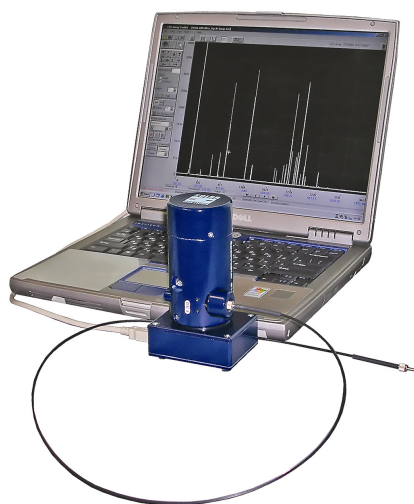


S100 - Compact Wide-Range Spectrometer



- extremely wide spectral range covered with one device
- high resolution & compact design
- no external power requirements
- friendly interface compatible with Windows 98/ME/2000/XP

Our S100 is a basic wide-range spectrometer which is hard to manage without in any scientific lab, at the educational process, and even in field conditions.

Use of original concave diffraction grating makes the S100 a unique device which allows concurrently get high-resolution of 1 nm within extremely wide spectral range – from 190 to 1100 nm.

Our S100 is extremely easy and convenient in use: it is calibrated by the manufacturer, does not contain any movable elements, is controlled and powered from the computer via Full-Speed USB interface. Analyzed light is input either through a quartz optical fiber or directly hit the input slit. Upon your request the S100 may be supplied with a filter separating high spectrum orders.

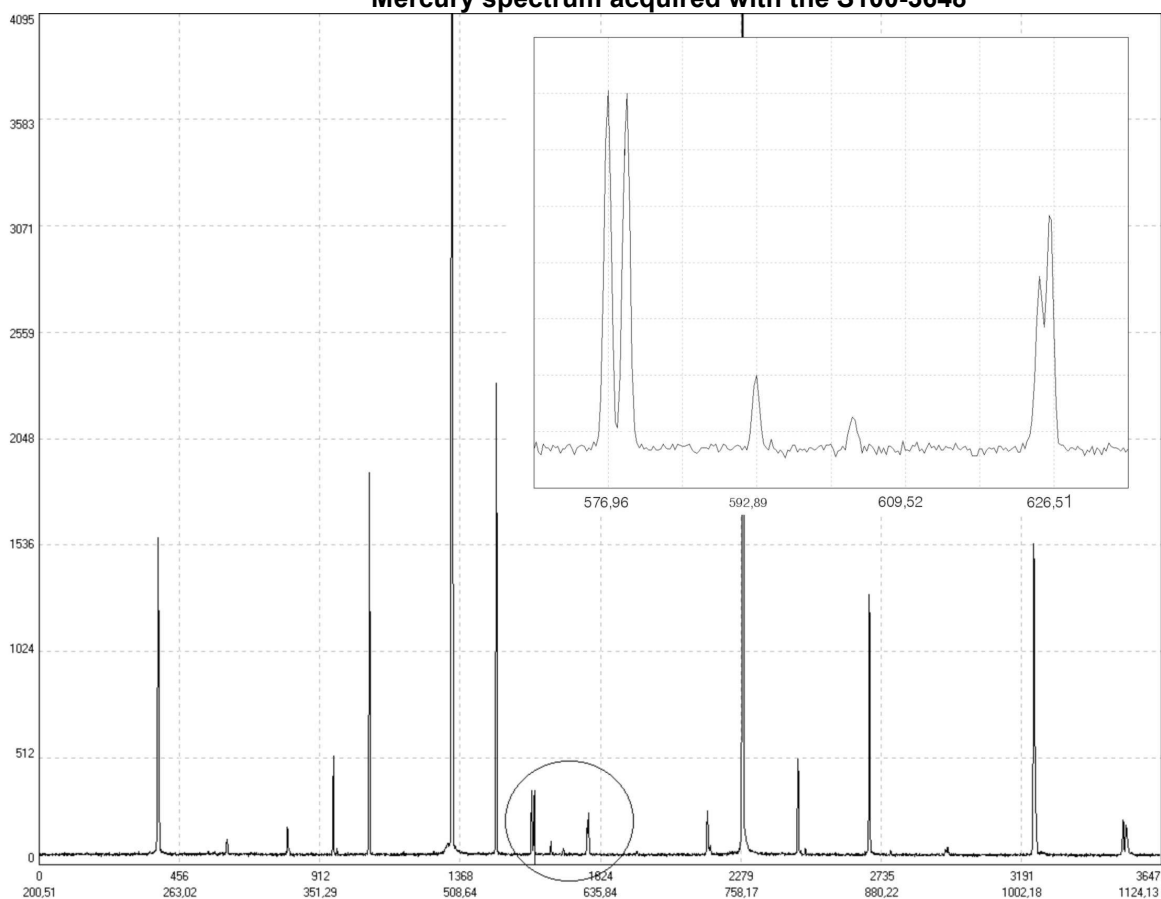
Model	S100-3648	S100-2048	S100-1024
SPECTROGRAPH			
Grating, l/mm (average)		300	
Reciprocal dispersion (average), nm/mm		33.28	
F/Number		6	
Focal Length, mm		99	
Spectral range, nm	190 - 1100	200 - 1100	200-1050
Spectral Resolution (average), nm	1.0	1.5	2.0
LINEAR IMAGE SENSOR			
	TCD 1304AP	TCD 1205D	S8378-1024
	3648 pixels	2048 pixels	1024 pixels
	size 8 μ m x 0.2mm	size 14 μ m x 0.2mm	size 25 μ m x 0.5mm
Min. exposure time, msec	7.3	4.1	2.0
Max. exposure time, sec ¹⁾	0.5	4.0	5.0
Max. S/N for 1 Scan	400 : 1	400 : 1	1000 : 1
Antiblooming ²⁾	no	yes	yes
Dynamic Range	900 : 1	1000 : 1	3500 : 1
Photo sensitivity, V/lux·sec ³⁾	160	80	22 (HS) 4.4 (LS)
Readout noise, ADC counts	18	14	16 (HS) ³⁾ 4.4 (LS)
ADC Resolution		14 bit, 16384 counts	
Synchronization		internal, external	
Computer Interface		Full-Speed USB	
Optical Input		UV Optical Fiber dia 0.6 (0.4)mm, 1m long SMA-905 connector	
Dimensions, weight		66 x 86 x 146 mm, 750 g	

¹⁾ max. exposure time is the time when the dark signal reaches 10% of the dynamic range at +25⁰C ambient.

²⁾ antiblooming is a sensor feature eliminating charge overflow from exposed pixels to surrounding pixels.

³⁾ the S8378-512Q linear image sensor provides possibility of control over sensitivity mode: high (HS) or low (LS).

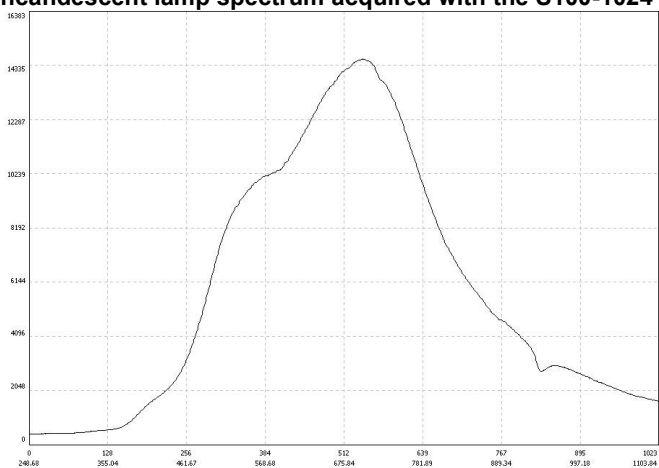
Mercury spectrum acquired with the S100-3648



Linear image sensors TCD 1304AP and TCD 1205D of Toshiba installed in the S100-3648 and S100-2048 feature high sensitivity; large quantity of relatively narrow sensor pixels ensures high resolution and precise wavelength detection. However, when recording wide-band spectra with the S100-3648 and S100-2048, spectrum modulation is observed (see below an incandescent lamp spectrum acquired with the S100-3648), thus limiting to some extent their application in spectrometry. The software allows the user to enter correction of recorded signal intensity in a selected spectral range. The intensity correction is not performed by the manufacturer.

Linear image sensor S8378-1024 installed in the S100-1024 provides excellent linearity, wide dynamic range and complete absence of spectrum modulation (see an incandescent lamp spectrum recorded with the S100-1024). However, it is characterized by relatively lower sensitivity and due to a wider pixel slightly loses in sense of resolution to devices based on Toshiba arrays.

Incandescent lamp spectrum acquired with the S100-1024



Incandescent lamp spectrum acquired with the S100-3648

