

Image Stabilisation Test Report

for Nikon Z50 with Nikkor Z DX 16-50mm f/3.5-6.3 VR

Test run on: 04/12/2020 14:50:45 with FoCal 2021 Beta

Report created on: 04/12/2020 15:47:32 with FoCal 2021 Beta

Overview

Test Information

Property	Description
Test ID	58-339-53445
Data Creation Software Version	2021 Beta (3.1.0.8930W)
Data Analysis Software Version	2021 Beta (3.1.0.8930W)
OS Version	Windows 10 - November 2019 Update (10.0.18363)
Source Mode	Camera Mode
Image Capture Mode	JPEG
Analysis Method	Multi-ESH (RGB)
Camera Model	Nikon Z50
Firmware Version	2.02
Serial Number	Not Included
Shutter count (start)	2224
Lens	Nikkor Z DX 16-50mm f/3.5-6.3 VR
Lens Serial Numnber	20063997
Focal Length	50mm
Test Outcome	Success
Shutter Speed	1/125s to 1.6s
Aperture	f/8 to f/16
ISO	100 to 800
Distance to Target	2.7m
Stops Improvement	3.7

Test Details

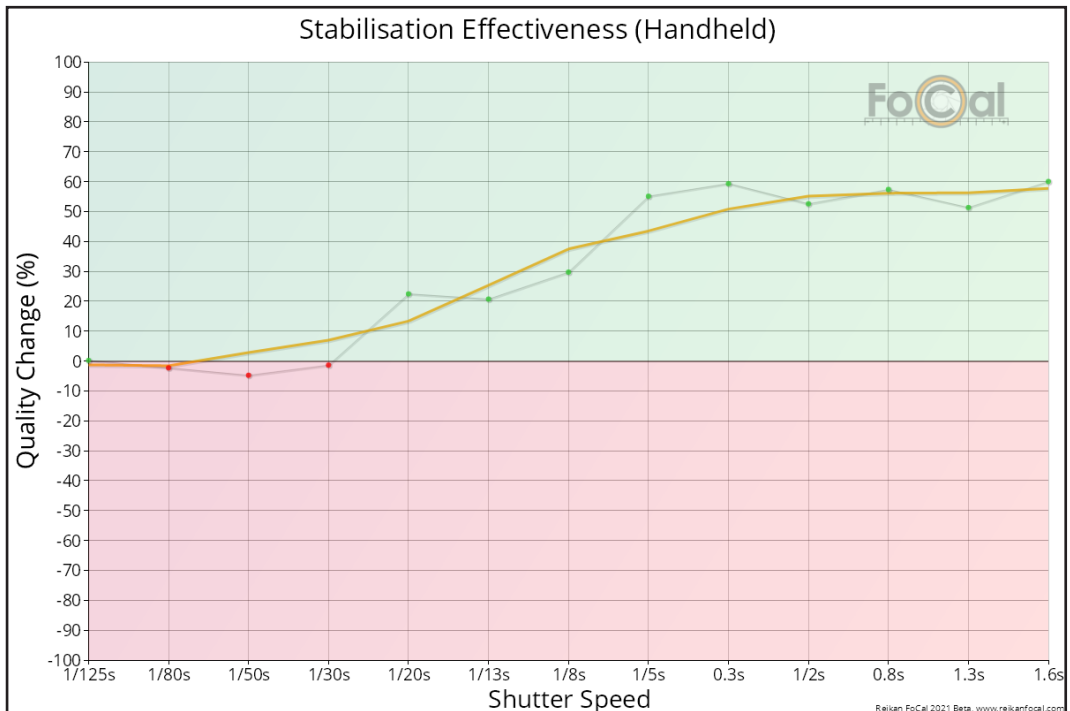
Stabilisation Effectiveness (Handheld)

Stabilisation Effectiveness shows the change in quality at each point when stabilisation is activated. As the line rises into the green area, this shows an improvement in quality with stabilisation enabled. If the line drops into the red area, this indicates that the stabilisation system is degrading the image.

For handheld results at slower shutter speeds, you should notice a significant quality improvement when stabilisation is enabled as it compensates for the movement.

At faster shutter speeds (typically less than around 1/200s), there should be very little difference between the quality value when stabilisation is enabled.

For detailed information about how to interpret this chart, please see: <http://help.reikanfocal.com/help2/1301.html>



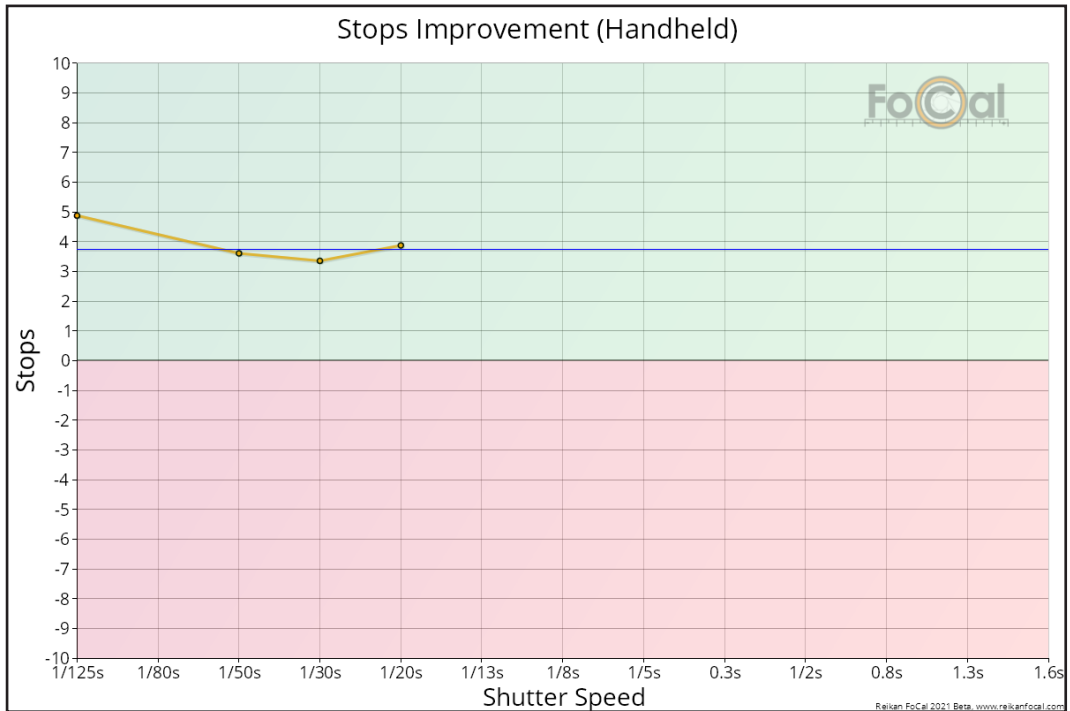
Stops Improvement (Handheld)

This chart shows the number of stops improvement when the stabilisation is enabled compared to when it is disabled.

For each stabilisation-disabled quality level, this calculation tries to find the shutter speed of the same stabilisation-enabled quality and determine the number of stops between them.

This calculation is not available at every point, and is generally only populated and valid when the test captures shutter speeds where movement cannot be fully corrected by the stabilisation system (e.g. slower than around 1/4 second)

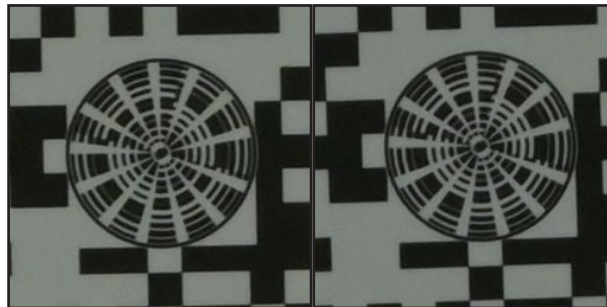
For detailed information about how to interpret this chart, please see: <http://help.reikanfocal.com/help2/1307.html>



Shutter Speed: 1/125s

	Shot 1	Shot 2
Hold Type	Handheld	Handheld
Stabilisation	Off	On
Aperture	f/8	f/8
Shutter Speed	1/125s	1/125s
EV	10.0 EV	10.0 EV
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	2044.6	2049.5
Optimised	Yes	Yes
Ignored	No	No
Spectral Power (R/G/B)	33.1% 34.9% 32.0%	33.0% 34.9% 32.1%
Red Quality	2046.2	2059.5
Green Quality	2041.1	2049.2
Blue Quality	2039.0	2051.7
Astigmatism Factor	-4.4%	0.7%
Red-Blue Ratio	0.4%	0.4%
Red:Green	100.2%	100.5%
Blue:Green	99.9%	100.1%

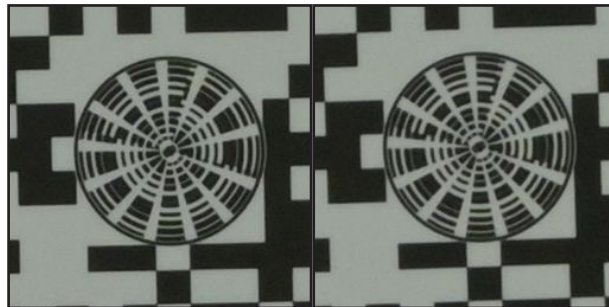
The are crops of the section of image analysed by FoCal:



Shutter Speed: 1/80s

	Shot 1	Shot 2
Hold Type	Handheld	Handheld
Stabilisation	Off	On
Aperture	f/8	f/8
Shutter Speed	1/80s	1/80s
EV	9.3 EV	9.3 EV
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	2126.5	2076.0
Optimised	Yes	Yes
Ignored	No	No
Spectral Power (R/G/B)	33.1% 34.7% 32.2%	33.1% 34.7% 32.2%
Red Quality	2129.9	2089.5
Green Quality	2118.3	2071.5
Blue Quality	2120.4	2069.5
Astigmatism Factor	1.4%	1.3%
Red-Blue Ratio	0.4%	1.0%
Red:Green	100.5%	100.9%
Blue:Green	100.1%	99.9%

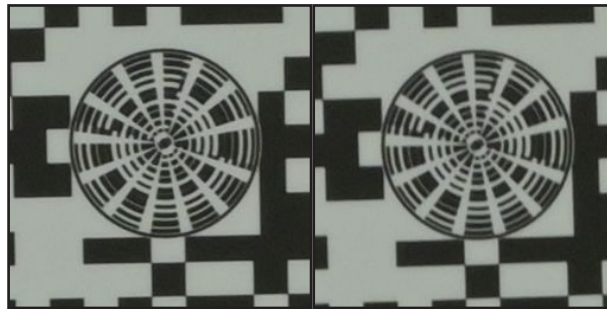
The are crops of the section of image analysed by FoCal:



Shutter Speed: 1/50s

	Shot 1	Shot 2
Hold Type	Handheld	Handheld
Stabilisation	Off	On
Aperture	f/8	f/8
Shutter Speed	1/50s	1/50s
EV	9.0 EV	9.0 EV
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	2145.0	2039.2
Optimised	Yes	Yes
Ignored	No	No
Spectral Power (R/G/B)	33.2% 34.6% 32.3%	33.1% 34.6% 32.3%
Red Quality	2148.7	2056.4
Green Quality	2141.2	2036.6
Blue Quality	2140.4	2028.2
Astigmatism Factor	-3.0%	7.4%
Red-Blue Ratio	0.4%	1.4%
Red:Green	100.4%	101.0%
Blue:Green	100.0%	99.6%

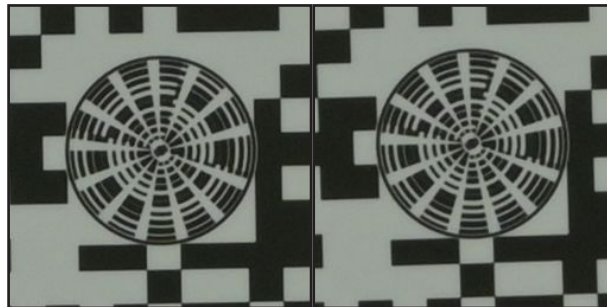
The are crops of the section of image analysed by FoCal:



Shutter Speed: 1/30s

	Shot 1	Shot 2
Hold Type	Handheld	Handheld
Stabilisation	Off	On
Aperture	f/8	f/8
Shutter Speed	1/30s	1/30s
EV	9.2 EV	9.2 EV
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	2201.7	2171.5
Optimised	Yes	Yes
Ignored	No	No
Spectral Power (R/G/B)	33.0% 34.9% 32.1%	33.0% 34.9% 32.1%
Red Quality	2208.6	2178.5
Green Quality	2197.6	2159.8
Blue Quality	2197.5	2175.5
Astigmatism Factor	1.4%	1.1%
Red-Blue Ratio	0.5%	0.1%
Red:Green	100.5%	100.9%
Blue:Green	100.0%	100.7%

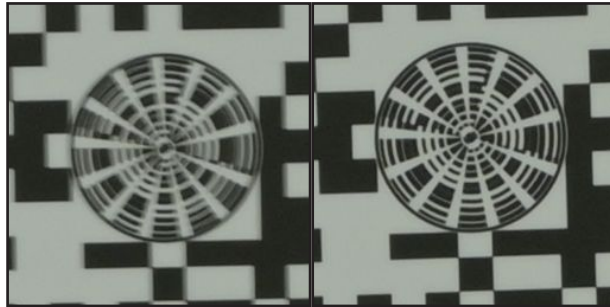
The are crops of the section of image analysed by FoCal:



Shutter Speed: 1/20s

	Shot 1	Shot 2
Hold Type	Handheld	Handheld
Stabilisation	Off	On
Aperture	f/8	f/8
Shutter Speed	1/20s	1/20s
EV	9.0 EV	9.0 EV
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	1677.8	2176.9
Optimised	Yes	Yes
Ignored	No	No
Spectral Power (R/G/B)	33.0% 34.8% 32.2%	33.1% 34.8% 32.2%
Red Quality	1685.3	2186.6
Green Quality	1674.3	2167.7
Blue Quality	1671.1	2177.4
Astigmatism Factor	-41.0%	1.8%
Red-Blue Ratio	0.8%	0.4%
Red:Green	100.7%	100.9%
Blue:Green	99.8%	100.4%

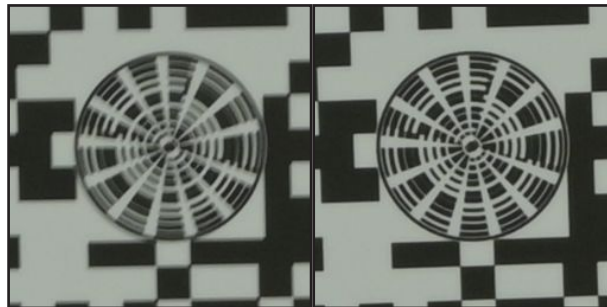
The are crops of the section of image analysed by FoCal:



Shutter Speed: 1/13s

	Shot 1	Shot 2
Hold Type	Handheld	Handheld
Stabilisation	Off	On
Aperture	f/8	f/8
Shutter Speed	1/13s	1/13s
EV	9.0 EV	9.0 EV
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	1761.7	2221.9
Optimised	Yes	Yes
Ignored	No	No
Spectral Power (R/G/B)	33.1% 34.7% 32.2%	33.1% 34.7% 32.2%
Red Quality	1774.5	2230.1
Green Quality	1758.3	2219.0
Blue Quality	1757.7	2209.9
Astigmatism Factor	11.8%	0.3%
Red-Blue Ratio	0.9%	0.9%
Red:Green	100.9%	100.5%
Blue:Green	100.0%	99.6%

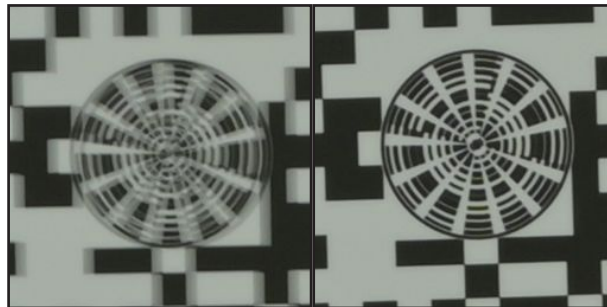
The are crops of the section of image analysed by FoCal:



Shutter Speed: 1/8s

	Shot 1	Shot 2
Hold Type	Handheld	Handheld
Stabilisation	Off	On
Aperture	f/8	f/8
Shutter Speed	1/8s	1/8s
EV	9.0 EV	9.0 EV
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	1531.7	2192.3
Optimised	Yes	Yes
Ignored	No	No
Spectral Power (R/G/B)	33.0% 34.8% 32.2%	33.1% 34.7% 32.2%
Red Quality	1539.6	2199.6
Green Quality	1515.2	2195.5
Blue Quality	1545.7	2185.6
Astigmatism Factor	-42.0%	-1.7%
Red-Blue Ratio	-0.4%	0.6%
Red:Green	101.6%	100.2%
Blue:Green	102.0%	99.5%

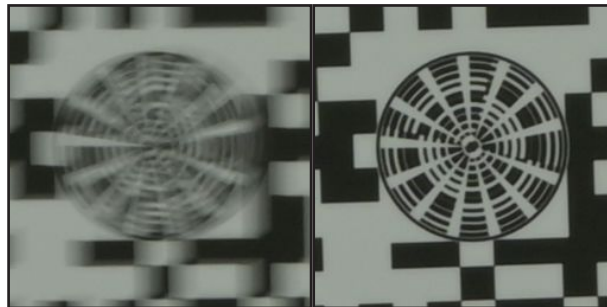
The are crops of the section of image analysed by FoCal:



Shutter Speed: 1/5s

	Shot 1	Shot 2
Hold Type	Handheld	Handheld
Stabilisation	Off	On
Aperture	f/11	f/11
Shutter Speed	1/5s	1/5s
EV	9.2 EV	9.2 EV
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	907.5	2132.1
Optimised	Yes	Yes
Ignored	No	No
Spectral Power (R/G/B)	33.0% 34.9% 32.2%	33.0% 34.9% 32.1%
Red Quality	895.3	2132.8
Green Quality	902.3	2134.1
Blue Quality	922.7	2130.1
Astigmatism Factor	-56.7%	-2.9%
Red-Blue Ratio	-3.0%	0.1%
Red:Green	99.2%	99.9%
Blue:Green	102.3%	99.8%

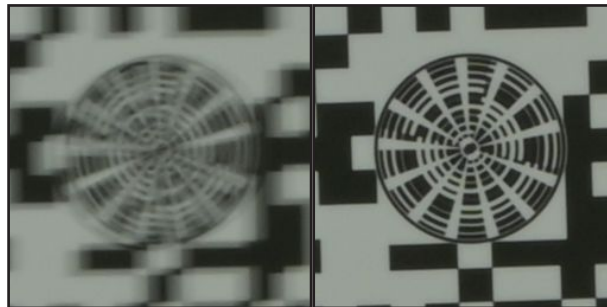
The are crops of the section of image analysed by FoCal:



Shutter Speed: 0.3s

	Shot 1	Shot 2
Hold Type	Handheld	Handheld
Stabilisation	Off	On
Aperture	f/14	f/14
Shutter Speed	0.3s	0.3s
EV	9.4 EV	9.4 EV
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	709.5	2027.7
Optimised	Yes	Yes
Ignored	No	No
Spectral Power (R/G/B)	33.0% 34.9% 32.2%	33.1% 34.9% 32.1%
Red Quality	704.8	2019.2
Green Quality	714.6	2037.3
Blue Quality	709.3	2029.8
Astigmatism Factor	-38.8%	-2.0%
Red-Blue Ratio	-0.6%	-0.5%
Red:Green	98.6%	99.1%
Blue:Green	99.3%	99.6%

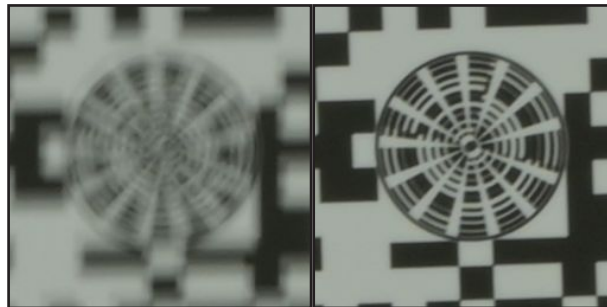
The are crops of the section of image analysed by FoCal:



Shutter Speed: 1/2s

	Shot 1	Shot 2
Hold Type	Handheld	Handheld
Stabilisation	Off	On
Aperture	f/16	f/16
Shutter Speed	1/2s	1/2s
EV	9.0 EV	9.0 EV
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	605.6	1773.8
Optimised	Yes	Yes
Ignored	No	No
Spectral Power (R/G/B)	33.0% 34.8% 32.2%	33.1% 34.8% 32.1%
Red Quality	605.4	1772.4
Green Quality	608.4	1782.1
Blue Quality	604.7	1767.1
Astigmatism Factor	22.4%	-8.4%
Red-Blue Ratio	0.1%	0.3%
Red:Green	99.5%	99.5%
Blue:Green	99.4%	99.2%

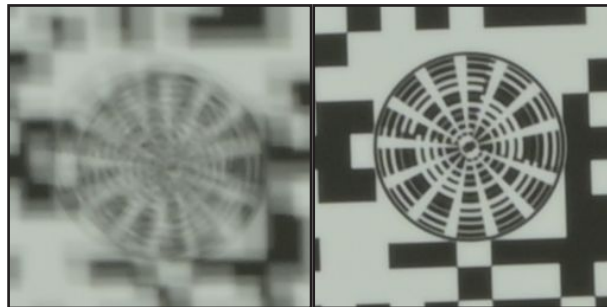
The are crops of the section of image analysed by FoCal:



Shutter Speed: 0.8s

	Shot 1	Shot 2
Hold Type	Handheld	Handheld
Stabilisation	Off	On
Aperture	f/16	f/16
Shutter Speed	0.8s	0.8s
EV	8.3 EV	8.3 EV
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	633.7	1908.6
Optimised	No	Yes
Ignored	No	No
Spectral Power (R/G/B)	33.0% 34.6% 32.4%	33.2% 34.6% 32.3%
Red Quality	637.6	1911.4
Green Quality	629.3	1907.3
Blue Quality	640.4	1913.2
Astigmatism Factor	-4.1%	3.0%
Red-Blue Ratio	-0.4%	-0.1%
Red:Green	101.3%	100.2%
Blue:Green	101.8%	100.3%

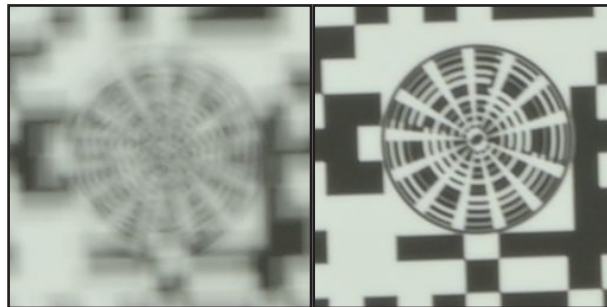
The are crops of the section of image analysed by FoCal:



Shutter Speed: 1.3s

	Shot 1	Shot 2
Hold Type	Handheld	Handheld
Stabilisation	Off	On
Aperture	f/16	f/16
Shutter Speed	1.3s	1.3s
EV	7.6 EV	7.6 EV
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	567.7	1708.2
Optimised	Yes	Yes
Ignored	No	No
Spectral Power (R/G/B)	33.0% 34.6% 32.4%	33.2% 34.5% 32.3%
Red Quality	568.1	1721.9
Green Quality	565.7	1713.8
Blue Quality	559.9	1696.2
Astigmatism Factor	-15.7%	-6.9%
Red-Blue Ratio	1.4%	1.5%
Red:Green	100.4%	100.5%
Blue:Green	99.0%	99.0%

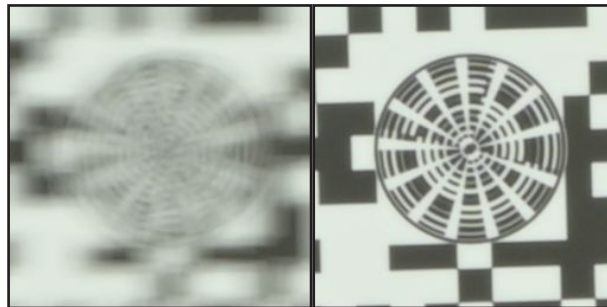
The are crops of the section of image analysed by FoCal:



Shutter Speed: 1.6s

	Shot 1	Shot 2
Hold Type	Handheld	Handheld
Stabilisation	Off	On
Aperture	f/16	f/16
Shutter Speed	1.6s	1.6s
EV	7.3 EV	7.3 EV
Colour Temperature	Unknown	Unknown
Camera Temperature	Unknown	Unknown
Quality Measure	512.0	1845.9
Optimised	Yes	Yes
Ignored	No	No
Spectral Power (R/G/B)	33.0% 34.5% 32.5%	33.2% 34.4% 32.4%
Red Quality	506.8	1850.2
Green Quality	511.9	1851.0
Blue Quality	513.4	1832.9
Astigmatism Factor	-30.2%	-1.6%
Red-Blue Ratio	-1.3%	0.9%
Red:Green	99.0%	100.0%
Blue:Green	100.3%	99.0%

The are crops of the section of image analysed by FoCal:

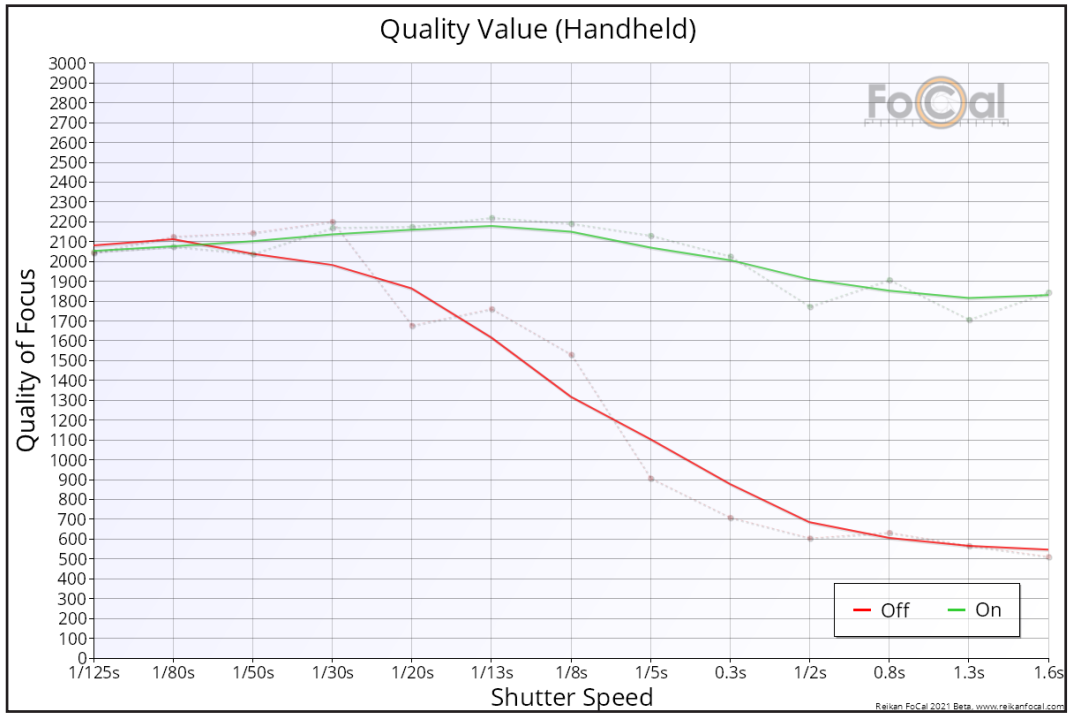


Charts

Quality Value (Handheld)

The Quality Value chart shows the absolute quality value of each point taken with stabilisation both active and disabled.

For detailed information about how to interpret this chart, please see: <http://help.reikanfocal.com/help2/1300.html>



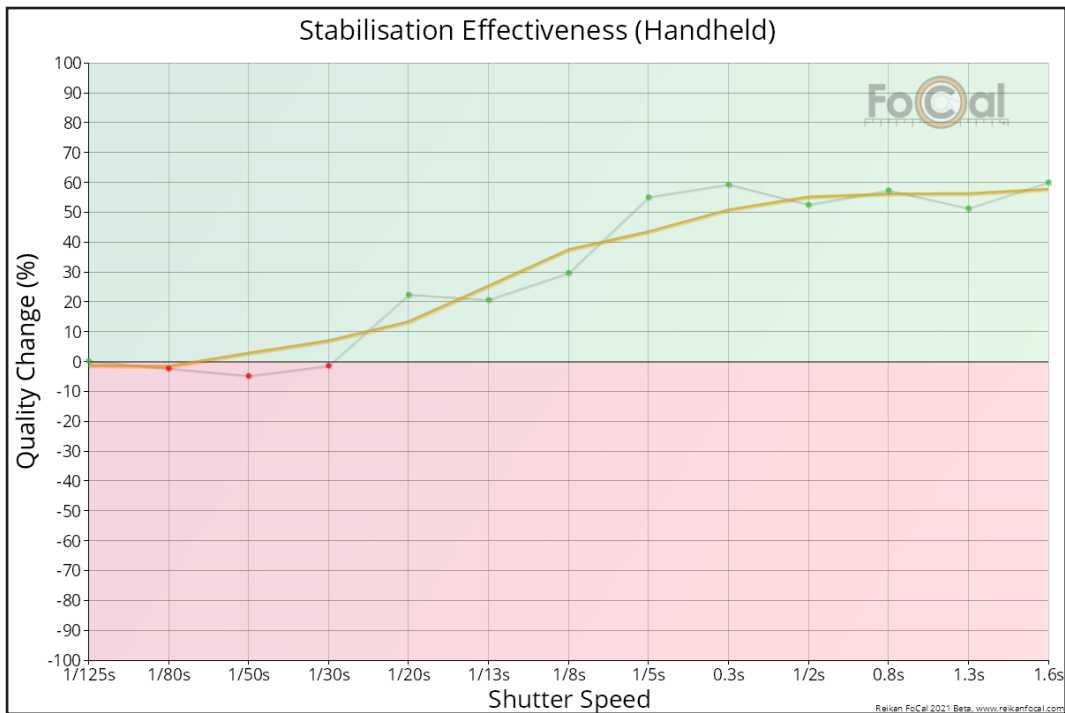
Stabilisation Effectiveness (Handheld)

Stabilisation Effectiveness shows the change in quality at each point when stabilisation is activated. As the line rises into the green area, this shows an improvement in quality with stabilisation enabled. If the line drops into the red area, this indicates that the stabilisation system is degrading the image.

For handheld results at slower shutter speeds, you should notice a significant quality improvement when stabilisation is enabled as it compensates for the movement.

At faster shutter speeds (typically less than around 1/200s), there should be very little difference between the quality value when stabilisation is enabled.

For detailed information about how to interpret this chart, please see: <http://help.reikanfocal.com/help2/1301.html>



H/V Ratio (Handheld)

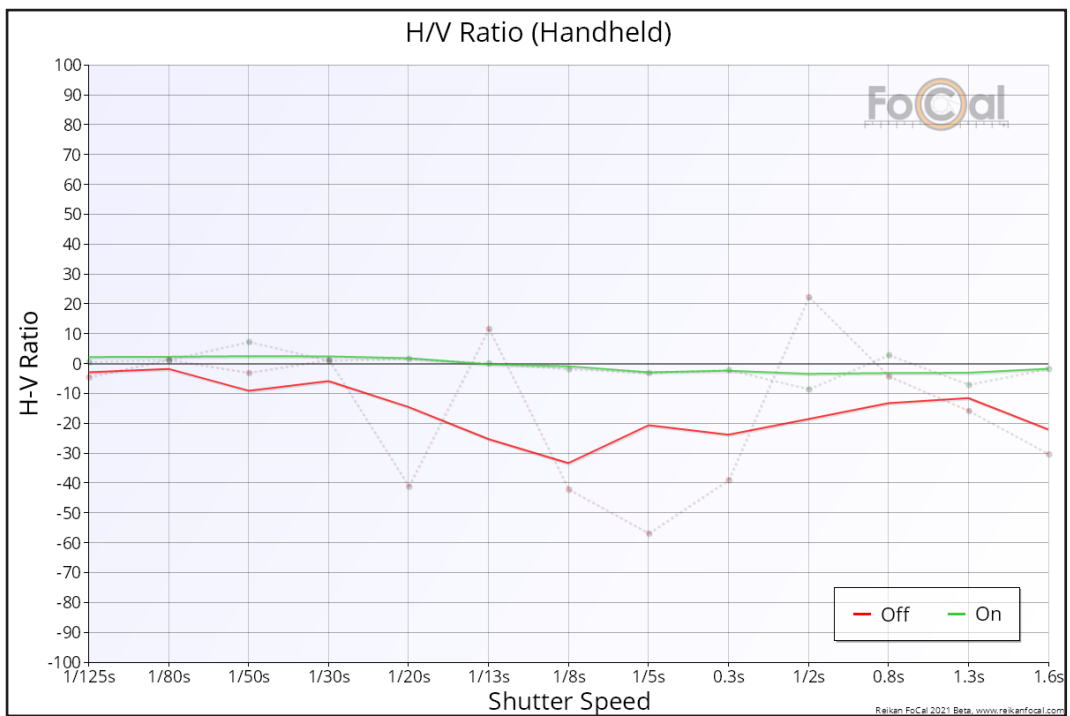
The H/V Ratio shows the relationship between the horizontal and vertical measured quality values.

For a sharp, well focused image, the H/V Ratio should be close to 0. If the image is blurred through even, optical defocusing, you will also see a ratio close to 0.

When the image is degraded due to movement in the horizontal direction, the value will drop below the 0 line, and if degraded due to movement in the vertical direction it will go above the 0 line.

Typically, when hand-holding a lens the vibration introduced will be in the horizontal plane, so you will usually see the line drop below the zero line as the image stabilisation system stops being able to compensate for movement.

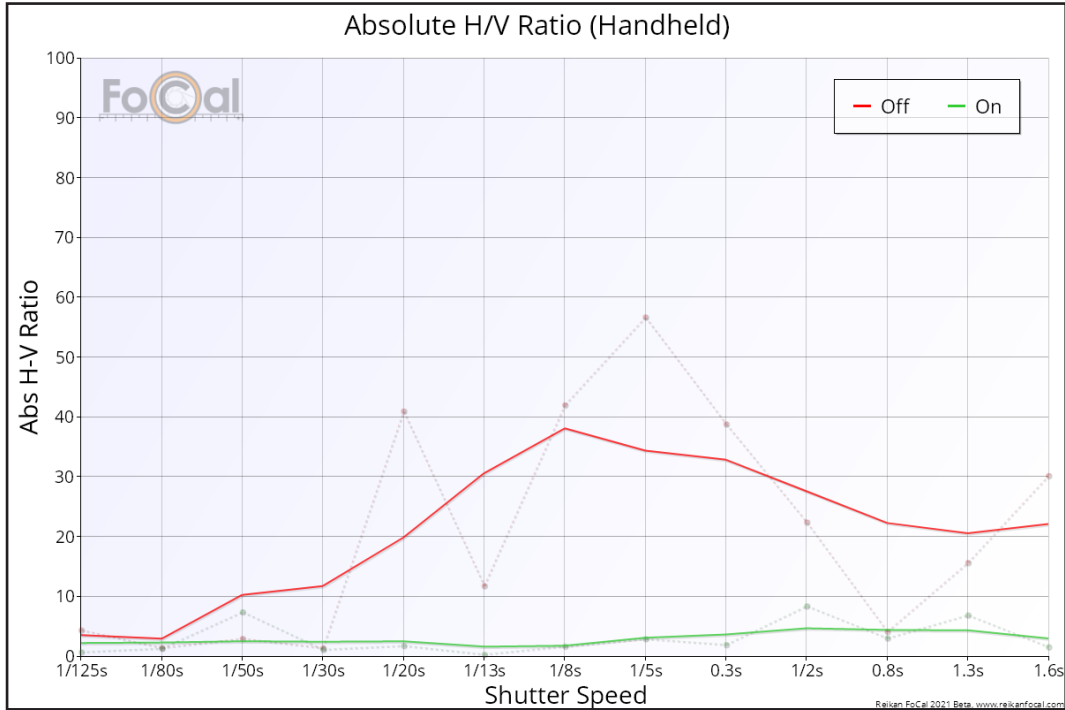
For detailed information about how to interpret this chart, please see: <http://help.reikanfocal.com/help2/1304.html>



Absolute H/V Ratio (Handheld)

The Absolute H/V Ratio shows the relationship between the horizontal and vertical measured quality values, but it ignores which axis is sharper and instead just shows a value proportional to the difference between horizontal and vertical results.

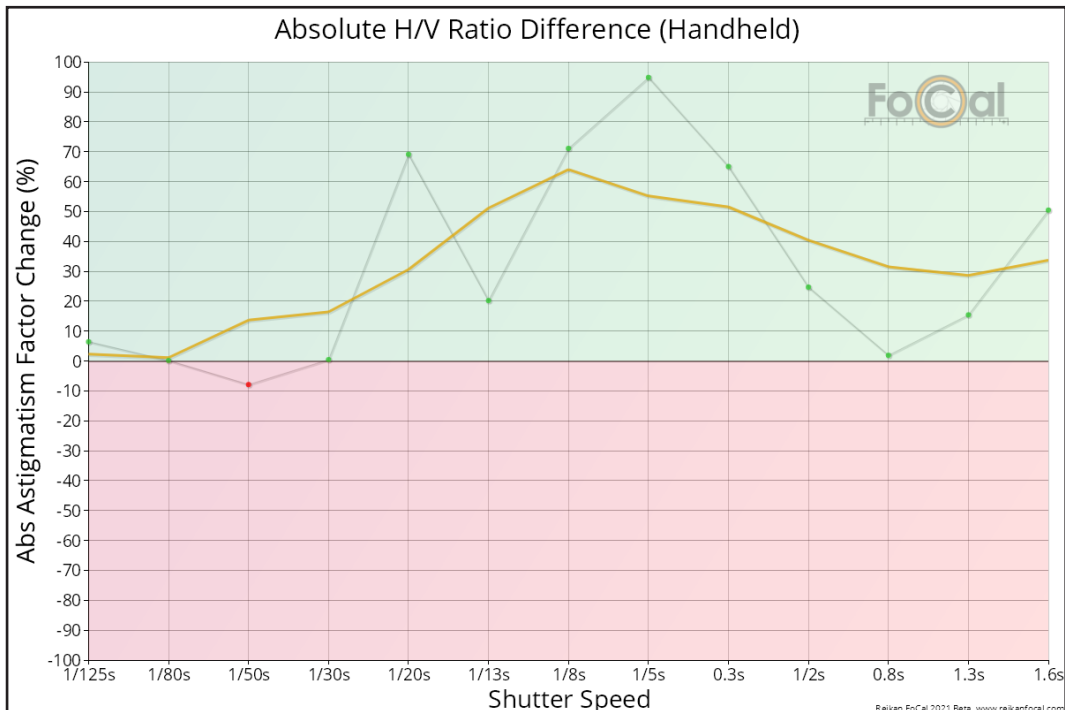
For detailed information about how to interpret this chart, please see: <http://help.reikanfocal.com/help2/1305.html>



Absolute H/V Ratio Difference (Handheld)

The Absolute H/V Ratio Difference shows the difference between the horizontal and vertical quality measurements with stabilisation enabled and disabled.

For detailed information about how to interpret this chart, please see: <http://help.reikanfocal.com/help2/1306.html>



Stops Improvement (Handheld)

This chart shows the number of stops improvement when the stabilisation is enabled compared to when it is disabled.

For each stabilisation-disabled quality level, this calculation tries to find the shutter speed of the same stabilisation-enabled quality and determine the number of stops between them.

This calculation is not available at every point, and is generally only populated and valid when the test captures shutter speeds where movement cannot be fully corrected by the stabilisation system (e.g. slower than around 1/4 second)

For detailed information about how to interpret this chart, please see: <http://help.reikanfocal.com/help2/1307.html>

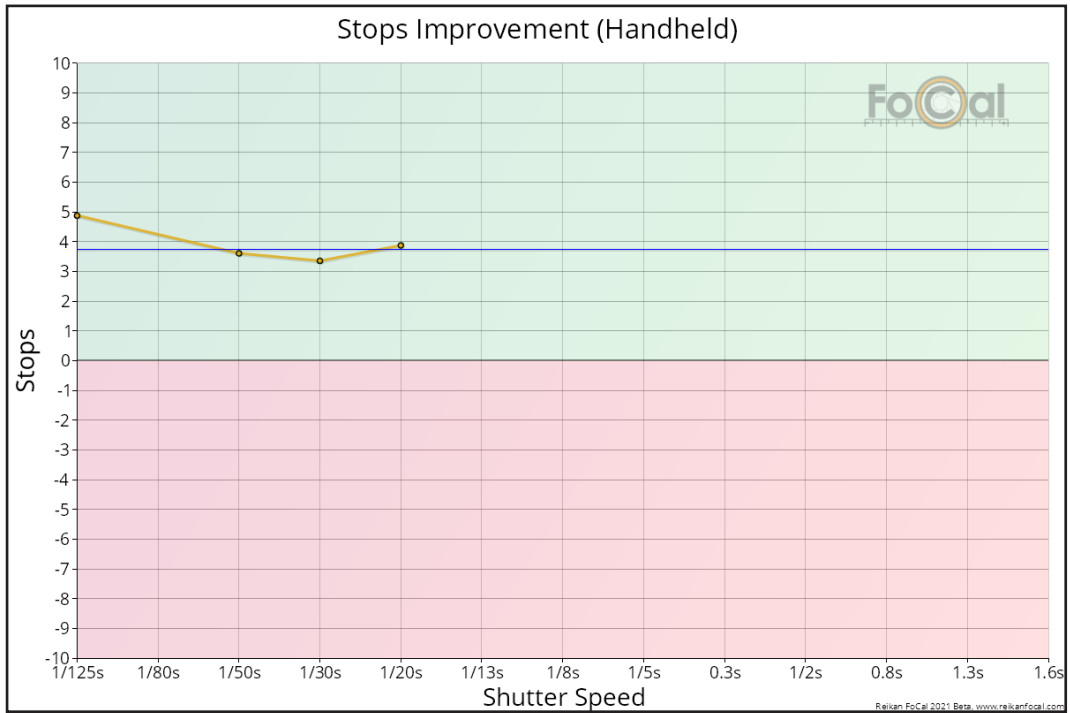


Image Motion (Handheld)

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.

For detailed information about how to interpret this chart, please see: <http://help.reikanfocal.com/help2/1308.html>

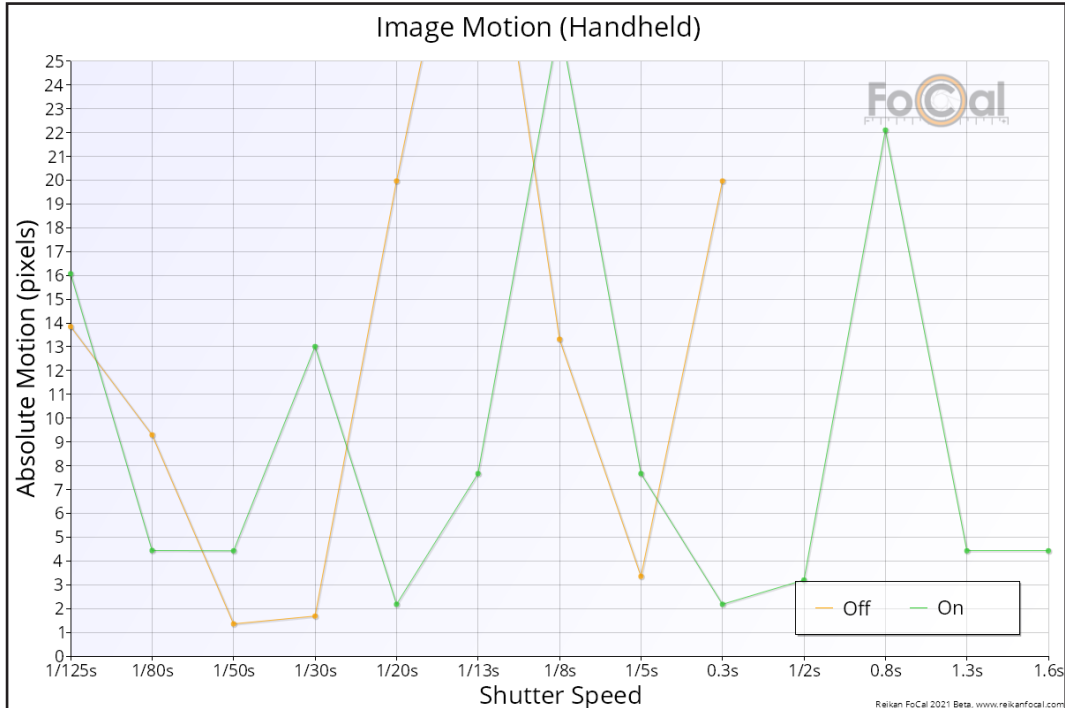


Image Motion (2D) (Handheld)

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 2D chart shows the the movement of the image as te test proceeds.

For detailed information about how to interpret this chart, please see: <http://help.reikanfocal.com/help2/1309.html>

