ASP-150. Multipurpose Spectrometer

- Tunable grating model ASP-150T
- High resoloution down to 0.017 nm
- Felxible configuration
- USB interface with PC software, USB powered
- Free-space and fiber input (SMA or FC)
- Sync in/out

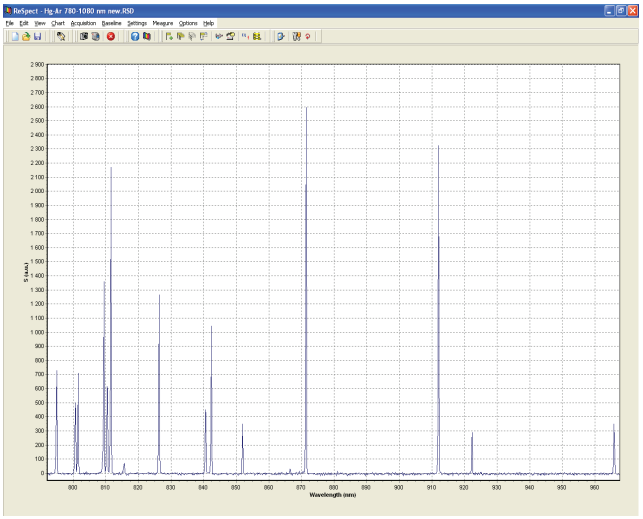
Tunable spectrometer ASP-150T

Product overview

The ASP-150C spectrometer is an ideal choice for a wide variety of different optical applications with its flexible tuning and high resolution. There is always a place for the ASP-150C on the optical table due to its small size, functionality and friendly interface.

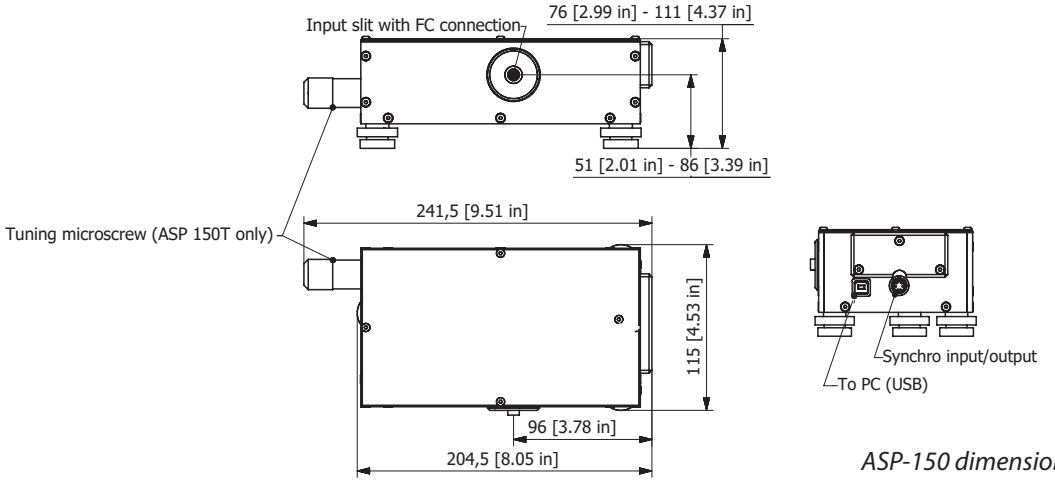
The ASP-150T model is able to carry out measurements in a wider spectral range without any losses in resolution, owing to a special tunable mechanism.

All models have a special fiber input with a spectral slit, the size of which is conditioned with the detector. It allows measurement of either free-space or fiber signals without any realignment. However, it is not recommended to use fiber to measure spectrum of a femtosecond laser due to signal modulation and subsequent spectrum distortion.



ReSpect software (included in a standard package)

ASP-150 dimensions



ASP-150 dimensions in mm [inch]

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ASP-150 optical specifications								
Optical scheme	Czerny-Turner							
Spectral range for choosing the registration domain*, nm	190-1100					190-800	190-450	190-300
Grating[1], grooves/mm	200	300	400	600	1200	1800	1800 II order	1800 III order
Registration domain width*[1], nm	950	640	480	315	145	90	40	25
Spectral resolution*, nm	0.6	0.42	0.3	0.2	0.09	0.06	0.025	0.017
Dispersion, nm/mm	33.2	22.4	16.8	11.0	5.1	3.1	1.4	0.9
Input slit	10 µm							
Focal length	150 mm							
Focal length of the camera objective	150 mm							
Relative aperture	1:13							
Input type[2]	free-space and SMA905 fiber socket (FC socket or fiber patch-cord on request)							
Synchronization	external/internal							
PC connection	USB							
Dimensions (LxWxH)	242x115x76 mm (ASP-150T); 205x115x76 mm (ASP-150C)							
Weight	1.6 kg							

CCD array specifications (any array can be combined with any grating type)			
Model	Toshiba 1205DG	Toshiba 1304DG	Hamamatsu S8378-1024Q
Number of pixels	2048	3648	1024
Pixel width	14 µm	8 µm	25 µm
Pixel height	200 µm	200 µm	500 µm
Minimum exposure time	4.2 ms	7.3 ms	2.1 ms
Maximum exposure time	4 s	5 s	5 s
Sensitivity[3], photons/count	80	20	650(3000)[4]
Antiblooming[5]	yes	no	yes
Meansquare noise of reading, counts of ADC	5.4	3.5	16(4.4)[4
ADC	14 bit, 16384 counts	14 bit, 16384 counts	14 bit, 16384 counts
Dynamic range	1000:1	1000:1	1000:1 (4000:1)[4]

(1) - the necessary grating type, and hence the width and the central wavelength of the instantaneously registered range (aka registration window) inside the full possible range of the CCD detector should be specified when sending the request. The ASP-150C model has the chosen grating and its position fixed at factory, while the ASP-150T model has the possibility to adjust the position of the registration window via microscrew rotation, thus covering full possible range with the highest resolution;
(2) - each spectrometer is equipped with a fiber socket and allows measurement of either free-space or fiber signals without any realignment;
(3) - sensitivity given at the wavelength of 550 nm;
(4) - the Hamamatsu arrays provide for sensitivity control via special driving signal, that can set either low (values in brackets) or high sensitivity mode;
(5) - the property of the CCD to prevent the charge flow from the neighboring overexposed pixels;
** - values given for the Toshiba 1304DG CCD array.*

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