

# A field review on the Sigma 120-300mm F2.8 DG OS HSM SPORT

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## Introduction

The mid-telephoto range of lenses is usually restricted to prime lenses, should you be looking for a lens of the 300mm f2.8 type. But for many years Sigma has been producing one of the best lenses in this telephoto range, with the added advantage that you can have your 300mm f2.8, and zoom back to 120mm f2.8!

When the original Sigma EX 120-300mm f2.8 APO IF HSM was launched circa 2002, I bought one as soon as the first ones landed in South Africa. Using it extensively since then as my main lens for covering motorsports, rugby, athletics, gymnastics and also birds and wildlife mostly with a 1.4x Extender fitted, it worked really hard with more than a 100 000 shots taken with it. Still going strong too.

Some years ago I tested the first OS version of the 120-300 f2.8 (which was then the 3<sup>rd</sup> generation of this lens) and was very impressed by its performance. Now with Sigma's Global Vision concept and the launch of the 120-300mm f2.8 DG OS HSM SPORT lens (hereafter referred to as the 120-300 Sport) I jumped at the opportunity when offered one to use for a full field evaluation over a couple of months.

## Basic Specifications and Switches

Listed below are the basic specifications of the 120-300 Sport lens, followed by a discussion on some of the important specifications and controls of the lens.



**Controls of the 120-300 Sport:**

**From top to bottom: Focus Mode Switch AF/MF, Focus Limiter Switch, Optical Stabiliser Switch, Custom Selector Switch. Also shown to the right of the switch panel is the bracket for the attachment of a lens strap and at the bottom the Twist Knob for the tripod mounting ring.**

|                                |                          |
|--------------------------------|--------------------------|
| Lens Construction              | 23 Elements in 18 Groups |
| Angle of View                  | 20.4°-8.2°               |
| Number of Diaphragm Blades     | 9                        |
| Minimum Aperture               | f22                      |
| Minimum Focusing Distance      | 150-250 cm               |
| Filter Size (mm)               | 105mm                    |
| Maximum Magnifications         | 1:8.1                    |
| Dimensions (Diameter x Length) | 124.4mm x 291mm          |
| Weight                         | 3,390 kg                 |
| Mounts available               | Canon, Nikon, Sigma      |

Focus mode switch AF/MF: Offers the standard auto focus (AF) and manual focus (MF) modes. An ultrasonic type focus motor that Sigma calls HSM (Hyper-Sonic Motor) for a fast and quiet AF function is standard for this lens.

A focus limiter switch is fitted, providing the following settings: minimum – 10m, 10m – infinity and the full focus range.

Optical Stabiliser Switch: A two stage OS is included:

- Mode 1: Normal OS in both horizontal and vertical planes
- Mode 2: Panning mode – OS in the vertical plane only

Also fitted is a special Custom Selector Switch: using the USB Dock (sold separately, and which basically looks like a rear lens cap with electronic contacts and a USB cable) with the free Sigma Optimization Pro software the user can update the firmware of the lens and add custom settings to his lens setup for AF, OS function and focus range. Different settings can be stored in two memories, C1 and C2. More on this later in the review.



**USB Dock**

Mass: This is one heavy lens, tipping the scales at almost 3.4 kg it is more than 500g heavier than my generation 1 lens. Which is to be expected really with the inclusion of the OS module and different optical design.

A very sturdy, removable tripod mounting collar is supplied with click settings at right angles, enabling the lens to rotate easily to the desired orientation. The lens tightens securely in the collar with the

familiar twist knob operation. I did find the collar a little jerky in operation, could be that it will wear a little smoother with time.

This lens feels very intimidating in the hand. It is a heavier lens than what most will be accustomed to, even heavier than the Sigma 150-600 Sport lens which I evaluated recently. Even though it is a heavy piece of kit, I did some handheld shots with it, but for consistent results I would not recommend doing so on a regular basis. It really belongs on a monopod, tripod or beanbag, whichever suits the situation. Build quality appears to be very good, with a durable exterior finish. After three months of heavy use it looked the same as it did when new.

Size: With the metallic alloy lens hood fitted it sticks out 385mm in front of the camera, and having internal zoom and internal focus, it means the overall length of the lens remains the same whatever you do to it, except removing the lens hood. Being used to lenses of this size, I didn't find it overly bulky or unwieldy. But it is a step up from my generation 1 version of this lens.

## Handling

For the field evaluation of this lens I had lined up a test to visually check calibration of the lens to my Canon EOS 1D MkIV camera body. Following on from that the field evaluation would encompass motorsport events and some birding and wildlife, concentrating more on the AF tracking capability rather just static captures of a subject. These tests would include using the lens on its own and with a 1.4x Extender fitted, turning the lens into a 168-420mm f4 lens.

With extended use the bigger and heavier lenses can really put a strain on arm, shoulder and neck muscles if one try to handhold them for any length of time. This is also not conducive to stability which will result in photos which are not really sharp and crisp. Remember OS can only do so much for the photographer. The end result is that I prefer to use a monopod with these lenses for added stability and comfort when out in the field looking for birds, wildlife or covering sports events. From a vehicle I will use a bean bag with the odd handheld snap shot every now and then.

I used this 120-300 Sport lens to cover motorsport and rugby, all done using a monopod and belt pouch. No doubt one could use it for cricket too, fitted with a 1.4x Extender and using a crop body for added reach, but I didn't try it. Trust me when I say it will perform more than good enough, it then offering sufficient reach and fast enough on maximum aperture (168-420 f4 when a 1.4x Extender is fitted).

I also used it during quite a few trips out in the bush for wildlife and birding photography. Some shots were taken off a bean bag whilst vehicle bound, some handheld (refer photo of the Eland Bull) whilst the birding shots were taken using a monopod.

I did use the OS quite a bit and found it very effective in neutralising camera shake in general, offering at least a 2 stop advantage in shutter speed and also when panning fast moving subjects at slower shutter speeds. No doubt with proper technique, and monopod this could easily be a 4-stop advantage.

The relatively short minimum focussing distance of 1.5m @ 120mm and 2.5m @ 300mm is very handy for those birds perching close to the photographer in a bird hide or tightly framed shots at sports events, be it of the action or portraits of the players all done using just one lens.

420mm, 1/640, f4, ISO 400



Photo © SimonDP / Actionimage 2015

Eland bull, handheld with 1.4x Extender, OS mode 1

252mm, 1/125, f5.6, ISO 100

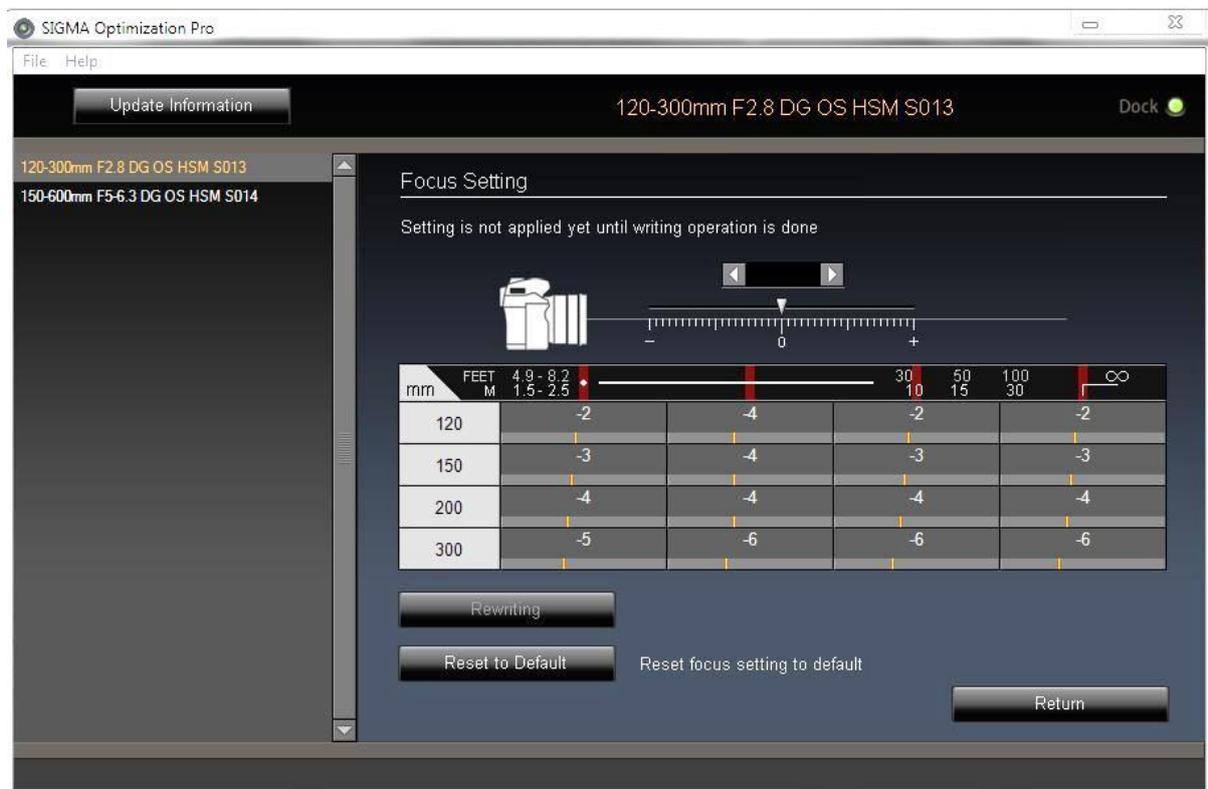


Photo © SimonDP / Actionimage 2015

Slower shutter speed panning, handheld OS mode 2, C1 AF setting

## Calibration

My first AF test showed the lens to have a heavy back-focus tendency, which I couldn't compensate for with the AF fine-tune setting of my camera. So I connected the USB dock provided by Tudortech and using the Sigma Optimization Pro software, first of all updated the firmware of the lens (internet connection required for this). Then I reset the lens calibration setting, and could then also reset the camera AF fine-tune setting. Then taking it step by step, at the different zoom settings, I started fine-tuning the AF calibration of the lens using the software and writing the updates to the lens. See the screen capture of the software. This process was repeated three times, each time writing the settings, then back to actual AF testing, loading the photos, checking them, fit the USB dock, update settings, write to lens, AF testing again. The end result was a spectacularly accurate AF calibration at the zoom settings and distances as per the screen capture picture.



Screen capture of AF calibration settings

Also, learning from my experience with the Sigma 150-600 Sport, I registered on the C1 custom setting the adjusted AF Speed Setting to prioritise the AF drive motor to achieve fast initial focus. The intention here was to evaluate the effect on fast paced sports and action photography at shorter distances rather than long range, with the closer to camera action always providing a more severe test for the AF performance of a camera and lens.

In general I found the USB Dock and software very easy and intuitive to use. One does have to be connected to the internet for the automatic check on firmware updates, but once done you can just close those request screens and move to the customization screen. After changing and setting those parameters you wish to change, remember to write the settings to the lens by clicking the "Rewriting" button.

## Nature Photography (Birding and Wildlife)

After performing the calibration of the lens I was eager to see the end effect so early next morning I was ready at the bird feeding area in my garden which I use frequently to get closer portrait style shots of the birds visiting my garden. Being more controlled and providing ample opportunity I could easily get the shots I was hoping for, one being a male Red-headed Finch and his juvenile (also a male) posing for a nice series of shots. Detail on the feathers proved that this lens is super sharp, and this was with the 1.4x Extender fitted and used wide open at maximum zoom.

Visiting nature and birding reserves provided all the opportunities I could hope for to test the lens properly. Using it from a bean bag or handheld in the nature reserves yielded very good results, testing the OS when handholding the lens for quick snapshots proved it to be very effective in combating camera shake. One can see the image in the viewfinder stop jumping and wandering around, and the bulk and size of the lens was not such that it felt cumbersome to use in the cabin of a vehicle when switching from passenger side to driver side windows. No doubt the photographer with a smaller physique or slight of build will have more difficulty swinging the 4+kg lens and camera body around, but really I didn't find it a hassle. Handy for those snapshots when you have to be quick to catch a moment and not switch the engine off.



**Red-headed Finches, monopod**

A cute, frolicking Blesbuck calf was one such encounter, not bothering to switch off the engine with a quick two frames handheld and panning with the calf's movement yielded two sharp and crisp images,

220mm, 1/1000, f4, ISO 400, handheld OS mode 2



Photography by Actionimage

Blesbuck calf, handheld, OS mode 2, no extender

420mm, 1/6400, f4, ISO 400



Photo © SimonDP / Actionimage 2015

Closer range fly-by, monopod, C1 AF setting.

the AF picking up and locking on very quickly and accurately. At this stage I was still using the lens on the normal AF setting as I wanted to see the real effect of the C1 AF setting on more challenging subjects.

Moving on to birds in flight proved the value of the C1 setting, as the keeper rate on faster flying birds increased from a very good 75% to about 85% which is really very good going indeed. The normal birding activity such as panning birds in flight, or slow moving birds head-on to the camera, portraits etc proved the lens to be very sharp with keeper rates in excess of 85 %, and most of these were done with the 1.4x Extender fitted to the lens. I felt this was a real super performance from this lens, and certainly an improvement by a good 10% on the results I was used to getting from my generation 1 lens. I also noticed that this lens actually handles the influences of the 1.4x Extender better than my lens do, with less drop-off in image quality and AF speed.

In general I experienced sharp crisp detail, good colours and nice contrast on the photos taken during this part of the evaluation.

### **Motorsport.**

I used the lens at two different motorsport events, the 2015 Passion for Speed International Historic Racing Event and the first round of the Extreme Festival, the national championship series, both of which were held at Zwartkops International Raceway. The racing provided a good selection of fast cars and motorcycles to test the tracking ability of the lens.

I took all of the shots at these two events with the Custom Selector Switch of the lens on the C1 setting, programmed for faster AF acquisition.

As I expected the side-on parallel panning shots were handled easily by the lens, and I had about a 90% keeper rate with not much difference between faster and slower moving subjects. The very fast Martini Porsche 911 RSR with a low-ish shutter speed or the #18 Kawasaki ZX10R (see the handheld photo just before the section on Calibration) at slower shutter speed and subject speed were all handled very well. Due to the nature of panning shots I do not believe the C1 setting made much difference here.

Tracking the VW Polo Cup cars at high speed,  $\frac{3}{4}$  angle down the back straight proved to be no problem either, yielding a better than 85% keeper rate. This was a challenging test handled perfectly by the lens.

Again the very fast AF acquisition proved its mettle, with very quick lock-on when I spotted a situation developing, like the door handle to wing-mirror racing between a Golf GTi and an Audi S4 where I managed 3/3 crisp shots.

Tracking the away-moving drift cars during a demonstration run was also handled very easily, with 8 from 8 shots all sharply focussed.

All in all a stellar performance with an average of about 93% keeper rate over the two events. I was suitably impressed.

145mm, 1/200, f11, ISO 100



Photo © SimonDP / Actionimage 2015

Porsche 911 RSR, monopod, C1 AF setting

300mm, 1/250, f6.3, ISO 100



Photo © SimonDP / Actionimage 2015

VW Polo Cup,  $\frac{3}{4}$  angle high subject speed tracking, monopod, C1 AF setting, no 1.4x Extender

235mm, 1/320, f10, ISO 100



Photo © SimonDP / Actionimage 2015

VW Golf GTi vs Audi S4, monopod, C1 AF setting, no 1.4x Extender

168mm, 1/160, f4, ISO 100



Photo © SimonDP / Actionimage 2015

Drift car demo run, monopod, C1 AF setting, with 1.4x Extender fitted

## Rugby

Covering a Super rugby match is another way of testing the AF performance of a lens on stop-start and fast running activities, in lower light levels. A match between the Bulls and the Hurricanes played under flood lights at Loftus Versveld in Pretoria would be the testing ground.

All shots were taken from a monopod and belt pouch, and with the Custom Selector Switch on the C1 setting. In all I took 325 shots at this match, playing with tracking, snap changing between subjects, tracking longer runs from the halfway line or closer from the 22m line. My keeper rate was better than 90% on focus accuracy, which is very good indeed. Panning shots of players running at full tilt, or charging straight towards the camera whilst attempting to break through the defensive line, all were handled with equal ease. Considering that this was under floodlights leaves me feeling very satisfied with the performance of the lens under these conditions.





Both shots monopod in belt pouch, C1 AF setting.

### Conclusion

The Sigma 120-300mm f2.8 DG OS HSM Sport lens is a super performing lens. This lens is aimed at the professional or serious enthusiast photographer who demands only the best from his equipment in terms of build quality, AF and IQ performance.

The lens is well made with very fast auto focus especially with the custom set-up available through the optional USB Dock, and very good optical quality throughout the zoom range and at any aperture setting, even with a 1.4x Extender fitted.

In all a class-leading lens from Sigma, and still one of my all-time favourite lenses.

Many thanks to TudorTech (+27 11 803 2226) for arranging and making available the test lens and USB Dock.