Saphir-Linsen

Saphir kann aufgrund seiner hervorragenden Transmissionseigenschaften für Linsen und Fenster im Spektralbereich von UV bis ins IR bei Wellenlängen bis zu 5 µm eingesetzt werden. Die außergewöhnliche Härte des Materials macht Saphir auch für Anwendungen verwendbar, bei denen eine hohe Bruch- und Kratzfestigkeit benötigt wird. In der Lasertechnik werden diese Linsen häufig in Er:YAG-Lasern eingesetzt, die bei 2,94 µm emittieren.

LASER COMPONENTS bietet Ihnen Saphirlinsen aller gängigen Typen in Hochleistungslaser-Qualität an. Neue Prozessentwicklungen garantieren Linseneigenschaften, die für Saphir bisher unerreicht waren. Die Qualität von Politur und Passe entspricht annähernd der von Quarzlinsen. Die Werte für Absorption und Streuung sind minimal; die Zerstörschwelle der Linsen wurde damit deutlich verbessert.

Sapphire Lenses

Because of its excellent transmission characteristics, sapphire can be used for lenses and windows in the spectral range from UV to IR at wavelengths of up to 5 µm. The extraordinary hardness of the material makes sapphire perfect for applications in which break-proof and scratch resistant material is required. In laser technology, these lenses are often used in Er:YAG lasers that emit at 2.94 µm.

LASER COMPONENTS offers sapphire lenses of all common types in high power laser quality. New developments in processing can ensure excellent lens features that were unachievable with sapphire until now. The quality of polishing and surface figure almost matches that of fused silica lenses. The values for absorption and scattering are minimal; thus, the damage threshold of the lenses has improved considerably.

Nomenklatur – Nomenclature

SPX / SPC	-25.4	/51.5	SA
Product code (**S**apphire **P**lano Conve**x** / **S**apphire **P**lano **C**oncave Lens)	Diameter in mm	Convex/concave radius of curvature in mm	Material code SA: sapphire

SPECS

- **Material:** Sapphire (random oriented) (other orientations upon request)
- **Diameter tolerance:** + 0.00 mm; - 0.20 mm
- **Thickness tolerance:** ± 0.20 mm
- **Radii tolerance:** ± 1 %
- **Centering tolerance:** 4/3' according to ISO 10110
- **Surface figure:**
  Curved surface: 3/–(0.5/–) according to ISO 10110
  Plane surface: 3/0.5(0.5/–) according to ISO 10110
  λ/4 according to MIL-O-1380A
- **Surface quality:** 5/4 x 0.063 for 1.0" substrates according to ISO 10110
  20-10 according to MIL-O-1380A
- **Protective chamfer:** 0.2 - 0.4 mm x 45°
- **Clear aperture:** 85 % of diameter

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France: LASER COMPONENTS S.A.S., Phone: +33 1 3959 5225, Fax: +33 1 3959 5350, info@lasercomponents.fr

Part. No.	Nominal f [mm]	Diameter Ø [mm]	f [mm] (193 nm) n = 1.92311	f [mm] (1320 nm) n = 1.74618	f [mm] (2010 nm) n = 1.7336	f [mm] (2940 nm) n = 1.711	Curvature rcx, rcc [mm]	Center Thickness CT [mm]	Edge Thickness ET [mm]
SPX-5.0/3.85SA	5	5.0	4.2	5.2	5.2	5.5	3.9	3.8	2.9
SPX-10.0/11.6SA	15	10.0	12.6	15.5	15.8	16.3	11.6	3.0	1.9
SPX-25.4/17.8SA	25	25.4	19.2	23.8	24.2	25.1	17.8	7.3	2.0
SPX-12.7/35.5SA	50	12.7	38.4	47.5	48.4	50.0	35.5	2.6	2.0
SPX-25./71.0SA	100	25.4	76.9	95.2	96.8	100.0	71.0	3.2	2.0
SPX-25.4/107SA	150	25.4	115.9	143.4	145.9	150.7	107.0	3.0	2.2
SPX-20.0/127SA	180	20.0	137.6	170.2	173.1	178.9	127.0	2.4	2.0
SPC-12.7/22.7SA	-30	12.7	-24.6	-30.4	-30.9	-32.0	22.7	1.1	2.0
SPC-12.7/38.5SA	-55	12.7	-41.7	-51.6	-52.5	-54.2	38.5	1.5	2.0
SPC-12.7/50.0SA	-70	12.7	-54.2	-67.0	-68.2	-70.4	50.0	1.6	2.0
SPC-8.0/500.0SA	-700	8.0	-541.6	-670.1	-681.6	-704.2	500.0	2.0	2.0

Other sizes are available upon request.

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