LINE AND LEVEL LASERBEAM MEASUREMENT SYSTEM

MODEL OPAL

The Line and Level Laserbeam Measurement System model OPAL is a simple device dedicated to determine with accuracy the horizontal and vertical position of the rail. It works with a laser source and a target on which the laser points.

Opal features a PDA with dedicated software for manual data logging, radius of curvature calculation and storage.

1. DESCRIPTION AND OPERATION

The Line and Level Laserbeam Measurement System model OPAL comprises two units which are mounted on magnetic clamps on the rail head involving an easy positioning of the device. The laser source is fitted with a screw for adjustment for horizontal and vertical alignment, and the target plate is fitted with two axis of movement.

The unit is then designed for horizontal and vertical measurement in plain track and in switches and crossings:

- On flat bottom rails;
- On grooved rails (drawing to be supplied).

The laser source is directed at the target plate, and the laser is a defined as a circular spot which is incident onto the target plate (the operator can see the spot with the supplied laser glasses).
1. DESCRIPTION AND OPERATION (Cont’d)

The target plate is sufficiently large in both directions to capture the laser spot and is fitted with coarse and fine graduations allowing a high resolution. Either the edge of the laser spot, or the centre can be used to determine the position of the beam with a good accuracy. During calibration the position of the beam is aligned to the zero position.

Both the target mechanism and the source mechanism have levels mechanisms to ensure the units remain level.

The PDA software for the Opal is very simple, it enables to enter the location, name the track etc., then the base of measurement (20 m etc.) and then the measured versine. The system will then indicate radii of curvature.

Both components are centred about the rail using vertical pillars.

A specially designed robust transportation and protective case is provided with the equipment.

2. TECHNICAL DATA

- Range of the target plate:
  - Horizontal: ± 200 mm
  - Vertical: ± 200 mm
- Resolutions and accuracy:
  - Target plate resolution: ± 1 mm
  - Laser beam accuracy: ± 1 mm
  - Resulting accuracy: ± 2 mm
- Nominal outdoor range for the laser: 30 m
- Laser spot diameter: 5 mm (dependant upon chord length selected)
- Laser: \( \lambda = 635 \) nm, class 3R
- Dimensions of the laser target:
  - Length: 210 mm
  - Width: 420 mm
  - Height: 470 mm
- Dimensions of the laser source:
  - Length: 240 mm
  - Width: 150 mm
  - Height: 340 mm
- Masses:
  - Laser target: 5 kg
  - Laser source: 6 kg
3. **ACCESSORIES AND OPTIONS (at extra price)**

- **Less powerful laser for night and in-tunnel operation**
  
  *(in replacement of the one provided as standard)*

4. **PDA SOFTWARE SCREENSHOTS**

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*We reserve the right to modify any equipment specification of the present offer to take into account the latest technical improvements and working conditions at the date of manufacturing. Pictures and drawings may include some options and are not contractual.*