A Tale of Two Filters

The Search For a Matching Pair of Graduated Neutral Density Filters

Source: http://photo.net/large-format-photography-forum/00MfNR

B+W 502 Filters - no two have the same density or color

Mike Davis , Sep 21, 2007; 01:35 a.m.

Hi,

The photos at the following links pretty much say it all, but I want to add that B&H Photo hasn't been any more helpful than B+W's filters are well crafted.

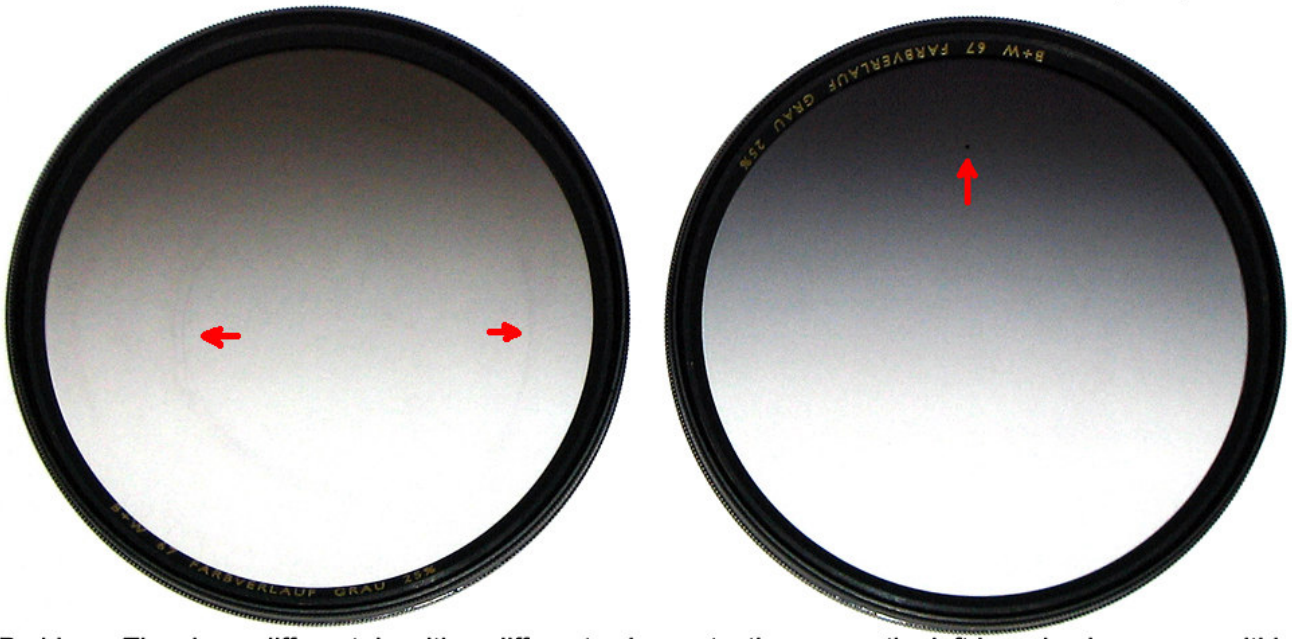
What's the problem?

I'm simply trying to obtain two B+W 67mm 502 filters (0.6 ND Graduated) that have the same density and color - preferably neutral in color, of course. I've just today received the third of three orders placed with B&H Photo, who say they can not inspect the filters before they ship them to me.

The best they can do is have me continue this tedious process of plowing through one poorly made B+W filter after another. If I lived anywhere near a store that carries such things I'd walk in there with my fingers crossed and hope they have the 20 or more 67mm B+W 502's in stock I suspect it would take to find two that match.

Here's a picture of the B+W 502 filters received with my first order:

Order Number: 205453830 ... Two BW50267 ... B+W 67mm Graduated Neutral Density Gray 502

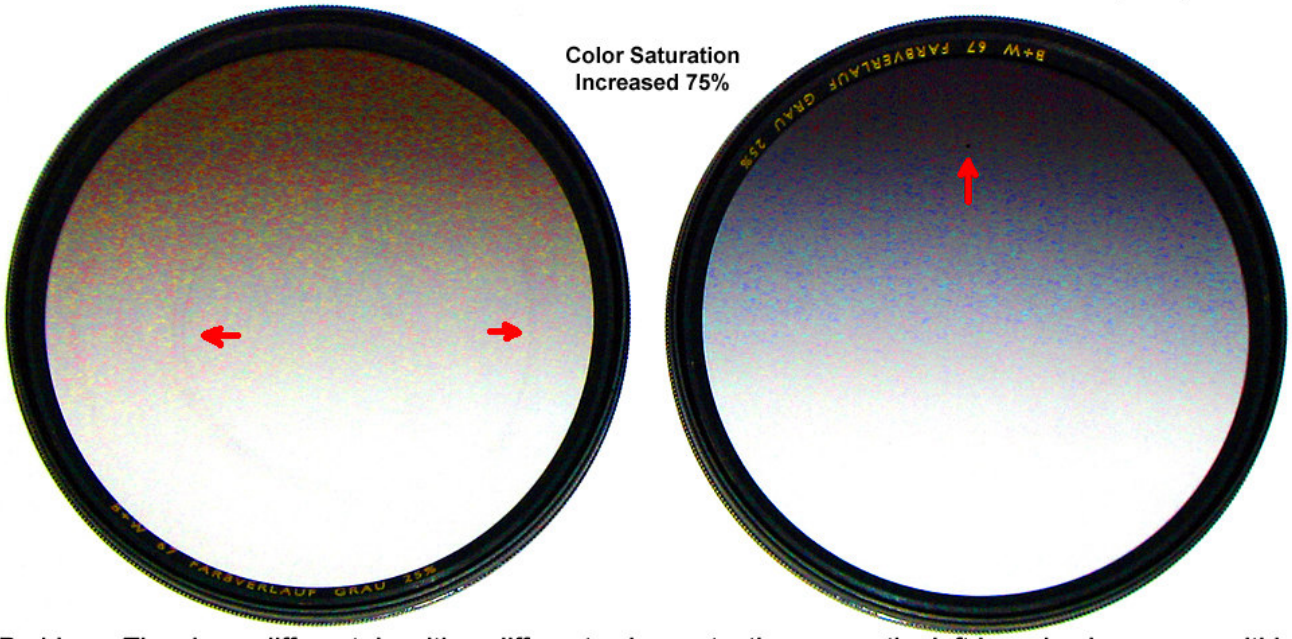


Problem: They have different densities, different color casts, the one on the left has circular smears within the glass, and the other one has a black speck adhered to the surface that can not be brushed or blown off.

http://home.globalcrossing.net/~zilch0/images/B+W_67mm_502_Filters_1st_Order.jpg

Here's the same photo, with the color saturation increased 75%:

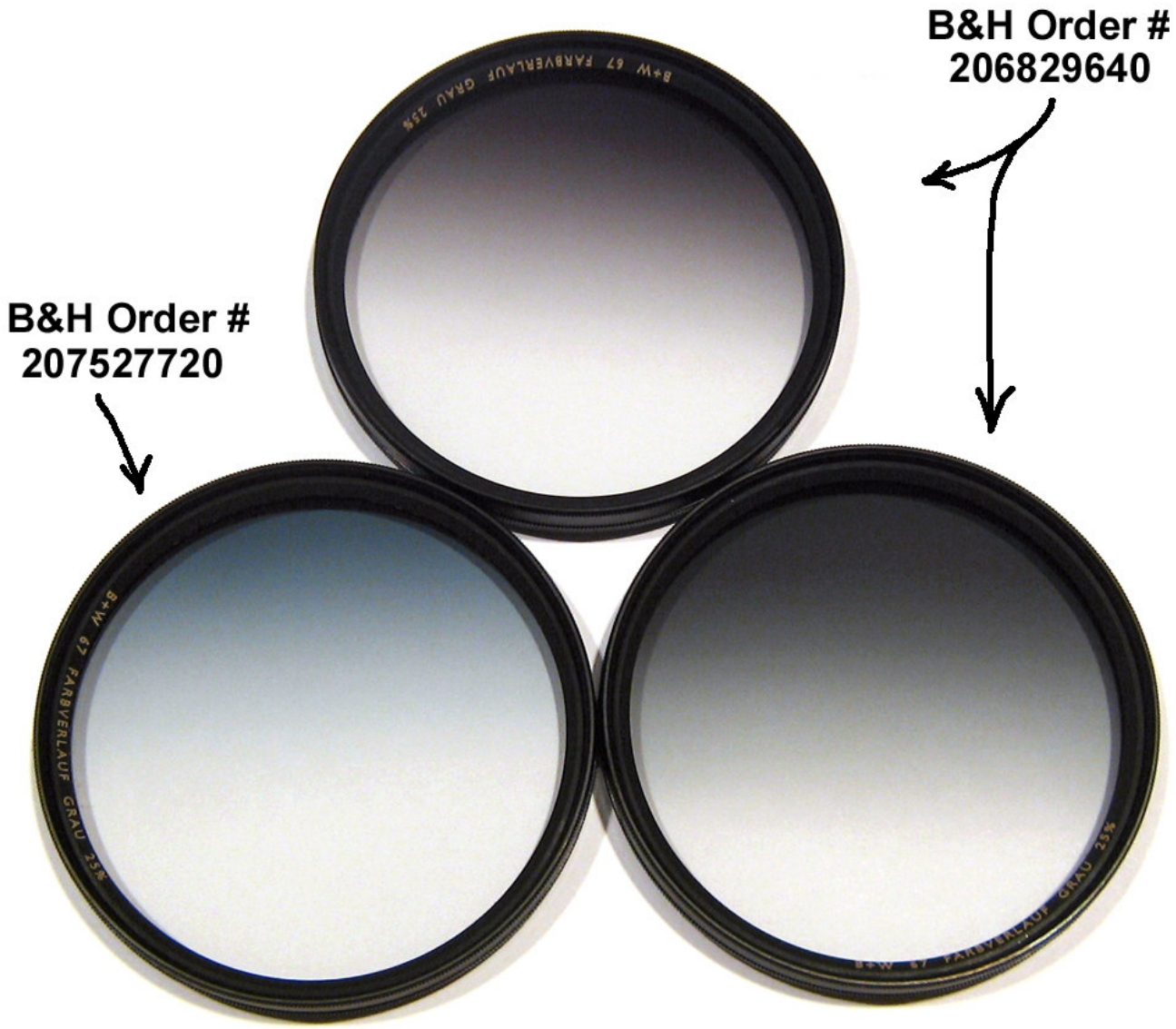
Order Number: 205453830 ... Two BW50267 ... B+W 67mm Graduated Neutral Density Gray 502



Problem: They have different densities, different color casts, the one on the left has circular smears within the glass, and the other one has a black speck adhered to the surface that can not be brushed or blown off.

(Link)

I've successfully returned the filters seen in the photos above to B&H Photo, but I'm still in possession of the three received in the 2nd and 3rd orders, seen below:



Three 67mm B+W 0.6 ND Graduated ND (502) Filters
No two of them have the same density or color
and none of them are truly neutral.

(Link)

And here's the same picture with the color saturation increased 75%:

(link)

Any suggestions?

Thanks,

Mike Davis

Michael Briggs , Sep 21, 2007; 02:39 a.m.

I suggest dealing with a smaller dealer that will order from Schneider USA, communicating with Schneider USA and asking them to select from their stock two matching filters.

Maybe The Filter Connection (http://www.2filter.com/) since they specialize in filters? Or your favorite smaller dealer that will give you better service.

I have two B&W filters of different sizes that have surprisinglydifferent colors, I forget which ones. A yellow-orange? Otherwise the B&W filters that I have of different sizes, but the same color, match very well.

Why are you so particular that the filters be matched? These are probably difficult filters to make exactly the identical.

John Kelly , Sep 21, 2007; 11:07 a.m.

I don't know about B&W graduated filters, but I spent a lot more on Harrisons twenty years ago...they were individually hand-graduated using hat was essentially lampblack...

I think you're seeing hand-applied smoke and not some sterile digital fabrication. Enjoy the differences or, if you must have perfectly identical filters, make your own using film....here's probably no other way.

Mike Davis , Sep 21, 2007; 11:49 a.m.

John,

Thanks for the suggestion regarding Harrison. I've never heard of them, but I'm guessing they are very expensive.

Michael,

I like your suggestion to deal with a smaller vendor - I wish I'd had the foresight to predict the response I'm getting from B&H, but now, unless I just sell B&H's filters on ebay to get my money back (or a portion of it), I'm stuck in this Groundhog Day loop of returning filters for exchange - one at a time until I find one that matches one of the two I consider to be the most neutral - an exercise in patience. Unfortunately, I don't believe B&H Photo is going to put up with it for very long - they've got plenty of customers willing to buy B+W ND filters that are actually RED, GREEN, or BLUE with no concern for matching density.

Why do they have to match in both color and density? I'm shooting 3D (both lenses have to see the same thing).

Just for fun, try photographing two or more of your ND filters against a sheet of white paper using a digital camera. Pull it into Photoshop and color balance the whole image such that the paper is white. Then turn up the color saturation. It's amazing.

I should add that I started down this road with Heliopan 0.6 ND Graduated filters, and found them to be VERY well matched in both color and density, but they are incredibly thin (lacking density) compared to the B+W 502's - nearly worthless. Unfortunately, like B+W, Heliopan doesn't offer any threaded ND grads at densities higher than 0.6. The question remains, however, if Heliopan can produce filters of consistent density and color, why can't B+W? It can't be that tough!

I predict B&H will shut the door on me and then I'll end up having to sell three filters at a loss and start over again at The Filter Connection, as you've suggested.

Thanks,

Mike

John Kelly , Sep 21, 2007; 12:38 p.m.

Mike, Harrison's better known than B+W or Heliopan.

You're seeing a hand-made product. I made them myself as a kid (Boy Scout technique..for viewing solar eclipse) using smoke from a candle. You can't expect identical results any more than you can expect identical performance from two same-description Nikon lenses.

Bill Mitchell , Sep 21, 2007; 01:24 p.m.

Harrison is what is/was used in the movie industry ($$$$)where they HAVE to be identical, and as specified. Are they still in business?

Bob Salomon , Sep 21, 2007; 01:34 p.m.

" Unfortunately, like B+W, Heliopan doesn't offer any threaded ND grads at densities higher than 0.6. The question remains, however, if Heliopan can produce filters of consistent density and color, why can't B+W? It can't be that tough!"

Sorry but you are very wrong. Heliopan makes circular, threaded ND filters in 0.3, 0.6, 0.9, 1.2, 1.5 all the way up.

Mike Davis , Sep 21, 2007; 02:10 p.m.

Bob,

There's no need for an apology, that's great news! You would certainly know what Heliopan is producing, but dissapointment has followed my initial glee - I can't find them anywhere. :-(

I just finished checking B&H - they only carry the 0.3 and 0.6 - both of which are far less dense than the B+W equivalents. I don't see any higher density Heliopans, even as special order items.

And now I've just finished checking Adorama - same thing.

Calumet Photo doesn't carry any Heliopan filters.

The Filter Connection doesn't carry Heliopan either.

I just did a search on www.froogle.com with this search term:

Heliopan +"0.6"

and got ten pages worth of links to 0.6 ND Heliopan filters, but when I changed the "0.6" to "1.2" www.froogle.com returned ZERO hits. Heliopan might be making them but nobody is selling them online, so far as Froogle can tell.

Where can I get these Heliopan grads in the higher densities?

Thanks!

Mike

Aaron Muderick , Sep 21, 2007; 03:20 p.m.

Contact Heliopan directly.

You are looking for something special. Photo stores aren't helping. Go straight to the manufacturer for a solution.

Mike Davis , Sep 21, 2007; 04:01 p.m.

Good idea, but I think Bob actually represents the manufacturer. I'm hoping he can tell me where to get the higher density Heliopan ND grads...

Thanks,

Mike

John Kelly , Sep 21, 2007; 04:28 p.m.

Why not buy better filters?
http://www.chamblesscineequip.com/catalog/catalog.htm

Bob Salomon , Sep 21, 2007; 06:41 p.m.

Sorry to disappoint you but no retail store can possibly carry or list the full line of Heliopan items. They total about 15,000 filters, rings, hoods, adapters, etc. The ND filters stronger then 0.9 are available from any of our dealers on a special order basis only. Delivery takes about 30 days and you will have to call and talk to a dealer rather then do it on the net.

Mike Davis , Sep 21, 2007; 08:09 p.m.

Thank you Bob.

Wow! B&H Photo only lists 924 of the 15,000 Heliopan products. How does Heliopan sell the other 14,000+ items ifretailers like B&H Photo don't even list them for special order? In other words, if nobody knows this stuff exists, Heliopan might as well stop making it. Look how hard I've had to dig to find out how wrong I was regarding the range of ND grad densities offered by Heliopan, and I still don't know where to go to get them. I'm glad I ran into you Bob - you're my only hope at this point! :-)

Could you please recommend a dealer that you believe would be willing to inspect (for neutrality) and match (for bothcolor and density) two 67mm Heliopan 1.2 ND grads? Going on how "thin" the Heliopan 0.6 ND grads are compared to B+W's 0.6 ND grads, I suspect the all but unobtainable 1.2 ND grads will be just right for my needs.

Thanks again!

Mike

Bob Salomon , Sep 21, 2007; 08:45 p.m.

Try Louis at Photo Gizzmo or try Foto Care, Ltd. Both in NYC.

If you specify exactly what you want then we can have the factory check for matching.

Heliopan makes filters as small as 19mm and as large as 127mm. They make Bay I, II, III, VI, VIII, Bay 50 Hasselblad, Bay 50 Zeiss, Bay 56, Bay 60 and Bay 70 filters. They make square and rectangular filters, they make long and short metal hoods in a range of sizes from 24 to 122mm plus bayonet sizes. They make step-up rings from 100mm to 105mm to 24 to 28mm plus bayonet adapters, lens coupling rings, two position rubber hoods in a complete range of screw-in and bayonet sizes. And then they make other filters and adapters. All together it is more then any one dealer could stock or sell. So a complete Heliopan brochure might come in handy. But it is only available via mail unless you read German. Then you could download it.

Mike Davis , Sep 21, 2007; 11:54 p.m.

Bob,

You've given me a lot to move forward with.

Thanks again!

Mike

John Kelly , Sep 22, 2007; 01:59 p.m.

Why the aversion to Harrison? Or Lee? Or making your own?

The notion that some retail store or online dealer is going to do densitometry or scans of filters in order to accomplish matches, and still be cheapo is fascinating.

Mike Davis , Sep 22, 2007; 03:27 p.m.

Hi John,

"Why the aversion to Harrison?"

Does Harrison make a 67mm graduated 0.6 ND filter? If so, can you recommend a dealer?

"Or Lee?"

Lee doesn't make a 67mm graduated 0.6 ND filter or am I as wrong about this as I was about Heliopan not making graduated ND filters with densities greater than 0.6?

"Or making your own?"

I don't smoke. Just kidding - I wouldn't know how to begin.

I am keen on your first suggestion, if Harrison actually offers such a filter.

Thanks,

Mike

Bob Salomon , Sep 22, 2007; 04:16 p.m.

Mike,

You are going to have to excuse me, My mother passed away on Wed. and I was not fully concentrating when I responded to you originally and missed the graduated part of your needs. Heliopan makes ND filters with higher densities but only have 0.3 and 0.6 in grey grads.

These type of grads are made by most companies who make them from acrylic by a process of dipping them into a vat of dye. The length of time that they are dipped into the dye determines the density of the grad. Naturally there can be some variation in density between filters made at different times due to mechanical variations in the machinery, timing variables, strength of the dye batch, etc.

I don't know of any filter manufacturer that makes on a commercial basis matched pairs of any filter for stereo. Heliopan does make a tightly controlled polarizer for using on lenses on projectors projecting stereo pairs but that is not a very large market item these days.They are for the Rollei Twin 35mm projector and that has not been available in the USA since the late 90's or early 2000's.

Mike Davis , Sep 22, 2007; 08:02 p.m.

Bob,

That's very gracious of you to correct your earlier statement - I very much appreciate the follow-up. I wish you and your family well.

Mike

Mike Davis , Sep 22, 2007; 10:58 p.m.

I just sent Schneider Optics an e-mail asking if they can help me with the problem described at this link.

I came across this text at their web_site:

"In Bad Kreuznach, the most modern fabrication machines produce highly precise filters in an impressive variety of types and diameters**. Quality controls are integrated at all key stages of the production process, and a final inspection of every individual filter ensures the renowned high B+W quality standard. At B+W, our commitment to our guarantee and service are taken seriously.** Continuous improvements and new developments enable users to achieve their best possible images. By comparison, a cheap filter can reduce the imaging performance of a high-quality lens quite dramatically! Therefore, consider the quality of a filter as seriously as you would consider the choice of your lenses - look for the B+W brand, because the quality of the image depends upon what is in front of the lens!"

Source: http://www.schneideroptics.com/ecommerce/CatalogSubCategoryDisplay.aspx?CID=57

Here's hoping B+W does take their commitment seriously...

Mike

Mike Davis , Sep 25, 2007; 12:53 a.m.

For the record... A Schneider Optics representative in Van Nuys, California has responded to my e-mail, writing that a Schneider Optics representative in New York will be contacting me. (B+W is a division of Schneider, by the way.)

Mike

Mike Davis , Sep 29, 2007; 12:29 a.m.

Three days later, I've heard nothing more from Schneider Optics.

"At B+W, our commitment to our guarantee and service are taken seriously."

OK...

Meanwhile, I've returned the B+W 502 filter that had the ridiculous blue cast (from my 3rd B&H Photo order) and just today received my 4th order from B&H Photo. It's got large specks in it that can't be blown away with compressed air, nor brushed off, and it is very light in density - and once again, it's not neutral and doesn't match the color or density of the other two I'm hanging on to until I get a match. Have a look:

The bottom left filter is the 4th order I've placed having returned the 3rd order. Again I've got three 67mm B+W Graduated ND Filters with no two of them having the same density or color and none of them are truly neutral. This latest filter also has defects at 9 o'clock that can't be brushed or blown away with compressed air.

(Link)

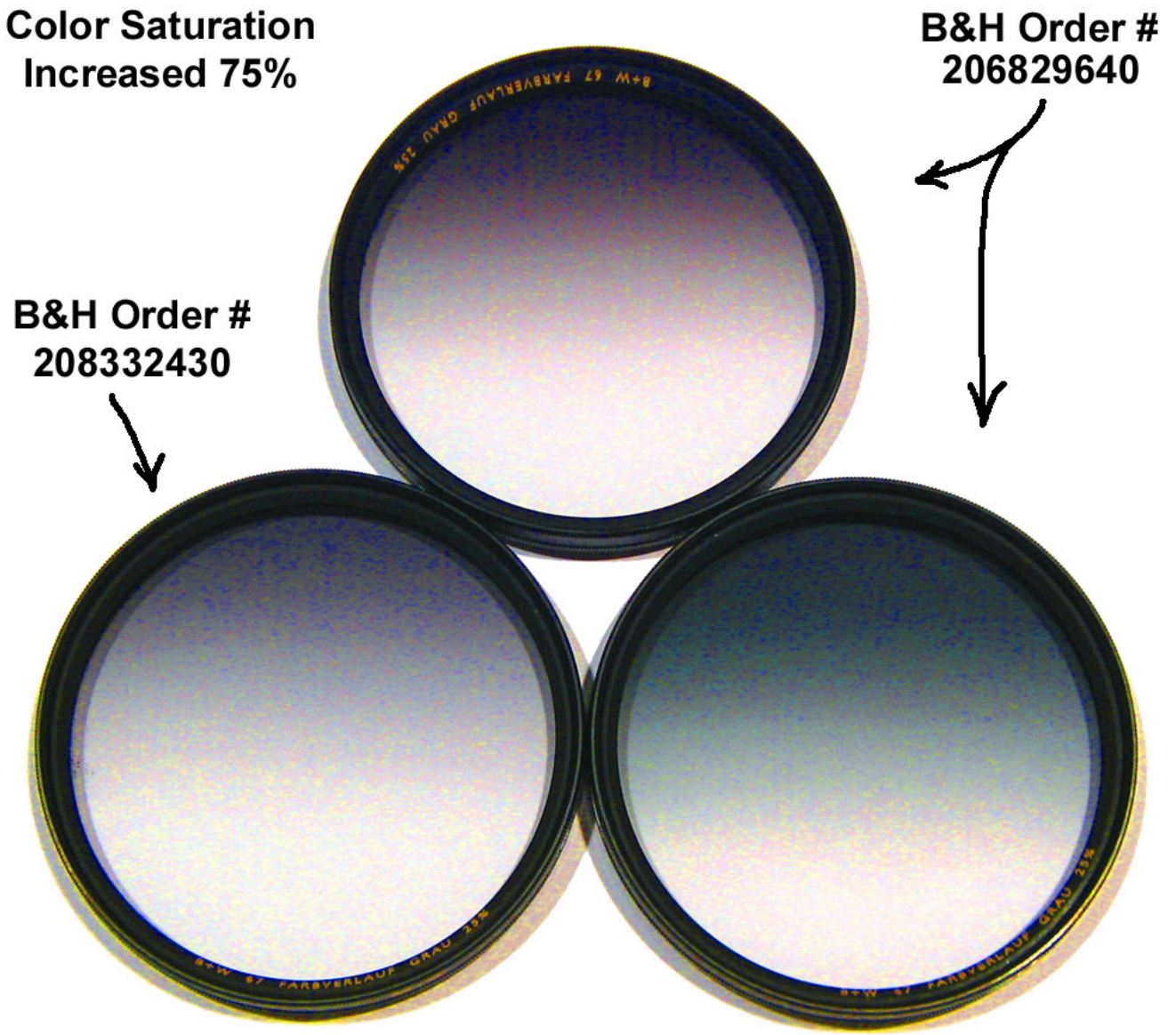
All I want is another filter that matches the one at the top in this picture - the most neutral of SIX B+W 502 filters I've received thus far, having no defects otherwise.

B&H Photo is hanging in there with me, accepting returns only for filters that are outright defective with specks or steaks or strong color casts, but Schneider Optics is dropping the ball. I guess I'll send both reps (California and New York) another e-mail...

Mike

Mike Davis , Sep 29, 2007; 12:35 a.m.

I forgot to supply the link to this second photo:



The bottom left filter is the 4th order I've placed having returned the 3rd order. Again I've got three 67mm B+W Graduated ND Filters with no two of them having the same density or color and none of them are truly neutral. This latest filter also has defects at 9 o'clock that can't be brushed or blown away with compressed air.

(link)

It's the same as the one above, but with the color saturation increased 75%. I have a choice of red, green, or blue NEUTRAL density filters. B+W apparently makes every color of NEUTRAL density filter except NEUTRAL. :-)

Mike

Mike Davis , Oct 06, 2007; 01:06 a.m.

It's been eleven days since John Sioringas, the Schneider Optics rep in Van Nuys, California passed the buck to his associate, Bob Zupka, in their New York office. I've heard nothing from either of them since then, despite sending two e-mails in the interim.

I hope SOMEBODY at B+W/Schneider Optics actually stands behind the pledge they make at their web_site:

"Quality controls are integrated at all key stages of the production process, and a final inspection of every individual filter ensures the renowned high B+W quality standard. At B+W, our commitment to our guarantee and service are taken seriously."

Source: http://www.schneideroptics.com/ecommerce/CatalogSubCategoryDisplay.aspx?CID=57

Mike Davis

Mike Davis , Oct 08, 2007; 10:00 p.m.

Yay! Bob Zupka, the representative from Schneider Optics' New York office has finally replied. 14 days is better than never!

He only asked me what the problem is (even though the e-mail to which he was responding had everything in it), but that's a start.

In short, I gave him all the links showing photos of the filters I've had to return to B&H Photo, told him I'm awaiting my seventh filter, and made it clear that: "I'm simply trying to purchase just TWO 67mm B+W 502 Graduated ND (0.6) filters that MATCH in both density and color (a NEUTRAL grey!), and which have NONE of the defects seen in the photographs of the ones that I've received thus far."

B+W is going to write the last chapters of this saga.

Stay tuned...

Mike Davis

Mike Davis , Oct 13, 2007; 02:49 p.m.

Even better news!

Don Shafer, Schneider Optics' Regional Sales Manager in Hauppauge, NY, sent me an e-mail saying that B&H Photo doesn't import their B+W filters through Schneider Optics (several other retailers do, including Adorama), but Don is going to do what B&H Photo told me they aren't willing to do: He's going to have one of his people try and find me a matching pair of 67mm B+W 502's among those in their warehouse. Yay!

The quality control problems I'm seeing in the filters obtained through B&H Photo aren't even his responsibility (again, because B&H Photo does not obtain B+W products through him), but Don has offered to help me anyway. Much appreciated!

Meanwhile, a seventh filter is on its way from B&H Photo. I've returned four at this writing and I'm hoping to match this seventh filter to one of the two I'm holding in reserve. Despite their

unwillingness to match a pair for me, I do have to thank B&H Photo for their patience in allowing me to return the defective ones for exchange, with them paying for return shipping each time.

Stay tuned...

Mike Davis

Mike Davis , Oct 19, 2007; 05:52 p.m.

Don Shafer's engineers (at Schneider Optics, in Hauppauge, NY) have used a spectrophotometer to find me a matched pair of 67mm B+W 502's and even reported the color temperature of each filter in the pair they've selected! How's that for service?

Their color temperatures differ by about 200 degrees Kelvin, but they have a slight BLUE cast - sitting at about 600 degrees Kelvin above (cooler than) the spectrophotometer's calibrated light source.

So, I've requested they look for another pair, that's closer to being neutral, and if not neutral, a pair that will WARM my highlights instead of COOLING them. I did say that if that's too much trouble, I'm willing to adjust my expectations and accept the pair that's matched in color and density, but with a slight blue cast.

Meanwhile, I'm still waiting for my seventh 502 from B&H Photo.

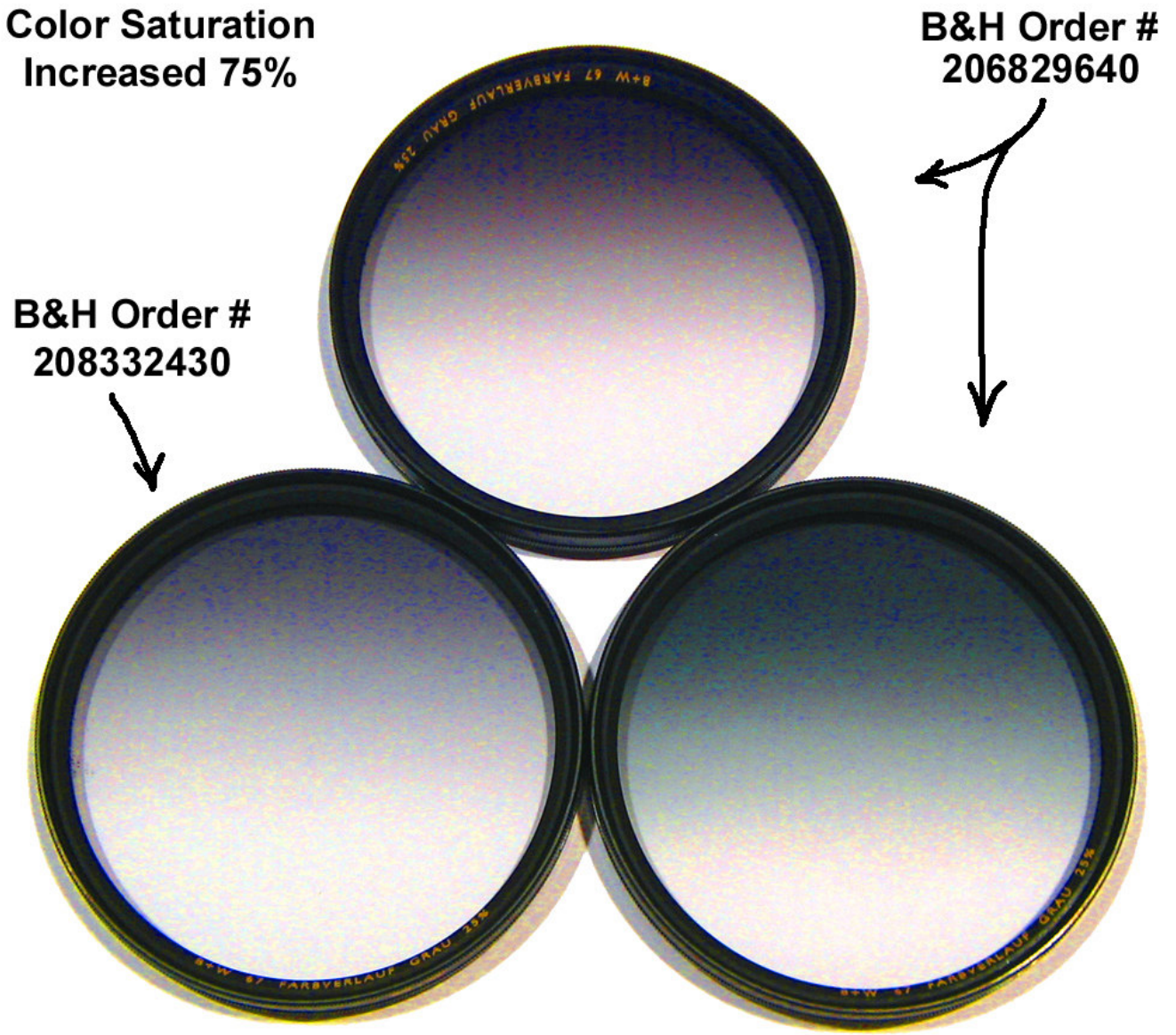
Stay tuned...

Mike

Mike Davis , Oct 20, 2007; 12:36 a.m.

Well, my seventh B+W 502 filter arrived today from B&H Photo. Problem: It's the SAME filter I returned for exchange, two orders back!

The filter on the bottom left in this photo is from my 3rd B&H Photo order (my fifth B+W 502 filter):



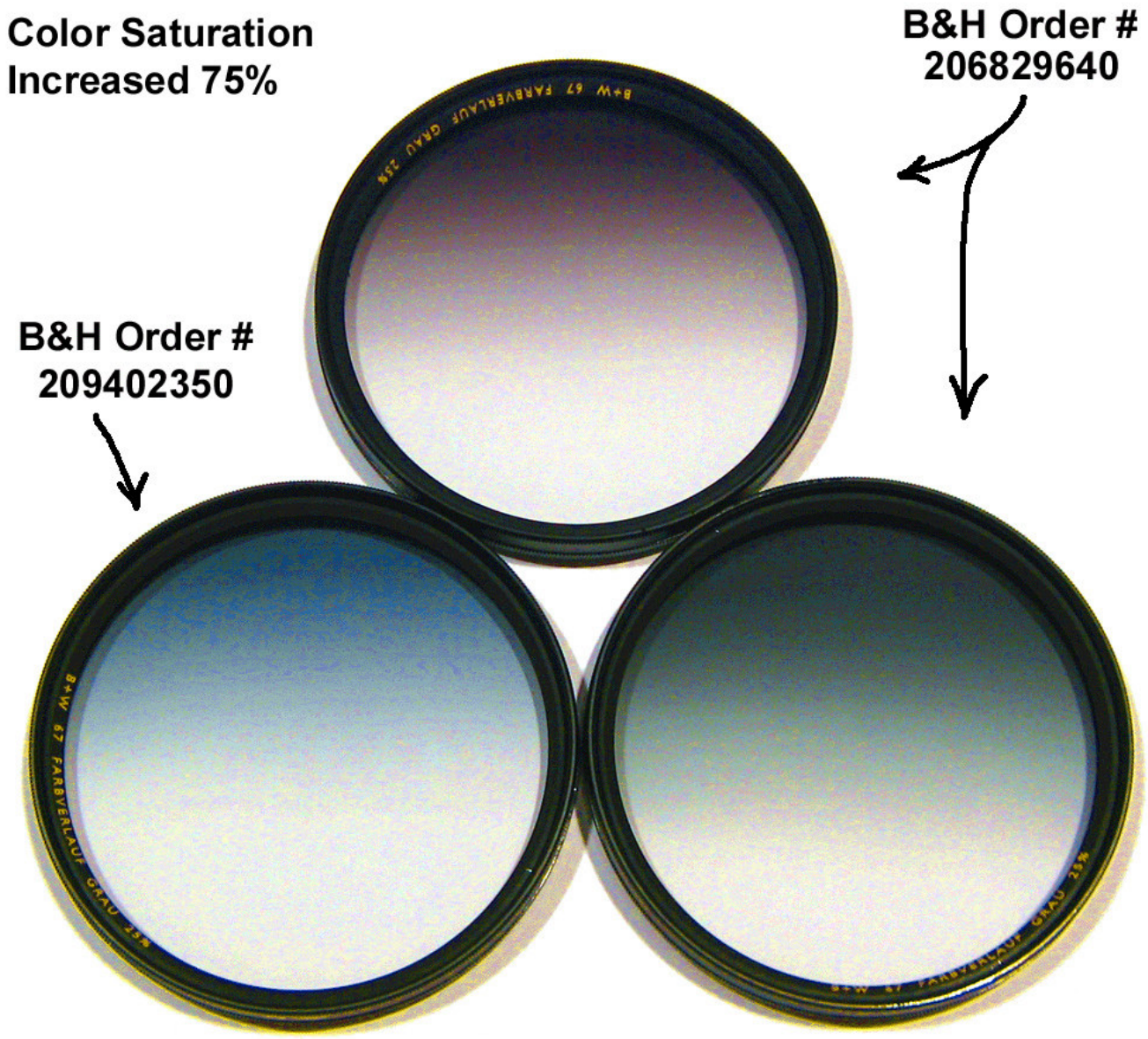
(link)

The filter on the bottom left in this next photo is from my 5th B&H Photo order (the seventh B+W 502 filter, just received today) - they are one in the same:

The botom left filter is the 7th B+W 502 filter I've received from B&H Photo. It's also the 5th! It's the filter I returned for exchange, under Order # 207527720, as a DEFECTIVE filter due to its excessive BLUE color cast, but B&H Photo just put it back in their inventory and inadvertantly resold it to me! Note that the position of the lettering relative to the tinted portion of the filter is identical (in addition to the color cast.)

(Link)

Here's that same photo with the saturation increased to 75% just to show how different the color casts of these filters are:



The botom left filter is the 7th B+W 502 filter I've received from B&H Photo. It's also the 5th! It's the filter I returned for exchange, under Order # 207527720, as a DEFECTIVE filter due to its excessive BLUE color cast, but B&H Photo just put it back in their inventory and inadvertantly resold it to me! Note that the position of the lettering relative to the tinted portion of the filter is identical (in addition to the color cast.)

(link)

I'll be returning the seventh filter to B&H Photo for a refund - not for exchange. Apparently, B&H Photo prefers to just sell defective merchandise over and over again until somebody decides to keep it, rather than returning it to the manufacturer. I'm done shopping for a matching filter from their inventory.

The guys at Schneider are my best hope, now.

Mike Davis (Tenacious)

Robert Budding , Oct 20, 2007; 07:12 a.m.

I'd go with Lee filters - sheet filters can be fitted to any lens size so you don't need duplicate filters. And the placement of the ND gradation can be easily adjusted.

Mike Davis , Oct 20, 2007; 04:02 p.m.

Hi Robert,

I appreciate your suggestion, but I'm shooting in stereo (medium format 3D) with Mamiya 7 II rangefinders. I vary the distance between the camera bodies (changing the "stereo base") to suit the distances to the near and far limits of the subject space I'm shooting. (I measure the distances with a laser rangefinder and calculate the appropriate stereo base with a PDA running Pocket Excel.) As the distance from the cameras to the nearest object decreases and/or the ratio of far object distance to near object distance increases, the cameras have to come closer together on a slide bar that sits atop my tripod. My closest working distance is therefore defined by how close together I bring the lenses.

Working with screw-mount filters, that limit is literally the point at which the camera bodies touch each other. If I were to mount Lee, Singh Ray, Formatt, or Schneider MPTV rectangular filters in appropriate holders, they would run into each other before the camera bodies do, thus forcing me to work at greater distances to my nearest subjects, which is already at about 13 feet for subject spaces that include Infinity, when working with Mamiya's 43mm lenses, and 17 feet with 65mm lenses, etc.

All that said, the rectangular ND grad filters are nearly impossible to position correctly with a rangefinder body and the holders block the viewfinder as well as the light meter port, requiring all framing, focusing and metering to be done BEFORE you mount the filter holders. I use a Sekonic L-608 for metering, but framing and focusing would still be a problem - not to mention positioning the filter horizon.

The B+W and Heliopan screw-mount ND Grads are also unique in that their density gradient begins at the horizon and runs CONTINUOUSLY all the way to the top of the filter. Whether you get the Hard Edge or Soft Edge Lee, Singh Ray, or Formatt filters, their gradients all begin at the horizon then reach the rated maximum density within just a few millimeters of the horizon - holding maximum density all the way to the top of the filter. This smoothly transitioning gradient deployed in the B+W and Heliopan designs are far less likely to cause positioning problems than would the aggressive gradients used in rectangular designs. The effect is certainly less effective than what one can achieve with a correctly positioned hard- or soft-edge rectangular filter, but given that I'm using rangefinders, I'd rather enjoy SOME attenuation of my highlights than risk a poorly positioned filter horizon.

Despite the SERIOUS quality control problem B+W apparently has with their 501 (0.3) and 502 (0.6) Graduated ND filters, this one make and model of ND grad is the ONLY filter that satisfies my requirements:

1) Round, screw-in mounts that are fast to work with and that won't interfere with rangefinder framing, focusing, or metering the way square filters would.

2) A gradient that runs from the horizon all the way to the top of the filter, instead of just for a few millimeters above the horizon, as so-called hard or soft gradients do.

The Heliopan ND Grads are the ONLY other filter that satsify these requirements, but they are so ridiculously THIN in density as to be worthless, even though they are offered with the same specs - 0.3 and 0.6 ND.

By the way, Tiffen makes screw-mount ND grads, but in addition to having a strong Tobacco color cast, even though they are allegedly NEUTRAL density, the Tiffen ND grads have a gradient much like the hard edge Lee or Singh Ray filters, achieving maximum density just a few millimeters above the horizon and remaining at that density all the way to the top. This is a next to worthless design for a screw-mount graduated filter, in my opinion, because the gradient is so aggressive that unless your composition places the highlight/shadow subject horizon right across the lens axis, the fact that you can only rotate these filters won't do you a bit of good.
As another aside, let me mention that Formatt makes a line of rectangular filters they call their "Blender" series. These have a gradient that start at one end of the filter and smoothly transition all the way to the top of the filter. They have no density horizon at all. These do not require careful positioning, but even if I was shooting with an SLR (instead of a rangefinder body) I can't imagine when I would want to attenuate my shadows somewhat and my highlights more so. No, I'd rather have the bottom half of the filter clear, with the density gradient beginning at the midline, reaching maximum density at the top.

So, when (if) I get my hands on a matched pair of reasonably NEUTRAL and reasonably DENSE B+W 502's, lacking any other defects common to this line, they won't be ideal for every high-contrast situation, obviously, but using them will certainly be better for many situations than not using them at all.

Mike Davis http://www.AccessZ.com

Mike Davis , Nov 05, 2007; 03:06 p.m.

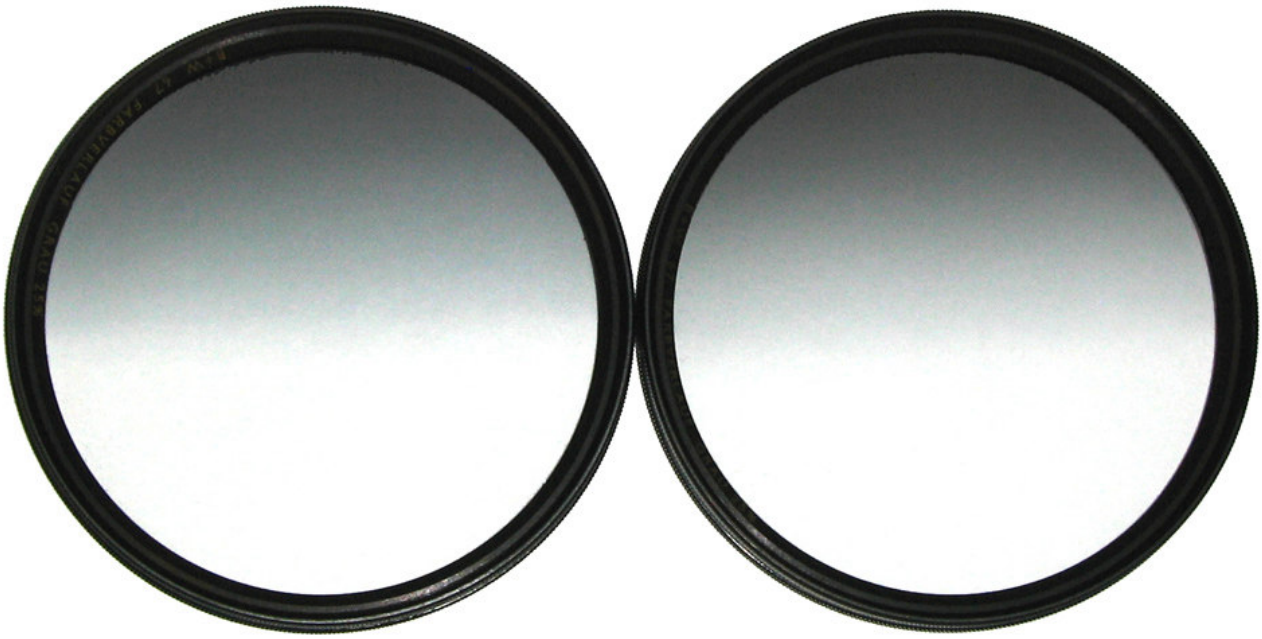
Great news!

The matched pair of 67mm B+W 502 (0.6) graduated ND filters provided by Don Shafer of Schneider Optics (via a local camera store) is spectacularly well-matched for both color and density - not surprising given that they used a spectrophotometer! And other than a very slight blue cast, they are without any of the defects I've seen in other B+W 502 filters.

It has taken almost three months to get my hands on a pair of B+W 502's that actually match, but I'm thrilled to have them. Nothing else will work with my 3D rig.

B+W manufacturing has a serious quality control problem, but I've overcome it with the help of the people at Schneider Optics, in Hauppauge, New York.

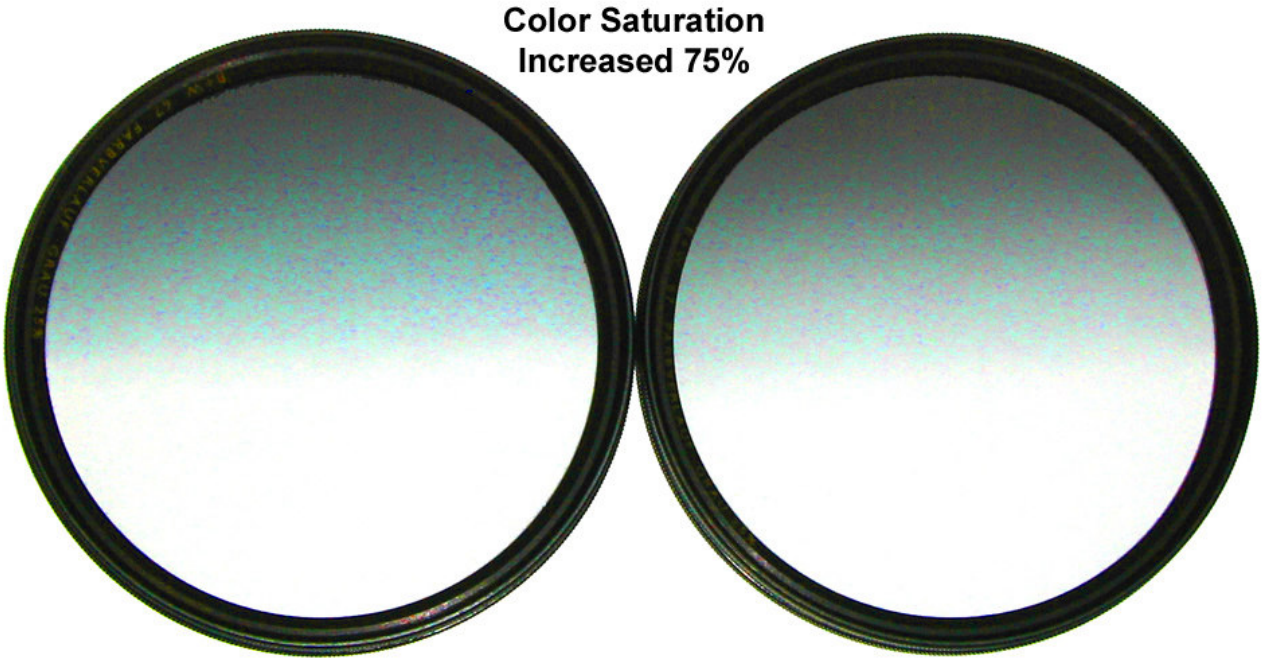
Here's a photo of the matched pair they provided:



Matched pair of 67mm B+W 502 (0.6) graduated neutral density filters from Schneider Optics. Density and color are incredibly well matched given the tremendous variance seen in B+W's 502 filters.

(Link)

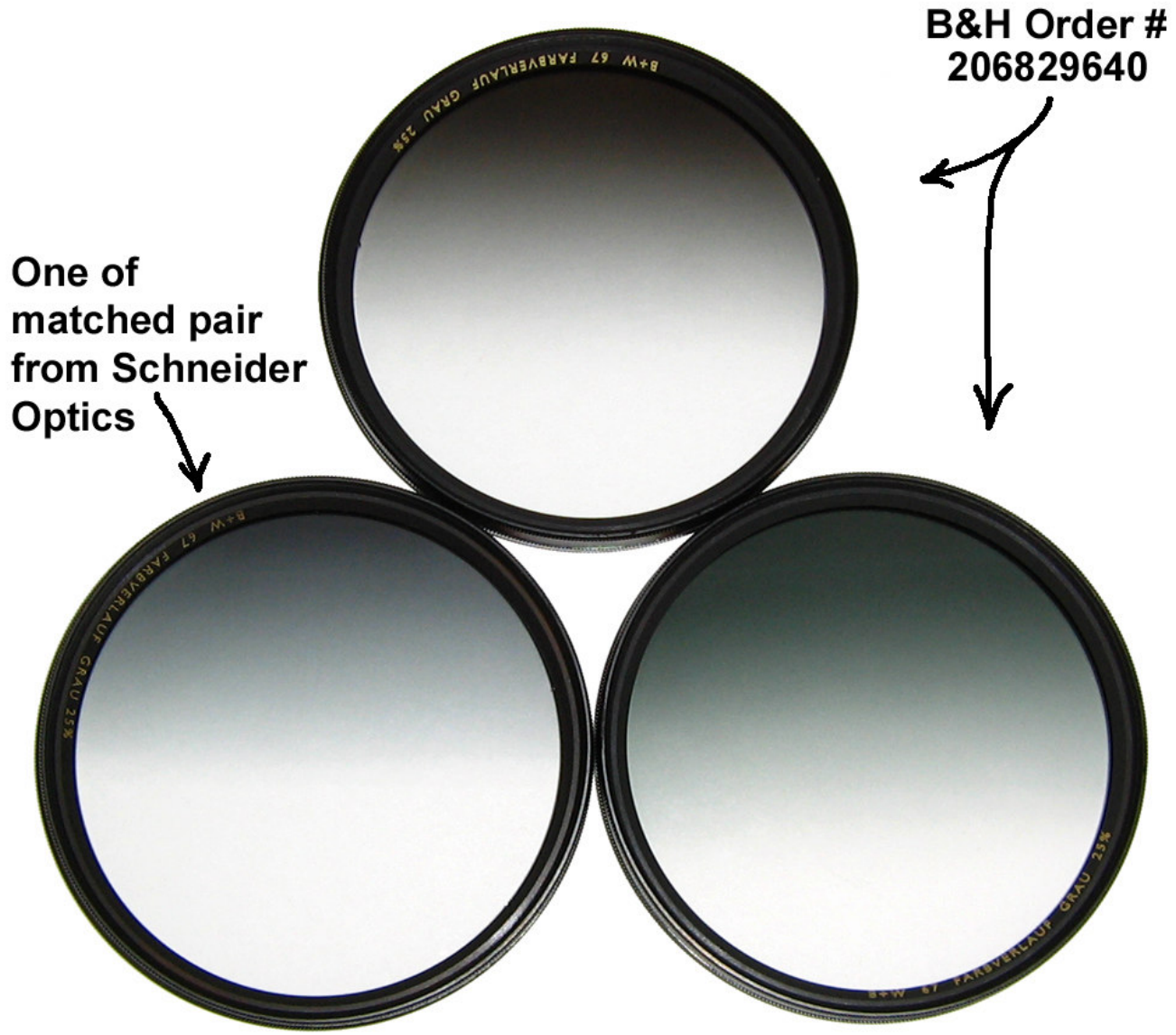
Here's the same photo with the saturation increased 75%:



Matched pair of 67mm B+W 502 (0.6) graduated neutral density filters from Schneider Optics. Density and color are incredibly well matched given the tremendous variance seen in B+W's 502 filters.

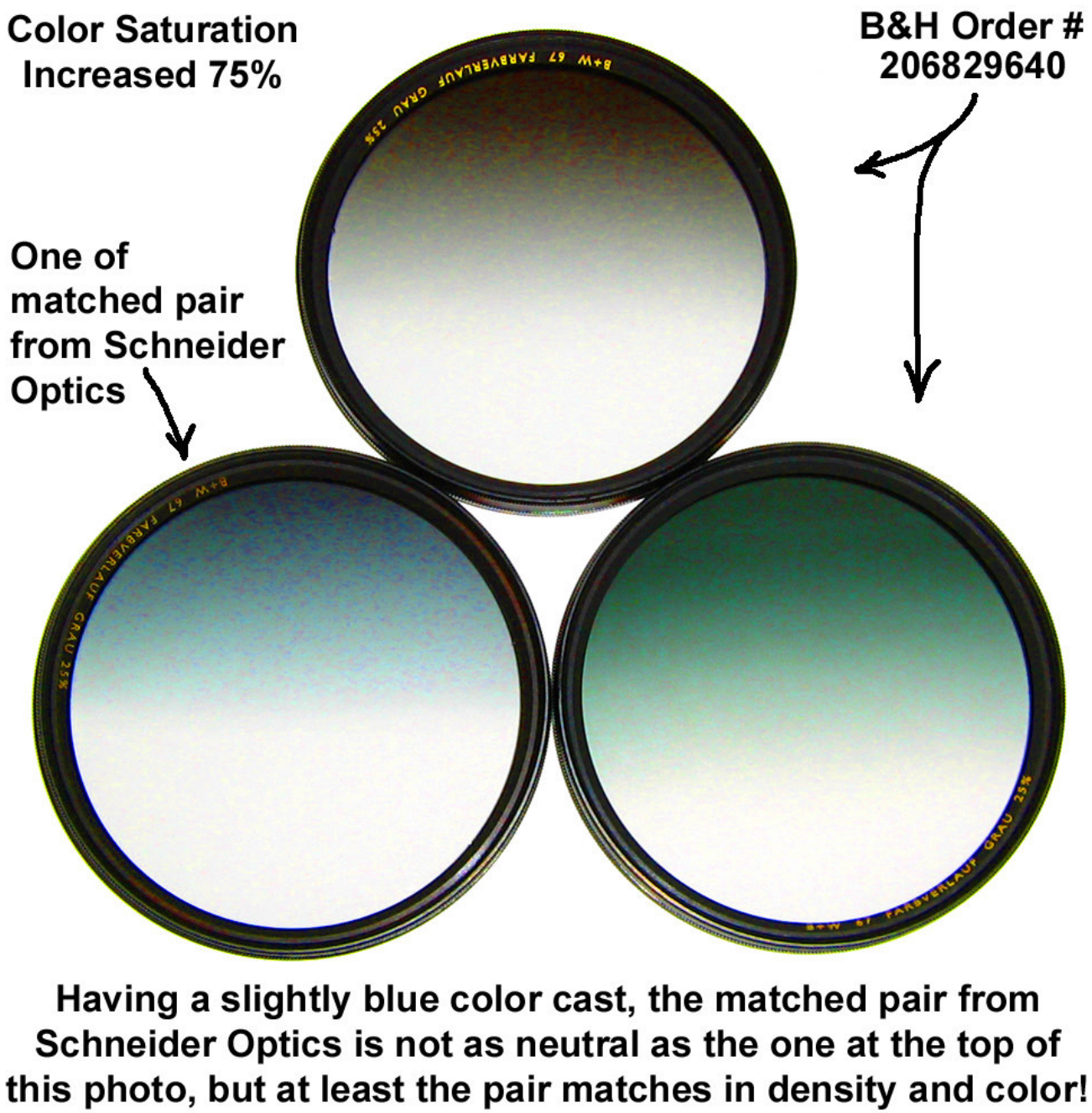
(Link)

Here's a photo comparing one of the matched filters to the two filters from my 2nd B&H Photo order:



(Link)

Here's the same photo with the saturation increased 75%:



(Link)

Mike Davis

http://www.AccessZ.com

petra Kues-Johnson , Aug 19, 2010; 10:35 a.m.

What a SAGA.... thanks for all that very interesting information. Now I will have to find just one 77mm B+W NG grad that is perfect.

Kevin Beretta , Nov 27, 2011; 02:23 a.m.

What a story indeed .... :-)

I love stereo photography. My cousin has the world's oldest stereo camera in his possesion. And tons and glass as well. His website is http://www.visual-media.eu/

His life revolves around his old photography equipment.