Leuze electronic

the sensor people

SMART SENSOR BUSINESS

ACRCalculator

Product Description

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Subject to change without prior notice

CONNECTING AND OPERATING INSTRUCTIONS

Original Instructions

Leuze electronic

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1 General/terms

The ACRCalculator tool is used to perform basic calculations for camera applications. This tool is especially designed for the components which are distributed by Leuze electronic Inc.
Distance, field of view, accuracy and intermediate rings can be calculated with this tool.

Distance:

This value indicates the distance between the camera bottom side and the object. For cameras with screw-on C-mount lenses, it is important to observe that the lens can be closer to the object (see Figure 1).

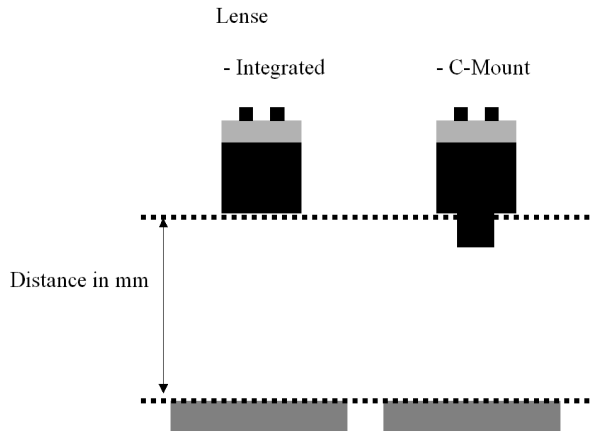

Fig. 1: Working distance

Field of view/object:

The field of view is the area, which is currently inspected by the camera. In order to be able to check an object/feature, it must be located within the field of view.
The aspect ratio of the field of view depends on the geometry of the imaging chip which is built into the camera.

Accuracy/resolution:

The resolution value indicates how many individual pixels make up the field of view. The accuracy of the inspection can vary, depending on the selected resolution and the size of the field of view. A high resolution with a small field of view yields a high accuracy.

Intermediate rings:

Intermediate rings are required for cameras with C-mount lenses in order to be able to focus images in close up range. The necessary intermediate rings are inserted between the lens and the camera.

2 Calculate distance

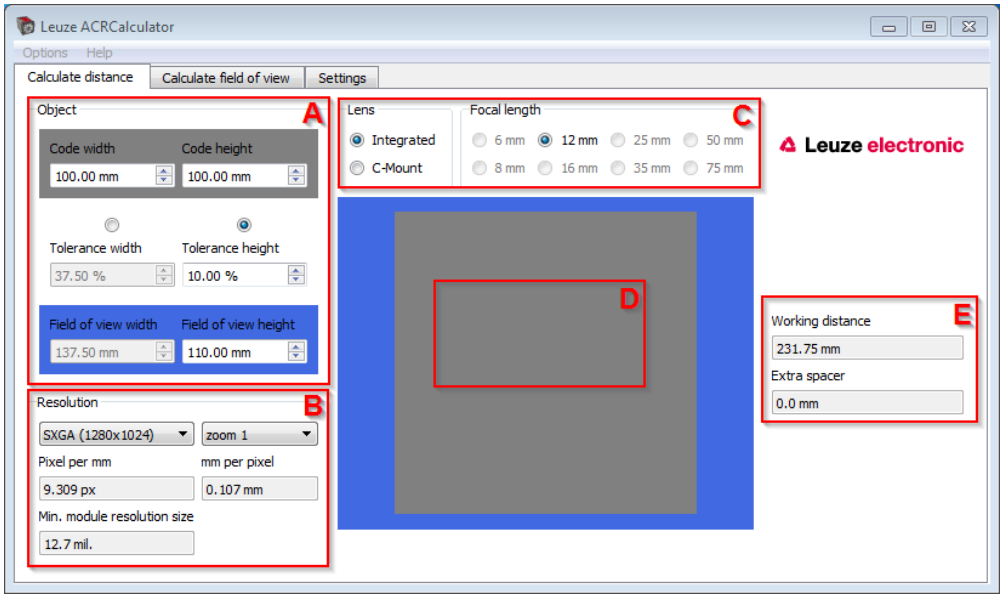

Fig. 2: Tab, Calculate distance

A. Entry of the object dimensions and the position/motion tolerances.
B. Selection of the desired resolution and output accuracy in the fields "pixels per mm“ and "mm per pixel“.
C. Selection of the lens type and focal length.
D. Visualization of object size and field of view. In order to receive the best possible resolution, the object should fill the field of view almost completely.
E. Result of the distance in mm.

The required minimum intermediate ring dimension is specified for C-mount devices. It should be noted that this value must be added to the standard intermediate ring (the standard intermediate ring is specified in the manual of the respective camera).

3 Calculate field of view

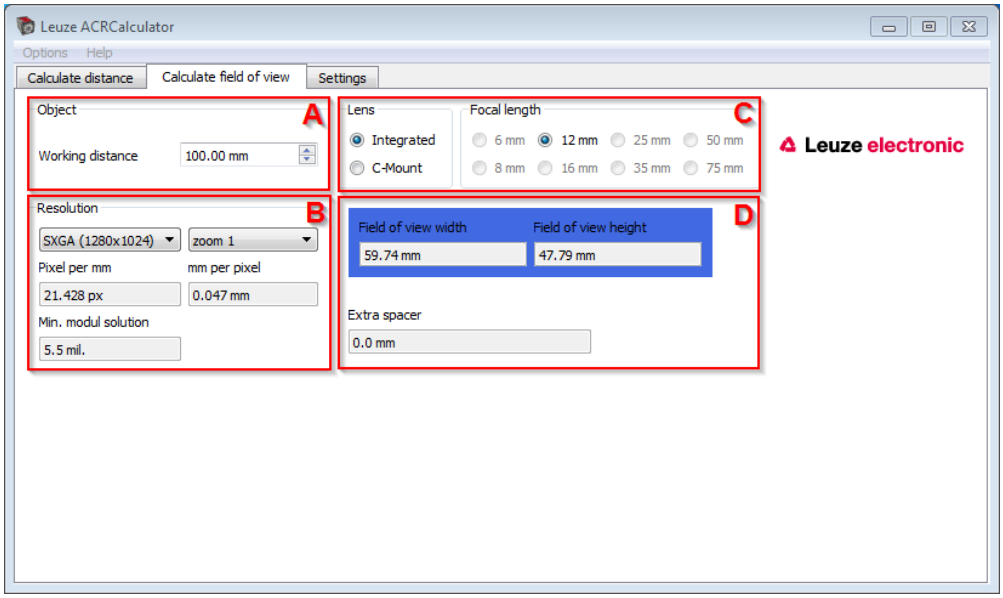

Fig. 3: Calculate field of view

A. Entry of the data for the distance.
B. Selection of the desired resolution and output accuracy in the fields "pixels per mm“ and "mm per pixel.
C. Selection of the lens type and focal length.
D. Output of the field of view size in width and height.

Please note: With setting “ACR 368i” (in tab Settings) in the window “Resolution” one more result “Min. Module size” is shown.

This shows the minimum size of a 2D Code module (in “mil” = 1/1000 inch = 0,0254 mm).

4 Settings

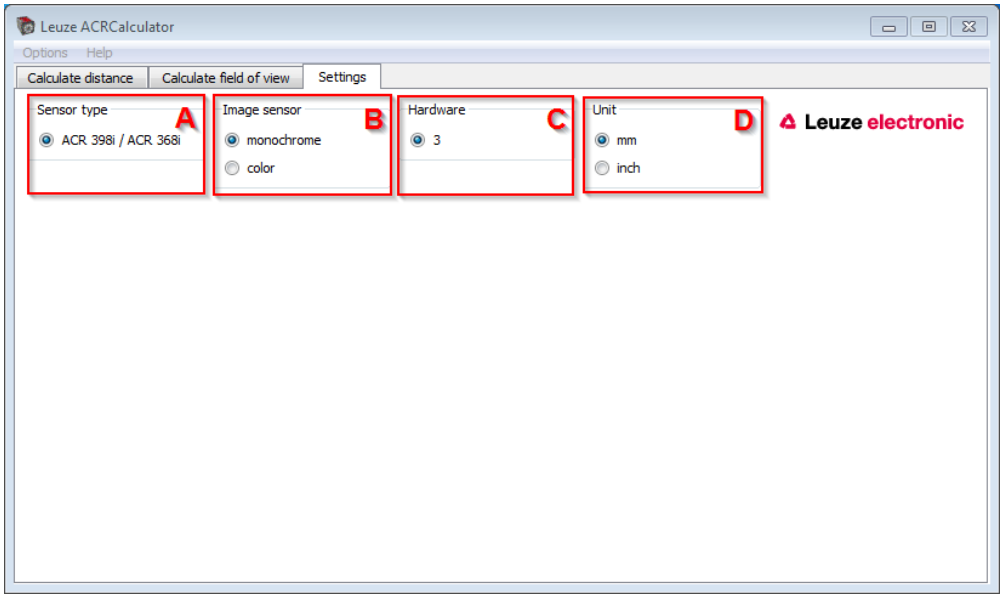

Fig. 4: Tab, Settings

A. Selection of the sensor type.
B. Selection monochrome or color chip.
C. Selection of the hardware platform.
D. Switching of the measurement units.

Note: In the fields B.-D. inactive selections are not possible because of hardware selection in field A.

Support

For further questions regarding this tool and your application please contact the technical support.

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Please note:

It should be noted that due to deviations of the tolerances the results may vary. A test and a correction of the data cannot be excluded. There is absolutely no liability for the functionality and compatibility of this software. Any warranty is void. The use will occur at your own risk.

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