

Simple Self-Leveling Laser

by Clayton DeKorne



There's a lot of gee-whiz appeal in high-tech leveling instruments. That first time you pull out a beeping, digital level, or a stick level with a laser on one end, you get a lot of attention from other crew members and all the subs on site. But I have to wonder if some of these devices won't end up like the Betamax and the 8-track player. After all the "wow" has worn off, will that instrument get buried in the truck under a pile of tools that get used more frequently? More important, what are the VHS and CD equivalents of the tool world — the second-generation electronics that we'll still be using years from now?

Enter the LeveLite — a laser level that projects both a horizontal and a vertical light beam. This thing is shorter than a torpedo level, but it's accurate to within 1/4 inch over 60 feet. "Yeah, right," you say? Check it out.

The Plumb Bob

The LeveLite laser is based on an entirely different approach to shooting

a level line. Instead of projecting the beam parallel to a level rail, LeveLite Technology suspends a laser diode — a tiny semiconductor that emits the laser beam — from the end of a short pendulum. The beam shoots perpendicular to the pendulum arm, projecting a level line. An optical prism splits the beam at 90 degrees, so the LeveLite projects a plumb line at the same time.

The small pendulum and laser are fully enclosed in a small plastic box that's about the size of a 30-foot tape measure. Like a conventional plumb bob, the pendulum in the LeveLite automatically finds plumb. You don't rely on your eyeball to align a bubble; you don't rely on the length of the rail. You rely on gravity.

The LeveLite's small case must sit on a surface that's within 4 degrees of level, otherwise the pendulum will hang at an angle and hit the inside of the case. But it's simple enough to tell if you're within this required range: Tap the case. If you're within the leveling range, the red dot will

oscillate. If you're not within range, the beam will stay fixed on one spot. According to the manufacturer, future incarnations of the tool will probably have some type of indicator to make it even more obvious that you're within the self-leveling range.

Layout Tool

I've had a LeveLite for a couple months. I've been slow to warm up to it only because I'm a skeptic by nature. But the more I become familiar with this tool, the more useful it seems.

Interior work. The LeveLite is probably best suited for interior layout work. It's especially useful for projecting a level line around a room as a reference for cabinets, countertops, wainscot, chair rail, header heights, ceilings, or sill plates. The plumb line is a great reference for centering ceiling lights, laying out the corners of tray ceilings, cabinet soffits, and skylight framing.

In the past, I've used an inexpensive optical level for leveling interior cabinets and finding new header heights. I've also tried using several first-generation laser stick levels for these interior layout jobs. But with both an optical level and the laser stick levels, I have spent way more time than I've ever wanted to leveling the bases. This involves shifting the level back and forth until the vials read level in all directions, and painstakingly turning knobs first a hair in one direction, then a half a hair back, and so forth.

The LeveLite's self-leveling feature avoids this time-consuming step. I can place the device on top of a stepladder, or on a sawhorse, and as long as the beam oscillates freely, I know I'm in the self-leveling range and feel confident that I'm shooting a level line. Because the level line isn't directly tied to the surface the tool is sitting on, I can pivot the tool to sweep the beam around the room, knowing the



The LeveLite self-leveling laser works more like a plumb bob than a traditional level. A laser diode hangs from a short pendulum inside the case and projects a light beam perpendicular to the pendulum arm to find level.



The Levelite projects two beams at once. When the case is upright, these beams project level and plumb lines. When the case is lying on its side, as it is in this photo, the laser lines won't establish level and plumb, but still project a near-perfect right angle for fast, accurate corner layout.

level won't be thrown off too much by slight variations in the surface the tool rests on.

Exterior work is a little more difficult, only because the beam isn't extremely bright, and can get washed out in direct sunlight. Levelite produces two models — the SL model for interiors and a brighter SLX for exterior work. Even with the SLX, however, you need to use a reflective target to locate the beam easily outdoors. Levelite supplies simple plastic targets that resemble Post-It notes. These targets are red, which seems odd, since the beam is red. But that's one of the mysteries of laser light: It shows up best on a red surface.

I found the Levelite to be a useful framing tool, especially for plumbing tall walls. You can stick one of the little plastic targets to a stud. With the Levelite sitting on the floor near the bottom wall plate, you can push the wall to plumb. When the beam intersects the target, nail off your bracing. This beats using a plumb bob. The oscillation of the laser beam settles out much faster than the string of a plumb bob, and you don't have worry about wind blowing the plumb bob out of alignment.

Levelite also makes a clamp — a modified Quick-Grip clamp — that makes it easy to quickly clamp the Levelite to any framing member, to a footing form, fence post, deck railing, or whatever. This helps position the

tool just about anywhere for leveling at a specific height.

Squaring corners. Flopped over on its side, the Levelite won't self-level. But in this position it still projects a perfect 90-degree angle that can be used as an accurate layout device for squaring corners. This feature alone makes the Levelite extremely valuable on any site. It's like having a huge framing square. According to the manufacturer, the angle is true to within 2 arc-minutes. That means if you're trying to establish the right angle to one foundation wall, you can lay out the second wall to within 1/4 inch of dead square at 40 feet. You'd be hard pressed to get that close pulling tapes, and you'd spend a lot more time doing it.

Durability and Cost

My limited experience with the Levelite suggests that it's relatively durable. Like an optical level, you don't want to chuck this tool around the site. But I accidentally knocked the Levelite off a workbench onto a slab, and this tumble didn't seem to have any effect on it. The case is padded with tough rubber bumpers. Also, the laser hangs in a protective cage, and the pendulum swings from a flexible arm. If the level takes a hard bump, this arm will bounce around, but it won't break or permanently deform.

The Levelite isn't exactly cheap, however. The SL sells for about \$500, the SLX for \$700. At those prices you probably have to be doing a lot of layout work to justify the expense. But there's little doubt in my mind that the Levelite would reduce a great deal of time otherwise spent fiddling with the adjustments on leveling bases, or setting up plumb bobs, or running layout strings for complex layout projects. There's an enormous amount of satisfaction in plunking down the Levelite and projecting accurate level, plumb, and square lines. As quick and reliable as the Levelite is, it can be used as a speedy check on your foundation sub. Averting one mispour would certainly help justify the cost. For more information, contact Levelite Technology, 1340 Space Park Way, Mountain View, CA 94043; 800/453-8354 or 415/254-5980. ■