

## Reikan FoCal Fully Automatic Test Report

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

Test run on: 16/01/2016 22:01:55 with FoCal 2.0.6.2416W

Report created on: 16/01/2016 22:37:22 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)	13345
Test Colour Temp	5200 K
Lens	150-600mm f/5-6.3
Focal Length	150,0mm
Termination Reason	Success
Test Aperture	f/5,0
Test ISO	100
Defocus Method	Defocus away from the camera
Distance to Target	2,8m to 2,8m
Starting AF Fine Tune	0
AF Consistency Constraint	6%
Shot Count	20
Calculated AF Fine Tune	+4
Result Confidence	Good
Consistency of Focus	98,6%

#### User Notes

Sigma 150-600 C  
150mm 2.8m

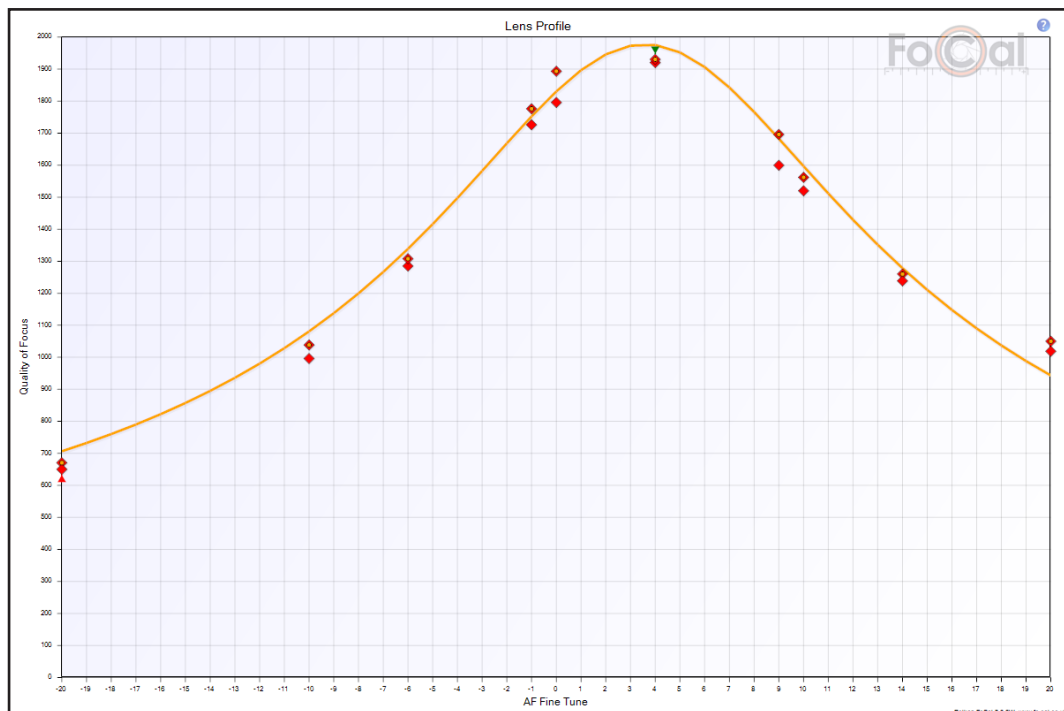
## Test Details

### Lens Profile Chart

The Lens Profile chart shows how the image quality changes as the AF Microadjustment changes. The orange line represents how the sharpness is expected to change through all values, so the highest point on this line corresponds to the best predicted AF Microadjustment value.

Each point on the chart represents the result of a single shot:

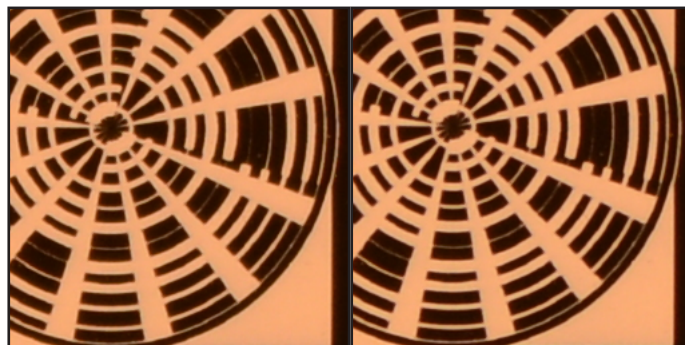
- Red marker: unoptimised sharpness
- Green marker: optimised sharpness
- Orange circle within marker - this is the representative sharpness for this AFMA
- Orange curve - the predicted sharpness across the AFMA range
- Green triangle - highest value
- Red triangle - lowest value



### Before/After Comparison

The images show the before and after shots.

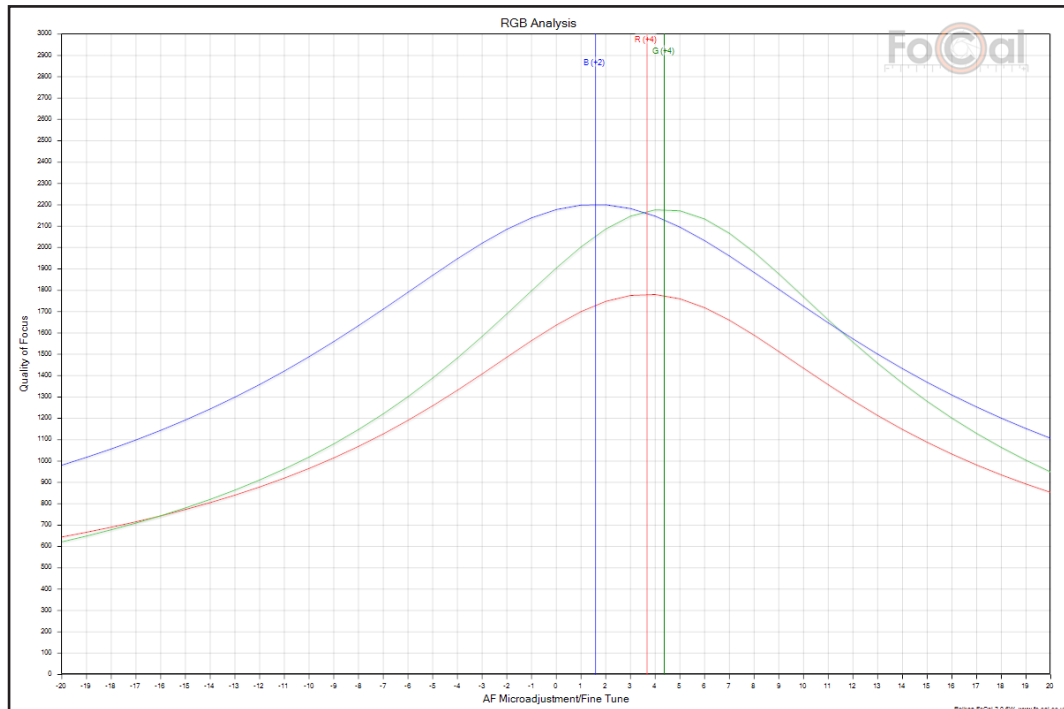
	AF Fine Tune
Before	0
After	+4



## RGB Analysis Chart

The RGB Analysis chart shows the predicted sharpness across the AF Microadjustment range for red, green and blue light. The vertical lines indicate the predicted best AF Microadjustment for each of the 3 colours.

It is important to note that when run in JPEG mode, there is some contamination between the colours so the result is not truly representative.



## RGB Analysis Details

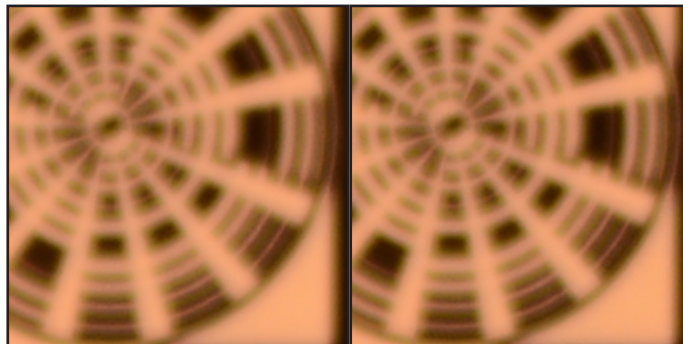
Property	Description
Red:	
Red Result	+4
Red Confidence	Good
Green:	
Green Result	+4
Green Confidence	Good
Blue:	
Blue Result	+2
Blue Confidence	Good

## AF Fine Tune: -20

The following table shows information obtained for this test point:

	Shot 1	Shot 2
Aperture	f/5,0	<b>f/5,0</b>
Shutter Speed	1/25s	<b>1/25s</b>
EV	9,2	<b>9,2</b>
Colour Temperature	Unknown	<b>Unknown</b>
Camera Temperature	Unknown	<b>Unknown</b>
Quality Measure	650,3	<b>670,8</b>
Optimised	No	<b>No</b>
Ignored	No	<b>No</b>
Spectral Power (R/G/B)	48/32/20	<b>48/32/20</b>
Red Quality	599,9	<b>614,8</b>
Green Quality	615,7	<b>634,4</b>
Blue Quality	819,2	<b>851,2</b>
HVR	1,1%	<b>1,5%</b>

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



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

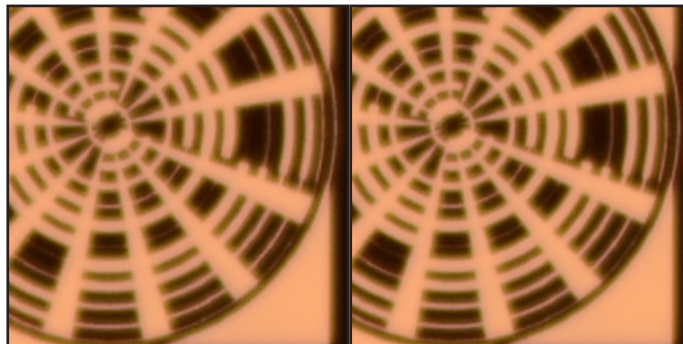


## AF Fine Tune: -10

The following table shows information obtained for this test point:

	Shot 1	Shot 2
Aperture	f/5,0	<b>f/5,0</b>
Shutter Speed	1/25s	<b>1/25s</b>
EV	9,2	<b>9,2</b>
Colour Temperature	Unknown	<b>Unknown</b>
Camera Temperature	Unknown	<b>Unknown</b>
Quality Measure	996,2	<b>1038,5</b>
Optimised	No	<b>No</b>
Ignored	No	<b>No</b>
Spectral Power (R/G/B)	49/32/19	<b>49/32/19</b>
Red Quality	892,0	<b>926,4</b>
Green Quality	897,1	<b>941,9</b>
Blue Quality	1401,4	<b>1466,2</b>
HVR	3,5%	<b>4,2%</b>

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



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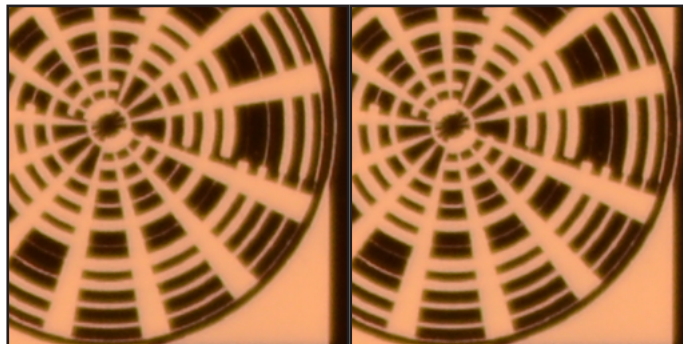


## AF Fine Tune: -6

The following table shows information obtained for this test point:

	Shot 1	Shot 2
Aperture	f/5,0	<b>f/5,0</b>
Shutter Speed	1/25s	<b>1/25s</b>
EV	9,2	<b>9,2</b>
Colour Temperature	Unknown	<b>Unknown</b>
Camera Temperature	Unknown	<b>Unknown</b>
Quality Measure	1285,2	<b>1307,9</b>
Optimised	No	<b>No</b>
Ignored	No	<b>No</b>
Spectral Power (R/G/B)	49/32/19	<b>49/32/19</b>
Red Quality	1135,7	<b>1159,2</b>
Green Quality	1194,5	<b>1213,6</b>
Blue Quality	1817,0	<b>1844,3</b>
HVR	4,4%	<b>4,4%</b>

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



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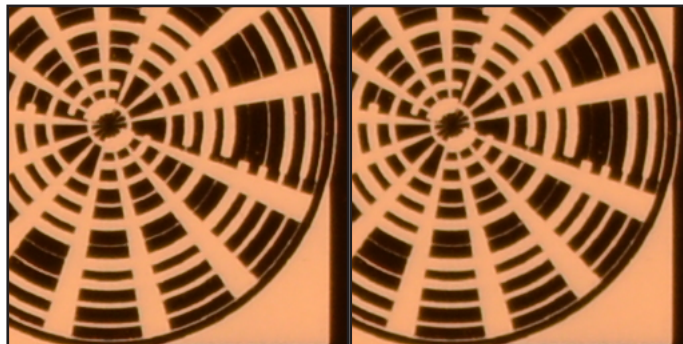


## AF Fine Tune: -1

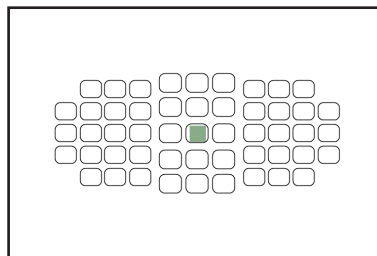
The following table shows information obtained for this test point:

	Shot 1	Shot 2
Aperture	f/5,0	f/5,0
Shutter Speed	1/25s	1/25s
EV	9,2	9,2
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	1776,1	1726,2
Optimised	No	No
Ignored	No	No
Spectral Power (R/G/B)	49/32/20	49/32/20
Red Quality	1587,8	1533,2
Green Quality	1830,8	1770,1
Blue Quality	2172,3	2142,7
HVR	2,5%	3,0%

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



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

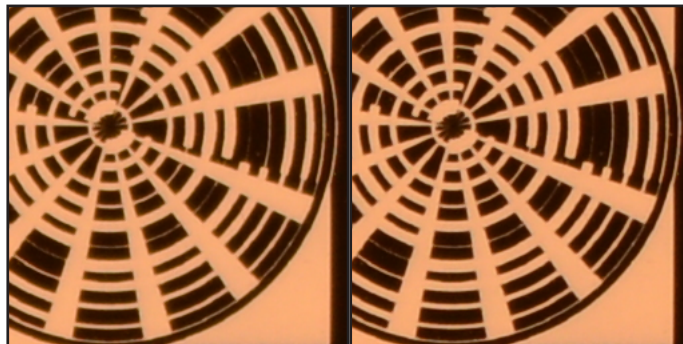


## AF Fine Tune: 0

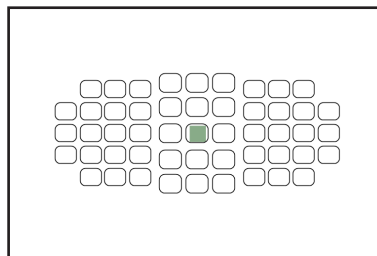
The following table shows information obtained for this test point:

	Shot 1	Shot 2
Aperture	f/5,0	<b>f/5,0</b>
Shutter Speed	1/25s	<b>1/25s</b>
EV	9,2	<b>9,2</b>
Colour Temperature	Unknown	<b>Unknown</b>
Camera Temperature	Unknown	<b>Unknown</b>
Quality Measure	1795,8	<b>1893,3</b>
Optimised	No	<b>No</b>
Ignored	No	<b>No</b>
Spectral Power (R/G/B)	49/32/20	<b>49/31/20</b>
Red Quality	1606,8	<b>1690,9</b>
Green Quality	1843,8	<b>2023,8</b>
Blue Quality	2194,1	<b>2179,3</b>
HVR	2,4%	<b>1,2%</b>

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



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



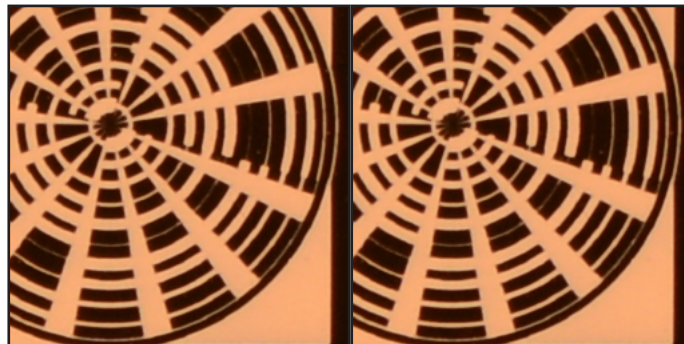


## AF Fine Tune: 4

The following table shows information obtained for this test point:

	Shot 1	Shot 2
Aperture	f/5,0	f/5,0
Shutter Speed	1/25s	1/25s
EV	9,2	9,2
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	1930,3	1920,4
Optimised	No	No
Ignored	No	No
Spectral Power (R/G/B)	49/31/20	49/31/20
Red Quality	1741,5	1741,3
Green Quality	2099,4	2087,0
Blue Quality	2126,1	2096,0
HVR	-0,2%	0,2%

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



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

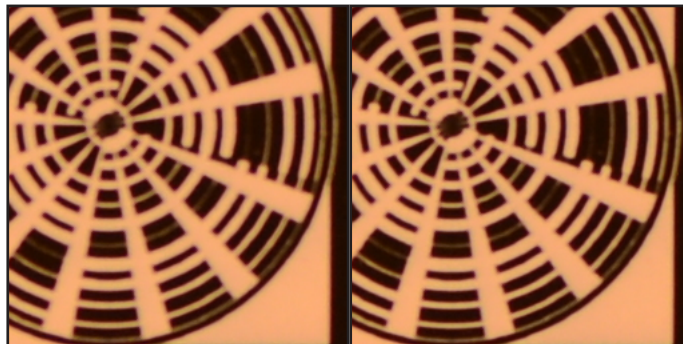


## AF Fine Tune: 9

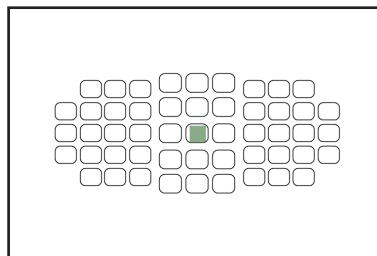
The following table shows information obtained for this test point:

	Shot 1	Shot 2
Aperture	f/5,0	<b>f/5,0</b>
Shutter Speed	1/25s	<b>1/25s</b>
EV	9,2	<b>9,2</b>
Colour Temperature	Unknown	<b>Unknown</b>
Camera Temperature	Unknown	<b>Unknown</b>
Quality Measure	1599,6	<b>1695,9</b>
Optimised	No	<b>No</b>
Ignored	No	<b>No</b>
Spectral Power (R/G/B)	49/31/21	<b>48/31/21</b>
Red Quality	1442,0	<b>1522,4</b>
Green Quality	1800,3	<b>1900,9</b>
Blue Quality	1675,3	<b>1792,2</b>
HVR	-5,7%	<b>-3,5%</b>

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



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

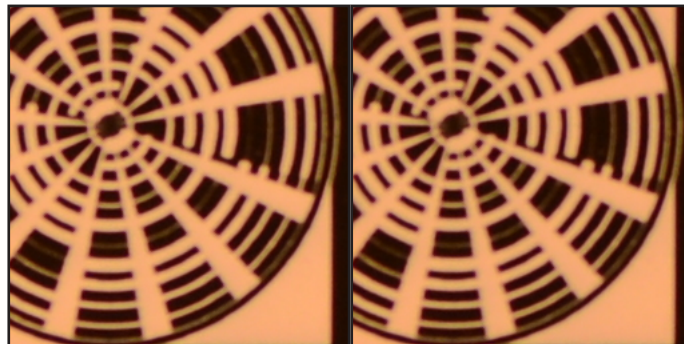


## AF Fine Tune: 10

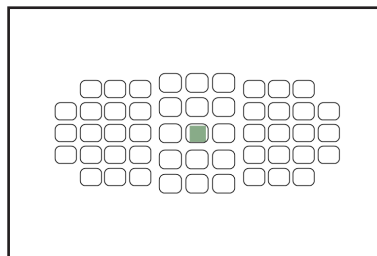
The following table shows information obtained for this test point:

	Shot 1	Shot 2
Aperture	f/5,0	f/5,0
Shutter Speed	1/25s	1/25s
EV	9,2	9,2
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	1562,0	1519,8
Optimised	No	No
Ignored	No	No
Spectral Power (R/G/B)	49/31/20	49/31/20
Red Quality	1408,9	1364,0
Green Quality	1743,6	1718,9
Blue Quality	1647,4	1593,5
HVR	-6,6%	-6,6%

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



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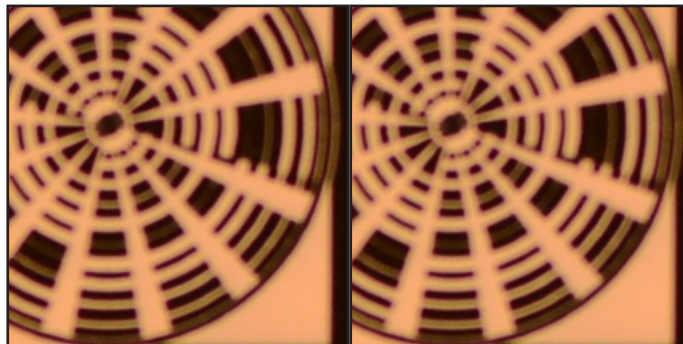


## AF Fine Tune: 14

The following table shows information obtained for this test point:

	Shot 1	Shot 2
Aperture	f/5,0	f/5,0
Shutter Speed	1/25s	1/25s
EV	9,2	9,2
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	1260,2	1238,6
Optimised	No	No
Ignored	No	No
Spectral Power (R/G/B)	49/31/20	48/31/21
Red Quality	1130,2	1112,9
Green Quality	1346,8	1313,9
Blue Quality	1428,7	1424,2
HVR	-6,7%	-6,8%

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



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

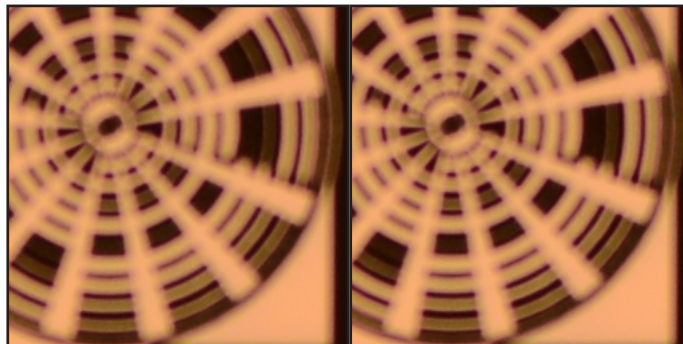


## AF Fine Tune: 20

The following table shows information obtained for this test point:

	Shot 1	Shot 2
Aperture	f/5,0	<b>f/5,0</b>
Shutter Speed	1/25s	<b>1/25s</b>
EV	9,2	<b>9,2</b>
Colour Temperature	Unknown	<b>Unknown</b>
Camera Temperature	Unknown	<b>Unknown</b>
Quality Measure	1019,1	<b>1050,3</b>
Optimised	No	<b>No</b>
Ignored	No	<b>No</b>
Spectral Power (R/G/B)	48/31/21	<b>48/31/21</b>
Red Quality	929,4	<b>949,5</b>
Green Quality	1017,5	<b>1045,9</b>
Blue Quality	1236,7	<b>1286,0</b>
HVR	-2,9%	<b>-4,1%</b>

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



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

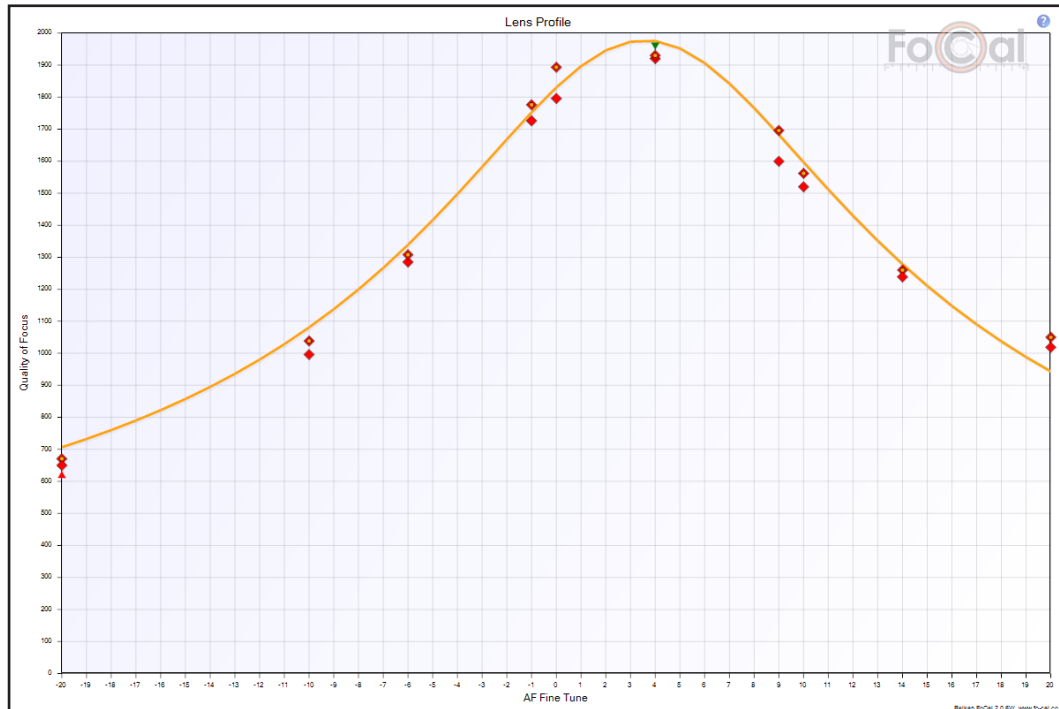


## Lens Profile

The Lens Profile chart shows how the image quality changes as the AF Microadjustment changes. The orange line represents how the sharpness is expected to change through all values, so the highest point on this line corresponds to the best predicted AF Microadjustment value.

Each point on the chart represents the result of a single shot:

- Red marker: unoptimised sharpness
- Green marker: optimised sharpness
- Orange circle within marker - this is the representative sharpness for this AFMA
- Orange curve - the predicted sharpness across the AFMA range
- Green triangle - highest value
- Red triangle - lowest value



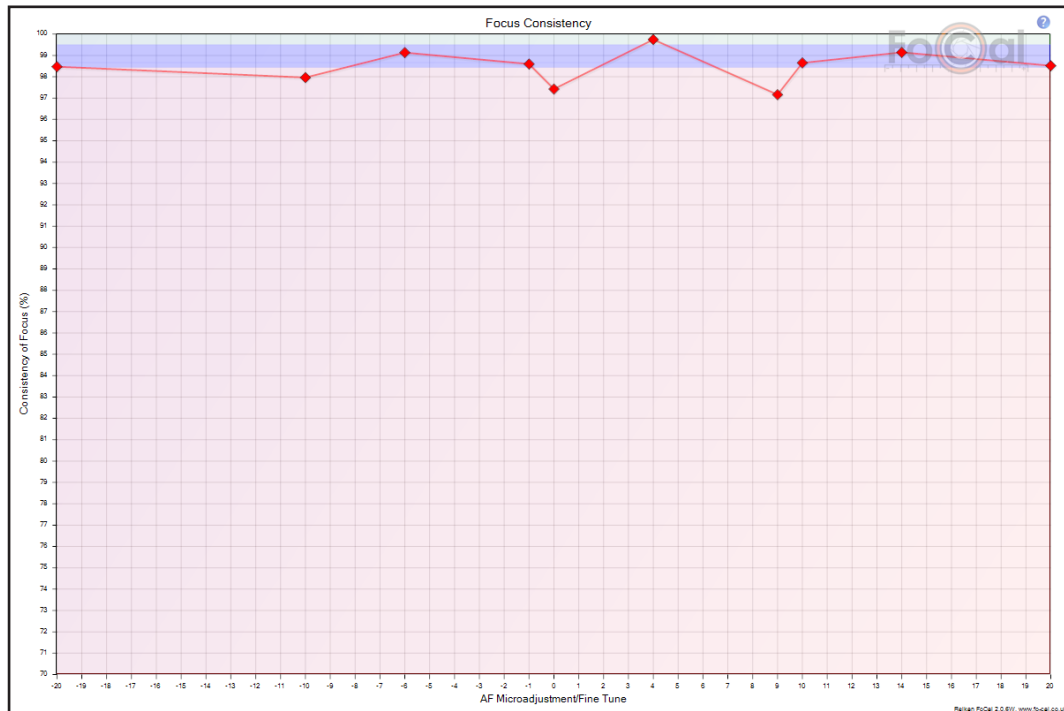
## Focus Consistency

The Focus Consistency chart shows the focus variability at each tested point where available. This is calculated from the spread in sharpness values from shots at a single AF Microadjustment value.

A value of 100% indicated perfect repeatability. In normal use, a values above 97% indicate acceptable autofocus repeatability, and above 99% indicate very good repeatability. Note that the consistency of focus measurement is less relevant far from the best AF Microadjustment value.

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.

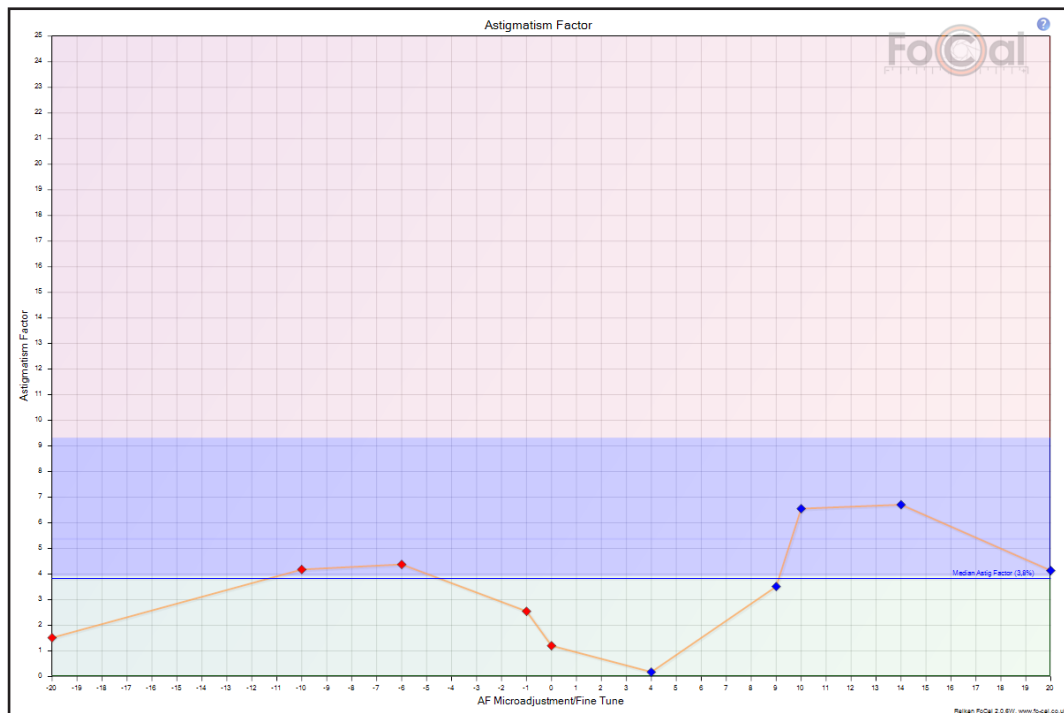


## Astigmatism Factor

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.

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.

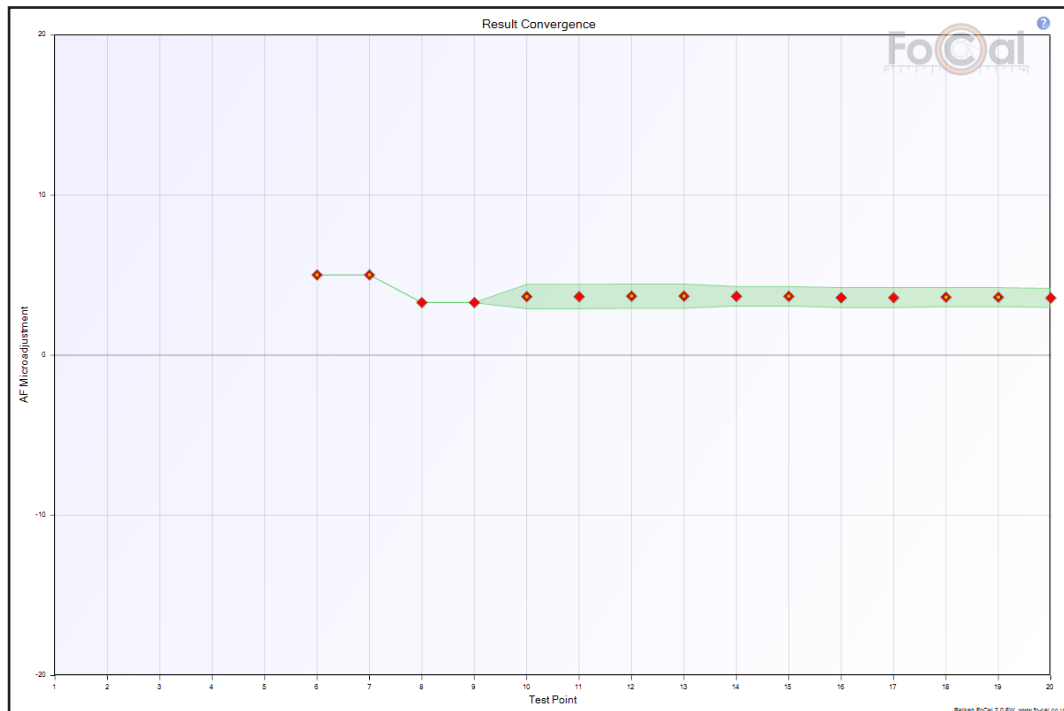




## Result Convergence

The Result Convergence chart indicates how FoCal determined the best AF Microadjustment value as more points were added to the data. There is no result for the first few points, then the result should stabilise as more points are added towards the end of the test (the right side of the chart).

The size of the green area gives an indication of the confidence in the result at that point. A large green area spreading across many AF Microadjustment values indicates poor data that will not give an acceptable final result.



## 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.

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.

