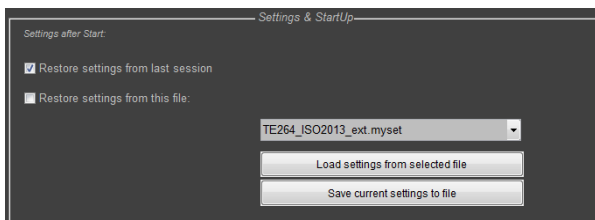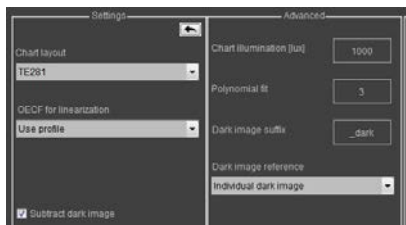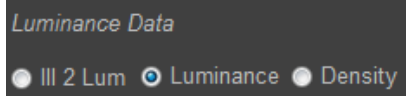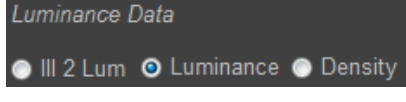# Example Images

Support Document

22 March 2017

This example image set is meant to perform analyses with the iQ-Analyzer software for test purposes. The left column shows the module and the available image files, in the mid column all required settings, charts and, if necessary, referance files that have to be loaded in the iQ-Analyzer. To make the configuration easier, please load the standard settings (*.myset) for each test chart before analysis in the General Settings window:

For more details concerning the usage of the iQ-Analyzer, please find the user manual on our website http://www.image-engineering.de/products/software/376-iq-analyzer#tab1_downloads or contact us under support@image-engineering.de.

module / image name	needed files	remarks
Color		
color_TE188_DSLR15.tif	TE188_default.myset TE188_ColorChecker.chart TE188_ColorChecker.cref	
color_TE188_lightstudio_mobilephoneX.jpg	TE188_lightSTUDIO_default.myset TE188_ColorChecker_lightSTUDIO.chart TE188_ColorChecker.cref	
color_TE230_DSLR1_00.jpg to _02.jpg	TE230_default.myset TE230_ColorCheckerSG.chart TE230_ColorCheckerSG.cref	
Distortion		
distortion_TE251_DSLRX_y.JPG	TE251_default.myset TE251_Distortion.chart	_s → standard _t → tele _w → wide angle
Flare		
Flare_TE281_DSLM4_f1,8.JPG to _f22 .JPG and corresponding dark images	no .myset existent and necessary TE281.chart	 • The _dark images are necessary for the analysis and will be automatically loaded.

OECF

01_TE241_determine_temporal_noise: OECF_TE241_DSLR5_00.jpg to _07 OECF_TE241_DSLR6_00.jpg to _07 **02_TE241_ISO:** OECF_TE241_DSLR3_ISOXXX.JPG OECF_TE241_DSLR4_ISOXXX.JPG	TE241_ISO2003_ext.myset TE241_OECF20.chart TE241_OECF20.lum or TE241_OECF20.den *Luminance Data* ○ lll 2 Lum ◉ Luminance ○ Density	• Advanced Settings: ISO 15739: 2003: The brightest patch must be in saturation and latest the 3rd brightest field must not. Saturation here is the highest digital value that the camera is able to return (increase of brightness does not lead to an increase of the digital value). • To determine temporal noise activate ‚Measure temporal noise' in the advanced settings. Add the first image of a series of minimum 8 pictures to the file list. Set ‚Processing' to ‚Files in Queue + Ext.' and start the analysis.
03_TE241_exposue_series: OECF_TE241_DSLM1_1_5.JPG to _1_50		• Advanced Settings: ISO 15739: 2003: The brightest patch must be in saturation and latest the 3rd brightest field must not. Saturation here is the highest digital value that the camera is able to return (increase of brightness does not lead to an increase of the digital value). • The Measurement module of the iQ-Analyzer is suitable to determine the right exposure time. • OECF_TE241_DSLM1_1_15.JPG would be the matching image after ISO 15739: 2003.
04_TE241_1,000,000-to-1: OECF_TE241_1,000,000-to-1_compactcamera2_ISO100.JPG to _ISO6400.JPG	TE241_ISO2003_ext.myset TE241_1,000,000-to-1_OECF20.chart TE241_OECF20.lum or TE241_OECF20.den *Luminance Data* ○ lll 2 Lum ◉ Luminance ○ Density	• Advanced Settings: ISO 15739: 2003: The brightest patch must be in saturation and latest the 3rd brightest field must not. Saturation here is the highest digital value that the camera is able to return (increase of brightness does not lead to an increase of the digital value).
05_TE264_10,000-to-1: OECF_TE264_DSLR14_00.JPG to _07	TE264_ISO2013_ext.myset TE264_OECF20.chart TE264_OECF20.lum or TE264_OECF20.den *Luminance Data* ○ lll 2 Lum ◉ Luminance ○ Density	• Advanced Settings: ISO 15739: 2013: The background of the chart shall be rendered to a digital value of 118 (sRGB, 8bit). • To determine temporal noise activate ‚Measure temporal noise' in the advanced settings. Add the first image of a series of minimum 8 pictures to the file list. Set ‚Processing' to ‚Files in Queue + Ext.' and start the analysis. → Message: More than three fields in full saturation. Check exposure.*
06_TE270X_10,000-to-1: OECF_TE270X_DSLR18_AE_00.JPG to _09	TE270_ISO2013_ext.myset TE270_OECF20.chart TE270_OECF20.lum or TE270_OECF20.den *Luminance Data* ○ lll 2 Lum ◉ Luminance ○ Density	• Advanced Settings: ISO 15739: 2013: The background of the chart shall be rendered to a digital value of 118 (sRGB, 8bit). • To determine temporal noise activate ‚Measure temporal noise' in the advanced settings. Add the first image of a series of minimum 8 pictures to the file list. Set ‚Processing' to ‚Files in Queue + Ext.' and start the analysis. → Message: More than three fields in full saturation. Check exposure.*

* As after ISO 15739:2013, the exposure should be adjusted based on the background. Therefore, this Message is just an information about the number of saturated patches. To avoid the message just unable the field beside "Check Number of saturated Patches".

■ Check Number of saturated Patc...

Resolution

Some results in resolution can be negative (GUI: !value). This feature of the iQ-Analyzer, setting the value negative or to "negative Nyquist", is meant to make the user aware, that this result could not be calculated properly. Else, higher frequencies than the theoretical Nyquist limit can occur. In this case IE engineers check the image and decide, based on the visual impression, if the resolution is set to the theoretical maximum or not.
http://www.image-engineering.de/library/technotes/708-how-to-deal-with-unusual-sfr-mtf-results
These two cases can happen:
The curve does not hit the MTF10/25/50 border at all → The result will be set to -Nyquist/!Nyquist
The curve hit MTF10 border behind Nyquist frequency → Result can be higher than Nyquist, even if it´s theoretically not possible. This may be caused by a higher resolution in diagonal directions for Siemens Star patterns or a high sharpening processing on other resolution patterns, e. g. Slanted Edges.
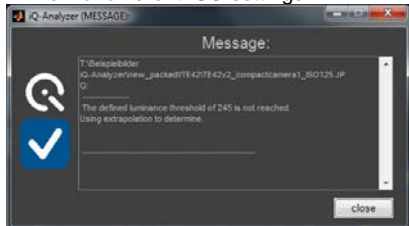
resolution_TE253_9x_compactcamera4_ISO 100.JPG	TE253_144_default.myset TE253_144_9x_NoiseLab.chart	• Chart with 9 sinusoidal Siemens stars with 144 cycles each • Center mark 12mm.
resolution_TE261_mobilephone5.JPG	TE261_default.myset TE261.chart	• Slanted Edge target
resolution_TE268_DSLM3_w.jpg	TE268_default.myset TE268_25x_Siemens.chart	• Chart with 25 sinusoidal Siemens stars and 144 cycles each. • Center mark 12mm. • _w → wide angle
resolution_TE268H_DSLM2_X.JPG resolution_TE268H_DSLM3_X.JPG	TE268H_default.myset TE268H_25x_Siemens.chart	• Chart with 25 sinusoidal Siemens stars and 144 cycles each. • Center mark 5mm; H version. _s → standard _t → tele _w → wide angle
resolution_TE276_mobilephoneX.jpg	TE276_default.myset TE276_newDeadLeaves.chart	• Dead Leaves pattern
resolution_TE276V2_DSLM_0X.JPG	TE276_V2_default.myset TE276_V2_DeadLeaves.chart	• Dead Leaves pattern surrounded by two low and two high contrast slanted edges.
resolution_TE280_A_DSLM3_ISO100.JPG	TE280.chart	• single low contrast Siemens star for texture loss evaluation
resolution_TE283_setup2_actioncam1_0X.jpg	TE283_Setup2_default.myset TE283_Setup2.chart	• iQ-FoV Box slanted edge charts

Shading

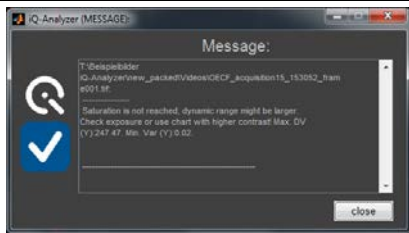|		
shading_TE255_DSLRX_y.JPG	TE255_profile.myset TE255_FlatField.chart	• OECF for Linearisation: Use Profile _s → standard _t → tele _w → wide angle

TE42/ TE42 V2

TE42_DSLR1_ISOXXX.JPG TE42_mobilephone1.JPG	TE42_default.myset TE42.chart TE42_Data.42	• row of different ISO settings → Message: defined threshold 245
TE42v2_16_9_mobilephone4.jpg TE42v2_16_9_mobilephone4_flash.jpg TE42v2_16_9_mobilephone4_zoom.jpg TE42v2_16_9_mobilephone4_nd03.jpg TE42v2_16_9_mobilephone4_nd09.jpg	TE42_V2_16_9_default.myset TE42_V2_16_9.chart TE42_V2_16_9_Data.42	• without specific conditions or settings • _zoom: maximum zoom position • _flash: with flash • _nd03: neutral density filter (D= 0.3) • _nd09: neutral density filter (D= 0.9) → Message: defined threshold 245
TE42v2_compactcamera1_ISOX.JPG TE42v2_DSLR2_ISOX.JPG	TE42_V2_default.myset TE42_V2.chart	• row of different ISO settings → Message: defined threshold 245

UTT

UTT_TE262_A3.tif	UTT_A3.chart UTT_MetaData_A3.xls 01-KB_UTT_Metamorfoze.xls	
UTT_TE262_A4.tif	UTT_A4.chart UTT_MetaData_A4.xls 01-KB_UTT_Metamorfoze.xls	

Videos

Color.mov	TE230_default.myset TE230_ColorCheckerSG.chart TE230_ColorCheckerSG.cref	• Load video in the Video Module. • Set Trigger Batch. • Capture as many frames as you need. • Pass frames into the matching module. • Load all needed setting files. • Start analysis.
Distortion.mov	TE251_default.myset TE251_Distortion.chart	
OECF.mov	TE241_**ISO2003**_ext.myset TE241_OECF20.chart TE241_OECF20.den oder TE241_OECF20.lum	
Resolution.mov	TE253_144_default.myset TE253_144_9x_NoiseLab.chart	
Shading.mov	TE255_profile.myset TE255_FlatField.chart	