# Reikan FoCal Fully Automatic Test Report

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

Test run on: 19/01/2016 00:43:35 with FoCal 2.0.6.2416W

Report created on: 19/01/2016 00:50:04 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) | 14136 |
| Test Colour Temp | 3200 K |
| Lens | 150-600mm f/5-6.3 |
| Focal Length | 400,0mm |
| Termination Reason | Success |
| Test Aperture | f/6,0 |
| Test ISO | 100 |
| Defocus Method | Defocus towards the camera |
| Distance to Target | 3,3m to 3,3m |
| Starting AF Fine Tune | +1 |
| AF Consistency Constraint | 6% |
| Shot Count | 18 |
| Calculated AF Fine Tune | -2 |
| Result Confidence | Excellent |
| Consistency of Focus | 98,4% |

### User Notes

mire 64mm
lampe Q1250
sac accroché au trépied carbone 055CXPro4 et tête pendulaire

# 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
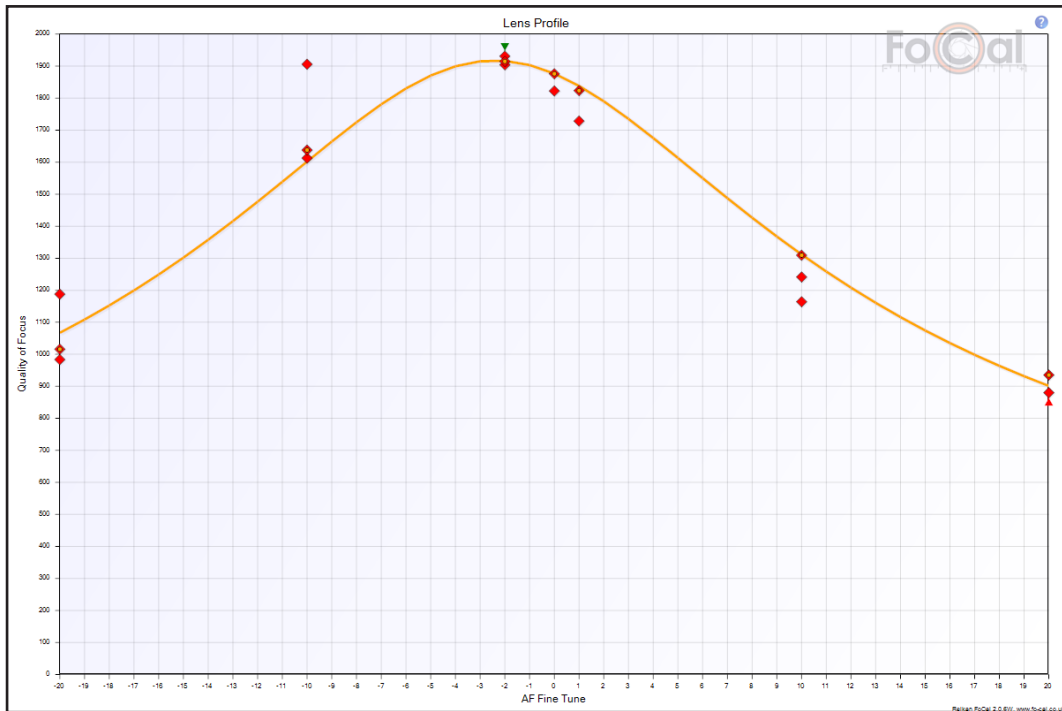


## Before/After Comparison

The images show the before and after shots.

|  | AF Fine Tune |
|---|---|
| Before | +1 |
| After | -2 |
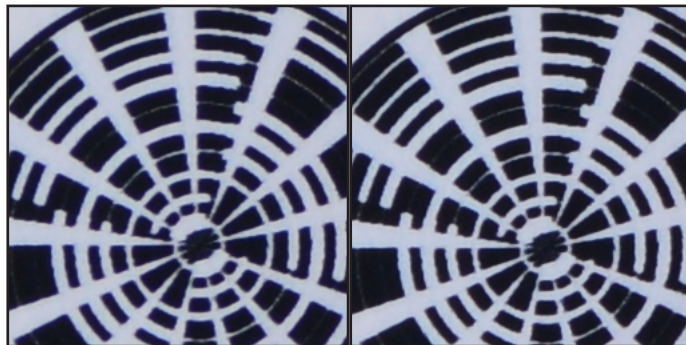
## RGB Analysis Chart

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.
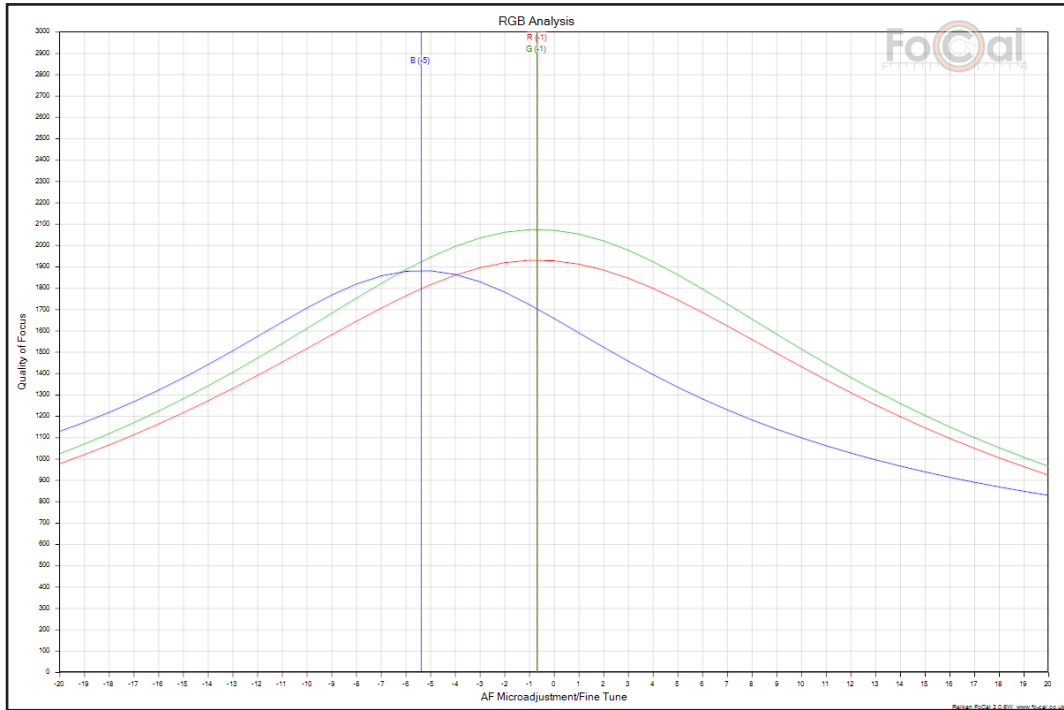


## RGB Analysis Details

| Property | Description |
|---|---|
| Red: | |
| Red Result | -1 |
| Red Confidence | Excellent |
| Green: | |
| Green Result | -1 |
| Green Confidence | Excellent |
| Blue: | |
| Blue Result | -5 |
| Blue Confidence | Excellent |

## AF Fine Tune: -20

The following table shows information obtained for this test point:

| | Shot 1 | Shot 2 | Shot 3 |
|---|---|---|---|
| Aperture | f/6,0 | f/6,0 | **f/6,0** |
| Shutter Speed | 1/400s | 1/400s | **1/400s** |
| EV | 13,8 | 13,8 | **13,8** |
| Colour Temperature | Unknown | Unknown | **Unknown** |
| Camera Temperature | Unknown | Unknown | **Unknown** |
| Quality Measure | 1187,8 | 983,6 | **1016,0** |
| Optimised | No | No | **No** |
| Ignored | No | No | **No** |
| Spectral Power (R/G/B) | 32/33/35 | 32/33/35 | **32/33/35** |
| Red Quality | 1087,1 | 892,4 | **922,4** |
| Green Quality | 1141,5 | 933,4 | **968,1** |
| Blue Quality | 1322,0 | 1107,8 | **1141,5** |
| HVR | -4,9% | -4,7% | **-5,1%** |

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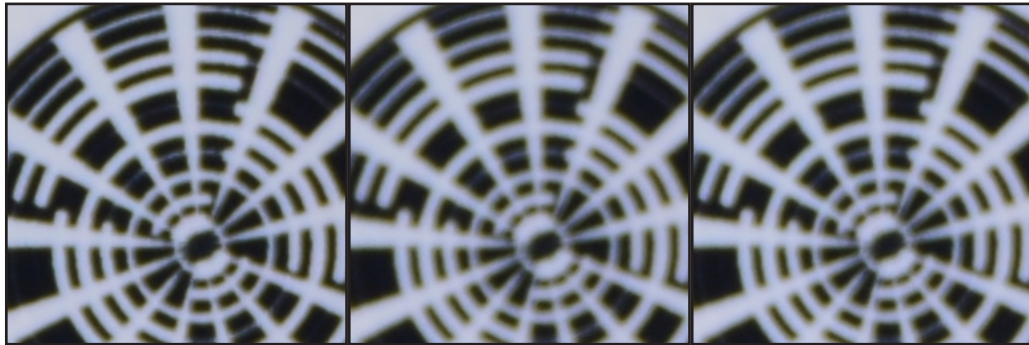


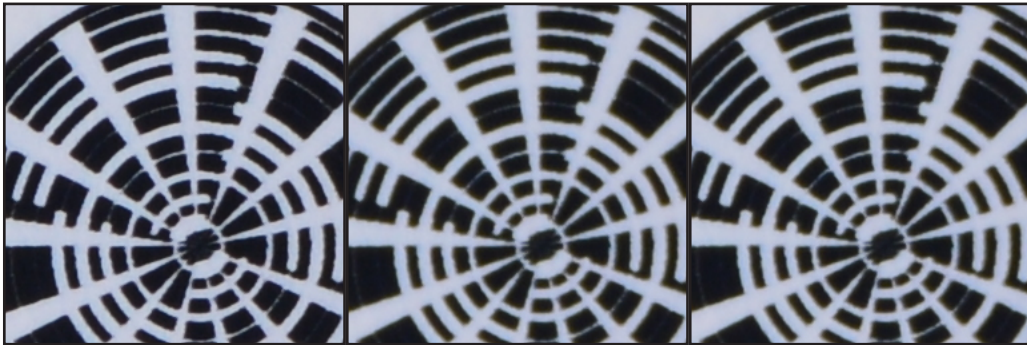The following image is a crop of the section of image analysed by FoCal:
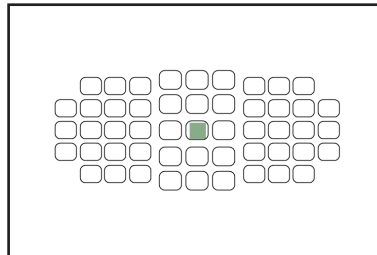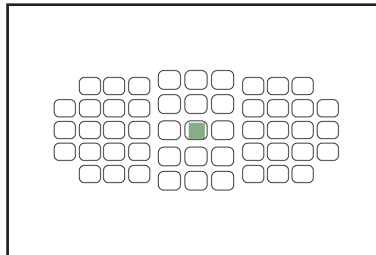
## AF Fine Tune: -10

The following table shows information obtained for this test point:

| | Shot 1 | Shot 2 | Shot 3 |
|---|---|---|---|
| Aperture | f/6,0 | f/6,0 | **f/6,0** |
| Shutter Speed | 1/400s | 1/400s | **1/400s** |
| EV | 13,8 | 13,8 | **13,8** |
| Colour Temperature | Unknown | Unknown | **Unknown** |
| Camera Temperature | Unknown | Unknown | **Unknown** |
| Quality Measure | 1905,8 | 1612,6 | **1637,9** |
| Optimised | No | No | **No** |
| Ignored | No | No | **No** |
| Spectral Power (R/G/B) | 31/32/36 | 32/33/36 | **32/33/36** |
| Red Quality | 1871,5 | 1534,7 | **1554,6** |
| Green Quality | 1997,3 | 1629,1 | **1649,6** |
| Blue Quality | 1864,2 | 1670,5 | **1701,9** |
| HVR | -5,4% | -5,5% | **-6,1%** |

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:
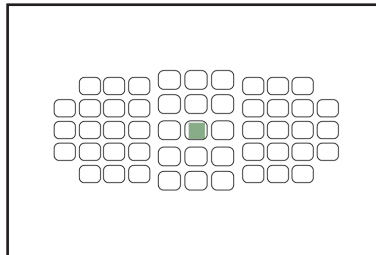
## AF Fine Tune: -2

The following table shows information obtained for this test point:

|  | Shot 1 | Shot 2 | Shot 3 |
|---|---|---|---|
| Aperture | f/6,0 | f/6,0 | **f/6,0** |
| Shutter Speed | 1/400s | 1/400s | **1/400s** |
| EV | 13,8 | 13,8 | **13,8** |
| Colour Temperature | Unknown | Unknown | **Unknown** |
| Camera Temperature | Unknown | Unknown | **Unknown** |
| Quality Measure | 1931,0 | 1904,0 | **1914,7** |
| Optimised | No | No | **No** |
| Ignored | No | No | **No** |
| Spectral Power (R/G/B) | 31/32/37 | 31/32/37 | **31/32/37** |
| Red Quality | 1928,2 | 1945,8 | **1933,0** |
| Green Quality | 2075,5 | 2086,3 | **2065,8** |
| Blue Quality | 1810,3 | 1715,4 | **1773,7** |
| HVR | -5,9% | -6,0% | **-5,7%** |

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

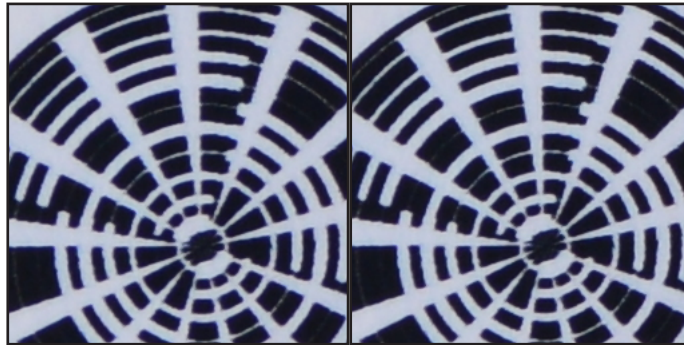The following image is a crop of the section of image analysed by FoCal:

See www.fo-cal.co.uk for further information

## AF Fine Tune: 0

The following table shows information obtained for this test point:

|  | Shot 1 | Shot 2 |
|---|---|---|
| Aperture | f/6,0 | f/6,0 |
| Shutter Speed | 1/400s | 1/400s |
| EV | 13,8 | 13,8 |
| Colour Temperature | Unknown | Unknown |
| Camera Temperature | Unknown | Unknown |
| Quality Measure | 1822,4 | 1876,1 |
| Optimised | No | No |
| Ignored | No | No |
| Spectral Power (R/G/B) | 31/32/37 | 31/32/37 |
| Red Quality | 1899,0 | 1909,0 |
| Green Quality | 2037,7 | 2071,3 |
| Blue Quality | 1579,6 | 1684,1 |
| HVR | -6,4% | -5,7% |

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



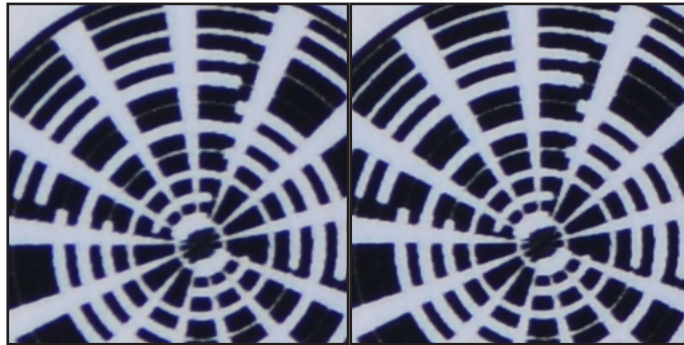The following image is a crop of the section of image analysed by FoCal:
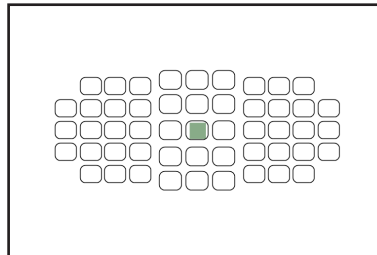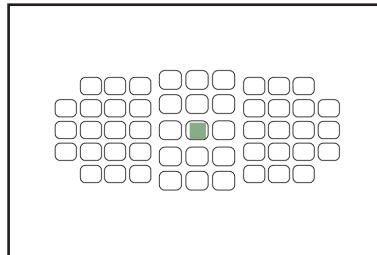
## AF Fine Tune: 1

The following table shows information obtained for this test point:

|  | Shot 1 | Shot 2 |
|---|---|---|
| Aperture | f/6,0 | f/6,0 |
| Shutter Speed | 1/400s | 1/400s |
| EV | 13,8 | 13,8 |
| Colour Temperature | Unknown | Unknown |
| Camera Temperature | Unknown | Unknown |
| Quality Measure | 1728,4 | 1823,4 |
| Optimised | No | No |
| Ignored | No | No |
| Spectral Power (R/G/B) | 31/32/38 | 31/32/38 |
| Red Quality | 1832,3 | 1914,6 |
| Green Quality | 1956,4 | 2045,3 |
| Blue Quality | 1445,3 | 1582,1 |
| HVR | -6,5% | -6,2% |

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

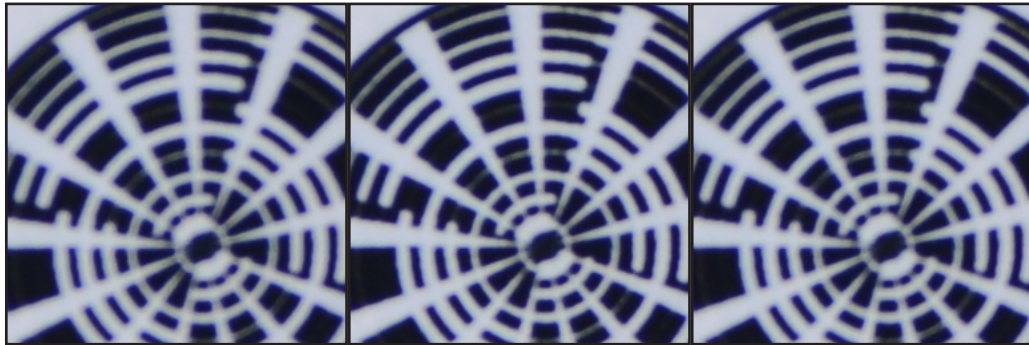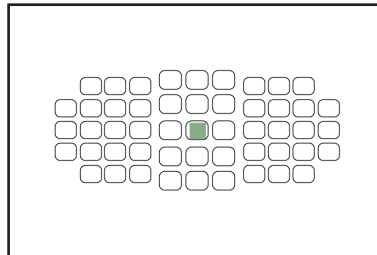The following image is a crop of the section of image analysed by FoCal:

## AF Fine Tune: 10

The following table shows information obtained for this test point:

|  | Shot 1 | Shot 2 | Shot 3 |
|---|---|---|---|
| Aperture | f/6,0 | **f/6,0** | f/6,0 |
| Shutter Speed | 1/400s | **1/400s** | 1/400s |
| EV | 13,8 | **13,8** | 13,8 |
| Colour Temperature | Unknown | **Unknown** | Unknown |
| Camera Temperature | Unknown | **Unknown** | Unknown |
| Quality Measure | 1164,0 | **1309,5** | 1241,3 |
| Optimised | No | **No** | No |
| Ignored | No | **No** | No |
| Spectral Power (R/G/B) | 31/32/38 | **31/32/38** | 30/32/38 |
| Red Quality | 1242,0 | **1406,3** | 1332,1 |
| Green Quality | 1310,1 | **1489,2** | 1406,5 |
| Blue Quality | 983,5 | **1080,6** | 1036,8 |
| HVR | -9,5% | **-6,4%** | -5,3% |

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



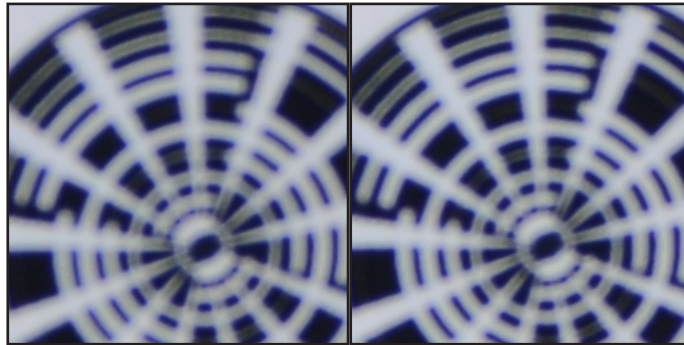The following image is a crop of the section of image analysed by FoCal:

## AF Fine Tune: 20

The following table shows information obtained for this test point:

|  | Shot 1 | Shot 2 |
| --- | --- | --- |
| Aperture | f/6,0 | f/6,0 |
| Shutter Speed | 1/400s | 1/400s |
| EV | 13,8 | 13,8 |
| Colour Temperature | Unknown | Unknown |
| Camera Temperature | Unknown | Unknown |
| Quality Measure | 880,1 | 935,3 |
| Optimised | No | No |
| Ignored | No | No |
| Spectral Power (R/G/B) | 31/32/37 | 31/32/37 |
| Red Quality | 917,8 | 975,8 |
| Green Quality | 954,7 | 1017,7 |
| Blue Quality | 784,0 | 834,5 |
| HVR | -4,7% | -6,0% |

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:
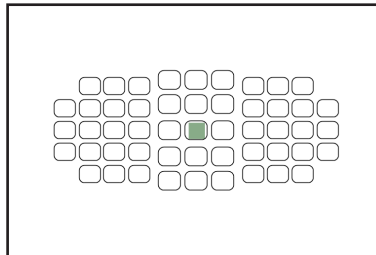
## Lens Profile

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
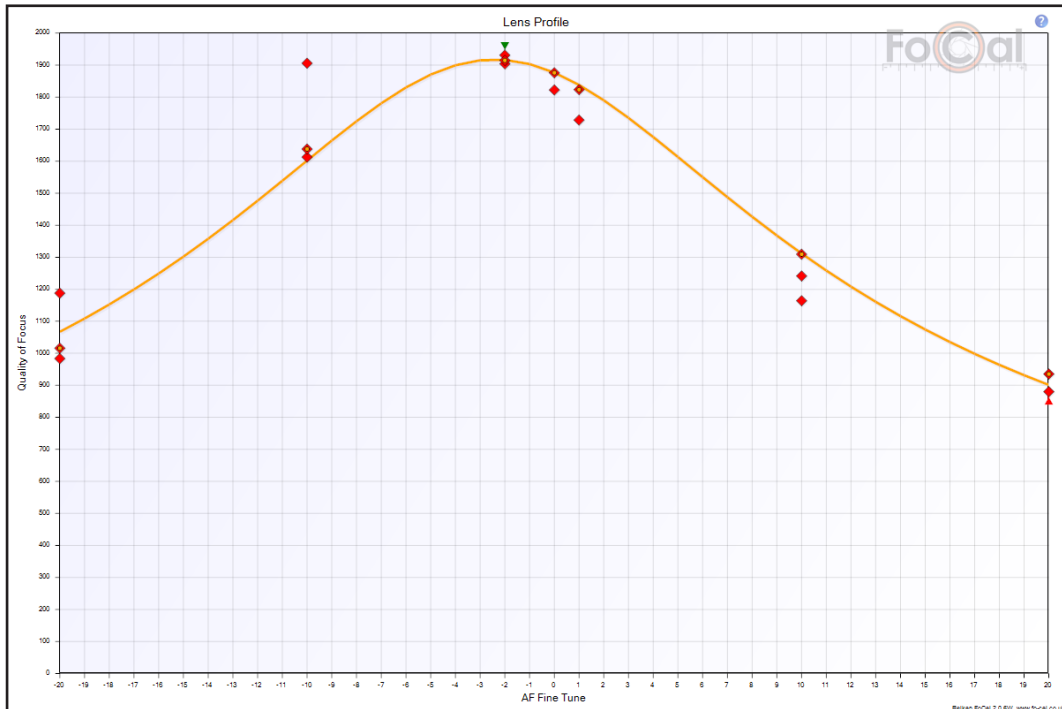
# Focus Consistency

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.

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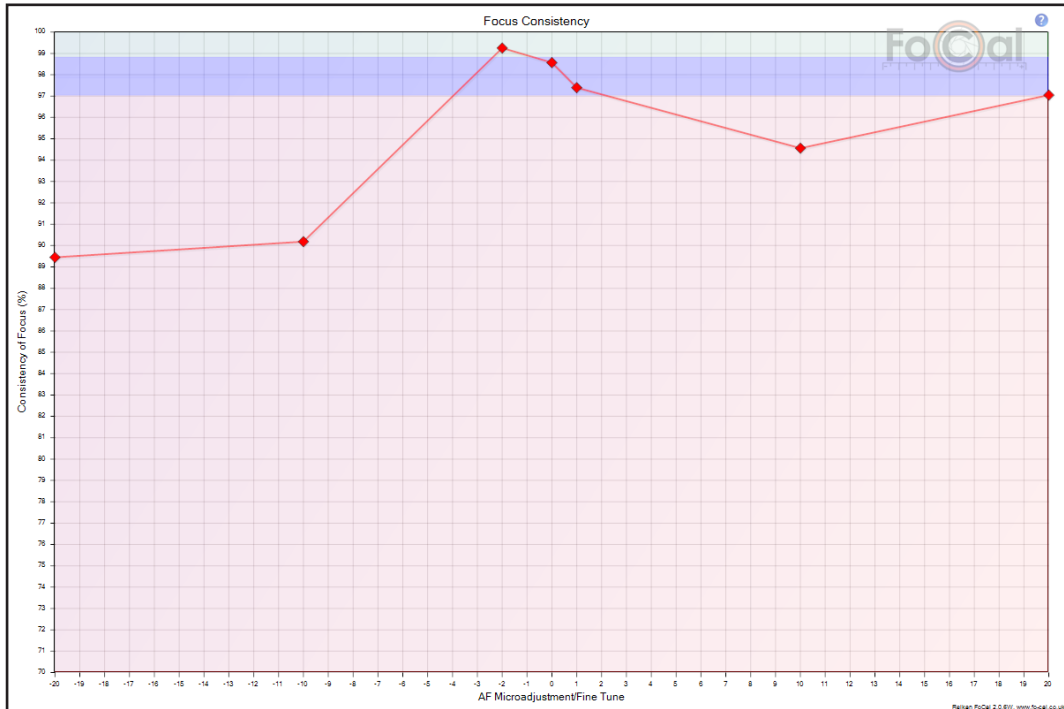
## Astigmatism Factor

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

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- Green: above average performance.
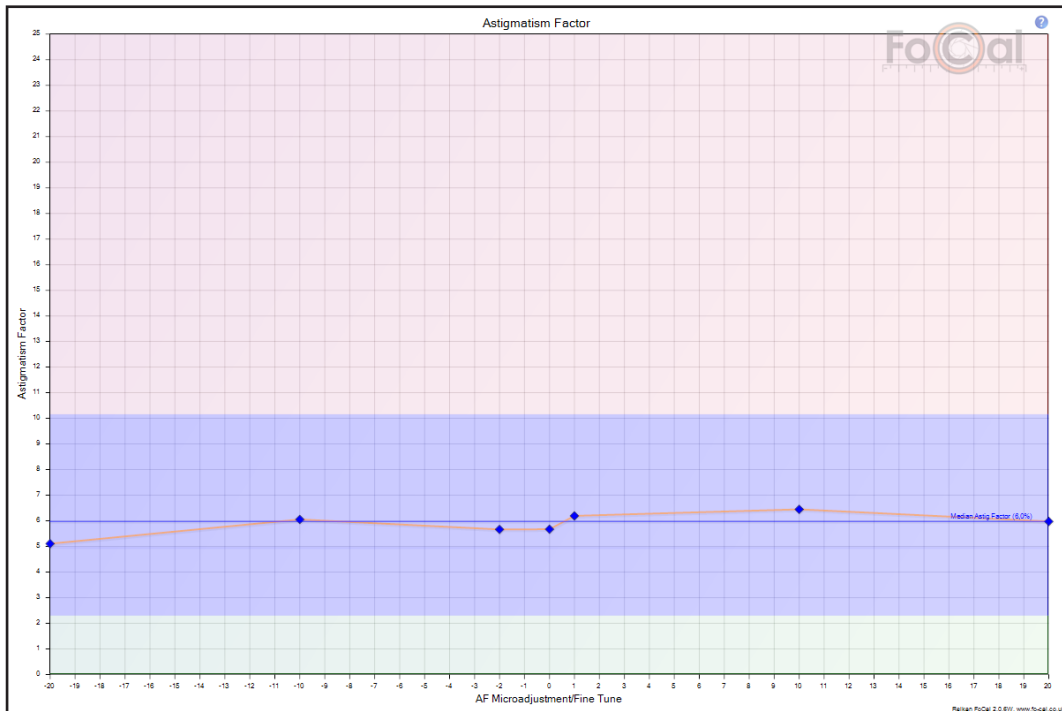
## Result Convergence

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.
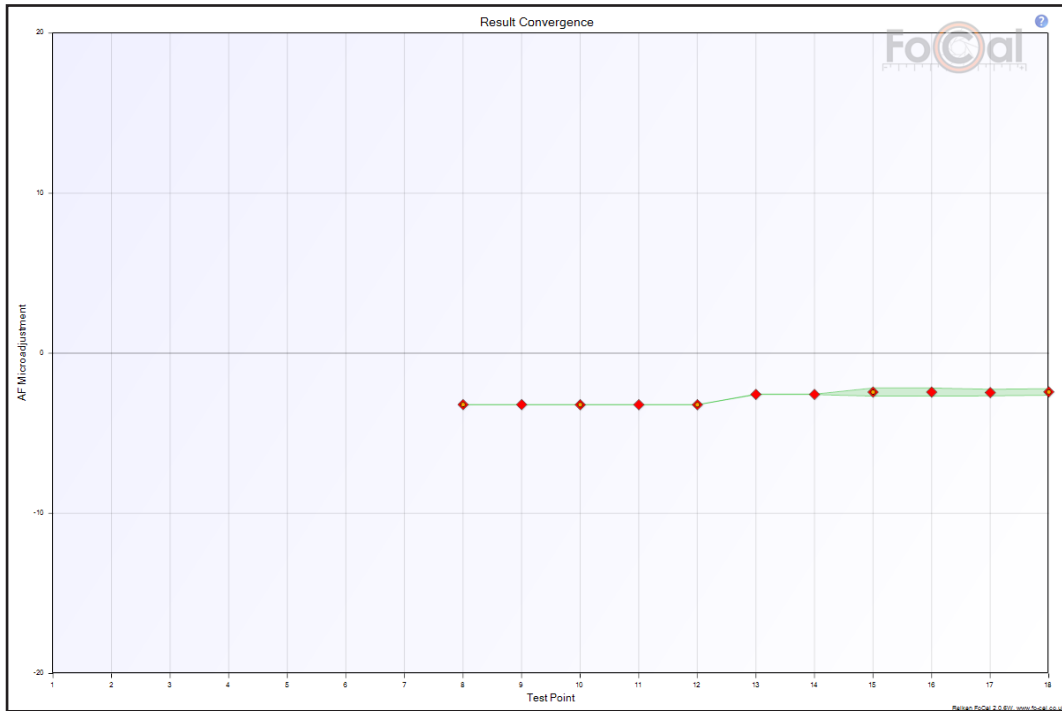
# Image Motion

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.

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- Green: above average performance.

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