

NSR-2205i11D S/N:- 1105183



enthält oder
vom Kyoto-
treibhausgase

1430*)
2005*)
1905*)
(GWP
ntial (Global Warming Potential)

9

sgase

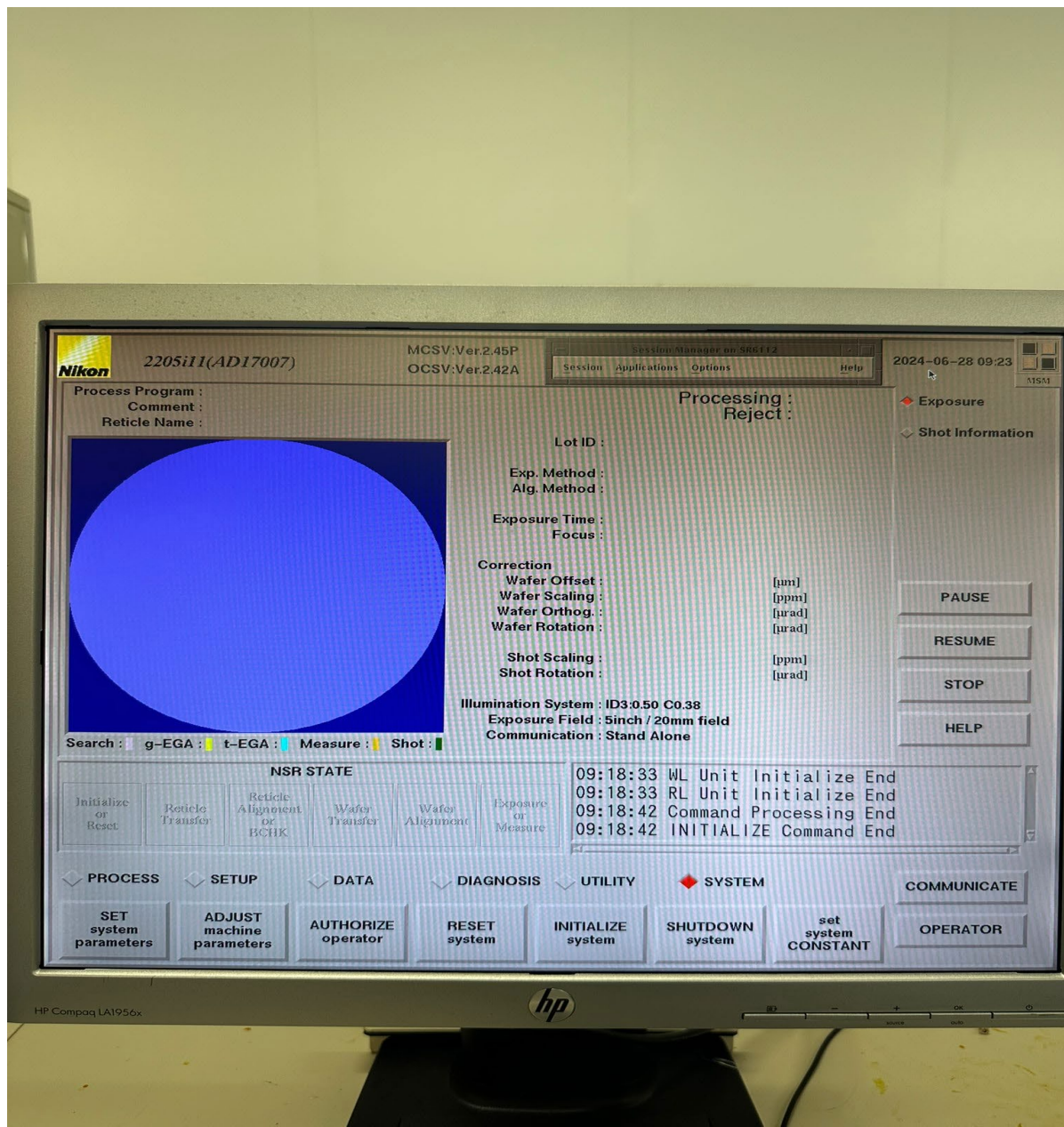
CHSEN
KÄLTE

NIKON CORPORATION
201-9, OH-AZA, MIIZUGAHARA
KUMAGAYA, SAITAMA, JAPAN
MANUFACTURED SEP 1995
Nikon STEP AND
REPEAT SYSTEM
MODEL NSR-2205i11D No. 1105183
THIS PRODUCT COMPLIES WITH HHS
PERFORMANCE STANDARDS FOR LASER
PRODUCT 21 CFR 1040.10 AND 1040.11.

CE















NSR-2205i11D S/N:- 1105183

- Date of Manufacture: 01 Sep 1995
- Serial Number: 1105183
- Resolution: 0.35 μ m
- Computer Type: Nest-V
- Reticle Size: 5inch
- Field Sizes: 15 / 17.5 / 20mm
- Wafer Size: 8 inch Notch
- Reticle Libraries: 1
- Wafer Loader: Type 2
- In – Line: Left
- Wafer Loader prealignment 2: Yes
- Barcode Reader: Yes
- Wafer Loader Indexers: 2
- FIA: Yes
- LSA: Yes
- LIA: No
- Autofocus: 5 Point
- Levelling: Yes
- Chuck Type: Ceramic ring chuck
- Illuminator: Shrinco 1
- Illuminator Power : 1750 Watts
- MCSV:2.45P
- OCSV: 2.42A
- TOOL: 2.51A
- PPD: No
- FC2 : Yes

Illuminator Table

MCSV-Ver 2.45P
Edit illumination condition

2024-07-01 13:37
DecTerm

Edit illumination condition

Parameter set list

ID	L-NA	I-NA	Aperture	Aperture-patt.	value	R-type	R-patt.	comment
1	0.63	0.38	1	Conv.	0.38	Normal	L/S	ID1:0.63 C0.38
2	0.50	0.30	2	Conv.	0.30	Normal	L/S	ID2:0.50 C0.30
3	0.50	0.38	1	Conv.	0.38	Normal	L/S	ID3:0.50 C0.38
4	0.50	0.35	4	Annular	50.35	Normal	L/S	ID4:0.50 A50.35
5	0.55	0.40	5	Annular	50.40	Normal	L/S	ID5:0.55 A50.40
6	0.50	0.40	6	Shrinc	0.40	Normal	L/S	ID6:0.50 S0.40
7	0.63	0.23	3	Conv.	0.32	Normal	L/S	ID7:0.63 C0.23
8	0.57	0.38	1	Conv.	0.38	Normal	L/S	ID8:0.57 C:0.38
9	0.50	0.40	6	Shrinc	0.40	Normal	L/S	ID9:0.50 S0.40
10	0.63	0.40	6	Shrinc	0.40	Normal	L/S	ID10:0.63 S0.40
11	0.55	0.40	6	Shrinc	0.40	Normal	L/S	ID11:0.55 S0.40
12	0.50	0.23	3	Conv.	0.23	Normal	L/S	ID12:0.50 C0.23

Basic ID number
1

F13 Quit F14 Exit

PROCESS SETUP **DATA** DIAGNOSIS UTILITY SYSTEM

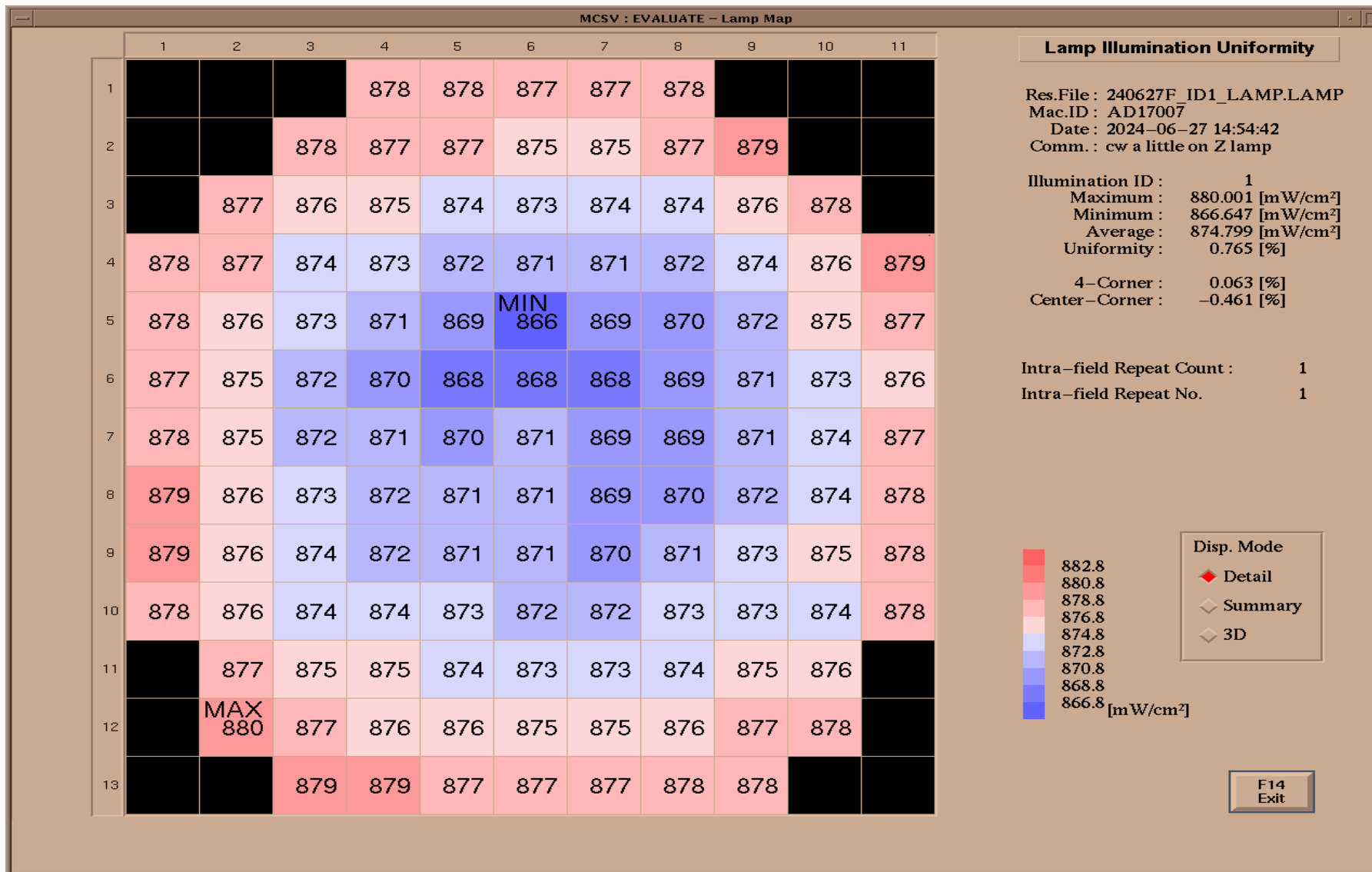
edit illumination condition CONVERT process program exit

Exposure
Shot Information

PAUSE
RESUME
STOP
HELP

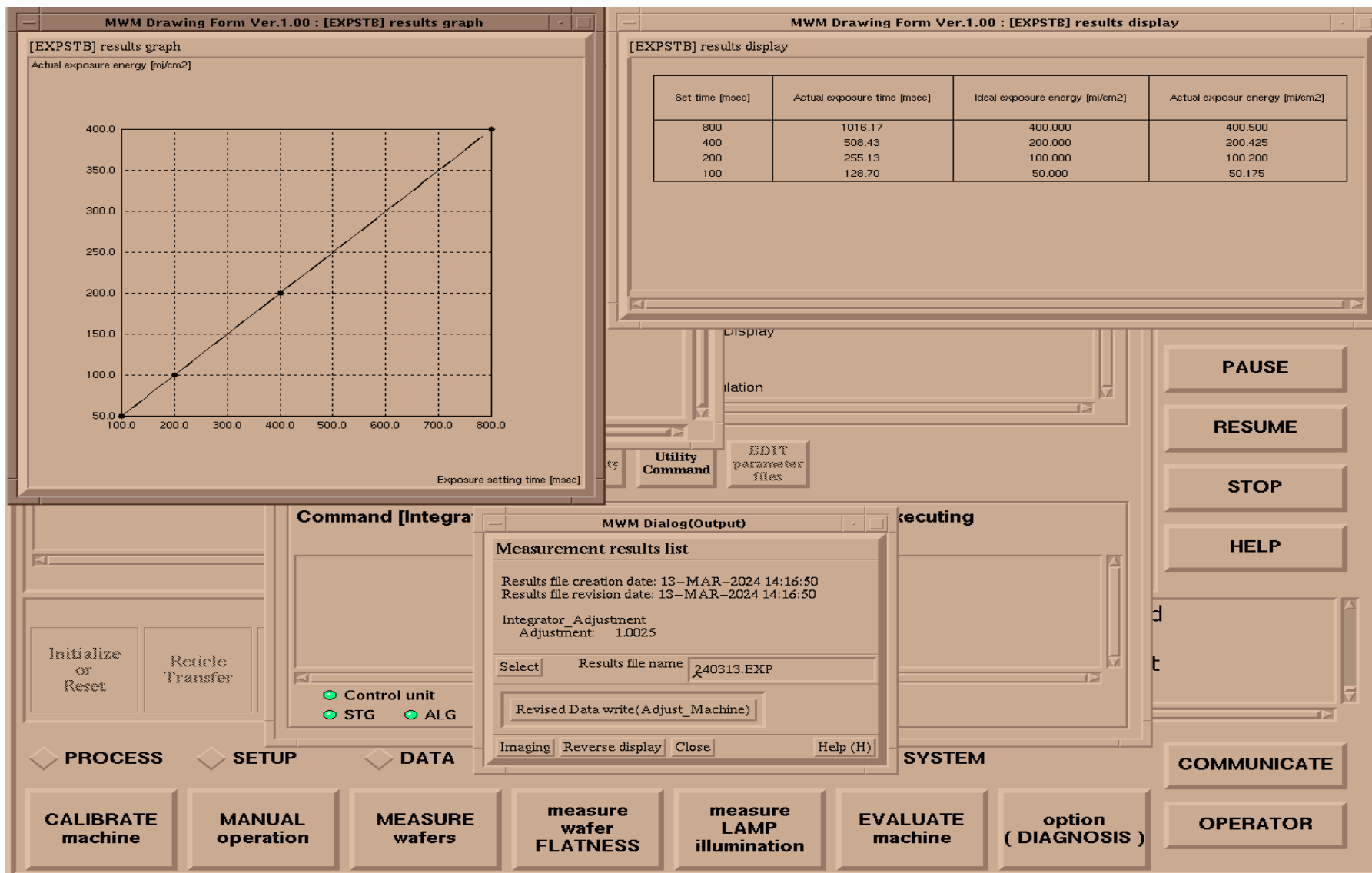
COMMUNICATE
OPERATOR

Illuminator Uniformity



OEM Spec
Power < 800 mW/cm²
Uniformity < 1.5%

Exposure Accuracy



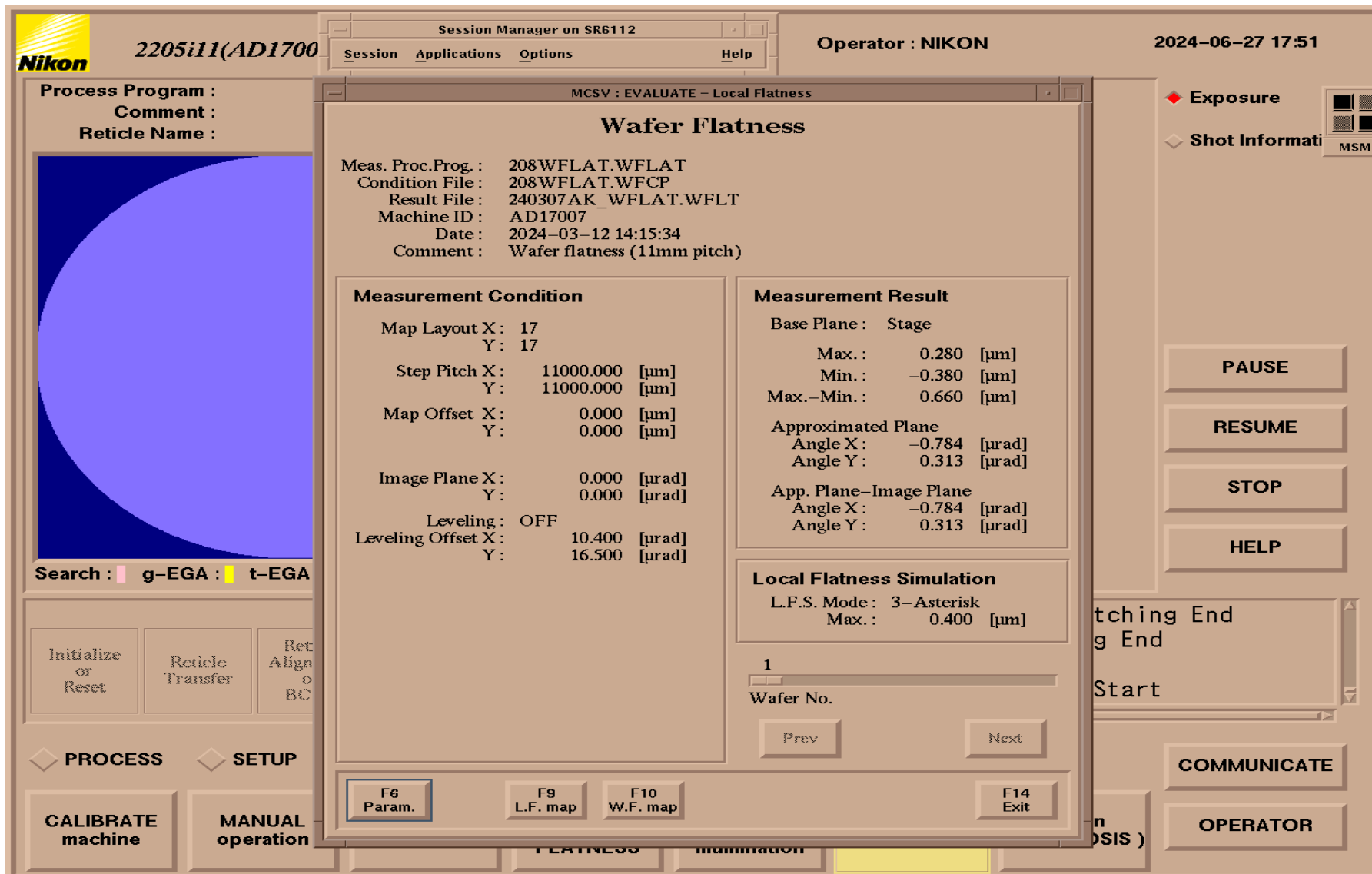
The screenshot displays the MWM Drawing Form Ver.1.00 software interface, which is used for monitoring and controlling lithography processes. The interface is divided into several functional areas:

- [EXPSTB] results graph:** A line graph showing the relationship between exposure setting time (msec) on the x-axis and actual exposure energy (mJ/cm²) on the y-axis. The data points are approximately (100, 50), (200, 100), (400, 200), and (800, 400), showing a linear trend.
- [EXPSTB] results display:** A table summarizing the exposure data for different setting times.
- MWM Dialog(Output):** A dialog box showing measurement results, including the results file creation and revision dates (13-MAR-2024 14:16:50), integrator adjustment (1.0025), and the selected results file name (240313.EXP).
- Control Panel:** A series of buttons for system control, including PAUSE, RESUME, STOP, and HELP. Below these are buttons for COMMUNICATE and OPERATOR.
- Navigation and System Controls:** Buttons for Initialize or Reset, Reticle Transfer, and a bottom row of buttons for CALIBRATE machine, MANUAL operation, MEASURE wafers, measure wafer FLATNESS, measure LAMP illumination, EVALUATE machine, option (DIAGNOSIS), and OPERATOR.

Set time [msec]	Actual exposure time [msec]	Ideal exposure energy [mJ/cm ²]	Actual exposure energy [mJ/cm ²]
800	1016.17	400.000	400.500
400	508.43	200.000	200.425
200	255.13	100.000	100.200
100	128.70	50.000	50.175

OEM Spec
Dose Accuracy < 1.5 %

Wafer Flatness



The screenshot shows the Nikon wafer flatness measurement software interface. The main window is titled "MCSV : EVALUATE - Local Flatness" and "Wafer Flatness". It displays measurement data for a wafer with a 11mm pitch.

Session Manager on SR6112
 Operator : NIKON
 2024-06-27 17:51

Process Program : 2205i11(AD1700)
Comment :
Reticle Name :

Measurement Condition

Map Layout X :	17
Y :	17
Step Pitch X :	11000.000 [μm]
Y :	11000.000 [μm]
Map Offset X :	0.000 [μm]
Y :	0.000 [μm]
Image Plane X :	0.000 [μrad]
Y :	0.000 [μrad]
Leveling :	OFF
Leveling Offset X :	10.400 [μrad]
Y :	16.500 [μrad]

Measurement Result

Base Plane :	Stage
Max. :	0.280 [μm]
Min. :	-0.380 [μm]
Max.-Min. :	0.660 [μm]
Approximated Plane	
Angle X :	-0.784 [μrad]
Angle Y :	0.313 [μrad]
App. Plane-Image Plane	
Angle X :	-0.784 [μrad]
Angle Y :	0.313 [μrad]

Local Flatness Simulation

L.F.S. Mode :	3-Asterisk
Max. :	0.400 [μm]

1
 Wafer No. []
 Prev Next

Buttons: INITIALIZE or Reset, Reticle Transfer, Ret Align BC, PROCESS, SETUP, CALIBRATE machine, MANUAL operation, F6 Param., F9 L.F. map, F10 W.F. map, F14 Exit, COMMUNICATE, OPERATOR, PAUSE, RESUME, STOP, HELP.

OEM Spec
 WF < 2.5 μm
 LF < 0.8 μm

Levelling

Session Manager on SR6112 Operator : NIKON 2024-06-27 17:54

2205i11(AD1700) Session Applications Options Help

MCSV : EVALUATE - Levelling

Levelling

Meas. Proc.Prog. : 208LEVEL.LEVEL2 Machine ID : AD17007
 Condition File : 208LEVEL2_ROUGH.WFCP Date : 2024-03-13 11:07:07
 Result File : 240313_LEVEL2_ROUGH.WFLT Comment : Wafer Flatness (1mm pitch) on leveling 20*20

Measurement Condition

Intra-shot Repeat Count : 1

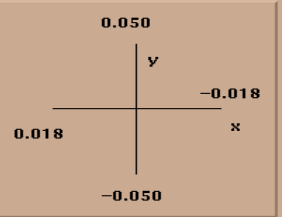
Measure Span X : 19000.000 [μm]
 Y : 19000.000 [μm]

Image Plane X : -2.146 [μrad]
 Y : 2.036 [μrad]

Leveling : ON
 Leveling Offset X : -13.500 [μrad]
 Y : 36.600 [μrad]

Measurement Result

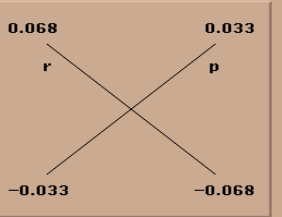
Back



Left Right

[μm]

Back_Left Back_Right



Front_Left Front_Right

[μm]

Tilt Data		Max. Data	Min. Data
X :	-1.864 [μrad] (-0.384 [sec])	-1.864	-1.864 [μrad]
Y :	5.294 [μrad] (1.092 [sec])	5.294	5.294 [μrad]
R :	5.061 [μrad] (1.044 [sec])	5.061	5.061 [μrad]
P :	2.426 [μrad] (0.500 [sec])	2.426	2.426 [μrad]
Tilt Data-Image Plane			
X :	0.282 [μrad] (0.058 [sec])	0.282	0.282 [μrad]
Y :	3.258 [μrad] (0.672 [sec])	3.258	3.258 [μrad]

Result Indication Select

Average 1 Intra-shot Repeat No.

Each

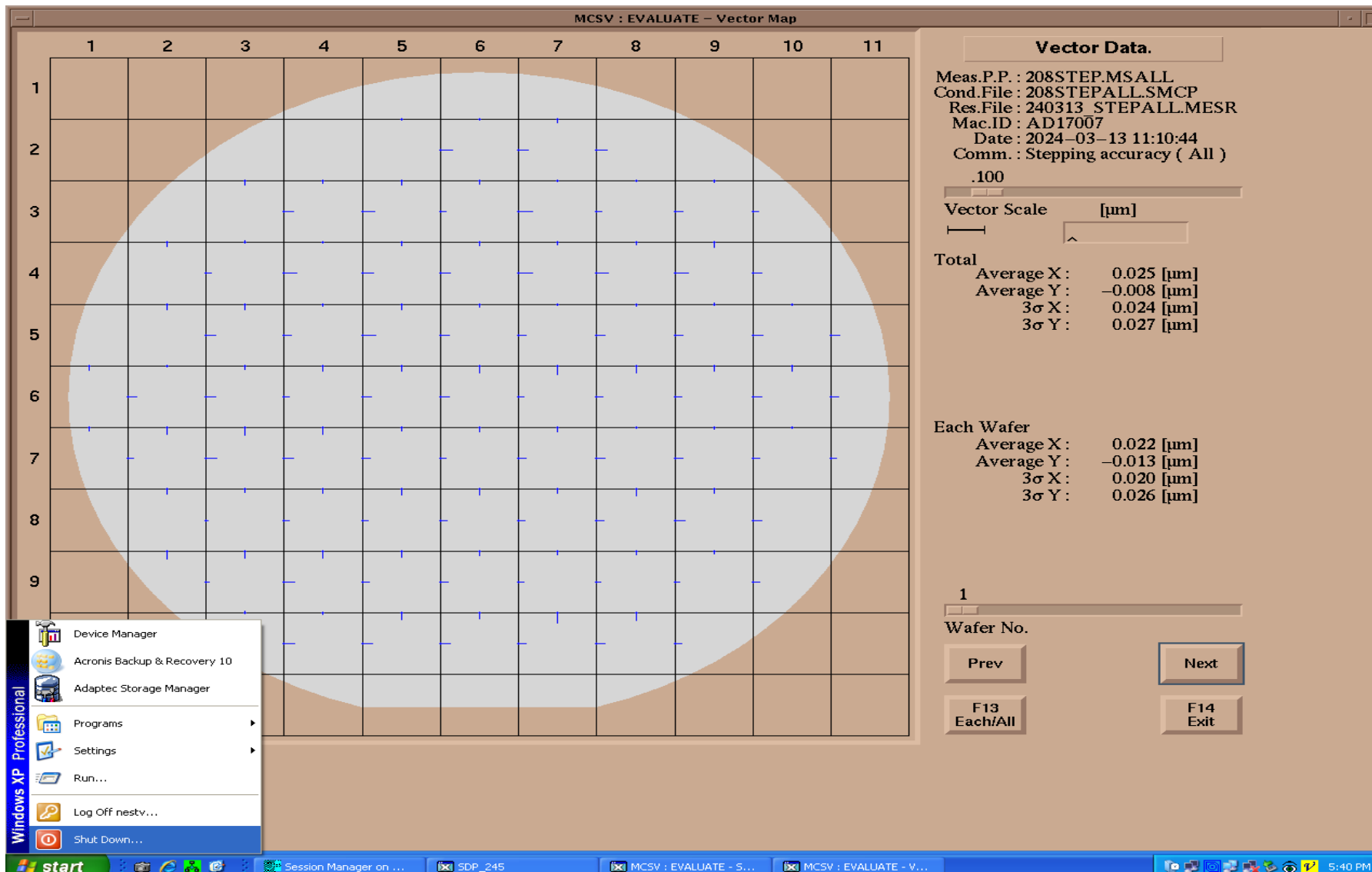
Prev Next

F6 Param. F10 Map F14 Exit

CALIB machine operation wafers FLATNESS illumination machine (DIAGNOSIS)

OEM Spec
X/Y < 7.2 urad

Stepping



OEM Spec
X/Y 3 Sigma < 0.040 um

Reticle Rotation

Session Manager on SR6112 Operator : NIKON 2024-06-27 17:49

MCSV : EVALUATE - Reticle Rotation

Reticle Rotation

Meas.Proc.Prog. : 208USRD.MSRR Machine ID : AD17007
 Condition File : 208RRD.SMCP Date : 2024-03-13 14:19:39
 Result File : 240313_RRD.MESR Comment : Reticle rotation [R2005DIS]

Align.	Block	Measured Value				
1	1	-0.015	-0.011	0.000	-0.001	0.000
	2	-0.002	0.007	0.006	0.002	0.003
	3	-0.001	-0.004	-0.005	-0.005	0.004
	4	0.000	-0.003	-0.002	0.000	0.006
	5	-0.010	-0.001	-0.007	-0.002	0.008
2	1	-0.008	-0.006	-0.005	0.002	-0.001
	2	0.000	0.003	0.000	0.000	0.005
	3	0.000	-0.013	-0.002	-0.003	0.007
	4	-0.005	-0.009	-0.008	-0.002	0.002
	5	-0.005	-0.004	-0.004	-0.004	0.004
3	1	-0.010	-0.014	-0.008	0.002	-0.001
	2	-0.008	0.000	0.004	-0.009	0.008
	3	-0.001	-0.008	-0.008	-0.007	0.003
	4	0.001	-0.003	-0.002	0.001	0.003
	5	0.001	-0.004	-0.005	-0.007	0.004
4	1	-0.009	-0.006	-0.006	-0.007	0.000
	2	-0.005	0.003	0.006	-0.001	-0.002
	3	-0.004	-0.008	-0.006	-0.006	0.002
	4	-0.005	-0.006	0.000	0.009	0.003
	5	-0.005	-0.001	-0.005	0.001	0.001
5	1	-0.011	-0.006	-0.008	-0.002	0.002

Align.	Average	
1 :	-0.001	[µm]
2 :	-0.002	[µm]
3 :	-0.003	[µm]
4 :	-0.002	[µm]
5 :	-0.002	[µm]
6 :	-0.005	[µm]
7 :	-0.005	[µm]
8 :	-0.004	[µm]
9 :	-0.006	[µm]
10 :	-0.003	[µm]

Total
 Reticle Rotation : -0.002 [µm]
 : -0.174 [µrad]
 Repeatability
 (3σ) : 0.002 [µm]

Each Wafer
 Reticle Rotation : -0.002 [µm]
 : -0.174 [µrad]
 Repeatability
 (3σ) : 0.002 [µm]

1
 Wafer No.

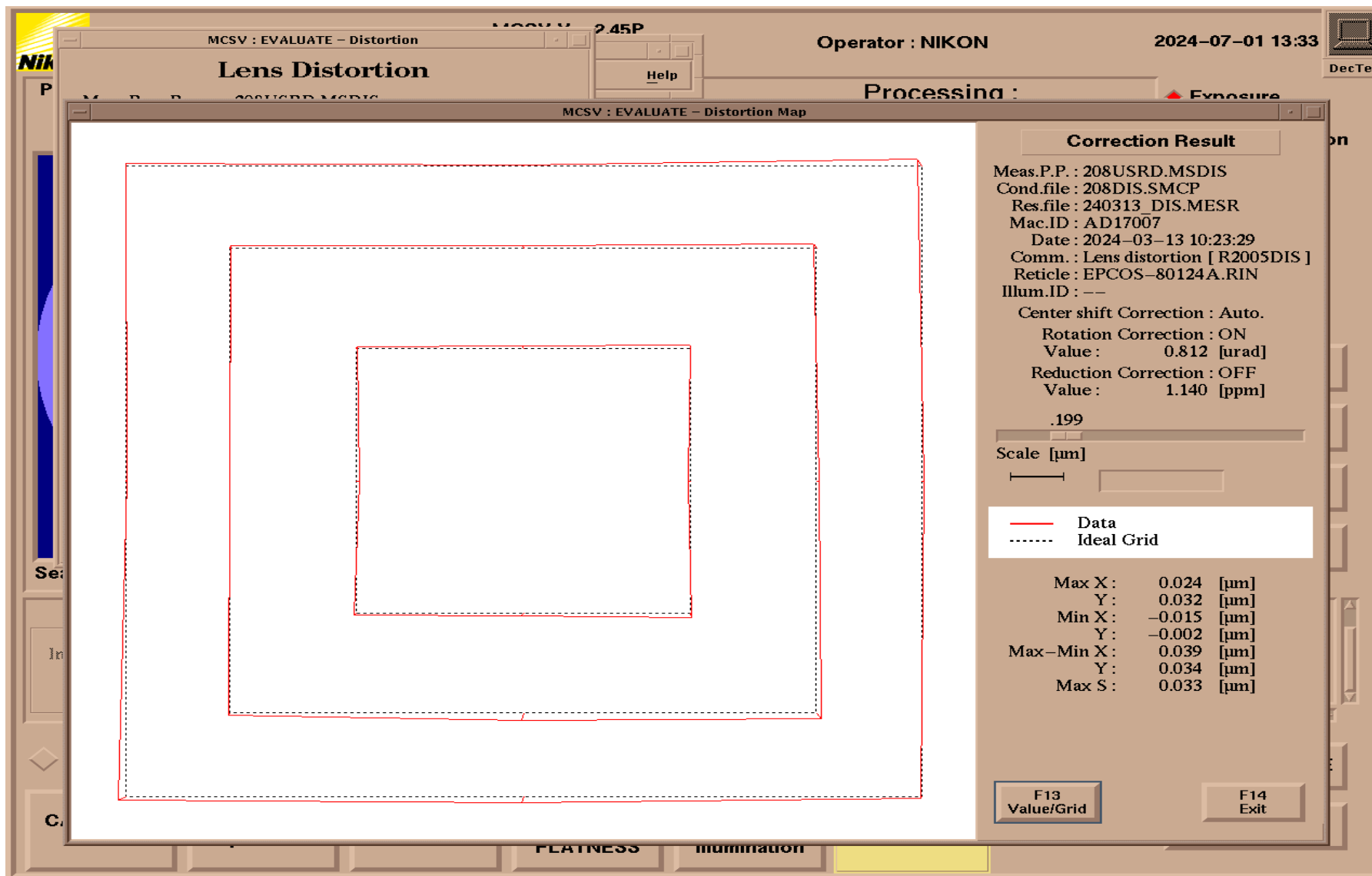
Prev Next

F6 Param. F14 Exit

machine operation wafers wafer FLATNESS LAMP illumination machine (DIAGNOSIS) OPERATOR

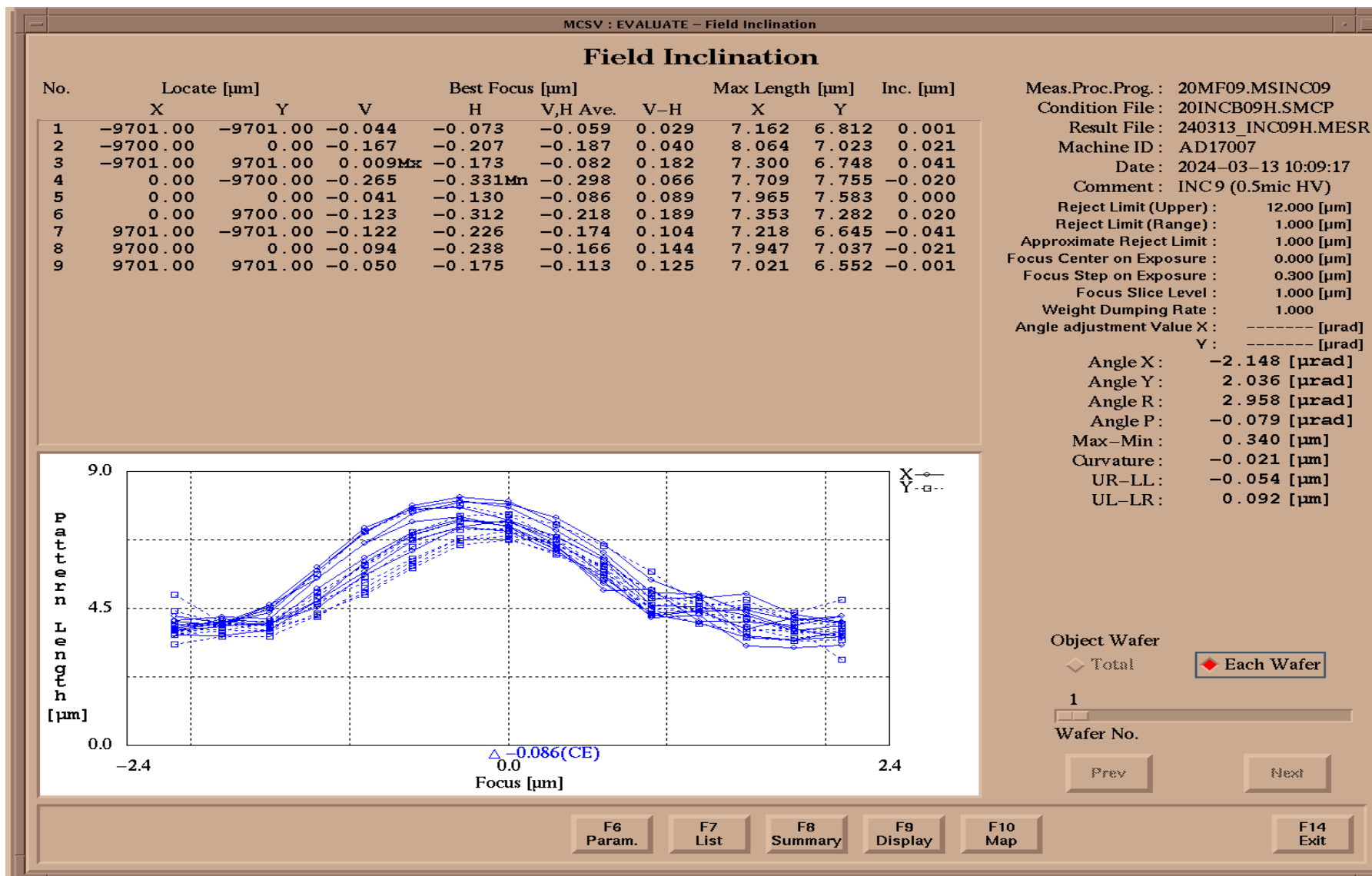
OEM Spec
 3 sigma + Mean < 15 um

LENS DISTORTION



OEM Spec < 0.040 µm

Lens Inclination



OEM Spec
 Max - Min < 0.4 μm

Overlay

MCSV : EVALUATE - LSA Base Line

LSA Base Line

Meas.Proc.Prog. : 208USRA.MSREG Machine ID : AD17007
 Condition File : 208REG05.SMCP Date : 2024-03-13 13:11:57
 Result File : 240313_REG.MESR Comment : Overlay accuracy check

Wafer	Average[μm]		3 σ [μm]	
	X	Y	X	Y
1	-0.004	-0.043	0.023	0.027
2	-0.006	-0.046	0.036	0.016
Total	-0.005	-0.044	0.030	0.022

Map Display Mode: Measured Data

Correction Contents: Each Wafer

Offset X Offset Y
 Scaling X Scaling Y

Orthogonality Rotation
 Shot Scaling Shot Rotation

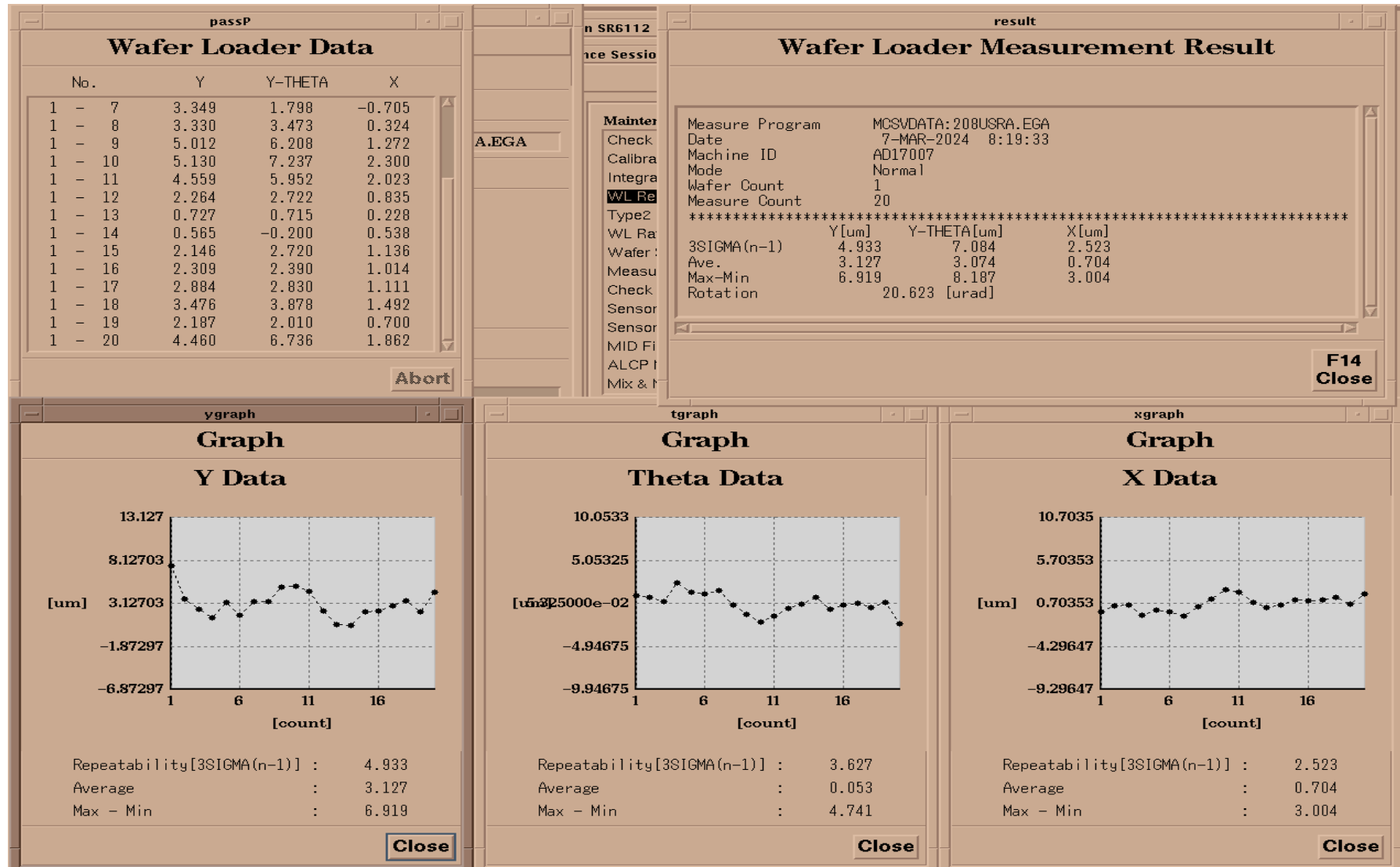
F6 Param
F7 List
F10 Map
F14 Exit

CALIBRATE machine
MANUAL operation
MEASURE wafers
measure wafer FLATNESS
measure LAMP illumination
EVALUATE machine
option (DIAGNOSIS)
OPERATOR

OEM Spec
3 sig + Mean < 0.080 μm

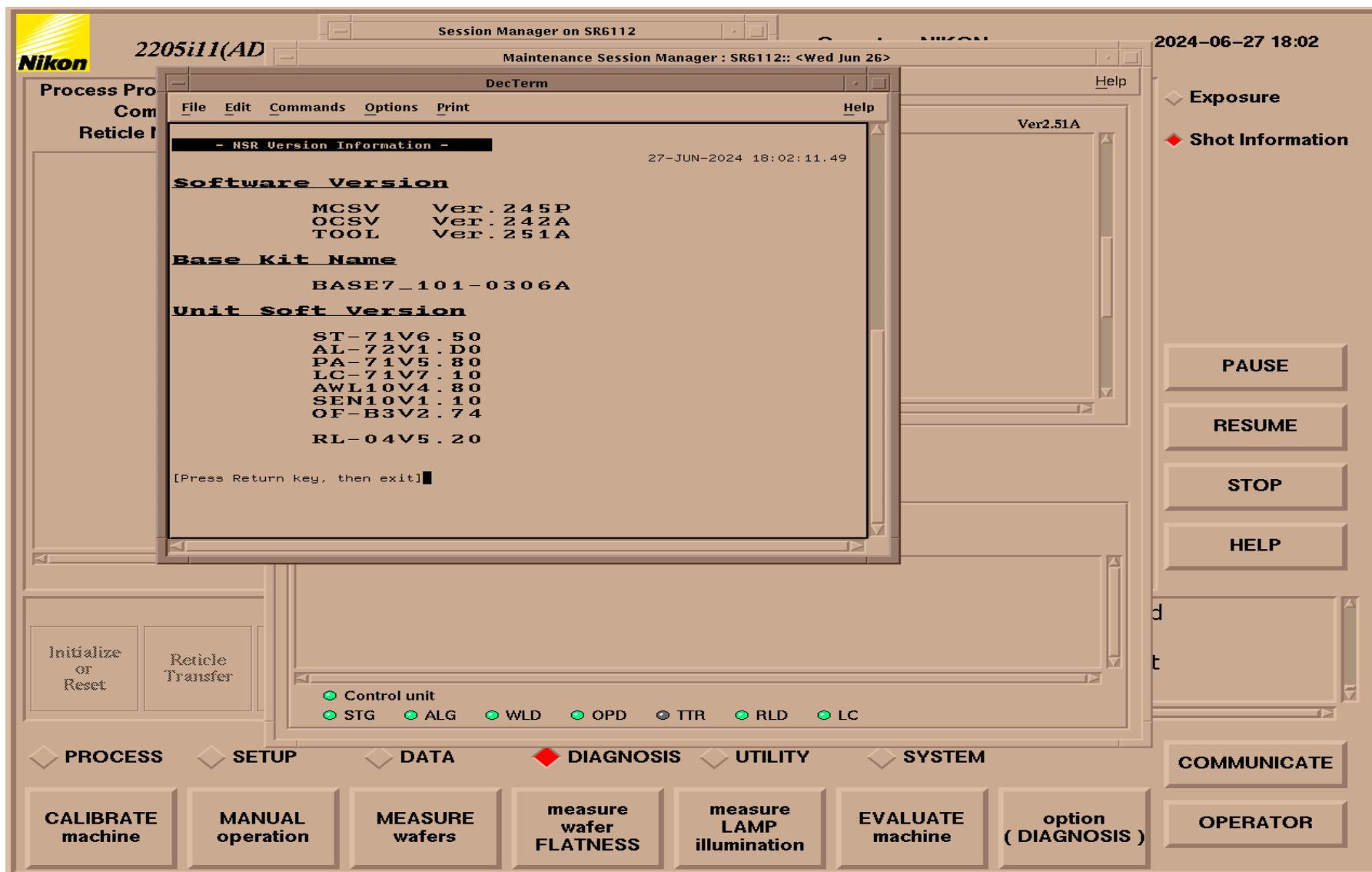
Means not dialled out here with software for Y.

Wafer Loader Repeatability



3 Sigma X/Y/T < 15um

Software



The screenshot displays the Nikon maintenance software interface. A central window titled "DecTerm" shows the following information:

```

- NSR Version Information -
27-JUN-2024 18:02:11.49

Software Version
MCSV Ver. 245P
OCSV Ver. 242A
TOOL Ver. 251A

Base Kit Name
BASE7_101-0306A

Unit Soft Version
ST-71V6.50
AL-72V1.D0
PA-71V5.80
LC-71V7.10
AWL10V4.80
SEN10V1.10
OF-B3V2.74
RL-04V5.20

[Press Return key, then exit]

```

The interface includes a top navigation bar with the following menu items: PROCESS, SETUP, DATA, **DIAGNOSIS** (highlighted with a red diamond), UTILITY, and SYSTEM. On the right side, there are buttons for PAUSE, RESUME, STOP, and HELP. At the bottom, there are several functional buttons: CALIBRATE machine, MANUAL operation, MEASURE wafers, measure wafer FLATNESS, measure LAMP illumination, EVALUATE machine, option (DIAGNOSIS), and OPERATOR. A status bar at the bottom shows various system indicators: Control unit (green), STG (green), ALG (green), WLD (green), OPD (green), TTR (grey), RLD (green), and LC (green).