

# Reikan FoCal Aperture Sharpness Test Report

for Canon EOS 6D (serial number 23023003454) with EF35mm f/1.4L USM

Test run on: 08/03/2017 13:59:19 with FoCal 2.4.5.3284M

Report created on: 08/03/2017 14:04:22 with FoCal 2.4.5M

## Overview

### Test Information

Property	Description
Data Creation FoCal Version	2.4.5.3284M
Data Analysis FoCal Version	2.4.5M
OS Version	OS X 10.11.6
Source Mode	Camera Mode
Image Capture Mode	JPEG
Analysis Method	Multi-ESH (RGB)
Camera Model	Canon EOS 6D
Firmware Version	1.1.7
Serial Number	23023003454
Camera Temperature	20C
Test Colour Temp	5200K
Lens	EF35mm f/1.4L USM
Focal Length	35mm
Termination Reason	Success
Test ISO	100
Distance to Target	2m
Diffraction Limited Aperture	f/10.5
Worst Aperture	f/22.0
Optimal Aperture	f/4.0

## Test Details

### Aperture Sharpness Profile

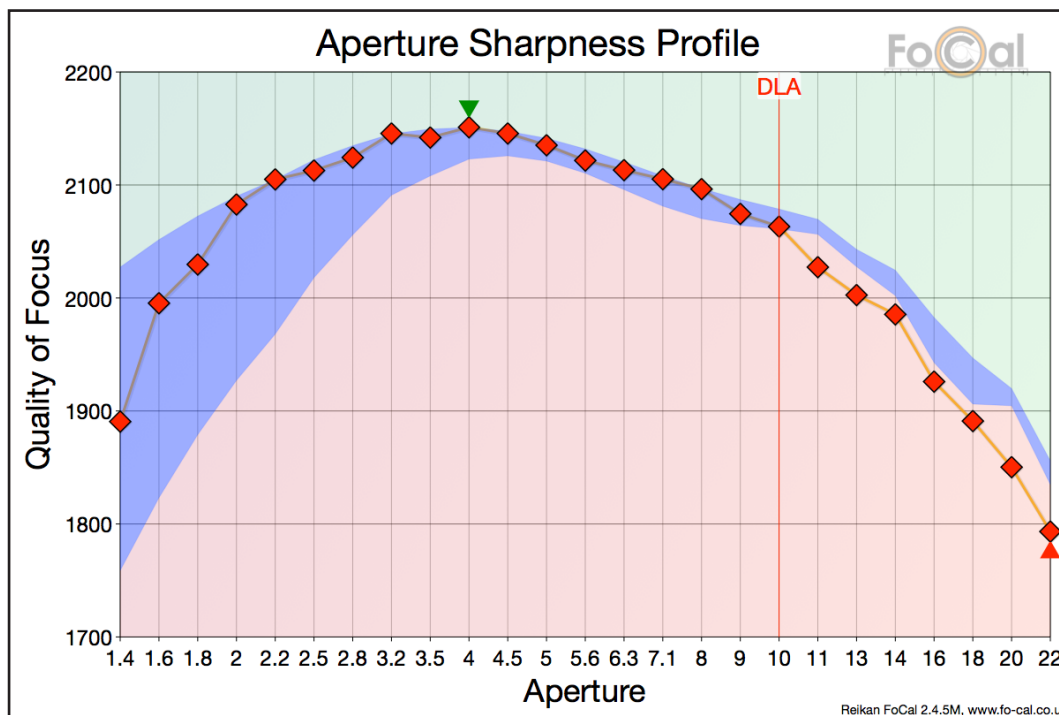
The Aperture Sharpness Profile shows how the image sharpness changes across the tested aperture range.

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	1.1% ( $\pm 1.1\%$ )
Spectral Power Range	R: 34% ( $\pm 0.1\%$ ) G: 34% ( $\pm 0.1\%$ ) B: 31% ( $\pm 0.2\%$ )
Red:	
Red Optimal Aperture	f/4.0
Red Peak QoF	2138.2
Green:	
Green Optimal Aperture	f/2.0
Green Peak QoF	2113.8
Blue:	
Blue Optimal Aperture	f/3.2
Blue Peak QoF	2163.4

## Aperture f/22

Aperture	f/22.0
Shutter Speed	3.2s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	1793.3
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	1762.3
Green Quality	1787.6
Blue Quality	1839.4
HVR	-0.4%

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



## Aperture f/20

Aperture	f/20.0
Shutter Speed	2.5s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	1850.3
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	1823.7
Green Quality	1854.3
Blue Quality	1869.5
HVR	-0.2%

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



## Aperture f/18

Aperture	f/18.0
Shutter Speed	2s
EV	7.3
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	1891.1
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	1862.4
Green Quality	1895.2
Blue Quality	1916.9
HVR	-0.5%

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



## Aperture f/16

Aperture	f/16.0
Shutter Speed	1.6s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	1926.0
Optimised	No
Ignored	No
Spectral Power (R/G/B)	35/35/31
Red Quality	1897.4
Green Quality	1920.9
Blue Quality	1960.1
HVR	0.1%

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



## Aperture f/14

Aperture	f/14.0
Shutter Speed	1.3s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	1985.5
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	1967.3
Green Quality	1987.4
Blue Quality	2005.7
HVR	0.2%

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



## Aperture f/13

Aperture	f/13.0
Shutter Speed	1s
EV	7.3
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2002.6
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	1977.3
Green Quality	1989.4
Blue Quality	2049.0
HVR	0.2%

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





## Aperture f/11

Aperture	f/11.0
Shutter Speed	0.8s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2027.3
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	1981.4
Green Quality	2018.4
Blue Quality	2088.7
HVR	0.3%

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



## Aperture f/10

Aperture	f/10.0
Shutter Speed	0.6s
EV	7.3
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2063.2
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	2043.2
Green Quality	2048.8
Blue Quality	2104.6
HVR	0.2%

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



## Aperture f/9

Aperture	f/9.0
Shutter Speed	1/2s
EV	7.3
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2074.5
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	2040.5
Green Quality	2061.5
Blue Quality	2131.2
HVR	0.0%

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



## Aperture f/8

Aperture	f/8.0
Shutter Speed	0.4s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2096.4
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	2062.0
Green Quality	2079.6
Blue Quality	2143.3
HVR	0.3%

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



## Aperture f/7.1

Aperture	f/7.1
Shutter Speed	0.3s
EV	7.3
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2105.2
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	2081.5
Green Quality	2094.0
Blue Quality	2146.8
HVR	0.4%

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



## Aperture f/6.3

Aperture	f/6.3
Shutter Speed	1/4s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2113.2
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	2079.3
Green Quality	2099.3
Blue Quality	2166.4
HVR	0.2%

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



## Aperture f/5.6

Aperture	f/5.6
Shutter Speed	1/5s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2121.7
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	2098.2
Green Quality	2114.1
Blue Quality	2160.2
HVR	-0.1%

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



## Aperture f/5

Aperture	f/5.0
Shutter Speed	1/6s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2135.2
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	2110.4
Green Quality	2142.3
Blue Quality	2155.3
HVR	0.6%

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





## Aperture f/4.5

Aperture	f/4.5
Shutter Speed	1/8s
EV	7.3
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2145.6
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	2115.5
Green Quality	2150.2
Blue Quality	2174.2
HVR	0.1%

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



## Aperture f/4

Aperture	f/4.0
Shutter Speed	1/10s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2151.1
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/35/31
Red Quality	2138.2
Green Quality	2161.8
Blue Quality	2161.5
HVR	0.1%

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



## Aperture f/3.5

Aperture	f/3.5
Shutter Speed	1/13s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2142.0
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/34/31
Red Quality	2117.2
Green Quality	2167.6
Blue Quality	2146.8
HVR	0.5%

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



## Aperture f/3.2

Aperture	f/3.2
Shutter Speed	1/15s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2145.6
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/34/31
Red Quality	2118.7
Green Quality	2159.6
Blue Quality	2163.4
HVR	0.2%

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



## Aperture f/2.8

Aperture	f/2.8
Shutter Speed	1/20s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2124.3
Optimised	No
Ignored	No
Spectral Power (R/G/B)	34/34/31
Red Quality	2086.2
Green Quality	2159.8
Blue Quality	2123.4
HVR	0.6%

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



## Aperture f/2.5

Aperture	f/2.5
Shutter Speed	1/25s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2112.8
Optimised	No
Ignored	No
Spectral Power (R/G/B)	35/34/31
Red Quality	2091.7
Green Quality	2140.0
Blue Quality	2106.2
HVR	1.5%

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



## Aperture f/2.2

Aperture	f/2.2
Shutter Speed	1/30s
EV	7.1
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2105.0
Optimised	No
Ignored	No
Spectral Power (R/G/B)	35/34/31
Red Quality	2082.2
Green Quality	2128.8
Blue Quality	2107.2
HVR	1.6%

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



## Aperture f/2

Aperture	f/2.0
Shutter Speed	1/40s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2082.8
Optimised	No
Ignored	No
Spectral Power (R/G/B)	35/34/31
Red Quality	2058.9
Green Quality	2113.8
Blue Quality	2070.5
HVR	1.9%

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





## Aperture f/1.8

Aperture	f/1.8
Shutter Speed	1/50s
EV	7.3
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	2029.7
Optimised	No
Ignored	No
Spectral Power (R/G/B)	35/35/31
Red Quality	1994.6
Green Quality	2082.8
Blue Quality	2015.9
HVR	2.2%

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



## Aperture f/1.6

Aperture	f/1.6
Shutter Speed	1/60s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	1995.4
Optimised	No
Ignored	No
Spectral Power (R/G/B)	35/34/31
Red Quality	1966.8
Green Quality	2051.7
Blue Quality	1959.4
HVR	1.8%

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



## Aperture f/1.4

Aperture	f/1.4
Shutter Speed	1/80s
EV	7.2
Colour Temperature	5200K
Camera Temperature	20C
Quality Measure	1890.6
Optimised	No
Ignored	No
Spectral Power (R/G/B)	35/34/31
Red Quality	1860.6
Green Quality	1938.7
Blue Quality	1870.9
HVR	1.0%

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



## Aperture Sharpness Profile

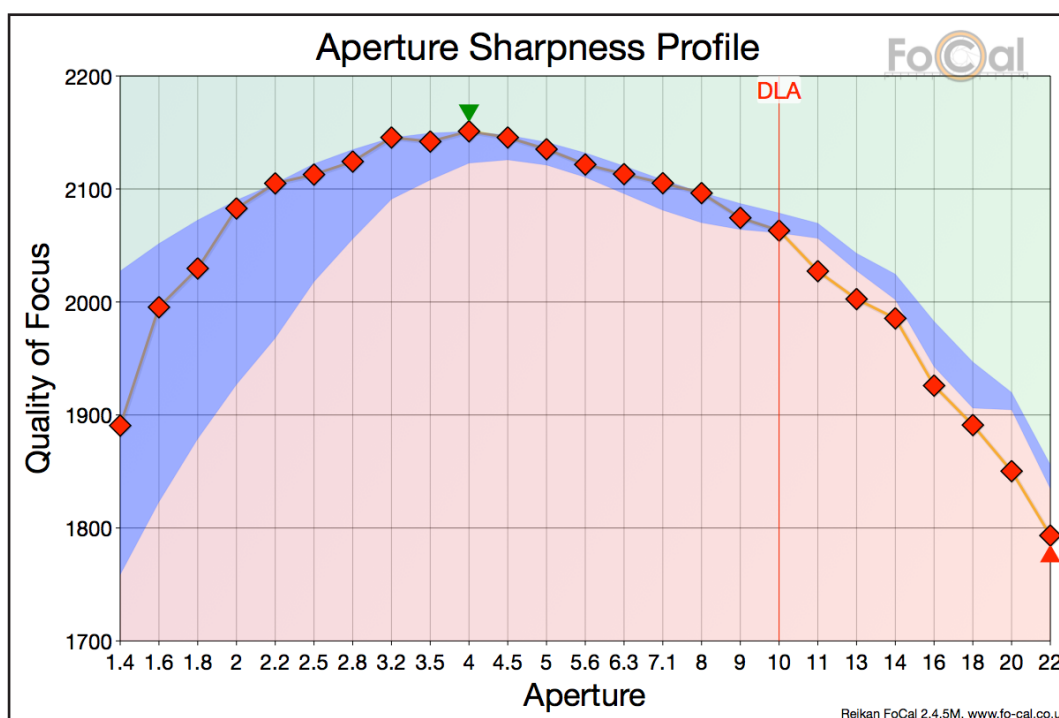
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- Green: above average performance.

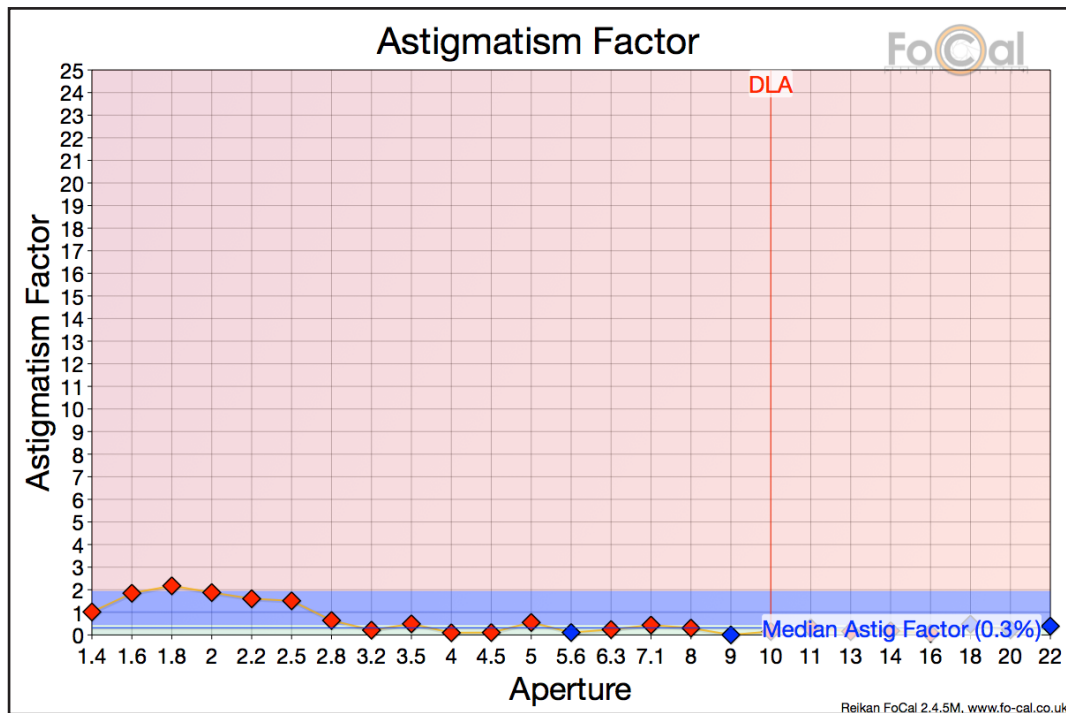


## Astigmatism Factor

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 +/- 5% then your lens may be suffering from some decentering or lens element alignment issues.

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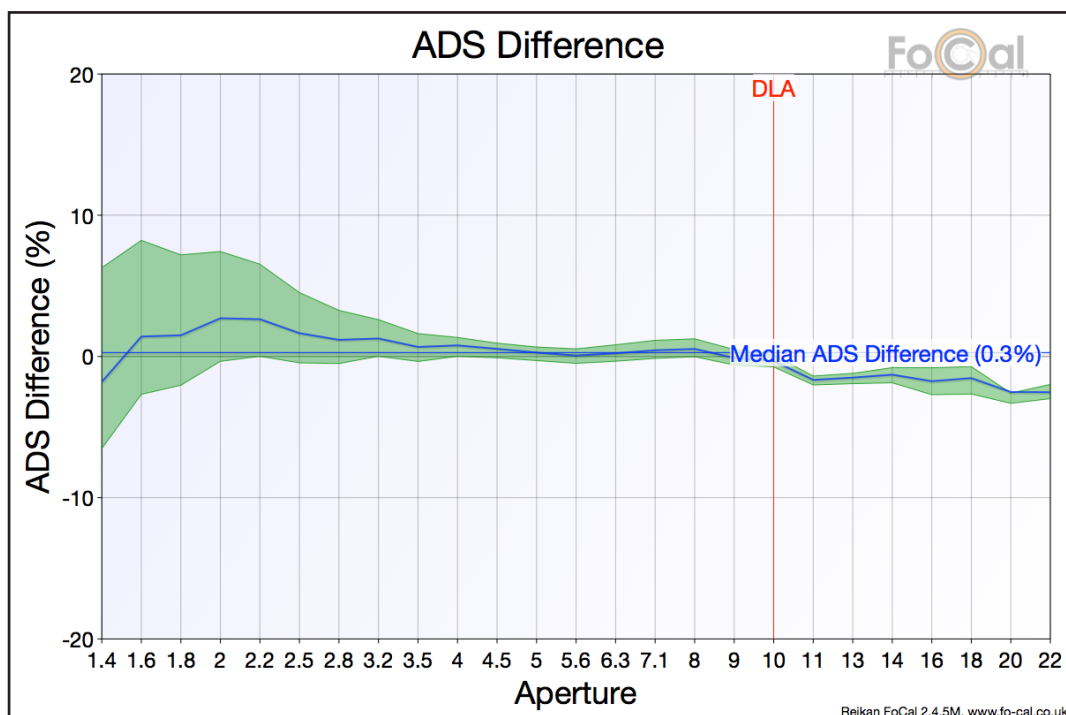
## ADS Difference

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.



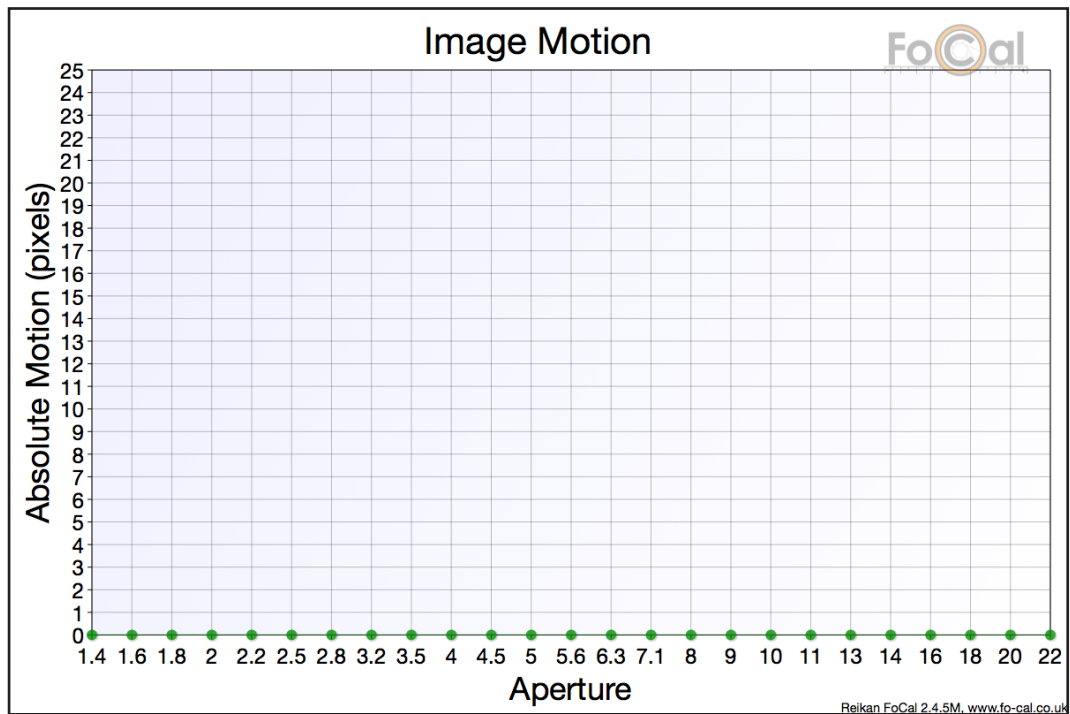
## Image Motion

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.

