

# USB 2.0 3648-Pixel 16bit CCD Line Camera with External Trigger

(Part Numbers: TCE-1304-U, TCE-1304-UW)

## FEATURES

- USB2.0 interface
- No external power supply required
- Optical integration time adjustable from 100µs to 6.5s
- 3648 pixel silicon linear CCD array
- 8µm x 200µm pixel size
- 16-Bit A/D converter for high intensity resolution
- Scan rate up to 138 scans/second
- External trigger capability
- 4 GPIOs
- SDK for user applications
- Demo software with GUI

## APPLICATIONS

- Industrial Process Control
- Optical Spectroscopy

## PRODUCT DESCRIPTION

Mightex's TCE-1304-U line camera is a cost-effective high-performance B/W enclosed line camera, based on a single-line, 3648-pixel CCD chip with USB2.0 (480 Mb/s) interface. CCD line cameras have several advantages over their area-array counterparts, including high optical linear resolution that allows systems developers to use the cameras to capture two-dimensional (2-D) images by moving the object or the CCD perpendicularly to the scan line. TCE-1304-U is a compact line-scan camera ideal for a variety of OEM applications such as industry process control, optical spectroscopy and bio-medical imaging etc. Setting up the TCE-1304-U line camera is very easy: one simply needs to install the camera's application software into any PC, and then connect the line camera to the PC using a USB cable. There is no need to install a DAC card or to use an external power supply.

TCE-1304-UW camera is the window-less version of TCE-1304-U, with the glass window removed from the image sensor. Therefore, the former is more sensitive to UV and is more suitable for applications that involve coherent light sources.

## PERFORMANCE SPECIFICATIONS

Parameters	TCE-1304-U and TCE-1304-UW	Unit
CCD	Toshiba TCD1304DG	
Number of pixels	3648	pixels
Pixel size	8 x 200	µm
Spectral range	TCE-1304-U: 350 to 1000 TCE-1304-UW: 200 to 1000	nm
Pixel output clock	0.5	MHz
Data storage on camera	4	frames
ADC resolution	16	bits
External trigger	Yes	
Exposure time range	0.1 ~ 6,500	ms
Number of GPIOs	4 programmable I/O's	
Frame rate	138	scans/second*
Host interface	USB2.0	

\* Frame Rate is dependent on exposure time. When exposure time is set to 0.1 ms, the camera can achieve 138 scans/second.

## SDK Features

Operation Systems	Windows 2000, XP, Vista and Windows 7
Minimum Requirement	RAM > 64M, hard disk space used > 10M
USB Port	2.0
Multiple Cameras	Supported
Device Driver	Yes
Demo Application	Yes
Library Files	Yes (DLL files and static library file)
Example Codes	Yes (VC++ and Delphi)
Frame Attributes*	Exposure Time, Time Stamp, Trigger Event Count, Over-Exposure Detection.

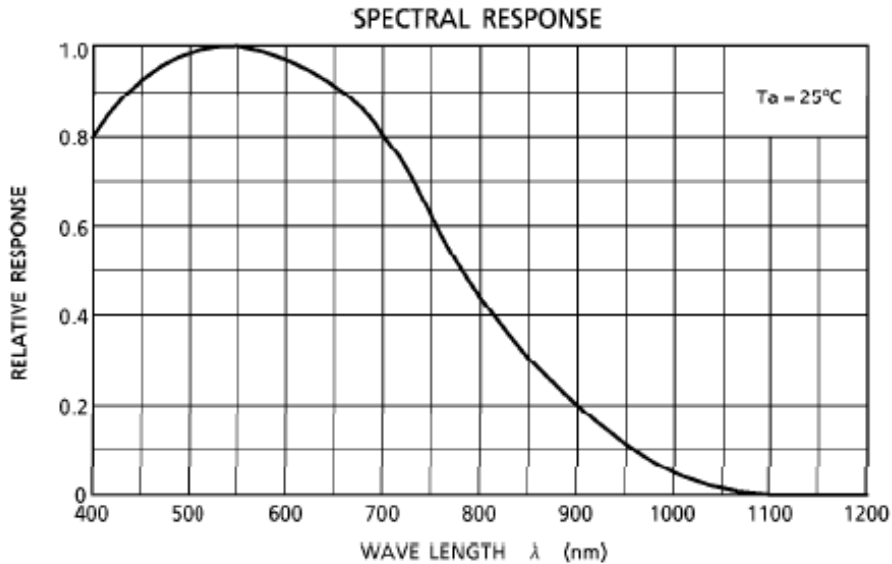
\* SDK will provide call back, which will send user frame data and the related attributes of the frame. The attributes include: Exposure Time, Time Stamp, Trigger Event Count and Over-Exposure Flag.



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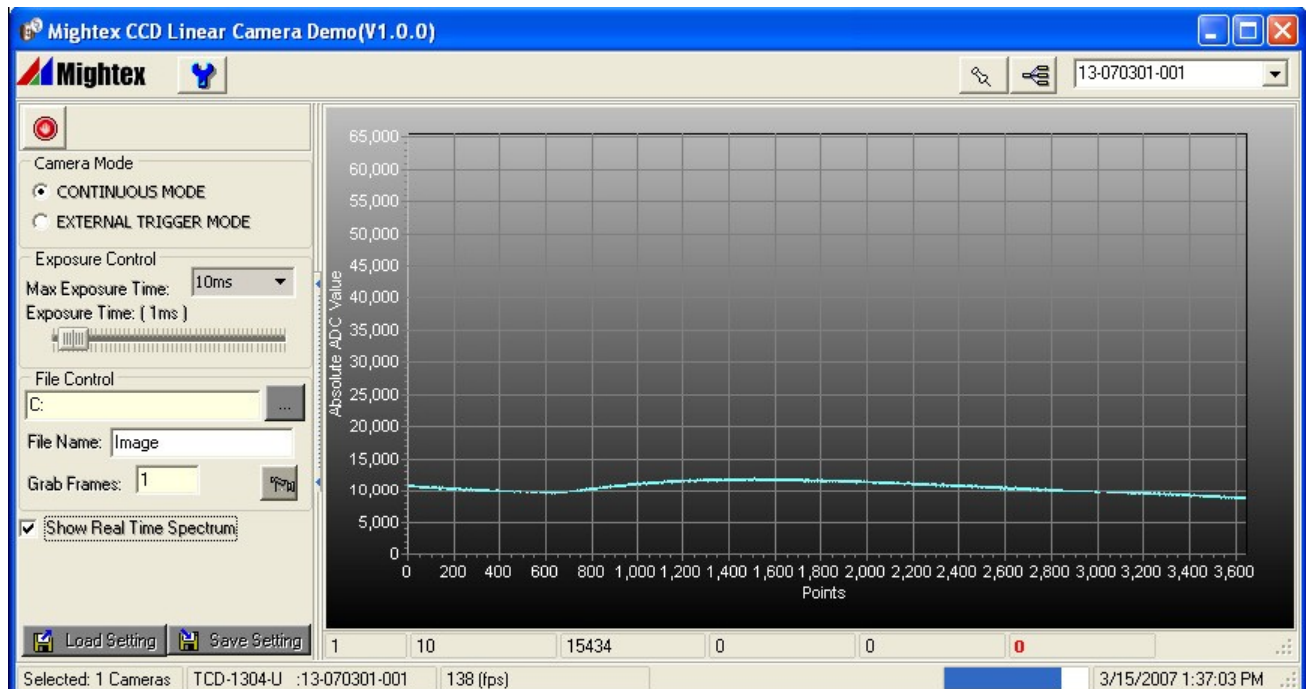
## SPECTRAL RESPONSE (for TCE-1304-U Only)



## OPERATION CONDITION

Operating Temperature Range	-10°C ~ 50°C
Relative Humidity, Non-condensing	5% ~ 95%

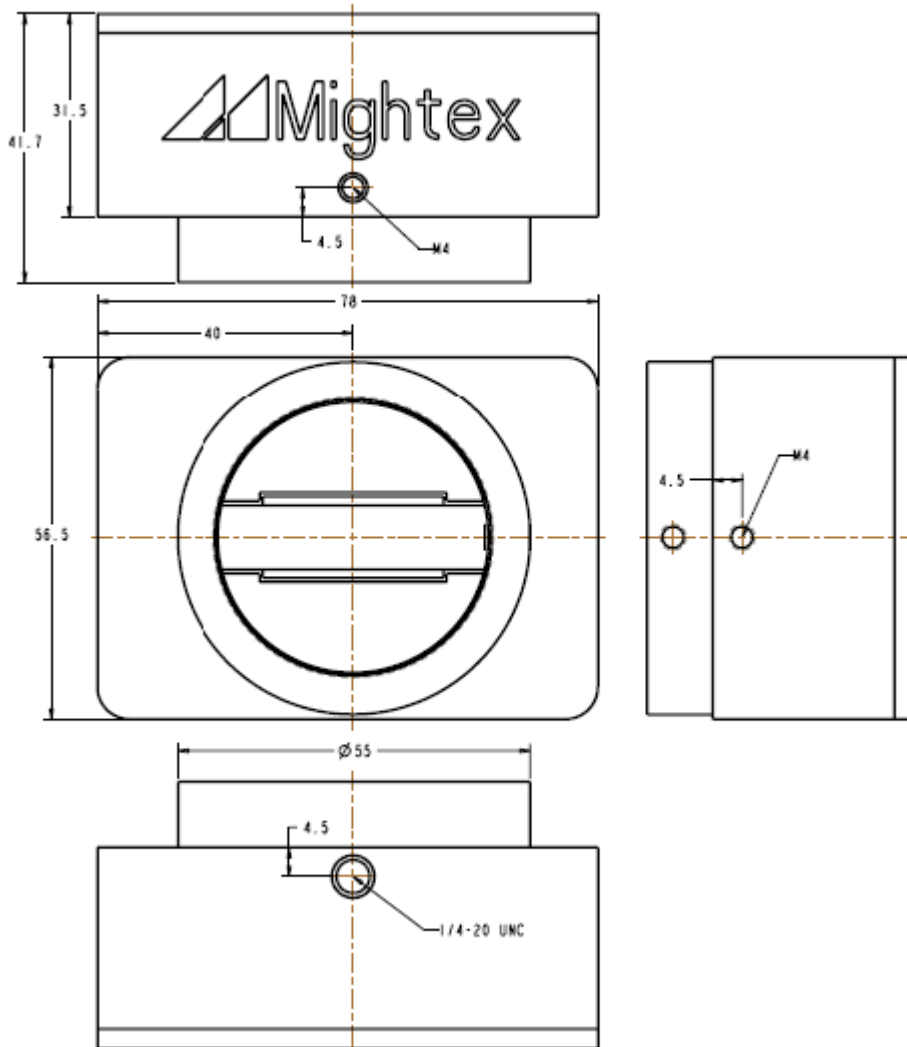
## EXAMPLE OF GRAPHICAL USER INTERFACE



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## MECHANICAL DIMENSIONS



**Length x Width x Height: 78(mm) x 42(mm) x 57(mm)**  
**Weight: 200g**

With a world-class OEM design team, Mightex offers a broad range of customized solutions in order to meet individual customer's unique requirements. Please call 1-416-840 4991 or email [sales@mightex.com](mailto:sales@mightex.com) for details.

【お問い合わせ先】

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