

Laser Level Usage advice – Potential Refraction problems

Product types: All Rotary and Cross-line laser levels

Laser levelling equipment is used by many different industries in various work-site environments. The User should be aware of the possibility of refraction problems, when using this type of equipment.

"Refraction" is the phenomenon where light is transmitted but moves direction when it passes from one medium to another e.g. through air then glass or water. This is why a pond of water appears shallower than it actually is. In the same way, this refraction can effect the correct setting-out when using laser light.

An easy example to understand is if, for example, a rotary laser is operated with a double glazed window behind it. The true level position can be refracted and the deviation can be appreciable, even over small distances. In some instances, a double beam position can occur and the wrong level marked.

Our advice is to be aware of this and take appropriate care when setting-out with your laser level, both indoor & outdoors.

A simple *fix* (if the laser cannot be moved) is to position a simple brown cardboard cover over the laser level on the side towards the refraction surface.

The following surfaces can potentially be problematic:

All glazing - single, double or treble glazed units.

Glazed office partitioning.

Vehicle or Site Plant - glass windows & windscreens. (Curved windows are the worst)

Panel vans - wet surfaces.

Mirrors & mirrored surfaces.

Stainless steel panels.

Shiny aluminium panels.

Water – pools, lakes, rivers, dams & weirs.

Fountains and water displays etc.

In addition, be aware of the effects of amber warning beacons on plant & equipment. This "strobe effect" is a known problem and can effect all types of laser detectors.

Our main advice is to just be site-aware when using laser levelling equipment, to ensure the reliable and accurate setting-out of your jobs.



If you require any further advice or guidance, then please contact our Technical Dept on tel. 08000 869 769 or email us on support@laser-level.co.uk