

HIGH-APERTURE COMPACT MONOCHROMATOR

ML44

The ML44 is a high-aperture compact monochromator containing two aberration-corrected objectives, two diffraction gratings, input slit wheel and output slit wheel. The gratings are automatically controlled. Due to its extremely high aperture (F/2.9) the ML44 is a perfect choice for illuminating purposes. It can be used in fluorescence, radiometry, process control, for tunable filtering and any other applications within the spectral range from 200nm to 1200nm.



FEATURES

- **Extremely high aperture F/2.9**
- **Change slits on the fly**
- **Compact size and light weight**

The ML44 monochromator comprises a turret with two diffraction gratings. Spectrum scanning and diffraction grating change are computer controlled.

Entrance and exit slits are changeable; they are mounted on two six-position discs. Each disc contains six spectral slits pre-aligned by the manufacturer. To change the slit width you just need to manually rotate the knob moving it to one of its six fixed positions. Indicators on the ML44 housing show the widths of entrance and exit slits, and the software allows to calculate the spectral width of the selected wavelength.

Being a scanning monochromator, the ML44 does not have a flat output field and hence cannot be operated as a spectrograph with a multi-channel detector mounted at the output port.

The ML44 delivery set contains two optical fiber adapters and two fused silica condensers. Condensers and fiber adapters can be installed on the entrance and/or the exit slit. The condenser is used to focus the light onto the monochromator entrance slit, as well as to focus the light, coming from the monochromator, to the object. Fiber adapters allow to transfer the light to/from the monochromator via optical fibers (SMA-905 connectors). Optical fibers can be supplied upon your request.

Scanning control is performed from a computer via the serial RS-232 port. The delivery set contains a USB-RS232 adapter providing the USB interface

APPLICATIONS

- **As an efficient spectral discriminator for investigation of detectors and light sources.**
- **As a tunable narrow-band filter for broadband fluorescence excitation sources.**
- **As an order separation pre-disperser in spectral instruments containing Echelle diffraction gratings.**
- **As part of other research and analytical equipment operating in the UV, visible and NIR spectral range.**
- **For spectroscopy education at colleges and universities.**

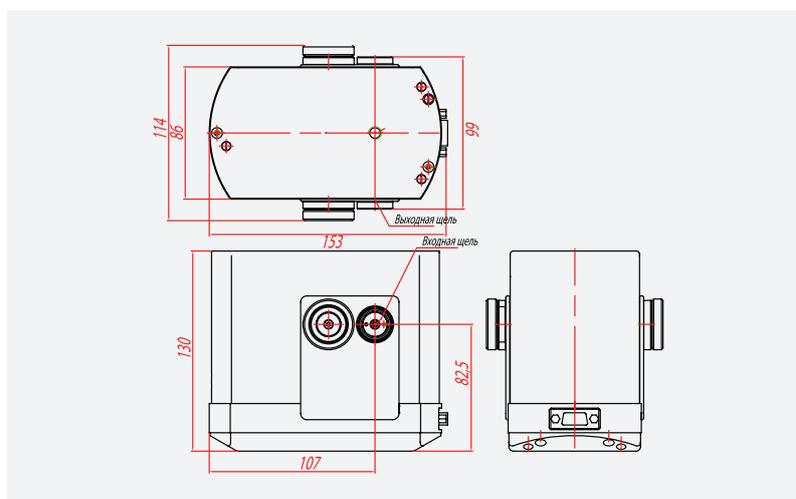
OPTICS & ACCESSORIES

The ML44 monochromator-spectrograph has a wide range of options and accessories that provide efficient light collection from the sample located at a finite distance and at infinity, delivering light to the monochromator with and without an optical fiber.

- **Condensers for collecting light into the fiber**
- **Condensers for collecting light into the monochromator**
- **Optical fibers**
- **Cassegrain lenses**

ML44 SPECIFICATIONS

Spectral range, nm	190-1200	
Focal length of the collimator and camera lenses, mm	44.2	
F/Number	1 : 2.9	
Gratings		
Size, mm	25 x 20 x 6	
Lines/mm	1200	600
Blazing wavelength, nm	270	700
Reciprocal linear dispersion (average), nm/mm	18.7	34.7
Operating spectral range, nm	190-600	450-1200
Wavelength of automatic change of grating, nm	600 (program controlled)	
Tuning step by angle, deg	0.01875	
Tuning step by spectrum, nm	0.125	0.25
Wavelength accuracy, nm	± 1.0	± 1.5
Wavelength repeatability, nm	± 0.25	± 0.5
Scanning speed, nm/s	200	400
Entrance/exit slits (changeable)		
Slit width, mm	0.02; 0.05; 0.1; 0.25; 0.5; 1.0	
Slit height, mm	3.0	
Spectral interval chosen by ML44 at width of entrance and exit slits (average), nm		
slits 20 µm	0.35	0.7
50 µm	0.9	1.8
100 µm	1.8	3.5
250 µm	4.5	8.9
500 µm	9.0	17.7
1000 µm	18.0	35.5
Optical input/output	- Optical Fiber 0.6 mm diameter, 1m length, SMA-905 connector – 2pcs - condensor f=16mm – 2pcs	
Interface	RS 232, USB	
Computer requirements	Windows 2000, XP, 7, 10	
Dimensions, mm		
monochromator	154 x 114 x 147	
driver	90 x 155 x 40	
Weight, kg		
monochromator	2.1	
driver	0.6	



ML44 dimensions.