

The Lenser D47852 Flashlight

Richard J. Nelson

Lighting is a vital part of our lives and we usually don't think much about artificial lighting. Let the AC power go out at night and you are reminded how nice life is with incandescent or fluorescent lighting. We reach for a flashlight in such "emergencies" and we also rediscover the basics of artificial lighting. Can you imagine having a candle, fire, or oil lamp as normal lighting?

I received a flashlight as a Christmas gift. It is a 3 watt single LED (light emitting diode) flashlight that produces a light as strong as any halogen incandescent flashlight I have seen. LED technology has reached an efficiency that now exceeds any other lighting technology - used for flashlights, tail lights, traffic lights, Christmas lights, or general purpose lighting. LED's, like incandescent bulbs, are sensitive to the current that flows through them so the life may be extended (less current and dimmer) or reduced (more current and brighter) by regulating the current from the battery.

This flashlight is especially bright and quite small and I immediately thought of the many uses I have for it. I take a lot of macro photographs and lighting is always an issue. I use the normal 150 watt fiber optic lights for my stereo microscope and when I compared the two, see figure 1, I could easily see that the Lenser flash light was much brighter even though it was several inches further away. It is also a bluer (cooler) light compared to the yellow (warmer) halogen light.

I have used LED lighting for many years and I often buy the latest LED and perform electrical tests on it¹.



Fig. 1 – Normal 150 Watt halogen lamp light into two fiber optic cables.

Brightness is traded for life for both LED and incandescent bulb flashlights. LED's, however, have 80 to 100 times the life of incandescent bulbs. They are also more shock resistant. Figure two shows the Lenser flashlight. My previous larger three watt LED flashlight was purchased four years ago at COSTCO and is shown in figure three.



Fig. 2 – Super Bright Lenser LED flashlight.



Fig. 3 – Old and new 3W LED Flashlights.

1. I explain LED technical details, measurements, and plots for a 1 watt LED in an article titled "Exploring The New Cree 7090 One Watt Light Emitting Diode", dated June 21, 2005. A copy will be sent on request. rjnelsoncf@cox.net
The Cree links in the article may not be still valid, however because manufacturers change their websites frequently.

Both flashlights are made in China. The now common US outsource production business model uses Chinese factories that have no concern for brands, patents, or copyrights. As a result they will make anything for anybody and seldom will there be very much identification information on the product such as model, manufacturer, or part number. “Made in China” is usually provided. The new flashlight, however, did have a prominent US brand name on it – the Lenser name may be seen in figure two.

Figure four shows how the two three watt flashlights compare in terms of brightness.

The two flashlights are ten feet from the wall. The old flashlight is shown by its self in figure four “a.” Both beams are shown in figure four “b.” Both beam diameters are two feet. The camera auto exposure was used and the old beam looks quite dim compared to the newer Lenser technology.

I measured the current drawn from their respective batteries. See Table one.

Table 1 – Flashlights Compared

Parameter	Old (unknown)	New (Lenser)
Cells	2x AA	3x AAA
Cell connection	Series	Series
Voltage	3V	4.5 V
Current	0.67 Amps	0.54 Amps
Power	2 watts	2.4 watts



Fig 4a – Old flashlight beam.

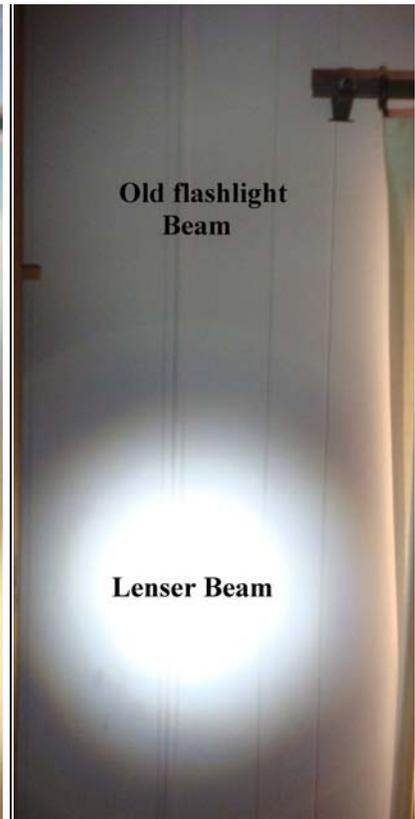


Fig. 4b - Old & New beams.

Both flashlights are machined from a solid aluminum rod which provides a very strong and solid feeling.



Fig. 5 – Waterproof Lenser D47852 flashlight assembly parts.



Fig. 6 – Lenser lens and LED “bulb.”

Both flashlights are water proof with O-rings to seal the insides. Neither has significant beam width adjustment. The Lenser design is an improvement in terms of the switch (both are at the back end of the body). Figure five shows the gold contacts (which are the weak link in most flashlights) in the electrical

circuit. The contacts oxidize and that is the reason you normally shake a flashlight when the beam dims.

The brightness tests illustrated in figures one and four were done using new alkaline batteries in both flashlights. The electrical data recorded in Table One used the same new batteries in each flashlight.

The reader is encouraged to Google Lenser LED flashlights. Below are two of the link images you will find. Figure 7 is from a Sears website at:

http://www.sears.com/shc/s/s_10153_12605_Tools_Electricians+Tools+%26+Lighting_Flashlights+%26+Lanterns?psid=15633858&sid=ISx20070515x00001a&OVMTc=Broad&site=&creative=3514035505&OVKEY=flashlights

Figure 8 shows the Lenser website at: <http://www.ledlenserusa.com/>

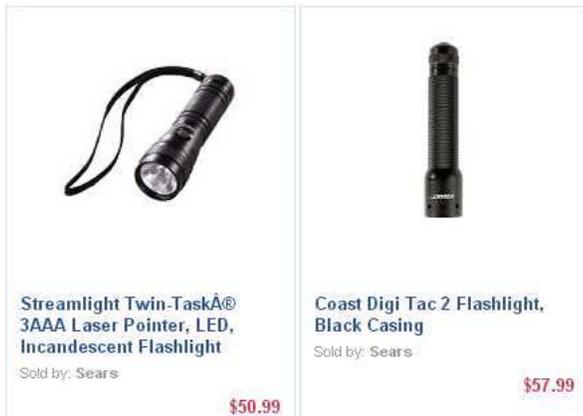


Fig. 7 – Lenser brand sold by Coast at Sears.

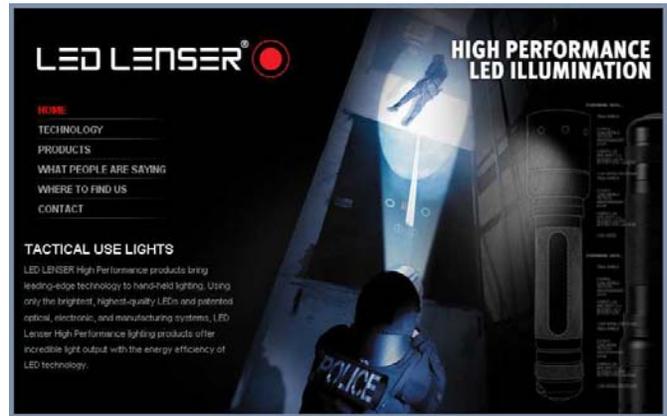


Fig. 9 – Lenser website promotes high performance.

Conclusion

Is the price worth the performance? This is a technology issue. The difference in the performance between my two three watt LED flashlights is the improved 3W LEDs. The question is: Where can you buy a Lenser D47852 Flashlight?

I hadn't heard of the Lenser brand distributed by Coast before. See the links at:

<http://www.quality-items-flashlights.com/coast-led-flashlight-1.html>

http://www.flash-lights.com/index.php/cat/c1193_Coast-LED-Lenser-Items.html/XTCsid/6155425355d320bfcfb063b2b3088be8

The Coast website doesn't show the D47852 Flashlight and I haven't found it on the Internet. A similar flashlight – or torch as the “in crowd” likes to call them - is a more expensive 4xAA cell model. See the chat link below for various user perspectives.

<http://www.candlepowerforums.com/vb/showthread.php?t=213692>

I emailed Coast asking about the D47852 and received the following (non) answer.

“Hi Richard, please go to www.coastportland.com to find specifications. We have quite a few retailers; Home Depot, REI, Target, Lowes, Ace Hardward, True Value, Gander Mountain, Dicks Sporting Goods. Also an online vendor at www.lightsandknives.com. We do not provide cost. We are the wholesale/distribution center. Thank you, Alex”

From: ledlenser@ledlenserusa.com [mailto:ledlenser@ledlenserusa.com]

Richard J. Nelson

December 30, 2009

Comments welcome at rjnelsoncf@cox.net