Lasers for Deck Builders

As the owner of a small remodeling company, I need to be as efficient and productive as possible to stay in the black — particularly these days. One tool that helps me do that is a compact laser. Since it requires only one person to operate, it's more efficient than the two-person builder's level I used in the past. It boosts productivity by speeding installations, and thanks to its accuracy of about 3/8 inch in 100 feet, work set to its line looks good.

When I bought my first laser level 15 years ago, the choices were limited and the cost was high — well over $1,000 for the manual leveling rotary tool I chose. Nevertheless, it quickly paid for itself in labor savings, and I was hooked. Fast forward to today: Prices have dropped, and there are

They plumb, level, and square. If they bought coffee, they'd be perfect.

by Greg Burnet

numerous lasers on the market with myriad features.

Though having a range of options is great, it can make selecting the right laser confusing. A must-have for deck builders is a laser that can be used outside. However, the brightest lasers can be difficult to see even on a cloudy day, and if the sun is bright, forget about it. The best option is a laser that works in tandem with a receiver (also referred to as a detector).

For years, the only lasers that could be read by a receiver were rotating lasers, which rapidly spin a laser line in a 360-degree circle. Since then, a new breed of laser has emerged. The beams of these new tools pulse faster than the eye can see and enable the beam to be located by the detector. The advantage of a pulse instrument over a rotating-beam laser is it can be much smaller, since there are no moving parts. Some are small enough to be worn on a belt when not in use.

Rotating lasers do have a distinct advantage for users who need to cast lines great distances: Their beams travel farther than those of a compact, or pocket, laser. The accuracy of rotating lasers is also usually better than that of their counterparts, though not enough to matter in typical residential applications.

I rounded up nine laser-level kits from six different companies to review. The kits all have a couple of important things in common. All are self-leveling. Having to manually level a laser can be time-consuming and frustrating as well as inaccurate, because precision depends on correctly reading the bubble vial(s) on the tool. Also, all the tools I reviewed work with a detector, and have street prices of $500 or less for the kit, detector included. Many of the tools do much more than level, as noted in the following pages.

Considerations

My objective in testing the lasers was not so much to pick a winner as to learn more about the available models, discover what features do and don't work, and pass that information along. Even the least expensive lasers are a vast improvement over the 4-foot-level-on-a-straight-board alternative.

While the most important feature for a deck builder is certainly leveling, some of the other features — like a plumb dot or the ability to square a corner — might tip the balance in favor of one laser over another. I focused on the following 12 aspects of the tools.

Level lines. Except for the PLS 90E, all the models I tested cast a level line — and most often, this is what I used them for. The clarity of the lines varied, however, ranging from thick and fuzzy on the Stanley model to crisp and fairly thin on the CST/Berger XLP 34.

Plumb lines. All but the PLS 360 have some sort of plumb function in addition to a level line. A plumb line is okay inside on finished surfaces, but for decks I prefer a dot, since I'm using the laser in place of a plumb bob — a huge improvement, by the way, on windy days. Lines are more difficult to reference — without the aid of a detector — than a concentrated dot, which is usually visible in even the brightest conditions. Tools with either a plumb dot or plumb cross hairs include the CST/Berger XLP34, the Johnson Level Co. 40-6515 Acculine Pro, and the Stabila LA-2PL.

Squaring corners. While not the most important feature for deck builders, the ability to shoot square corners can be a big help laying out footings. Only the CST/Berger XLP34 and the Pacific Laser PLS 90E have this capability.

Detectors. These are essential when the laser line can't be seen. Detectors emit a series of beeps, depending on whether they're above or below the

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	CST/Berger	CST/Berger	David White	Johnson Level Co.
	XLP34 800/435-1859 cstberger.com	**58-ILMXTE** 800/435-1859 cstberger.com	**M2XT** 800/435-1859 davidwhite.com	**40-6515 Acculine Pro** 262/242-1161 acculinepro.com
				
Street price:	$425	$300	$300	$400
Comments:	Despite being fairly compact, the recently released XLP34 shoots two vertical and two horizontal lines, plus small, plumb cross hairs. This combination makes it useful not only for leveling, but for squaring and plumbing as well. The lines are crisp and narrow, and the cross-hairs plumb mark is cleaner and easier to reference than any dot laser I've ever used. The XLP34 also shoots a 90-degree corner; but unlike the PLS 90 — the only other tool I reviewed that does that — it lacks a fine-adjustment feature.	Apart from a few cosmetic differences, the CST/Berger 58-ILMXTE and the David White M2XT are essentially the same. The only notable difference is that David White's warranty of two years is double that of the CST/Berger instrument. Both are good entry-level tools. Both shoot fairly bright cross-hairs, if a bit on the wide side. They share similar features with the Stanley, but the vertical beam on these models fans 130 degrees, allowing it to be projected clearly above the tool.		This rotary laser also shoots a plumb dot — a very handy feature. The line rotates at one of 3 speeds: 200, 400, or 600 rpm. The lower speeds make the line more visible. Like some other rotary lasers, the 40-6515 Acculine Pro can also be used on its side for shooting vertical lines. The huge drawback here is that the tool must be manually leveled when used this way.
Strengths:	Most versatile tool tested; fine, crisp lines; excellent case, though bulky; good range and accuracy; shoots a cross-hairs plumb mark	Good value for the money; kit includes mini-tripod and magnetic mount; good instructions; wide fan on beam		Best range of any tool tested; excellent case; pendulum lock; plumb dot
Weaknesses:	Some lag time readying the laser; no fine lateral adjustment of 90-degree lines; shorter claimed battery life than others; so-so manual	So-so case		Must be manually leveled in lay-down applications; chunky, somewhat faint line
Type of line(s) projected:	Two level lines, two plumb lines, two cross-hairs lines, one plumb cross-hairs "dot," one 90-degree (square corner) line	Level and plumb lines with a 130-degree fan, plus cross hairs		One 360-degree level line plus a plumb dot, and a 360-degree plumb line when used in the lay-down position.
Power:	3 AA batteries	3 AA batteries		4 AA batteries or accessory DC adaptor
Stated range:	100 feet visible, 300 feet with detector	100 feet		Up to 800 feet in diameter with detector
Stated accuracy:	+/- 1/8 inch at 100 feet	+/- 3/32 inch at 30 feet		+/- 1/8 inch at 50 feet

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	Pacific Laser Systems			Stabila	The Stanley Works
	PLS 180 800/601-4500 plslaser.com	**PLS 360** 800/601-4500 plslaser.com	**PLS 90E** 800/601-4500 plslaser.com	**LA-2PL** 800/869-7460 stabila.com	**Fat Max CL2XT** 860/225-5111 stanleytools.com
					
Street price:	$350	$460	$495	$495	$260
Comments:	A great go-to tool for small leveling and plumbing jobs, the PLS 180 was the most compact in the survey. At roughly the size of a 35-foot tape measure, it's so small that it can be carried on a belt in its included pouch. It casts bright lines that fan 180 degrees both horizontally and plumb, or combined in cross hairs.	As its model number implies, the 360 shoots a 360-degree level line. At roughly half the size of a typical rotating laser, the 360 is far more compact and has no moving parts to be concerned about. On the other hand, it can't be used on its side to shoot plumb lines.	The PLS 90E doesn't level or plumb. It only lays out square corners, but it shines at that. Particularly on sloped sites, it's faster and more accurate than traditional methods. The unit's plumb-down-only dot accurately locates it over benchmarks. Two vertical plumb lines and two horizontal lines combine in a 90-degree corner. If you do a lot of layout, it should quickly pay for itself.	A versatile, fairly compact tool, the Stabila LA-2PL shoots a level beam that fans 150 degrees around the tool. It also shoots a plumb dot, which is extremely handy for plumbing from footings to the beam.	This no-frills cross-hairs tool does an adequate job, especially considering its attractive price. The lines projected by this model were bright indoors, but lacked any real fan, essentially projecting directly in front of the device. The result is less range and less versatility.
Strengths:	Extremely compact tool and receiver; easy to see and locate lines; good user manual; multiple mounting options; rubber-lined cage protects leveling pendulum	Compact tool and detector; crisp line that's easy to see and detect; clear instructions; very good range and accuracy; rubber-lined cage protects leveling pendulum	Very accurate; very good range; good instruction manual; crisp, easily read line; micro-adjust dial allows lateral fine tuning of line; rubber-lined cage protects leveling pendulum	Sharp horizontal line, though a bit thick; convenient plumb dot, instead of a line; pendulum lock; very good range	Comparatively inexpensive; kit includes mini-tripod and magnetic mount; fairly bright lines
Weaknesses:	So-so case; tripod adapter must be purchased separately	So-so case; tripod adapter must be purchased separately; one-function tool	Tripod adapter must be purchased separately; adequate case; limited functions	Can project only one beam at a time; adequate case	Thick line; so-so case; so-so manual; lines have very little fan
Type of line(s) projected:	Level and plumb with 180-degree fan, plus cross hairs	Five horizontal level lines coupled to form one 360-degree level line	Two vertical lines, two horizontal lines (projected towards the ground or floor), one plumb-down dot	Level line with 150-degree fan and plumb dot	One level and one plumb line that can meet in cross hairs
Power:	3 AA batteries	3 D batteries	3 AA batteries	4 AA batteries	3 AA batteries
Stated range:	100 feet	250 feet	250 feet	300 feet	Up to 100 feet visible; more than 100 feet with a detector
Stated accuracy:	+/- 1/8 inch at 30 feet	+/- 1/8 inch at 100 feet	+/- 1/8 inch at 100 feet	+/- 3/8 inch at 100 feet	+/- 3/32 inch at 30 feet

laser beam. Typically, faster beeping indicates the receiver is above the beam, while slower beeping lets you know the detector needs to be raised to reach level. A solid tone indicates level.

All the detectors worked well; those with the PLS models were the most compact. All could be mounted on a grade rod through some type of clamping mechanism included with the kit. It's standard for one detector to work with all the exterior lasers made by the same manufacturer.

Cases. Though not a deal breaker, a nice case is a point to consider. These are precision instruments and should be protected when not in use.

Power supply. All the models I tested accepted standard alkaline batteries. Most also accepted aftermarket rechargeable nicads, though the run times would likely suffer as a result, as nicads don't last as long as alkaline batteries.

Accuracy. In general, the larger the tool, the more accurate it will be. This is because all self-leveling lasers use a pendulum hung from an interior mechanism to level the tool, and the longer the pendulum, the more accurate.

That said, all the tools I reviewed had an acceptable degree of accuracy, with most being in the range of +/- 3/8 inch at 100 feet — plenty accurate for residential contractors.

It's worth noting that it's important to be consistent when reading the lines or dots on any laser. Always mark the same part of the laser beam, whether it's the top, bottom, or dead center. Not doing so will introduce error, as most laser beams are more than 1/8 inch thick, and inconsistency in marking the line can accumulate on larger projects.

Pendulum lock. Most often found on rotary lasers, a pendulum lock is an internal clamp that secures the pendulum when the tool is not in use, thereby protecting the leveling mechanism. The Johnson Level Co. 40-6515 Acculine Pro and the Stabila LA-2PL have this feature, while in the PLS 180 and the PLS 360, Pacific Laser Systems lines the cage surrounding the pendulum with rubber for the same reason.

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Range. For all the tools I tested, the manufacturers listed a working range of at least 100 feet — plenty for most typical residential applications.

Mounting. Like a transit, lasers work best placed on a firm base such as a tripod. A few tools came with folding mini-tripods. While these worked okay for limited applications, a full-size tripod is a worthwhile investment for tools that will see a fair amount of exterior use.

A good tripod allows you to set up the tool secure in the knowledge the setting won't change. An even better option is to use an elevator tripod, which provides the ability to raise and lower the tool while it's attached to the tripod. All the lasers I tested can be used on a standard thread (5/8 inch by 11) tripod, although some require an adapter.

Out-of-level sensor. This feature lets you know when the instrument is out of its leveling range (anywhere from 3 to 6 degrees, depending on the model). The tools beep or flash indicator lights (some do both) when knocked out of level.

Size. The smaller and handier a tool is, the more likely it is to be used. Not surprisingly, I found this to be true of lasers, too — those that were on the larger side tended to get used less than the more compact ones.

Recommendations

No single tool was best for all users; all have strengths and weaknesses, depending on the application. You have to evaluate the type of work you do and pick the tool (or tools) best suited to your needs.

The two models I turned to most often were the Stabila LA-2PL and the PLS 180. Neither one does it all, but I was able to perform the vast majority of tasks I needed to, both interior and exterior, with a combination of these two models. The Stabila offered almost everything I needed for deck building, though I often reached for the PLS 180 for leveling jobs, thanks to its handy size and quick setup.

I also liked the CST/Berger XLP 34 but found the time required for it to self-level to be frustrating. It has an attractive combination of features at a reasonable price, though, so if I could own only one laser, the XLP 34 would warrant serious consideration. ❖

Greg Burnet is a remodeling contractor and deck builder in Berwyn, Ill.