

## Reikan FoCal Fully Automatic Test Report

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

Test run on: 06/02/2016 15:42:34 with FoCal 2.0.6.2416W

Report created on: 06/02/2016 15:55:48 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)	18005
Test Colour Temp	5200 K
Lens	150-600mm f/5-6.3
Focal Length	400,0mm
Termination Reason	Success
Test Aperture	f/8,0
Test ISO	100
Defocus Method	Defocus away from the camera
Distance to Target	53,1m
Starting AF Fine Tune	-20
AF Consistency Constraint	2%
Shot Count	45
Calculated AF Fine Tune	-6
Result Confidence	Poor

#### User Notes

Depuis le salon, pied Q1000, 4 sections + 20cm de colonne, tête pendulaire BK-45, lesté avec sac

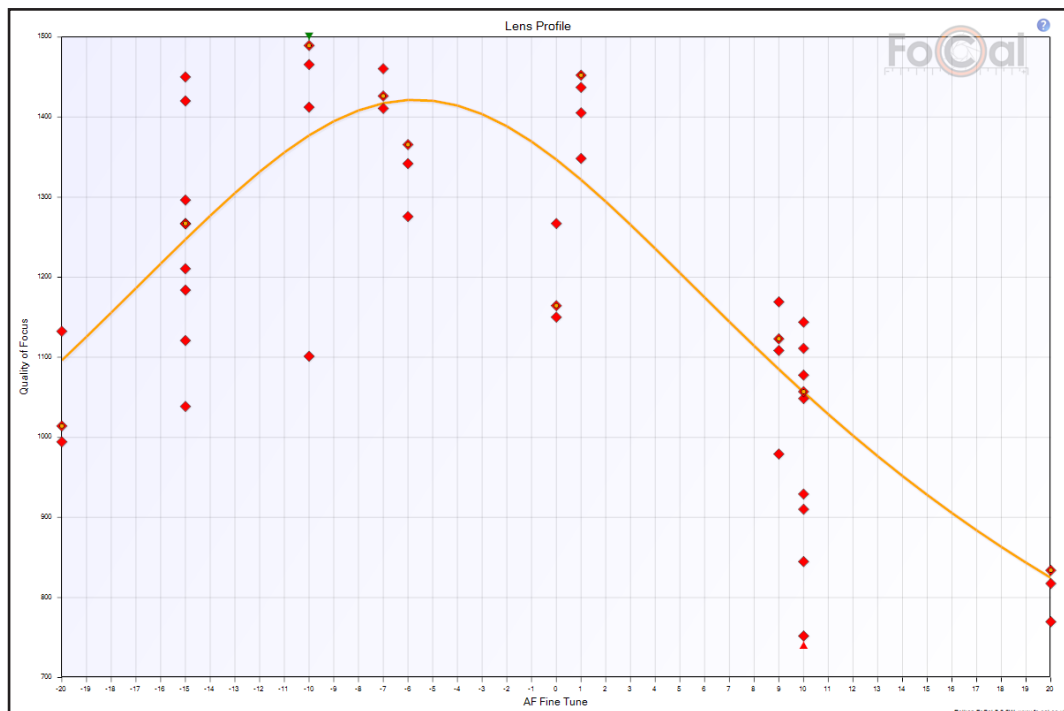
## Test Details

### 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.

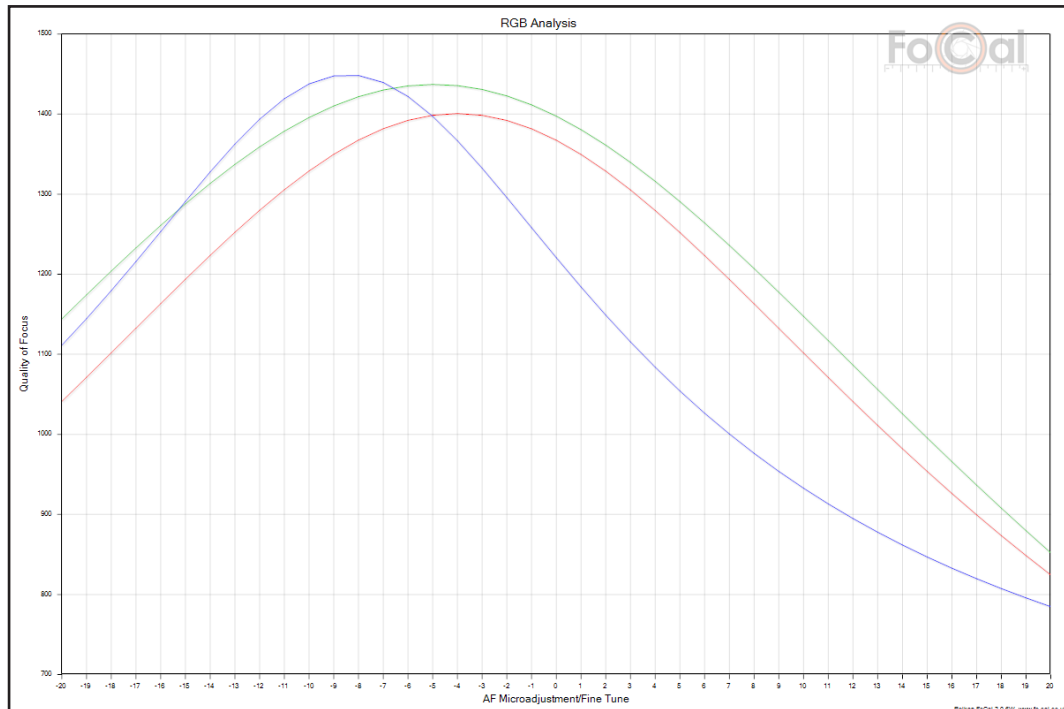
	AF Fine Tune
Before	-20
After	-6



## 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	Poor
Green:	
Green Result	-5
Green Confidence	Poor
Blue:	
Blue Result	-8
Blue Confidence	Poor

## AF Fine Tune: -20

The following table shows information obtained for this test point:

	Shot 1	Shot 2	Shot 3
Aperture	f/8,0	f/8,0	<b>f/8,0</b>
Shutter Speed	1/125s	1/125s	<b>1/100s</b>
EV	12,9	12,9	<b>12,6</b>
Colour Temperature	Unknown	Unknown	<b>Unknown</b>
Camera Temperature	Unknown	Unknown	<b>Unknown</b>
Quality Measure	994,5	1132,5	<b>1014,3</b>
Optimised	No	No	<b>No</b>
Ignored	No	No	<b>No</b>
Spectral Power (R/G/B)	37/34/29	37/34/29	<b>36/34/30</b>
Red Quality	902,3	1011,1	<b>971,2</b>
Green Quality	1009,4	1155,6	<b>1099,4</b>
Blue Quality	1104,5	1260,8	<b>1003,0</b>
HVR	-1,7%	-11,1%	<b>-6,4%</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:

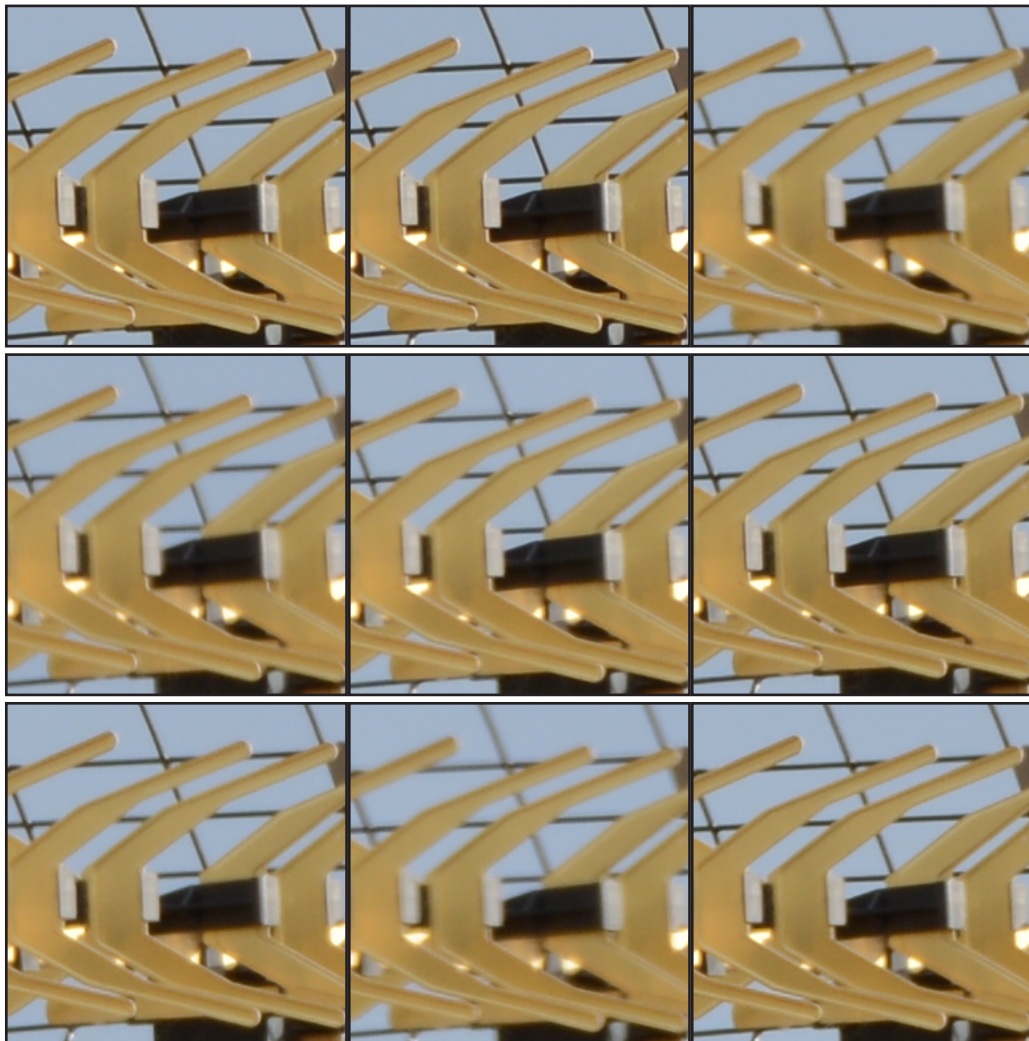


## AF Fine Tune: -15

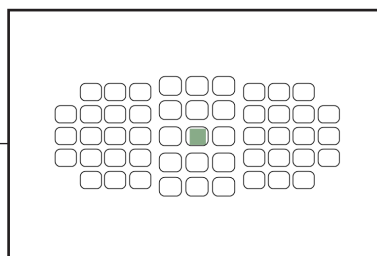
The following table shows information obtained for this test point:

	Shot 1	Shot 2	Shot 3	Shot 4	Shot 5	Shot 6
Aperture	f/8,0	f/8,0	f/8,0	f/8,0	f/8,0	f/8,0
Shutter Speed	1/125s	1/125s	1/125s	1/125s	1/125s	1/125s
EV	12,9	12,9	12,9	12,9	12,9	12,9
Colour Temperature	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Camera Temperature	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Quality Measure	1420,3	1450,2	1184,0	1121,0	1210,7	1296,4
Optimised	No	No	No	No	No	No
Ignored	No	No	No	No	No	No
Spectral Power (R/G/B)	36/34/29	36/34/29	36/34/29	36/34/30	36/34/30	36/34/29
Red Quality	1355,7	1404,8	1109,4	1060,6	1158,3	1205,3
Green Quality	1435,4	1456,7	1169,0	1110,0	1223,0	1306,6
Blue Quality	1513,2	1497,7	1301,6	1196,0	1258,6	1398,1
HVR	-5,7%	-2,3%	-13,3%	-14,0%	-11,8%	-8,2%

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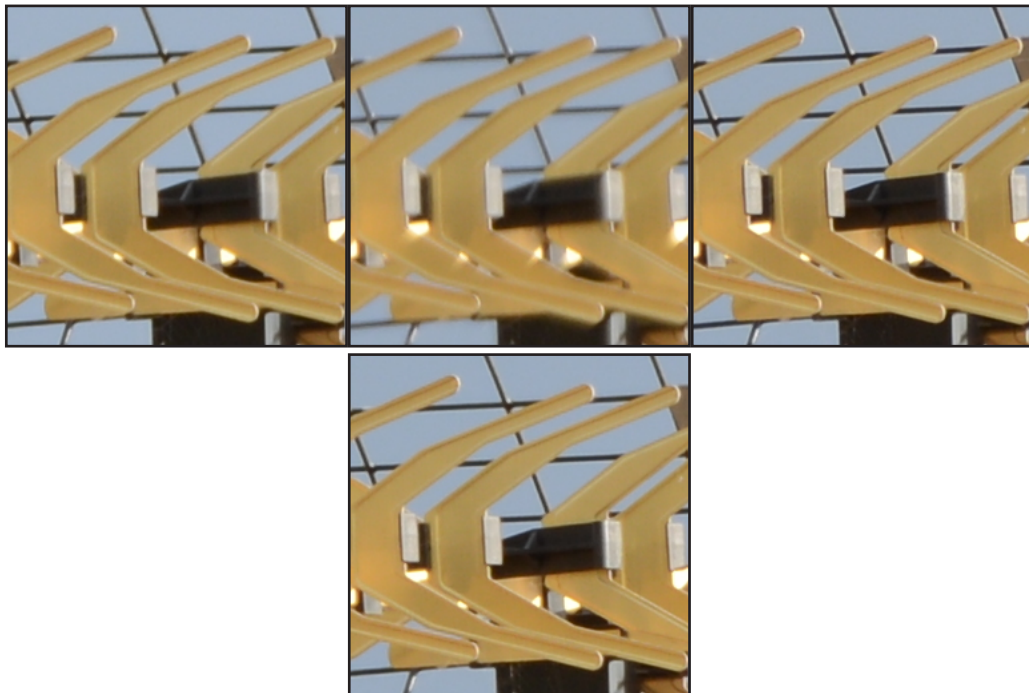


## AF Fine Tune: -10

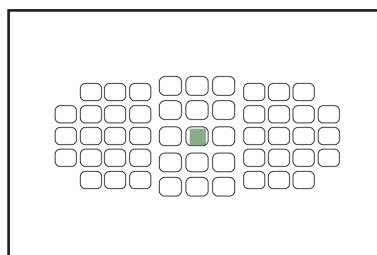
The following table shows information obtained for this test point:

	Shot 1	Shot 2	Shot 3	Shot 4
Aperture	f/8,0	f/8,0	<b>f/8,0</b>	f/8,0
Shutter Speed	1/100s	1/125s	<b>1/125s</b>	1/125s
EV	12,6	12,9	<b>12,9</b>	12,9
Colour Temperature	Unknown	Unknown	<b>Unknown</b>	Unknown
Camera Temperature	Unknown	Unknown	<b>Unknown</b>	Unknown
Quality Measure	1412,4	1101,3	<b>1489,5</b>	1465,7
Optimised	No	No	<b>No</b>	No
Ignored	No	No	<b>No</b>	No
Spectral Power (R/G/B)	37/34/29	37/34/29	<b>37/34/29</b>	37/34/29
Red Quality	1324,5	917,1	<b>1442,8</b>	1411,6
Green Quality	1428,2	1219,3	<b>1519,9</b>	1483,0
Blue Quality	1492,7	1183,4	<b>1503,4</b>	1500,8
HVR	3,3%	-3,1%	<b>3,5%</b>	-2,1%

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: -7

The following table shows information obtained for this test point:

	Shot 1	Shot 2	Shot 3
Aperture	f/8,0	<b>f/8,0</b>	f/8,0
Shutter Speed	1/160s	<b>1/160s</b>	1/160s
EV	13,3	<b>13,3</b>	13,3
Colour Temperature	Unknown	<b>Unknown</b>	Unknown
Camera Temperature	Unknown	<b>Unknown</b>	Unknown
Quality Measure	1460,5	<b>1426,4</b>	1410,9
Optimised	No	<b>No</b>	No
Ignored	No	<b>No</b>	No
Spectral Power (R/G/B)	36/34/30	<b>36/34/30</b>	36/34/30
Red Quality	1468,2	<b>1391,7</b>	1383,4
Green Quality	1488,8	<b>1438,2</b>	1428,4
Blue Quality	1426,2	<b>1460,3</b>	1427,1
HVR	1,2%	<b>0,7%</b>	-10,2%

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: -6

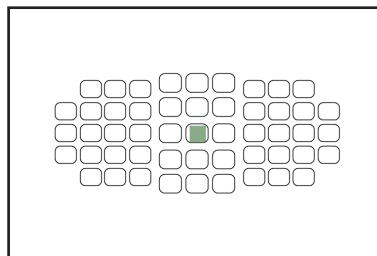
The following table shows information obtained for this test point:

	Shot 1	Shot 2	Shot 3
Aperture	f/8,0	<b>f/8,0</b>	f/8,0
Shutter Speed	1/160s	<b>1/160s</b>	1/160s
EV	13,3	<b>13,3</b>	13,3
Colour Temperature	Unknown	<b>Unknown</b>	Unknown
Camera Temperature	Unknown	<b>Unknown</b>	Unknown
Quality Measure	1342,0	<b>1365,7</b>	1275,9
Optimised	No	<b>No</b>	No
Ignored	No	<b>No</b>	No
Spectral Power (R/G/B)	36/34/30	<b>36/34/30</b>	36/34/30
Red Quality	1321,4	<b>1366,6</b>	1285,7
Green Quality	1386,1	<b>1404,1</b>	1302,8
Blue Quality	1300,3	<b>1309,0</b>	1227,9
HVR	-7,3%	<b>-5,1%</b>	-1,5%

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	Shot 3
Aperture	f/8,0	f/8,0	f/8,0
Shutter Speed	1/125s	1/125s	1/125s
EV	12,9	12,9	12,9
Colour Temperature	Unknown	Unknown	Unknown
Camera Temperature	Unknown	Unknown	Unknown
Quality Measure	1164,5	1267,1	1150,2
Optimised	No	No	No
Ignored	No	No	No
Spectral Power (R/G/B)	37/34/29	37/34/29	36/34/30
Red Quality	1190,0	1300,6	1157,6
Green Quality	1226,4	1327,8	1194,0
Blue Quality	1042,6	1141,1	1087,6
HVR	10,5%	-6,0%	-1,3%

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:

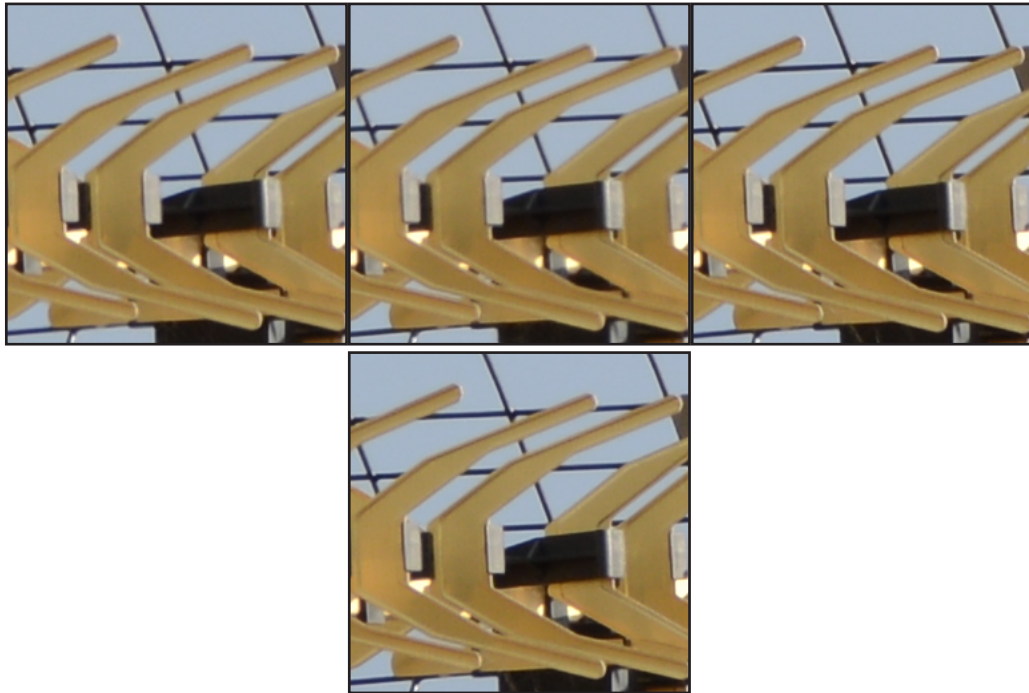


## AF Fine Tune: 1

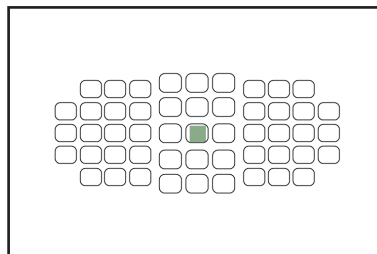
The following table shows information obtained for this test point:

	Shot 1	Shot 2	Shot 3	Shot 4
Aperture	f/8,0	f/8,0	<b>f/8,0</b>	f/8,0
Shutter Speed	1/160s	1/160s	<b>1/160s</b>	1/160s
EV	13,3	13,3	<b>13,3</b>	13,3
Colour Temperature	Unknown	Unknown	<b>Unknown</b>	Unknown
Camera Temperature	Unknown	Unknown	<b>Unknown</b>	Unknown
Quality Measure	1405,4	1348,4	<b>1452,4</b>	1437,2
Optimised	No	No	<b>No</b>	No
Ignored	No	No	<b>No</b>	No
Spectral Power (R/G/B)	36/34/30	36/34/30	<b>36/34/30</b>	36/34/30
Red Quality	1425,7	1368,4	<b>1459,0</b>	1450,9
Green Quality	1457,2	1389,9	<b>1471,8</b>	1471,4
Blue Quality	1317,2	1259,1	<b>1418,7</b>	1381,0
HVR	3,6%	-4,3%	<b>3,3%</b>	-0,7%

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:

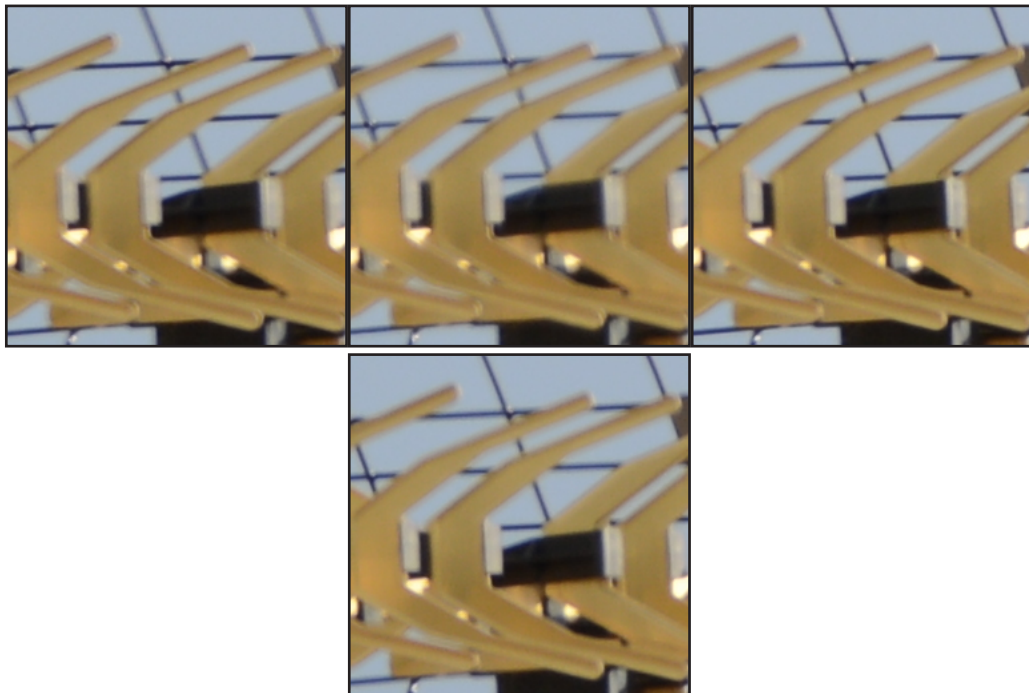


## AF Fine Tune: 9

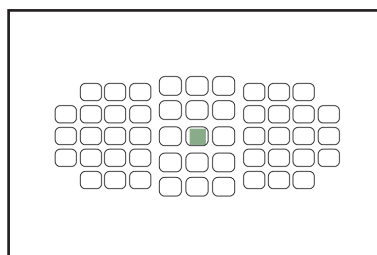
The following table shows information obtained for this test point:

	Shot 1	Shot 2	Shot 3	Shot 4
Aperture	f/8,0	f/8,0	f/8,0	<b>f/8,0</b>
Shutter Speed	1/160s	1/160s	1/160s	<b>1/160s</b>
EV	13,3	13,3	13,3	<b>13,3</b>
Colour Temperature	Unknown	Unknown	Unknown	<b>Unknown</b>
Camera Temperature	Unknown	Unknown	Unknown	<b>Unknown</b>
Quality Measure	1108,5	979,2	1169,3	<b>1123,1</b>
Optimised	No	No	No	<b>No</b>
Ignored	No	No	No	<b>No</b>
Spectral Power (R/G/B)	36/34/30	36/34/30	36/34/30	<b>36/34/30</b>
Red Quality	1121,7	1027,8	1221,3	<b>1177,5</b>
Green Quality	1183,9	1035,8	1235,2	<b>1198,1</b>
Blue Quality	998,1	841,0	1035,4	<b>954,9</b>
HVR	-7,2%	5,8%	0,8%	<b>6,0%</b>

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



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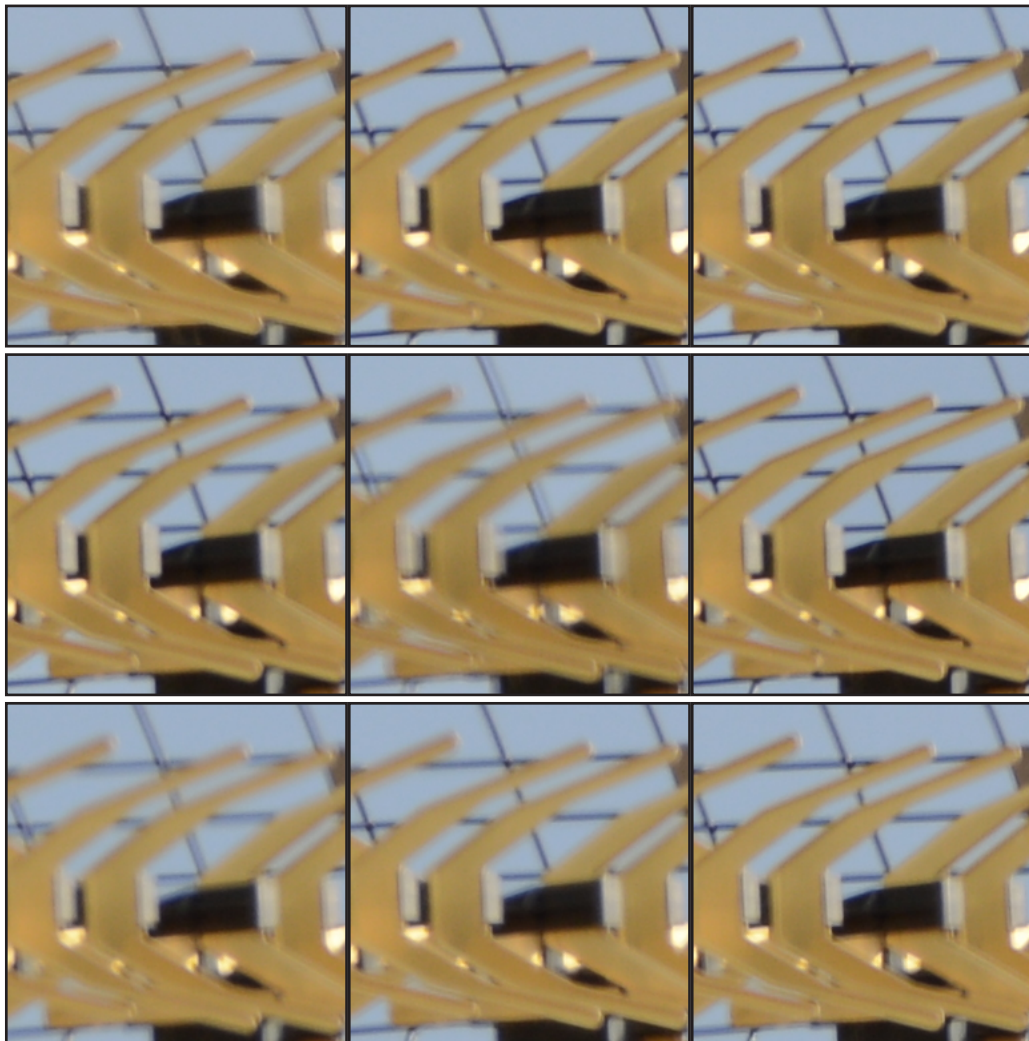


## AF Fine Tune: 10

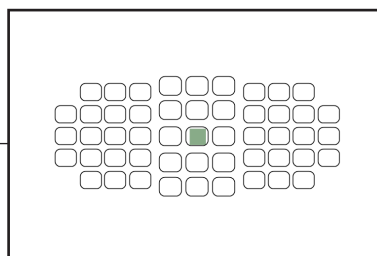
The following table shows information obtained for this test point:

	Shot 1	Shot 2	Shot 3	Shot 4	Shot 5	Shot 6
Aperture	f/8,0	f/8,0	f/8,0	f/8,0	f/8,0	f/8,0
Shutter Speed	1/160s	1/160s	1/160s	1/160s	1/160s	1/160s
EV	13,3	13,3	13,3	13,3	13,3	13,3
Colour Temperature	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Camera Temperature	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
Quality Measure	910,2	1111,2	1077,8	1048,5	752,0	1144,0
Optimised	No	No	No	No	No	No
Ignored	No	No	No	No	No	No
Spectral Power (R/G/B)	36/34/30	36/34/30	36/34/30	36/34/30	36/34/30	36/34/30
Red Quality	864,2	1138,0	1102,8	1080,5	755,6	1165,2
Green Quality	1024,2	1178,9	1158,3	1114,2	771,1	1211,5
Blue Quality	852,8	991,1	957,8	904,5	688,0	1016,5
HVR	-25,9%	-5,7%	4,1%	13,8%	-41,7%	-2,2%

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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	Shot 3
Aperture	f/8,0	<b>f/8,0</b>	f/8,0
Shutter Speed	1/160s	<b>1/125s</b>	1/125s
EV	13,3	<b>12,9</b>	12,9
Colour Temperature	Unknown	<b>Unknown</b>	Unknown
Camera Temperature	Unknown	<b>Unknown</b>	Unknown
Quality Measure	769,8	<b>834,0</b>	817,5
Optimised	No	<b>No</b>	No
Ignored	No	<b>No</b>	No
Spectral Power (R/G/B)	36/34/30	<b>36/34/30</b>	36/34/30
Red Quality	712,6	<b>848,7</b>	727,5
Green Quality	939,0	<b>856,2</b>	1018,9
Blue Quality	625,6	<b>787,3</b>	662,4
HVR	-5,6%	<b>7,6%</b>	-13,0%

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:

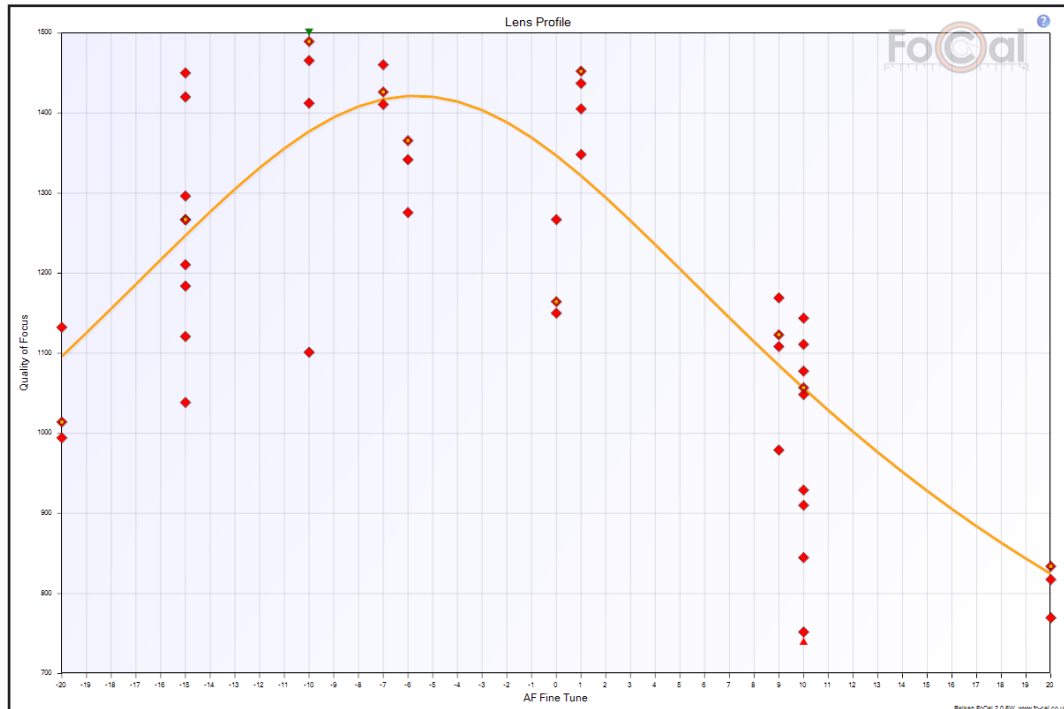


## Lens Profile

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





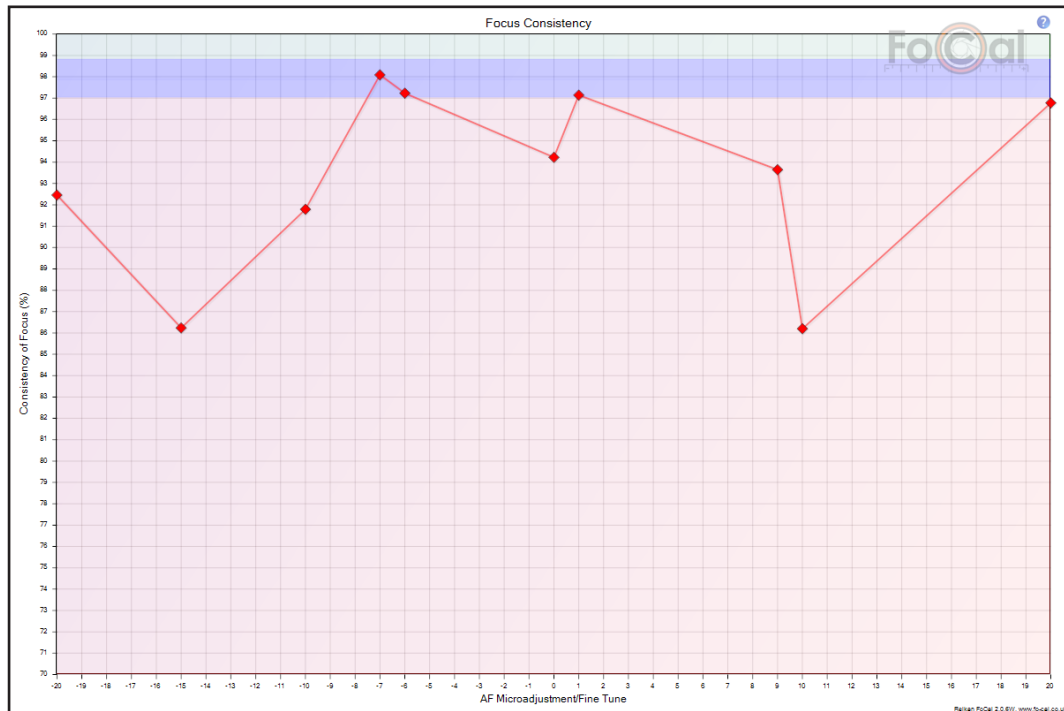
## Focus Consistency

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.

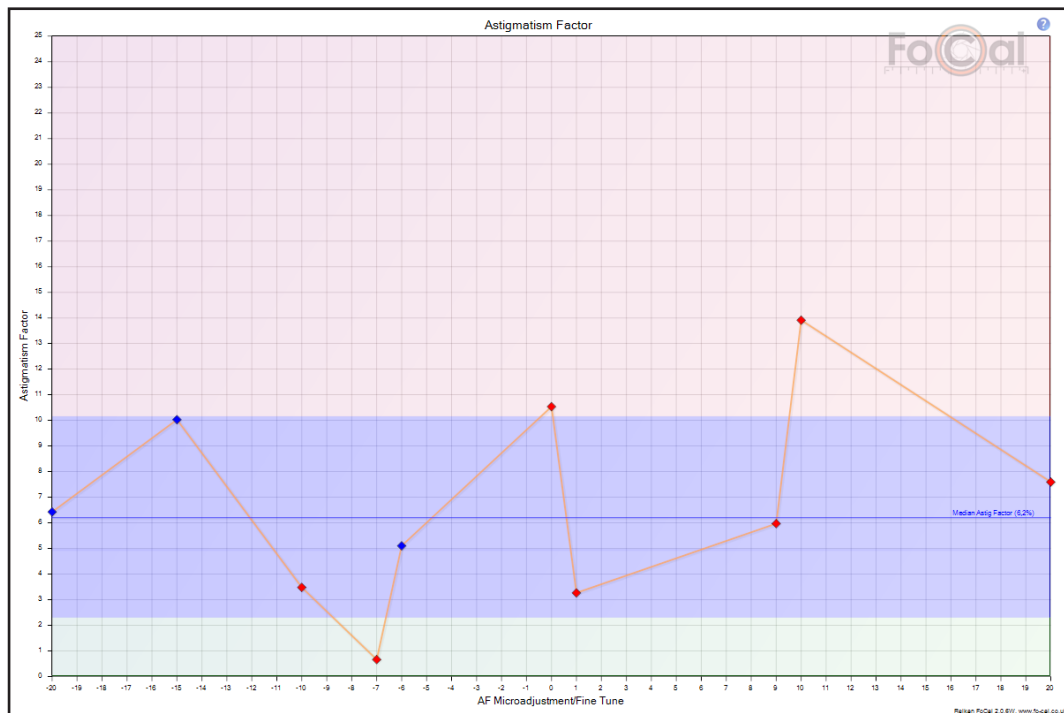


## Astigmatism Factor

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:

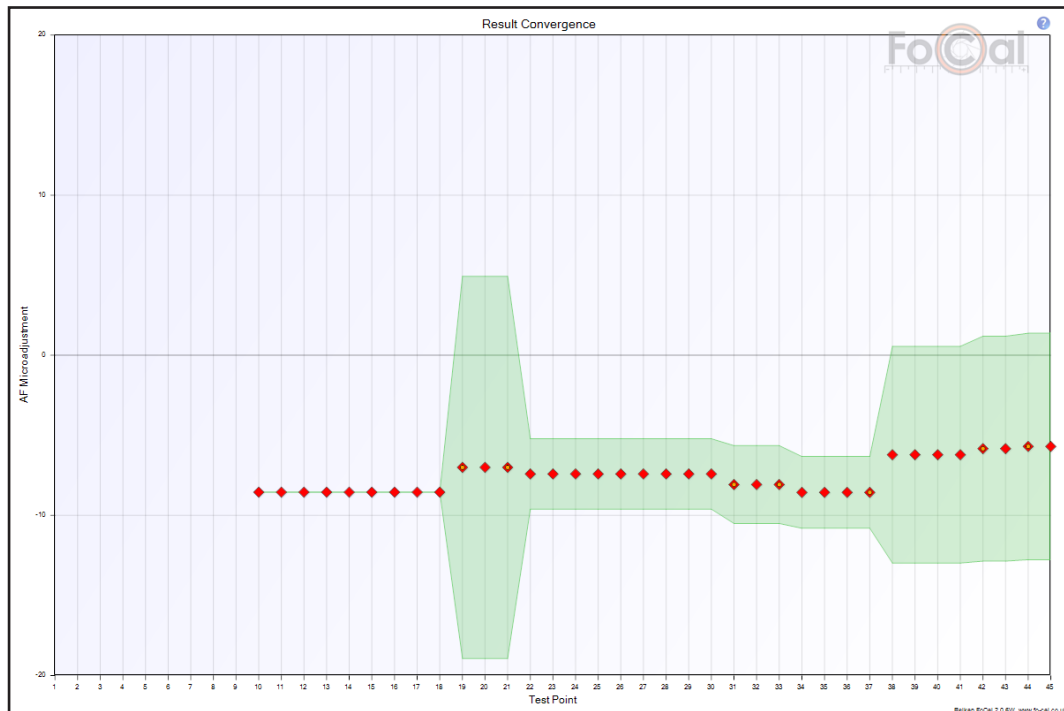
- Red: indicates below-average performance,
- Blue: typical performance experienced by other users
- Green: above average performance.



## 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:

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- Blue: typical performance experienced by other users
- Green: above average performance.

