

DOUBLE DISPERSION MONOCHROMATOR-SPECTROGRAPH



1 (0.5x2) Meter

MODEL

MSDD 1000

Monochromator-Spectrograph **MSDD 1000** with additive dispersion uses the Cherny-Turner optical configuration with spherical mirrors.

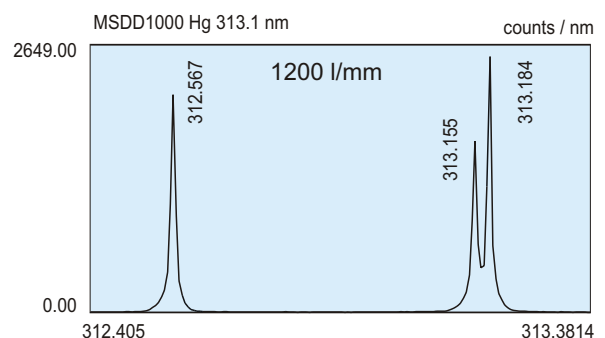
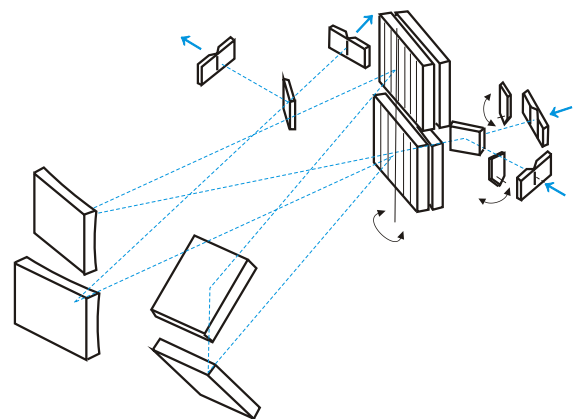
FEATURES

- ◆ Compromise between compactness and high resolution due to original design of modified Cherny-Turner double dispersion
- ◆ Abberation-free corrected Optical System
- ◆ Low stray light
- ◆ Two-grating pairs turret with automatic grating switching or single-grating pair holder for easy manual grating interchange
- ◆ Continuously automatically or manually variable slits
- ◆ Model is available with optional two entrance and two exit ports to enable simultaneous mounting of different light sources and detectors
- ◆ Total computer control
- ◆ Original software Win'9x/ME/NT/2000/XP

APPLICATIONS

- UV to IR measurement
- Emission, Fluorescence and Raman Spectroscopy
- Absorption and Transmission
- Multichannel Spectroscopy (PDA and CCD)

Optic Layout



SPECIFICATIONS

SYSTEM

Design:	Original design of modified Cherny-Turner two-fold configuration with two (one) pairs of gratings
Ports:	2 inputs, 2 outputs
Usable Wavelength Range:	180 nm to 60 μ m
F/Number (Monochromator):	5,9
Focal Length:	1000 mm
Main Mirrors:	Spherical
Stray Light:	10^{-6} (20 nm from 632,8 laser line)
Flat Field:	28 mm x 10 mm

DRIVE

Motor:	High torque microstepper
Drive:	Sine mechanism
Step Size:	0,18 arc seconds
Precision:	+/- 1 step
Max. Speed:	10000 steps/s

GRATINGS

Grating mounts:	- Automatic turret with two pairs of gratings - Holder with a single pair of grating
Grating Rotation:	Optical center
Grating Size:	80x70x10 mm

WAVELENGTH (grating 1200 l/mm)*

Reciprocal Dispersion:	0,78 nm/mm
Wavelength Repeatability:	+/- 0,005 nm
Wavelength Resolution:	0,012 nm
Wavelength Accuracy:	+/- 0,05 nm
Wavelength Step Size (aver):	0,0015 nm

SLITS

Motor (Micrometer) Driven Slit Assembly:	Width variable from 0 to 2,0 mm Diaphragm-varied height from 0 to 10 mm
Step size:	0,5 μ m
Parallelism:	+/- 1 μ m
Accuracy:	+/- 10 μ m
Reading accuracy (micrometer):	2 μ m

SYSTEM CONTROL

Central Control by On Board CPU
Programmed Control by External Computer
EXTERNAL INTERFACE RS-232C

OVERALL SIZE: 566x395x340 mm, WEIGHT: 35 kg

* Grating choice upon Customer's request

LOOK AT WHAT YOU CAN GET ADDITIONALLY WITH MSDD 1000

- ◆ Automated filter wheel
- ◆ Fast shutter
- ◆ Remote control
- ◆ Optical fibers
- ◆ Detectors

UV Gratings (ruled)

Line density (l/mm)	Blaze wavelength (nm)	Wavelength region corresponding to 40% reflection at blaze (nm)	Model No
2400	225	190 - 450	872422
2400	270	190 - 540	872427
1800	270	190 - 540	871827
1800	400	265 - 800	871840
1800	750	500 - 1200	871875
1200	250	190 - 500	871225
1200	280	190 - 560	871228
1200	400	265 - 800	871240
1200	500	330 - 1000	871250
1200	600	400 - 1200	871260
1200	750	500 -1300	871275
600	230	190 - 460	870623
600	280	190 - 560	870628
600	300	200 - 600	870630
600	400	265 - 800	870640
600	500	330 - 1000	870650
600	600	400 - 1200	870660
600	750	500 -1500	870675
300	300	200 - 600	870330
300	350	230 - 700	870335
300	500	330 -1000	870350
300	600	400 -1200	870360
300	700	465 -1400	870370
200	350	230 - 700	870235
200	400	265 - 800	870240
200	500	330 - 1000	870250
200	700	465 - 1400	870270
150	425	280 - 850	871542
150	700	465 -1400	871570
100	650	430 - 1300	870165
100	700	465 - 1400	870170

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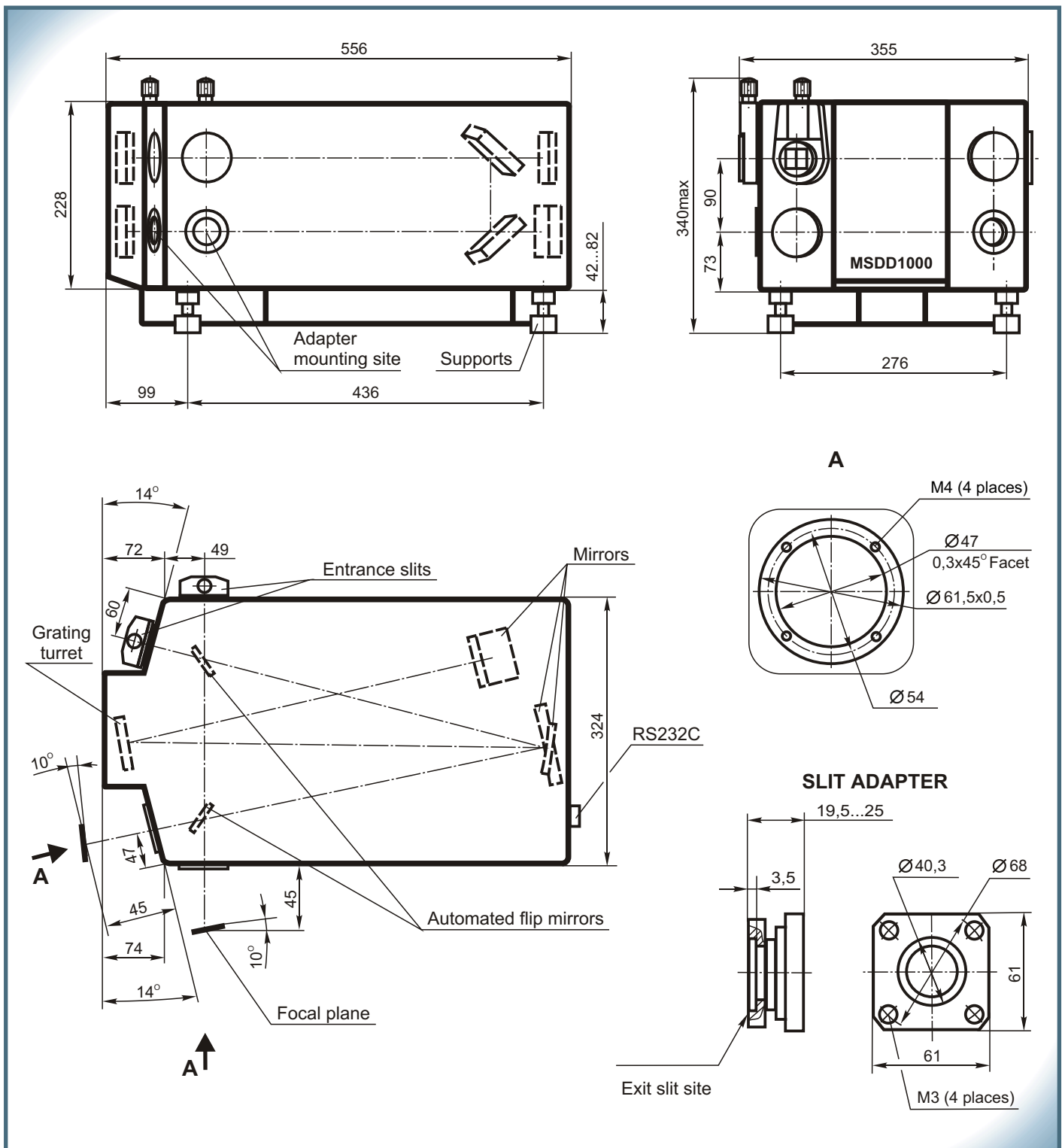
IR Gratings (ruled) with Al or Au coatings

Line density (l/mm)	Blaze wavelength (nm)	Wavelength region corresponding to 40% reflection at blaze (nm)	Model No
400	0.8	0.57 - 1.52	8704008
400	1.7	1.2 - 3.2	8704017
400	2.0	1.4 - 3.8	8704020
400	2.5	1.8 - 4.75	8704025
300	1.0	0.7 - 1.9	8703010
300	1.5	1.0 - 2.85	8703015
300	2.0	1.4 - 3.8	8703020
300	3.0	2.1 - 5.7	8703030
300	3.5	2.5 - 6.65	8703035
200	1.5	1.0 - 2.85	8702015
200	2.0	1.4 - 3.8	8702020
200	2.5	1.8 - 4.75	8702025
200	3.0	2.1 - 5.7	8702030
150	3.0	2.1 - 5.7	8715030
150	4.5	3.2 - 8.55	8715045
100	1.0	0.7 - 1.9	8701010
100	2.0	1.4 - 3.8	8701020
100	2.5	1.8 - 4.75	8701025
100	3.0	2.1 - 5.7	8701030
75	7.0	5.0 - 13.0	8775070
75	9.5	6.8 - 18.0	8775095
50	1.0	0.7 - 1.9	8750010
50	3.8	2.7 - 7.2	8750038
50	6.3	4.5 - 12.0	8750063
50	7.0	5.0 - 13.3	8750070
ECHOLETTTS			
100	4.16	3.0 - 7.9	8701042
100	4.84	3.5 - 9.2	8701048
100	5.5	3.9 - 10.5	8701055
100	6.2	4.4 - 11.8	8701062
100	7.2	5.1 - 13.7	8701072
100	8.75	6.2 - 16.6	8701088
100	9.7	6.9 - 18.4	8701097
100	10.3	7.3 - 19.6	8701103
50	6.95	5.0 - 13.2	8750070
50	8.3	5.9 - 15.8	8750083
50	12.36	8.8 - 23.5	8750124
50	16.9	12.0 - 32.1	8750169
50	20.0	14.3 - 38.0	8750200
37.5	2.79	2.0 - 5.3	8737028
37.5	5.57	4.0 - 10.6	8737056
37.5	9.26	6.6 - 17.6	8737093
37.5	15.6	11.1 - 29.7	8737156
24	11.6	8.3 - 22.0	8724116
24	14.4	10.3 - 27.4	8724144
24	17.3	12.4 - 32.9	8724173
24	24.3	17.4 - 46.2	8724243
24	28.5	20.4 - 54.2	8724285
24	32.5	23.2 - 61.8	8724325

DOUBLE DISPERSION MONOCHROMATOR-SPECTROGRAPH

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DIMENSIONAL DRAWINGS



For more information please contact:

BELARUS

SOLAR TII, LTD
15/2, Akademicheskaya str.,
Minsk 220072,
Republic of Belarus
Phone: +375 (17) 284-02-00
Fax: +375 (17) 284-06-38
E-mail: laser@it.org.by
Web: www.solartii.com

JAPAN

Tokyo Instruments, Inc.
6-18-14, Nishikasai,
Edogawa-ku,
Tokyo 134-0088, Japan
Phone: +81 3 (3686) 4711
Fax: +81 3 (3686) 0831
E-mail: sales@tokyoinst.co.jp
Web: www.tokyoinst.co.jp

GERMANY

**PROSCAN elektronische
Systeme GmbH**
Lechstrasse 40,
D-86937 Scheuring, Germany
Phone: +49 (8195) 999-511
Fax: +49 (8195) 999-512
E-mail: solar@proscan.de
Web: www.proscan.de