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### I. IMAGE ACQUISITION PROCEDURE

The “***lateral resolution***” analysis is associated with the “***gradually spaces lines***” patterns (Pattern E - see Figure 1).

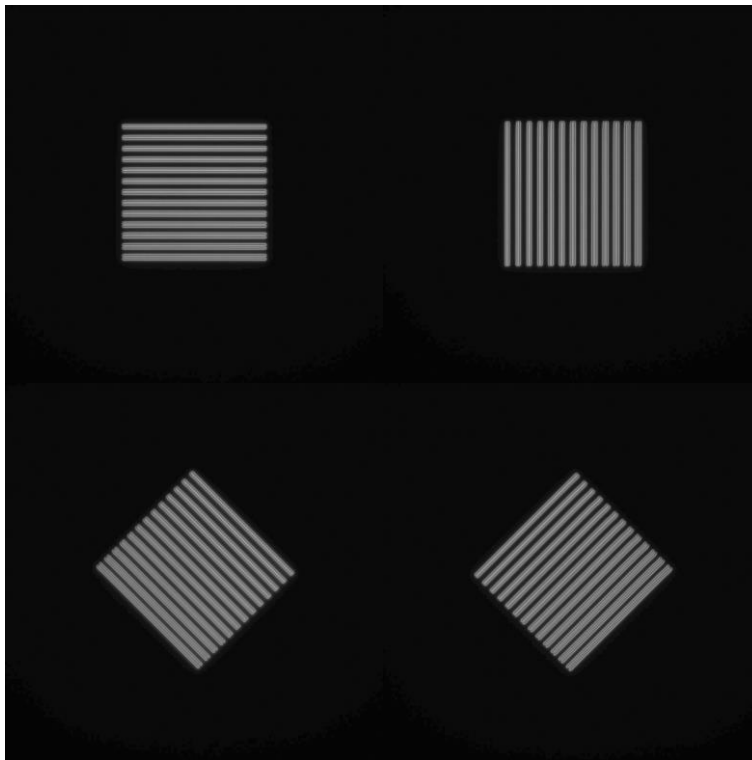


Figure 1: Image examples of the 4 “gradually spaced lines” patterns (horizontal, vertical, +45° and -45° lines), fulfilling the acquisition recommendations.

#### 1. ACQUISITION RECOMMENDATIONS

- Recommended image type

<b>Z stack</b>	Yes (if your microscope allows to do it)
<b>Multi-channel</b>	Recommended but not mandatory
<b>Tiles</b>	No

When a multi-channel Z-stack is acquired, the reader in Daybook separates each channel so that one Z-stack per channel can be analyzed.

**Do not zoom in, this could damage the pattern.**

**The area of the scanned zone should not be smaller than the area of the pattern.**

- Alignment prior image acquisition





Align precisely the detector orientation and/or the scanning with respect to the XY translation stage. The analysis, however, can correct a low XY orientation misalignment (a few degrees).

- **Signal-to-background ratio (SBR)**

Acquire images with enough contrast between the pattern and the background, *e.g.* a signal-to-background ratio higher than 2:1.

- **Signal-to-noise ratio (SNR)**

Acquire images with enough contrast between the pattern and the noise, *e.g.* a signal-to-noise ratio higher than 10:1.

- **Image intensity**

Acquire images within the linear response range of the detector, that is above the detection limit and below the saturation limit. If available in the acquisition software, use the color-coded pixels to adjust properly the image intensity. Note that Daybook Analysis cannot analyze images containing negative values.

- **Image dynamic range**

When possible, acquire images with a detector that captures raw data with a bit depth of 8 or 16 bits, the allowed image dynamic range for computers (1-byte and 2-byte chunks, respectively). If the detector captures raw data with a bit depth different from 8 or 16 bits, convert the images into 8- or 16-bit-dynamic range without losing any information. Note that if the image file weight is too big for the computational capacity of your computer, the analysis may not succeed.

- **Image sampling rate**

The sampling rate of the image should fulfill the Nyquist criterion, *i.e.* the image pixel size should be at least the half of the theoretical resolution limit. However, if possible, we recommend adjusting the image pixel size to one third of the theoretical resolution limit.

Image examples acquired following the acquisition recommendations can be found in your Daybook folder, located here: C:\Program Files\Daybook\Daybook-Analysis\trial images

We encourage you to process these images to have an idea of the image quality required to perform the analysis, and to start being familiar with the use of the software.

## 2. HOW TO IMAGE THE PATTERN?

### 1- Find the patterns

- a) Start with a low mag objective (such as 10× or 20×). Set the DAPI (405 nm) or GFP (488 nm) channel.
- b) Make coincide the center of the slide with respect to the objective.
- c) Adjust focus through the eyepieces.





- d) Switch to the objective you would like to use. Move the slide to the pattern.

### 2- Adjust your setup

- a) Match the center of the pattern with the center of the field of view.
- b) Adjust the focus.  
The best focus usually corresponds to the Z-plane for which the central cross looks the clearest (qualitative approach) and/or for which the intensity histogram is the broadest (quantitative approach).

### 3- Image your pattern

- a) Image the pattern by following the acquisition recommendations.
- b) Save images into a raw, non-compressed format (for example, the acquisition software proprietary format) or into a lossless compression format (e.g. "\*.tiff"). The image file must have a dynamic range of 8 or 16 bits.

#### **Important:**

This pattern must be imaged entirely. Do not zoom within the pattern.  
If the pattern is not imaged entirely, the analysis will not work.





## II. IMAGE ANALYSIS PROCEDURE

### 1. HOW TO LAUNCH AN ANALYSIS?

- Select “Lateral resolution” in the “Select analysis” list.
- Upload your image(s) using the “Upload file” button.  
Select the image to be analyzed.
- Set the required and optional settings (see chapter 2 “Analysis Settings”).
- Click on “Start the analysis”.

Lateral resolution

Start the analysis

☒ Normalized image On/Off

- If needed, select a region of interest (ROI) and click on “Crop” to crop the image (*cf.* Figure 2).

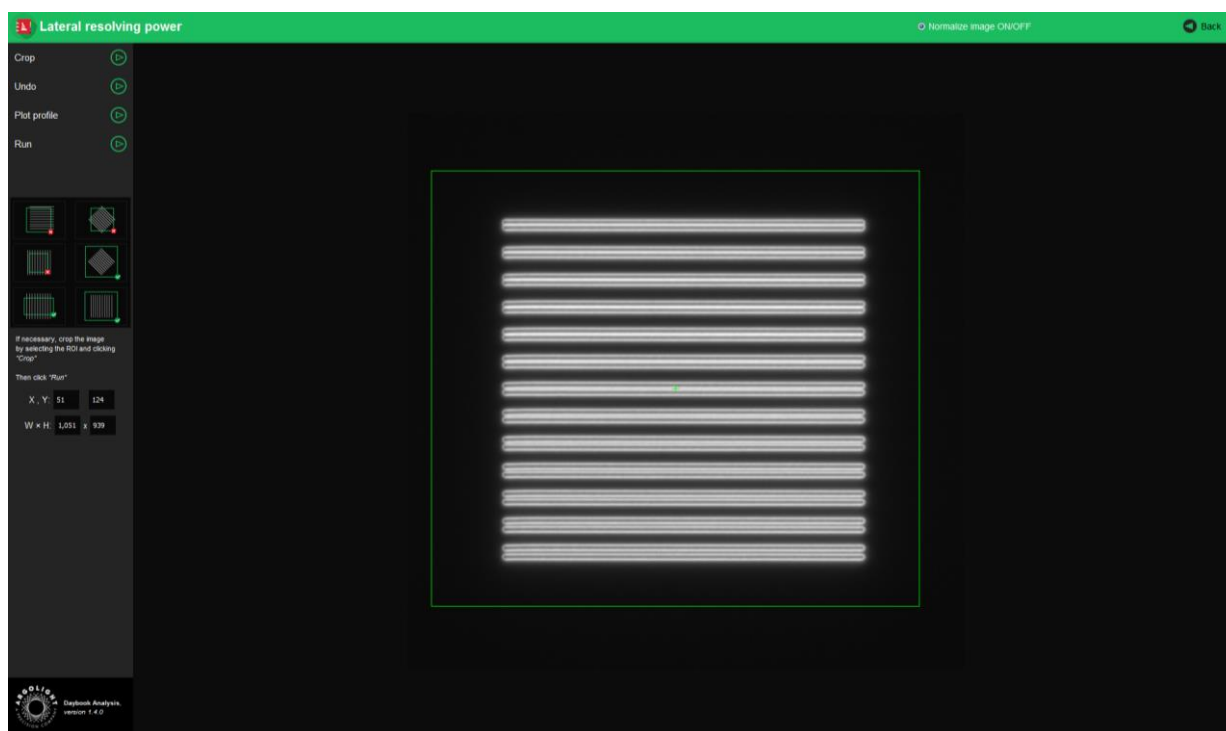


Figure 2: Crop window.

- Click on “Run”.  
Results are displayed and can be saved as “\*.csv”, “\*.pdf”, or transferred into Daybook Data Manager (if available in your package).





## 2. ANALYSIS SETTINGS

### 1- Required settings

- **Specified lateral pixel size**

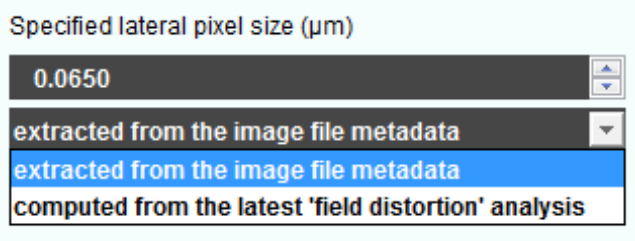
There are two ways to get the lateral pixel size of the image to be analyzed:

- Either from the proprietary file:

Select *“extracted from the image file metadata”*.

- Or from a previous *“field distortion”* analysis:

Select *“computed from the latest ‘field distortion’ analysis”*.



- **Contrast criterion**

There are many criteria (Rayleigh, Schuster, Sparrow criterion...) that can be applied to determine the lateral resolution.

The user can define here the value he would like to apply.

- **ROI width & Interpolation factor**

- The ROI width is the width of the Region Of Interest (ROI).
- The interpolation factor, also known as resampling factor, allows the increase of the number of points of the intensity line profile, by applying a linear interpolation.
- The ROI width and the interpolation factor can have a non-negligible influence on whether the analysis works or not.

It is advised to set the ROI width to at least 1/3 of the pattern size, as well as to increase the interpolation factor up to 1 if the following situations occur:

- The detection of peaks and valleys does not work precisely.
- The image is under-sampled (pixel size too large).
- The signal-to-noise ratio and/or the signal-to-background ratio are too low.

Click on “Redo” to easily change the ROI width, interpolation factor, correction angle, pixel size, Gaussian fitting threshold level and re-run the analysis.

### 2- Optional settings

- **Background correction**

Subtracts the background in images where the signal-to-background ratio (SBR) is too low to be analyzed by Daybook Analysis.





It requires to acquire an image of an area where there is no fluorescent pattern (*i.e.* a background image) with the same settings (channel, illumination power, exposure time, etc.) as the image of the pattern to be analyzed.

For multi-channel tests, a background image for each channel is required.

- **Hot pixels removal**

Removes the very intense (*i.e.* hot) pixels that may cause analysis issues.

Use this option only if you have such hot pixels in the image.

- **Specified axial pixel size**

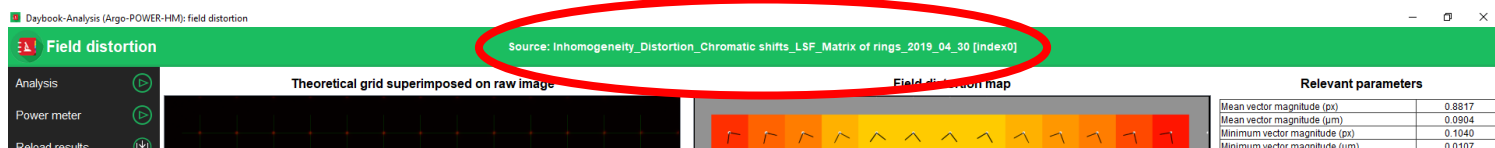
On Z-stacks analysis, the axial pixel size is determined from the proprietary file.

- **Best focus selection**

Works only for mono- or multi-channel Z-stacks.

It automatically selects from a Z-stack the image having the best contrast, corresponding to the best focus for the fluorescent pattern.

The index of the selected image is displayed in the middle top of the results page (see figure below). Information about the selected image can also be found in the metrics and reports.



- **Gaussian fitting threshold level**

The Gaussian fitting threshold level is the intensity level above which the Gaussian fitting is performed on the intensity line profile. It is automatically computed (recommended option). It can also be set manually when there is a problem with the analysis, we advise to do so only as last option.

- **Orientation correction**

There might sometimes be a tilt on the acquired images. Tick "Orientation correction" to button enable the correction angle option.

- **Correction angle**

The correction angle is computed from other analyses (*field distortion* or *lateral resolution*). It can also be set manually.



### III. RESULTS PAGE DESCRIPTION

The picture below shows the results page for this analysis (cf. Figure 3). Results are displayed in the form of images, maps, graphs and tables.

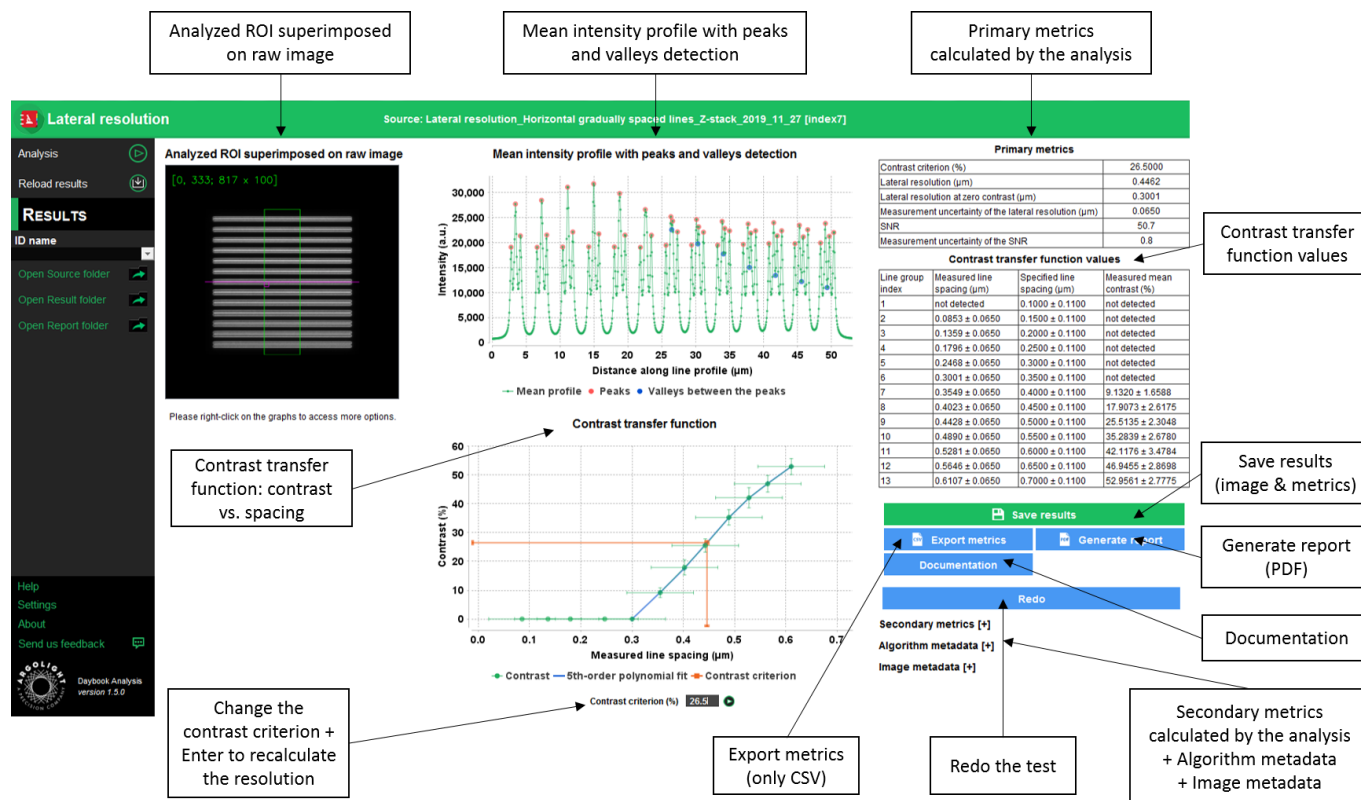


Figure 3: Results page.

When Daybook Data Manager is disabled, the results can be saved into a “\*.csv” file thanks to the “Save results” or “Export metrics” buttons.

Reports (in a “\*.pdf” format) containing the results (maps, graphs, metrics) can be generated and saved by clicking on the “Generate report” button (cf. Figure 3).

By default, the results will be saved in the “/Daybook results” folder, located within the Daybook directory. To modify the default folder, go to the “Settings” menu at the bottom left corner.

When a valid Daybook Data Manager license key is registered, the “Save results” button becomes “Save into Data Manager”. Results are therefore transferred into Daybook Data Manager when clicking the “Save in Data Manager” button. To do that, in the saving window interface, select the system, acquisition profile and associated channel for which you would like to save the results.

By default, the results are saved at the acquisition date of the image. If the acquisition date is not in the metadata of the image, it is possible to save the results at the present date (date of the analysis) or at a custom date.





SAVE RESULTS IN DATABASE

Please choose your configuration used for the Field uniformity analysis

Select your system  
Demo microscope ▼

Select your acquisition profile  
Profile 1 ▼

Select the associated channel  
DAPI #1 ▼

Select the saving date  
Present date (2020-01-20 15:43:56) ▼

Select the saving date

- Acquisition date (2019-10-07 13:32:02) ▼
- Acquisition date (2019-10-07 13:32:02)
- Present date (2020-01-21 18:00:28)
- Custom date and time

Save results Cancel

- **Image options:**
  - Zoom in and out. The images can be zoomed in and out by using the mouse roller.
- **Graph options:**
  - Zoom in and out: Hold the left or right button of the mouse and move it towards the bottom right to create a selection rectangle. To go back to the initial size, hold the left or right button of the mouse and move it towards any direction.
  - Optional features. Right click on the graph to have access to:
    - “Properties”: Edit the chart properties.
    - “Save as”: Save an image into a “\*.png” file, or the graph values into a “\*.txt” file.
    - “AutoRange”: Adjust automatically the ranges of the axes.



#### IV. ANALYSIS ALGORITHM DESCRIPTION

The diagram below describes the algorithm that allows the extraction of the lateral resolution from the “gradually spaced lines” image (*cf.* Figure 5).

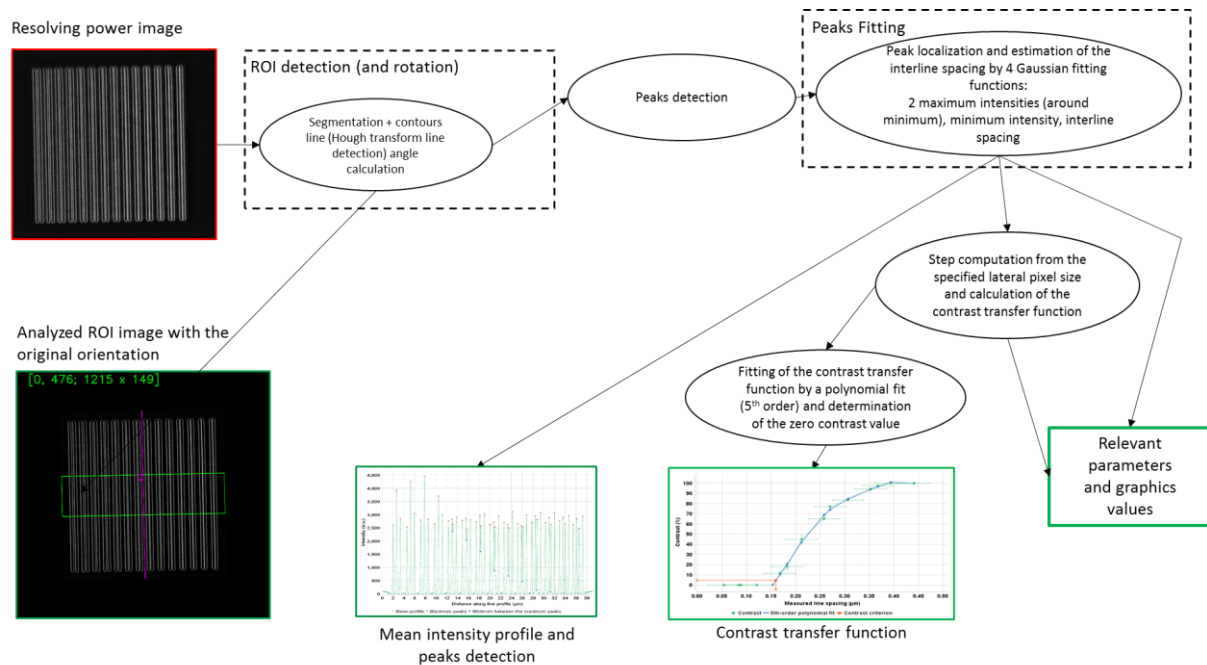


Figure 3: Schematic description of the different steps of the analysis algorithm.

In short, the algorithm works as follows:

- It detects and segments the “gradually spaced lines” in the image.
- It applies an automatic orientation correction.
- It plots an intensity line profile perpendicular to the lines.
- It detects the peaks (in red) and the valleys (in blue) for each group of lines.
- It computes the mean contrast for each group of lines.
- It fits each line with a Gaussian function, from which it measures the spacing between the two inner lines of each group.
- It displays the mean contrast versus the measured line spacing into the contrast transfer function graph.
- It also computes the SNR, by dividing the average value of the intensity of each pixel along one line of each group with the standard deviation of the intensity values.

See below a more detailed description of the algorithm used to fit the intensity line profile with Gaussian functions. There are mostly two main steps.

**STEP 1:** The algorithm identifies the double pair of lines (*i.e.* the lines group) which has the largest interline spacing from the following model, which is a sum of four Gaussian functions.



**Model 1:**

$$f(x) = K_1 \exp \left[ -2 \ln(2) \frac{(x - x_1)^2}{FWHM_{1-3}^2} \right] + K_2 \exp \left[ -2 \ln(2) \frac{(x - x_1 - d_{1-2})^2}{FWHM_{2-4}^2} \right] \\ + K_3 \exp \left[ -2 \ln(2) \frac{(x - x_4)^2}{FWHM_{1-3}^2} \right] + K_4 \exp \left[ -2 \ln(2) \frac{(x - x_4 + d_{3-4})^2}{FWHM_{2-4}^2} \right]$$

The following parameters are set as free:

$x_1$ : position of the 1<sup>st</sup> line.

$x_4$ : position of the 4<sup>th</sup> line.

$d_{1-2}$ : spacing between the first two lines (1<sup>st</sup> and 2<sup>nd</sup> line).

$d_{3-4}$ : spacing between the last two lines (3<sup>rd</sup> and 4<sup>th</sup> line).

$K_1, K_2, K_3, K_4$ : respective magnitudes of the four lines.

$FWHM_{1-3}$ : full width at half-maximum of the 1<sup>st</sup> and 3<sup>rd</sup> lines (these widths are supposed to be the same).

$FWHM_{2-4}$ : full width at half-maximum of the 2<sup>nd</sup> and 4<sup>th</sup> lines (these widths are supposed to be the same).

The intensity profiles of the lines are locally normalized with an offset correction determined at the edges of all the analyzed double pairs of lines (*i.e.* the lines groups).

The interline mean spacing between the 1<sup>st</sup> and 2<sup>nd</sup> lines and the 3<sup>rd</sup> and the 4<sup>th</sup> lines, denoted  $d$ , is calculated from  $d = \frac{d_{1-2} + d_{3-4}}{2}$ .

**STEP 2:** All the double pairs of lines (*i.e.* the lines groups) are fitted with one of the two following models, depending on the cases whether four or three lines per group are resolved.

**Model 2: Four lines per group are resolved**

$$f(x) = K_1 \exp \left[ -2 \ln(2) \frac{(x - x_1)^2}{FWHM_{1-3}^2} \right] + K_2 \exp \left[ -2 \ln(2) \frac{(x - x_1 - d)^2}{FWHM_{2-4}^2} \right] \\ + K_3 \exp \left[ -2 \ln(2) \frac{(x - x_1 - d - \Delta)^2}{FWHM_{1-3}^2} \right] + K_4 \exp \left[ -2 \ln(2) \frac{(x - x_1 - 2d - \Delta)^2}{FWHM_{2-4}^2} \right]$$

The following parameters are set as free:

$x_1$ : position of the 1<sup>st</sup> line.

$K_1, K_2, K_3, K_4$ : respective magnitudes of the four lines.

$\Delta$ : spacing between the 2<sup>nd</sup> and 3<sup>rd</sup> lines (the two inner lines which are resolved).

The following parameters are set beforehand:

$d$ : interline mean spacing between the 1<sup>st</sup> and 2<sup>nd</sup> lines and the 3<sup>rd</sup> and the 4<sup>th</sup> lines.

$FWHM_{1-3}$ : full width at half-maximum of the 1<sup>st</sup> and 3<sup>rd</sup> lines (these widths are supposed to be the same).

$FWHM_{2-4}$ : full width at half-maximum of the 2<sup>nd</sup> and 4<sup>th</sup> lines (these widths are supposed to be the same).

**Model 3: Three lines per group are resolved**

$$f(x) = K_1 \exp \left[ -2 \ln(2) \frac{(x - x_1)^2}{FWHM_{1-3}^2} \right] + K_{2-3} \exp \left[ -2 \ln(2) \frac{(x - x_1 - d)^2}{FWHM_{2-4}^2} \right]$$





$$+K_{2-3} \exp \left[ -2 \ln(2) \frac{(x - x_1 - d - \Delta)^2}{FWHM_{1-3}^2} \right] + K_4 \exp \left[ -2 \ln(2) \frac{(x - x_1 - 2d - \Delta)^2}{FWHM_{2-4}^2} \right]$$

The following parameters are set as free:

$x_1$  : position of the 1<sup>st</sup> line.

$K_1, K_4$ : respective magnitudes of the 1<sup>st</sup> and 4<sup>th</sup> lines.

$K_{2-3}$ : magnitude of the 2<sup>nd</sup> and 3<sup>rd</sup> lines (these magnitudes are supposed to be the same).

$\Delta$ : spacing between the 2<sup>nd</sup> and 3<sup>rd</sup> lines (the two inner lines which are not resolved).

The following parameters are set beforehand:

$d$ : interline mean spacing between the 1<sup>st</sup> and 2<sup>nd</sup> lines and the 3<sup>rd</sup> and the 4<sup>th</sup> lines.

$FWHM_{1-3}$ : full width at half-maximum of the 1<sup>st</sup> and 3<sup>rd</sup> lines (these widths are supposed to be the same).

$FWHM_{2-4}$ : full width at half-maximum of the 2<sup>nd</sup> and 4<sup>th</sup> lines (these widths are supposed to be the same).

To choose which fitting model to apply, the number, the position, the magnitude and the width of the lines are first determined.

Once the fitting model is applied, the number and the position of the lines is then cross-checked.

A threshold parameter, set automatically, allows fitting only the data points that are above the dip between the 2<sup>nd</sup> and 3<sup>rd</sup> lines (the two inner lines), determined during step 1.

It is however possible to set manually this threshold parameter, in % of the maximum value of the detected peaks.





## V. OUTPUT METRIC DESCRIPTION

### 1. PRIMARY METRICS

- **Contrast criterion** is the set contrast value for which the user wants to determine the lateral resolution. The contrast is expressed in % and is given by the following equation:

$$Contrast = 100 \times \frac{\overline{I_{peak}} - I_{dip}}{\overline{I_{peak}}}$$

For instance, the well-known Schuster, Rayleigh and Sparrow criteria correspond to contrast thresholds of 99.9%, 26.5%, and 0.1%, respectively.

The PSF FWHM criterion (which is the contrast criterion equivalent to the FWHM measurement of a PSF) corresponds to contrast thresholds of 3.8% for a wide-field microscope, and of 7.3% for a confocal microscope.

$\overline{I_{peak}}$  is the average value of the four peaks magnitude and  $I_{dip}$  is the local minimum value between the two inner lines.

- **Lateral resolution** corresponds to the minimum separation distance distinguishable at a previously set contrast criterion. It is obtained from the intercept between the fitted contrast transfer function and the pre-set contrast threshold. It is expressed in  $\mu\text{m}$ .
- **Lateral resolution at zero contrast** is the cut-off value of the measured line spacing, *i.e.* the intercept between the abscissa axis and the 5<sup>th</sup>-order polynomial fitting function of the contrast transfer function. In other words, it is the minimum resolvable distance by the imaging system. It is expressed in  $\mu\text{m}$ .
- **Measurement uncertainty of the lateral resolution** is the uncertainty of the algorithm on the measurement of the lateral resolution from the analyzed image. It is equal to one pixel size. It is expressed in  $\mu\text{m}$ .
- **SNR** is the signal-to-noise ratio of the analyzed image. It is defined as the ratio between the mean signal  $\bar{S}$  and the mean noise  $\bar{N}$ . It is unitless and is given by the following equation:

$$SNR = \frac{\bar{S}}{\bar{N}} = \frac{Mean(\overline{S_n})}{Mean(\overline{N_n})}$$

For one line of each subset (the one towards the largest line spacing), the average signal of each line profile  $n$  with the raw intensity  $I$  at pixel  $y$  is expressed as:

$$\overline{S_n} = \frac{1}{ROI\ width} \sum_{y=1}^{ROI\ width} I_n(y)$$

For one line of each subset (the one towards the largest line spacing), the average noise of each line profile  $n$  with the raw intensity  $I$  at pixel  $y$  is expressed as:





$$\overline{N_n} = \sqrt{\frac{1}{ROI\ width} \sum_{y=1}^{ROI\ width} [I_n(y) - \overline{S_n}]^2}$$

The mean signal is the average of the  $n$  average signals calculated here before for each line profile, and is expressed as:

$$\bar{S} = Mean(\overline{S_n}) = \frac{1}{number\ of\ line\ subsets} \sum_{n=1}^{number\ of\ lines\ subsets} S_n$$

The mean noise is the average of the  $n$  average noises calculated here before for each line profile, and is expressed as:

$$\bar{N} = Mean(\overline{N_n}) = \frac{1}{number\ of\ line\ subsets} \sum_{n=1}^{number\ of\ lines\ subsets} N_n$$

- **Measurement uncertainty of the SNR** is the uncertainty on the measurement of the signal-to-noise ratio from the analyzed image. It is unitless and is given by the following equation:

$$\Delta(SNR) = SNR \times \sqrt{\left[\frac{SD(\bar{S})}{\bar{S}}\right]^2 + \left[\frac{SD(\bar{N})}{\bar{N}}\right]^2}$$

Where:  $SD(\bar{S_n}) = \frac{1}{number\ of\ line\ subsets} \sum_{n=1}^{number\ of\ lines\ subsets} [\bar{S_n} - \bar{S}]^2$  is the standard deviation (SD) of the average signals.

And:  $SD(\bar{N_n}) = \frac{1}{number\ of\ line\ subsets} \sum_{n=1}^{number\ of\ lines\ subsets} [\bar{N_n} - \bar{N}]^2$  is the standard deviation (SD) of the average noises.

## 2. CONTRAST TRANSFER FUNCTION VALUES

The measured line spacings and mean contrast values plotted in the “Contrast transfer function” graph, are displayed in the “Contrast transfer function values” table.

## 3. SECONDARY METRICS

- **Maximum detectable line spacing** is the maximum spacing value between two inner lines of a group of lines that can be detectable, *i.e.* that can be measured. It is expressed in  $\mu\text{m}$ .
- **Minimum detectable line spacing** is the minimum spacing value between two inner lines of a group of lines that can be detectable, *i.e.* that can be measured. It is expressed in  $\mu\text{m}$ .
- **Intensity maximum** is the maximum intensity value in the mean intensity profile. It is expressed in





arbitrary unit.

- *Intensity minimum* is the minimum intensity value in the mean intensity profile. It is expressed in arbitrary unit.

#### 4. ALGORITHM METADATA

- *Analysis date* is the date at which the analysis has been performed.
- *Software version* is the version of the software.
- *Product type* is the type of Argolight product selected in the panel settings.
- *Angle value used for the orientation correction (automatically calculated)* is the measured angle value to correct for a small rotation of the “gradually spaced lines” pattern, usually due to a camera or laser scanning misalignment in microscopes. It is expressed in degree.
- *Background correction* indicates if the “Background correction” option has been activated or not.
- *Hot pixels removal* indicates if the “Hot pixels removal” option has been activated or not.
- *Best focus selection* indicates if the “Best focus selection” option has been activated or not.
- *Index of the selected image in the stack* indicates the index of the image in the stack that has been selected when activating the “Best focus selection” option.
- *Processed ROI width* is the width set for the region of interest within the “gradually spaced lines” pattern. It is expressed in pixel.
- *Interpolation factor* is the factor set to interpolate linearly the mean intensity profile.
- *Detected number of line groups* is the detected number of line subsets (or line groups). For the analysis to provide correct results, it must be the same as the *expected number of line groups*.
- *Expected number of line groups* is the expected number of line subsets (or line groups), for a given slide type: 13 for Argo-HM, 14 for Argo-SIM, 10 for Argo-Z, 14 for Argo-Check Resolution and 13 for Argo-POWER<sup>HM</sup>.
- *Specified maximum line spacing* is the maximum line spacing specified by Argolight: 0.70 for Argo-HM, 0.39 for Argo-SIM, 0.55 for Argo-Z, 0.39 for Argo-Check Resolution and 0.70 for Argo-POWER<sup>HM</sup>. It is expressed in  $\mu\text{m}$ .





- *Specified minimum line spacing* is the minimum line spacing specified by Argolight: 0.10 for Argo-HM, 0.00 for Argo-SIM, 0.10 for Argo-Z, 0.00 for Argo-Check Resolution and 0.10 for Argo-POWER<sup>HM</sup>. It is expressed in  $\mu\text{m}$ .
- *Specified line spacing increment* is the line spacing increment specified by Argolight: 0.05 for Argo-HM, 0.03 for Argo-SIM, 0.05 for Argo-Z, 0.03 for Argo-Check Resolution and 0.05 for Argo-POWER<sup>HM</sup>. It is expressed in  $\mu\text{m}$ .
- *RMSE for the fitting function of the CTF* is the root mean square error between the 5<sup>th</sup>-order polynomial fit and the experimental data in the contrast transfer function. It is a measurement of the goodness of the fit. It is expressed in % and is given by the following equation:

$$RMSE = \sqrt{\frac{1}{n} \sum (C_{measured} - C_{fit})^2}$$

Where  $n$  is the number of experimental points,  $C_{measured}$  the measured contrast values and  $C_{fit}$  the contrast values from the 5<sup>th</sup>-order polynomial fit.

- *X coordinate of the ROI* is the coordinate along X (starting from the top left corner) of the cropped area in the image. A null value corresponds to an uncropped image. It is expressed in pixel.
- *Y coordinate of the ROI* is the coordinate along Y (starting from the top left corner) of the cropped area in the image. A null value corresponds to an uncropped image. It is expressed in pixel.
- *ROI width* is the width of the cropped area in the image. A value equal to the image width corresponds to an uncropped image. It is expressed in pixel.
- *ROI height* is the height of the cropped area in the image. A value equal to the image height corresponds to an uncropped image. It is expressed in pixel.

## 5. IMAGE METADATA

- *Acquisition date* is the date at which the acquisition of the image has been performed. If this information is not contained in the metadata of the image, then the note “unknown” is displayed.
- *Specified lateral pixel size* is the size of one pixel, provided by the metadata associated to the raw image. It is expressed in  $\mu\text{m}$ .
- *Specified axial pixel size* is the interval between each slice of the stack, provided by the metadata associated to the raw image. It is expressed in  $\mu\text{m}$ .
- *Image dynamic range* is the dynamic range of the image, provided by the metadata associated to







the raw image. It is expressed in bits (8 or 16 bits).

- *Detector bit depth* is the data capturing range of the detector, provided by the metadata associated to the raw image. It is expressed in bits. For example, a 16-bit detector can capture  $2^{16} = 65536$  intensity levels.
- *Image width* is the width of the image, provided by the metadata associated to the raw image. It is expressed in pixel.
- *Image height* is the height of the image, provided by the metadata associated to the raw image. It is expressed in pixel.





**Encountered an issue or a question when running this analysis?**  
**Please send a screenshot and your issue description at**  
**[customer@argolight.com](mailto:customer@argolight.com)**

