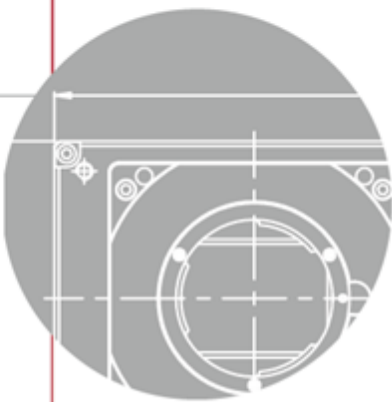


APPLICATION NOTE

Introduction of the TDI Camera Calculator



VIEWWORKS
Imaging Expert

Revision History

Version	Date	Descriptions
1.0	2017-05-19	First release

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1 Introduction of the TDI Camera Calculator

The TDI Camera Calculator is a tool to find the best suited Vieworks camera to user demands – object width, pixel size on object and object speed.

The TDI Camera Calculator has five functions.

- Calculating required resolution.
- Recommending a suitable camera.
- Calculating a line rate and pixel size on object.
- Providing the required encoder distance per pulse and the lens magnification values.
- Calculating a camera rescaler factor

Layout of the TDI Camera Calculator is divided into two parts.

TDI Camera Calculator V1.0

1) To find a suitable Vieworks TDI camera for user demands

Object Width (mm)

Calculated Resolution (# of pixels)

Required Pixel Size on Object (mm)

Suitable Vieworks TDI Camera

Object Speed (mm/sec)

Line Rate (KHz)

Pixel Size on Object (mm)

Required Encoder Distance per Pulse (mm)

Required Lens Magnification

OK

2) To find a camera rescaler factor

User Encoder Distance per Pulse (mm)

Camera Rescaler Factor

User Lens Magnification

OK

Part 1
: To find a suitable
Vieworks TDI camera

Part 2
: To find a camera
rescaler factor

2 Definitions on Input and Output

Part1: To find a suitable camera for user demands.

Input	Definitions
Object Width (mm)	Horizontal length of the object.
Required Pixel Size on Object (mm)	Maximum pixel size on object which is required to capture defects in the object.
Object Speed (mm/sec)	Speed of a conveyer belt.

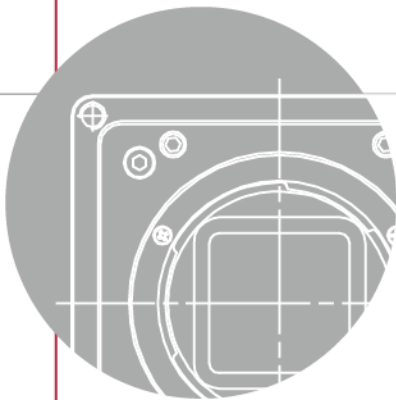
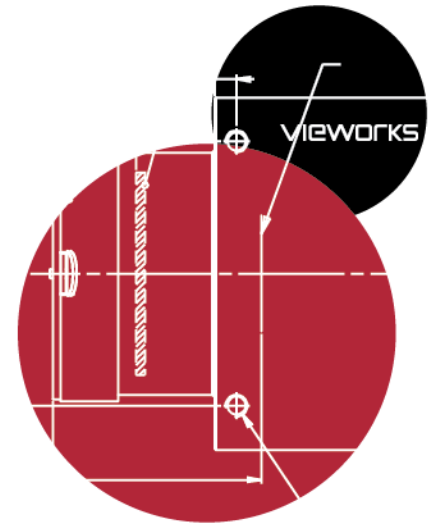
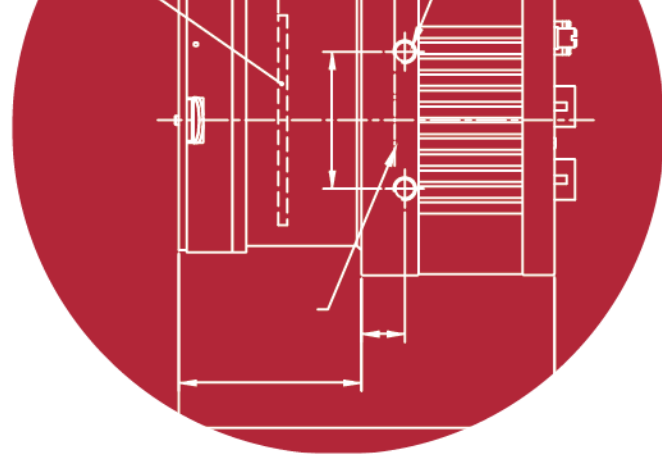
Output	Definitions
Calculated Resolution (number of pixels)	Required resolution to satisfy user demands.
Suitable Vieworks Camera	The best suited Vieworks TDI Camera for user demands.
Line Rate (KHz)	Line rate of the camera.
Pixel Size on Object (mm)	Object size which is represented in one camera sensor pixel.
Required Encoder Distance per Pulse (mm)	Required encoder distance per pulse for the recommended camera.
Required Lens Magnification	Required lens magnification for the recommended camera.

Part 2: To find a rescaler factor

※ In order to find a rescaler factor, the part 1 should be done beforehand.

Input	Definitions
User Encoder Distance per Pulse (mm)	Distance per pulse of user encoder.
User Lens Magnification	Magnification of user lens.

Output	Definitions
Camera Rescaler Factor	This value modulates the period of the trigger signal to get an accurate image. If you want to get a similar function from a frame grabber, please test the grabber function.



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