

# Buffered USB2.0 CCD Line Camera with External Trigger (16-bit)

(Part Number: TCN-1304-U)

## FEATURES

- USB2.0 compatible
- Board-level camera, ideal for OEM applications
- 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
- High scan rate (up to 138 scans/second)
- External trigger capability
- 4 GPIOs
- Full-featured SDK
- Linux driver available
- USB command set protocol for non-Windows based applications
- LabVIEW support is provided
- Demo graphical user interface
- Compatible to Windows 2000XP or higher

## APPLICATIONS

- Industrial Process Control
- Optical Spectroscopy

## PRODUCT DESCRIPTION

Mightex's TCN-1304-U line camera is a cost-effective high-performance B/W board-level 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. The TCN-1304-U is a compact, board-level line-scan camera ideal for a variety of OEM applications in industry process control, optical spectroscopy and bio-medical imaging etc. Setting up the TCN-1304-U line camera is very easy, the user simply installs the latest version of the operating software onto any desktop or notebook PC and then connects the USB cable from the line camera to the PC. There is no need for installing a DAC card, or using an external power supply. A user-friendly GUI based application software, LabVIEW support and an SDK are provided. In addition a USB command set protocol and a Linux driver are available for non-Windows based applications.

## PERFORMANCE SPECIFICATIONS

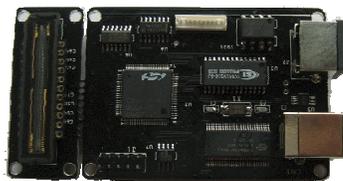
Parameters	TCN-1304-U	Unit
Board-level/enclosed	Board-level	
CCD chip	Toshiba TCD1304DG	
Number of pixels	3648	pixels
Pixel size	8 x 200	µm
Spectral range	200 to 1000 (see spectral response below)	nm
Pixel output clock	0.5	MHz
Data storage on camera	4	frames
ADC resolution	16	bits
External trigger	Yes	
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.

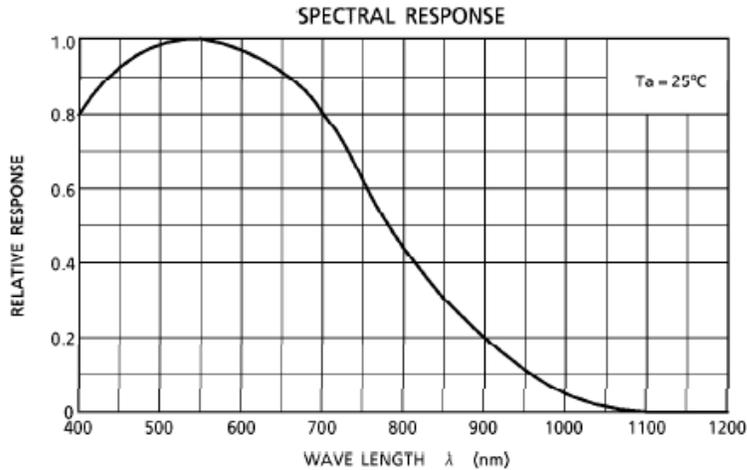
\* SDK will provide call back, which will send user frame data and the related attributes of the frame. The attributes include: Exposure Time, Time Stamp, Trigger Event Count and Over-Exposure Flag.



# Buffered USB2.0 CCD Line Camera with External Trigger (16-bit)

(Part Number: TCN-1304-U)

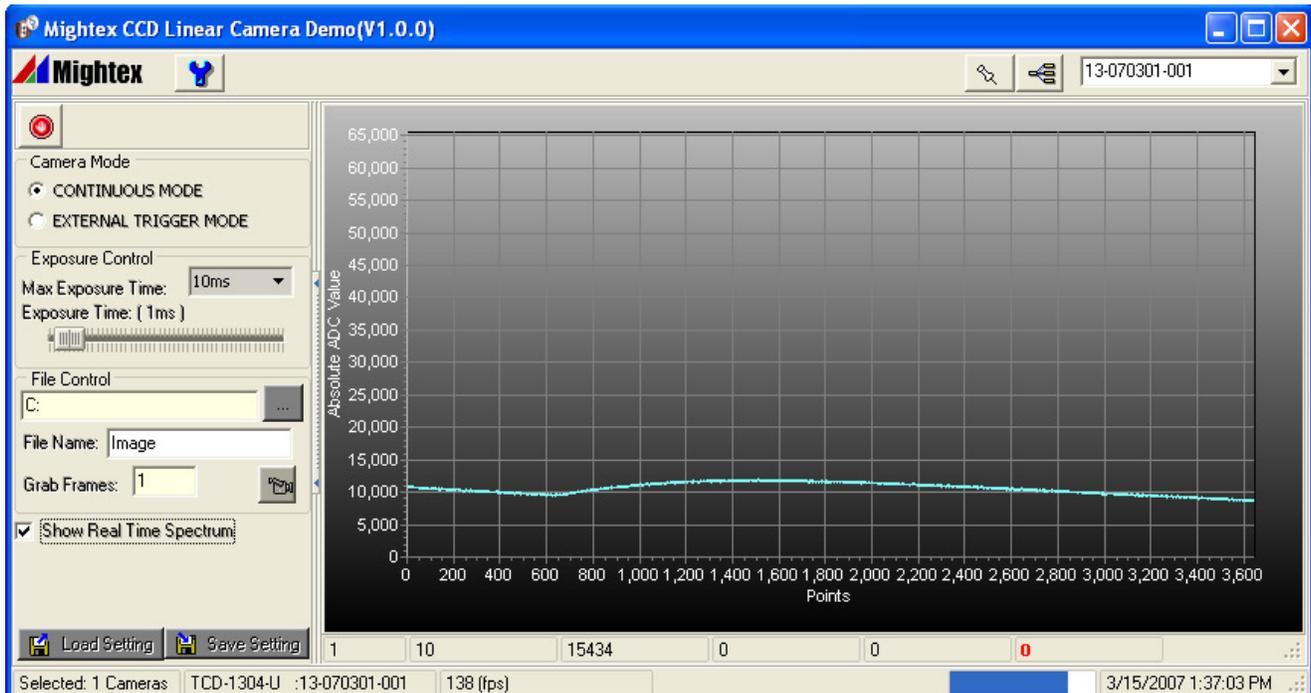
## SPECTRAL RESPONSE



## OPERATION CONDITION

Operating Temperature Range: -10°C ~ +50°C  
Storage Temperature Range: -25°C ~ 85°C  
Relative Humidity, Non-condensing: 5% ~ 95%

## EXAMPLE OF GRAPHICAL USER INTERFACE



## MECHANICAL DIMENSIONS

Controller Board: 69.0mm x 49.5mm  
CCD Daughter Board: 20.0mm x 49.5mm  
Daughter Board Cable Length: 120mm

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.