

Slit Uniformity						
Operator:MSA Machine:XXXX Release:8.7.0 Date:09/05/2012 Time:18:01						
Comment	:					
Measurement mode						
Scanning	:	N				
Start position	:	Leftside				
Measurement settings						
Fieldsize [mm] X : 26.000 Y: 11.940						
Steps X : 11 Y: 51						
Number of Pulses : 100						
Pulse Frequency [Hz] : 1000						
Pulse Energy [mJ] : 10.00						
Miscellaneous						
Apply REMA Window : Yes						
Illumination Mode						
Illumination Mode : Conventional						
Numerical Aperture : 0.57						
Sigma Outer : 0.750						
Illumination mode name : conventional Version : 1.0.0						
Uniformity Measurement Results						
<b>Uniformity [%] : 0.48</b>						
X-Tilt [%/field] : -1.08						
Symmetrical error [%] : -0.14						
Logfile : LI/LISU/waf.1225						
Overall Average of						
Ratio : 1.00 Standard Deviation : 0.00						
Intensities Spot Sensor [mW/cm2] : 585.60 Standard Deviation : 1.90						
Intensities Energy Sensor [mW/cm2] : 586.80 Standard Deviation : 0.17						
Estimated Uniformity from measured data [%]						
If corrected for actual tilt : 0.21						
If corrected with gradient filter : 0.48						
If corrected for tilt and with gradientfilter : 0.07						
#####						
#####						

Slit Uniformity						
Operator:MSA Machine:XXXX Release:8.7.0 Date:08/22/2012 Time:09:02						
Comment : Annular						
Measurement mode						
Scanning : N						
Start position : Leftside						
Measurement settings						
Fieldsize [mm] X : 26.000 Y: 11.940						
Steps X : 11 Y: 51						
Number of Pulses : 100						
Pulse Frequency [Hz] : 1000						
Pulse Energy [mJ] : 10.00						
Miscellaneous						
Apply REMA Window : Yes						
Illumination Mode						
Illumination Mode : Annular						
Numerical Aperture : 0.57						
Sigma Outer : 0.750 Inner : 0.450						
Illumination mode name : annular Version : 1.0.0						
Uniformity Measurement Results						
<b>Uniformity [%] : 0.90</b>						
X-Tilt [%/field] : -1.75						
Symmetrical error [%] : -0.37						
Logfile : LI/LISU/waf.1224						
Overall Average of						
Ratio : 1.00 Standard Deviation : 0.01						
Intensities Spot Sensor [mW/cm2] : 605.13 Standard Deviation : 3.65						
Intensities Energy Sensor [mW/cm2] : 606.53 Standard Deviation : 0.12						
Estimated Uniformity from measured data [%]						
If corrected for actual tilt : 0.42						
If corrected with gradient filter : 0.81						
If corrected for tilt and with gradientfilter : 0.08						
#####						

#####						
Operator:MSA Machine:XXXX Release:8.7.0 Date:08/22/2012 Time:10:38						
Uniformity Measurement						
Comment :						
Image Field Size [mm]						
x : 26.0 y: 3.0 Diameter : 40.0						
Steps						
x : 11 y: 3						
Measurement Type : Pulse Mode						
Pulses : 100						
Pulse Frequency [Hz] : 1000						
Pulse Energy [mJ] : 10.00						
Apply REMA Window : Yes						
Load Reticle : N						
Illumination Mode : Conventional						
Numerical Aperture : 0.57						
Sigma Outer : 0.750						
Illumination mode name : conventional Version : 1.0.0						
Uniformity Measurement Result						
Uniformity [%] : 0.61						
Logfile : LI/LIUM/waf.1443						
Tilt X [%/field] : -0.91 Y [%/field] : -0.03						
Overall Average of						

Ratio	:	1.00	Standard Deviation :	0.00		
<b>Intensities Spot Sensor [mW/cm2]</b>	:	<b>586.44</b>	<b>Standard Deviation :</b>	<b>1.93</b>		
<b>Intensities Energy Sensor [mW/cm2]</b>	:	<b>587.55</b>	<b>Standard Deviation :</b>	<b>0.38</b>		
Estimated Uniformity from measured data [%]						
If corrected for actual tilts	:	0.37				
If corrected with gradient filter	:	0.45				
If corrected for tilts and with gradientfilter	:	0.26				
Total Nr of Laserpulses since Installation [* 10^6]	:	12454.98				
Symmetric Uniformity Value [%]	:	0.12				
#####						
#####						
Scanning Dose Accuracy & Repeatability Test						
Operator:MSA	Machine:XXXX	Release:8.7.0	Date:08/22/2012	Time:09:19		
Comment	:					
Scanning	:	Y				
Scan Direction	:	Forwards				
Scan Type Settings	:	All scans SingleScan				
Die size [mm]	X :	2.000	Y :	5.000		
Spot Sensor Coordinates on Die [mm]	X :	0.000	Y :	-2.000		
Rema Mode	:	Die				
Number of Repeats for each dose:	:	100				
Illumination Mode	:	Conventional				
Numerical Aperture	:	0.57				
Sigma Outer	:	0.750				
Illumination mode name	:	conventional	Version :	1.0.0		
Dose Control Mode	:	High Performance Dose Control				
Logfile	:	LI/LISA/waf.149				
Result Table						

Recorded Exposure Energy Dose								
Dose	Mean	Stddev	Min	Max	Repeat	Acc	Sum	
[mJ/cm2]	[mJ/cm2]	[mJ/cm2]	[mJ/cm2]	[mJ/cm2]	[mJ/cm2]	[%]	[%]	[%]
5.00	5.09	0.00	5.08	5.10	0.24	1.77	2.00	
10.00	10.21	0.01	10.19	10.23	0.22	2.07	2.29	
20.00	20.31	0.01	20.28	20.35	0.18	1.56	1.74	
30.00	30.39	0.01	30.35	30.44	0.14	1.32	1.46	
40.00	40.54	0.02	40.50	40.59	0.11	1.35	1.45	
50.00	50.57	0.02	50.52	50.62	0.10	1.14	1.24	
100.00	101.04	0.05	100.93	101.16	0.11	1.04	1.15	
150.00	151.39	0.08	151.27	151.55	0.09	0.93	1.02	
<b>Max. Repeatability [%] : 0.24</b>								
<b>Min. Repeatability [%] : 0.09</b>								
<b>Max. Accuracy [%] : 2.07</b>								
<b>Min. Accuracy [%] : 0.93</b>								
Max. Sum [%] : 2.31								
Min. Sum [%] : 1.02								
#####								
#####								
=====								
Dyn System Qual;Image Plane - ...ification/Dynamic/Single Energy/Model ; Dynamic								
Operator:MSA Machine:XXXX Release:8.7.0 Date:11/21/2012 Time:11:27								
Exposure conditions:								
Exposure date and time : Sun Aug 19 11:46:56 2012								
Machine ID : XXXX								
Reticle ID : 45441782A019								
Reticle Alignment : TTL Align								
Lens type : 79								
Temperature [degC]: 22.00								
Pressure [mbar]: 1023.25								
Illumination Mode : Conventional								
Blade ID : Not Applicable								

Numerical Aperture	: 0.57				
Sigma Inner	: Not Applicable				
Sigma Outer	: 0.75				
Lens ID	: 0105624A				
Focus Step	[um]: 0.12				
Focus Offset	[um]: -0.90				
Number of wafers	: 2				
Comments:					
'Exposure':	MPM				
'Modelling':					
Data File Name:	XXXX_MPM8_081912				
=====					
Uncorrected values:					
+-----+					
	Mean	Std. Dev.			
=====					
Focus range	[nm]	148	20		
Raw astigmatism	[nm]	106	6		
+-----+					
Correctables:					
+-----+					
Image offset	[um]	0.049			
Image tilt in x (Ry)	[urad]	0.195			
Element 1 height	[um]	0.722			
RS linear wedge	[urad]	-0.546			
RS quadratic wedge	[nm/cm2]	-3.749			
+-----+					
Result after corrections:					
+-----+					
	Mean	Std. Dev.			
=====					
Image plane deviation	[nm]	151	16		
Astigmatism	[nm]	106	7		
+-----+					

determined on 91 field positions.					
#####					
#####					
Operator:MSA Machine:XXXX Release:8.7.0 Date:08/18/2010 Time:17:42					
Focus Reproducibility					
Measurements					
Position : Wafer					
Position X [mm]: 0.00 Y [mm]: 0.00					
Number of measurements : 100					
Output					
Data Type : Full					
Configuration					
Reference Branch : Y					
Fine p : Y q : Y					
Window					
Height [nm] Coarse : 250 Fine : 250					
Tilt [urad] Rx : 100 Ry : 100					
Absolute results					
+-----+-----+-----+-----+-----+					
Z   Rx   Ry   TotZ					
[um]   [urad]   [urad]   [um]					
+=====+=====+=====+=====+=====+					
Avg   -9.7701   -39.8370   -38.0575   -10.5218					
Max   -9.7515   -38.2445   -36.3055   -10.4992					
Min   -9.7916   -42.0147   -39.8978   -10.5497					
Max-Min   0.0401   3.7701   3.5923   0.0504					
Stddev   0.0079   0.6756   0.7289   0.0125					
+-----+-----+-----+-----+-----+					
Relative results (to average)					
+-----+-----+-----+-----+-----+					

	Z	Rx	Ry	TotZ				
	[um]	[urad]	[urad]	[um]				
+-----+-----+-----+-----+-----+								
Avg	0.0000	0.0000	0.0000	0.0000				
Max	0.0186	1.5925	1.7521	0.0225				
Min	-0.0216	-2.1776	-1.8402	-0.0279				
+-----+-----+-----+-----+-----+								
Termination Status								
terminated : Normally								
error count : 0								
Measured data (Absolute)								
+-----+-----+-----+-----+-----+								
Z	Rx	Ry	TotZ					
[um]	[urad]	[urad]	[um]					
+-----+-----+-----+-----+-----+								
-9.7655	-40.5165	-36.9648	-10.5074					
-9.7800	-39.5127	-37.1097	-10.5173					
-9.7769	-39.7916	-38.9125	-10.5394					
-9.7790	-40.3539	-38.2437	-10.5364					
-9.7785	-39.5528	-38.7713	-10.5377					
-9.7649	-40.4179	-37.2816	-10.5102					
-9.7732	-42.0147	-36.8241	-10.5229					
-9.7821	-39.0658	-38.4235	-10.5336					
-9.7652	-39.7742	-37.5021	-10.5093					
-9.7684	-39.3748	-37.6588	-10.5119					
-9.7652	-39.5564	-36.9409	-10.5006					
-9.7634	-40.8306	-37.7038	-10.5169					
-9.7515	-40.6355	-37.3565	-10.4992					
-9.7603	-40.2630	-37.1124	-10.5025					
-9.7786	-39.3249	-37.7339	-10.5227					
-9.7643	-40.6762	-37.9644	-10.5202					
-9.7675	-40.4179	-37.3377	-10.5136					
-9.7776	-38.8425	-38.0860	-10.5232					
-9.7718	-40.2938	-37.3000	-10.5166					
-9.7681	-40.0046	-38.3063	-10.5241					
-9.7748	-39.3195	-36.3055	-10.5004					
-9.7667	-40.5930	-38.2534	-10.5258					
-9.7868	-39.8798	-38.2696	-10.5415					



-9.7745   -39.9436   -38.9972   -10.5391			
-9.7645   -39.8327   -39.0892   -10.5296			
-9.7701   -40.2804   -36.7024   -10.5070			
-9.7814   -40.2261   -37.8231   -10.5325			
-9.7794   -39.8133   -39.0155   -10.5434			
-9.7750   -39.0829   -39.1232   -10.5357			
-9.7797   -40.6502   -37.6666   -10.5315			
-9.7672   -40.4168   -36.7030   -10.5050			
-9.7761   -39.1525   -38.2369   -10.5258			
-9.7870   -39.0503   -38.4891   -10.5392			
-9.7577   -41.1639   -36.8837   -10.5027			
-9.7570   -41.1076   -38.2929   -10.5199			
-9.7714   -40.7037   -37.9743   -10.5276			
-9.7568   -39.8498   -38.0060   -10.5080			
-9.7710   -39.3692   -39.7966   -10.5423			
-9.7646   -39.8609   -37.4839   -10.5090			
-9.7721   -39.6824   -38.3422   -10.5265			
-9.7604   -39.2479   -37.4802   -10.5008			
-9.7536   -39.2437   -38.4132   -10.5061			
-9.7657   -40.2048   -37.6258   -10.5141			
-9.7762   -39.6844   -37.8291   -10.5239			
-9.7702   -38.8947   -37.6470   -10.5105			
-9.7612   -40.1875   -38.2415   -10.5176			
-9.7792   -39.8850   -37.5037   -10.5240			
-9.7729   -39.1850   -37.2381   -10.5098			
-9.7613   -40.7197   -37.9457   -10.5173			
-9.7705   -39.9194   -39.2022   -10.5376			
-9.7564   -38.9419   -39.4759   -10.5207			
-9.7694   -39.1124   -39.8978   -10.5404			
-9.7720   -39.1279   -38.2178   -10.5212			
-9.7916   -39.8522   -38.5405   -10.5497			
-9.7741   -40.0793   -38.6619   -10.5352			
-9.7691   -39.9331   -38.1660   -10.5228			
-9.7792   -40.3889   -38.7946   -10.5440			
-9.7717   -39.1853   -37.4060   -10.5107			
-9.7745   -40.9147   -38.2744   -10.5360			
-9.7732   -39.6131   -37.6885   -10.5187			
-9.7787   -39.9724   -37.8588   -10.5287			
-9.7762   -40.0535   -38.1205   -10.5301			
-9.7629   -40.5288   -36.8900   -10.5039			
-9.7702   -39.5173   -37.6971   -10.5151			
-9.7761   -39.9947   -38.1668   -10.5303			
-9.7680   -38.8518   -37.8147   -10.5102			
-9.7658   -39.8365   -37.7452   -10.5134			
-9.7689   -40.1078   -37.1308   -10.5103			

-9.7742	-39.4813	-38.4813	-10.5291				
-9.7727	-39.9902	-37.2798	-10.5153				
-9.7634	-39.8633	-37.0637	-10.5023				
-9.7711	-38.2445	-37.7369	-10.5083				
-9.7732	-40.2596	-37.2719	-10.5174				
-9.7761	-40.3531	-37.6834	-10.5262				
-9.7766	-40.0425	-38.9605	-10.5413				
-9.7674	-39.8253	-38.4360	-10.5239				
-9.7772	-39.5769	-38.3233	-10.5307				
-9.7698	-38.7025	-39.2795	-10.5301				
-9.7688	-38.7997	-38.1785	-10.5153				
-9.7768	-39.4022	-37.5756	-10.5194				
-9.7820	-39.3415	-38.4344	-10.5354				
-9.7578	-39.4880	-38.3495	-10.5110				
-9.7767	-39.9885	-38.1482	-10.5306				
-9.7615	-39.7493	-39.0979	-10.5262				
-9.7602	-39.8560	-38.0996	-10.5126				
-9.7674	-39.6038	-39.2936	-10.5336				
-9.7559	-39.3433	-38.7500	-10.5134				
-9.7652	-40.7314	-37.6660	-10.5176				
-9.7556	-39.0180	-38.6828	-10.5101				
-9.7736	-38.5990	-38.6164	-10.5246				
-9.7659	-40.0684	-37.5131	-10.5120				
-9.7717	-40.3805	-39.0647	-10.5400				
-9.7767	-40.0894	-39.2315	-10.5453				
-9.7738	-39.3731	-38.5647	-10.5291				
-9.7687	-39.5713	-38.4534	-10.5238				
-9.7522	-38.9775	-38.4677	-10.5037				
-9.7614	-41.1591	-37.7801	-10.5180				
-9.7636	-41.2565	-38.6489	-10.5321				
-9.7665	-38.2850	-37.7461	-10.5041				
-9.7770	-39.8987	-38.2130	-10.5312				
+-----+	+-----+	+-----+	+-----+				
#####							
#####							
Dynamic System Qualification ; Distortion - ...ification/Dynamic/Model ; Dynamic							
Operator:ASM Machine:4418 Release:8.8.6 Date:11/26/2012 Time:11:19							
System Qualification							

Exposure Layer	: --- First ---					
Date/Time	: Sun Aug 19 10:59:23 2012					
Machine ID	: XXXX					
Reticle ID	: 45443171A103					
Reference Grid	:					
Matching set ID	: NOMINAL					
Reticle Alignment	: TTL Align					
Wafer Alignment	: TTL Align					
Lens Type	: 79					
Lens ID	: 0105624A					
Energy [mJ/cm2]	: 33.0					
Focus Offset [um]	: 0.00					
Illumination Mode	: Conventional					
Blade ID	:					
Numerical Aperture	: 0.57					
Sigma Inner	:					
Sigma Outer	: 0.75					
Temperature [degC]	: 22.0					
Pressure [mbar]	: 1023.4					
Wavelength [nm]	: 248.281					
Comments from:						
'Exposure First Layer'	: MPM					
'Measure Mark Positions'	:					
'XY-Imaging Modelling'	:					
Test Log Name	: XYD_XXXX_MPM8_081912.tlg					
Optimization Method	: Least-Squares					
Number of Wafers	: 1					
Number of Rejected Wafers	: 0					
Number of Fields per Wafer	: 12					
Number of Marks per Field	: 49					
Alignment Errors in Data	: 0					
Max Field Size X [mm]	: 26.0					
Y [mm]	: 33.0					
Wafer/Field/Mark Selection	: *.*.*					
Align. Errors in Selection	: 0					
Overlay Mode	: First to Nominal					
Set Threshold	: OFF					
Reticle data used	: Reticle data from testlog					
Reticle layout used	: 4X_SU_DYNA_7X7					

=====						
Uncorrected values:						
+-----+-----+-----+						
		Mean	Std. Dev.			
		[nm]	[nm]			
+-----+-----+-----+						
	max. image displacement x	38.0	4.5			
	max. image displacement y	37.5	7.4			
+-----+-----+-----+						
Correctables:						
+-----+-----+-----+						
		Mean	Std. Dev.			
+-----+-----+-----+						
	RS height [um]	-0.072	1.431			
	RS tilt in x (Ry) [urad]	216.176	32.303			
	Element 2 height [um]	0.060	0.109			
	Translation in X [um]	0.019	0.006			
	Translation in Y [um]	-0.004	0.005			
	Lens rotation [urad]	0.157	0.116			
	Scan skew [urad]	0.118	0.048			
	Scan scale [ppm]	0.225	0.200			
+-----+-----+-----+						
Result after corrections:						
+-----+-----+-----+						
		Mean	Std. Dev.			
		[nm]	[nm]			

+=====+=====+=====+					
image distortion (NCE) x	17.2	6.7			
image distortion (NCE) y	27.7	4.8			
+-----+-----+-----+					
#####					
#####					
Model - ...ogy Verification/Overlay/Wafer Stage Accuracy/Dynamic/Single Velocity					
Operator:MSA Machine:XXXX Release:8.7.0 Date:05/06/2012 Time:07:12					
Wafer Stage Accuracy					
Exposure Layer : --- First ---					
Date/Time : Sat May 5 17:30:29 2012					
Machine ID : XXXX					
Reticle ID : 45443171A103					
Reference Grid :					
Matching set ID : NOMINAL					
Reticle Alignment : TTL Align					
Wafer Alignment : No Align					
Lens Type : 79					
Lens ID : 0105624A					
Energy [mJ/cm2] : 33.0					
Focus Offset [um] : 0.00					
Illumination Mode : Conventional					
Blade ID :					
Numerical Aperture : 0.57					
Sigma Inner :					
Sigma Outer : 0.75					
Temperature [degC] : 22.0					
Pressure [mbar] : 1026.9					
Wavelength [nm] : 248.278					
Comments from:					
'Exposure First Layer' : after hp laser replacement					
'Measure Mark Positions' :					
'XY-Imaging Modelling' :					
Test Log Name : XYW_SA_050512.tlg					
Optimization Method : Least-Squares					
Number of Wafers Measured : 1					
Number of Fields per Wafer : 20					

Number of Marks per Field : 25					
Alignment Errors in Data : 0					
Max Field Size X [mm] : 26.0					
Y [mm] : 33.0					
Wafer/Field/Mark Selection : *.*.*					
Align. Errors in Selection : 0					
Overlay Mode : Second to First					
Set Threshold : OFF					
Reticle data used : Reticle data from testlog					
=====					
Overlay Error for this Batch:					
+-----+-----+-----+-----+					
Filtered Overlay Error					
+-----+-----+-----+-----+					
X   Y   Vector					
[nm]   [nm]   [nm]					
+=====+=====+=====+=====+					
Mean   -1   -1					
St. Dev.   2   2					
Mean  + 3 Sigma   7   7					
Maximum 99.7%   7   7   8					
+-----+-----+-----+-----+					
Intrafield Overlay Error Classification:					
+-----+-----+-----+-----+					
Model Parameters   Max. Resulting Errors					
+-----+-----+-----+-----+					
Mean  Std. Dev.   Mean  Std. Dev.					
[nm]   [nm]					
+=====+=====+=====+=====+					
Translation in X [um]   -0.001   0.001   -1   1					
Translation in Y [um]   -0.001   0.002   -1   2					

Rotation [urad]   -0.008   0.066   -0   1				
Magnification [ppm]   -0.029   0.086   -1   2				
3rd Order Dist. [nm/cm3]   0.266   1.537   1   3				
Trapezoid in X [um/cm2]				
Trapezoid in Y [um/cm2]				
4th Ord. Trap. X [um/cm4]				
4th Ord. Trap. Y [um/cm4]				
Asymm. Rotation [um]   0.009   0.062   0   1				
Asymm. Magnification [ppm]   -0.003   0.108   -0   2				
+-----+-----+-----+-----+-----+				
Residuals for this batch:				
+-----+-----+				
Value				
+=====+				
Residual X [nm]   1				
Residual Y [nm]   1				
+-----+-----+				
Wafer Stage Classification:				
+-----+-----+-----+				
X   Y   Vector				
[nm]   [nm]   [nm]				
+=====+				
Stage Repeatability   3   4				
Stage Accuracy   7   7   8				
+-----+-----+-----+				
#####				
#####				
Model - Metrology Calibration/Machine Matching/Intrafield				
Operator:MSA Machine:XXXX Release:8.7.0 Date:09/22/2012 Time:08:52				
Machine to Machine Matching				
Exposure Layer : --- First --- : --- Second ---				
Date/Time : Thu Oct 26 10:52:45 2000 : Sat Sep 22 08:16:35 2012				

Machine ID	: XXXX	: XXXX				
Reticle ID	: 45441181A015	: 45441181A015				
Reference Grid	:	:				
Matching set ID	: DEFAULT	: ORIGINAL				
Reticle Alignment	: TTL Align	: TTL Align				
Wafer Alignment	: TTL Align	: TTL Align				
Lens Type	: 79	: 79				
Lens ID	: 0105624A	: 0105624A				
Energy [mJ/cm2]	: 30.0	: 33.0				
Focus Offset [um]	: 0.00	: 0.00				
Illumination Mode	: Default	: Conventional				
Blade ID	:	:				
Numerical Aperture	: 0.57	: 0.57				
Sigma Inner	: 0.00	:				
Sigma Outer	: 0.75	: 0.75				
Temperature [degC]	: 22.0	: 22.0				
Pressure [mbar]	: 1014.1	: 1021.8				
Wavelength [nm]	: 248.288	: 248.282				
Comments from:						
'Exposure First Layer'	:					
'Exposure Second Layer'	:					
'Measure Mark Positions'	: WPM					
'XY-Imaging Modelling'	:					
Test Log Name	: XYM_zmatchbcf09222012.tlg					
Optimization Method	: Least-Squares					
Number of Wafers Measured	: 1					
Number of Fields per Wafer	: 16					
Number of Marks per Field	: 17					
Alignment Errors in Data	: 0					
Max Field Size X [mm]	: 26.0					
Y [mm]	: 33.0					
Wafer/Field/Mark Selection	: *.*.*					
Align. Errors in Selection	: 0					
Overlay Mode	: Second to First					
Set Threshold	: OFF					
Reticle data used	: Reticle data from testlog					
=====						



Overlay Error for this Batch:									
+-----+-----+-----+-----+									
Filtered Overlay Error									
+-----+-----+-----+									
X   Y   Vector									
[nm]   [nm]   [nm]									
+-----+-----+-----+-----+									
Mean         0   0									
St. Dev.     5   6									
Mean  + 3 Sigma   14   18									
<b>Maximum 99.7%</b>   <b>14</b>   <b>21</b>   <b>24</b>									
+-----+-----+-----+-----+									
Maximum Overlay Error positions for this Batch:									
+-----+-----+-----+-----+									
Corresponding Position in Field									
+-----+-----+									
Nr   Max DX   Stdev   DY   X   Y									
[nm]   [nm]   [nm]   [mm]   [mm]									
+-----+-----+-----+-----+									
1   6   3   2   0.000   -10.800									
2   5   4   2   10.800   0.000									
3   4   4   1   0.000   -6.480									
4   4   2   2   -10.800   0.000									
5   3   5   1   -6.480   6.480									
6   3   6   1   10.800   10.800									
7   3   5   3   0.000   10.800									
8   3   5   0   6.480   -6.480									
9   2   4   1   0.000   6.480									
10   2   5   4   6.480   0.000									
+-----+-----+-----+-----+									
+-----+-----+-----+-----+									
Corresponding Position in Field									
+-----+-----+									
Nr   Max DY   Stdev   DX   X   Y									

	[nm]	[nm]	[nm]	[mm]	[mm]					
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+										
1	12	6	2	-10.800	10.800					
2	7	8	0	10.800	-10.800					
3	4	5	0	-6.480	-6.480					
4	4	5	2	6.480	0.000					
5	3	5	3	0.000	10.800					
6	2	3	4	-10.800	0.000					
7	2	5	0	-6.480	0.000					
8	2	11	1	-10.800	-10.800					
9	2	5	2	0.000	0.000					
10	2	6	5	10.800	0.000					
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+										
Intrafield Overlay Error Classification:										
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+										
	Model Parameters				Max. Resulting Errors					
	+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+									
	Mean	Std. Dev.	Mean	Std. Dev.						
			[nm]	[nm]						
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+										
Translation in X	[um]	0.000	0.000	0	0					
Translation in Y	[um]	0.000	0.000	0	0					
Rotation	[urad]	-0.042	0.000	-1	0					
Magnification	[ppm]	0.091	0.242	2	5					
3rd Order Dist.	[nm/cm3]	0.591	4.911	1	11					
Trapezoid in X	[um/cm2]									
Trapezoid in Y	[um/cm2]									
4th Ord. Trap. X	[um/cm4]									
4th Ord. Trap. Y	[um/cm4]									
Asymm. Rotation	[um]	-0.032	0.206	-1	4					
Asymm. Magnification	[ppm]	-0.051	0.295	-1	6					
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+										
Interfield Overlay Error Classification:										
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+										
	Model Parameters				Max. Resulting Errors					

+-----+-----+-----+-----+							
	Mean	Std. Dev.	Mean	Std. Dev.			
		[nm]	[nm]				
+-----+-----+-----+-----+							
Wafer Rotation	[urad]	0.014	0.000	1	0		
Nonorthogonality	[urad]	-0.054	0.000	-6	0		
Scaling in X	[ppm]	0.005	0.000	1	0		
Scaling in Y	[ppm]	0.008	0.000	1	0		
Rotation Scaling	[urad/cm]	0.007	0.000	1	0		
+-----+-----+-----+-----+							
Residuals for this batch:							
+-----+-----+							
	Value						
+-----+-----+							
Residual X	[nm]	3					
Residual Y	[nm]	4					
+-----+-----+							
Overlay Error after proposed Corrections are carried out:							
+-----+-----+							
	Overlay Error						
+-----+-----+							
	X	Y	Vector				
	[nm]	[nm]	[nm]				
+-----+-----+							
Mean	-0	-0					
St. Dev.	6	7					
Mean + 3 Sigma	17	20					
Maximum 99.7%	26	36	44				
+-----+-----+							
THE FOLLOWING CORRECTIONS SHOULD BE APPLIED TO THE MACHINE CONSTANTS:							

+-----+-----+-----+-----+					
	Reference	Correction	New		
+-----+-----+-----+-----+					
Matching Translation in X [um]	-0.007	0.000	-0.007		
Matching Translation in Y [um]	0.004	0.000	0.005		
Matching Rotation [urad]	-1.206	-0.042	-1.247		
Matching Magnification [ppm]	-0.138	0.091	-0.047		
Matching 3rd Order Dist. [nm/cm3]	-0.005	0.591	0.586		
Matching Asym. Rotation [um]	-0.263	-0.032	-0.295		
Matching Asym. Magnification [ppm]	-0.488	-0.051	-0.539		
Reticle Height [um]					
Stone to Lens Tilt Rx [urad]					
Stone to Lens Tilt Ry [urad]					
White Level Sensor Tilt Rx [urad]					
White Level Sensor Tilt Ry [urad]					
Level Sensor Height [um]					
Rotation Scaling [urad/cm]	0.028	0.007	0.035		
Nonorthogonality [urad]	-0.005	-0.054	-0.059		
Scaling in X [ppm]	0.000	0.000	0.000		
Scaling in Y [ppm]	0.082	0.003	0.085		
+-----+-----+-----+-----+					
#####					
#####					
ES Repro					
Operator:MSA Machine:XXXX Release:8.7.0 Date:08/18/2012 Time:09:16					
TEST : ES Repro					
Number of batches : 25					
Wafers per batch : 1					
Prealignment data					
Prealignment mode used : 0					
Wafer kind : SEMI Notch					
Prealignment mode : Edge Sensor					
Nominal WCS theta : 0.00000					
Alignment data					
Do zero aligns : Y					
Focus offset : 0.000000					
Alignment Mark 1 X,Y : 85.000, 0.000					

Alignment Mark 2 X,Y	: -85.000, 0.000					
Reticle id	: 45441181A015					
Test result	: OK					
+-----+-----+-----+-----+-----+-----+-----+						
ALL ALIGNMENT RESULTS						
+-----+-----+-----+-----+-----+-----+-----+						
Prealignment static   Alignment wafer-to-stage						
and dynamic offset   offset (wafer-to-fiducial)						
+-----+-----+-----+-----+-----+-----+-----+						
Batch	Wafer	X wafer	Y wafer	X align	Y align	Rotation
id	offs [um]	offs [um]	trnsf [um]	trnsf [um]	[urad]	
+-----+-----+-----+-----+-----+-----+-----+						
1	1	-10.10	-84.79	0.32	-1.31	-86.21
2	1	-16.94	-69.27	-0.91	-1.33	-46.75
3	1	-15.38	-69.86	-0.71	-1.27	-83.46
4	1	-16.27	-69.46	-0.67	-0.44	-51.01
5	1	-16.82	-70.05	-0.06	-1.53	-72.57
6	1	-16.31	-69.60	-0.68	-1.40	-64.47
7	1	-14.78	-69.34	0.15	-1.81	-77.61
8	1	-16.37	-68.80	-0.17	-2.22	-88.17
9	1	-15.58	-69.17	0.80	-2.37	-83.14
10	1	-15.89	-69.79	-0.22	-2.65	-92.40
11	1	-17.23	-69.41	0.44	-1.03	-53.98
12	1	-15.26	-69.48	-0.65	-1.64	-100.22
13	1	-16.71	-68.86	0.13	-1.97	-59.57
14	1	-16.08	-68.96	0.07	-2.57	-59.39
15	1	-17.32	-69.22	-0.09	-2.17	-65.30
16	1	-15.05	-68.53	0.32	-2.34	-54.08
17	1	-16.68	-69.53	-0.45	-2.16	-75.81
18	1	-17.07	-69.31	-0.44	-1.38	-81.19
19	1	-16.14	-69.02	-0.31	-1.98	-60.34
20	1	-16.57	-69.51	-0.09	-2.10	-43.97
21	1	-15.68	-68.78	-1.02	-1.59	-70.46
22	1	-16.87	-69.53	-0.40	-1.95	-58.62
23	1	-16.10	-68.92	0.49	-2.49	-86.08
24	1	-17.24	-69.29	0.91	-3.16	-77.89
25	1	-15.84	-69.20	-0.03	-3.27	-65.31
+-----+-----+-----+-----+-----+-----+-----+						
Minimum		-17.32	-84.79	-1.02	-3.27	-100.22
Maximum		-10.10	-68.53	0.91	-0.44	-43.97
Mean		-16.01	-69.91	-0.13	-1.93	-70.32
Std. Dev.		1.42	3.12	0.51	0.66	15.15

+-----+-----+-----+-----+-----+-----+						
#####						
#####						
Operator:MSA Machine:XXXX Release:8.7.0 Date:08/18/2012 Time:13:45						
Stray Light Measurement						
Comment : Uniformity stray light measurement						
Image Field Size [mm]						
x : 26.0 y: 26.0						
Steps						
x : 11 y: 11						
Apply REMA Window : Yes						
Load Reticle : N						
Illumination Mode : Conventional						
Numerical Aperture : 0.57						
Sigma Outer : 0.750						
Illumination mode name : conventional Version : 1.0.0						
Stray Light Measurement						
<b>Maximum Stray Light Number [%] : 2.01</b>						
Stray Light Variation [%] : 1.04						
Log Files : LI/LIUM/waf.1441, LI/LIUM/waf.1442						
#####						
#####						
PAS 5500 Scanning Wafer Stage: Dynamic Performance						
Operator:MSA Machine:XXXX Release:8.7.0 Date:07/14/2012 Time:15:13						
OK: Test finished successfully						
User Input						
Number of Wafers : 7						

Job File	: ASML_ONLY_DO_NOT_DELETE/TH_500M_8WN_R6							
Layer	: MEASURETHRUPUT							
Energy [mJ/cm2]	: 0.0							
Machine Clearance Wafers	: Y							
Control Limits								
MA-X [nm]	: 5.00							
MA-Y [nm]	: 5.00							
MA-Rz [nrad]	: 150.00							
MA-Ztotal [nm]	: 50.00							
MSD-X [nm]	: 17.00							
MSD-Y [nm]	: 17.00							
MSD-Rz [nrad]	: 900.00							
MSD-Ztotal [nm]	: 65.00							
Total number of exposures	: 322							
Number of exposures out of spec	: 32							
Overall Performance per die								
WS-RS/4 Moving Average, Moving Standard Deviation								
+-----+-----+-----+-----+-----+-----+-----+								
WS-RS/4	MA-X	MA-Y	MA-Rz	MSD-X	MSD-Y	MSD-Rz		
	[nm]	[nm]	[nrad]	[nm]	[nm]	[nrad]		
+=====+=====+=====+=====+=====+=====+=====+								
<b>Peak</b>	<b>2.8</b>	<b>3.3</b>	<b>73.4</b>	<b>19.0</b>	<b>23.9</b>	<b>163.9</b>		
Av	1.8	2.1	59.7	10.8	12.3	120.9		
Av +3s	2.7	3.2	76.8	17.2	22.5	161.1		
+-----+-----+-----+-----+-----+-----+-----+								