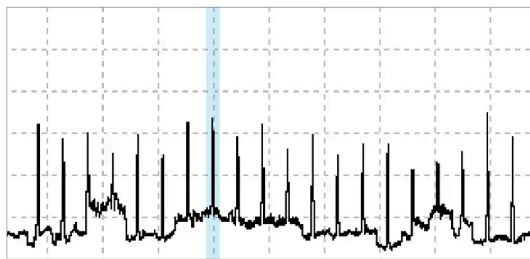


## SETTING UP A LINE SCAN CAMERA

### LENS FOCUSING PERFORMED USING THE OSCILLOSCOPE DISPLAY

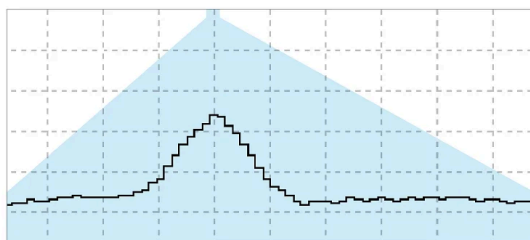
The real-time display of the line scan camera signal facilitates the focusing of the camera lens. This display can even be used to focus a line scan camera system when making measurements in two dimensions. Variations in edge steepness at dark-bright transitions and modulations in the line scan signals provide a useful mechanism for establishing the correct focus. Initial focusing is performed with a fully opened aperture, when the depth of field is at its smallest and the sensitivity of focus adjustment is at its largest. The integration time can also be shortened to provide a sufficiently sensitive low amplitude signal.

### EVALUATION OF A CORRECT FOCUS SETTING BY USING THE LINE SCAN SIGNAL



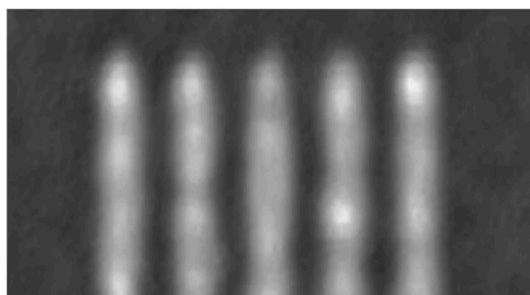
#### OUT OF FOCUS: LINE SIGNAL

Edges are indistinct, signal peaks are blurred with low modulation of high frequency densities.



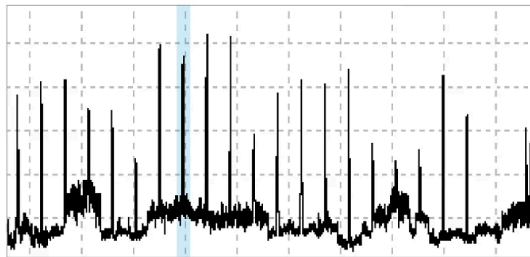
#### OUT OF FOCUS: ZOOM INTO THE LINE SIGNAL

Zoom of highlighted area in the previous image.



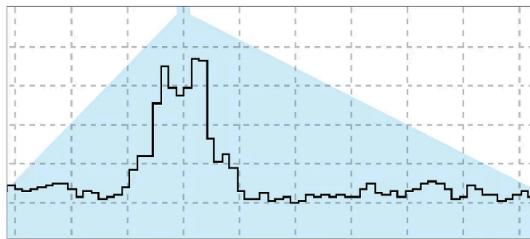
#### OUT OF FOCUS: ARE SCAN WITH BAD FOCUS SETTING

Area scan with bad focus settings reveals a blurred image.



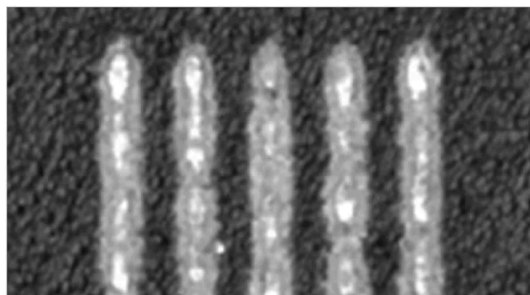
**OPTIMAL FOCUS SETTING: LINE SIGNAL**

Line scan camera signal with optimal focus setting: dark-bright transitions have sharp edges, highly modulated signal peaks with high frequency density variation.



**OPTIMAL FOCUS SETTING: ZOOM INTO THE LINE SIGNAL**

Zoom of highlighted area in the previous image.



**OPTIMAL FOCUS SETTING: AREA SCAN WITH GOOD FOCUS SETTING**

Area scan with optimal focus settings shows a sharp image.

This is a printout of the page <https://sukhamburg.com/support/technotes/linescancamera/setup.html> from 5/24/2026

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