

This document was originally presented to a web knife reviewer interested in my light and how it compares to other custom lights. I present it here for academic reasons as it does include insight into what the design goals of the SPY lights were and are.

Flashlights have much in common with knives when it comes to the metal and its finish, but where flashlights differ and mine in particular is, they require electronics, microcomputers, source code and compilers, emitters, thermal design, lenses, water seals, battery compartment mechanisms etc. All that stuff is extremely important to me and my customers but it may not be familiar to the average knife consumer.

What makes an ultra-high end custom wristwatch, custom knife or custom flashlight so special? Answer: It is an attention to detail beyond what high profit consumer products strive for. Cool Fall Inc. makes custom exotic flashlights. I live and breathe it every day and I have committed my life to it. If I were to sum it up, I would simply say that the SPY is designed to be the ultimate flashlight tool. It was never intended to compete in the flashlight world so much as it was intended to change the world's perspective of what a flashlight could be.

What makes the 007 special?

- The SPY design ergonomics are unique. The front mounted switch is easy and fast and it lets the light sit forward naturally in your hand. There is a simple ease of use with this layout that lets you control the light directly and instantly. There is no easier or faster flashlight made today. From day one, this has been the SPY's defining asset. For many people it is truly appreciated after handling the light, but some do see how exceptional it is solely from pictures and videos. It is not something to overlook or one would overlook the point of a SPY.
- The knob lets a user turn the SPY on and off as fast as any light made. It accomplishes this in a sneaky way. The user learns to flick it. Once you get the hang of it, you are suddenly the operator of the fastest one handed flashlight made. But it does not stop there, two other things happen. One, you suddenly have variable control of light output. You can vary the light intensity so easy you will find yourself subconsciously modulating the light as you pan from scene to scene. And it is so natural that you start to modulate it in nearly every instance of use. The result is a huge reduction in battery consumption coupled with an amazing ease on your eyes. That takes a bit to sink in for some people. Second, it is fun! It is of course fun to play with any flashlight, like Tom Hanks does in "Cast Away" but the SPY takes that to another level. It is a clicky party and people cannot put it down. It is exactly the kind of fun that knife people enjoy with a flipper or balisong or spinning a top.
- The SPY is precision built using aerospace grade machining and finishing technologies. Every single piece is machined in the USA from billet aerospace grade titanium with ultra-precise tolerances. All the pieces fit perfectly, this is the kind of precision used in spacecraft, military equipment and military aircraft. Look closely at the battery cap machining and fit to the body, this is precision. And the Vault battery cap is that times 10. The clicky rotary knob requires intricate and precise parts born of extensive machining processes. The Vegas knob and all the parts associated with it are more complicated to manufacture than most other entire flashlights. This light will last a lifetime and it has a Lifetime Warrantee.
- The 007 Sapphire is capable of extreme lux intensity. It is way above many other lights in lumen output too but here I am talking lux. Sure there are lots of other lights out there that are great tactical throwers but they are not in the EDC class! If it is not with you, it will not save your life. As a tactical weapon the 007 Sapphire is in another class. Coupled with a knife in a dark alley way, it provides an insane advantage against a mugger. If you doubt it though, please do not test. It will damage your eyes. I feel compelled to point out here that this is a point that will fall on deaf ears to those who do not understand how amazingly fast the SPY is.
- The SPY uses a driver board called the STFu MK4. It is many man years in the making and it is a technological marvel. The driver electronics are designed and manufactured here in the USA specifically for the Cool Fall SPY. The board is made and SMD loaded by one of the finest PCB fab shops in the world. The ultra-quality achieved is on par with the finest computer motherboards with multi-layer plated through holes and silver filled thermal vias. The power IC is a new Texas Instruments super DC to DC converter that is the most efficient design available today. The microprocessor is a powerful Atmel chip with lots of I/O enabling all the multi-channel functionality that the board needs. There are three independent power outputs and another channel for haptic feedback. There is a precise circuit for measuring battery voltage used in the charge level report feature. There is a dual gain ultra-precise current monitoring circuit enabling spot on current targeting regardless of LED temperature or battery voltage. Programming of the microprocessor is all done in-house with a mix of compiled C language and assembly. All of the systems on the board have independent power down switching circuitry enabling the board to go into a super deep sleep. This provides an ultra-low 5 micro amp sleep current commensurate with the battery's own internal current drain. The result is many years of shelf life with the batteries loaded and ready to go at an instant. The DC to DC voltage buck conversion circuit produces a perfectly flat DC voltage source that has no flicker at any power output, none! The adjustable range of the lumen output goes all the way down till the emitter appears to be off. So the user can, if he so desires, setup the SPY as a nightlight so dim so as to have the tiniest glow in a pitch black camping or bedroom environment with output even lower than a tritium vile. The military grade Grayhill switch is super durable and in the 11 years we have been using them we have yet to witness a single switch failure! What does all this mean? Well, it simply means the SPY is reliable and it actually will last a lifetime.
- The SPY technology package includes the Vault Battery Cap and the Vegas Knob. They are both intricate mechanisms that greatly add to the overall package. I hope someday you will get to experience them.
- The Advanced finishes that are available are the Stone Washed Gunner Grip and the Springfield Knurl Stone Wash. Both create a durable and beautiful aesthetic for the SPY. I realize you are not reviewing the artistic side of my light but I wanted to remind you that that side exists.
- The Tri-V is another light altogether and is probably not going to be understood by the common folk. It is an exercise in how much technology Cool Fall could stuff into such a small space. Tri-V stands for three variable: variable light intensity, variable color temperature and variable beam width. It manages all these things in one EDC sized light. I made it solely because I could and I was surprised to see that people actually wanted it. The write up for the Tri-V to match this document covering the 007 would take me weeks to create as it has taken me 8 years to perfect the Tri-V version 3. But that is a story for another day.

The parallel layout of the two batteries is the magic that defines a SPY flashlight. The 007's tiny EDC size enables it to fit in your pocket. Combined with the forward knob, it results in one of the most powerful and functional fully regulated EDC sized flashlights ever created! There are lots of pretty lights made by some amazing craftsman out there. I love them all and personally own many of them. We all strive for the art. But my prime design focus has always been "form follows function". The others just don't have the heart of the flashlight tool that is the SPY.