

## “Are Lightsabers Possible?”

Lightsabers are a genius idea: portable, lightweight, activated with the flick of a switch and oozing cool (at least if you’re a Star Wars fan). To create the saber’s shining blade of light, laser technology seems the obvious choice. Laser produces a highly directional light beam which can be used for everything from etching metal surfaces to eye surgery, so why not battling the dark side? Unfortunately, it’s not as simple as it looks.

### **Problem #1: Creating a short blade**

Probably the most fundamental issue is that a lightsaber’s blade needs to stop short after a couple of feet. But a laser beam, just like any kind of light, never just ‘stops,’ unless something in its way absorbs or reflects the energy.

A laser-powered lightsaber would therefore be extremely unwieldy, not to mention constituting a real health and safety nightmare. Allow the slightest lapse of attention during a battle and you could accidentally decapitate your best friend or slice off your own toes.

One solution would be to cap the end of blade with a mirror to confine the beam, but this would mean that you couldn’t stab anyone. Plus, building a structure to hold the cap in place would take all the elegance and grace out of a lightsaber.

### **Problem #2: Size**

Producing a high-powered laser beam requires a lot of kit. Although some pretty amazing advances in technology have seen high power lasers shrink in size, you’d also need some kind of cooling system to prevent the system from overheating. This fundamental requirement means you’d be hard pressed to build a light saber that you could physically carry on your back, let alone pull off any fancy sword tricks with.

### **Problem #3: Powering the blade**

This brings us on to the question of power. Lasers strong enough to do any proper damage need serious amounts of energy, so your light saber couldn’t run on standard batteries. You’d probably have to plug yourself into the mains - which might not go down so well on an enemy ship (even if the ship’s owner