

Together we deliver



## LaserSweep™

The new  
lightweight  
measurement  
laser scanner

LRLS05 specification





# New lightweight LaserSweep™

**The LaserSweep™ has long been a trusted and versatile portable measurement device used by rail operators and surveying consultants throughout the UK and Ireland.**

The LaserSweep™ offers users total flexibility to undertake profile measurements on a range of structures including:

- Bridges
- Tunnels
- Viaducts
- Platform canopies
- Platform edges
- OLE equipment
- Datum plates

To keep up with modern surveying techniques, Balfour Beatty has developed a new version of the LaserSweep™ which incorporates a suite of improved applications and features.

These improvements provide a range of benefits including greater levels of on-site software functionality, improved setting-out downtime, the ability to add track geometry to structure measurements, plus new platform marker gauge.

NEW FEATURES FOR THIS UNIT  
NEW PLATFORM AND DATUM PLATE ADAPTORS

## Improved levels of functionality without the additional weight

At almost half the weight of the original LaserSweep™, the new lightweight design makes it easier to transport the unit to and from site.

### Overview

The unit incorporates:

- A new digital volt meter
- Illuminated blue bezel on/off switch
- Lightweight plastic header unit
- Improved plastic arm
- External charging point
- 6+ hours of continuous usage through its internal Lithium ion battery
- Rugged GETAC PDA – IP68 Rating

***The new unit has also been designed to work in third rail electrified environments***

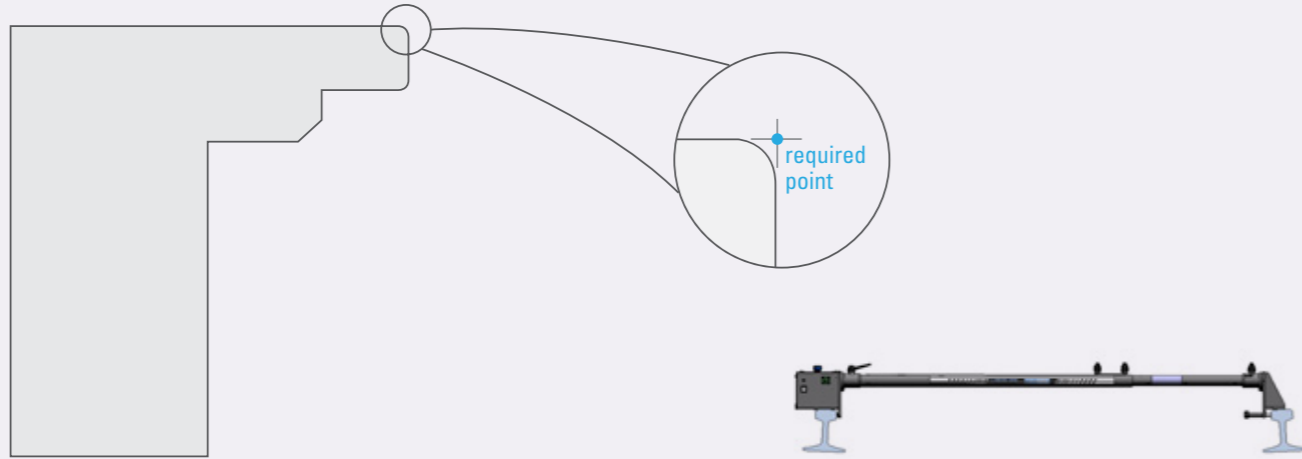
## Ergonomic features

The new LaserSweep™ comes complete with a hi-visibility rucksack carrying case:

- » Water resistant
- » Pre-cut internal foam sections
- » Reflective material
- » Separate pocket for manuals
- » Carry handle and straps



# New platform edge measurement capability



## Platform survey

The new platform edge enhancement provides an accurate measurement of the platform edge intersection, regardless of the platform height, type and distance from rails.

The new adaptor allows accurate positioning of the laser dot and provides a modified platform adaptor which is suited to most platforms on the rail network.

The adaptor is profiled such that the LaserSweep™ captures the eight points automatically on the angled and vertical faces of the adaptor. Once complete, the software calculates the intersection point and subsequently the platform edge value.

The new adaptor and software provide the following benefits:

- Improved accuracy
- Faster processing speed with measurement
- Direct export to Network Rail format sample spreadsheet
- Platform profile can be imported directly into ClearRoute™ gauging software
- Suitable for most platform construction types
- Can be purchased for use with earlier models of the LaserSweep™.

## AVAILABLE SUMMER 2015

Datum plates are fixed to trackside structures (platforms, bridges etc.) to identify the relative position of the track so that it can be monitored for movement. This includes information on the horizontal and the vertical "offset" distances measured from the plate/ slider block to the running edge of the nearest rail of the relevant track.



Balfour Beatty's newly designed "Datum plate adaptor", combined with the LaserSweep™ software, has the ability to automatically calculate the required parameters and the output can be exported directly into an Excel spreadsheet.



○ ○  
A more detailed survey, whilst reducing data processing time

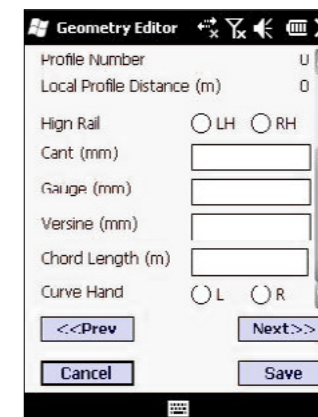
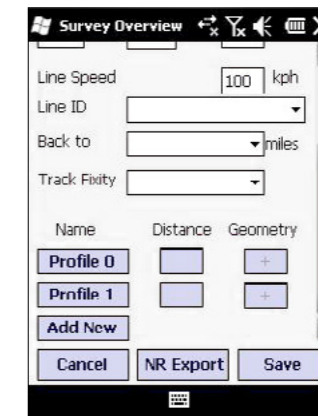
# Setting-out and editing measurement data



The new improved LaserSweep™ software allows the user to capture a more detailed survey whilst reducing data processing time. It can be prepared for the survey prior to reaching the worksite, maximising the time on track for profile capture.

Improvements include:

- The ability to produce SCN files with track geometry included (i.e formats .sc0 for use with ClearRoute™).
- Instead of having to create a new profile at each required position on the structure, the upgraded software can undertake surveys on a complete structure basis.
- The new software allows users to create surveys before reaching the worksite. This allows the user to capture a more detailed survey without increasing time on track.
- Track geometry can be added to structure profiles after or during survey.



# Summary of main features and benefits

- Lightweight – approx. 10kg
- Suitable for use in third rail electrified environments
- Improved setting-out software
- Inclusion of track geometry
- Platform edge measurement capability
- Imports files directly into ClearRoute™
- Datum plate measurement adaptor
- Improved rugged IP68 rated PDA
- Improved battery life
- Improved handling capability
- Weekly and weekend hires available



## LaserSweep™ specification

### Temperature range

Operating temperature range: -10°C to +50°C

### Distance range

0.5m – 30m

### Specified accuracy range

Accuracy better than ± 2mm (to 2 sd)

### Actual range

0.5m – 30m

### Angle range

20 – 340 degrees

### Angle resolution

0.18 degrees, 0.2 grads

### Angle accuracy

± 0.09°, 0.1 grad (to 2 sd)

### Co-ordinate accuracy

± 4mm at 4m distances  
± 10mm at 9m distances

### Cant measurement

Accuracy typically ± 2mm (to 2 sd)

### Measuring speed

1 – 6 seconds per reading depending on surface reflectivity.  
Approximately 4 minutes for a typical complete profile.

### Output

The data is produced in a standard format that downloads directly from the Tablet PC or PDA (via a USB cable) into all versions of Balfour Beatty's gauging software for analysis. Analysis can also be performed on a computer or through a spreadsheet or through the use of Balfour Beatty's ClearRoute™ software. On-site analysis can also be carried out at the worksite using Balfour Beatty's LaserClear or ClearRoute™ software.



## Training and Support

If you have purchased a LaserSweep™ unit or plan to hire one on a regular basis, a LaserSweep™ course could help you get the most from your expenditure.

New users can benefit from attending a LaserSweep™ course by learning the most efficient ways of surveying a structure. The course includes useful guidance for ensuring that the measured profile is an accurate representation of the structure and provides the opportunity for best practices to be shared so that no time is wasted while out on site.

*For more information please contact training support on 01629 760750 or email [bbrt.training@bbrail.com](mailto:bbrt.training@bbrail.com).*



A LaserSweep™ course could help you get the most from your expenditure



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