



Reikan FoCal Aperture Sharpness Test Report

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

Test run on: 26/01/2016 17:14:35 with FoCal 2.0.6.2416W Report created on: 26/01/2016 17:16:16 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)	16125
Test Colour Temp	3200 К
Lens	150-600mm f/5-6.3
Focal Length	600,0mm
Termination Reason	Success
Test <mark>ISO</mark>	400
Distance to Target	15,4m to 15,5m
Operation Mode	Normal Mode
Diffraction Limited Aperture	f/6,3
Worst Aperture	f/29,0
Optimal Aperture	f/7,1





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,
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Analysis Details

Property	Description
Astigmatism Factor Range	24,2% (±20,1%)
Spectral Power Range	R: 32% (±0,2%) G: 32% (±0,2%) B: 36% (±0,4%)
Red:	
Red Optimal Aperture	f/7,1
Red Peak QoF	1695,6
Green:	
Green Optimal Aperture	f/7,1
Green Peak QoF	1817,5
Blue:	
Blue Optimal Aperture	f/8,0
Blue Peak QoF	1507,3





Aperture	f/29,0
Shutter Speed	1/50s
EV	13,3
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	943,0
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/33/36
Red Quality	919,7
Green Quality	962,1
Blue Quality	946,1
HVR	44,3%





Aperture	f/25,0
Shutter Speed	1/50s
EV	12,8
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	969,5
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/33/36
Red Quality	937,9
Green Quality	993,8
Blue Quality	971,9
HVR	42,2%





Aperture	f/22,0
Shutter Speed	1/80s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1032,4
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/33/36
Red Quality	1007,8
Green Quality	1064,2
Blue Quality	1030,6
HVR	40,1%





Aperture	f/20,0
Shutter Speed	1/100s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1118,7
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/33/36
Red Quality	1083,6
Green Quality	1152,5
Blue Quality	1115,7
HVR	35,8%







Aperture	f/18,0
Shutter Speed	1/125s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1222,5
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/33/36
Red Quality	1182,8
Green Quality	1269,5
Blue Quality	1214,0
HVR	28,9%







Aperture	f/16,0
Shutter Speed	1/160s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1266,6
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/33/36
Red Quality	1233,9
Green Quality	1315,0
Blue Quality	1255,6
HVR	33,7%







Aperture	f/14,0
Shutter Speed	1/200s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1340,5
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/32/36
Red Quality	1303,2
Green Quality	1394,3
Blue Quality	1314,0
HVR	31,1%







Aperture	f/13,0
Shutter Speed	1/250s
EV	13,3
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1344,1
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/32/36
Red Quality	1317,0
Green Quality	1401,7
Blue Quality	1308,2
HVR	33,7%







Aperture	f/11,0
Shutter Speed	1/320s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1493,6
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/32/36
Red Quality	1483,5
Green Quality	1606,7
Blue Quality	1401,7
HVR	15,6%







Aperture	f/10,0
Shutter Speed	1/320s
EV	12,9
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1587,6
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/32/36
Red Quality	1595,1
Green Quality	1717,2
Blue Quality	1472,8
HVR	10,8%







Aperture	f/9,0
Shutter Speed	1/400s
EV	12,9
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1659,7
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/32/36
Red Quality	1697,8
Green Quality	1819,0
Blue Quality	1481,5
HVR	6,9%







Aperture	f/8,0
Shutter Speed	1/640s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1687,4
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/32/36
Red Quality	1718,8
Green Quality	1856,7
Blue Quality	1507,3
HVR	6,9%





Aperture	f/7,1
Shutter Speed	1/800s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1698,9
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/32/36
Red Quality	1695,6
Green Quality	1817,5
Blue Quality	1589,4
HVR	4,1%







Aperture	f/6,3
Shutter Speed	1/1000s
EV	13,2
Colour Temperature	Unknown
Camera Temperature	Unknown
Quality Measure	1513,3
Optimised	Yes
Ignored	No
Spectral Power (R/G/B)	32/33/36
Red Quality	1484,1
Green Quality	1587,6
Blue Quality	1456,9
HVR	4,7%





Aperture Sharpness Profile

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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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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.

