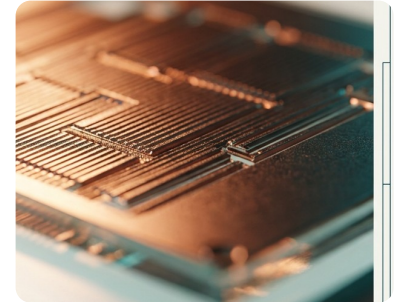


Photomask and Metal Mask Fabrication

Chrome-on-glass photomasks, metal masks by three routes, and full CAD conversion from GDS, DXF, DWG, PDF, or a hand drawing. Quote in 3 days, no minimum order, every order managed end to end by a dedicated project manager.



0.5 μ m

photomask
minimum CD

30 μ m

electroformed Ni
aperture

600×600

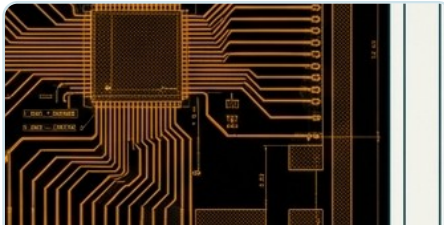
mm

max metal mask
sheet

3 days

to quotation

Three disciplines, one project



01

Design conversion and CAD

Customer drawings, sketches, or existing CAD converted to production-ready GDSII, DXF, or DWG with DRC and layout-versus-schematic checks; CD targets confirmed before writing.



02

Chrome-on-glass photomasks

Direct-write e-beam or laser on soda-lime, borosilicate, or fused silica; 0.5 μ m minimum CD; formats from 4 to 9 inch for contact aligners and steppers.

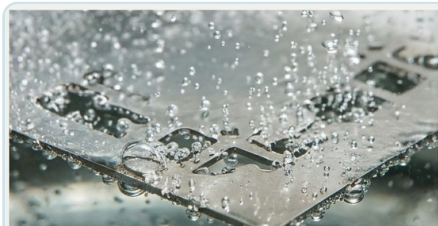


03

Metal masks

Wet-etched, laser-cut, or electroformed nickel masks for solder paste, OLED and PVD evaporation, ion implantation shielding, and MEMS shadow masking.

Metal masks: three routes, matched to feature size and volume



A

Wet etch (photochemical machining)

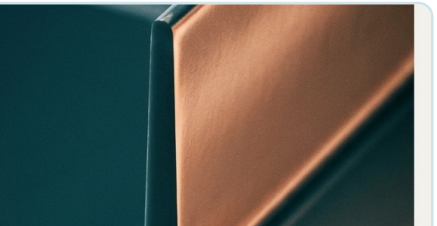
SUS304, SUS316, Ni, Mo, Cu; 20-500 μ m thick; sheets to 300×300 mm. Best cost-performance for prototypes and medium volumes where a small etch taper is acceptable.



B

Laser cut

SUS301 and SUS304 (HA/TA); 30-200 μ m thick; sheets to 600×600 mm. Sharp vertical edges, no photomask needed, fastest turnaround; aperture wall polishing option for paste release.



C

Electroformed nickel

Ni built up around a photoresist master; 30 μ m minimum aperture; 30-200 μ m thick; the smoothest walls for fine-pitch BGA, micro-LED, and OLED deposition masks.

Photomask substrates: soda-lime for standard contact lithography; borosilicate (lower thermal expansion) for overlay-sensitive multi-level work, 4 to 9 inch; fused silica / quartz (UV and DUV grade, flatness below 0.5 μ m) for steppers and precision optics.

Specifications (typical capability, confirmed per program)

Parameter	Photomask (chrome on glass)	Metal mask (Ni / SUS / Mo)
Minimum feature / aperture	0.5 μm CD	30 μm (electroformed Ni); larger for etched and laser-cut routes per thickness
Sheet or plate size	4, 5, 6, 7, 9 inch	Up to 300×300 mm wet etch; up to 600×600 mm laser cut
Materials	Soda-lime, borosilicate, fused silica; chrome absorber	SUS301/304/316, Ni, Mo, Cu; electroformed Ni
Thickness	Standard blank thicknesses per format	20-500 μm (wet etch), 30-200 μm (laser, electroformed)
Writing	Direct-write e-beam or laser	Photochemical machining, fiber laser, or electroforming from a resist master
Inspection	CD-SEM, defect scan, transmission measurement; data sheet with every mask	Dimensional inspection and aperture check; data sheet with every mask
Delivery	Packed in mask shipping boxes, tracked worldwide delivery; typically 7-14 days in total from order	

Applications



OLED pixel deposition

Electroformed Ni fine-pitch shadow masks for organic layer evaporation.



PVD and sputtering

Mo or SUS masks for selective-area deposition; Mo preferred for high-temperature PVD.



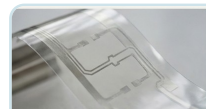
E-beam evaporation

Molybdenum masks for high-vacuum evaporation of Au, Pt, Ti, Al onto wafers and substrates.



Solder paste stencils

Laser-cut SUS304 stencils; $\pm 10 \mu\text{m}$ shape accuracy; sheets to 600×600 mm.



Organic semiconductors

Masks for solvent-free patterning of organic electronics on rigid and flexible substrates.



Ion beam and implant shielding

Heavy stainless or Mo masks for selective-area ion beam etching and implantation.

How to start

Send the design in any format with the target CD, substrate or sheet material, thickness, quantity, and the tool it will be used on. An engineer confirms format and CD targets, and a written quotation follows within 3 days. NDA available before any design file is shared.

Nanosystems JP Inc.

Level 20, Marunouchi Trust Tower, 1-8-3 Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan
sales@nanosystems.jp · +81-3-5288-5569 · www.nanosystems.jp/mask-fabrication

[Request a Quote](#)

Specifications describe typical capability, confirmed per program at engineering review. Photographs and illustrations are representative. © 2026 Nanosystems JP Inc.