

OL28X - Automatic Levelling Dumpy Level
Superior Build Quality and Clear Optics



OL28X

Instruction Manual



www.redbacklasers.com.au

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OL28X™ INTRODUCTION

Congratulations on purchasing the OL28X™ an auto levelling optical dumpy level ideal for general site levelling, alignment and surveying.

The OL28X™ features superior optics and lenses making the image crisp and clear and the generous 28x magnification is ideal for accurately reading staffs without making the field of view too narrow.

The OL28X™ is built tough with a cast metal body which offers protection from dust and water.

The OL28X™ is simple to use. Use the rough levelling bullseye vial to get the unit into self levelling range and the magnetically dampened compensator does the rest.

The OL28X™ features a rubber anti-glare sun screen for the eyepiece making use during tricky sun positions much more comfortable.

The OL28X™ is a truly professional tool, designed to be used day in and day out and built with quality materials, its tough and comes with a Two Year Redback Warranty. (See page 12)

OL28X™ Included Accessories

- OL28X™ Dumpy Level
- Protective Carry Case
- Protective Lens Cap
- Plumb Bob
- Lens Cleaning Cloth
- Instruction Manual



OL28X™ DIAGRAMS

OL28X™ Optical Dumpy Unit



OL28X

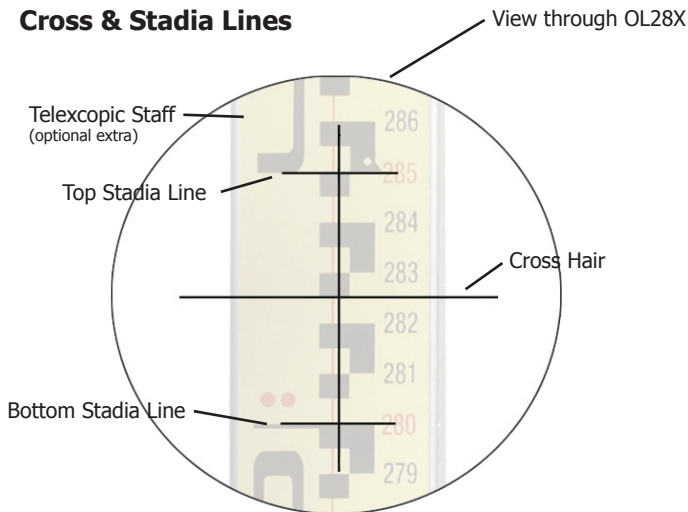


Rough Levelling Vial

1. Lens Cover
2. Focus
3. Rubber Eyepiece Shield
4. Eyepiece/Cross Hair Focus
5. Angle Estimator
6. Levelling Feet
7. Fine rotation Adjustment



Cross & Stadia Lines



Bubble Vial is roughly levelled using adjustment feet. The bubble **ONLY NEEDS TO BE SOMEWHERE IN THE CIRCLE** for the dumpy level to self level. Getting the bubble exactly central does not affect accuracy as the self levelling compensator is in control of this.

OL28X™ OPERATING INSTRUCTIONS

Getting Started

The OL28X is best operated on a heavy duty domed top tripod (Redback model HDD51). Place the Dumpy Level on the tripod and locate the locking screw into the base of the unit. Before tightening the screw completely roughly level the OL28X on the dome of the tripod, using the bubble vial as a guide. The locking screw can now be tightened and the three adjustment feet used to bring the bubble in the vial into the circle. Note: The bubble vial is used only to get the dumpy into self levelling range (anywhere within the circle) once in range the automatic compensator takes over and levels the view through the dumpy to a high level of accuracy.

Next, the front of the dumpy level needs to be pointed at the required target/staff. This is achieved with the help of the sight built into the top housing. Rotate the complete level on its base to be roughly aimed then whilst looking through the eyepiece of the unit use one of the fine rotation adjustment knobs (either on the right or left of the unit - see diagram page4) to get on target.

The OL28X will require focussing depending on the distance the target/staff is away from the unit. Focus the dumpy by looking through the eyepiece and turning the large focus knob on the right hand side of the unit.

The Cross Hair may also need focussing this is done by rotating the eyepiece itself whilst looking through it until you see a clear and sharp vertical and horizontal cross hair lines. Note it is possible to make the cross hair completely disappear with this adjustment.



Levelling with the OL28X

Levelling with a dumpy level is a two person operation, one to hold the staff and one to look through the unit and read the height on the staff.

To level simply look through the eyepiece at the staff and make a mental note of the height indicated by the central horizontal line of the cross hair, now by moving the staff to various points on site you can set the same height and so have a level site.

Vertical Alignment with the OL28X

The OL28X can be used for vertical alignment, such as fence post alignment. This is simply achieved by placing the dumpy level over the alignment line, this can be done accurately by using the plumb bob attached to the hanging point on the bottom of the tripod locking screw.

Next the OL28X is rotated until it is lined up with the other end of the alignment line. Using the vertical line on the eyepiece cross hair the operator can indicate to the post marker where each post needs to go along the alignment line.

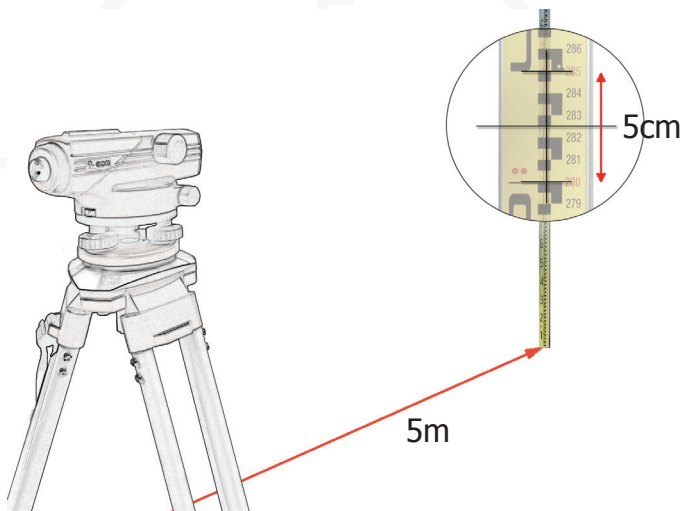


OL28X™ OPERATING INSTRUCTIONS cont.

Distance Estimation with the OL28X

The OL28X can be used to estimate distances between the unit and the staff with the use of the "Stadia" lines whilst looking through the eyepiece.

By using the plumb bob hanging from under the locking screw of the tripod the exact position of the dumpy level can be marked on the ground. Next set the staff up at the point that you want to estimate the distance to and look through the eyepiece. Note the number of centimeters on the staff between the top and bottom stadia lines (short lines see page 5), multiply this measurement by 100 and you have the distance between dumpy and staff in centimeters. e.g. $5\text{cm} \times 100 = 500\text{cm}$ which is 5m. In other words whatever you read in centimeters is the distance in meters.

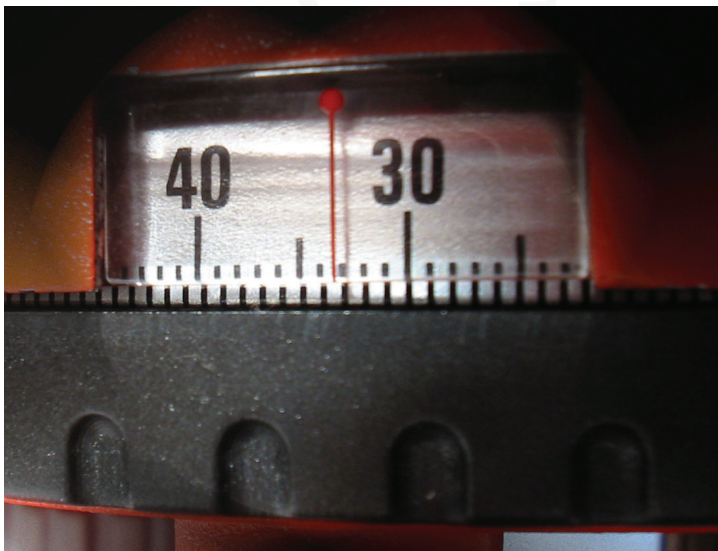


OL28X™ OPERATING INSTRUCTIONS cont.

Angle Estimation with the OL28X

The OL28X can be used to estimate angles with the use of the angle finder scale.

Simply aim the dumpy level at the target point using the cross hair and zero off the angle finder scale by rotating the adjustment ring under the finder scale. Then rotate the dumpy level noting the angle on the finder.



OL28X™ TECHNICAL SPECIFICATIONS

Technical Specifications

Magnification	28x
Object Aperture	≥42mm
Min Focus Distance	0.3m
Compensator Working Range	±15'
Compensator Error	≤±0.3"/1'
Setting Accuracy	≤±0.5"
Temperature Range	-25°C - 50°C
IP Dust Water Resistance	IP66

Calibration & Self Check

All Redback Lasers and Levels have been checked for calibration and certified by one of our technicians here in Australia prior to despatch and should under normal conditions not go out of calibration. A calibration certified sticker with the date and name of technician is located on the laser/level itself. It is worth checking calibration from time to time particularly after any known knocks or drops. An easy way to continually check calibration is to always double check you work with the laser/level located in a different position. Various other methods for checking calibration can be found at **www.redbacklasers.com.au/downloads** or the laser/level can be returned to our service department for checking and re-calibration. We at Redback Lasers provide a once off free calibration and check within the duration of the warranty period see page 12 for details.

Care & Maintenance

- Keep level and accessories stored in protective case.
- Make sure level is stored dry, dry out before storage to prevent damage.
- The OL28X™ is a precision instrument and should not be subjected to excessive knocks, drops or vibrations.
- Self check calibration from time to time. See page 10
- For service contact Redback Lasers. www.redbacklasers.com.au

Trouble Shooting - FAQ

Q. *I cannot see a cross hair through eyepiece!*

A. *The cross hair needs focusing for your eye sight by rotating the adjustment ring on the eyepiece itself.*

Q. *The Bubble Vial does not stay exactly central when I rotate the level on its base.*

A. *This is nothing to worry about the bubble vial is just a rough levelling device to get the self levelling compensator into working range, as long as the bubble is any where within the circle then the compensator can accurately self level. Getting the bubble exactly central will NOT increase accuracy.*

REDBACK LASERS WARRANTY

Two Year Warranty

All RedBack Lasers come with a limited **2 year warranty** from date of purchase, this warranty states that Redback Lasers will be free from defects in material and manufacture. The warranty does not cover damage or defects caused by or resulting from misuse, accidental damage, un-authorised repair or abnormal use. If the equipment fails under the warranty period or conditions it will need to be returned either to the place of purchase or to RedBack Lasers direct together with proof of purchase (items can be returned without proof of purchased where age of unit can be estimated) for replacement or repair. Any lasers or levels returned that do not fulfil warranty criteria will be quoted for repair. Calibration is not covered by warranty, however, we provide a once off free calibration check for any Redback Lasers that may need re-calibration during the warranty period. Note that this offer is invalid if the unit shows signs of accidental damage, un-authorised repair or abnormal use. Also note that when returning the unit to us for free calibration the customer is liable for freight, we will arrange and cover return freight. Any subsequent need to be re-calibrated will attract a service charge. The warranty obligation is limited to repair or replacement of faulty products falling within the warranty criteria and does NOT include cost or hiring replacement equipment during the time taken to remedy the warranty or loss of earnings during this period. RedBack Lasers excepts no responsibility for any inaccurate work carried out by the user, it is the users responsibility to maintain good working practices and regularly test their tools for accuracy.



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