

## Reikan FoCal Aperture Sharpness Test Report

for D7100 (serial number 4341964) with 150-600mm f/5-6.3

Test run on: 27/01/2016 00:31:31 with FoCal 2.0.6.2416W

Report created on: 27/01/2016 00:34:32 with FoCal 2.0.6W

### Overview

#### Test Information

Property	Description
Data Creation FoCal Version	2.0.6.2416W
Data Analysis FoCal Version	2.0.6W
OS Version	Microsoft Windows NT 6.2.9200.0
Source Mode	Camera Mode
Image Capture Mode	JPEG
Analysis Method	Multi-ESH (RGB)
Camera Model	D7100
Firmware Version	V1.02
Serial Number	4341964
Shutter count (start)	16382
Test Colour Temp	3200 K
Lens	150-600mm f/5-6.3
Focal Length	600,0mm
Termination Reason	Success
Test ISO	400
Distance to Target	15,3m
Operation Mode	Normal Mode
Diffraction Limited Aperture	f/6,3
Worst Aperture	f/29,0
Optimal Aperture	f/9,0

#### User Notes

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mode Q  
400 iso

## Test Details

### Aperture Sharpness Profile

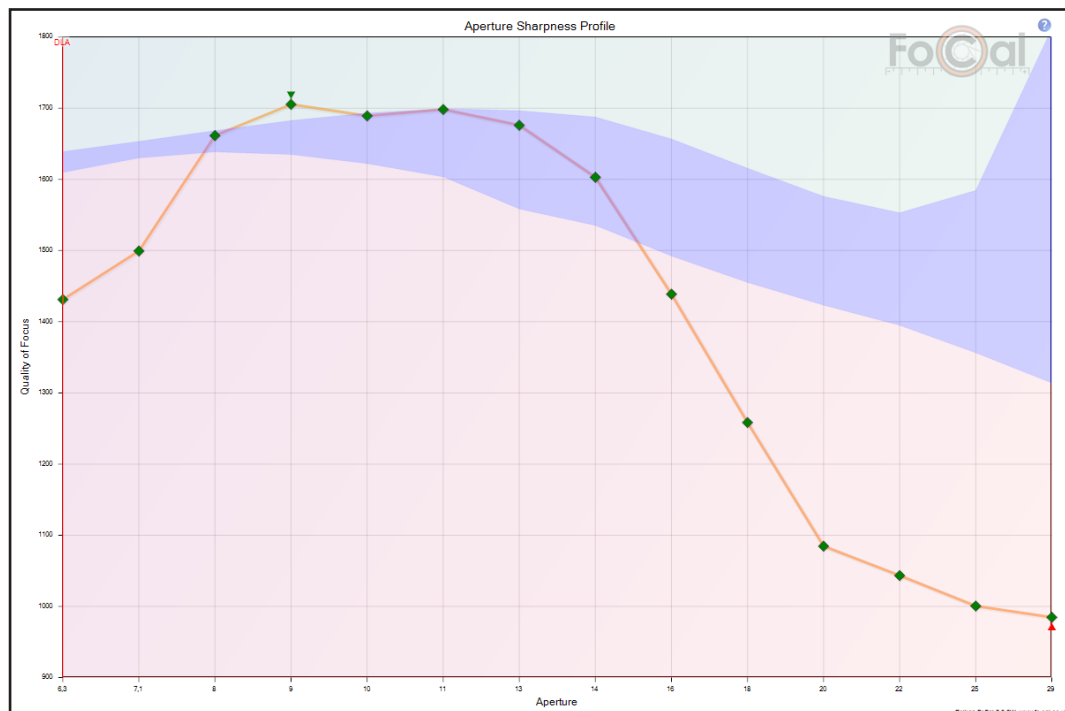
The Aperture Sharpness Profile shows how the image sharpness changes across the tested aperture range.

At small apertures (large f-numbers), diffraction will soften the image and reduce the sharpness. Where possible, the chart will include a red vertical marker at the Diffraction Limited Aperture (DLA) to indicate where diffraction will start to affect the sharpness of the image.

Lenses typically perform less well when close to maximum aperture (smallest f-number) which also results in a drop in sharpness.

If FoCal Comparison Data is available for this camera and lens a red/blue/green overlay will be added to indicate how your camera and lens performance compares with other users as follows:

- Red: indicates below-average performance,
- Blue: typical performance experienced by other users
- Green: above average performance.



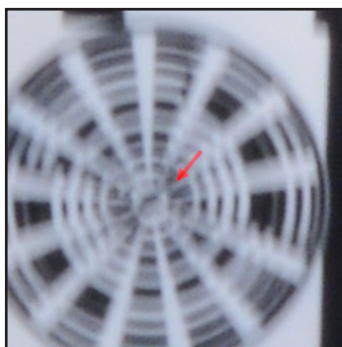
### Analysis Details

Property	Description
Astigmatism Factor Range	40,8% ( $\pm 40,2\%$ )
Spectral Power Range	R: 32% ( $\pm 0,2\%$ ) G: 32% ( $\pm 0,2\%$ ) B: 36% ( $\pm 0,2\%$ )
Red:	
Red Optimal Aperture	f/10,0
Red Peak QoF	1696,0
Green:	
Green Optimal Aperture	f/8,0
Green Peak QoF	1787,2
Blue:	
Blue Optimal Aperture	f/13,0
Blue Peak QoF	1609,3

## Aperture f/29

Aperture	f/29,0
Shutter Speed	1/50s
EV	13,3
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	984,7
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/33/36
Red Quality	962,3
Green Quality	1001,1
Blue Quality	987,7
HVR	72,1%

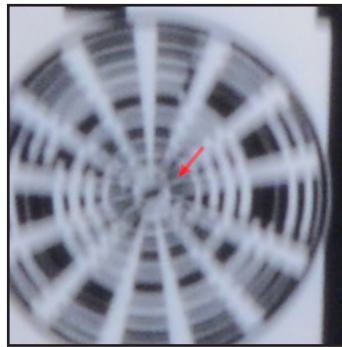
The following image is a crop of the section of image analysed by FoCal:



## Aperture f/25

Aperture	f/25,0
Shutter Speed	1/59s
EV	13,1
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1000,5
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	31/33/36
Red Quality	1002,1
Green Quality	1019,8
Blue Quality	975,7
HVR	81,0%

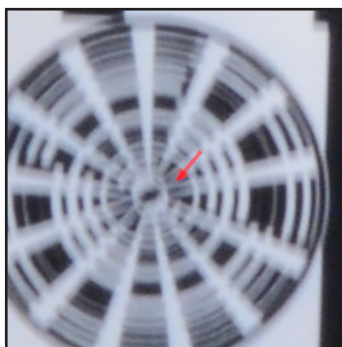
The following image is a crop of the section of image analysed by FoCal:



## Aperture f/22

Aperture	f/22,0
Shutter Speed	1/80s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1043,3
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/33/36
Red Quality	1036,6
Green Quality	1050,4
Blue Quality	1039,8
HVR	72,7%

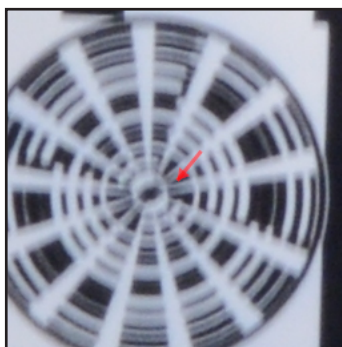
The following image is a crop of the section of image analysed by FoCal:



## Aperture f/20

Aperture	f/20,0
Shutter Speed	1/100s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1084,6
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	31/33/36
Red Quality	1053,0
Green Quality	1110,9
Blue Quality	1092,8
HVR	62,1%

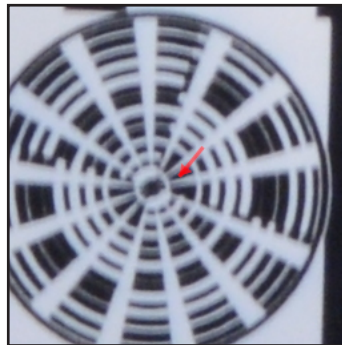
The following image is a crop of the section of image analysed by FoCal:



## Aperture f/18

Aperture	f/18,0
Shutter Speed	1/125s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1258,4
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	31/32/36
Red Quality	1226,6
Green Quality	1298,6
Blue Quality	1252,9
HVR	29,4%

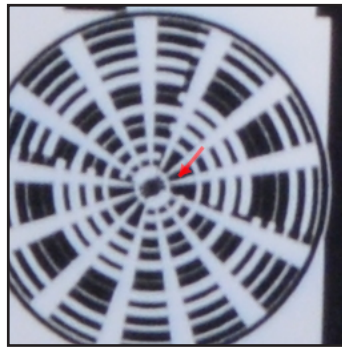
The following image is a crop of the section of image analysed by FoCal:



## Aperture f/16

Aperture	f/16,0
Shutter Speed	1/160s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1438,7
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	31/32/36
Red Quality	1399,1
Green Quality	1511,5
Blue Quality	1415,5
HVR	7,3%

The following image is a crop of the section of image analysed by FoCal:

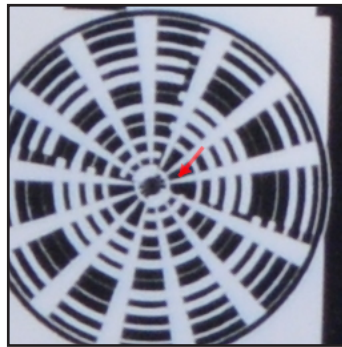




## Aperture f/14

Aperture	f/14,0
Shutter Speed	1/200s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1603,0
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/32/36
Red Quality	1562,1
Green Quality	1695,3
Blue Quality	1548,1
HVR	-0,7%

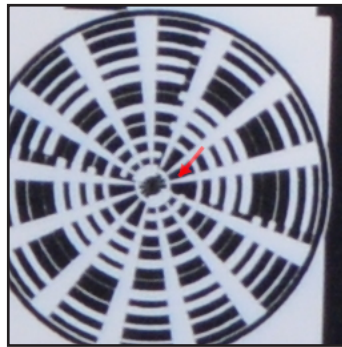
The following image is a crop of the section of image analysed by FoCal:



## Aperture f/13

Aperture	f/13,0
Shutter Speed	1/250s
EV	13,3
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1676,1
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/32/36
Red Quality	1641,9
Green Quality	1780,6
Blue Quality	1609,3
HVR	-1,3%

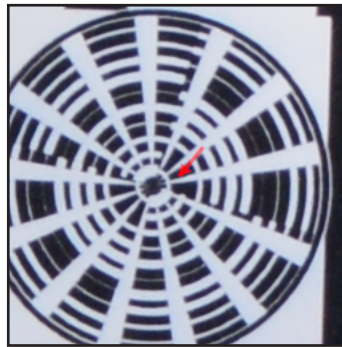
The following image is a crop of the section of image analysed by FoCal:



## Aperture f/11

Aperture	f/11,0
Shutter Speed	1/320s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1698,3
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/32/36
Red Quality	1675,2
Green Quality	1830,6
Blue Quality	1608,7
HVR	-0,6%

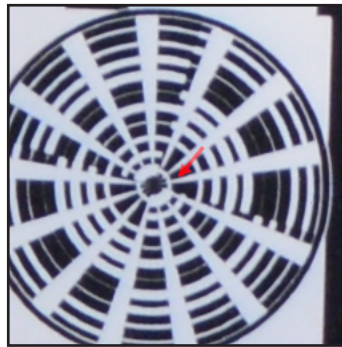
The following image is a crop of the section of image analysed by FoCal:



## Aperture f/10

Aperture	f/10,0
Shutter Speed	1/400s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1689,3
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/32/36
Red Quality	1696,0
Green Quality	1829,6
Blue Quality	1566,8
HVR	2,5%

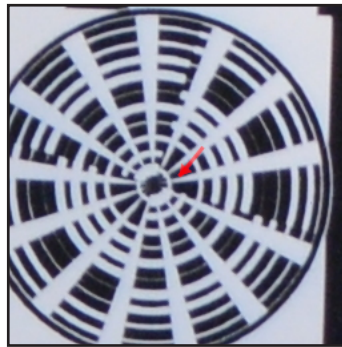
The following image is a crop of the section of image analysed by FoCal:



## Aperture f/9

Aperture	f/9,0
Shutter Speed	1/500s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1705,4
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/32/36
Red Quality	1683,5
Green Quality	1840,8
Blue Quality	1605,1
HVR	2,4%

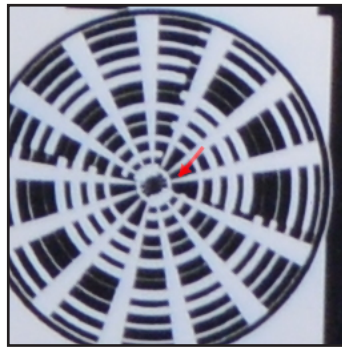
The following image is a crop of the section of image analysed by FoCal:



## Aperture f/8

Aperture	f/8,0
Shutter Speed	1/640s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1661,6
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	31/32/36
Red Quality	1655,8
Green Quality	1787,2
Blue Quality	1560,0
HVR	2,6%

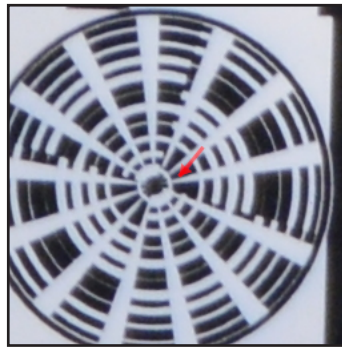
The following image is a crop of the section of image analysed by FoCal:



## Aperture f/7,1

Aperture	f/7,1
Shutter Speed	1/640s
EV	12,9
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1499,4
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/33/36
Red Quality	1458,6
Green Quality	1570,2
Blue Quality	1472,2
HVR	1,6%

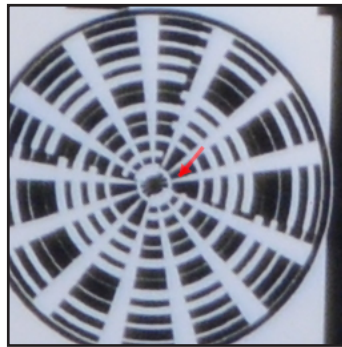
The following image is a crop of the section of image analysed by FoCal:



## Aperture f/6,3

Aperture	f/6,3
Shutter Speed	1/1000s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1431,2
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/33/36
Red Quality	1406,0
Green Quality	1482,4
Blue Quality	1406,9
HVR	0,6%

The following image is a crop of the section of image analysed by FoCal:





## Aperture Sharpness Profile

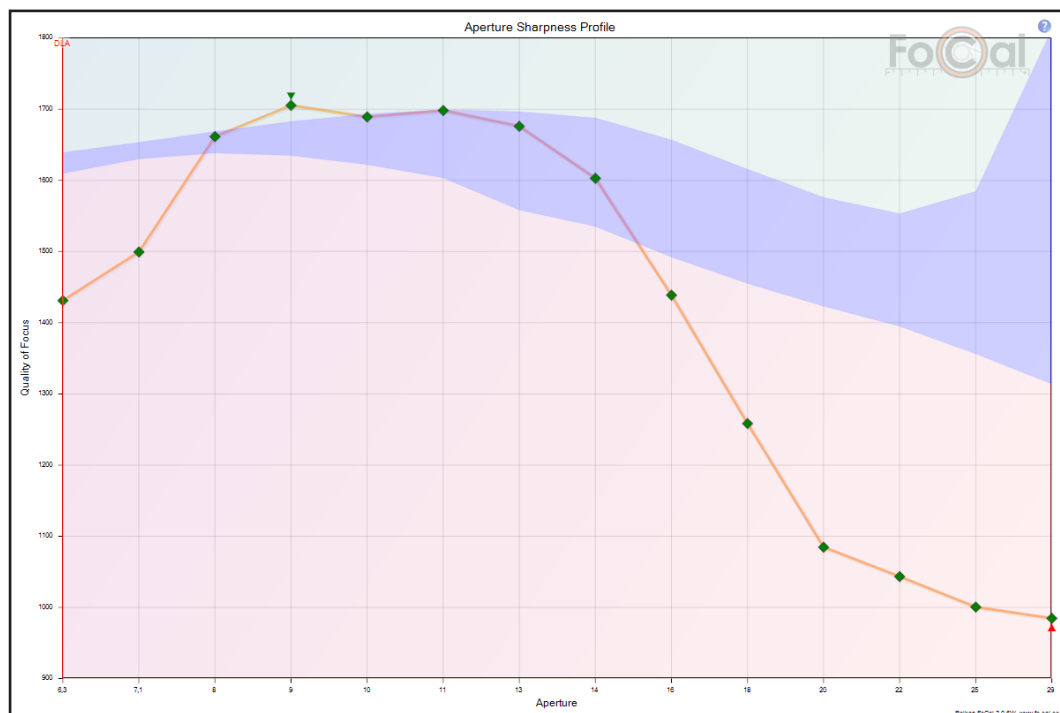
The Aperture Sharpness Profile shows how the image sharpness changes across the tested aperture range.

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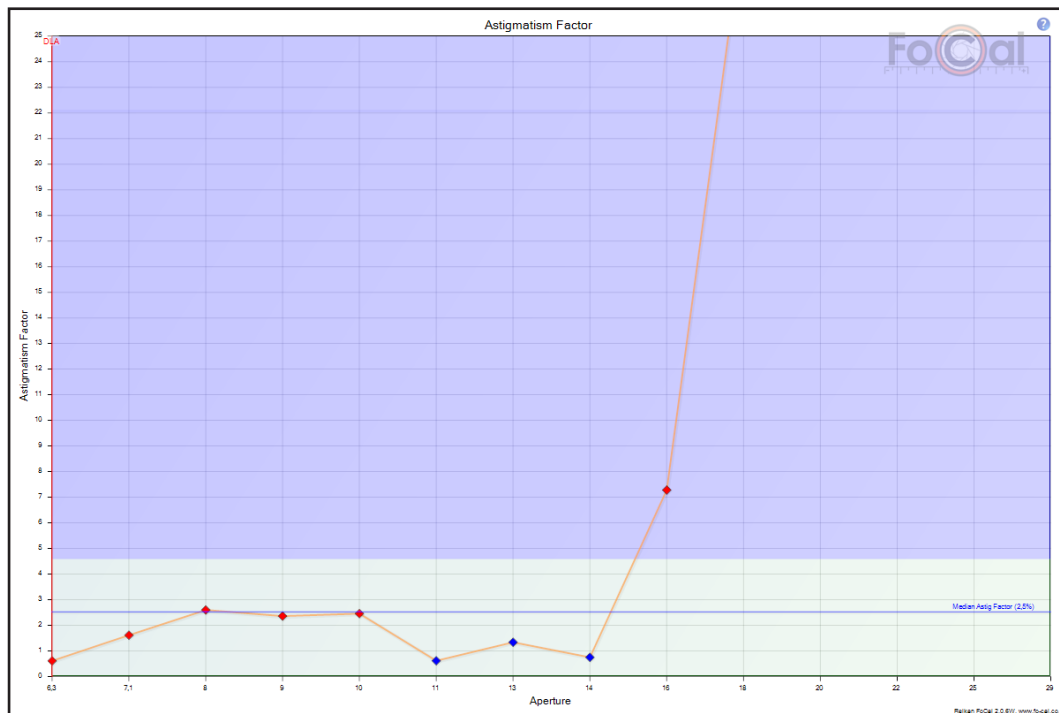


## Astigmatism Factor

The Astigmatism Factor chart shows the image quality ratio between the horizontal and vertical analysis directions. If this value varies by more than 10% across the range, or the average value is more than  $\pm 5\%$  then your lens may be suffering from some decentering or lens element alignment issues.

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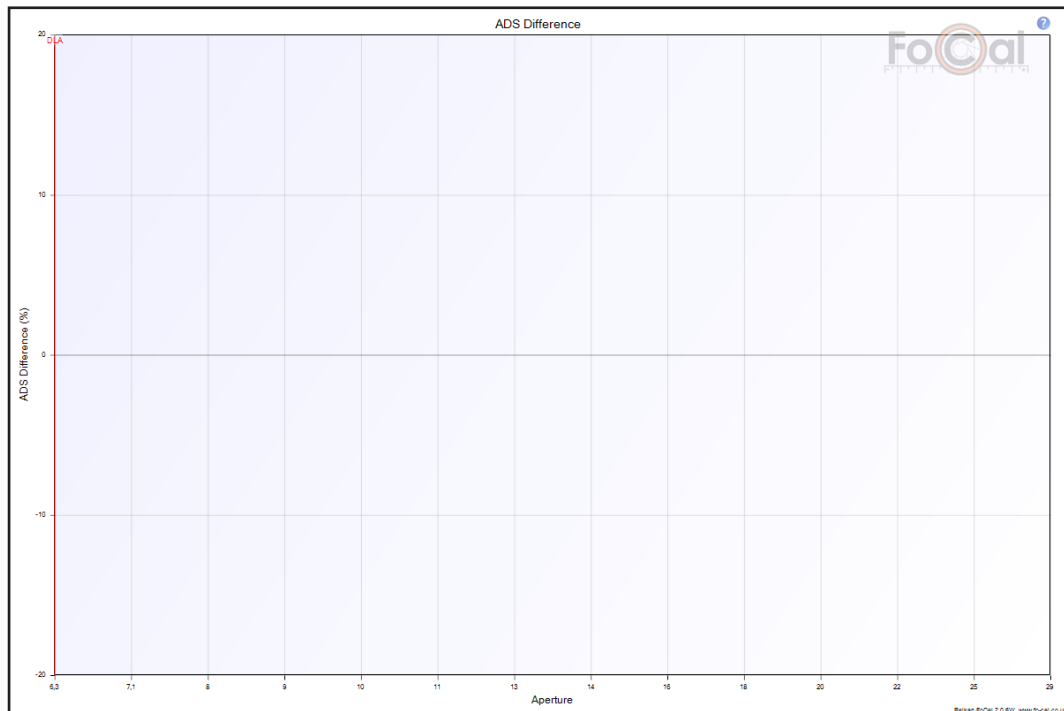
## ADS Difference

The ADS Difference chart shows the point-by-point difference between the data captured from your camera and lens and the processed data from many FoCal users.

The blue line indicates the difference between your data and the median value of other users, while the green area indicates the 25th and 75th percentile data from other users. The median of all the points is shown as a blue horizontal marker line.

Where possible, the chart will include a red vertical marker at the Diffraction Limited Aperture (DLA) to indicate where diffraction will start to affect the sharpness of the image.

A large variation or a median variation significantly away from the zero may indicate that your lens is not performing in the same way as a typical lens.



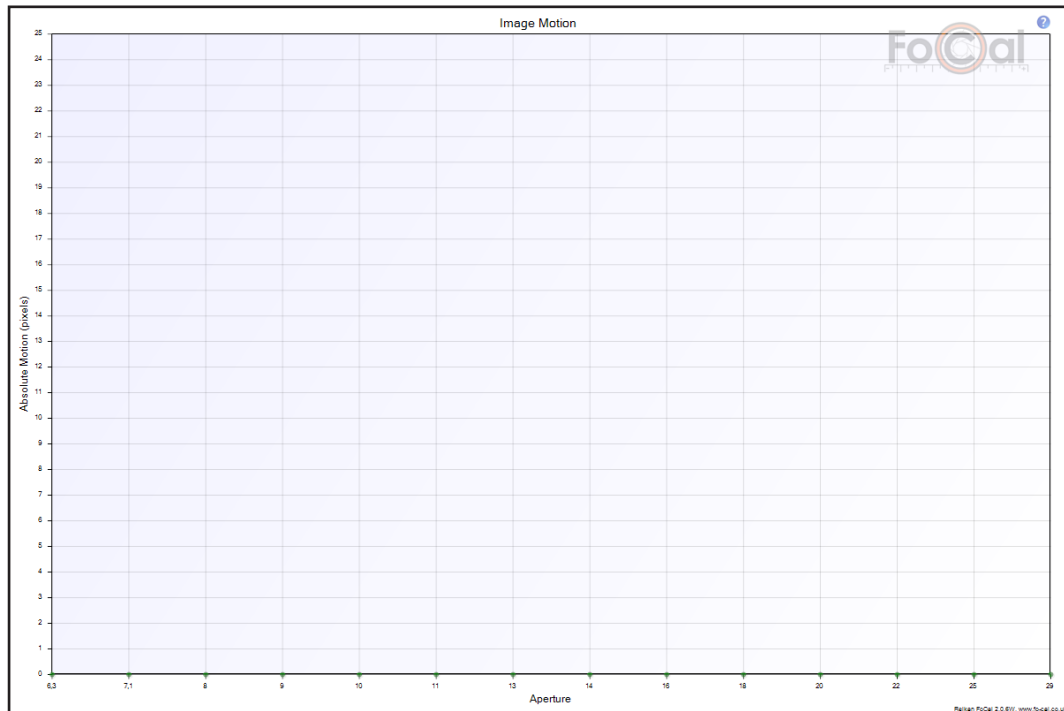
## Image Motion

As changes are made inside a lens (e.g. focussing or aperture change), the image projected onto the sensor can move slightly. The Image Motion chart shows the absolute number of pixels moved for each image compared to the first image captured.

Typically, the Image Motion should be significantly less than 10 pixels, and a repeatable higher value could indicate misaligned lens optics, camera movement or vibration during the test or other environmental or lens issues.

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## Corner Brightness Profile

The Corner Brightness Profile chart shows the relative change in brightness of the corners of the full-frame image through the test. The results use the centre of the image to compensate for common exposure differences. If the corners of the frame are unchanging and not completely dark, this chart can give an idea of the vignetting produced by this lens.

Be aware that a lot of cameras have in-camera lens corrections which are applied to JPEG images, so for a true indication of potential vignetting you should run the test with raw images.

