



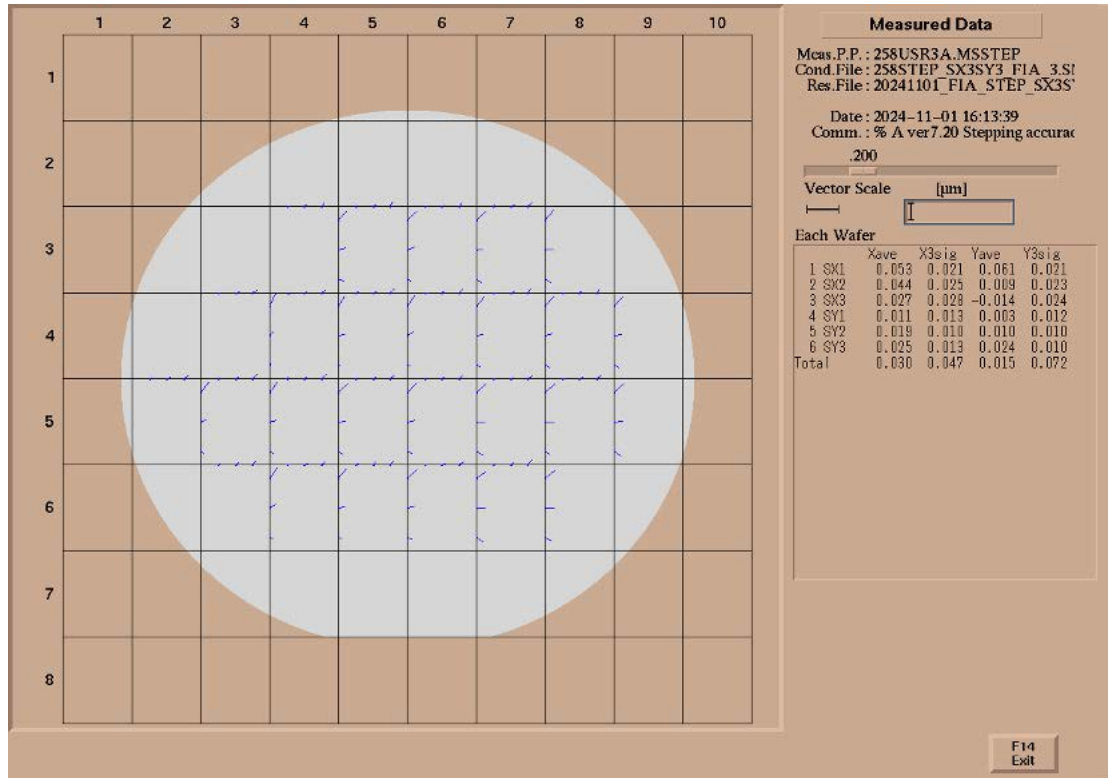
NIKON NSR-S204B



No.	Configuration	Requirement
1	Original temperature:	23°
2	Original Altitude normal pressure:	755mmHg
3	Lens type:	Nikon standard
4	Rack type:	Right Type
5	Wafer Carrier Table:	Left
6	Reticle Library:	Center
7	Main unit with 0.68 NA (Auto Variable, SHRINC Conventional)	Sigma 0.75
8	Pellicle reticle loader (PRL)	YES
9	System for 6" reticle	6 Inch (NON-SMIF)
10	25mm X 33mm field size	YES
11	LSA system	YES
12	FIA 1//system	YES
13	Illumination model:	(Conventional, Annular,)
14	8" wafer loader (WL Type-3), 8" ceramic holder, Flat ZONE: In 6 O'clock	FLAT Type 8Inch
15	Pellicle reticle detector	YES
16	BMU Type	Standard
17	Pre-alignment non contact pre-alignment	Non-Contact
18	Chip leveling	YES
19	NEMA Box	YES
20	Tool software	MCSV: 3.44
21	Laser Type	Giga Photon
22	Chamber Type	Asahi N5Z1102 (2000.02)



1. stepping





2. focus leveling repeatability

PLUS

S10(13nm), S18(14nm), S28(15nm), S36(13nm)

Measurement Result List						
Sensor	Res. Mean	Res. Max.	Res. Min.	3 σ Mean	Repeat.	Unit
S1 (A)	0.014	0.214	-0.096	0.012	0.003	[μ m]
S5 (A)	0.094	0.317	-0.032	0.014	0.004	[μ m]
S9 (A)	0.168	0.429	0.038	0.013	0.004	[μ m]
S10 (A)	-0.025	0.120	-0.111	0.013	0.002	[μ m]
S14 (A)	0.092	0.232	0.014	0.013	0.003	[μ m]
S18 (A)	0.139	0.350	0.032	0.014	0.004	[μ m]
S28 (A)	0.181	0.278	0.091	0.015	0.004	[μ m]
S32 (A)	0.088	0.120	0.036	0.012	0.004	[μ m]
S36 (A)	-0.013	0.025	-0.042	0.013	0.004	[μ m]
Tilt X	4.414	7.044	0.981	0.630	0.099	[μ rad]
Tilt Y	-14.409	-6.330	-30.473	1.663	0.482	[μ rad]
Z	134.533	134.712	134.154	0.086	0.014	[μ m]

F14
Exit

MINUS

S10(14nm), S18(15nm), S28(12nm), S36(13nm)

Measurement Result List						
Sensor	Res. Mean	Res. Max.	Res. Min.	3 σ Mean	Repeat.	Unit
S45 (A)	0.008	0.093	-0.048	0.015	0.003	[μ m]
S41 (A)	0.126	0.248	0.056	0.015	0.003	[μ m]
S37 (A)	0.151	0.350	0.029	0.018	0.005	[μ m]
S36 (A)	-0.038	0.037	-0.087	0.013	0.003	[μ m]
S32 (A)	0.064	0.156	-0.006	0.012	0.002	[μ m]
S28 (A)	0.132	0.313	0.027	0.012	0.002	[μ m]
S18 (A)	0.085	0.203	0.007	0.015	0.004	[μ m]
S14 (A)	0.028	0.075	-0.031	0.012	0.003	[μ m]
S10 (A)	-0.069	-0.028	-0.103	0.014	0.003	[μ m]
Tilt X	3.184	6.911	0.997	0.781	0.081	[μ rad]
Tilt Y	-12.129	-6.332	-15.945	2.406	0.208	[μ rad]
Z	134.454	134.855	134.187	0.106	0.022	[μ m]

F14
Exit



3. TTLFC2

```
Focus Calib. result :  Ø.910    [µm]
-----
Focus Calib. result :  Ø.906    [µm]
-----
Focus Calib. result :  Ø.906    [µm]
-----
Focus Calib. result :  Ø.896    [µm]
-----
Focus Calib. result :  Ø.891    [µm]
-----
Focus Calib. result :  Ø.886    [µm]
-----
```

```
Focus Calib. result :  Ø.881    [µm]
-----
Focus Calib. result :  Ø.883    [µm]
-----
Focus Calib. result :  Ø.887    [µm]
-----
Focus Calib. result :  Ø.894    [µm]
-----
```



4. reticle rotation

Reticle Rotation

Meas.Proc.Prog.: 258RR3.MSRRLSA
Condition File: 258RR1_LSA_3.SMCP
Result File: 20241030_RR1-5.MESR
Date: 2024-10-30 15:02:16
Comment: RR check(3points/chip)

Align.	Block	Measured Value					
1	1	0.013	0.008	0.000	0.005	0.022	
	2	0.019	0.005	0.000	0.017	0.001	
	3	0.010	0.005	0.002	0.006	0.006	
	4	0.004	0.008	0.001	0.003	0.003	
	5	0.006	-0.003	0.001	-0.002	0.010	
2	1	0.002	0.003	0.003	-0.004	-0.003	
	2	-0.003	0.002	0.004	0.004	-0.005	
	3	-0.004	-0.003	0.012	0.000	0.001	
	4	0.002	-0.002	-0.001	-0.006	-0.005	
	5	0.001	-0.005	0.001	-0.005	0.004	
3	1	0.026	0.006	0.011	0.016	0.017	
	2	0.007	0.015	0.011	0.004	0.014	
	3	0.005	0.009	0.009	0.005	0.009	
	4	0.011	0.012	0.012	0.007	0.005	
	5	0.009	0.010	0.003	-0.003	0.021	
4	1	0.007	-0.002	0.005	0.005	0.003	
	2	0.003	-0.001	0.010	0.007	-0.001	
	3	0.006	0.000	0.012	0.011	0.002	
	4	-0.001	0.006	0.001	0.005	-0.002	
	5	0.010	0.000	0.006	0.002	0.010	
5	1	0.011	0.005	0.004	-0.006	-0.001	
	2	0.005	0.002	0.005	-0.007	-0.004	
	3	0.005	0.002	0.003	-0.010	0.002	
	4	-0.001	0.001	-0.001	-0.003	0.001	
	5	0.002	0.002	0.000	-0.006	0.007	

Align.	Average
1 :	0.006 [µm]
2 :	0.000 [µm]
3 :	0.010 [µm]
4 :	0.004 [µm]
5 :	0.001 [µm]

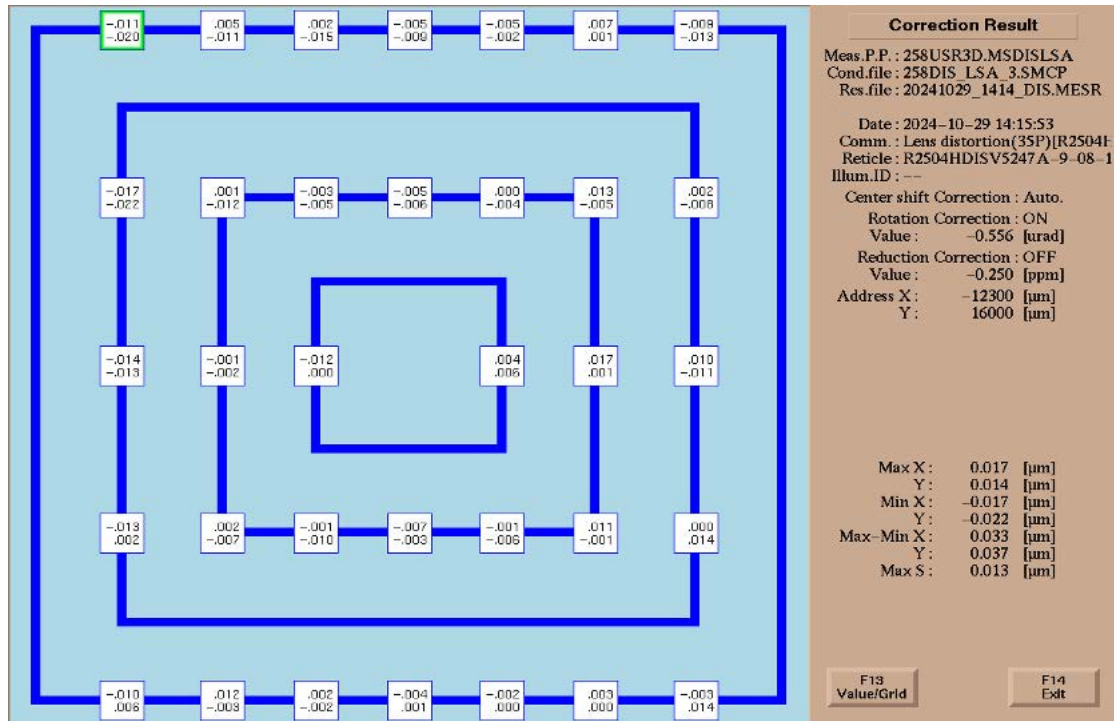
Total
Reticle Rotation : 0.002 [µm]
Repeatability : 0.172 [µrad]
(3σ): 0.006 [µm]

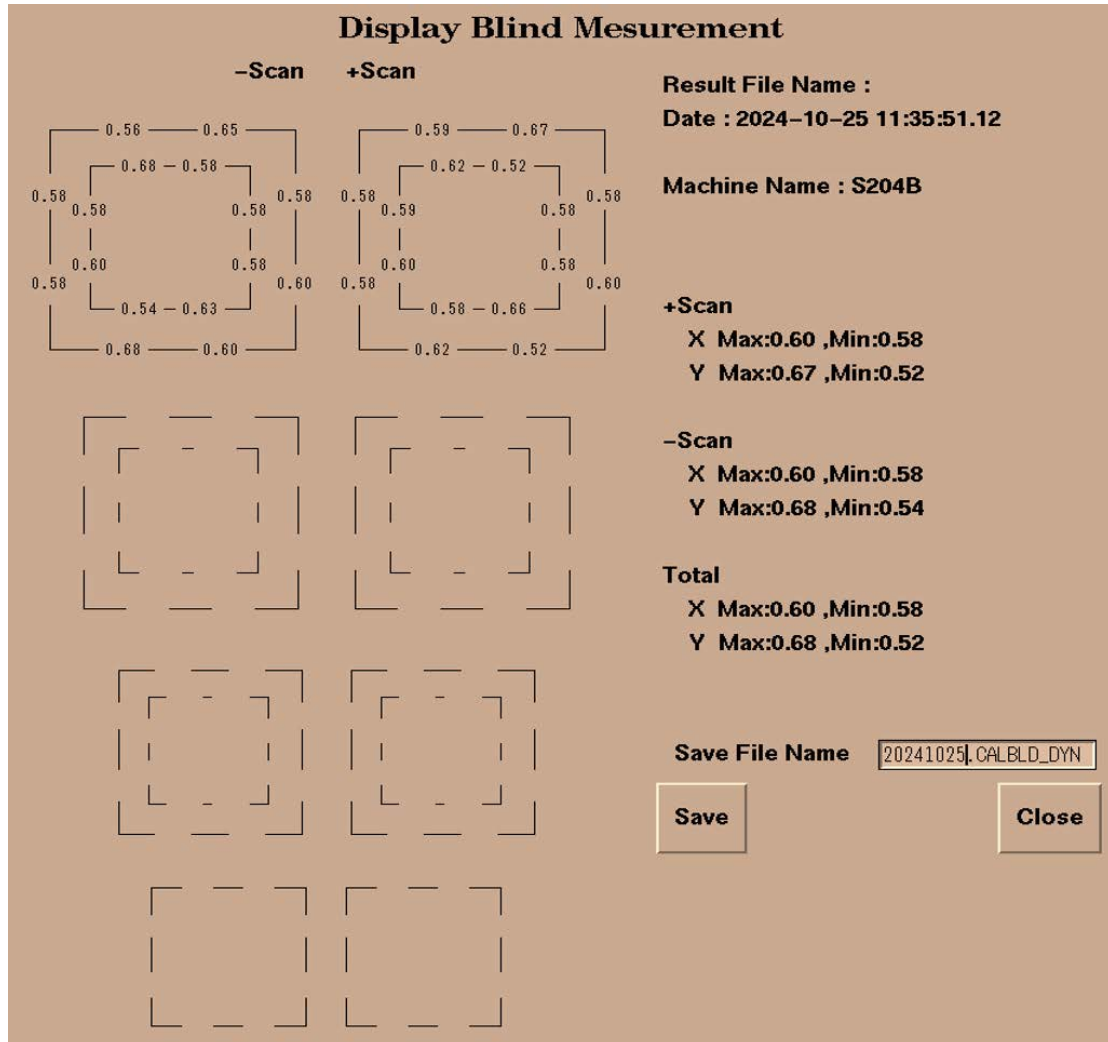
Each Wafer
Reticle Rotation : 0.002 [µm]
Repeatability : 0.172 [µrad]
(3σ): 0.006 [µm]

1
Wafer No.

Prev Next

F6 Param. F14 Exit

5. DIS

6. RB



7. illumination intensity

This Data is 1000Hz.

Laser is 2000Hz. Therefore, All Data must be multiplied by 2.

1. Conv (Lens NA : 0.68, l NA : 0.58) : 998mw/cm2

EXPCHK Result		計測	
ウェハ面照度計測結果		Basic ID 1	
結果ファイル作成日時 : 26-AUG-2024 17:17:08		ID	Lens
レチクル : 無し		NA	Rev.
レーザー周波数 : 1000.00		Iris	Pattern
照明系 I D ウェハ面照度 [mW/cm2]		Illum.	IDC Last
		NA	Update
1	499.000	1	Conv.
2	0.000	2	Shrinc
3	0.000	3	Conv.
4	356.000	4	Conv.
5	324.000	5	Annular
6	0.000	6	Annular
7	0.000	6	Annular
8	0.000	6	Annular
9	0.000	6	Annular
コメント :		11	Conv.
選択 結果ファイル名 TOOL\$RESULT\2024\$26.EXB_EXPCHK_W		12	Annular
F14 閉じる			



8. integrator

EXPCHK Result

ファイル(F)

露光量制御精度結果表示

結果ファイル作成日時 : 26-AUG-2024 17:23:47

計測センサー : 照度計

レチクル : 無し

平均化回数 : 20

追い込み回数 : 1

1	10.000
2	20.000
3	50.000
4	100.000
5	200.000

目標露光量
[mJ/cm2]

照明系 I D : 1

露光量補正係数

現在設定されている Adjust 値 : 0.997

新 Adjust 値 : 0.980

I D C 補正係数 : 0.974

コメント :

選択 結果ファイル名 TOOL\$RESULT:20240826.EXB_EXPCHK

F6
グラフ

F7
生データ

F8
書き込み

F9
再計測

F10
IDC履歴

F14
閉じる

EXPCHK Result

露光量目標値精度

	目標露光量 [mJ/cm2]	実露光量 [mJ/cm2]	残差量 (AVE) [%]	計測再現性 [%]
1	10.000	9.819	-1.808	0.153
2	20.000	19.631	-1.847	0.178
3	50.000	49.151	-1.698	0.071
4	100.000	98.348	-1.652	0.025
5	200.000	196.710	-1.645	0.025
6	-----	-----	-----	-----
7	-----	-----	-----	-----
8	-----	-----	-----	-----
9	-----	-----	-----	-----
10	-----	-----	-----	-----

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1

編集...

3	0.68	3	Conv.	0.46	17-MAY-2006 11:43:01
4	0.68	4	Conv.	0.23	6-AUG-2024 11:24:28
5	0.68	5	Annular	0.51	6-AUG-2024 11:25:02
6	0.68	6	Annular	0.58	12-JAN-2005 18:08:09
7	0.68	6	Annular	0.58	14-JAN-2005 15:24:41
8	0.68	6	Annular	0.58	27-JUN-2004 1:51:25
9	0.68	6	Annular	0.58	18-AUG-2004 15:51:41
10	0.68	6	Annular	0.58	2-JUN-2004 9:51:50
11	0.65	3	Conv.	0.46	23-SEP-2004 16:11:40
12	0.63	5	Annular	0.51	17-MAY-2006 11:43:32

EXPCHK



Slit Width

File: 20241021_LAMP_SLIT.LAMP

Illumination ID: 1

Date: 2024-10-21 10:22:44

Comment: Lamp Uniformity Condition File (Slit Width)

Col.	Slit Width [μm]	Defocus Width [μm]		Slit Center [μm]	Defocus Position [μm]				Slit Symmetry [1/mm]
		WFront	WBack		Front (Bottom,Top)		Back (Top,Bottom)		
1	8002.236	443.337	460.136	-6.546	-4229.332	-3785.995	3764.504	4224.640	0.082
2	8011.294	473.588	469.938	-2.557	-4244.998	-3771.410	3768.121	4238.059	0.016
3	8014.503	424.105	474.578	1.835	-4217.469	-3793.364	3771.797	4246.375	0.251
4	8014.646	464.748	415.438	5.596	-4234.101	-3769.353	3805.200	4220.638	0.255
5	8014.704	406.520	452.914	10.454	-4200.159	-3793.638	3791.349	4244.263	0.252
6	8012.874	404.507	424.944	14.311	-4194.379	-3789.873	3808.275	4233.220	0.119
7	8015.882	452.061	429.657	18.271	-415.701	-3763.639	3811.384	4241.041	0.115
8	8016.982	411.243	414.132	23.248	-4190.864	-3779.622	3824.673	4238.805	0.017
9	8017.601	441.993	469.222	28.323	-4201.474	-3759.481	3802.512	4271.734	0.131
10	8015.191	407.096	442.355	32.890	-4178.253	-3771.158	3819.308	4261.663	0.196
11	8008.927	405.231	506.672	39.116	-4167.963	-3762.732	3790.244	4296.915	0.494
Ave.: 8013.167 430.403 450.908 14.995 -4206.790 -3776.388 3796.124 4247.032									
Slit Width Uniformity: 0.096 [%]				Slit Rotation (Front): 1674.866 [μrad]					
				(Back): 1908.277 [μrad]					

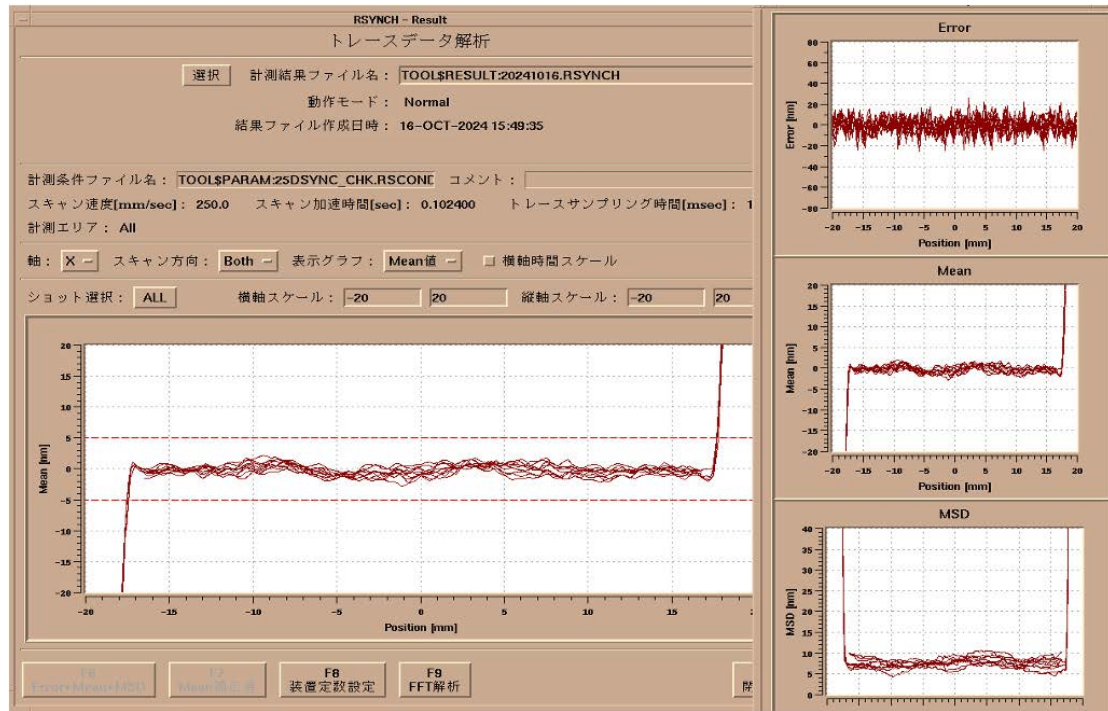
F6
Param.

F14
Exit

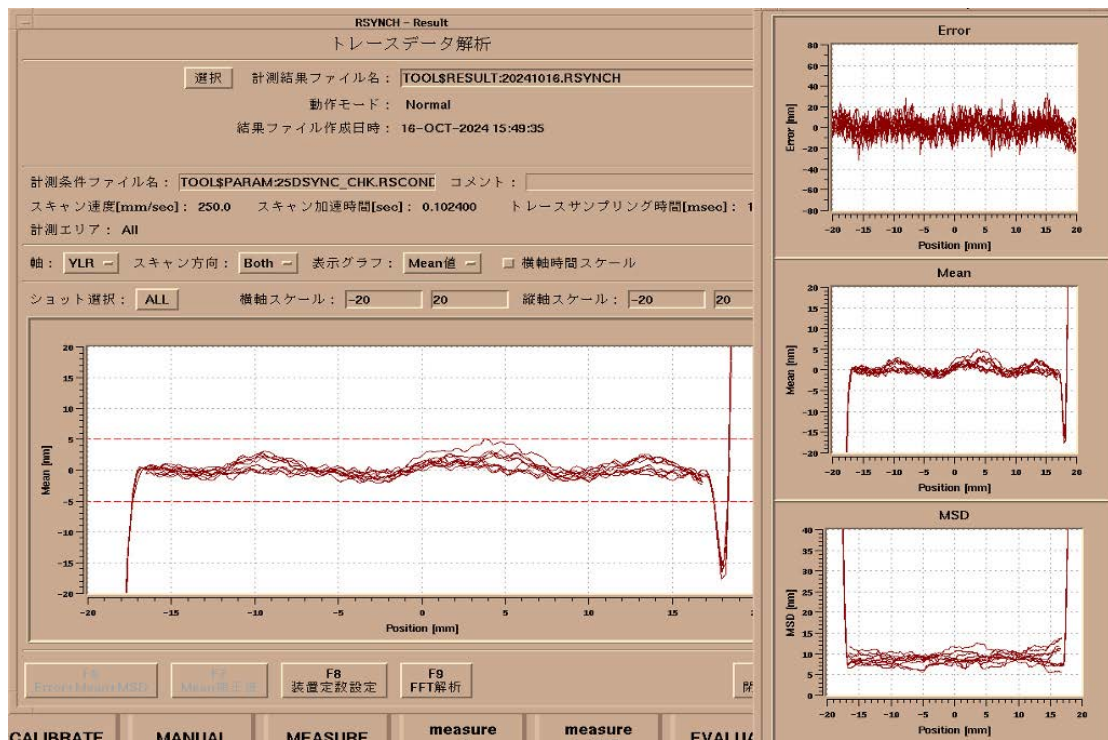


10. scanning stage (MA & MSD)

X



YLR



11. ORT

Nikon セッション・マネージャ : SRXXXX
セッション(S) アプリケーション(A) オプション(O) ヘルプ(H) or : NIKON 2024-10-28 10:15

Process Program : @258USR3B.ORTM
Comment : Measurement Orthogonality (OF: Front) [R2504HB Ver.7.2]
Reticle Name : <<Reticle Nothing>>

(6, 8): Y EGA Result = 0.041
(6, 8): X EGA Result = 0.007
(7, 7): Y EGA Result = 0.048
(7, 7): X EGA Result = -0.006
(8, 8): Y EGA Result = 0.070
(8, 8): X EGA Result = -0.012

g-EGA result
Wafer Scaling : -0.557, -0.353 [ppm]
Wafer Orthogonality : -0.215 [μrad]
Wafer Rotation : -68.176 [μrad]
Wafer Offset : -0.015, 0.062 [μm]
Shot Scaling : 0.000, 0.000 [ppm]
Shot Orthogonality : 0.000 [μrad]
Shot Rotation : 0.000 [μrad]
Random Factor : 0.016, 0.016 [μm]

Sensor Calibration
Reticle : -----
LSA : Not Calibrated
FIA : Not Calibrated
LIA : -----
Stage : -----

LC : Controlled

Focus Calib. : 1.723 [μm]
Lens Mag. : ----- [μm]

Alignment Sensor
Search : FIA
g-EGA : FIA
t-EGA : -----
D/D : -----

Processing : 1/1
Reject : 1

Exposure
Shot Information

PAUSE(Quick)
PAUSE
RESUME
STOP
HELP

Nikon セッション・マネージャ : SRXXXX
セッション(S) アプリケーション(A) オプション(O) ヘルプ(H) or : NIKON 2024-10-28 10:19

Process Program : @258USR3B.ORTMSIDE
Comment : Measurement Orthogonality (OF: Right) Automatic loading
Reticle Name : <<Reticle Nothing>>

(5,11): Y EGA Result = -0.013
(5,11): X EGA Result = -0.368
(6,10): Y EGA Result = -0.111
(6,10): X EGA Result = -0.282
(7, 9): Y EGA Result = -0.209
(7, 9): X EGA Result = -0.205

g-EGA result
Wafer Scaling : -0.453, -0.587 [ppm]
Wafer Orthogonality : -0.110 [μrad]
Wafer Rotation : -202.306 [μrad]
Wafer Offset : -0.117, -0.310 [μm]
Shot Scaling : 0.000, 0.000 [ppm]
Shot Orthogonality : 0.000 [μrad]
Shot Rotation : 0.000 [μrad]
Random Factor : 0.022, 0.026 [μm]

Sensor Calibration
Reticle : -----
LSA : Not Calibrated
FIA : Not Calibrated
LIA : -----
Stage : -----

LC : Controlled

Focus Calib. : 1.723 [μm]
Lens Mag. : ----- [μm]

Alignment Sensor
Search : FIA
g-EGA : FIA
t-EGA : -----
D/D : -----

Processing : 1/1
Reject : 0

Exposure
Shot Information

PAUSE(Quick)
PAUSE
RESUME
STOP
HELP

12. wafer loader (loading rep)

ウェハーローダ投入再現性計測結果

計測プログラム MCSVDATA:258USR3B.ORTM
日付 11-SEP-2024 13:44:09

モード Normal
ウェハー枚数 1
計測回数 30

	Y [um]	THETA [um]	Y-THETA [um]	X [um]	PRE-X [um]	PRE-Y [um]	PRE-ROT [urad]
3σ (n-1)	5.178	4.297	5.341	5.271	25.289	250.266	1590.477
平均	14.227	18.313	-4.086	-4.867	-298.042	283.902	421.440
Max - Min	5.553	6.921	6.185	6.105	34.707	225.263	2430.310

ローテーション補正量 -64.352 [urad]

F7
書き込み

F14
閉じる



