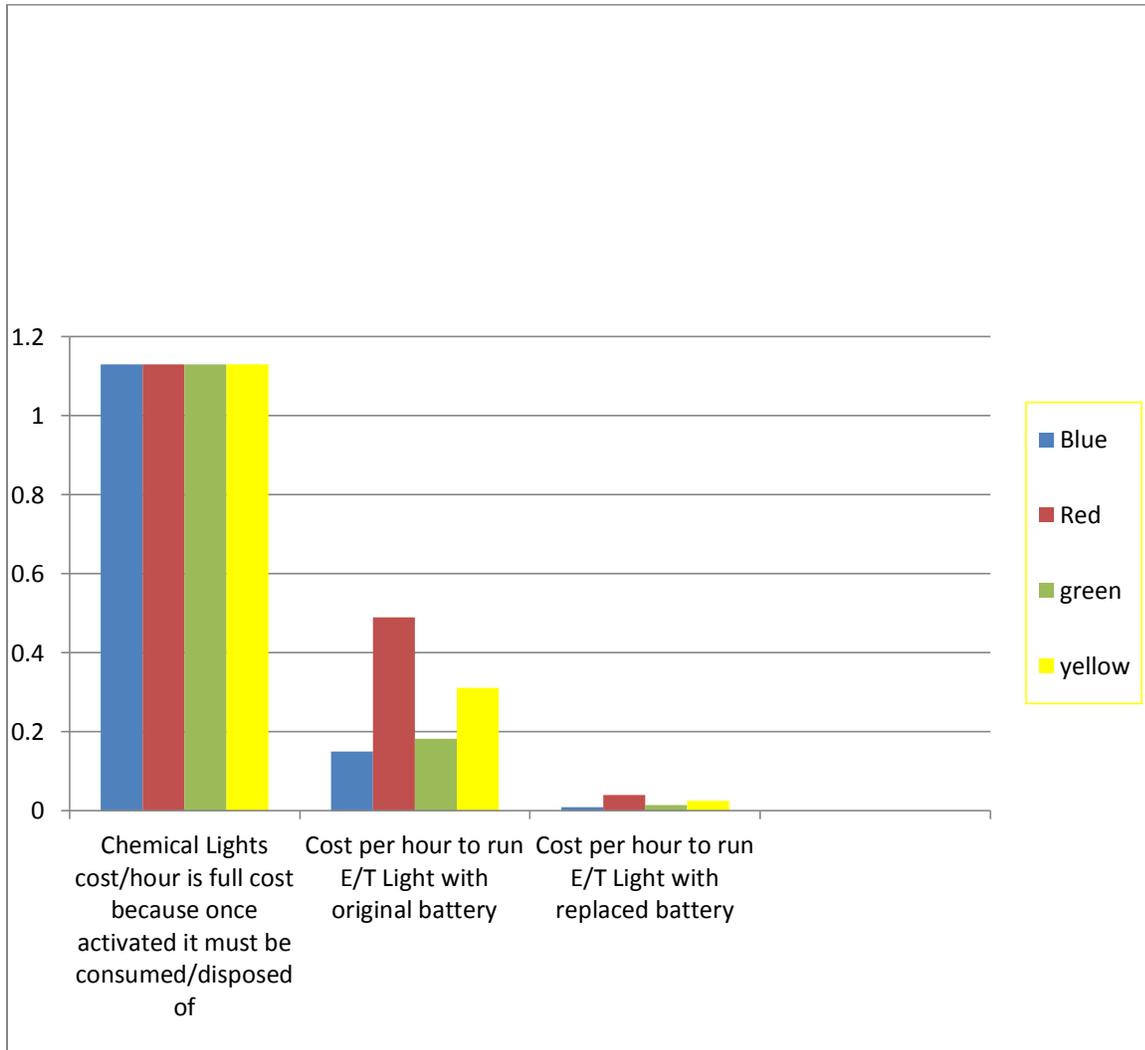


## E/T Lights vs. Chemical Light Sticks

Dollars



Cost per hour analysis, E/T Lights vs. Chemical Lights:

	Blue	Red	Green	Yellow
Chemical lights	~ \$1.13	~ \$1.13	~ \$1.13	~ \$1.13
E/T Lights –original battery cost per hour	\$0.15	\$0.49	\$0.18	\$0.312
E/T Lights – replaced battery cost per hour	\$0.01	\$0.04	\$0.015	\$0.026

1. The DLA has contracted over \$179,000,000+ since 2010 for chemical lights. This number does not include purchases made via Government credit card, GSA vendors, etc....
  
2. When you use chemical lights you activate them and they stay on, even if you only needed 5 minutes of illumination. That is a waste of a dollar and it's a dollar you never get back. They are a constant drain on the budget, very little return on investment.
  
3. You cannot turn off chemical lights, something that is important during many tactical situations. Many soldiers have shared that many times they are hiding, burying, throwing away, doing anything necessary to get rid of the illumination given off by a chemical light stick.
  
4. Following is an email from a member of an Air Force Special Tactics Squadron regarding chemical lights versus E/T Lights in cold weather:

"I took the triage light into ~ -20°F the other day and it worked well. The outer shell did not get brittle as I suspected, and the lights worked whenever I tried them over a 1 hour timeframe. I did not cold soak them overnight to see if there would be any battery degradation. I was able to toggle the light while wearing blue glove liners and OR windstopper outer gloves (did not try in the dark). I did note that the chemlites were frozen after only 10 minutes, and when I attempted to break them they would not mix and glow. After re-warming the chemlites, they worked. I replaced them into the cold environment the lites re-froze and did not work very well.
  
5. From what I have been told chemical lights if not consumed normally are disposed of every 2 years and repurchased. That means every two years you are spending not only on MORE chemical lights but you are spending additional resources by the fact of having to keep track of chemical light stick expiration dates, having to dispose of them, having to spend the man hours to repurchase, receive and restock. The battery shelf life of one E/T light is 5 years.
  
6. One E/T Light replaces over 70 blue chemical lights before you have to change out one battery. That means that after you consume the 70 blue chemical lights you have to buy 70 more blue chemical lights instead of a ~\$3.00 battery. This also means you don't have to ship barrels to the disaster stricken area you can ship small boxes for the same performance. You store less, you ship less, you dispose of less, you carry less and repurchase less often.
  
7. You cannot make chemical light sticks flash at different flash rates or color patterns to convey a different condition. You must bundle chemical light sticks together and combine different colors to have more options. This adds to cost per use.

8. Let's say you were using chemical lights for perimeter marking at night. One complaint I heard was "I have to continually, every few hours go replace the .... chemlites". That means for each location you have a chemlite, you will at least utilize 3 chemical lights every night. In one week that is 21 chemical lights (^ \$21.00). If you use an E/T Light you don't have to continually go and crack another chemical light every few hours. You replace a \$3 battery maybe once. If you figure I retail to the public at \$35.00 ( $35/4=8.75$ ), \$8.75 per color.

9. A few people have stated "I am only throwing away \$1.00 vs.\$35.00 (State & Local governments pay less)". They do not consider that most likely by the time you throw away an E/T Light you will have received a big enough return on investment (multiple uses) to justify the loss vs. what return on investment you received by using chemical lights (one time, each time, repurchase). Most of these types of lights are used in trainings, why not pick them up and reuse them. You should be picking up the chemical lights after trainings anyway (dispose of). By the time you utilize them in a real world scenario where you have to drop and forget, they more than paid for themselves.

10. The DLA has contracted over \$179,000,000+ since 2010 for chemical lights. This number does not include purchases made via Government credit card, GSA vendors, etc....

11. Good quality chemical light stick replacement options run around \$30 per color. The cheap quality ones run around \$5.00 a color and you still need to buy four of theirs to every one E/T Light. Responders and soldiers consume that amount of chemical lights in a couple of trainings. Further if you take the useful life of each battery and the fact that you can replace it, it turns out you reduce the chemical light stick budget by over 90%. Let's say you have 50 patients you would have to carry ( $50 \times 4 =$ ) 200 chemical light sticks to be truly be prepared to properly tag all of them. You only have to carry 50 E/T Lights for the same scenario.

12. E/T Lights you can do many things you cannot with chemical light sticks, it is much more versatile. Please keep in mind we can customize the programming and nose cone design.

13. Cost per hour and weight/performance calculations and results:

E/T Lights:

Life: Red LED (72+ hrs.)

Yellow LED (100+ hrs.)

Green LED (192+ hrs.)

Blue LED (144+ hrs.)

Weight: 37.5 grams each (no lanyard)

Weight per color:  $37.5 \text{ grams} / 4 \text{ colors} = 9.375 \text{ grams/color}$

Volume:  $1.125'' \text{W} \times 3.125'' \text{H} = 3.515''$

Cost: \$34.95 each (full retail, military price is less)

Cost per color:  $\$34.95 / 4 \text{ colors} = \$8.74/\text{color}$

Cost per hour:  $\$8.74 / 192 \text{ hrs.} = \$0.045/\text{hr.}$

## Chemical Lights:

Life: State 6 hours to 12 hours

(In my opinion they are usable for less. Red colored are usable for 2 hours, Green colored are usable for 5 hours, Blue are usable for 2 hours. These are the figures I will use in this analysis)

Volume: 3.375 inches each

Volume of 4 chemical lights (R/Y/G/B):  $3.375 \times 4 = 13.5''$

Weight: 20.8 grams each

Weight of 4 chemical lights: 83.2 grams

## Analysis:

### Cost per hour of use:

Chemical lights cost  $\sim \$1 / 6$  hrs of advertised use =  $\$0.166/\text{hr}$

In my opinion Red & Blue Chemical light useful life is  $\sim \$1 / 2$  hrs =  $\$0.50/\text{hr}$

In my opinion Green Chemical light life is  $\sim \$1/5$  hrs =  $\$0.20/\text{hr}$

E/T Light is  $\$34.95$  ea. (Version 3 & 4)/72 hours (Red LED) =  $\$0.485/\text{hr}$ , then when you replace the battery your cost goes to  $\$3/72$  hours (Red LED) =  $\$0.041/\text{hr}$

E/T Light is  $\$34.95$  (Version 3 & 4)/240+ hrs (Blue flashing max life) =  $\$0.145/\text{hr}$ , then when you replace the battery your cost goes to  $\$3/240+$  hrs (Blue flashing max life) =  $\$0.0125/\text{hr}$

### Weight/Life Comparison:

You would use (144+ hrs (Blue LED)/6 hrs (chemical lights) = 24) 24 times the chemical lights for a total weight for performance of  $4.4\text{grams} \times 24$  chemical lights = 105.6 grams per color in chemical lights for 144 hours of performance.

E/T Lights weigh 9.375 grams per color for 144+ hours of life – Chemical lights weigh 105.6 grams for 144 hours of life. (Note in my opinion chemical light stick useful life is under 6 hours)