applications. Including RTK and static networks, single base station, field campaigns, structural monitoring, atmospheric and seismic studies and offshore positioning.

Please call for more information regarding Reference Networks

Leica SmartNet

Do you need fast, accurate, traceable and reliable OS Co-ordinates? If so then Leica SmartNet is the correction service for you. SmartNet is available to anyone with any make of GPS/GNSS receiver that can accept RTK or DGPS corrections broadcast by GSM or GPRS (Mobile phone Internet).

What is SmartNet?

SmartNet is basically a 24/7, accurate, reliable, robust, traceable and repeatable National GPS Network solution, based on a common datum, for the entire positioning community of Great Britain & Ireland. Users of SmartNet can expect centimetre level Network RTK accuracies, through to sub-metre DGPS; or raw data for post processing.

Typical Applications:

- Surveying & Engineering
- Utility Mapping & Archaeology
- Construction, Machine Control and Agriculture
- GIS, Asset Management

Leica SmartNet Benefits

Quality

- Same accuracy as a local base station
- High-speed initialisation for RTK solutions
- Redundancy – multiple reference stations, not just one
- Reliability – full mirroring of network services
- Quality assurance – Network integrity monitoring

Productivity

- Performs 1-3cm RTK surveys with one rover
- Eliminates daily base station set-up & potential errors
- Reduces dependency on ground control monuments
- Far exceeds range of conventional RTK systems
- Convert your existing base station into a productive rover

Availability

- "Always on" 24/7 monitored service
- Full backup systems
- Immediate SMS text updates on the status of OSNet, OSI & OSNI stations
- Free RINEX downloads from the SmartNet web site
- Allows subscribers to easily work in various locations

GB RTK Annual Subscriptions		
88363	RTK Unlimited	**£2,000.00**
90614	RTK Limited Access (40hrs p/m)	**£1,200.00**
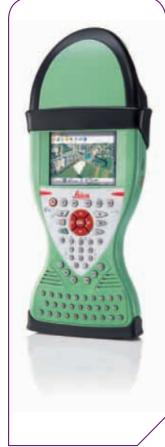
GB DGPS Annual Subscriptions		
88364	DGPS Unlimited	**£750.00**
90615	DGPS Limited Access (40hrs p/m)	**£450.00**

GPS & GNSS

ABOUT OPTI-CAL   HOW TO ORDER   HIRE & SERVICING   SUPPORT & TRAINING   DISTO™   LEVELS   LASERS   TPS   IMAGING   SMARTWORX   TPS MONITORING   CONTROLLERS   GPS & GNSS   PACIFIC CREST   ICON   SOFTWARE   CABLE AVOIDANCE   RAIL   LEICA ACCESSORIES   ANCILLARY ITEMS   INDEX

Leica GIS Solutions

■ Authorised Distributor & Service Partner

GIS Software

■ Authorised Distributor & Service Partner

With innovative and integrated solutions whatever your GIS requirements we can supply a solution to meet your needs, both hardware and software.

Leica Viva Zeno 10/15

Simplicity in your own hands

The Leica Zeno GIS series offers an ideal set of tools for anyone who needs more accurate data in a GIS database. All GNSS post-processing is automated; GIS and GNSS technologies are seamlessly combined in one easy solution.

Simplicity in your own hands

High quality measurement engine and proven antenna technology provide the highest quality measurement data.

- L1 GPS, GLONASS, SBAS sensor
- Post processing accuracy 5 mm + 0.5 ppm (2D)
- DGPS accuracy <0.4 m
- Leica MDB and RINEX raw data logging

Leica GG02 plus – The most precise GNSS/GIS

- 72 channel GNSS SmartAntenna
- GPS
- Glonass (Option)
- Galileo ready
- Cablefree
- Lightweight (1 kg) and ultra-rugged: IP67, -40° - 60°C
- Proven surveying technology for the GIS market
- Highly precise 1 cm + 2 ppm
- And excellent GNSS tracking in rough conditions
- 7h battery life, with simple exchange concept

Zeno Field

Leica Zeno Field is an OEM version of ArcPad 10 and provides in addition to the well known ArcPad™ functionality: GNSS raw data logging, easy handling of GNSS configurations (such as DGPS settings), feature accuracy management and an automated workflow between the field and office. Together with Zeno Office easily manage feature quality over time and benefit from automated import and export functions to a wide range of different formats such as ArcGIS geodatabase, shapefile, dxf, dgn, and dwg.

- ArcPad 10 OEM integrated, with fast visualization & drawing speed
- Real-Time differential correction made easy
- Logging of raw data for post-processing to increase accuracy
- State-of-the-art field mapping tools
- Various field controller supported
- Full support for Zeno 10/15's internal camera
- QuickCapture toolbar for simple use

Zeno Connect

Integrate Leica hardware with 3rd party Software to receive NMEA messages from the Zeno SmartAntennas to provide your own custom solution.

Features & Functionality

- Configure RTK, stream RTK NMEA from GS05/06, GG01 and GG02plus

Leica Zeno Office

Leica Zeno Office on ArcGIS™ provides a set of tools for managing and processing GNSS and surveying data within ArcGIS Desktop, all from directly within your familiar environment. Leica Zeno Office is a software package to maintain, manage and post-process GIS, GNSS and surveying data. With Leica Zeno GIS you get much more done in a busy day and have full trust in the accuracy of your GNSS data.

- Automated field-office workflows: EasyIn and EasyOut
- Store detailed GNSS quality information in a GIS database
- Integration of surveying measurements in a GIS database

Leica MobileMatriX – Mobile Mapping and Data Collection Software

Leica MobileMatriX is a field solution for the interactive processing, visualization and maintenance of feature and survey data. Leica MobileMatriX directly integrates survey related data collection and processing functionality into ArcGIS®. Leica MobileMatriX is the perfect software for feature data collection and management and computation and storage of survey data based around the geodatabase from ESRI.

- Geodesy and Land Surveying
- Utility market and Power Supply Industry
- Forestry and geologic mapping
- Agricultural Mapping
- Environmental Data collection
- Map Completion

Please call us on 01189 820 500 for   more information on Leica GIS products

Pacific Crest Radios

ADL Vantage

Advanced high speed wireless data link built to survive the rigours of GNSS/RTK surveying and precise positioning.

- Multi-function user interface
- Configurable Transmit Power 0.1-4.0 Watts
- Heavy-Duty Construction
- High Over-the-Air Link Rate
- Configurable Transmit Power
- Advanced 40 MHz Bandwidth
- Software-Derived Channel Bandwidth

ADL Vantage Radio from £1,070.00

ADL Vantage Pro

This sophisticated 35 Watt radio utilizes Pacific Crest's latest generation Advanced Data Link (ADL) technology while remaining backward compatible with existing Pacific Crest, Trimble and other radios.

- Configurable Transmit Power from 2-35 Watts
- Multi-function user interface
- Heavy-Duty Construction
- Fully water- and dustproof
- 19200 Over-the-Air Link Rate without range degradation
- Advanced 40 MHz Bandwidth
- Software-Derived Channel Bandwidth

ADL Vantage Pro Radio from £2,195.00

ADL Uplink

The ADL Uplink combines a ruggedized handheld computer with a software program that automatically downloads Internet-based RTK corrections and streams them to a radio for rebroadcast into areas of poor cell coverage.

- Repeats NTRIP GNSS Network data in combination with radio
- Nomad computer and PCC software
- Fully automated operation
- Extents GNSS Network coverage using radios
- Solution for locations with weak cell phone coverage
- Offers solution to cut Cell phone cost

ADL Uplink System from £2,990.00

> **If you would like to discuss any Pacific Crest product in more detail please call us.**

Pacific Crest Accessories

ADL Vantage ADL Battery / Charger Kit
- Battery, bag, tripod clip + connector wire
- 9' SAE-to-SAE cable
- Charger, 12V, 3A
- Charger power cord and plug adaptors
- Battery manual
- Charger manual

Price £290.00

ADL Vantage Field Accessory Kit Includes:
- Battery, bag, tripod clip + connector wire
- 9' SAE-to-SAE cable
- Charger, 12V, 3A
- Charger Power Cord and plug adaptors
- Battery manual
- Charger manual
- NMO-to-TNC adaptor Cable (9 ft)
- Tripod Clip for radio
- Radio/cable carrying case with strap

Price £420.00

ADL Vantage – Tripod with Bag

Price £300.00
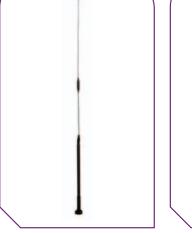
Part Number	Price
Elevated Feed Antenna, Unity Gain, NMO connector, 18"/45.7cm	£65.00
Elevated Feed Antenna, 5 dB Gain, NMO connector, 38"/96.5cm	£83.00
High-Gain Antenna Kit - 5 dB gain antenna + Antenna transport quiver	£115.00
Elevated Feed Antenna Cable (TNC to NMO) 2.8 m / 9 ft	£65.00
Elevated Feed Antenna Cable (TNC to NMO) 8 m / 25 ft	£115.00
1/2-Wavelength TNC-M Duck Antenna, 8.5"/21.6cm	£29.95

> **We can supply the full range of Pacific Crest Accessories. Please contact us for further information**

Fully understanding construction carried us beyond the ordinary. Leica iCON is more than a new product line and a software package, it enables you to enhance your performance, and increase your profitability through perfecting your construction workflow.

iCON Instruments:

Leica iCON robot 50 –

One-person operation, saving time and increasing productivity when carrying out layout tasks and as-built checks.

- One-button keyboard for simple operation
- Unique PowerSearch option for fast prism acquisition
- Ready to use in 3D machine control
- Easy hand-over control from rover to machine control and vice versa
- Available in 2", 5" versions
- PowerSearch option
- 250m option (reflectorless)

Leica iCON gps 60 –

Versatile Smart Antenna for multi-purpose positioning tasks.

- No controller required for base station set-up means you need less hardware.
- Future-proof satellite tracking. Works with all existing and future satellite systems.
- Unique communication flexibility, featuring integrated radio, modem and Bluetooth®
- Multi-purpose GPS solution. Can be used as construction site GNSS Base, Rover or NetRover, in supervisor vehicle on site and entry level machine control mounted inside a machine.

Leica iCON CC60/61 –

Rugged, mobile tablet PC with enhanced connectivity and functionality.

- Ideal for larger graphic visibility
- 7" display 1024x600 resolution
- IP 65, -20°C to +65°C
- Integrated BT & WLAN
- L1 GPS

Leica iCON CC50 –

Lightweight, handy PDA for easy and efficient field work.

- Long-range Bluetooth® up to 350m
- Sunlight visible VGA display

Leica Builder Range –

For anybody working on or around a site with the need of a simple, intuitive, yet innovative, long-lasting and powerful measuring tool. From a basic theodolite to a reflectorless total station with wireless communication the Leica Builder range can fit all measuring tasks.

Please call us on 01189 820 500 for more information on the iCON and Builder instruments

iCON Software

Improving your performance with intelligent software applications, workflow and an innovative user interface, iCON build's intuitive user interface provides you with highest accuracy and flexibility for your daily tasks.

- Worlds simplest Construction Positioning interface
- Ergonomically designed for unmatched user experience
- Intuitive to use and navigate through
- Large easy to use buttons
- All information displayed graphically wherever possible
- Modern look and feel (Smart phone style)
- Optimized for easy viewing
- Import and Export data from generic file formats
- Easily move data between Field, Office and Machine

Available as either iCON Build or Site there is a software package which meets your needs which ever sector you work in.
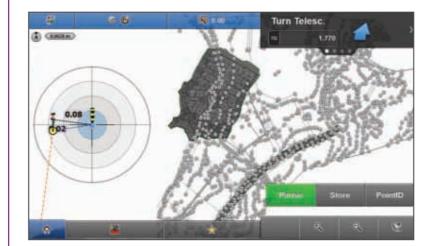
Feature Snap Shot:

Sketching
Build your digital copy of the design within seconds. Extend and modify existing data to the reality on site.

Layout
Simply pick points, lines or arcs for your layout from the map screen.

As-Built
Create as-built checks of structures for your records. Collect points, lines or arcs in one go with immediate graphical representation.

Volumes and Cut & Fill
Measure surfaces and calculate volumes or check elevation.

Leica
Geo Office

Your Vision: one integrated Office Software with Leica Geo Office use the most powerful tools all integrated in one common software to finalize your work faster today and tomorrow.

One Office Software for all your instruments

Seamlessly import and combine data from all your instruments to produce the final results. Manage and combine your data with Leica Geo Office to ensure you get the best results.

- GNSS instrument support
- TPS instrument support
- Level instrument support

Best-in-class Processing Options

Years of experience in the fields of surveying and GNSS data processing resulted in the world's most powerful processing options.

- GNSS data processing using SmartCheck techniques
- TPS processing – from simple station updates to complex traverses
- Level processing
- Combined network adjustments
- COGO calculations, Datum transformations and Volume calculations

All components integrated in one software

Leica Geo Office enables you to manage your project in an integrated way. No need to transfer data between the various modules.

- Use GNSS processing to automatically update SmartStation setups
- Combine GNSS and terrestrial data with an integrated Least Squares Adjustment
- Benefit from volume calculations being instantly updated whenever coordinates change
- Data management
- View and Edit
- TPS Processing

- Flexible Reporting
- Flexible Import and Export
- Tools for GPS, TPS and levels
- Coordinate transformations
- GNSS Post Processing
- Network Adjustment
- Surfaces and Volumes

Item No.	Module Description	Price
778066	Leica Geo Office TPS Bundle (Node locked). Includes LandXML Import/Export, COGO calculations and TPS data-processing.	P.O.A
778067	Leica Geo Office GNSS RTK Bundle (Node locked). Includes LandXML Import/Export and COGO calculations.	P.O.A
778068	Leica Geo Office GNSS-PP Bundle (Node locked). Includes LandXML Import/Export, COGO calculations, L1/L2 GNSS processing, GLONASS, RINEX Import and Datum & Map.	P.O.A
778069	Leica Geo Office Level Bundle (Node locked). Includes Level processing and Adjustment 1D.	P.O.A
778070	Leica Geo Office Professional Bundle (Node locked). Includes all options.	P.O.A

Please note Leica Geo Office can be customised to suit your requirements. Please contact us for more details

Geomatics Software from AiC

4Site

4Site Survey software for AutoCAD™ removes the tedium of extracting data from your survey equipment and transferring it into CAD to create drawings.

4Site Office (desktop) allows down loading, formatting and processing of survey data, whilst

4Site Survey links directly to your instrument for infield recording turning 4Site into an advanced digitiser. This allows you to take drawings out into the field, for setting out and comparisons with as built. All data is stored and processed internally in CAD.

Data appears on a Project Tree, like ⁿ4ce, for easy access and editing. A CodeTable, converts coded data into objects such as Points, Lines, Shapes, Blocks and Annotation.

Turn your Total Station into a digitiser, working in AutoCAD™!

4Site AutoCAD™ Software

A true Geomatics Software Toolbox, with data at your finger tips!

Survey – For those who want to import and process their survey data and export it to third-party CAD software.

Lite – Includes powerful graphical editing options, including the ability to create DTMs, contours and sections.

Professional – Uses advanced section and volume options, and advanced CAD editing tools to drastically speed up survey plotting.

Designer – Also adds specialist applications for Geological Modelling, Mining, Railways Surveys, Alignment Design and more.

I/O filters are available for all popular instruments formats including **Leica, Pentax, Sokkia, Topcon** and **Trimble**.

ⁿ4ce Used in Housing Layouts

ⁿ4ce Survey

ⁿ4ce Survey Import and process your survey data for exporting it to third-party software. Import your survey data from Total Stations and GPS directly in to ⁿ4ce.

LS Network Adjustment, Reduction & Error Checking Building Elevation Surveys.

Automatic feature generation from a Fully-layered database and user defined Code Table. Including Point, Line, Symbols, Shape and Text definitions. Spreadsheet and Graphics displays.Comma Codes, Dimensions, Helmert Co-ordinate Transformations and user-defined XYZ/CSV filters.

Transfer formats including Star*Net, AutoCAD™ DXF and Bentley MX™ GENIO.

Use Point Extraction from CAD for setting out from design drawings.

An ideal partner to third-party Modelling or CAD packages.

Fully Layered Code Table and Project Tree

£550.00

ⁿ4ce Lite

As ⁿ4ce Survey with the addition of Graphical Editing, including Multi-Point and Feature Identification, DTM creation with Contours, Groups, Multi-Surface Sections, and Complex Prism Volumes and Isopachytes. Image Registration.

Point and Feature editing, including Delete, Move and Insert.

A 3D Viewer allows interactive visualisation of the DTM, with coloured Groups.

A simple CAD editor allow the creation of detail including finished Drawings with View Ports using Paper Space and Model Space.

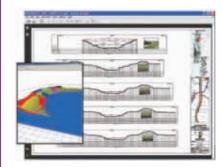Bitmap Images, like logos and photos can be introduced to Drawings for final presentations.

Field to Finish solutions for site engineers and surveyors with limited needs.

Modelling and 3D Views in ⁿ4ce

£1250.00

ⁿ4ce Professional

Beach and River Surveys

£2250.00

As ⁿ4ce Lite with additional **Design Tools** for Model and CAD Editing. additional Sectioning and Volume options with Group Depths with Model Merging, Combining and Grid Models. Partitions with Key Plans.

Introducing Dedicated CAD Backcloths with Tables, Hatching, Dimensioning and other CAD functions for preparing professional presentations.

Point Height Text Filtering, point List and Design using Profile Templates; Bench and Batter; Densification and much more…

Applications for River Sections and Beach Surveys extends ⁿ4ce into a specialist design package.

Full of detail for the discerning user wanting advanced functionality and quality presentations.
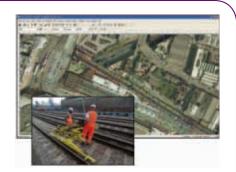
ⁿ4ce Designer

As ⁿ4ce Professional with specialist applications for Geological Modelling, Earthworks, Mining, Rail Surveys from Trolleys with overlap checking and Offsets.

Bore Holes, Lidar & Grid Modelling, Alignment Design, Haul Roads, Surcharging, Cut/Fill Balancing with Bulking Factors & Trending.

Horizontal and Vertical Alignment Design. Ideal for Rail Survey Analysis, Pipelines and Road Layouts.

Multi-surface Modelling with draped aerial photography and 3D viewing. Visibility Analysis with zoned line of sight. Specialist LiDAR processing and editing tools.

Suited to Earthworks Contractors, Design Engineers and Rail Surveyors wanting precise quantities and specialist applications.

Rail Surveys

£2750.00

Radiodetection
AN SPX COMPANY

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Scan Me

> **Radiodetection**

In an ever more regulated industry, the next generation of Cable Avoidance Tools, C.A.T4™ and Genny4™, build on over 30 years of Cable Avoidance expertise to enable operators to find more buried utilities, faster.

Detect more, detect faster

The C.A.T4 Avoidance Mode™ lets the operator check an intended excavation area for Power, Radio and Genny4 signals, and pinpoint located utilities, in a single scan. The bargraph 'tidemark' enables the user to quickly spot and zero-in on a buried conductor.

The Genny4 provides a class-first simultaneous dual-frequency signal output. Alongside the familiar 33kHz signal for general purpose locates, the Genny4 transmits a specialised Small Diameter Locate frequency which facilitates location of utilities such as telecoms and street lighting, including spurs. For difficult locates, the Signal Boost function enables the Genny4 signals to travel further and deeper, and couple onto utilities more easily.

C.A.T4's Dynamic Overload Protection feature automatically filters out high levels of interference, allowing operators to continue working even in electrically noisy areas such as substations and under high-voltage cables – and requires no input from the operator.

Dig more safely

As a safety critical tool, C.A.T4 and Genny4 offer a number of features designed to support safe working and help to drive utility strike rates down.

eC.A.T4™ series units feature on-board data acquisition to aid in identifying training needs, while the SWING™ warning alerts the operator to incorrect usage patterns, encouraging corrective action.

All C.A.T4 units are equipped with Radiodetection's proprietary eCert™ technology, which provides a comprehensive assessment of the unit's hardware and software using an internet connection to Radiodetection, and can be used to extend the validity of the C.A.T4's calibration certificate on-demand.

	C.A.T4	C.A.T4+	eC.A.T4	eC.A.T4+
Avoidance Mode™ (R)	●	●	●	●
Genny™ signal locate (G)	●	●	●	●
Power signal locate (P)	●	●	●	●
Radio signal locate (R)	●	●	●	●
Small Diameter Locate frequency	●	●	●	●
eCert™	●	●	●	●
Dynamic Overload Protection	●	●	●	●
Depth estimation			●	●
StrikeAlert™	○	○	○	○
Usage data logging			●	●
Service due indicator			●	●
SWING™ warning			●	●
CALSafe™			○	○

● Standard ○ Option

Depth estimation requires use with Genny or Sonde

Data Acquisition / Logging

On-board memory allows over a year's worth of data[2] to be stored on eC.A.T4 series products. This data can be backed-up to a PC at any time, giving virtually unlimited record keeping for the life of the product. Retrieved data can be analysed, either locally or remotely, to aid in ensuring compliance and identifying training requirements. records can be retrieved and collated helping to increase on site safety, whilst identifying training needs. The EZiCAT i650 makes locating underground cables and pipes a simple and efficient task, increasing your onsite safety and ultimately saving time and money.

Factors logged include:

- Mode of use: Genny / Power / Radio signal strengths
- Date and time of survey
- StrikeAlert / Swing warning statuses
- Angle of use
- Audio status
- Bargraph readout
- Sensitivity control setting
- Depth measurements made
- Battery status
- Last / next calibration date
- Dynamic Overload Protection / signal overload status

[2] Based on 8 hours use per day, 5 days per week.

eCert™ – remote calibration validation

eCert™ remote calibration testing offers an innovative calibration option intended to form part of an annual service regime. Activated through the C.A.T Manager PC software, eCert provides a fast, thorough and convenient test of the key locating circuitry within C.A.T4, and validates the results against the original factory calibration using an internet connection to Radiodetection. Following an eCert test pass, a Radiodetection Calibration Certificate for that C.A.T4 can be printed or saved.

For a complete maintenance package, Radiodetection also offers exhaustive factory-backed service and recalibration options including full mechanical integrity inspection and function testing.

Model	Standard Unit	With Strike Alert
C.A.T4	£495.00	£569.95
C.A.T4+	£575.00	£649.95
eC.A.T4	£625.00	£699.95
eC.A.T4+	£695.00	£769.95
Genny4	£445.00	£519.95

Radiodetection RD7000

A broad range of standard active frequencies and rugged construction make the RD7000+ a reliable and versatile locator. The RD7000+ range of locators are powerful successors to the industry standard RD4000 family.

Featuring Compass™ and dynamic overload protection, the RD7000+ range delivers exceptional pipe and cable location and tracing functionality, even in electrically noisy areas.

Available in 4 models:

RD7000 SL+
for Construction

RD7000 DL+
for Water Industry

RD7000 PL+
for Power Industry

RD7000 TL+
for Telecoms Industry

Model	Price
RD7000 SL+	From £955.00
RD7000 DL+	From £1,055.00
RD7000 PL+	From £1,195.00
RD7000 TL+	From £1,195.00

Tx Transmitter Range

Available in 1, 3 & 10 Watt Configuration

All models are compatible with the complete range of **RD7000** and **RD8000** frequencies in both inductive and direct connect modes. The transmitters use 8 D-cell batteries and can be powered from a vehicle using a 12V cable plug (it is recommended that an approved Radiodetection isolation transformer is used).

As an additional feature, each model has a multimeter function providing measurement of output voltage, line voltage, current, impedance and power.

Available in 3 Models:

TX-1 (with or without iLOC™)
1 Watt Transmitter

TX-3 (with or without iLOC™)
3 Watt Transmitter

TX-10 (with or without iLOC™)
10 Watt Transmitter

Rechargeable battery packs available for all models

Model	Price
TX-1	From £675.00
TX-3	From £995.00
TX-10	From £1,215.00

Scan Me

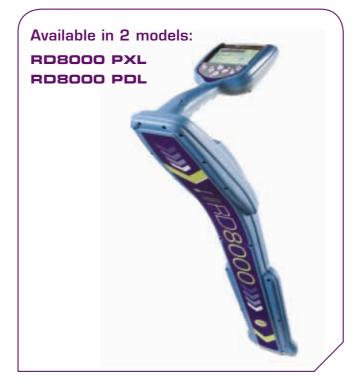**Delivering fast, accurate, reliable and repeatable locate data.**

The RD8000™PDL and PXL are powerful multifunctional pipe and cable locators designed for use across the pipe and cable location industry. With several unique features, the RD8000™ delivers speed, accuracy and reliability, yet remains a cost-effective solution for any application. Designed with the latest digital architecture and software, RD8000™ delivers a highly accurate, controllable and reliable locate solution to service any industry, anywhere in the world.

Available in 2 models:

RD8000 PXL
RD8000 PDL

RD8000 PXL

The RD8000PXL is the industry standard high performance cable and pipe locator. It has a broad range of active, passive and sonde frequencies as well as a number of unique user features supplied as standard.

RD8000 PDL

Radiodetection's most advanced cable and pipe locator delivers a broader range of frequencies and sophisticated fault-finding capabilities. It has all the features of the RD8000PXL and a larger range of active and passive frequencies (including CATV and CPS) plus Current Direction (CD), and Fault Find (FF) modes.

Key Features:

Ergonomics
- Light weight – 28% lighter than industry standard RD4000
- IP54 Rating – you can operate it in almost any environment
- Transmitter and receiver feature a large, high contrast backlit LCD screen.

Centros™
- Over 50 software and hardware patents
- Combination of new and innovative algorithms with established software on a high-performance processor core
- Improves the accuracy and repeatability of measurements
- Delivers powerful signal filtering and analysis allowing continued operation even in the most electrically noisy environments.

iLOC™
- iLOC™ is an advanced Bluetooth® link between the RD8000 locator and transmitter
- iLOC allows the operator to control the transmitter remotely
- Less time walking and more time locating.

eCAL™
- A Radiodetection technique that allows the operator to validate the original factory calibration of the RD8000
- eCAL can issue and print validation certificate without needing to return the RD8000 to a service center.

TruDepth™
- Accurate depth readings as only indicates a locate depth when the locator is correctly oriented directly above the pipe/cable.

Model	Price
Radiodetection RD8000 PXL	From £1,585.00
Radiodetection RD8000 PXL iLoc	From £1,725.00
Radiodetection RD8000 PDL	From £1,825.00
Radiodetection RD8000 PDL iLoc	From £1,995.00
Radiodetection RD8000 PDL	From £1,825.00

Please call for more information on the Radiodetection Precision Location RD7000 and RD8000 Range

Cable Avoidance

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Radiodetection C.A.T³

Radiodetection® AN SPX COMPANY

C.A.T³ (Cable Avoidance Tool) is an advanced cable avoidance tool delivering world class performance from a powerful digital processing platform can detect signals naturally radiating from metallic services or the Genny3 can be used to apply a distinctive signal that the C.A.T³ can detect.

The Radiodetection C.A.T3 and Genny3 has become the industry standard pipe and cable avoidance tool, recognized as the leader across all industry segments providing performance, ruggedness and reliability, together with affordability and low cost of ownership.

Key features

- Precision locate – Improved pinpointing of buried services and exceptionally fast sound and meter response.
- Optimized locate – Operates effectively in congested sites, and sites with overhead cables.
- Avoidance Scan – Search in Power, Radio and Genny modes simultaneously for improved safety and faster surveys.
- Strike Alert – Alerts the user to shallow power cables by flashing an alert icon.

	C.A.T³	C.A.T³V	C.A.T³+
Power	✓	✓	✓
Radio	✓	✓	✓
AvoidanceScan™	✓	✓	✓
Genny	✓	✓	✓
Active Depth			✓
StrikeAlert™		Optional	Optional
Meter with Backlight		✓	✓

Radiodetection Genny³

Radiodetection® AN SPX COMPANY

The Genny can be used to apply a distinctive signal that the C.A.T can detect.

KIT	C.A.T³	C.A.T³V	C.A.T³+
C.A.T Only	£515.00	£425.00	£495.00
Genny Only	£425.00	£425.00	£425.00
C.A.T & Genny Kit (includes bag)	£895.00	£895.00	£925.00
C.A.T³+ Builders Kit (includes bag)	£1,375.00	£1,375.00	£1,470.00
C.A.T³+ Electricians Kit (includes bag)	£1,260.00	£1,260.00	£1,335.00

Sondes

Self contained transmitters for locating underground pipes and conduits can be connected to Drain Rods or Cobra Reels. 6 Models with three choices of locate frequencies.

Standard Sonde 33kHz	£234.00
Slim Sonde (Mighty Mouse)	£296.00

Signal Clamps

Used to apply signal to pipe or cable without need to disconnect or interrupt supply.

Small Signal Clamp (50mm)	£186.00
Standard Signal Clamp (100mm)	£186.00
Signal Clamp Extension Rod	£22.00

FlexiTrace

A flexrod which is energised by transmitter and inserted into small diameter pipes, can trace the tip or whole rod.

Flexitrace	£821.00

Cobra Rods

Can be used in-conjunction with a sonde for tracing available in 9mm or 11mm Diameter Rod and are supplied complete with Wheel sets for ease of transportation.

Mini Frame 4.5mm 30,50,80m	From £110.00
Ferret Frame 6mm 30 to 120m	From £149.00
Compact Frame 9mm 50 to 100m	From £200.00
Large Frame 11mm 100 to 250m	From £345.00

T 01189 820 500

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CABLE AVOIDANCE

EZiCAT i-Series Locators

cable detection

The EZiCAT 500i and 550i represent the latest design in cable location technology. With state-of-the-art digital signal processing (DSP) and intelligent software, the EZiCAT i-Series locators make ground surveys a simple and speedy task; increasing onsite safety and ultimately saving time and money.

EZiCAT 500i locator

With its automatic controls and combined detection mode "Auto Mode" the EZiCAT 500i locator has been specifically designed to reduce human error during the location process. Combined with its precise and reliable service positioning, the EZiCAT 500i will prevent damage to underground services during excavation projects. Active signal tracing is available when using the EZiTRACE 8/33 signal generator.

£485.00

EZiCAT 550i locator

Contains the same functionality as the EZiCAT 500i, however it offers the added benefit of service depth estimation, when used in conjunction with the Digitex 8/33 signal generator or Sonde in 8/33 kHz mode.

£525.00

Bluetooth Technology

The EZiCAT i-Series locators can be purchased with the added benefit of Bluetooth wireless connectivity, allowing them to integrate seamlessly with mobile mapping technology to log survey data.

Bluetooth™

EZiTEX t100 signal transmitter

Dual Frequency Signal Generator. Designed in conjunction with the EZiCAT locators, to easily and accurately trace the route of, or locate, an underground cable or metal pipe that does not carry a naturally present signal. The EZiTEX t100 generates a specific "active" signal, which can then be traced using any EZiCAT locator..

£450.00

Features	EZiCAT 500i	EZiCAT 500i with Bluetooth	EZiCAT 550i	EZiCAT 550i with Bluetooth
High contrast LCD display	✓	✓	✓	✓
Automatic sensitivity adjustment	✓	✓	✓	✓
5 operating modes - including Auto Mode	✓	✓	✓	✓
Hazard Zone - shallow service warning	✓	✓	✓	✓
In-built user activated self test	✓	✓	✓	✓
Peak Assist Function	✓	✓	✓	✓
Bluetooth wireless data transfer		✓		✓
Service depth indication			✓	✓

Advanced buried service location technology

The new EZiCAT i600/650 provides a unique data capture and on board memory function, allowing verification of the locators use and the ability to recall records following a near miss, service strike or similar incident.

With the unique LOGiCAT Software, records can be retrieved and collated helping to increase on site safety, whilst identifying training needs. The EZiCAT i650 makes locating underground cables and pipes a simple and efficient task, increasing your onsite safety and ultimately saving time and money.

EZiCAT i600/650 New Features

Data Logging
Both the EZiCAT i600 and i650 record and store detection information whilst in use. The locators start to record information every second after completion of the initial start-up routine. These records (logs) are stored in the locator's memory and can be retrieved and transferred via Bluetooth to a PC for analysis. The locators are capable of storing approximately 80 hours of records.

Bluetooth Wireless Connectivity
Both the EZiCAT i600 and i650 locators have the added benefit of Bluetooth wireless connectivity. It allows the EZiCAT to integrate seamlessly with mobile mapping technology to log survey data, in addition to enabling wireless Bluetooth data transfer.

Depth Indication (i650 only)
When using the EZiCAT in conjunction with the EZiTRACE or Sonde in 8 or 33 kHz modes, operators can determine the depth of the buried utility, providing a clear advantage when conducting ground surveys.

EZiCAT Intelligent Features
- **Automatic Controls**
  Making the EZiCAT easy to use, requiring minimal user training.
- **Starts in Power Mode**
  Ensures the most potentially dangerous current carrying services are detected first for maximum operator safety.
- **Hazard Zone**
  Buried utilities close to the surface pose a significant safety risk to site works. The new Hazard Zone function provides an additional warning to the close proximity of buried services, alerting users to the immediate danger.
- **Pinpoint Assist**
  Maintains the highest peak reading obtained on the signal strength indicator for a period of time, allowing the operator to quickly and accurately pinpoint the service position.
- **Signal Strength Indicator**
  All EZiCAT i-Series locators feature numeric signal strength readout, specifically designed for easy Sonde location and use with Signal generator.
- **In built Test Function**
  Allowing operators to test the hardware and software functionality of the EZiCAT before use.
- **Service Due Indicator**
  Wrench icon displayed after 12 months.
- **Highly Visible Digital LCD Display**
  With built in light sensor, automatically enabling the backlight in dark conditions.

Features	EZiCAT i600	EZiCAT i650
High Contrast LCD Display	✓	✓
Automatic Pinpointing	✓	✓
Always Starts in 'Power Mode' for Safety	✓	✓
Automatic Sensitivity Adjustment	✓	✓
5 Operating Modes - including 'Auto Mode'	✓	✓
'Hazard Zone' - Shallow Service Warning	✓	✓
In-built User Activated Self-Test Function	✓	✓
Peak Assist Function	✓	✓
Bluetooth Wireless Data Transfer	✓	✓
Service Depth Indication		✓
Price	**£695.00**	**£650.00**

i-Series LOGiCAT Software – LOGiCAT Software

Allows you to upload stored records from individual locators, simply upload all records or search by date. Upload information includes:

- Time and Date Information
- Usage Duration
- User Identification
- Detection Mode Used
- Service Detection
- Product Fleet Management
- Diagnostic Check
- Management Reports

£49.95

Cable Avoidance

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Track Measuring Device

abtuslimited
Established in 1908-100 years of excellence in railway and marine technology
ABT5100 Track Measuring Device

Track Monitoring Device Software By

4Site Rail

ABT5100 TMD

Abtus have over 100 years' experience in the design and manufacture of railway measurement equipment. Specialising in lightweight, robust products to measure and maintain the rail-track and associated infrastructure.

Understanding the growing demand for absolute track measurement from the global survey market, Abtus have teamed up with AiC and Opti-cal Survey Equipment to deliver the ABT5100 Track Measuring Device.

System Benefits:

- Cable free solution
- Light weight
- Modular system
- One operating system for all survey data (Including set-up, track data and topo survey)
- Can be used on Tramway
- System is compatible with customers' existing survey equipment
- Complete solution developed and supported in UK

4Site Rail has been developed in partnership between Apps in CAD and Opti-cal to provide a powerful software package to combine with the ABT5100 Track Monitoring Device. Working in a full 3D DWG based CAD environment, specifically tailored to facilitate the quick and easy collection of survey data 4Site rail combines powerful and easy to use tools whilst keeping the survey process simple.

4Site Rail combines the already powerful 4Site survey software to enable the user to perform a full rail survey and not just the tracks. This means that all the other important track features such as junction boxes, electrical conduits etc can be collected seamlessly at the same time with no need to switch controller or software.

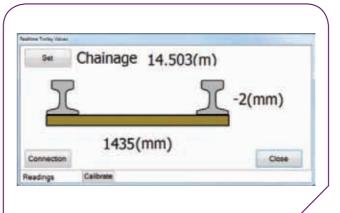### One Solution = One Software Package = 4Site Rail

Key Features

- Clear simple easy to use software platform
- Unique Wizard Resection – One button Automatic Resection using Leica PowerSearch
- Short Learning Curve
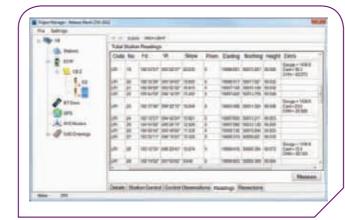- Tablet PC optimised, no requirement for stylus whilst surveying
- Real time data and graphical views
- Leica GSI & Trimble DC Data Files supported
- Full reporting on all key operations – setups, resection, track data, etc direct to PDF
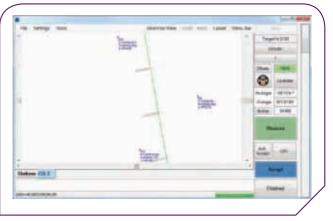- Import/Export – MX Genio, LandXML

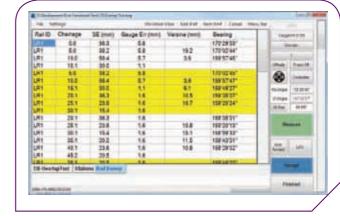| System configuration	
Gauge (mm)	1000, 1067, 1435, 1520/24, 1600, 1668/76

Measurement Range	
Gauge - for nominal gauges	Horizontal: 5 mm + 0.5 ppm (rms) Vertical: 10 mm + 0.5 ppm (rms)
Superelevation (Cant) - at 1435 mm	+/- 249 mm (+/- 10°)

Cont. system accuracy	
Gauge	+/- 0.8 mm
Superelevation - stop&go mode - kinematic mode	+/- 0.5 mm +/- 0.5 mm

System weight	
ABT5100 - ready to measure - incl. battery and computer	20 kg

System configuration	
Leica total stations - motorised, ATR - radio modem	TS30 TPS1200, TS15 TPS2000
Leica GPS	GPS1200

Power supply	
TGS FX – sensors	Leica GEB171, battery, rechargeable
Battery life*)	> 8 h
Algiz control computer	Algiz Hot Swappable Li-Ion battery, rechargeable
Battery life*	> 6 h
* Depending on conditions.	

Environmental specifications	
Working temperature range Humidity	-10° to +50° C
- non-condensing	< 80 %

Please call us on 01189 820 500 for more information regarding Track Monitoring Devices

Calibration and relative mode display

Real time graphical stream

Real time data stream

Overlap Indication

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Rail 65

ABT4650 RouteScan

Structure Survey Editor™ Software

Balfour Beatty
Rail

RouteScan has been developed to provide quick, accurate structure clearance measurements relative to the Permanent Way. The Gauge self-locates on the track and can be operated from a position of safety using the supplied PDA via a Bluetooth connection.
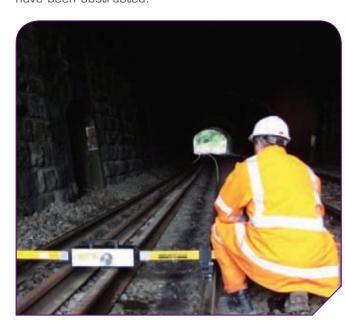
X/Y co-ordinate points are measured using a laser which rotates through 360º. RouteScan is also able to measure Track Gauge and Super-Elevation. Data recorded by RouteScan is compatible with MS Excel™ and Clear Route™ and is easily transferred to a PC via USB.
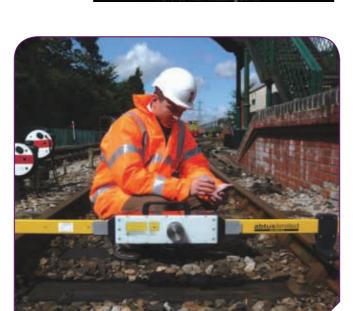
The unit is a lightweight 9.5kg and is provided with a rugged box for storage and transportation to and from site. The unit has been designed to be user-friendly, and if required additional training course can be provided.
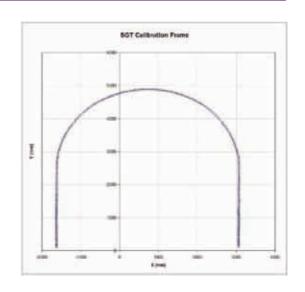
Some of the functions of RouteScan are:

- Over Bridges
- Tunnels
- Platforms; including 'true' platform edge position
- Signals & Gantries
- Under Bridges
- Datum Plates
- Six Foot & ten Foot Rail positions
- Super-Elevation and Running Gauge

A target pole set is available for the capture of measurement postions that would otherwise have been obstructed.

SGT Calibration Frame

Technical Data

Point Co-ordinates	Range Accuracy	0.2-3.0m ±3mm @ 4.0m ±6mm @ 8.0m
	Resolution	1mm
Track Gauge	Range Accuracy Resolution	15/+25 (on nominal) ±0.5mm 0.1mm
Super-Elevation	Range Accuracy Resolution	±200mm ±1.2mm 0.1mm
Dimensions	Length Width Height Weight	1600mm 260mm 240mm 9.5kg

Visualise your data with Structure Survey Editor™ Providing the capability to view and edit your infrastructure measurement data, Structure Survey Editor™ is the latest package to come from Balfour Beatty Rail Technologies.

Over recent years there has been an increased requirement within the geo-spatial surveying sector to carry out infrastructure measurement analysis across rail networks so it is essential that surveyors are equipped with an editing tool that allows them to check, edit and view their profile data before undertaking and design or gauging clearance work.

Structure Survey Editor™ provides a low cost solution with no annual maintenance charges plus the back up support associated with a leading transport software provider
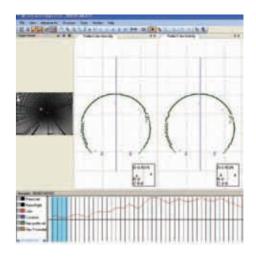
The ultimate structure editing tool

The software editor has been designed to assist surveyors when undertaking measurements for tunnels, bridges and platforms by providing them with a tool that lets them view, and if necessary manipulate, profile data before undertaking any design or gauging clearance work. Data can be viewed at site and integrated with other measurements, such as cant and curvature. Measurement points can be edited to correct spurious points caused for example by lighting, foliage and areas of poor reflectivity.
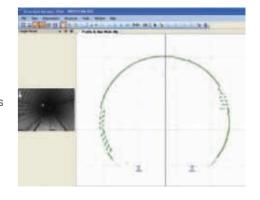
Key Features:

- A range of viewing and editing tools which support .ScO/Xml data from an array of measurement devices
- Clear and concise editing tools
- Provision to view and edit multiple profiles
- Navigator window shows all selected profiles with cant and curvature
- Allows inclusion of track geometry measurements such as cant and radius
- Profiles from a whole structure survey can be viewed and edited together
- Photographic images of structures can be associated with structure profiles
- Multiple distance base settings

Key Benefits:

- Improved quality of survey data
- Saves time analysing measurement data
- Allows a comprehensive on site assessment
- Supports .scO/.scn data from an array of measurement devices
- Training and support available
- Low 'one off' purchase price

Please call 01189 820 500 for more information or to arrange a demonstration

Rail Accessories

Monitoring Prism

Versatile monitoring prism which can be attached to the track side furniture and structures without the need to drill or stick. Easily removable at the end of the monitoring scheme and can be used again and again.

£55.00

Rail Angle Shoe

- Rail shoe for exact surveying of the rail position.
- Allows the operator to set a reference point on the inner side of the rail 14mm below the top.
- Metal construction with hardened 14mm long cylinder pin for exact setup.
- Available with Leica or 5/8" fitting
- Adjustable reach with rubber stop

£137.00

Platform Gauges

The Bance Platform Gauges have been designed to help set the platform coping stones to the track. It achieves this by measuring both height and distance from the outside rail running edge, on a level between both rails. It can be used to both set the platform stones, or check and measure their actual dimensions.

The platform gauge is both rigid and stable whilst as light and manageable as possible. By preventing any flexibility in the gauge true accurate readings are guaranteed. It has handles and is balanced to enable one person to manoeuvre and operate it, with clear simple and precise scale readings. The gauge can be used with no fear of making electrical signalling contact between the two rails, so it will not affect any signalling equipment.

- Separates into 2 sections for ease of transportation
- Calibration ISO 9002 NAMAS

Description	Model	Lateral	Vertical	Price
Standard	PLG/STD	550 - 1200 mm	50 - 1230 mm	**£1,585.00**
Non-Conductive	PLG/NC	550 - 1050 mm	175 - 1200 mm	**£1,785.00**

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HDS Laser Scanning

Laser scanning is a fast, accurate, and cost-efficient method of gathering three-dimensional data for use in 3D models and mapping. It is widely used throughout the surveying and engineering sectors and many others where large volumes of precision data need to be captured quickly and accurately.

Applications for 3D laser scanning include:

- Structural and Engineering applications
- Topographic surveys
- Volumetric Analysis – Stockpiles etc
- Road traffic accident scene
- Restricted Access Surveys
- Erosion monitoring
- Cityscape modelling – integration of terrestrial based scanning with airborne data

- Building and Architectural Survey
- Crime scene recording
- Slope and Embankment Modelling
- Manufacturing and processing facilities management
- Ports, harbour and water course modelling
- 3D modelling for film and television productions
- Visual Impact Assessment

Leica ScanStation C5/C10

Today's most popular class of laser scanner, ScanStation, is now in a compact, all-in-one C10 platform. It includes scanner, tilt sensor, battery, controller, data storage, auto-adjusting video camera and laser plummet.

ScanStation C5/C10 Benefits

- **Range** up to 300 m range.
- **Field-of-View** Full 360º x 270º field-of-view
- **Speed** Scans at up to 50,000 points per second.
- **Flexibility & Integration** Compatible with existing Leica GNSS sensors.
- **Camera** Integrated high resolution camera for texture mapping point clouds.
- **Onboard display** Full Colour QVGA Touchscreen

The entry level ScanStation C5 can be upgraded over time to meet users developing requirements.

HDS7000

The HDS7000 phase-based scanner provides important "next level" performance features for demanding professionals, making it the industry's best phase-based scanner.

HDS7000 Benefits

- **Speed** Up to 1 Million Points per Second
- **Range** Up to 180m
- **Higher Productivity** Ultra-high speed scanning and a 360x320 field-of-view combine with longer useful range for fewer setups and less scanning time
- **More Robustness** Operate with confidence from -10°C to +45°C, in harsh environments with a reliable, "encapsulated mirror" design and a safe class 1 laser
- **Better Data Quality** Best combination of high accuracy and low scan noise at longer ranges for any phasebased scanner
- **Better Usability** A user friendly touch screen and compact design with integrated battery and data storage make it easy to use

Please call for further information and pricing

Leica DISTO™ Accessories

Ideal accessories to compliment the Leica DISTO™ range

Leica TRI100 Tripod

Quality tripod with bubble level, very easy fine adjustment. Extendible length from 0.70 m to 1.74 m.

£59.00

Leica GLB10 Laser Red Glasses

Red lens glasses for improved visibility of the laser dot in bright rooms and outdoors up to 10-15m.

£12.95

Leica LSA360 Adapter

For precise indirect measurements with the tilt sensor from the tripod; tilt axis and laser beam are in one plane (elimination of tilt axis error).

Suitable for a set-up pole with a diameter of 11–35 mm (0.45"–1.35") and the Leica TRI 100 tripod.

£59.00

Leica TA360 Adapter

Handy metal tripod head for easy and precise targeting. Rotary axis, tilt axis and laser axis meet at one point. This leads to minimum deviations when using indirect measurement. Particularly suitable for the Leica TRI 100 tripod.

£59.00

Leica GZM30 Target Plate

Stick-on target plates for placing on ground markers.

Size: 274 × 197 mm

£44.98

Leica GZM26 Target Plate

For measurements on to poorly reflective surfaces. Two-sided – grey side for shorter distances and brown for longer.

Size: 210 × 297 mm

£19.99

Leica GZM27 Target Plate

Stick-on target plates for fixing on to edges and corners.

Size: 147 × 98 mm

£22.99

Softbag

Protects the Leica DISTO™ against dust and impact. With additional compartments for operating manual, target plates, pocket PC etc

£29.99

Leica Staves

It is essential to achieve the best performance from your level that you partner it with the suitable stave for the job. From standard dumpy levels to high accuracy digital levels we can supply the correct staff, if you are unsure of which stave to purchase please contact us and we will advise the best solution for you.

Staves – E Type   For Automatic Levels

345123-613	Construction Telescopic Staff 5m, 5 Sections	**£24.95**
663130	BTL4D Telescopic staff 4m, with bubble	**£48.00**
663131	BTL5D Telescopic staff 5m, with bubble	**£55.50**
727587	CLR101, Telescopic Staff 4m, 4 Sections	**£37.50**
727588	CLR102, Telescopic Staff 5m, 4 Sections	**£39.95**
757761	GTL4M Telescopic staff, 4m, fibreglass	**£195.56**

Staves – Barcode   For Sprinter Digital Levels

741884	Dual Face Telescopic Staff, 4m 4 Section Metric	**£48.00**

Staves – Barcode   For DNA Digital Levels

757761	GTL4M Telescopic staff, 4m, fibreglass	**£195.56**

Staves – Invar   For DNA Digital Levels

563659	GPCL2 invar code lev.staff, 2m	**£524.95**
555638	GSL3 Pair of struts f. GPCL3/GPLE3N	**£595.00**
555636	GPLE2N Invar staff, 2m	**£425.00**
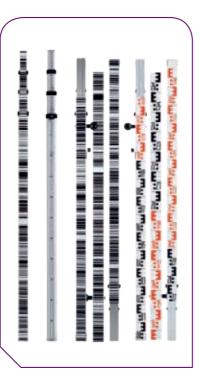
Staves – Industrial Invar   For DNA Digital Levels
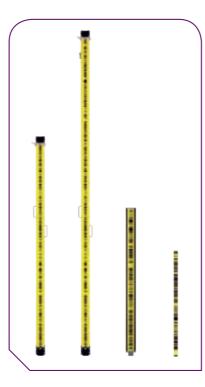
559615	GWL92N Industrial Staff, 92cm	**£325.00**
559616	GWL182N Industrial Staff, 182cm	**£425.00**
563733	GWCL60 Invar Code Scale, 60cm	**£175.00**
632313	GWCL92 Industrial Code Staff, 92cm	**£525.00**

Staves – Lumi Scale   For Digital Levels

340 222	LumiScale with Leica DNA bar code	**£1,130.00**
340 225	LumiScale with Leica sprinter bar code	**£1,130.00**

LumiScale is a self-illuminating levelling staff for digital levels for use under unfavourable light conditions such as underground and tunnelling construction projects.

Leica Tripods

GST103   CTP104   GST05L   GST101

GST05   GST20-9   GST120-9   GST4
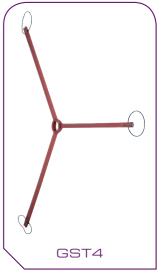
Item No.	Model	Material	Leg Clamp	Top	Max Height	Price
726833	GST103	Aluminium	Screw	Flat	1.73m	**£39.95**
767710	CTP104	Aluminium	Quick release	Flat	1.73m	**£59.95**
563630	GST05L	Aluminium	Screw	Flat	1.76m	**£79.95**
726831	GST101	Wood	Screw	Flat	1.73m	**£89.95**
399244	GST05	Wood	Screw	Flat	1.76m	**£149.95**
394752	GST20-9	Wood	Screw	Flat	1.8m	**£219.95**
667301	GST120-9	Wood	Screw	Flat	1.8m	**£219.95**
332200	GST4 Tripod Floor Star					**£229.95**

We have put together a number of detail kits below to go with your Leica Total Station, please remember these can be customised to suit your needs.

Suggested Detail Equipment for Two-Person Operation

Part No.	Qty	Material Description
394752	1	GST20-9 Wooden heavy duty tripod
385500	1	GLS11 Aluminium reflector pole
641617	1	GPR121 Circular prism with holder
667718	1	GHM007 Instruments height meter
722045	1	GHT196 Distance holder for height meter
746919		**Standard Detail Kit "Round Prism" £595.00**

Suggested Detail Equipment for Standard One-Person Operation

Part No.	Qty	Material Description
394752	1	GST20-9 Wooden heavy duty tripod
385500	1	GLS11 Aluminium reflector pole
639985	1	GRZ4 360° Prism
667718	1	GHM007 Instruments height meter
722045	1	GHT196 Distance holder for height meter
746920		**Professional Detail Kit "360 Prism" £995.00**

Suggested Detail Equipment for SmartPole One-Person Operation

Part No.	Qty	Material Description
394752	1	GST20-9 Wooden heavy duty tripod
754391	1	GLS12 Aluminium SmartPole, telescopic snap-lock, cm
754384	1	GRZ122 360° Prism for SmartPole
667718	1	GHM007 Instruments height meter
722045	1	GHT196 Distance holder for height meter
6005356		**SmartPole Ready Detail Kit "360 Prism" £1,395.00**

We have put together a number of traverse kits below to go with your Leica Total Station, please remember these can be customised to suit your needs.

Basic Set with Optical Plummets

Part Number	Quantity	Material Description
726833	2	GST103 Aluminium tripod
748888	2	GDF111-1 Tribrach without plummet
725566	2	GZR103 Carrier with optical plummet
641618	2	GPR111 Circular prism
667451	1	Container for GPR111/121 plummet tribrach
743460		**Basic Set with Optical Plummets** **£995.00**

Professional Set with Optical Plummets

Part Number	Quantity	Material Description
394752	2	GST20-9 Wooden heavy duty tripod
667307	2	GDF122 Tribrach with optical plummet
667313	2	GRT144 Carrier with stub
641617	2	GPR121 Circular prism with holder
667451	1	Container for Traverse Kit
743456		**Professional Set with Optical Plummets** **£1,395.00**

Professional Precise Set with Optical Plummets

Part Number	Quantity	Material Description
394752	2	GST20-9 Wooden heavy duty tripod
667304	2	GDF121 Tribrach without plummet
428340	2	GZR3 Precise carrier with optical plummet
641617	2	GPR121 Circular prism with holder
667451	1	Container for Traverse Kit
743457		**Professional Precise Set with Optical Plummets** **£2,495.00**

Professional Set with Laser Plummets

Part Number	Quantity	Material Description
394752	2	GST20-9 Wooden heavy duty tripod
667304	2	GDF121 Tribrach without plummet
667316	2	SNLL121 Precise carrier with laser plummet
641617	2	GPR121 Circular prism with holder
667451	1	Container for Traverse Kit
743454		**Professional Set with Laser Plummets** **£2,895.00**

Leica Accessories

Authorised Distributor & Service Partner

GDF111-1

GDF121

GDF122

GDF112

GHT196

GHM007

Item Number	Model	Description	Price
748888	GDF111-1	Tribrach without optical plummet	£109.95
667304	GDF121	Tribrach without optical plummet	£154.95
667307	GDF122	Tribrach with optical plummet	£235.95
667308	GDF112	Tribrach with optical plummet	£189.95
722045	GHT196	Holder for GMH007	£7.95
667718	GHM007	Instrument Height Measuring Meter	£24.95

Authorised Distributor & Service Partner

GRT247

GZR103

GRT144

GRT146

GZR3

GZR2

SNLL121

GZS4

GAD31

Item Number	Model	Plummet	Accuracy	Bubble	Price
770715	GRT247	None	1.0mm	No	£71.95
725566	GZR103	Optical	1.0mm	Yes	£174.95
667313	GRT144	None	1.0mm	No	£64.95
667216	GRT146	None	1.0mm	No	£69.95
428340	GZR3	Optical	0.3mm	Yes	£649.95
360532	GRZ2	None	0.3mm	Yes	£399.95
667316	SNLL121	Laser	0.3mm	No	£724.95
667244	GZS4	Height hook			£106.95
667217	GAD31	Screw to Stub adapter			£79.95

Leica Accessories

■ Authorised Distributor & Service Partner

GPR113

GPR111

GPR121

GPR112

GPR1

GPH1P

GRZ4

GRZ122

GPZ101

GMP101

GMP104

GMP111-0

Item No.	Model	Prism Type	Accuracy	Range	Description	Price
753492	GPR113	Circular	2.0mm	2,500m	Circular Prism with Holder	**£104.95**
641618	GPR111	Circular	2.0mm	2,500m	Circular Prism with Holder	**£104.95**
641617	GPR121	Circular	1.0mm	3,500m	Precision Circular Prism with Holder	**£199.95**
726295	GPR112	Circular		2,500m	Monitoring/Mining prism	**£64.95**
362830	GPR1	Circular	1.0mm	3,500m	Precision circular prism	**£99.95**
555631	GPH1P	Circular	0.3 mm	3,500m	Precise Reflector for High Accuracy	**£595.00**
639985	GRZ4	360°	2mm	600m (ATR)	Suitable for all robotic TPS	**£599.95**
754384	GRZ122	360°	2.0mm	600m (ATR)	Can be connected to the Leica SmartAntenna.	**£899.95**
644327	GRZ101	360°	1.5mm	350m (ATR)	Ideal for short range, high accuracy tasks	**£399.95**
641662	GMP101	Mini Prism	1.0mm	2000m	Includes bubble, target plate, spike and bag.	**£136.95**
642534	GMP111-0	Mini Prism	2.0mm	Long range	O constant prism. Includes bubble, and GLS115 mini reflector pole	**£124.95**
641762	GMP104	Mini Prism	N/A	2000m	Monitoring Prism with L-Bar for fixed installation	**£124.95**

■ Authorised Distributor & Service Partner

GLS11

GLS12

GLS111/112

GZW12

GLS30/31

GLS14

GSR111

Item No.	Model	Max. Height	Material	Price
385500	GLS11	2.15m	Aluminium	**£109.95**
754391	GLS12	2.00m	Aluminium	**£124.95**
667309	GLS111	2.60m	Aluminium	**£159.95**
667310	GLS112	3.60m	Aluminium	**£154.95**
403428	GZW12	1m Extension for GLS11	Aluminium	**£54.95**
752292	GLS30	2.00m	Carbon Fibre	**£324.95**
403427	GLS14	0.2m	Aluminium	**£49.95**
667319	GSR111	Dual-strut support for all GLS	–	**£149.95**

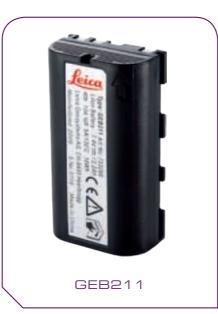# Leica Batteries

Authorised Distributor & Service Partner

The batteries available from Leica Geosystems are of the highest quality in respect of temperature tolerance, recharging capability, operating time and cycle behaviour.

GEB111

GEB121

GEB211

GEB212

GEB221

GEB241

GEB171

Item No.	667318	667123	733269	772806	733270	754834	727367
Model	GEB111	GEB121	GEB211	GEB212	GEB221	GEB241	GEB171
Chemistry	NiMH	NiMH	Li-Ion	Li-Ion	Li-Ion	Li-Ion	NiMH
Output	6V / 2.1Ah	6V / 4.2Ah	7.4V / 2.6Ah	7.4V / 2.6Ah	7.4V / 4.4Ah	14.8 V / 4.8Ah	12V/9Ah
Instrument	TPS400/800 & DNA	TPS400/700/800	Flexline Field controller, Builder	Viva Controller GNSS receiver	Viva, System 1200,Flexline, Piper	TM30 / TS30	HD Battery for TPS & GPS
Price	£34.95	£69.95	£89.95	£105.95	£109.95	£164.95	£279.95

Leica Chargers

Authorised Distributor & Service Partner

Leica Geosystems chargers ensure the fastest recharging time and the longest life span of Leica batteries.

GKL211
Adaptor plates not included

GDI221

GDI222

GKL112

GKL221

GKL22

GEV235

GDC221

CEV208

Item Number	Model	Suitable for	Price
733271	GLK221	GEB211, GEB212, GEB211, GEB241, GEB171	£300.00
733323	GDI221	Adaptor Plate for GKL221	£39.95
733322	GDI222	Adaptor Plate for GKL221	£39.95
734753	GKL112	Suitable for: GEB111 & GEB121	£47.25
734752	GKL211	GEB221, GEB211 and GEB212, car adapter included	£96.00
636983	GKL22	5 pin batteries (except GEB171)	£60.00
773755	GEV235	AC/DC-Adapter for Viva series field controller	£19.95
734389	GDC221	Car adapter for the GKL221 charger	£106.50
749279	CEV208	External power supply unit for TPS/GPS/DNA	£120.00

Leica Accessories

LEICA ACCESSORIES

Leica
Data Storage

Authorised Distributor & Service Partner

Losing data after a work-filled day is frustrating and expensive. The electronic accessories from Leica Geosystems comply with a higher standard than the commercially available accessories that meet consumer or even industry standards. The storage media and other data transfer products from Leica Geosystems are qualitatively of extremely high value and reliability.

MCF32/256 & 1000

MS1

MSD1000

MCFAD1

MCR7

Item No.	Model Number	Capacity	Description	Price
733256	MCF32	32 MB	32MB Compact Flash Card	£99.95
733257	MCF256	256 MB	256MB CompactFlash card	£99.95
745995	MCF1000	1 GB	1GB CompactFlash card	£269.95
765199	MS1	1 GB	1GB USB memory stick	£109.95
767856	MSD1000	1 GB	1GB SD memory card	£209.95
733258	MCFAD1	N/A	CompactFlash PC card adapter.	£24.95
767895	MCR7	N/A	Card reader for SD/CF cards.	£319.95

Leica
TPS Accessories

Authorised Distributor & Service Partner

GOK6

GFZ3

GDZ66

GVP102

GAD104

GAD110

RH1200

RH15

RH16

Item No.	Model	Description	Price
376236	GOK6	Eyepiece for steep sights	£1,450.00
734514	GFZ3	Diagonal eyepiece for telescope, except T100	£424.95
744501	GDZ66	Back strap (2), for container (case not included)	£24.95
727589	GVP102	Soft Bag for Prism Station (Prism Station not included)	£31.95
741965	GAD104	GAD104 SmartStation Adapter for GS09/GS12	£395.00
767802	GAD110	SmartStation Adapter for GS15	£395.00
741964	RH1200	1200 RadioHandle with integrated radio modem	£895.00
772300	RH15	Viva RadioHandle with integrated radio modem	£895.00
788853	RH16	Viva Long Range Bluetooth® Handle	£895.00

Authorised Distributor & Service Partner

GVP643
CS10 Soft Case

GVP644
CS15 Soft Case

GHT31
Hand Strap

CS10/15
Docking Station

GHT62 Holder

GHT63
Pole Clamp

SPF01 Anti-Glare
Screen Protectors

GDZ69
Stylus Pen

Item Number	Model	Description	Price
767904	GVP643	Soft Bag for CS10 Field Controller	£17.50
767905	GVP644	Soft Bag for CS15 Field Controller	£17.50
767 877	GHT61	Hand Strap for Leica Viva Field Controller	£35.00
767906	CCS01	Docking Station for Leica Viva Field Controller	£169.95
767879	GHT62	Holder for Field Controller	£24.95
767880	GHT63	Poleclamp for Field Controller	£85.95
767907	SPF01	Anti-Glare Screen Protectors	£12.95
781521	GDZ69	Stylus Pen	£4.44

Authorised Distributor & Service Partner

GVP647

GAD32

GAD33

GAD34

GAD108

GAT1202

GAT1203

GAT2

GAT18

Item No.	Model	Description	Price
770707	GVP647	Minipack for GNSS receiver	£102.22
667228	GAD32	Telescopic rod with 5/8" screw	£35.95
667219	GAD33	Arm 15cm, GPS/Gainflex antenna	£39.95
667220	GAD34	Arm 3cm telescopic rod/Gainflex antenna	£39.95
767790	GAD108	UHF/GSM antenna arm for GS15	£102.95
743282	GAT1202	Radio Modem Antenna for radio modem 435-470MHz	£39.95
743283	GAT1203	Mobile Antenna for 900/1800MHz mobile network	£39.95
667243	GAT2	Gainflex radio antenna, frequency range 435 - 470 MHz.	£39.95
782500	GAT18	Multiband GSM/UMTS antenna for 850/1900MHz for 900/1800MHz and 2100Mhz mobile networks	£69.95

Leica Cable Comms & Power

Device	Instrument	Art.	Sign	Description
GEB171 or GEV208	TS02/06/09 TPS1200/1800/2003 DNA GS10 GRX1200/GS10/GS15 CS09/GS09 GS09/GS15 TS30/GS15/CS10*/CS15*	409678 560130 733298 756365 748418 758469	GEV52 GEV97 GEV172 GEV215 GEV205 GEV219	Power cable, 1.8 m, connects TPS/TS or DNA to external battery Power cable, 1.8 m, connects GS10 to external battery Y-cable, 2.8 m, connects GRX/GS with two external power supplies Y-cable, 2.0 m, connects CS09/GS09 - Batterie Y-cable, 1.8 m, connects GS09/GS15 - GFU Batterie Power cable, 1.8 m, connects TS30/GS15 to external battery
12 V car battery	All instruments	439038	GEV71	Power cable, 4 m, connects all battery cables to 12 V car battery
PC-RS232 Port	TS02/06/09 TPS1200/1800/2003 DNA TS02/06/09 TPS1200/1800/2003 DNA GRX1200/GS10/GS15 TS30/GS10/GS15/CS10*/CS15* GFU14 SLR1/2/3 TS30/GS15/GS10	563625 734698 733280 733282 733297 767803 759257	GEV102 GEV187 GEV160 GEV162 GEV171 GEV231 GEV220	Data cable, 2 m, connects to PC (RS232) Y-cable, 2 m, connects TS/TPS/DNA - PC - Batterie Data cable, 2.8 m, connects GX port 1, 2, 3, (port 3 not for GS15) to PC (RS232) Data cable, 2.8 m, connects TS/GS/CS to PC (RS232) Y-program cable, 1.8 m, for the Satelline 3AS radio modem inside the GFU14 housing Program adapter cable ,1.8 m, for SLR radios Y-cable, 1.8 m, connects TS30/GS-RS232-Batterie
PC-USB port	TS02/06/09 TPS1200/1800/2003 DNA GRX1200/GS10/GS15 TS30/GS10/GS15/CS10/CS15 GS10/GS15/CS10/CS15/GS09/CS09 TS02/06/09/CS10**/CS15**	734700 734755 758468 767899 764700	GEV189 GEV195 GEV218 GEV234 GEV223	Serial Data transfer cable, 2 m, TS/TPS/DNA Lemo to USB Serial Data transfer cable, 2 m, connects GX port 1, 2, 3, (port 3 not for GS15) to PC Serial Data transfer cable, 2 m, connects TS30/GS/CS to USB USB data cable, 1.65 m, connects CS to GS or CS to PC (USB) USB Data cable, 1.8 m, TS/CS Mini-USB to USB
CS09/RX1210	GRX1200/GX1200	733283	GEV163	Data transfer cable, 1.8 m, connects RX port to GRX1200/GX1200
CS10/CS15	TPS1200 GS15/GS10	756367 767899	GEV217 GEV234	Data transfer cable, 1.8 m, connects CS10/15 to TPS1200 USB data cable, 1.65 m, connects CS to GS or CS to PC (USB)
CS10*/CS15* CS09	GS15/GS10/GS09	772807	GEV237	USB data cable, 1.65 m, connects GS15/GS10/GS09 to CS Lemo

* with Lemo connector module
** with Mini USB connector module

Device	Instrument	Art.	Sign	Description
TCPS	TS30	771057	GEV236	Y-cable, 1.8 m, connects TS30 - TCPS - Batt
Satelline 3AS w/o housing	GS15/GS10/TPS1200	639968	GEV125	Data transfer cable, 1.8 m, connects Satelline radio w/o housing
Satelline 3AS Epic pro (10 W)	GS09/GS10/GS15/GRX1200	762026	GEV221	Y-cable, 2 m, connects Satel - GS/GX - Batterie
Satelline 3AS Epic pro (35 W)	GS09/GS10/GS15/GRX1200	636805	GEV114	Connects Satelline to GS, for GS09 a GEV205 is additionally required
System 1200 GFU	GS09/GS15 GS15/System500 GPS GS15/System500 GPS	748418 767898 767897	767897 GEV233 GEV232	Y-cable, 1.8 m, connects GS09/15 - GFU - Batterie Data cable, 0.8 m GS15/System500 to GFU Data cable, 2.8 m GS15/System500 to GFU
System 500 GFU	TPS1200/GS10/GS15/GRX1200 TPS1200/GS10/GS15/GRX1200	767897 767898	GEV232 GEV233	2,8 m, connects System 500 GFU housings 0.8 m, connects System 500 GFU housings
External Modem	GRX1200/GS10/GS15	563809	GEV113	Data cable, 2.8 m, connects GX port 1, 2, 3, (port 3 not for GS15) to modem
Time mark receiver	GX/GRX1200	667744	GEV150	PPS output cable, 2 m
External GNSS antenna*	GRX1200/GS10 GRX1200/GS10 GRX1200/GS10 GRX1200/GS10 GRX1200/GS10	667200 667201 636959 632372 724969	GEV141 GEV142 GEV120 GEV119 GEV194	antenna cable, 1.2 m antenna cable, 1.6 m antenna cable, 2.8 m antenna cable, 10 m antenna cable, 1.8 m
External antenna	GS05/06	772002	GEV238	antenna cable, 1.2 m

*or external Gainflex UHF/GSM Radio ant.

ABOUT OPTI-CAL · HOW TO ORDER · HIRE & SERVICING · SUPPORT & TRAINING · DISTO™ · LEVELS · LASERS · TPS · IMAGING · SMARTWORX · TPS MONITORING · CONTROLLERS · GPS & GNSS · PACIFIC CREST · ICON · SOFTWARE · CABLE AVOIDANCE · LEICA ACCESSORIES · ANCILLARY ITEMS · INDEX

Leica Accessories

Scan Me

Spray Paint

- Permanent aerosol paint in a large 750ml can.
- The paint is a blend of resins solvents and colour pigment designed to cover with one application.
- Ideal for either hand spot marking or applicator use for line marking.
- Can be used both indoors and out.
- Available in a range of colours.

Code	Description	Price Per Can
16401	Spray Paint – Red	£2.75
16402	Spray Paint – Blue	£2.75
16403	Spray Paint – Green	£2.75
16404	Spray Paint – Orange	£2.75
16405	Spray Paint – Yellow	£2.75
16406	Spray Paint – White	£2.75
16408	Spray Paint – Black	£2.75

Temp-Mark

- Water based biodegradable paint.
- Designed to last up to one month in normal weather conditions or can be washed off with water.
- Ideal where you are working in sensitive areas and do not want to leave unsightly marks on the ground.
- Available in 750ml sizes and two colours.

Code	Description	Price Per Can
16425	750ml Temp Mark – Yellow	£5.25
16426	750ml Temp Mark – White	£5.25

Spray-Mark

- Durable in adverse weather conditions.
- Constant and even flow.
- Can be used in all directions.
- Safety catch lid
- Easier to mark those hard to reach places.
- Available in 500ml sizes and comes in a range of colours.
- Six bright fluorescent colours: Red – Blue – Green – Orange – Yellow – Pink
- Also available in two standard colours: Black – White.

Code	Description	Price Per Can
16101	500ml – Red Fluorescent	£3.75
16102	500ml – Blue Fluorescent	£3.75
16103	500ml – Green Fluorescent	£3.75
16104	500ml – Orange Fluorescent	£3.75
16105	500ml – Yellow Fluorescent	£3.75
16107	500ml – Pink Fluorescent	£3.75
16106	500ml – White Standard	£3.75
16108	500ml – Black Standard	£3.75

Paint Accessories

Code	Description	Price
19125	4 Wheel Line Applicator	£115.00
19010	Hand Paint Gun	£20.00
80-8098	Spray Can Holster	£12.00
80-8099	Spray Can Holster w Pockets	£18.00
66350	50x50mm Masking Tape	£2.70
60-8000	Survey Point Stencil	£10.50
60-9416	Numbers 0-9 PVC Stencils	£21.00
60-9417	Letters A-Z PVC Stencils	£50.00

Paint Stick Markers

- A solidified paint in stick form.
- Allows you to mark on virtually any surface even if it is wet or oily.
- Available in 7 colours.
- Boxed in 12.

Product Code	Description	Price per Box
12041	Paint Stick – Red	£14.50
12042	Paint Stick – Blue	£14.50
12043	Paint Stick – Green	£14.50
12044	Paint Stick – Orange	£14.50
12045	Paint Stick – Yellow	£14.50
12046	Paint Stick – White	£14.50
12048	Paint Stick – Black	£14.50

Chalk

- Soft Chalk Stick
- 22x114mm
- For general purpose site & highway marking.

Engineers Chalk

- Hard Engineers Chalk (French Chalk)
- 10x10x100mm
- Ideal for precision marking.

Product Code	Description	Price per Box
12306	Chalk Sticks 114mm – Box 72	£30.00
12330	Engineers Chalk 100mm – Box 12	£2.70
12326	Engineers Chalk 100mm – Box 50	£16.00

Universal Crayon

- A general purpose crayon for marking a variety of surfaces.

Product Code	Description	Price per Box
12375	Wax Crayon Yellow – Box 12	£6.45
12376	Wax Crayon White – Box 12	£7.00

Permanent Markers

- Edding Permanent Markers with tough acrylic tips.
- Capable of marking on wood glass plastic and steel.
- Available with broad or fine marking tips

Product Code	Description	Price per unit
12107	Permanent Marker Fine – Black	£1.40
12108	Permanent Marker Broad – Black	£1.40

Paint Marker

- Edding Paint Markers with light-fast waterproof paint for industrial applications
- Yellow, 2-4mm line
- Available in 3 alternate sizes of marking tips; broad, medium and fine
- Colours available: yellow and white.

Product Code	Description	Price per unit
12785	Paint Marker Medium - Yellow	£3.50
12786	Paint Marker Medium - White	£3.50

Carpenter's Pencils

- Blackedge top quality flat carpenter's pencils.
- Available in three grades soft medium and hard.
- All suitable for carpenters

Product Code	Description	Price per unit
12600	Carpenters Pencil – Green – Hard	£1.30
12601	Carpenters Pencil – Red – Medium	£1.30
12602	Carpenters Pencil – Blue – Soft	£1.30

Ancillary Items

Survey Point Nail

- Available in three sizes 50mm, 75mm and 100mm
- Large 20mm diameter head with central monitoring recess
- Should additional washers be required then there are 30mm diameter (209355) & 50mm diameter (209360) available.

Product Code	Description	Price per unit
209115	50mm	£0.50
209116	75mm	£0.60
209117	100mm	£0.70

Hilti Type Nail

- For hard surface penetration.
- Complete with steel support washer.
- Can also be used on their own by hand driving them into a variety of hard surfaces.
- Supplied in packs of 100.

Product Code	Description	Price per 100
209124	27mm	£11.30
209126	32mm	£16.15

Survey Nail Selection Box

- Also makes a handy universal kit allowing you to have the right type of marking nail to suit a variety of surfaces.
- The 100 piece kit comprises the full range of nails available with supporting washers.
- All in a compartmented box with a hinged lid.

The kit contains the following: 25mm P-K Nail x5, 32mm P-K Nail x5,38mm P-K Nail x5, 50mm P-K Nail x10, 64mm P-K Nail x10, 35mm Hilti Type Nail x5, 60 x 4mm Helical Nail x5, 50mm Survey Point x5, 75mm Survey Point x5, 100mm Survey Point x5 25mm Washer for Helical Nail x5, 25mm Washer for P-K Nail x5 30mm P-K Plated Washer x25, 50mm Steel Washer x5

Product Code	Description	Price per box
209090	Nail Box	£23.65

P-K Survey Nail

- A superior quality heavy duty hardened steel survey nail.
- Gives maximum holding power with pin-point accuracy.
- Made of especially durable steel that is zinc plated for corrosion resistance.
- Ribbed threads assure a permanent fastening into most materials.
- Once they are into masonry they won't work loose.
- Available in five sizes to suit a variety of applications.
- Supplied in boxes of 100.

Product Code	Description	Price per 100
209102	25x5mm PK Nail	£9.00
209103	32x6mm PK Nail	£13.00
209104	38x7mm PK Nail	£17.00
209105	50x7mm PK Nail	£20.00
209106	64x7mm PK Nail	£24.00

Helical Twist Nail

- Ideal in breeze block walls and superb holding power in asphalt surfaces.
- Can be used with a 25mm diameter support washer (code: 209350).

Product Code	Description	Price per 100
209110	60mm	£10.50

Survey Washer

- Marking Washers to highlight marking nails etc.
- The steel washers are zinc plated for resistance to corrosion.
- Supplied in packs of 100.

Product Code	Description	Price per 100
209350	25 x 5mm Survey Washer Use With - Helical Twist Tarmac	£4.60
209352	25 x 7mm Survey Washer Use With - 25mm P-K Nail	£4.60
209355	30 x 10mm Survey Washer Use With - 32-64mm P-K Nails	£6.00
209360	50 x 10mm Survey Washer Use With - 32-64mm P-K Nails, Survey-Point Nail	£16.15

Surveyor's Shiners

- Used for indicating semi-permanent points with spikes or survey nails.
- Simply drive the nail you are using through the pre-marked centre.

Product Code	Description	Price per 250
80-2182	33mm Surveyor's Shiners (Raised)	£27.00
80-2181	57mm Surveyor's Shiners (Flat)	£40.00

Disk-Mark

- Manufactured from a tough high impact weather resistant plastic material.
- At 54mm wide and with a low profile (3mm) it allows heavy vehicles and pedestrians to run over the top without damage.
- The Disk-Mark has a blank area allowing you to record data.
- Alternatively your company name can be pre-printed on the disk for positive identification.
- Uses: Survey work bench marks, setting-out, road openings, resurfacing work, road & car park marking, footpaths, identifying buildings, services re-instatement / repair areas, trees walls, setting out pegs and exhibitions.
- The Disk-Mark is fixed to tarmac surfaces with the 60mm helical twist hardened steel nail.
- The P-K indented survey nail can also be used.
- Alternatively Disk-Mark can be adhered to most surfaces with Araldite Rapid a fast setting epoxy resin adhesive.
- Disk-Marks are also available in boxes of 100 c/w nails support washers and marker.

Product Code	Description	Price
203045	Single Disk-Mark - Yellow	£0.30
203042	Single Disk-Mark - Blue	£0.30
203005	Disk-Mark Kit - Yellow	£26.25
203002	Disk-Mark Kit - Blue	£26.25
203009	Disk-Mark Kit -Mixed	£26.25
203270	Araldite Rapid Syringe Pack	£9.50
203100	Special Printing – per 500	£285.00
80-2181	57mm Surveyor's Shiners (Flat)	£40.00

Disk-Mark Kit

Scan Me

Wooden Survey Pegs

- A range of top quality economical softwood stakes and profile boards for general survey projects setting out and building control work on site.
- The stakes have rounded points and four sides to ensure they stay on line when they are driven into the ground.
- Wide 40 x 40mm heads make for the easy attachment of reference nails or markers.
- Three sizes are available: 300, 500 and 1200mm.
- The profile boards measure 70 x 13 x 900mm.
- All are packed in bundles of 25.

Product Code	Description	Price per 25
202200	300mm Survey Pegs (25)	£11.50
202205	500mm Survey Pegs (25)	£15.00
202210	1200mm Survey Pegs (25)	£29.50
202250	900mm Profile Boards (25)	£14.00

Plastic Survey Stakes

- Red plastic peg.
- 305 x 16mm with built in tape and line hooks for setting out.
- Supplied in packs of 10.

Product Code	Description	Price per 10
202001	305mm Red Plastic Survey Pegs	£5.50

Steel Survey Stakes

- Top quality steel stake for general survey projects setting out and building control work on site.
- Each peg is 15 x 15 x 350mm long.
- Supplied in bundles of 10.

Product Code	Description	Price per 10
202110	350mm Steel Survey Pegs	£7.80

Flag Marks

- The flag size is 127 x 100mm.
- Flag-Marks are available in six standard colours – Red, Blue, Green, Orange, Yellow and White – allowing colour coded marking systems to be set on site.
- Sold in packs of 100.

Product Code	Description	Price per 100
14101	Flag-Mark - Red	£10.50
14102	Flag-Mark - Blue	£10.50
14103	Flag-Mark – Green	£10.50
14104	Flag-Mark – Orange	£10.50
14105	Flag-Mark – Yellow	£10.50
14106	Flag-Mark - White	£10.50

Perma-Mark

- Manufactured from high tensile 18mm ribbed steel for maximum ground grip and rigidity.
- Three sizes available 350mm, 600mm and 1 metre to suit all ground conditions.
- Perma-Marks are simple to install: place the head in position and drive the spike through the head. Mark the data-disk with your details and secure with the plumbing stud.

Product Code	Description	Price per unit
10035C	350mm Perma-Mark Complete	£15.75
10060C	600mm Perma-Mark Complete	£16.30
10100C	1000mm Perma-Mark Complete	£17.00

Ground-Mark

- Manufactured from high quality steel sheathed in a tough polyethylene material.
- Designed for maximum grip in a variety of soil conditions.
- Has a cadmium plated bullet point tip for accurate precision allowing it to be driven into the hardest of soils.
- Available with Flat or Raised Heads.

Product Code	Description	Price per unit
10300	300mm Ground Mark (Flat Head)	£6.30
10305	600mm Ground Mark (Flat Head)	£7.35
10310	300mm Ground Mark (Raised Head)	£6.90
10315	600mm Ground Mark (Raised Head)	£7.90

Econo-Mark

- Comprises of a heavy duty 600mm long high tensile ribbed steel bar with a forged point for easy penetration into hard ground.
- The top is capped off with a yellow Data-Disk with space to write on the station number or preferred site data. Disk diameter 54mm.

Product Code	Description	Price per unit
10600	600mm Econo-Mark Complete	£7.35

Land-Mark

- This PGM must be the sturdiest on the market.
- Constructed from 3mm steel plate.
- No installation kit required – only a lump hammer.
- Head accepts Data-Disk and accessory adaptor.
- Downward pointing lugs on head for protection and grip.
- 5/8" adaptor available for 5/8" and Leica adaptors.
- Head Size: 80 x 80mm.
- Length: 500mm

Product Code	Description	Price per unit
10500	Land-Mark Complete	£13.50

Marking – Wall & Floor Marks

Wall Mark

- Adaptable monitor and reference point marker
- Comprises of a 12x40mm fixed base, permanently set into the wall or floor to which a variety of markers can be attached.
- The internally threaded lipped anchor (208999) provides an easy to install wall or floor fixing. The lipped feature on this anchor helps preventing the anchor slipping back into the cavity.
- Whilst markers are removable they do not disturb the fixed base so the position is always permanent.
- The removable reference points are available in six types:
  - 16mm dia x10mm stainless steel levelling stud
  - 18mm dia x 5mm stainless steel floor levelling stud
  - 16mm dia Ball x 23mm steel precision monitoring ball
  - 22mm dia Ball x 77mm stainless steel monitoring ball
  - 5/8" x 10mm stainless steel accessory adaptor
  - Leica style stainless steel adaptor
- The 5/8" adaptor allows prism to be attached
- Once the base has been fixed the reference points can be attached or removed without affecting base position
- Allows precise monitoring time without leaving expensive equipment installed
- Reference points can be removed and capped to protect threaded insert
- Data-Disks can be added for reference point information
- When ordering for the first time you will require the following:
  - Drill-Bit
  - Base Fixing
  - Base Fixing Tool
  - Removable Marker
  - Appropriate size Allen key.

Product Code	Description	Price Per Unit
209000	Stainless Steel Base Fixing	£3.50
209001	Steel Base Fixing	£0.80
208999	Lipped Base Fixing	£0.90
209002	Stainless Steel Square Headed Levelling Stud	£0.90
209003	Stainless Steel Dome Head Stud	£0.90
209004	16mm Precision Steel Ball Stud	£3.25
209005	M10 to 5/8" Stainless Steel Adaptor	£6.00
209006	M10 to Leica Stainless Steel Adaptor	£35.00
209020	22mm Stainless Steel Monitoring Ball	£50.00
209007	Stainless Steel Blanking Grub Stud	£0.60
209008	Plastic Blanking Plug	£0.15
209010	Base Fixing Tool	£2.50
209011	Allen Key Level & 5/8" Adaptor	£1.70
209012/14	Allen Key Dome/ Blanking	£0.90
209612	12mm Masonry Drill Bit	£3.80

Image codes: 209000, 209001, 208999, 209002, 209003, 209004, 209005, 209006, 209020, 209007, 209008

Markers

Anchor Marks

- A versatile and economical survey marker which allows for a variety of permanent survey stations to be set.
- Easy to install.
- Stable and very durable making them ideal for accurate X/Y/Z co-ordination.
- Stability – Resistance to horizontal and vertical movement: The Anchor-Marks' tubular shaft is 25mm in diameter which gives a high degree of lateral stability.
- Complete with a unique reversible aluminium head allowing you to set the marker above ground increasing visibility or flush with the surface giving better stability and resistance to vandalism.
- A data disk Allen key marker pen and a stainless steel domed plumbing stud complete the outfit.
- An installation kit is required for your first purchase, but can be used for all future Anchor-Mark installations.

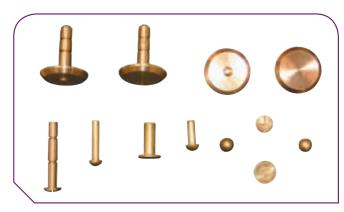| Code	Description	Price
11050C	500mm Anchor Mark Complete	£26.28
11075C	750mm Anchor Mark Complete	£28.90
10210	Perma Mark Pyramid Head	£5.50
11220	Domed Alloy Marker Head	£3.70
11230	Galvanised Steel Marker Head	£8.00
11240	Stainless Steel Plumbing Stud & Data Disk	£2.70
11250	Anchor Mark Installation Kit	£52.50

Brass Markers

209501
- Flat headed brass marker.
- Ideal for scribing.
- Head 19 x 2mm Shank 25 x 10mm.
- Pack of 10

209511 & 209521
- Dome headed brass survey marker.
- Head 10mm Shank 20 or 30 x 6mm
- Packs of 10

209534 & 209536
- Large headed brass marker with chamfered edges.
- Ideal as boundary or general survey reference markers.
- Two tops flat or with central levelling dome.
- Shank is ribbed for grouting or gluing in position.
- Head 38mm Shank 50 x 8mm

Code	Description	Price
209501	19x25mm Flat Head (10)	£11.10
209511	10x20mm Dome Head (10)	£5.80
209521	10x30mm Dome Head (10)	£6.30
509530	14x50mm Cross Head - Single	£3.50
209534	38mm Brass Flat Marker - Single	£12.00
209536	38mm Brass Raised Marker - Single	£12.00

Leica Reflective Tapes

Self-adhesive, reflective tapes supplied in pack of 20 pieces.

Product Code	Description	Price per Box
736532	GZM29 – 20 x 20 mm, for measurements up to 100 m (330 ft)	**£44.44**
763533	GZM30 – 40 x 40 mm, for measurements up to 200 m (650 ft).	**£48.89**
763534	GZM31 – 60 x 60 mm, for measurements up to 250 m (800 ft).	**£53.33**

Sokkia Reflective Targets

Adhesive Retro-Reflective Target Sheets

These targets work with most EDMs and are ideal for monitoring work where you have to leave targets in position over long periods.

Easy-to-use reflective targets, supplied on convenient adhesive-backed sheets, can be directly fixed to measuring points.

Product Code	Description	Price per Sheet
RS10N	10x10mm (400p/sheet)	**£60.00**
RS20N	20x20mm (100p/sheet)	**£60.00**
RS30N	30x30mm (49p/sheet)	**£60.00**
RS50N	50x50mm (16p/sheet)	**£60.00**
RS70N	70x70mm (9p/sheet)	**£60.00**
RS90N	90x90mm (4p/sheet)	**£60.00**

Retro-Mark

- An inexpensive range of retro-reflective targets in four colours.
- These targets work with most EDMs and are ideal for monitoring work where you have to leave targets in position over long periods.
- The 25mm square fluorescent Retro-Mark Yellow is highly visible in daylight.
- A single 25mm target will give a measuring range in excess of 100m with mm accuracy and an angle of intersection of up to 60 degrees.
- Greater distances can be achieved by using multiples of 5 and 9 targets which are easily attached with the self-adhesive backing.

Product Code	Description	Price
30140	25mm – Yellow – Sheet 81	**£22.55**
30141	25mm – Yellow – Sheet 10	**£3.15**
30103	10mm – Amber – Sheet 400	**£44.60**
30104	20mm – Amber – Sheet 100	**£33.30**
30105	30mm – Amber – Sheet 49	**£33.30**
30190	10mm – Silver – Sheet 400	**£44.60**
30200	20mm – Silver – Sheet 100	**£33.30**
30205	30mm – Silver – Sheet 49	**£33.30**
30210	10mm – Orange – Sheet 400	**£44.60**
30215	20mm – Orange – Sheet 100	**£33.30**
30220	30mm – Orange – Sheet 49	**£33.30**

PinPoint Smart Targets

Simple – safe – extremely accurate

Use PinPoint Smart Targets to permanently document site control. This has created a new standard in surveying. All survey points provide unambiguous, permanent and distinctive documentation on all types of site.

Great for backsight's, check shots, elevation references and monitoring situations, 'Smart from the Start' PinPoint markers are the best way to take advantage of your investment in high tech survey equipment.

RS10 and RS11 Smart Datum

Ideal for concrete construction and for measurement of pre-cast sections. *Available in White or Red*

RS10 £4.50 per unit | **RS11 £4.50** per unit

RS30 to RS41 Smart Targets

The combination target for engineers and groundworkers
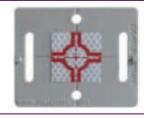*Available in Grey or Red*

RS30 £6.30 per unit | **RS41 £6.30** per unit

RS50 to RS71 Smart Targets

The all-round targets for a variety of uses
Available in Grey or Red

RS50 £4.85 per unit | **RS71 £4.85** per unit

RS80 and RS90

Smart Angle Targets - The solution for difficult positions
Available in Grey or Red

RS80 £10.50 per unit | **RS90 £10.50** per unit

RSAK80

Plastic adapter with RS80 Smart Angle Targets
Available in Grey or Red

RSAK80 £15.00 per unit

opti·cal
surveyequipment.com

Protimeter Mini – Moisture Meter

- The definitive general purpose moisture meter for building surveying timber inspection and a very broad range of other applications.
- Ultra bright display of sixty LEDs for clear visibility.
- Measurement range of 6 - 90% WME for versatility.
- Supplied with pouch moisture probe calibration check device and wood calibration table.

Product Code 354800
Price **£132.00**

Protimeter Hygromaster – Humidity Meter

- Used in conjunction with the detachable Hygrostick probe is an easy to use versatile hygrometer.
- Large LCD displays RH ambient and dewpoint temperatures.
- Embeddable hygrosticks can be used to measure the equilibrium RH value of walls and floors.
- May be used with optional surface temperature probe.

Product Code 354850
Price **£210.00**

Protimeter Surveymaster – Moisture Meter

- A dual function instrument which combines the proven two-pin inspection method (the MEASURE Mode) for surface dampness with a non-destructive radio frequency technique (the SEARCH Mode) for below surface dampness.
- Protimeter colour-coded LED display in both Modes plus: LCD display in the Measure Mode and audible alarm in the Search Mode.
- Range: 7% WME to fibre saturation and well beyond (up to 100).
- Resolution ±1%.

Product Code 354700
Price **£337.00**

Protimeter Aquant – Moisture Meter

- Used to assess and monitor relative moisture level of materials including plaster masonry concrete and fibreglass (GRP).
- Simply hold the Aquant against the surface of the material under investigation.
- Relative moisture levels are measured by radio frequency to a nominal depth of 10-20mm.

Product Code 354200
Price **£214.00**

Protimeter Timbermaster – Moisture Meter

- The instrument of choice for quality control applications across the wood industries from the sawmill to finished products.
- Moisture values are automatically corrected for temperature when the temperature probe is used.
- May be used with optional hammer electrode (35443) for sub-surface measurement.

Product Code 354400
Price **£265.00**

Protimeter MMS – Moisture Measurement System

- Designed for measuring moisture conditions in buildings to aid understanding of why damp conditions may prevail.
- Combines moisture meter and hygrometer in one state-of-the-art instrument for a complete moisture surveying capability.
- Also has a complete on-board data logging facility – when used with Protimeter Moisture Measurement System Data Logging Software information captured by the Moisture Measurement System can be transferred to a PC.

Outfit includes:
- Protimeter MMS instrument
- Hygrostick hygrometer probe
- Hygrostick extension lead
- Moisture probe
- Deep wall probes (140mm)
- Surface temperature sensor (direct contact)
- Carry case
- Calibration check device (for %WME)
- Instruction manual

Product Code 354750
Price **£563.00**

Stabila 96-2 Professional Spirit Level

- Extra strong ribbed frame.
- Three vials – one horizontal and two vertical.
- Removable end caps – incorporating anti-slip wall pads which allow the level to be held firmly against a wall with one hand without slipping.

Product Code	Description	Price per Unit
26070	800mm Length	**£47.25**
26071	1200mm Length	**£84.00**
26072	2m Length	**£115.00**

Stabila 83S Range

- Pressure Die-Cast Frame with 2 milled measuring faces.
- Three vials, the horizontal vial to be viewed from 4 sides and the vertical vials from 3 sides.
- Accuracy to +-0.5mm per metre in normal and 0.75mm/m vial down positions.

Product Code	Description	Price per Unit
STB83S-40	400mm Length	**£49.95**
STB83S-80	800mm Length	**£59.95**
STB83S-100	1000mm Length	**£79.95**

Stabila 2D Level

- Two vials set at right angles to enable all planes to be levelled in one action.

Product Code	Description	Price per Unit
STB-KRW	Stabila 2D Right Angle Level	**£5.95**

Stabila 81SM Boat Level

- Handy light metal casing in an especially slim form – extremely sturdy
- Super-powerful Stabila magnets provide a secure hold
- Light metal die cast profile with milled measuring surface, 1 vertical vial, 1 horizontal vial.

Product Code	Description	Price per Unit
STB81SM-25	Magnetic Boat Level with Pouch	**£34.79**

Stabila Pocket Pro Magnetic

- The Stabila Pocket Pro Magnetic is a professional quality spirit level that fits in the pocket, or can be attached to a belt with the clip supplied.
- This little compact level has strong magnets that hold the level in place on horizontal or vertical surfaces.

Product Code	Description	Price per Unit
STB-17768	Stabila Pro Pocket Magnetic Level with Belt Holster	**£10.45**

Ancillary Items

98   **E** sales@surveyequipment.com

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Ancillary Items   99

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Fisco 'Ranger' Fibreglass Tape

- Highly flexible 13mm wide tape.
- Constructed from multiple uni-directional glass-fibre strands embedded in PVC.
- Claw end fitting.

Product Code	Description	Price per Unit
41131	30m Fisco Ranger	£24.50
41132	30m/100' Fisco Ranger	£24.50
41151	50m Fisco Ranger	£36.60
41152	50m/165' Fisco Ranger	£36.60

Fisco 'Pacer' Steel Tape

- Robust steel tape designed for use in difficult terrain and adverse conditions.
- Extra thick Tufcote nylon coating for added protection.
- ABS frame fitted with a ground spike.

Product Code	Description	Price per Unit
40130	30m Fisco Pacer	£43.60
40131	30m/100' Fisco Pacer	£43.60
40150	50m Fisco Pacer	£64.05
40151	50m/165' Fisco Pacer	£64.05

Fisco 'Surveyor' Steel Tape

- Heavy duty, high specification open frame tape designed for the professional user.
- Extra thick Tufcote nylon coating for added protection.
- Press button firm blade lock with simple lock release.
- Rubber grip top handle and lower base grip.
- Integral ground spike for end-hook anchoring.

Product Code	Description	Price per Unit
40135	30m Fisco Surveyor	£49.50
40136	30m/100' Fisco Surveyor	£49.50
40137	50m Fisco Surveyor	£73.20
40138	50m/165' Fisco Surveyor	£73.20

Fisco 'Big T' Tape

- Quick release belt clip
- Tough rubber protection
- Rubber grip tip

Product Code	Description	Price per Unit
38062	'Big T' 5m	£11.30
38063	'Big T' 5m/16'	£11.30
38085	'Big T' 8m	£15.10
38086	'Big T' 8m/25'	£15.10

Fisco 'Tuf-Lok' Tape

- Tough shock absorbing ergonomic case with rubber-like outer casing.
- Detachable belt clip.
- Self-zeroing end-hook.

Product Code	Description	Price per Unit
38058	'Tuf-Lok' 5m	£4.60
38059	'Tuf-Lok' 5m/16'	£4.60
38087	'Tuf-Lok' 8m	£7.55
38088	'Tuf-Lok' 8m/25'	£7.55

Measure-Mark Road Wheel

- Heavy-duty precision measuring wheel for reliable out-door measuring under most terrain conditions
- Spoked Wheel for strength
- Accurate to ±0.5%
- Yellow Enamelled finish for safety
- Measures to 9999.99m reading to 1cm
- Optional rail track adaptor which clamps the wheel securely to rails
- Reset lever for quick resetting
- Robust – all metal construction
- The wheel diameter of 318.5 mm gives a precise circumference of 1 metre

Product Code	Description	Price per Unit
490010	Measure-Mark Wheel	£110.00
490040	Measure-Mark HD Wheel	£140.00
49008	Bag for Measuring Wheel	£12.60
49010	Rail Track Adaptor – Pair	£73.00

Trumeter Road Measurer

- A precision measuring wheel
- Folding handle and pistol grip
- Clear easily read 7mm high figures in the six figure mechanical counting head
- A reset lever returns the counter reading to zero at any time
- Supplied complete with bag

Product Code	Description	Price per Unit
49210	Road Measure – Metric	£97.00

Trumeter Measuremeter & Trumeter Revolution

- With many unique features Measuremeter Revolution should be the first choice for all your distance measuring applications.
- Fitted with a 1m circumference wheel you have the option of electronic or mechanical versions.
- Large easy-to-read display or LCD
- Accuracy: ±1%

Product Code	Description	Price per Unit
49205	Measuremeter Revolution – Digital	£53.80
49206	Measuremeter Metric – Mechanical	£53.80
49820	Protective Bag	£19.00

Heavy Duty Rail Wheel

- A precision measuring wheel
- Folding handle and pistol grip
- Clear easily read 7mm high figures in the six figure mechanical counting head
- A reset lever returns the counter reading to zero at any time
- Supplied complete with bag

Product Code	Description	Price per Unit
493210	Heavy Duty Rail Measuring Wheel - Metric	£375.00
493240	Heavy Duty Declutch Rail Wheel - Metric	£425.00
493250	Heavy Duty Rail Wheel – Metric/Imperial	£475.00

Feature	Benefit
Accuracy 99.5%	Reliable Measurements
Stainless Steel	No rust or weak points
Adjustable Handle	Height adjustment for ergonomic comfort
Declutch Option	Disconnect Counter
Dual Counter Option	Complete protection of drive mechanism

Scale Rules
- 150 and 300mm Long
- Oval or Triangular shaped in a material manufactured to comply with BS: 1347: 1985.
- Unequalled for clarity and legibility

48152: 1:5 1:50 1:10 1:100 1:20 1:200 1:500 1:1000
48153: 1:1 1:100 1:20 1:200 1:5 1:50 1:1250 1:2500
48154: 1:1250 1:2500 1:10000 1:10560 6":1 mile
48302: 1:5 1:50 1:10 1:100 1:20 1:200 1:500 1:1000
48303: 1:1 1:100 1:20 1:200 1:5 1:50 1:1250 1:2500
48304: 1:1250 1:2500 1:10000 1:10560 6":1 mile
48401: 1:1 1:10 1:2 1:20 1:5 1:50 1:100 1:200 1:500 1:1000 1:1250
48410: 1:1 1:2 1:5 1:10 1:20 1:50 1:100 1:200 1:500 1:1000 1:1250 1:2500

Product Code	Description	Price per Unit
48152	150mm No. 2 Oval Metric Scale Rule	£9.15
48153	150mm No. 3 Oval Metric Scale Rule	£9.15
48154	150mm No. 4 Oval Metric Scale Rule	£9.15
48302	300mm No. 2 Oval Metric Scale Rule	£13.50
48303	300mm No. 3 Oval Metric Scale Rule	£13.50
48304	300mm No. 4 Oval Metric Scale Rule	£13.50
48401	300mm Metric 'A' Triangular Scale Rule	£22.90
48410	300mm Academy Triangular Scale Rule	£10.30

Steel Rule
- Steel rule with mm/cm graduations 1/16 1/32 and 1 inch markings on one side and conversion tables on the other.
- 29mm wide 0.9mm thick.

Product Code	Description	Price per Unit
45020	300mm Scale Rule	£3.50

Government Stamp Brass Rule
- High quality brass counter rule.
- Metric graduations: 1m/36" 8ths on top edge mm figured cm on bottom edge.
- Deep etched black figures and graduations.
- Government stamped.

Product Code	Description	Price per Unit
45026	Stamp Brass Rule 1m/36"	£3.50

Fisco Surveyor's Rods
- Multi-fold rule made from top quality hardwood
- Ends capped with rolled brass
- Treated twice for extra durability

Product Code	Description	Price per Unit
45210	2m Surveyor's Rod	£24.20
45220	2m/6' Surveyor's Rod	£24.20
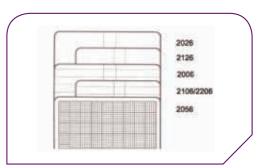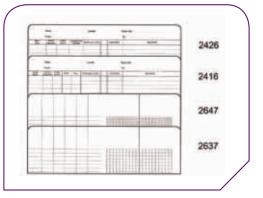
Chartwell Field Books

Chartwell field books are made to the highest specification using quality strength paper with high cotton content. They provide excellent tear resistance when wet. Strength and writing surface is retained when dried even after being subjected to extreme weather conditions. All books come with 160 pages printed with permanent waterproof ink. Covers can be wiped clean, fold flat, and are sewn in sections with nylon thread to withstand the most demanding environments.

Model	Description	Price
2426	Collimation Level Book	£10.95
2126	Field Book – Rules/2 Centre Lines	£8.45
2056	Field Book - Ruled/Graph Centre Lines	£10.70
2647	Mining Transit Book – Quadrille/Feints	£11.95
2006	Field Book – Ruled/2 Centre Lines Feints	£10.30
2416	Rise & Fall Survey Book	£10.95
2256	Field Book – Ruled/Graph Centre Lines	£9.95
2142	Dimension Book – Ruled/Numbered	£10.50
2206	Field Book – Ruled/Centre Lines Feints	£9.50
2026	Field Book – Ruled/2 Centre Lines	£7.60
2200	Field Book – Plain Leaves	£8.15
2106	Field Book – Ruled/Centre Lines Feints	£10.50
2042	Dimension Book – Ruled/Numbered	£9.95
2242	Dimension Book – Ruled/Numbered	£9.95

Ancillary Items

Used Surveying Equipment

Opti-cal offer a wide range of used second hand, ex demo and reconditioned survey equipment and laser instruments, all coming with a minimum 3 months parts and labour warranty and 1 year calibration certificate. By purchasing reconditioned survey equipment from us you will have fully calibrated equipment as if it were new, saving on depreciation but not compromising on quality.

Need to sell your Leica surveying equipment?
We can give you a competitive quote.

Trade-in options available for all surveying equipment

Simply contact us with the details **01189 820 500**
or email sales@surveyequipment.com

Our stock extends to external resources, and due to the high demand for second-hand, ex-demo, used and re-conditioned surveying equipment it is advisable to check for the latest deals. If you have any specific survey equipment requirements but cannot see what you require here, please do contact us to check availability.

Finance Options

Opti-cal offer a range of plans through our partnering leasing company Academy Leasing Ltd. The following plans are available by contacting Academy direct on **01942 324 455 (www.academyleasing.com)**.

Finance Lease

This lease plan simply funds the use of your chosen equipment. As your company leases the equipment, monthly rentals are tax deductible. Variable payment patterns, including low initial rental, are available, so you also benefit from low capital outlay.

After the primary period, the lease can be extended into a secondary period for a single nominal rental.
At the end of the lease agreement you may sell the equipment (as an agent for the finance company), or return it to the finance company to sell. A proportion of the sale proceeds, typically 95% plus, are returned to you as a refund of rentals.

- Low Deposit
- Various Payment Patterns
- Proportionate Rebate of rentals from sale proceeds
- Nominal Secondary Rental

Hire Purchase

A traditional form of purchase finance, Hire Purchase offers ownership of the equipment. Low deposit terms (all the VAT element payable on signing) make ownership even more accessible. The price of payment is fixed. Interest is simply calculated on the length of the agreement and the amount financed.

At the end of the payment term, a nominal "option to purchase" amount will result in ownership of the equipment.

- Fixed monthly payments
- Ownership

Contract Hire

Contract hire is an ideal product for companies who do not want the ownership of equipment and are therefore able to treat this as off-balance sheet funding. Your company simply hires the equipment from the Contract Hire Company for a predetermined period at a fixed monthly rate. The Contract Hire Company retains ownership of the equipment, and the risks associated with them. At the end of the contract the equipment is returned to the Contract Hire Company.

- Off Balance Sheet
- Maximum Cash-flow Benefits
- No Depreciation risk
- Low Deposit

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Sales • Hire • Repair

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