

10 "Must Have" Features for a Laser Distance Meter

Written by Hugh.Baertlein on September 30th, 2014

Ok, I bet I know what you are thinking: Asking a company that sells [Laser Distance Meter \(LDMs\)](#) what to look for when you buy an LDM is like asking a used car salesman standing on his lot what you should look for in an automobile.

So why should you listen to me?

I was in the lab working on another project when Leica Geosystems engineers [invented the first LDM in the early 90's](#). I thought, "That's neat, but who the hell is going to buy one?" 10 years later I was the Global Sales Manager for Leica DISTO™. I have been involved in the design, production, and distribution of these cool tools ever since and I can tell you from first-hand experience that not all LDMs are the same.

These are the Top 10 "must have" things to look for in an LDM from my perspective:

1. [ISO rating](#) – When you're looking at LDMs an ISO rating helps you compare apples-to-apples. It is like the 0-60 times in a Consumer Reports car review: You know what kind of performance to expect and everyone is judged the same way.
2. [Certificate of Accuracy](#) – When you are buying a precision measurement tool, how do you know that the company that produced it made sure it was accurate before it left the factory?

Look for a Certificate of Accuracy with the actual measurements of *your* LDM on a calibrated range. This is different than a "certificate of compliance", which is a generic "certification by a competent authority that the supplied good or service meets the required specifications".

That's cute, but I want to see that MY tool is accurate and what the actual measurements are, not the "average tool" produced that month.

Every Leica LDM is tested on a range calibrated with a \$50,000 precision [Absolute Distance Meter](#) (that we also make) that is typically used by

metrologists and engineers. ADMs are used to build ultra-precise assemblies like aircraft and particle accelerators. Measurement is what we do. If you want to take deep dive, check out this [white paper from our sister company, Hexagon Metrology](#).

3. **No moving parts** - If you hear “[click-click, click-click](#)” when you hit the button on an LDM, you are using older tech that is based on the same principle as the mechanical shutter on a camera.

A clicking LDM is like a Smartphone with a rotary dial. Moving parts are more likely to break from a drop and are not as reliable as a “solid-state” tool. You are buying a high-tech tool, make sure you get the latest technology.

4. **An automatic or "intelligent" end-piece** – Many common measurements -- like measuring a door or window rough opening, or across foundation forms to check square -- are diagonal measurements that require getting your LDM into a corner.

The problem is that the thickness of the base of an LDM means you can't get it all the way into the corner, so your measurement will be off by the distance between the back of the tool and farthest reach of the corner.

The solution is a flip-out extension that is thin enough to fit all the way into the corner. This addition to the back of the LDM makes the endpoint of the LDM narrow enough to extend into a corner, but it is crucial that the device knows that it is now measuring from a point that is behind its base.

On some LDMs you have to manually move the measuring point -- forget that step and your measurements will be off. That's why you want an automatic end piece, connected to the circuit board, so that when you flip it open, it tells the device that the distance measured should be corrected by the length of the end-piece and you don't have to think about it.

5. **Configurable “beep”** – It sounds like a no-brainer, but having a sound that tells you a measurement has been successfully taken is key. A small thing, but really useful. Make sure you can switch the beep on and off. Some more sophisticated models even change the tone of the beep to alert you if you are measuring from the front vs. the rear of the tool.
6. **Backlit display** – Another seemingly small thing, but useful if you are measuring indoors a lot. New models have a small photo-sensor that switches the backlight on and off automatically.
7. **IP54 rating** – IP stands for “Ingress Protection” – which means resistance to dust and moisture in English. For the “do-it-yourselfer” you’ll find IP40 products (dust and moisture no bueno).

For the Pros don’t buy anything below IP54 – dust resistant and moisture resistant. You can get it dusty or damp like you would a cordless drill. Dry it off before you put it in a case.

If you are using an LDM on active job sites, look for IP65, which means dust proof and water jet protected. And when we say "water jet protected" we mean it -- check out how we test Total Stations to make sure they meet the IP65 standard.

8. **Realistic working temperature range** – Midwest winters and or Texas summers are unkind to electronic tools. Check the storage and working temperature ranges for an LDM before you buy. The pro-grade tools are rated for storage from -13 to 158 °F and for operation from 14 to 122 °F. Sounds crazy hot or cold, but think about the temperature extremes your truck might see on a hot day or cold night.
9. **Two year warranty (minimum)** Peace of mind, plain and simple. Most reputable manufacturers offer a simple exchange policy when things go bad (Note:

Running over the tool is not a warranty issue. They don't have an IP rating high enough for that.).

10. Metal thread tripod mount – If your measuring jobs require you to use functions like Pythagoras calculations or height tracking, you need to hold the tool steady and a tripod is really a must-have. If you are mounting and un-mounting an LDM a lot, over time the plastic threads used on cheaper LDMs get cross-threaded, worn or cracked.

Look for a metal tripod thread, you'll be glad you did.

In a future post, I'll get into the "Nice to have" features, many of which just happen to be exclusive to Leica DISTO laser distance meters. Like this baby right here...It was owned by an old lady who only used it to measure how much yarn she had left on Sundays...