



Spectrophotometer UV/VIS/IR

Model	MC122
Optical scheme	single beam with reference channel (split beam)
Monochromator	double with dispersion summation
Wavelength range	190 nm – 1100 nm (52600 cm⁻¹ – 9000 cm⁻¹)
Bandpass	3 nm
Scanning speed	from 3 nm/min till 5000 nm/min
Minimum scanning step	0.1 nm
Wavelength accuracy	less than ± 0.5 nm
Wavelength repeatability	less than ± 0.2 nm
Scattered light	< 0.05 % (measured for 220nm, 340nm, 400nm)
Photometric range of optical density D	from - 3 till 3 A
Photometric accuracy for the measurements of transmission T	less than ± 0.05 %
Photometric repeatability for the measurements of transmission T	less than ± 0.005 %
Light source	deuterium and halogen lamp
Light source switching	automatic, at 330-365nm manual
Detector	silicon photodiode
Inner size of the cuvet volume	120 × 205 × 105 mm
Max size of the measured sample	till 120 mm
Interfaces	Ethernet, USB
Dimensions	516 × 352 × 198 mm
Weight	18 kg
Power supply	90 - 240 Vac, 50 – 60 Hz, 100 W
Price	9800 €

Additional hardware
K100 holder for the cavity 10 – 100mm Included
M10-1 for the measurements of the solid samples reflection (angle 10 degree) Price: 1140€
C35 holder for the solid samples with sizes till 100 x 100 x 35mm and thin films Price: 430€
P1 polarizer on the base of the Glan-Thomson prism for 220-1100 nm. Price: 970€
T10 thermostatted (13° - 52° C) holder for samples with optical path till 10 mm Price: 1200€
M15-82 photoelectric holder for the measurements of the reflection for variable incident angle (15 – 82 degree with step 0.5 degree) Price: 3400€
H60 turntable holder for the transmission measurements of the samples with thickness till 1.5 mm and variable incident angle (0 – 60 degree with step 0.5 degree) Price: 2400 €
Halogen lamp “Narva”55919 - 35€ Deut. lamp L2D2 “Hamamatsu” – 490€



Spectrophotometer UV/VIS/IR

Model	PB 2201
Optical scheme	single beam with reference channel (split beam)
Monochromator	double with dispersion summation
Wavelength range	190 nm – 1100 nm (52600 cm⁻¹ – 9000 cm⁻¹)
Bandpass	5 nm
Scanning speed	from 50 nm/min till 3000 nm/min
Minimum scanning step	0.2 nm
Wavelength accuracy	less than ± 1 nm
Wavelength repeatability	less than ± 0.5 nm
Scattered light	< 0.3 % (measured for 220nm)
Photometric range of optical density D	from – 0.3 till 3 A
Photometric accuracy for the measurements of transmission T	less than ± 0.3 %
Photometric repeatability for the measurements of transmission T	less than ± 0.03 %
Light source	pulsed Xe-lamp
Light source switching	-
Detector	silicon photodiode
Inner size of the cuvet volume	110 × 160 × 100 mm
Max size of the measured sample	till 110 mm
Interfaces	RS-232, USB
Dimensions	405 × 340 × 160 mm
Weight	11 kg
Power supply	190 - 240 Vac, 50 – 60 Hz, 60 W
Price	7200 €

Additional hardware
10067 holder for the cavity 10-100mm x 12.5 mm Price: 400€
10068 magnetic stirrer for 11 cavity thermostatted (20° - 45° C) Price: 400€
10069 thermostatted (37° C) holder for 5 position square cavity till 10mm Price: 460€



Spectrophotometer IR

Model	MC311
Optical scheme	single beam
Monochromator	double with dispersion summation
Wavelength range	800 nm – 3200 nm (12500 cm⁻¹ – 3125 cm⁻¹)
Bandpass	smoothly tuned from 1nm till 10 nm
Scanning speed	from 3 nm/min till 5000 nm/min
Minimum scanning step	0.4 nm
Wavelength accuracy	less than ± 1.6 nm
Wavelength repeatability	less than ± 1.0 nm
Scattered light	< 0.3 % (measured for 1600nm)
Photometric range of optical density D	from - 3 till 3 A
Photometric accuracy for the measurements of transmission T	less than ± 0.2 %
Photometric repeatability for the measurements of transmission T	less than ± 0.02 %
Light source	halogen lamp
Light source switching	--
Detector	thermoelectric cooled PbS detector
Inner size of the cuvet volume	120 × 205 × 105 mm
Max size of the measured sample	till 120 mm
Interfaces	Ethernet
Dimensions	520 × 360 × 210 mm
Weight	20 kg
Power supply	90 - 240 Vac, 50 – 60 Hz, 100 W
Price	18000 €

Additional hardware
K100 holder for the cavity 10 – 100mm Price: 430€
M10-3 for the measurements of the solid samples reflection (angle 10 degree) Price: 1140€
C35 holder for the solid samples with sizes till 100 x 100 x 35mm and thin films Included
P3 polarizer on the base of the Glan-Thomson prism for 800-2300 nm. Price: 970€
T10 thermostatted (13° - 52° C) holder for samples with optical path till 10 mm Price: 1200€
Halogen lamp "Narva"55919 - 35€



Spectro-fluorometer UV/VIS/IR

Model	CM 2203
Optical scheme	single beam with reference channel (split beam)
Monochromator	double with dispersion summation
Wavelength range	200 nm – 1100 nm - Spectrophotometer 220 nm – 820nm - Fluorometer
Bandpass	1-15 nm
Scanning speed	from 60 nm/min till 1500 nm/min
Minimum scanning step	0.2 nm
Wavelength accuracy	less than ± 0.5 nm
Wavelength repeatability	less than ± 0.2 nm
Scattered light	< 0.3 % (measured for 220nm)
Photometric range of optical density D	from – 0.3 till 3 A
Photometric accuracy for the measurements of transmission T	less than ± 0.5 %
Photometric repeatability for the measurements of transmission T	less than ± 0.2 %
Light source	150W Xe-lamp
Light source switching	-
Detector	Photomultiplier - Fluorometer silicon photodiode -spectrophotometer
Inner size of the cuvet volume	130 × 110 × 110 mm
Max size of the measured sample	till 50 mm (for mode Spectrophotometr)
Interfaces	RS-232, USB
Dimensions	500 x 400 x 230 mm
Weight	18 kg
Power supply	190 - 240 Vac, 50 – 60 Hz, 60 W
Price	14800€

Additional hardware
30023 Holder for the solid samples Price: 550€
30022 Polarizer Price: 490€
30024 Fiber-optic probe Price: 900€



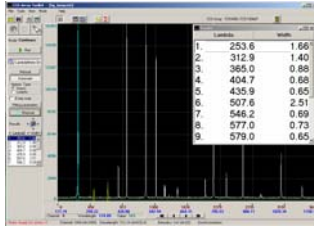
Spectrometer with linear image sensor

Model	S100-3648	S100-2048	S100-1024
F/Number	6		
Focal Length, mm	99		
Wave range, nm	190 – 1100	200 - 1100	200-1050
Spectral Resolution (average), nm	1.0	1.5	2.0
Linear image sensor	TCD 1304AP 3648 pixels size 8mkm x 0.2mm	TCD 1205D 2048 pixels size 14mkm x 0.2mm	S8378-1024 1024 pixels size 25mkm x 0.5mm
Min. exposure time, msec	7.3	4.1	2.0
Max. exposure time, sec ¹⁾	0.5	2.0	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 Interface		
Optical Input	UV Optical Fiber dia 0.6 (0.4)mm, 1m long, SMA-905 connector		
Overall Size, mm	66 x 86 x 146		
Weight, g	750		
Price	3360 €	3360 €	4360 €

1) max. exposure time is the time when the dark signal constitutes 10% of the dynamic range at +25°C 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).



A diffraction grating you choose and linear sensor from the specifications below or other upon prior agreement with the manufacturer will be fitted to your S150, and the instrument will be adjusted to a fixed spectral interval of your choice within the detectable range of the grating.

Model	S150-200	S150-300	S150-400	S150-600	S150-1200	S150-1800	S150-1800(II)	S150-1800(III)
Diffraction grating, lines/mm	200	300	400	600	1200	1800	1800 II order	1800 III order
Reciprocal linear dispersion (average), nm/mm	33.15	21.5	16.2	10.5	4.7	3.0	1.3	0.8
Spectral Resolution (average), nm ¹⁾	0.66	0.44	0.32	0.21	0.1	0.06	0.025	0.015
Width of the concurrently measured spectral interval (average), nm	920	620	460	300	135	85	38	23
Wave range , nm	200-1100	200-1100	200-1100	200-1100	200-1100	200-800	200-450	200-300
Price	By request	by request	by request	by request	by request	by request	by request	by request
Computer Interface	Full-Speed USB							
Optical Input	UV Optical Fiber dia 0.6 (0.4) mm, 1m long, SMA-905 connector							
Overall Size, mm	155 x 200 x 105							
Weight, kg	2.5							

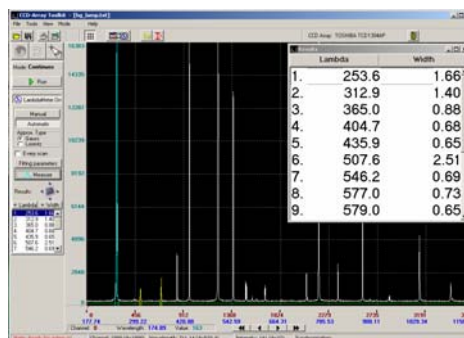
1) spectral resolution and width of the concurrently measured spectral interval are indicated for the case of using the detection system based on the TCD 1304AP linear image sensor. In case of using detectors based on other linear image sensors, either indicated in the table below or alternative, the specifications should be preliminarily stipulated with the manufacturer.

Linear image sensor	TCD 1304AP 3648 pixels size 8mkm x 0.2mm	TCD 1205D 2048 pixels size 14mkm x 0.2mm	S8378-1024 1024 pixels size 25mkm x 0.5mm
Min. exposure time, msec	7.3	4.1	2.0
Max. exposure time, sec ¹⁾	0.5	2.0	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)
Root-mean-square reading noise, ADC counts	18	14	16 (HS) ³⁾ 4.4 (LS)
ADC Resolution	14 bit, 16384 counts		
Synchronization	internal, external		

1) max. exposure time is the time when the dark signal constitutes 5% of the dynamic range at +25°C 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).



Spectrometer with linear image sensor (miniature lens spectrometer)

Model	S41-I	S41-II	S41-III
Focal length, mm	41.18		
F/Number	6		
Entrance slit width, not more than, mm height, not more than, mm	0.04 3.0		
Diffraction grating, lines/mm ¹⁾	1200	600	600
Wave range, nm	200 - 400	390 - 780	754 - 1140
Reciprocal linear dispersion (average) nm/mm nm/pixel	16.57 0.414	33.28 0.83	30.27 0.76
Spectral resolution (average) nm	0.9 - 1.2	1.7 - 2.5	1.6 - 2.3
Accuracy of wavelength detection, not more than, nm	± 0.5	± 0.9	± 0.8
Detector	based on the S8378-512Q linear image sensor 512 pixels with the size of 25 µm x 0.5 mm		
Min. exposure time, msec	1.0		
Max. exposure time, sec ²⁾	20		
Antiblooming ³⁾	yes		
Dinamic range	3500 : 1		
ADC Resolution	14 bit, 16384 counts		
Computer interface	Full-Speed USB		
Optical input	UV Optical Fiber dia 0.6 (0.4) mm, 1m long, SMA-905 connector		
Dimensions, mm	129 x 78 x 53		
Weight, kg	0.76		
Price	3480 €	3480 €	3480 €

1) for obtaining spectral parameters differing from the above, diffraction gratings with a different quantity of lines can be used.

2) max. exposure time is the time when the dark signal constitutes 10% of the dynamic range at +25°C ambient.

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