

CARL ZEISS GRATINGS



(MG) Monochromator gratings

PRODUCT SPECIFICATION

Grooves [mm ⁻¹]	Grating type	Blaze [nm]	Correction range [nm]	Dimensions [mm ²]
2500	blazed	250	240-300	Ø 64x12
1900	blazed	400	250-650	Ø 64x12
1500	sinus	450	330-850	Ø64x12
1400	blazed	230	340-800	Ø50x10
1400	blazed	230	200-750	Ø50x10
1300	blazed	230	200-890	Ø52x10
1300	sinus	850	340-800	Ø30x8
1221	blazed	230	230-1000	Ø50x8
1221	ion	500	350-1000	Ø50x8
1221	blazed	230	185-900	Ø34x7
1200	blazed	230	180-800	Ø30x8
1200	sinus	800	600-1100	Ø64x12
1053	blazed	230	200-1100	Ø56x10
1000	blazed	230	200-900	Ø52x10
1000	blazed	230	190-1100	Ø50x10
1000	blazed	230	190-850	Ø64x8
950	blazed	230	200-800	Ø32x7
700	sinus	1600	1000-2000	Ø90x12
651	blazed	230	200-800	Ø64x10
650	blazed	230	180-800	Ø30x8
527	ion	300	200-1100	Ø56x10
456	sinus	2000	1100-2500	Ø64x10

Note:

(1) all imaging gratings are holographically exposed

blazed- sawtooth profile

ion- ion etched sawtooth profile

sine- sinusoidal profile

(2) the efficiency maximum of holographically blazed gratings can vary between 210 and 250nm

(3) adaptable to experimental conditions

(4) given thickness is the center thickness

preferred materials are NBK7 and ZKN7

l.g. - lateral grinded

(5) monochromator difference $\Delta = \beta - \alpha$

(6) $D = 10^\circ \cos \beta / (L_g * G)$ [nm/mm]

(7) for entrance slit width 50µm

(8) see drawing

(9) related to shortest waveleng

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Grooves [mm ⁻¹]	Diffrautive area [mm]	Blank radius [mm]	Monochromator difference [deg.]	Dispersion [nm/mm]
2500	∅ 55	393	24,2	0,7
1900	∅ 56	207,1	30	2
1500	∅56	206,4	30	2,9
1400	∅46	136,4	42,1	2,6
1400	∅46	149,7	30	4,4
1300	∅25	175,3	46,4	4,4
1300	∅24	109,8	40,3	6,3
1221	∅37	163,1	35,7	4,6
1221	∅39	163,1	35,7	4,6
1221	∅27	116,3	36,5	5,9
1200	∅24	109,8	30	7,5
1200	∅56	204,7	30	3,6
1053	36x30	260,4	55	3,5
1000	∅36	94,4	30	7
1000	∅40	193,6	30	4,6
1000	∅50	192,7	30	4,6
950	∅25	150,7	40	6,6
700	∅80	181,5	21,1	7,7
651	∅56	214,8	30	7
650	∅24	109,8	30	16,1
527	30x34	141,3	45	8.4
456	∅30	75	10	25

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l.g. - lateral grinded
- (5) monochromator difference $\Delta = \beta - \alpha$
- (6) $D = 10^\circ \cos \beta / (L_g * G)$ [nm/mm]
- (7) for entrance slit width 50 μ m
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Grooves	Resolution	Focal Length /nm		Order number
		LA	LB	
		-8	-9	
2500	0.7	560	564.2	2645102953224
1900	0,8	219,3	200	2645102258824
1500	1	219,3	200	2645102257824
1400	4	98,4	208	1305962
1400	2	150	149,1	1390410
1300	1.5	181,9	150	792102
1300	>1	96,8	95,7	1224543
1221	0,7	161	158,8	792005
1221	1	161	158,8	792008
1221	2	115	111,7	792012
1200	1,5	120	100	2645102951224
1200	1	219,3	200	2645102256824
1053	0,4	217,9	251,3	1321172
1000	2,5	70	138	792101001010
1000	2,2	181,9	197,8	2645102951724
1000	2	190	189,5	2645102950824
950	1	136,4	151,2	792060
700	6,5	240,1	157,8	2645102259724
651	1,5	219,3	200	2645102951124
650	2,2	120	97,3	2645102951324
527	7.7	97.9	200	792024
456	5	83.7	76.8	2645102261124

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