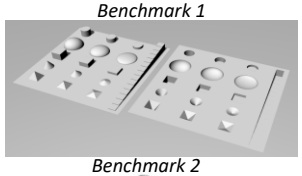
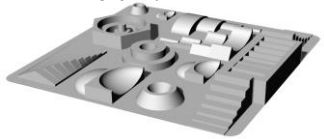
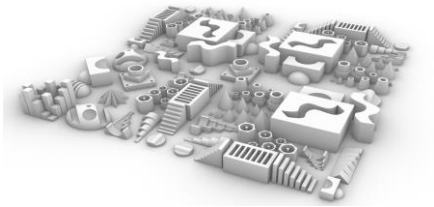
OPTIMAL METADATA LIBRARY

Date	Laser lithography method	Laser writing	Focusing optics	Material	3D model	Structure size (L x W x H)	Virtual photomask type	Virtual photomask parameters	Optimization method	Average shape deviation	Maximum shape deviation	Surface quality	Benchmarks
Apr-23	1PL (MALA-JOR)	serial	Microscope objective 10x, NA 0.25	ma-P 1275G, positive photoresit	Benchmark_1	334 µm x 160µm x11.5 µm	calibrated by contrast curve	negative and positive polarity, hatch 1 µm, scanning speed 30mm/s , max. laser power 100 µW	Manual / iterative	1.70 µm	14.7 µm	0.032 µm Sa	*Benchmark 1* 
Apr-23	1PL (MALA-JOR)	serial	Microscope objective 10x, NA 0.25	ma-P 1275G, positive photoresit	Benchmark_1, Benchmark_2	760 µm x 160µm x20 µm	calibrated by contrast curve	negative and positive polarity, hatch 1 µm, scanning speed 30mm/s , max. laser power 100 µW	Manual / iterative	0.65 µm	15.39 µm	0.042 µm Sa	
May-23	1PL (MALA-JOR)	serial	Microscope objective 4x, NA 0.16	ma-P 1275G, positive photoresit	Benchmark_3	2100µm x 1000µm x50 µm	calibrated by contrast curve	negative and positive polarity, hatch 1 µm, scanning speed 30mm/s, max. laser power 345µW, multiexposure (3x)	Manual / iterative	4.89 µm	34.1 µm	0.072 µm Sa	*Benchmark 2* 
Aug-23	1PL (MALA-JOR)	serial	Microscope objective 4x, NA 0.16	ma-P 1275G, positive photoresit	Benchmark_1, Benchmark_2	760 µm x 160µm x20 µm	calibrated by contrast curve	negative and positive polarity, hatch 1 µm, scanning speed 30mm/s, max. laser power 345µW	Manual / iterative	1.67 µm	8.24 µm	0.032 µm Sa	
Dec-23	1PL (MALA-JOR)	serial	Microscope objective 10x, NA 0.25	ma-P 1275G, positive photoresit	Benchmark_2, Benchmark_4	1750 µm x 1265 µm x 70 µm	calibrated by contrast curve	negative and positive polarity, hatch 1 µm, scanning speed 40mm/s, max. laser power 180µW	Manual / iterative	11.14 µm	29.58 µm	0.122 µm Sa	
Dec-23	1PL (MALA-JOR)	serial	Microscope objective 10x, NA 0.25	ma-P 1275G, positive photoresit	Benchmark_2, Benchmark_4	1750 µm x 1265 µm x 70 µm	calibrated by contrast curve	negative and positive polarity, hatch 1 µm, scanning speed 40mm/s, max. laser power 180µW	Manual / iterative	2.14 µm	14.16 µm	0.058 µm Sa	*Benchmark 3* 
Dec-23	1PL (MALA-JOR)	serial	Microscope objective 10x, NA 0.25	ma-P 1275G, positive photoresit	Benchmark_2, Benchmark_4	1750 µm x 1265 µm x 70 µm	generated by optimization algorithm	negative and positive polarity, hatch 1 µm, scanning speed 40mm/s, max. laser power 180µW	Automated optimzation algorithm	2.70 µm	13.59 µm	0.041 µm Sa	
Jan-24	1PL (MALA-JOR)	serial	Microscope objective 10x, NA 0.25	ma-P 1275G, positive photoresit	Benchmark_2, Benchmark_4	503 µm x 365µm x20 µm	calibrated by contrast curve	negative and positive polarity, hatch 1 µm, scanning speed 40mm/s, max. laser power 191µW	Manual / iterative	1.53 µm	13.57 µm	0.052 µm Sa	
Jan-24	1PL (MALA-JOR)	serial	Microscope objective 10x, NA 0.25	ma-P 1275G, positive photoresit	Benchmark_2, Benchmark_4	503 µm x 365µm x20 µm	generated by optimization algorithm	negative and positive polarity, hatch 1 µm, scanning speed 40mm/s, max. laser power 191µW	Automated optimzation algorithm	1.63 µm	13.52 µm	0.085 µm Sa	
Feb-24	1PL (MALA-JOR)	serial	Microscope objective 10x, NA 0.25	ma-P 1275G, positive photoresit	Benchmark_2, Benchmark_4	503 µm x 365µm x20 µm	generated by optimization algorithm	negative and positive polarity, hatch 1 µm, scanning speed 40mm/s, max. laser power 191µW	Automated optimzation algorithm	1.47 µm	13.56 µm	0.064 µm Sa	*Benchmark 4*