

Flat-Top Generator



FT-Generator is a refractive single- or double-array laser beam transformer and homogenizer into the Flat Top.

FT is available in optical glass or fused silica for the spectral range of 193 nm - 3.0 μm . Optical transmission (without AR-coating): $\sim 92\%$ for single-array and 85% for double-array ones. The divergency angles of standard FTs are $0.3 - 60^\circ$. The intensity distribution slope is nearly vertical. The active field of the FT sizes up to 100 x 100 mm^2 .



Gaussian Generators



The LBH-G (Laser Beam Homogenizer - Gaussian) is a refractive microoptical element homogenizing the beam and transforming its intensity distribution into the Gaussian one, enabling the uniformity precision of more than 90%.

The Gaussian Generators working wavelength range is $\lambda = 0.193 - 3.00 \mu\text{m}$ providing the uncoated component's transmission of $T > 90\%$ at e.g. $\lambda = 0.193 \mu\text{m}$. Maximal regular size is 100 x 100 mm^2 . Bigger sizes are available on request.

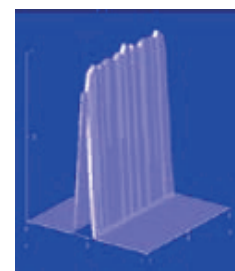


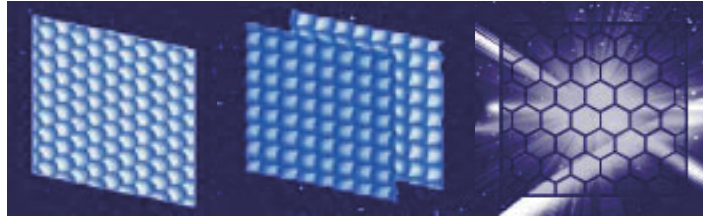
Transformers Line and Cross



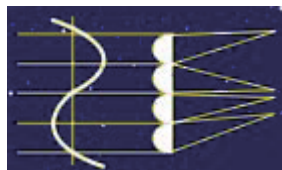
TL(C) is a refractive single- or double-array laser beam transformer into the line/cross.

Generators are available for the spectral range of 193 nm - 3 μm . The optical transmission (without AR-coating): $\sim 92\%$ for single-array transformers and over 85% for double-array ones. The divergency angle of the standard single-array TL(C) makes $3 - 50^\circ$, the uniformity of the energy distribution along the line - not worse than 15%. The quality of the generated line can be improved (up to 5 %) by means of double-array units, available with the divergency angles from 1° to 60° .



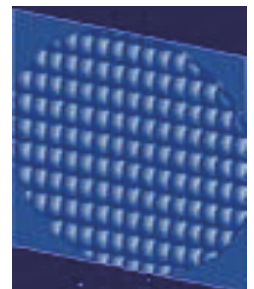


Shack-Hartman Generators



SH-MB is a refractive single- or double-array unit, splitting or focusing a laser beam into a number of beams.

SH-MBs are available with $f/\#$ between 1/10 and 1/100 for the spectral range of 193 nm - 3.0 μm . Optical transmission (without AR-coating): $\sim 92\%$ for single-array SH-MBs and over 85% for double-array ones.

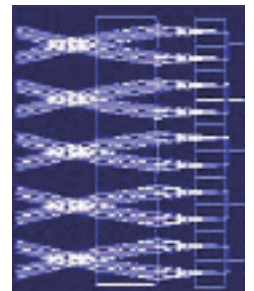


Cylindrical Collimators



The microlens collimators CF(S) are the refractive microlens elements and/or arrays for the beam collimation of the single standing high-power diode lasers or diode laser stacks.

Available are collimators for the focusing of highly diverging ($\text{FWFM} > 30^\circ$ -fast axis) and low diverging (slow axis) laser beams. The principle functioning of CF(S)s is based on the emission focusing by means of a cylindrical lens with the aspherical surface. The optical data of the CF(S)s are being determined by the geometry and material of the microlens; achievable M^2 -value less 2; the optical transmission - up to 99%.



Single Lenses & Lens Arrays



MPs are optically active structures or microstructures including step microstructures, fields, chains of single microlenses, binary diffractive two- or three-order gratings, diffusion masks for laser marking, etc., all to be used for various purposes.

Fabricated in optical glass, fused silica or other materials, the MPs are designed for the spectral range of 193 nm - 11.0 μm and supply the following data:

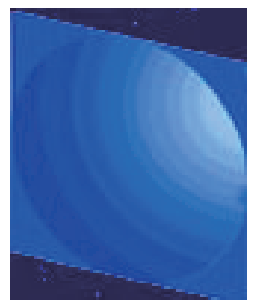
Positioning accuracy of elements : $\pm 0.5 \mu\text{m}$

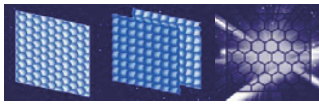
Geometrical form precision: about $1/4 \lambda$

Depth precision: 0.5 % (when depth up to 2 μm)

1 % (when depth up to 10 μm)

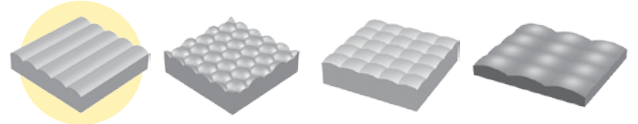
2 % (when depth up to 100 μm)





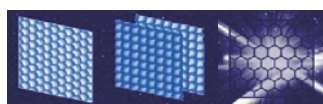
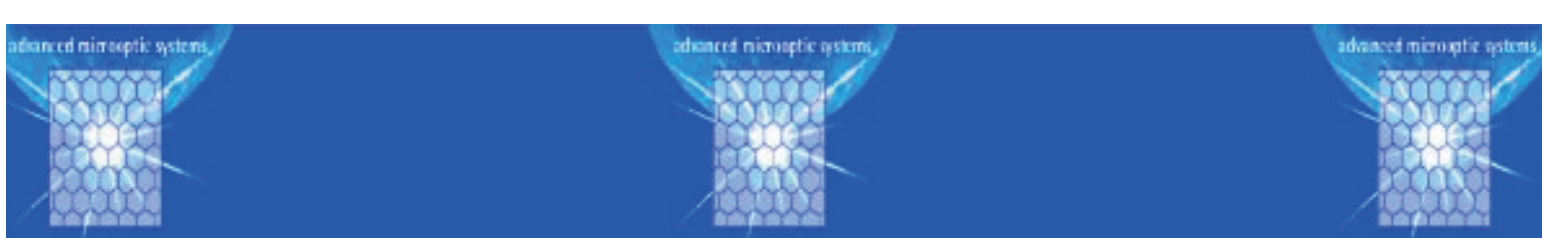
Positive Arrays

Array Positive (convex) Cylindrical



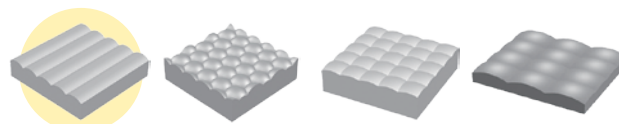
Product Code	Pitch, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
APC-Q-P4500-R136	4.500	136
APC-Q-P3000-R50	3.000	50
APC-Q-P3000-R11.7	3.000	11.7
APC-Q-P2300-AR3.5	2.300	3.5
APC-Q-P2000-R30	2.000	30
APC-GT-P2000-R7.653	2.000	7.653
APC-GT-P1500-R5	1.500	5
APC-Q-P1300-R6.5	1.300	6.5
APC-Q-P1096-AR1.258	1.096	1.258
APC-Q-P1017-R25.712	1.017	25.712
APC-Q-P1000-R50	1.000	50
APC-Q-P1000-R19	1.000	19
APC-Q-P1000-R14	1.000	14
APC-Q-P1000-R10	1.000	10
APC-Q-P1000-R6.5	1.000	6.5
APC-GT-P1000-R4.5	1.000	4.5
APC-Q-P1000-R2.95	1.000	2.95
APC-GT-P1000-AR1.51	1.000	1.51
APC-Q-P1000-AR1.211	1.000	1.211
APC-Q-P900-R1.9	0.900	1.9
APC-Q-P900-R0.95	0.900	0.95
APC-Q-P900-AR0.84	0.900	0.84
APC-Q-P800-R4.35	0.800	4.35
APC-Q-P700-R5	0.700	5
APC-GT-P700-AR2.04	0.700	2.04
APC-Q-P700-R1.14	0.700	1.14
APC-GT-P624-AR2.1896	0.624	2.1896
APC-Q-P600-R0.494	0.600	0.494
APC-GT-P500-AR2.6	0.500	2.6
APC-GT-P500-R2.43	0.500	2.43
APC-GT-P500-AR2.117	0.500	2.117
APC-GT-P500-R1.95	0.500	1.95
APC-Q-P500-AR1.7	0.500	1.7
APC-GT-P500-R1	0.500	1
APC-GB-P500-R1	0.500	1

Q: Fused silica GB: Glass BK7 GT: Glass S-TiH53 or S-TiH10 P: Plastic



Positive Arrays

Array Positive (convex) Cylindrical



Product Code	Pitch, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
APC-GT-P500-AR0.6	0.500	0.6
APC-GT-P498.5-R2.284	0.4985	2.284
APC-GT-P490.6-AR0.573	0.4906	0.573
APC-Q-P460-R40	0.460	40
APC-GT-P416-AR2.151	0.416	2.151
APC-Q-P400-R4	0.400	4
APC-GB-P400-R1.8	0.400	1.8
APC-Q-P400-R1.24	0.400	1.24
APC-Q-P400-R0.8	0.400	0.8
APC-GT-P353.5-R0.8	0.3535	0.8
APC-GT-P353.5-AR0.55	0.3535	0.55
APC-P(GB)-P353.5-R0.430	0.3535	0.430
APC-GT-P353.5-AR0.316	0.3535	0.316
APC-GT-P353.3-AR0.316	0.3533	0.316
APC-GT-P353.2-AR0.316	0.3532	0.316
APC-Q-P339-R24.517	0.339	24.517
APC-Q-P300-R0.793	0.300	0.793
APC-Q-P300-R0.57	0.300	0.57
APC-GT-P300-AR0.4971	0.300	0.4971
APC-GT-P300-AR0.1598	0.300	0.1598
APC-Q-P250-R2.8	0.250	2.8
APC-Q-P250-R0.75	0.250	0.75
APC-Q-P250-R0.225	0.250	0.225
APC-GT-P200-R0.8	0.200	0.8
APC-GT-P200-AR0.77	0.200	0.77
APC-Q-P200-R0.38	0.200	0.38
APC-GT-P199.77-AR0.77	0.19977	0.77
APC-GT-P199.75-AR0.77	0.19975	0.77
APC-GT-P199.7-AR0.77	0.1997	0.77
APC-GT-P175-AR0.4971	0.175	0.4971
APC-GT-P175-AR0.1586	0.175	0.1586
APC-Q-P127-R0.225	0.127	0.225
APC-Q-P100-R1	0.100	1
APC-Q-P84-R4.61	0.084	4.61
APC-Q(GB)-P100-0.003SIN	0.100	0.003SIN
APC-Q(GB)-P100-0.001SIN	0.100	0.001SIN

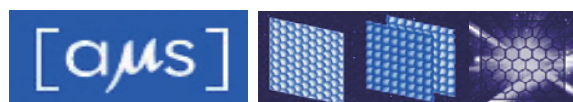
Q: Fused silica GB: Glass BK7 GT: Glass S-TiH53 or S-TiH10 P: Plastic



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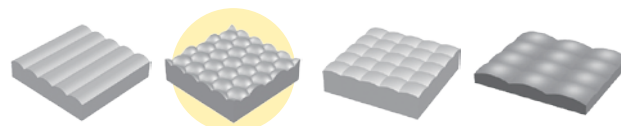
〒101-0051 東京都千代田区神田神保町1-34-2F TEL (03) 3294-0560 FAX (03) 6856-4866

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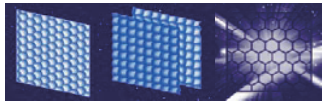
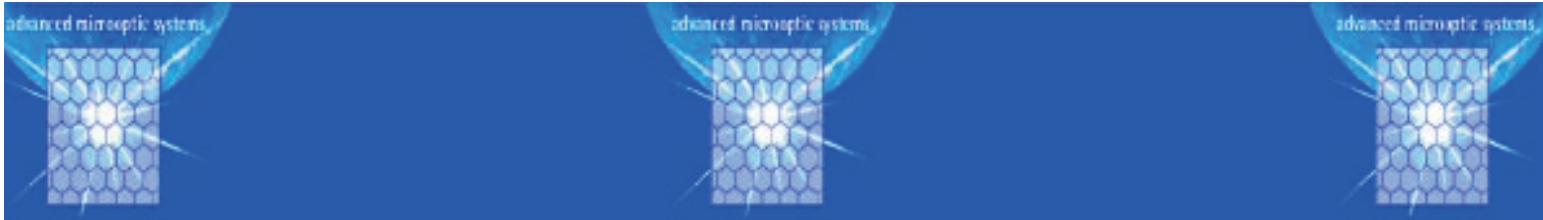
Positive Arrays

Array Positive (convex) Hexagonal



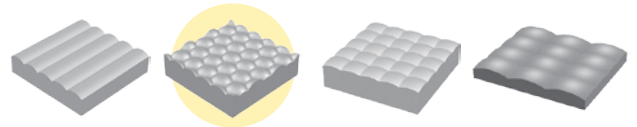
Product Code	Pitch, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
APH-GT-P7000(CA4000)-R420	7.000	420
APH-Q-P3200-R21.6	3.200	21.6
APH-Q-P2000-AR6.354	2.000	6.354
APH-GB-P2000(D1600)-AR2.62	2.000	2.62
APH-Q-P2000(CA1600)-AR1.1	2.000	1.1
APH-Q-P1750(D1750)-R45.04	1.750	45.04
APH-Q-P1600-R60	1.600	60
APH-Q-P1590(D1390)-AR1.103	1.590	1.103
APH-GT-P1500-R12.42	1.500	12.42
APH-Q-P1500(D1416)-R2.3	1.500	2.3
APH-GB-P1500-R2	1.500	2
APH-GT-P1500-R2	1.500	2
APH-Q-P1400-R60	1.400	60
APH-GT-P1300-AR4.3	1.300	4.3
APH-GT-P1300-R2.74	1.300	2.74
APH-Q-P1000-R3.63	1.000	3.63
APH-GT-P1000-R1.93	1.000	1.93
APH-GT-P1000-R1.34	1.000	1.34
APH-Q-P866-R30	0.866	30
APH-Q-P866-R19.3	0.866	19.3
APH-Q-P866-R16.5	0.866	16.5
APH-Q-P866-R8.4	0.866	8.4
APH-GT-P866-AR2.0	0.866	2.0
APH-Q-P850-R11.46	0.850	11.46
APH-Q-P800-AR2.045	0.800	2.045
APH-Q-P760-R1.25	0.760	1.25
APH-GT-P600-R1.2	0.600	1.2
APH-Q-P565(D565)-AR0.923	0.565	0.923
APH-Q-P513-R1.820	0.513	1.820
APH-Q-P537-R1.25	0.537	1.25
APH-Q-P507-R0.85	0.507	0.85
APH-Q-P500-R76.05	0.500	76.05
APH-Q-P480-R4.7	0.480	4.7
APH-Q-P443-AR0.844	0.443	0.844
APH-Q-P400-R1.73	0.400	1.73
APH-Q-P400-R1.57	0.400	1.57
APH-Q-P330-R10.7	0.330	10.7

Q: Fused silica GB: Glass BK7 GT: Glass S-TiH53 or S-TiH10 P: Plastic P(G): Polymer lens on Glass substrate



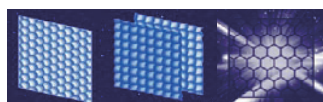
Positive Arrays

Array Positive (convex) Hexagonal



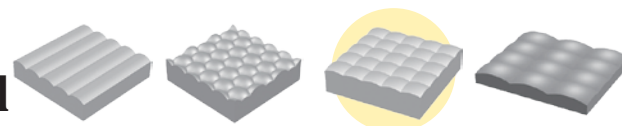
Product Code	Pitch, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
APH-GT-P330-AR0.82	0.330	0.82
APH-Q-P300-R1	0.300	1
APH-Q-P300-R0.477	0.300	0.477
APH-Q-P286-R0.8	0.286	0.8
APH-Q-P271.9-R0.337	0.2719	0.337
APH-Q-P260(CA240)-R1.24	0.260	1.24
APH-P(GB)-P250-R0.3xLBH-P(GB)-DV30	0.250	0.3
APH-P(G)-P250-R300	0.250	300
APH-Q-P250-R1	0.250	1
APH-P(GB)-P250-R0.3	0.250	0.3
APH-Q-P247.5-R14	0.2475	14
APH-Q-P204.8(D204.8)-R1.005	0.2048	1.005
APH-Q-P200-R2.0	0.200	2.0
APH-Q-P200-R0.367	0.200	0.367
APH-Q-P161.5-R2.05	0.1615	2.05
APH-Q-P161.5-R0.5	0.1615	0.5
APH-Q-P125(D113)-R0.129	0.125	0.129
APH-Q-P100-R90	0.100	90
APH-Q-P60-R0.110	0.060	0.110
APH-Q-P60(CA44)-R0.03	0.060	0.03
APH-Q-P60(D30)-R0.019	0.060	0.019
APH-Q-P44-AR0.049	0.044	0.049
APH-Q-P38-R0.174	0.038	0.174
APH-P(GB)-P30-R0.023	0.030	0.023

Q: Fused silica GB: Glass BK7 GT: Glass S-TiH53 or S-TiH10 P: Plastic P(G): Polymer lens on Glass substrate



Positive Arrays

Array Positive (convex) Orthogonal



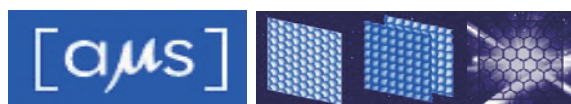
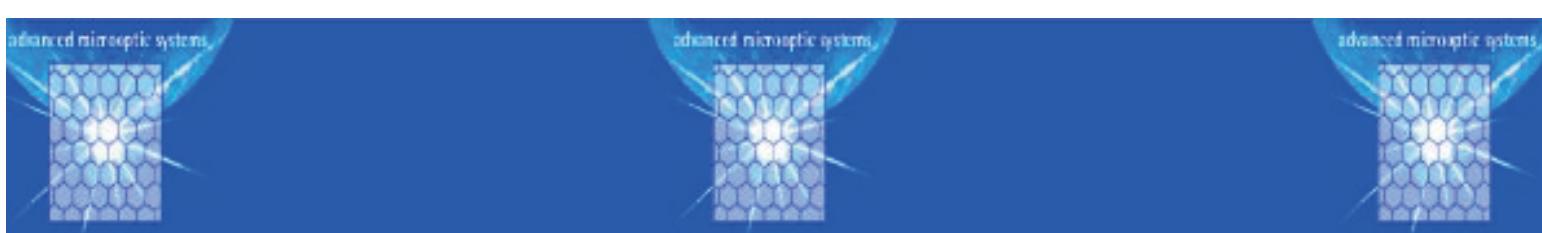
Product Code	Pitch, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
APO-Q-P5000(D4950)-R18.139	5.000	18.139
APO-Q-P4500-R9.214	4.500	9.214
APO-GT-P4000-AR9.95	4.000	9.95
APO-Q-P3000-R23.5	3.000	23.5
APO-Q-P2200-R95.52	2.200	95.52
APO-GT-P2000-R7.3	2.000	7.3
APO-GT-P2000(D1900)-AR4.1	2.000	4.1
APO-GT-P1800-R8	1.800	8
APO-GT-P1800-AR2.25	1.800	2.25
APO-GT-P1800-AR2.2	1.800	2.2
APO-Q-P1600-R6.17	1.600	6.17
APO-Q-P1500-R224	1.500	224
APO-GB-P1500-R13.8	1.500	13.8
APO-GB-P1500-R12.8	1.500	12.8
APO-Q-P1500(D1450)-R10	1.500	10
APO-Q-P1500-R3.39	1.500	3.39
APO-GT-P1500-R3.25	1.500	3.25
APO-Q-P1500-R2.4	1.500	2.4
APO-Q-P1440-R7.5	1.440	7.5
APO-Q-P1400-R21	1.400	21
APO-Q-P1300-R50	1.300	50
APO-Q-P1251-R5.9	1.251	5.9
APO-Q-P1250(D1000)-R131	1.250	131
APO-GT-P1250(D750)-R0.77	1.250	0.77
APO-GT-P1250(D750)-AR0.77	1.250	0.77
APO-GT-P1250-AR2.991	1.250	2.991
APO-GT-P1250-R2.775	1.250	2.775
APO-GT-P1250-R2.435	1.250	2.435
APO-GB-P1250-R1.873	1.250	1.873
APO-GB-P1250-R1.73	1.250	1.73
APO-GT-P1250-AR1.63	1.250	1.63
APO-GB-P1250-R1.523	1.250	1.523
APO-Q-P1200-R136.2	1.200	136.2
APO-GB-P1200(D1100)-R1.8	1.200	1.8
APO-Q-P1100-R103.1	1.100	103.1
APO-Q-P1100-R100	1.100	100
APO-Q-P1100-R95.5	1.100	95.5

Q: Fused silica GB: Glass BK7 GT: Glass S-TiH53 or S-TiH10 G: Glass other type P: Plastic



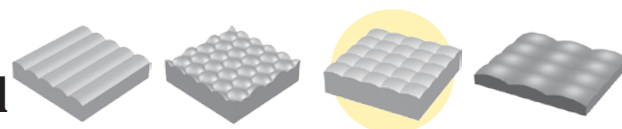
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Positive Arrays

Array Positive (convex) Orthogonal



Product Code	Pitch, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
APO-P1100-R51.7	1.100	51.7
APO-Q-P1100-R48	1.100	48
APO-Q-P1061-R72	1.061	72
APO-Q-P1015-R28	1.015	28
APO-Q-P1000-R30	1.000	30
APO-Q-P1000-R25	1.000	25
APO-Q-P1000-R16	1.000	16
APO-Q-P1000-R5	1.000	5
APO-GT-P1000-AR2.775	1.000	2.775
APO-Q-P1000-R2.59	1.000	2.59
APO-Q-P1000-AR2.32	1.000	2.32
APO-Q-P1000(D1000)-AR2.32	1.000	2.32
APO-Q-P1000-R2.2	1.000	2.2
APO-GT-P1000(D950)-AR2.076	1.000	2.076
APO-GT-P1000-R1.86	1.000	1.86
APO-GB-P1000(D950)-R2.076	1.000	2.076
APO-GT-P1000(D950)-AR1.716	1.000	1.716
APO-GT-P999-AR2.076	0.999	2.076
APO-Q-P996-R1.83	0.996	1.83
APO-GT-P960(CA820)-R3.6	0.960	3.6
APO-Q-P960-R2.065	0.960	2.065
APO-Q-P800-R20	0.800	20
APO-Q-P800-R17	0.800	17
APO-Q-P800-R14.4	0.800	14.4
APO-Q-P800-R9.6	0.800	9.6
APO-GT-P750(D750)-AR0.65	0.750	0.65
APO-Q-P723.3-R5.9	0.7233	5.9
APO-Q-P718-R11.1	0.718	11.1
APO-Q-P715(CA400)-R0.581	0.715	0.581
APO-Q-P680-R1.03	0.680	1.03
APO-Q-P660(CA560)-AR0.925	0.660	0.925
APO-Q-P624-R8.2	0.624	8.2
APO-Q-P618-R0.713	0.618	0.713
APO-Q-P605-R4.3	0.605	4.3
APO-Q-P600-R29.3	0.600	29.3
APO-Q-P600(D595)-R7.3	0.600	7.3
APO-Q-P600(D595)-R1.9	0.600	1.9

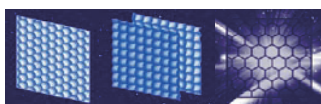
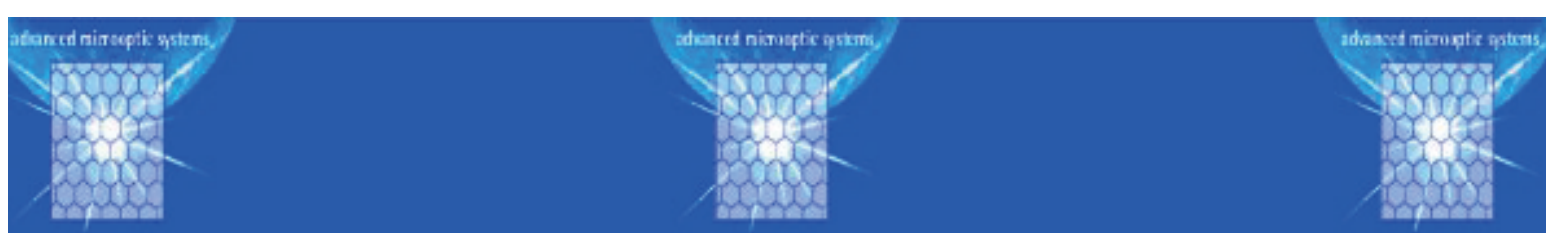
Q: Fused silica GB: Glass BK7 GT: Glass S-TiH53 or S-TiH10 G: Glass other type P: Plastic



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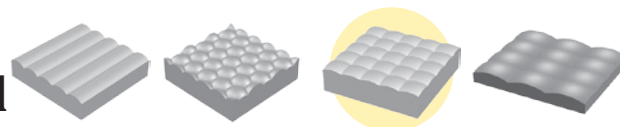
〒101-0051 東京都千代田区神田神保町1-34-2F TEL (03) 3294-0560 FAX (03) 6856-4866

〒815-0041 福岡市南区野間1-10-18 TEL (092) 554-6800 FAX (092) 554-6802



Positive Arrays

Array Positive (convex) Orthogonal



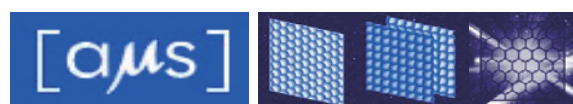
Product Code	Pitch, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
APO-Q-P597-R22.8	0.597	22.8
APO-Q-P591-R36.3	0.591	36.3
APO-Q-P576-R3.32	0.576	3.32
APO-Q-P552-R11	0.552	11
APO-Q-P520(D520)-R1.027	0.520	1.027
APO-Q-P500-R35	0.500	35
APO-Q-P500-R13.8	0.500	13.8
APO-Q-P500-R11	0.500	11
APO-Q-P500-R9	0.500	9
APO-Q-P500-R7	0.500	7
APO-Q-P500-R3.8	0.500	3.8
APO-Q-P500-R0.65	0.500	0.65
APO-Q-P500-AR0.58	0.500	0.58
APO-Q-P500(D500)-R0.58	0.500	0.58
APO-Q-P480-R3.1	0.480	3.1
APO-GT-P480-R1.82	0.480	1.82
APO-Q-P414.4-R8.84	0.4144	8.84
APO-Q-P400-R11	0.400	11
APO-Q-P400-R6.17	0.400	6.17
APO-Q-P399-R0.462	0.399	0.462
APO-Q-P384-R2.63	0.384	2.63
APO-Q-P360-R8	0.360	8
APO-Q-P357-R0.374	0.357	0.374
APO-Q-P350-R1.26	0.350	1.26
APO-GT-P332-R1.857	0.332	1.857
APO-Q-P327.8-R2.71	0.3278	2.71
APO-Q-P325-R8.2	0.325	8.2
APO-Q-P303(CA100)-R1.83	0.303	1.83
APO-Q-P300-R85	0.300	85
APO-Q-P300-R54	0.300	54
APO-Q-P300-R32	0.300	32
APO-Q-P300-R22.6	0.300	22.6
APO-Q-P300-R18	0.300	18
APO-Q-P300-R16	0.300	16
APO-Q-P300-R3.2	0.300	3.2
APO-Q-P300-R1.76	0.300	1.76
APO-Q-P300-R0.94	0.300	0.94

Q: Fused silica GB: Glass BK7 GT: Glass S-TiH53 or S-TiH10 G: Glass other type P: Plastic



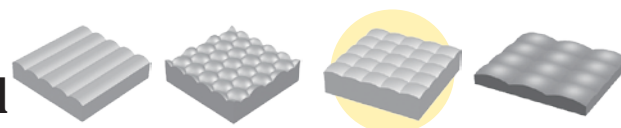
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〒815-0041 福岡市南区野間1-10-18 TEL (092) 554-6800 FAX (092) 554-6802



Positive Arrays

Array Positive (convex) Orthogonal



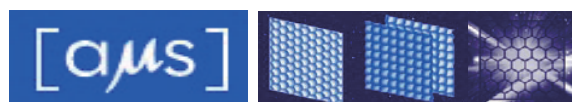
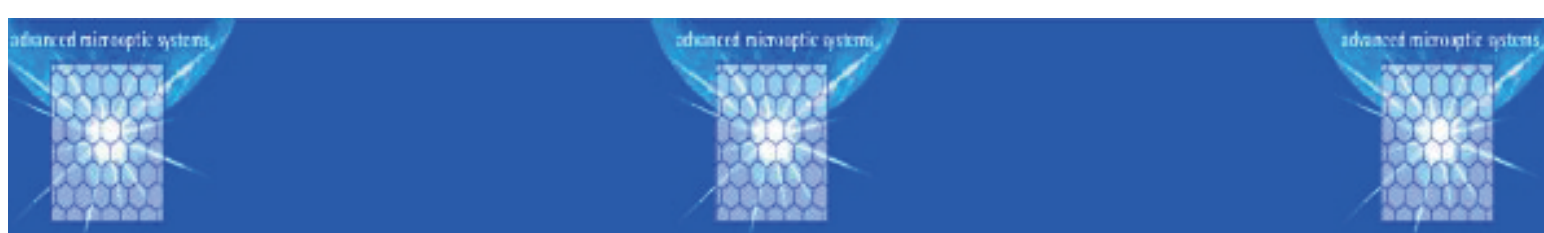
Product Code	Pitch, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
APO-Q-P300-R0.85	0.300	0.85
APO-Q-P290-R1.1	0.290	1.1
APO-Q-P288-R3.246	0.288	3.246
APO-Q-P280(CA260)-R1.33	0.280	1.33
APO-Q-P281.4(D250)-R0.537	0.2814	0.537
APO-Q-P255-R1.08	0.255	1.08
APO-Q-P250-R5.8	0.250	5.8
APO-Q-P250-R1.83	0.250	1.83
APO-Q-P250(D235)-AR0.386	0.250	0.386
APO-Q-P250-R0.307	0.250	0.307
APO-GT-P250(D240)-AR0.296	0.250	0.296
APO-Q-P247.5-R14	0.2475	14
APO-Q-P240-R11.355	0.240	11.355
APO-Q-P240-R4	0.240	4
APO-Q-P238-R10	0.238	10
APO-Q-P232.5-R1.86	0.2325	1.86
APO-Q-P222-R0.93	0.222	0.93
APO-Q-P222-R0.85	0.222	0.85
APO-Q-P222-R0.425	0.222	0.425
APO-Q-P220-R14.02	0.220	14.02
APO-Q-P209-R0.242	0.209	0.242
APO-Q-P207.2-R2.5	0.2072	2.5
APO-Q-P200-R18.3	0.200	18.3
APO-Q-P200-R10	0.200	10
APO-Q-P200-R4.9	0.200	4.9
APO-P(GB)-P200-R3.32	0.200	3.32
APO-Q-P200-R3.2	0.200	3.2
APO-Q-P200-R2.23	0.200	2.23
APO-Q-P200-R1.4	0.200	1.4
APO-Q-P200-R1.12	0.200	1.12
APO-Q-P200(D180)-R0.685	0.200	0.685
APO-Q-P200-R0.3	0.200	0.3
APO-Q-P192-R2.63	0.192	2.63
APO-Q-P192-R1.45	0.192	1.45
APO-Q-P192-R1.311	0.192	1.311
APO-Q-P181.5-R4	0.1815	4
APO-Q-P178.2-R3.99	0.1782	3.99

Q: Fused silica GB: Glass BK7 GT: Glass S-TiH53 or S-TiH10 G: Glass other type P: Plastic



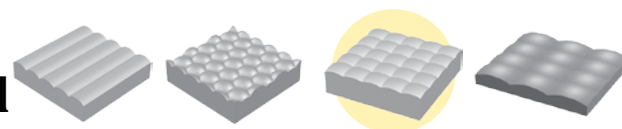
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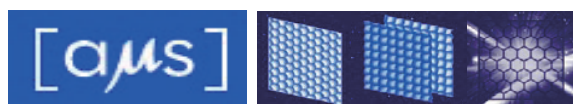
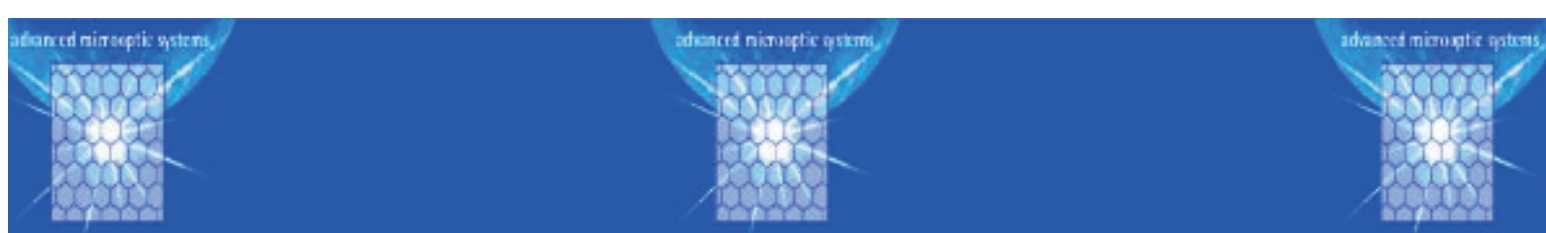
Positive Arrays

Array Positive (convex) Orthogonal



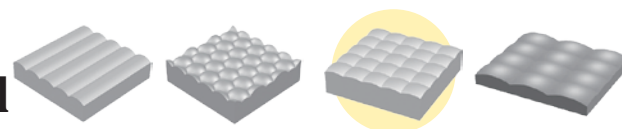
Product Code	Pitch, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
APO-Q-P170.6-R2.19	0.1706	2.19
APO-Q-P168-R4.077	0.168	4.077
APO-Q-P157.5-R1.018	0.1575	1.018
APO-Q-P150-R182	0.150	182
APO-Q-P150-R90	0.150	90
APO-Q-P150(D146)-R2.54	0.150	2.54
APO-Q-P150-R4.57	0.150	4.57
APO-Q-P150-R2.54	0.150	2.54
APO-Q-P150(D146)-R2.54+CHR	0.150	2.54
APO-Q-P150-R1.6	0.150	1.6
APO-GT-P150-R0.8	0.150	0.8
APO-Q-P150-R0.19	0.150	0.19
APO-Q-P148-R0.567	0.148	0.567
APO-Q-P146.4-R0.736	0.1464	0.736
APO-Q-P144-R3.8	0.144	3.8
APO-Q-P136-R0.94	0.136	0.94
APO-Q-P130-R1.47	0.130	1.47
APO-Q-P130(D120)-R0.457	0.130	0.457
APO-Q-P120-R13.7	0.120	13.7
APO-Q-P120-R1	0.120	1
APO-Q-P120-R0.136	0.120	0.136
APO-Q-P114-R1.38	0.114	1.38
APO-Q-P112-R1.14	0.112	1.14
APO-Q-P110-R0.2	0.110	0.2
APO-Q-P105.75-R0.725	0.10575	0.725
APO-Q-P103.6-R1.61	0.1036	1.61
APO-Q-P103.4-R1.02	0.1034	1.02
APO-Q-P100-R2.29	0.100	2.29
APO-Q-P100(D100)-R1.33	0.100	1.33
APO-GP-P100-R0.175	0.100	0.175
APO-Q-P100-R0.1	0.100	0.1
APO-Q-P96.6-R2	0.0966	2
APO-GT-P93.5-R0.23	0.0935	0.23
APO-Q-P90(D90)-R0.246	0.090	0.246
APO-Q-P86-R0.353	0.086	0.353
APO-Q-P81.1-R0.48	0.0811	0.48
APO-GT-P80(72)-R0.064	0.080	0.064

Q: Fused silica GB: Glass BK7 GT: Glass S-TiH53 or S-TiH10 G: Glass other type P: Plastic



Positive Arrays

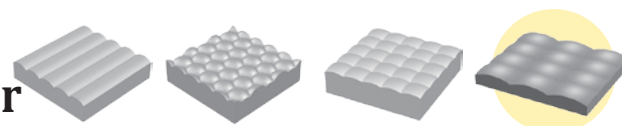
Array Positive (convex) Orthogonal



Product Code	Pitch, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
APO-GT-P75(68)-R0.064	0.075	0.064
APO-Q-P72-R1.45	0.072	1.45
APO-Q-P71.5(D64)-AR0.093	0.0715	0.093
APO-Q-P68-AR0.14	0.068	0.14
APO-Q-P63-R0.68	0.063	0.68
APO-Q-P55-R0.1	0.055	0.1
APO-Q-P54-R0.1	0.054	0.1
APO-Q-P45-R0.294	0.045	0.294
APO-Q-P42-R0.109	0.042	0.109
APO-Q-P40(D38)-R0.105	0.040	0.105
APO-Q-P40-R0.029	0.040	0.029
APO-Q-P30-R0.022	0.030	0.022
APO-Q-P18-R0.033	0.018	0.033

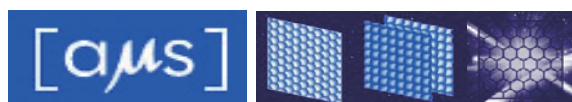
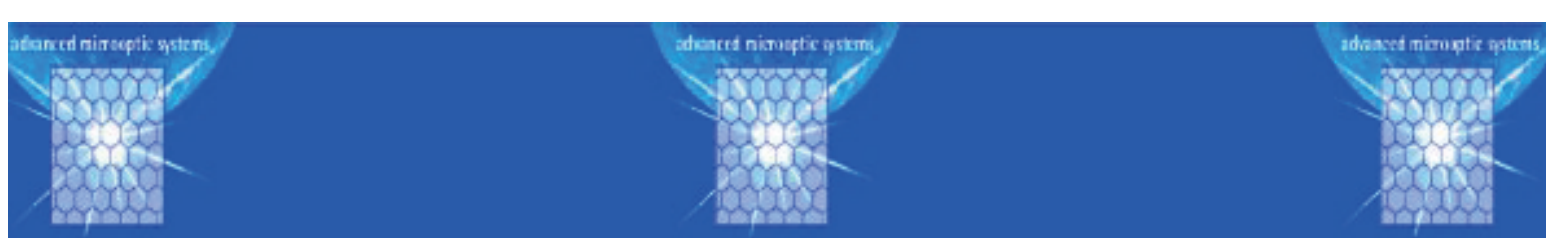
Q: Fused silica GB: Glass BK7 GT: Glass S-TiH53 or S-TiH10 G: Glass other type P: Plastic

Array Positive (convex) Rectangular



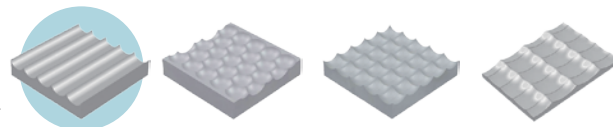
Product Code	Pitch in Both Axis, mm	Radius of Curvature, mm
APR-P(GB)-P2750xP2950(D2400)-R21.8	2.750 x 2.950	21.8
APR-P(GB)-P2720xP2920-R26	2.720 x 2.920	26
APR-P(GB)-P2250xP2850-R22.8	2.250 x 2.850	22.8
APR-GT-P2000xP1500-R5.7	2.000 x 1.500	5.7
APR-P(GB)-P1250xP1000-R3.6	1.250 x 1.000	3.6
APR-Q-P420xP320-R1	0.420 x 0.320	1
APR-P(GB)-P387xP332-R0.8	0.387 x 0.332	0.8
APR-Q-P300xP169-R0.92	0.300 x 0.169	0.92
APR-Q-P99xP121-R0.366	0.099 x 0.121	0.366
APR-P(G)-P33.75xP36-R0.078	0.03375 x 0.036	0.078
2APR-Q-P270xP540-R0.927	0.270 x 0.540	0.927
B2(APR-Q-P450xP270-R13.4)	0.450 x 0.270	13.4

Q: Fused silica GB: Glass BK7 GT: Glass S-TiH53 or S-TiH10 P: Plastic P(G): Polymer lens on Glass substrate



Negative Arrays

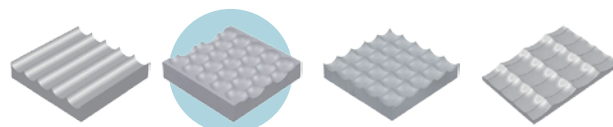
Array Negative (concave) Cylindrical



Product Code	Pitch, mm	Radius of Curvature, mm
ANC-Q-P4500-R139	4.500	139
ANC-Q-P700-R5	0.700	5
ANC-Q-P600-R0.56	0.600	0.56
ANC-Q-P250-R34.35	0.250	34.35
ANC-Q-P80-R0.14	0.080	0.14

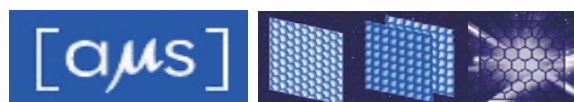
Q: Fused silica

Array Negative (concave) Hexagonal



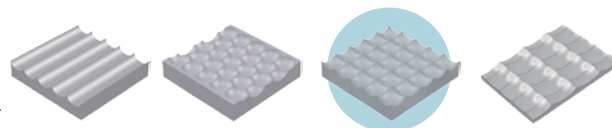
Product Code	Pitch, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
ANH-Q-P4500-R139	4.500	139
ANH-Q-P1000-R91	1.000	91
ANH-GB-P1000-R22	1.000	22
ANH-Q-P1000-R150	1.000	150
ANH-Q-P1000-R13.5	1.000	13.5
ANH-Q-P1000-R10.3	1.000	10.3
ANH-Q-P1000-R10	1.000	10
ANH-Q-P1000-R9.7	1.000	9.7
ANH-GB-P1000-R8.6	1.000	8.6
ANH-Q-P1000-R6.6	1.000	6.6
ANH-GB-P1000-R7.5	1.000	7.5
ANH-Q-P1000-R7.5	1.000	7.5
ANH-Q-P500-R75	0.500	75
ANH-GB-P500-R5.1	0.500	5.1
ANH-GB-P250-AR0.708	0.250	0.708
ANH-Q-P250-R0.26	0.250	0.26
ANH-Q-P173-R0.121	0.173	0.121

Q: Fused silica GB: Glass BK7



Negative Arrays

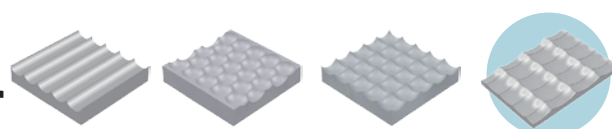
Array Negative (concave) Orthogonal



Product Code	Pitch, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
ANO-Q-P2500(D600)-AR0.3	2.500	0.3
ANO-Q-P1000-R700	1.000	700
ANO-Q-P1000-R236	1.000	236
ANO-Q-P1000-R200	1.000	200
ANO-Q-P1000-R160	1.000	160
ANO-Q-P1000-R92	1.000	92
ANO-Q-P1000-R46	1.000	46
ANO-Q-P1000-R18	1.000	18
ANO-Q-P1000-R11.9	1.000	11.9
ANO-Q-P1000-R1.95	1.000	1.95
ANO-Q-P300-R60	0.300	60
ANO-Q-P300-R4.2	0.300	4.2
ANO-Q-P150-R182	0.150	182
ANO-Q-P150-R90	0.150	90
ANO-Q-P100-R0.090	0.100	0.090
ANO-GB-P90-R0.099	0.090	0.099
ANO-GB-P25-R0.1	0.025	0.1

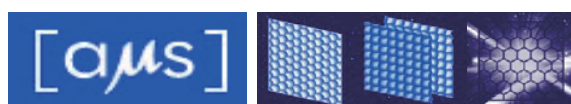
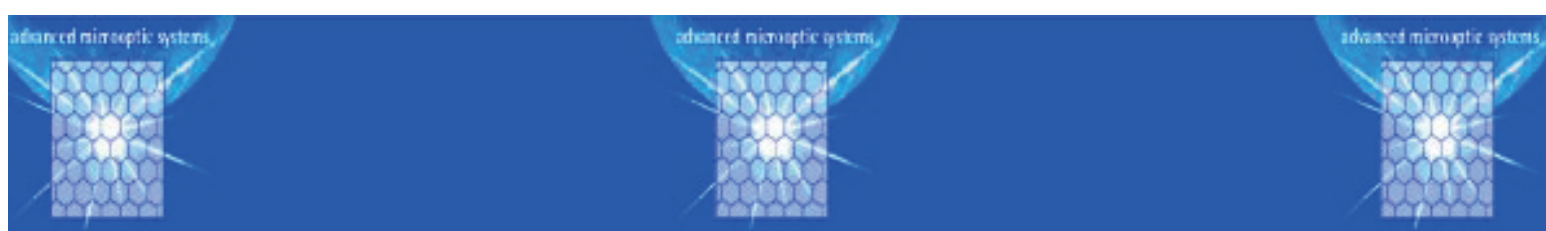
Q: Fused silica GB: Glass BK7

Array Negative (concave) Rectangular

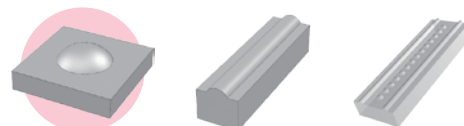


Product Code	Pitch in Both Axis, mm	Radius of Curvature, mm
ANR-P(GB)-P2950xP2750-R240	2.950 x 2.750	240
ANR-GB-P2720xP2920-R26	2.720 x 2.920	26

GB: Glass BK7 P: Plastic



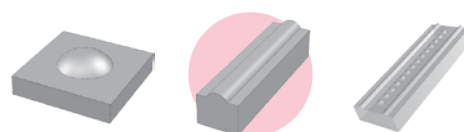
Positive Lenses



Single Positive (convex) Lens

Product Code	Lens Diameter, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
SPL-GT-D1900-AR4.1	1.900	4.1
SPL-Q-D1450-R10	1.450	10
SPL-Q-D1100-R1810	1.100	1810
SPL-GB-D1100-AR1.75	1.100	1.75
SPL-GT-D1100(CA760)-AR0.612	1.100	0.612
SPL-GT-D1000-AR2.775	1.000	2.775
SPL-GT-D1000-R2.75	1.000	2.75
SPL-GB-D950-R2.076	0.950	2.076
SPL-GT-D950-AR1.65	0.950	1.65
SPL-GT-D750-R0.77	0.750	0.77
SPL-GT-D240-AR0.296	0.240	0.296
SPL-Q-D235-AR0.386	0.235	0.386
SPL-Q-D146-R2.54	0.146	2.54
2SPL-GT-D900xD900-AR0.734	0.900 x 0.900	0.734
2SPL-GT-D700xD900-AR0.41xAR0.87	0.700 x 0.900	0.41 x 0.87
2SPL-GT-D500xD700-AR0.7xAR0.79	0.500 x 0.700	0.7 x 0.79
2SPL-GL-D700xD1000-AR0.63xAR1.08	0.700 x 1.000	0.63 x 1.08
2SPL-GL-D400xD800-AR0.63xAR0.65	0.400 x 0.800	0.63 x 0.65

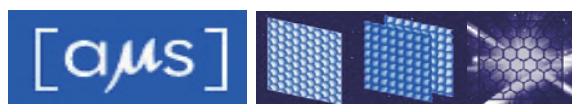
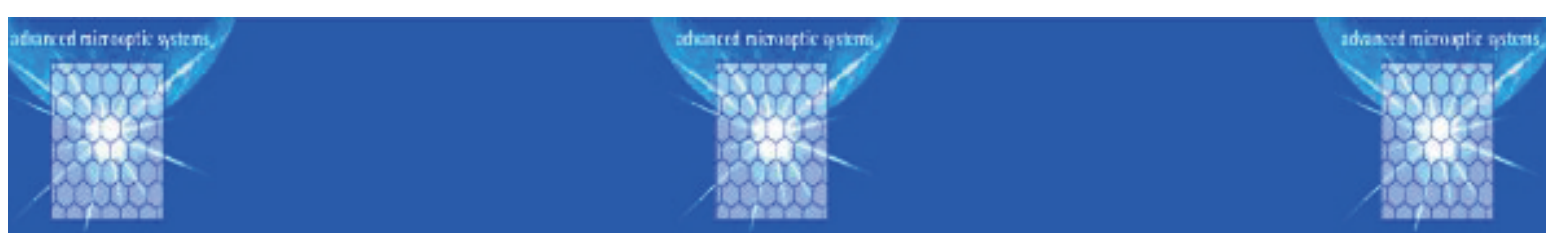
Q: Fused silica GB: Glass BK7 GT: Glass S-TiH53 or S-TiH10



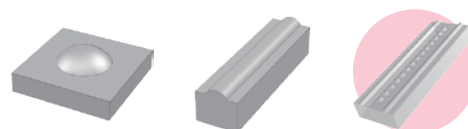
Single Positive (convex) Cylindrical lens

Fast Axis Collimator	Lens Diameter (or width), mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
SPC-GT-D800-AR0.58	0.800	0.58
SPC-GT-D600-AR0.108+APC-GT-P500-R1.9	0.600	0.108 + 1.9
SPC-Q-D300(CA250)-AR0.270	0.300	0.270
SPC-GT-D250-AR0.15+APC-GT-P700-AR0.88	0.250	0.15 + 0.88
2SPC-GT-D3000-AR1.49xAR2.73	3.000	1.49 x 2.73
2SPC-GT-D2000-AR0.966xAR2.2	2.000	0.966 x 2.2
B2(SPC-GT-D1900(CA1000)-AR0.75+APC-Q-P500-AR1.7)	1.900	0.75 + 1.7

Q: Fused silica GT: Glass S-TiH53 or S-TiH10



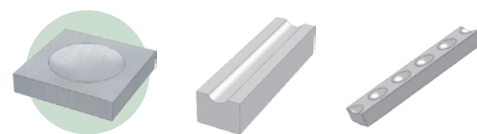
Positive Lenses



Line of Positive (convex) Lens

Product Code	Lens Diameter, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
LPL-P(GB)-P2200(D1250)-AR0.45	2.200	0.45
LPL-P(GB)-P2200(D1250)-AR0.30	2.200	0.30
LPL-GT-P2000(D1900)-AR4.2	2.000	4.2
LPL-GT-P2000(D1000)-AR1.73	2.000	1.73
LPL-GT-P1100(D1200)-AR0.66	1.100	0.66
LPL-GT-P1000(D920)-AR1.9	1.000	1.9
LPL-Q-P1000(D100)-R0.122	1.000	0.122
LPL-Q-P750(D420)-AR0.76	0.750	0.76
LPL-GT-P750(D500)-AR0.333	0.750	0.333
LPL-Q-P250(D235)-AR0.500	0.250	0.500
LPL-GT-P250(D250)-AR0.400	0.250	0.400
LPL-Q-P250(D235)-AR0.386	0.250	0.386
LPL-Q-P250(D235)-AR0.381	0.250	0.381
LPL-Q-P250(D235)-R0.370	0.250	0.370
LPL-Q-P250(D235)-R0.320	0.250	0.320
LPL-GT-P250(D230)-R0.300	0.250	0.300
LPL-GT-P250(D235)-R0.275	0.250	0.275
LPL-GT-P250(D235)-R0.250	0.250	0.250
LPL-GT-P250(D250)-AR0.190	0.250	0.190
LPL-Q-P200(D195)-AR0.225	0.200	0.225
LPL-Q-P28(D28)-R0.025	0.028	0.025

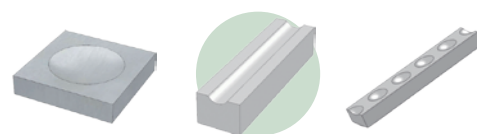
Q: Fused silica GB: Glass BK7 GT: Glass S-TiH53 or S-TiH10 P: Plastic



Single Negative (concave) Lens

Product Code	Lens Diameter, mm	Radius of Curvature, mm (AR: Aspherical Radius of Curvature, mm)
SNL-GT-D2200-AR2.876	2.200	2.876
SNL-GT-D1500-R4.44	1.500	4.44
SNL-Q-D278.8-R0.59	0.2788	0.59
SNL-Q-D219.6-R0.50	0.2196	0.50

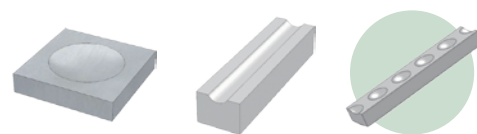
Q: Fused silica GT: Glass S-TiH53 or S-TiH10



Single Negative (concave) Cylindrical lens

Product Code	Lens Diameter (or width), mm	Radius of Curvature, mm
SNC-Q-D25400-R76 	25.400	76

Q: Fused silica

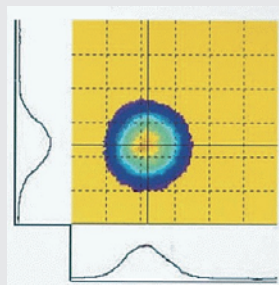


Line of Negative (concave) Lens

Product Code	Lens Diameter, mm	Radius of Curvature, mm
LNL-Q-P5000-D2420-R1460	5.000	1460
LNL-Q-P4050-D2420-R1460	4.050	1460
LNL-Q-P250(D240)-R0.1	0.250	0.1

Q: Fused silica

Laser Beam Homogenizer



Product Code	Angle of Divergency, grad
LBH-Q-DV10	10
LBH-Q-DV7	7
LBH-Q-DV6	6
LBH-Q-DV5	5
LBH-Q-DV2	2
LBH-Q-DV0.8	0.8
LBH-Q-DV0.61	0.61
LBH-Q-DV0.5	0.5
LBH-Q-DV0.4	0.4
LBH-Q-DV0.388	0.388
LBH-Q-DV0.38	0.38
LBH-Q-DV0.37	0.37

Q: Fused silica