Instrument Expert
Original factory packaging
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Optical Spectrometer Sensor Engine
(Model: SSE-1304-U and SSE-1304-UW)

FEATURES
HARDWARE

- USB2.0 compatible
- Board-level camera, ideal for OEM applications
- No external power supply required
- Optical integration time adjustable from 100µs to 6.5s
- 3,648 pixel silicon linear CCD array
- 8µm x 200µm pixel size
- 16-Bit A/D converter for high intensity resolution
- High scan sate (up to 138 scans/second)
- External trigger capability
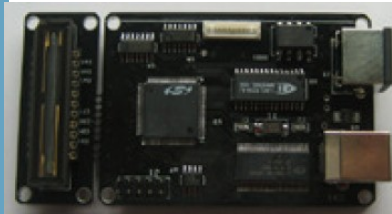- 4 GPIO pins

SPECTROMETER SOFTWARE

- Exposure time control
- Frame averaging
- Dark/Bright Reference
- Dark compensation
- Pixel monitoring modes
- Time-line recording
- External trigger
- SDK for user applications
- Compatible to Windows 2000, XP, Vista, 7 or 8

APPLICATIONS
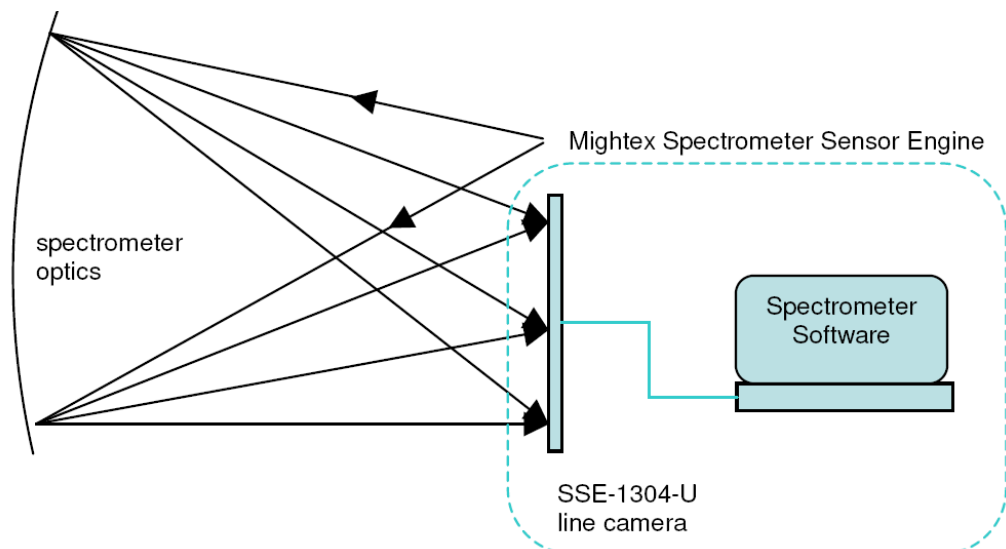- Optical Spectroscopy

PRODUCT DESCRIPTION

Many scientific and industrial applications require building custom spectrometers with optics, CCDline cameras, and spectrometer software. Developing the spectrometer software with all the necessary features is often challenging and time consuming even for professional programmers. When only one or a few spectrometers are built, the time and cost of software development can greatly exceed that of hardware development. There is a need for a CCD line camera that comes with full-featured spectrometer software.

Mightex Optical Spectrometer Sensor Engine (SSE) includes the following two components:
1. Mightex 3,648-pixel CCD Line Camera, and
2. Mightex Spectrometer Software.

To build a complete spectrometer user will set up his own optics (spectrograph) and place the linecamera at the focal plane of the spectrograph. The spectrometer software provides a powerful set of spectrometer functions such as wavelength calibration, dark/bright references, spectrum display, and file management. Mightex SSE releases users from the burden of programming spectrometer functions so that they are able to build their spectrometers much more efficiently and cost- effectively.

Mightex's SSE-1304-U includes a cost-effective high-performance B/W board-level line camera, based on a single-line, 3,648-pixel CCD chip with USB2.0 (480 Mb/s) interface.

Setting up SSE-1304-U is very easy, the user simply installs Mightex spectrometer 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. SSE-1304-U also comes with a line camera SDK for further development by the user.

The 'window-less' version of the spectrometer sensor engine, SSE-1304-UW, has the glass plate in front of the image sensor removed, and hence it is more sensitive to UV and is also more suitable for applications where coherent light sources such as lasers are used.

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PERFORMANCE SPECIFICATIONS

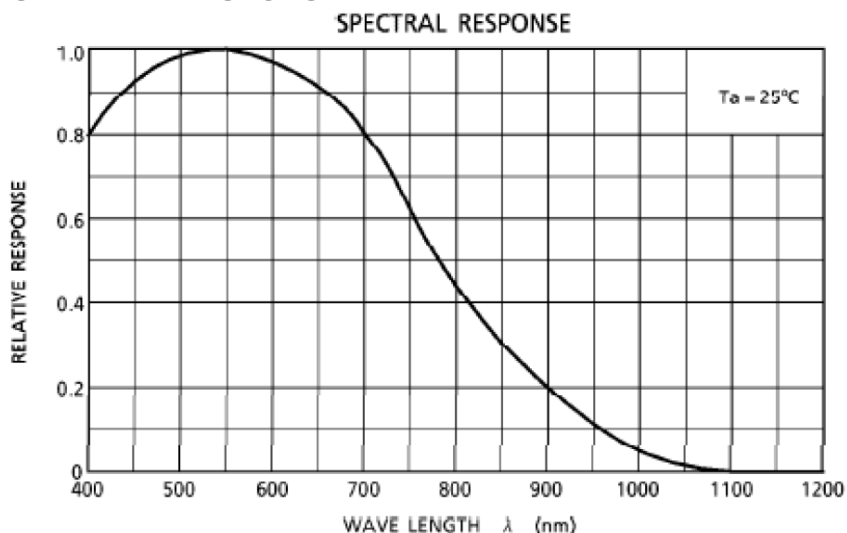| Parameter	Specification
CCD	Toshiba TCD1304DG
Number of Pixels	3,648
Pixel Size	8μm x 200μm
Spectral range	SSE-1304-U: 350nm to 1,000nm SSE-1304-UW: 200nm to 1,000nm
Pixel Output Clock	0.5 MHz
Data Storage on camera	4 Frames
ADC resolution	16 bits
External Trigger	Yes
Exposure Time Range	0.1ms ~ 6,500ms
GPIO	Yes (4 programmable I/O's)
Frame Rate	138 scans/second*
Host Interface	USB 2.0

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

SDK Features

Operation Systems	Windows 2000, XP, Vista, 7 and 8
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 Detect.

Note: The SDK provides call back, which will send user frame data and related attributes of this frame. The attributes include: Exposure time, Time Stamp, Trigger Event Count and Over Exposure Flag.

SPECTRAL RESPONSE

Mightex Systems, 2343 Brimley Road, Suite 868, Toronto, Ontario M1S 3L6, Canada
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www.mightex.com or www.mightexsystems.com

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Beijing Dorgean Electronic Technology Co.,Ltd

Optical Spectrometer Sensor Engine
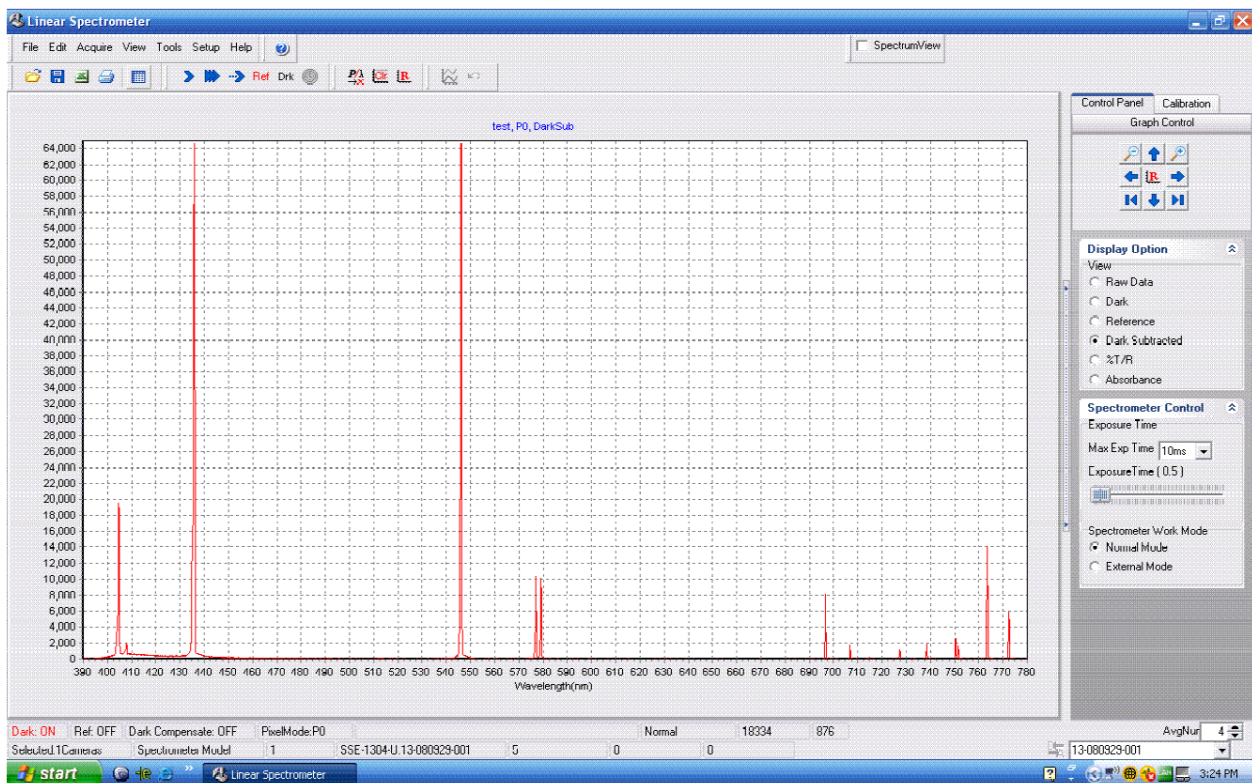(Model: SSE-1304-U and SSE-1304-UW)

OPERATION CONDITION

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

MECHANICAL DIMENSIONS

Controller Board: 69.0mm x 49.5mm
CCD Daughter Board: 20.0mm x 49.5mm
Daughter Board Cable Length: 4" (maximum 10")

MIGHTEX SPECTROMETER SOFTWARE

Mightex Spectrometer Sensor Engine comes with a powerful spectrometer software which enables users to immediately control the line camera and perform spectrometer-related computation without any programming. Through the graphic user interface users can easily perform wavelength calibration with a known spectral source. Besides the basic functions such as exposure time control, dark reference, bright reference, and dark subtraction, the software also supports dark compensation, pixel monitoring, time-line recording, and various graphing modes.

For customized solutions, please call 1-416-840 4991 or email sales@mightex.com.

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