



# Flashlight Filtration Guide



In 2017 I wrote a two-part blog post titled “Level Up With Light Painting: Correcting the Color of Your Flashlight,” which discussed the color biases of flashlights and how to filter them to neutralize that color when shooting at different white balance settings.

In the first part I talked about the pros and cons of LED flashlights, color theory, white balance, testing your flashlight’s color and how to fashion your own custom filters. This all revolved shooting at Daylight white balance.

In the second part I followed up with how to filter Coast HP7R and HP5R flashlights to provide a neutral color when the white balance is set to 3200 K. This is a common setting for shooting in urban areas at night, as most streetlights and other city lights are rendered overly orange when white balance is set to Daylight.

In both of those posts I used a decidedly unscientific method of performing the color tests. While the

results were close to accurate, this past summer I decided to look for more precision, so I set about running color tests with the aforementioned flashlights (my favorite two to use). Now I can paint with neutral light at any white balance.

For this I needed a color meter. Since I don’t own one, the generous folks at MAC Group arranged to loan me a Sekonic C-800 SpectroMaster. (Thank you, MAC Group! Your gracious loan benefits us all.)

My goal for the tests was to determine the proper filtration for the HP7R and HP5R with a camera set to the white balances most often used for night photography. (For a rundown on these, see Matt’s post “How to Choose the Right White Balance for Night Skies” and my post “Making the Move to Manual White Balance.”)

I tested each of nine white balance settings (5500, 5000, 4800, 4500, 4200, 4000, 3850, 3500 and 3200 K), with

each flashlight set at both high and low power. I then determined which Lee gels would neutralize the color while also adding a little warmth to the light.

You can see the results on the following pages of this guide. For more information about how to use these, and about how to run your own tests for different flashlights, visit the related blog posts:

- [Level Up With Light Painting: Correcting the Color of Your Flashlight \(Part I\)](#)
- [Level Up With Light Painting: Correcting the Color of Your Flashlight \(Part II\)](#)
- [Level Up With Light Painting: Correcting the Color of Your Flashlight \(Part III\)](#)

—Tim Cooper



*If you decide to purchase any of the items in this guide, please consider using the links included, as many generate a small commission that help us improve the N program.*

## THE FLASHLIGHTS

### *Coast Portland HP7R and HP5R*

Hands-down, our favorite flashlights for light painting. The **HP7R** outputs up to 300 lumens in a perfectly even beam, allowing for smooth painting of objects near or far, and features three power modes and a slide focus for honing or broadening the illumination. The 185-lumen **HP5R** is excellent for situations that don't require the higher output of its big brother, such as when shooting at higher ISOs.

*Special offer: Use the code "PARKSATNIGHT" at [coastportland.com](http://coastportland.com) for a 35 percent discount available only through National Parks at Night.*

[Buy Here](#)



## THE FILTERS

### *Lee*

A common form of filtration for the photographer is a thin, heat-resistant, polyester filter that's often called a "gel." Gels come in a staggering number of variations and are used to enhance the color of light or to color-correct it. Gels also come in different sizes, but the ones typically used for on-camera flash units and flashlights are about 1.5 by 3 inches. This size is neatly bundled into a swatch book. For the small investment of \$2.50, the Lee Swatch Book is must-have for light painters.

[Buy Here](#)







## CASE STUDY

At Death Valley National Park's Devils Cornfield, I captured this image with a white balance setting of 3850 K. For the light painting I used the low-power setting on my Coast HP5R.

To get my added light to accurately render the colors of the scene, I filtered the flashlight to look good at that white balance of 3850 K. According to my test results (see the following pages), that meant I needed a combination of 1/2 CTO + 1/8 CTO + 1/4 Minus Green.

That fixed the incorrect color cast, but I wanted my flashlight to put out a slightly warmer rather than neutral color, because I like the visual effect of warm light. So instead of using the filter combo for 3850 K, I used the combo for a 3200 K setting: 3/4 CTO + 1/8 CTO + 1/4 Minus Green + 1/8 Minus Green. That gave me exactly the color I was hoping for.

*Devils Cornfield, Death Valley National Park. Nikon D4s with a **Nikon 14-24mm f/2.8** lens. 20 seconds, f/4, ISO 6400, with a white balance of 3850 K. Light painted with a Coast HP5R with Lee 3/4 CTO + 1/8 CTO + 1/4 Minus Green + 1/8 Minus Green gels.*



# 5500 K

**HP7R** (High) — (L223) 1/8 CTO + (L279) 1/8 Minus Green

**HP7R** (Low) — (L223) 1/8 CTO + (L279) 1/8 Minus Green

**HP5R** (High) — (L223) 1/8 CTO + (L279) 1/8 Minus Green

**HP5R** (Low) — (L223) 1/8 CTO

# 5000 K

**HP7R** (High) — (L205) 1/2 CTO + (L279) 1/8 Minus Green

**HP7R** (Low) — (L205) 1/2 CTO

**HP5R** (High) — (L223) 1/8 CTO + (L279) 1/8 Minus Green

**HP5R** (Low) — (L223) 1/8 CTO + (L279) 1/8 Minus Green

# 4800 K

**HP7R** (High) — (L223) 1/8 CTO + (L279) 1/8 Minus Green

**HP7R** (Low) — (L223) 1/8 CTO + (L279) 1/8 Minus Green

**HP5R** (High) — (L223) 1/8 CTO + (L279) 1/8 Minus Green

**HP5R** (Low) — (L223) 1/8 CTO + (L279) 1/8 Minus Green

# 4500 K

**HP7R** (High) — (L206) 1/4 CTO + (L223) 1/8 CTO + (L249) 1/4 Minus Green

**HP7R** (Low) — (L206) 1/4 CTO + (L223) 1/8 CTO + (L249) 1/4 Minus Green

**HP5R** (High) — (L206) 1/4 CTO + (L223) 1/8 CTO + (L279) 1/8 Minus Green

**HP5R** (Low) — (L206) 1/4 CTO + (L223) 1/8 CTO + (L249) 1/4 Minus Green

# 4200 K

**HP7R** (High) — (L205) 1/2 CTO + (L279) 1/8 Minus Green

**HP7R** (Low) — (L205) 1/2 CTO + (L249) 1/4 Minus Green

**HP5R** (High) — (L205) 1/2 CTO + (L279) 1/8 Minus Green

**HP5R** (Low) — (L205) 1/2 CTO + (L249) 1/4 Minus Green

# 4000 K

**HP7R** (High) — (L205) 1/2 CTO + (L249) 1/4 Minus Green

**HP7R** (Low) — (L205) 1/2 CTO + (L249) 1/4 Minus Green

**HP5R** (High) — (L205) 1/2 CTO + (L249) 1/4 Minus Green

**HP5R** (Low) — (L205) 1/2 CTO + (L249) 1/4 Minus Green

# 3850 K

**HP7R** (High) — (L205) 1/2 CTO + (L223) 1/8 CTO + (L249) 1/4 Minus Green

**HP7R** (Low) — (L205) 1/2 CTO + (L223) 1/8 CTO + (L249) 1/4 Minus Green

**HP5R** (High) — (L205) 1/2 CTO + (L223) 1/8 CTO + (L279) 1/8 Minus Green

**HP5R** (Low) — (L205) 1/2 CTO + (L223) 1/8 CTO + (L249) 1/4 Minus Green

# 3500 K

**HP7R** (High) — (L285) 3/4 CTO + (L249) 1/4 Minus Green + (L279) 1/8 Minus Green

**HP7R** (Low) — (L285) 3/4 CTO + (L249) 1/4 Minus Green + (L279) 1/8 Minus Green

**HP5R** (High) — (L285) 3/4 CTO + (L249) 1/4 Minus Green

**HP5R** (Low) — (L285) 3/4 CTO + (L249) 1/4 Minus Green



# 3200 K

**HP7R (High)** — (L285) 3/4 CTO + (L223) 1/8 CTO + (L249) 1/4 Minus Green + (L279) 1/8 Minus Green

**HP7R (Low)** — (L285) 3/4 CTO + (L223) 1/8 CTO + (L249) 1/4 Minus Green + (L279) 1/8 Minus Green

**HP5R (High)** — (L285) 3/4 CTO + (L223) 1/8 CTO + (L249) 1/4 Minus Green + (L279) 1/8 Minus Green

**HP5R (Low)** — (L285) 3/4 CTO + (L223) 1/8 CTO + (L249) 1/4 Minus Green + (L279) 1/8 Minus Green

## PURCHASE LINKS

If you'd like to purchase any of the items mentioned in this guide from our good friends at **B&H Photo**, here's a quick index of links:

[Coast HP7R flashlight](#)

[Coast HP5R flashlight](#)

[Sekonic C-800 SpectroMaster Color Meter](#)

[Lee Swatch Book](#)

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### COAST HP7R Long Distance Focusing Rechargeable LED Flashlight (Black)

BH #COHP7RB • MFR #19221

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#### Key Features

- 30 / 300 Lumen Output
- Flood-to-Spot Focusing Beam
- Sliding Head to Focus with Beam Lock
- Disorientating Strobe Mode

With the needs of law enforcement, professionals, and outdoor enthusiasts in mind, COAST made the HP7R Long Distance Focusing Rechargeable LED Flashlight to be a versatile light that turns on every time you click the switch. It has a durable design, high and low outputs, a focusable beam angle, a disorienting strobe, and dual power source capability.

## ■ WANT TO LEARN MORE ABOUT SEIZING THE NIGHT?

Join the National Parks at Night team as we take you to magical and majestic destinations for extraordinary night photography adventure workshops. Our five enthusiastic veteran instructors hand-craft each workshop to provide a unique, world-class educational experience where you receive friendly, individual attention and create awe-inspiring images in settings of unparalleled natural beauty.

National Parks at Night features a different itinerary every year, so book now for a creative journey unlike any other. Our 2020 parks are Badlands, Joshua Tree, North Cascades, Shenandoah and Yellowstone, along with adventures in Charleston, Colorado high country, coastal Maine, Trona Pinnacles & Alabama Hills, Barcelona, Easter Island, Greenland, Norway and Scotland.

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