

Aberration-Corrected

Aspheric Lenses

Rev. 4

Aspheric surfaces can effectively reduce spherical aberration and realize a diffraction-limited performance

 Optimal solutions for high-precition and high quality laser materials processing



A spherical lens with spherical aberration shows differences in focal positions of light rays depending on their distances from the optical axis.

> SUMITOMO ELECTRIC GROUP

Aspheric lens for 1050-1080nm

High purity synthetic quartz is used as a ultra-low absorption lens material for high power lasers.





Spec.		Unit	: mm					
Spec. No.	Diameter	Effective focal length (f)	Edge thickness	Center thickness	T1	D1	Back working distance	Remarks
LASQ 30F50A1		50	4.1	10.0	5.0	ø25	44.2	
LASQ 30F50A1C		50	4.1	10.0	5.0		45.7	*1
LASQ 30F75A1		75	3.9	8.0	4.5		70.4	
LASQ 30F80A1	ø30	80	3.9	8.0	4.5		75.4	
LASQ 30F100A1		100	4.1	7.0	4.5		95.9	
LASQ 30F120A1		120	4.2	6.5	4.5		116.2	
LASQ 30F125A1		125	4.2	6.5	4.5		121.2	
LASQ 30F150A1		150	4.3	6.5	4.5		146.2	
LASQ 30F200A1		200	4.3	6.0	4.5		196.5	
LASQ 30F240A1		240	4.3	6.0	4.5		236.6	
LASQ 50F75A1		75	5.0	15.0	6.5	ø45	66.1	
LASQ 50F75A1C	ø50	75	5.0	15.0	6.5		68.0	*1
LASQ 50F80A1		80	5.1	14.5	6.5		71.5	
LASQ 50F80A1C		80	5.1	14.5	6.5		73.3	*1
LASQ 50F100A1		100	5.4	13.0	6.5		92.4	
LASQ 50F100A1C		100	5.4	13.0	6.5		93.9	*1
LASQ 50F120A1		120	5.1	11.5	6.0		113.2	
LASQ 50F125A1		125	5.1	11.5	6.0		118.3	
LASQ 50F150A1		150	5.3	11.0	6.0		143.5	
LASQ 50F200A1		200	5.5	10.0	6.0		194.1	
LASQ 50F240A1		240	5.5	10.0	6.0		234.3	
LASQ 50F300A1		300	5.2	7.5	5.2	_	294.8	*2
LASO 50F360A1		360	51	70	51		355.2	*7

* For low-absorption lenses (Low-a[™]), please add "-L" to the end of the specification number. *1: Aberration-Corrected for Protective Windows (For protective windows with a thickness of 3mm or more.) *2: Plano-Convex Shape

* Our lineup includes a variety of lenses with specifications other than those indicated above, so please consult with us regarding specifics.

Aspheric singlet for imaging

Spec. No.	Diameter	Imaging magnification	Edge thickness	Center thickness	T1	D1	Object distance	Image distance	Remarks
ILASPQ 30X2A1	ø30	2	4.1	11.5	7.0	ø25	50.3	108.3	
ILASPQ 30X4A1		4	3.7	11.0	6.0		44.8	197.3	

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Spot diameter (for 1064nm)







Unit : mm

Aspheric imaging lens Imaging magnification : 2 Fiber ø200µm core

[Plano-Convex Shape] Effective focal length (f)(±1%) Center thickness (±0.1) Co.5

Low-absorption lenses

Edge thickness (T1)

* Compatible Wavelengths : 1050nm-1080nm

Reduce laser absorption to the utmost! Suppresses the thermal lens effect, contributing to high quality and stability of laser.



Regular lens Low-a[™] lens * Wavelength 1070nm, lens thickness 10mm Compared to our regular lenses

The Low-a[™] series is a lens that uses our unique coating technology and highpurity anhydrous quartz to minimize laser absorption. Its excellent properties make it extremely effective in high-power laser processing.



Spot diameter comparison at a focal length of 50mm

 $\frac{40}{30} - Aspheric lens}{--Conventional triplet lens}$



Aspheric lens for 532nm

Spec.		Unit : mm					
Spec. No.	Diameter	Effective focal length (f)	Edge thickness	Center thickness	T1	D1	Back working distance
LASQ 30F50A2	ø30	50	4.1	10.0	5.0	ø25	44.2
LASQ 30F75A2		75	3.5	8.0	4.1		70.4
LASQ 30F80A2		80	3.6	8.0	4.2		75.5
LASQ 30F100A2		100	3.1	7.0	3.5		95.9
LASQ 30F125A2		125	3.0	6.5	3.3		121.3
LASQ 30F150A2		150	3.2	6.5	3.4		146.2
LASQ 30F200A2		200	3.0	6.0	3.2		196.5
LASQ 50F75A2	ø50	75	5.1	15.0	6.5	ø45	66.2
LASQ 50F100A2		100	5.1	13.0	6.2		92.4
LASQ 50F125A2		125	4.8	11.5	5.7		118.3
LASQ 50F150A2		150	5.1	11.0	5.8		143.6
LASQ 50F200A2		200	5.1	10.0	5.6		194.2
LASQ 50F300A2		300	4.0	8.0	4.4		295.6

Spot diameter (for 532nm)



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Aspheric lens for 355nm

Spec.		Unit : mm					
Spec. No.	Diameter	Effective focal length (f)	Edge thickness	Center thickness	T1	D1	Back working distance
LASQ 25F40A3	ø25	40	4.0	9.0	4.7	ø20	34.8
LASQ 25F50A3		50	3.6	8.0	4.1		45.3
LASQ 25F75A3		75	3.4	7.0	3.7		70.8
LASQ 30F40A3	ø30	40	4.3	11.0	5.4	ø25	33.8
LASQ 30F50A3		50	4.3	10.0	5.0		44.1
LASQ 30F75A3		75	3.6	8.0	4.0		72.2
LASQ 30F100A3		100	3.2	7.0	3.5		95.9
LASQ 30F125A3		125	3.1	6.5	3.4		121.2
LASQ 30F150A3		150	3.3	6.5	3.5		146.1

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Please choose diameter, focal length, and wave length.





Aspheric lens for 10.6µm, made of ZnSe for CO2 laser

Aspheric lenses are used to minimize spherical aberration to achieve a small spot size.

They work the most powerfully in short focal length or large incident beam applications.

Spot diameter (for 10.6µm)





Spec. Wavelength : 10.6µm Unit : mm øDxFL FL ΕT CT WD Spec. No. øD (inch) LASZ 27.9F25.4-3 1.1×1.0 25.4 5.78 19.1 LASZ 27.9F38.1-3 1.1×1.5 27.9 38.1 3.0 4.81 33.3 LASZ 27.9F50.8-3 1.1×2.0 50.8 4.35 46.7 LASZ 38.1F25.4-4 1.5×1.0 25.4 9.45 15.2 LASZ 38.1F38.1-4 38.1 743 1.5×1.5 30.2 LASZ 38.1F50.8-4 1.5×2.0 38.1 50.8 4.0 6.53 44.3 57.8 LASZ 38.1F63.5-4 63.5 15×25 6.02 LASZ 38.1F95.3-4 1.5×3.75 95.3 5.34 90.5 LASZ 50.8F63.5-5 2.0×2.5 63.5 8.62 54.7 LASZ 50.8F95.3-5 88.3 2.0×3.75 50.8 95.3 5.0 7.39 LASZ 50.8F127-5 2.0×5.0 127.0 6.79 120.9





* Our lineup includes a variety of lenses with specifications other than those indicated above, so please consult with us regarding specifics.

Please choose diameter, focal length, and edge thickness.

Spec. No. LASZ 27.9 F 38.1 - 3 Diameter Focal Length Edge Thickness



Do not inhale ZnSe dust.Do not dip in acids or alkalis.

Do not dispose by incineration.

Please store away from acids and alkalis.

• Disposal should be in compliance with all applicable laws and regulations.

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