3 APPENDIX

3.1 Parameter Ranges and Default Settings

The table shows the range of values for parameters included in the main processes exposure and bonding.

Parameter	Description	Default value	Range of Values
Expose Type	Type of exposure	Soft	[Soft, Hard, Low Vac, Vac, Prox, Flood-E]
Exp. Time	Time of exposure	5.0 sec.	[0.1...999.9]
Wait Time	Pause between the expose cycles, using Multiple Exposure	10 sec.	[1...999,9]
Exp. Cycles	No. of cycles, using Multiple Exposure	3	[1...500]
Al. Gap	Alignment distance during the alignment	100 µm	[10...300]
Exp. Gap	Distance during the exposure in proximity	50 µm	[0...300]
HC-Wait Time	Time for N_2 purge under the wafer prior exposure	4 sec.	[0...30]
Pre Vac	Time of the pre-vacuum with reduced vacuum pressure	4 sec.	[0...30]
Full Vac	Time with full vacuum before exposing in vacuum contact	4 sec.	[0...30]
Vac Purge	N_2 purge time into the vacuum chamber after exposure	4 sec.	[0...30]
N_2 Purge Time [1]	N_2 purge time before exposure for exposing in N_2 atmosphere	4 sec.	[0...999]
N_2 Purge Gap [1]	Gap distance during N_2 Purge for exposing in N_2 atmosphere	30 µm	[0...1000]
WEC-Offset	Substrate position optional different to contact- respectively to 0-position	0 µm	[+/- 50]
WEC Type	Type of the Wedge Error Compensation	Cont	[Cont / Spacer / GlobCont [2] / GlobSpac [2]]
WEC delay	Time to get parallelism between substrate and mask	1 sec.	[0,1...120]
Spacer Thick	Thickness of the spacers	MA = 2000 BA = 100 µm	[50, 100, 125, 200, 1000, 2000]
Substrate Thick	Thickness of substrate using global WEC	500 µm	[10...3000]

Parameter	Description	Default value	Range of Values
Load Type	Load type of substrate(s)	Slide	[Slide / Fixture]
Unload Type	Unload type of the sub-strate(s)	Slide	[Slide / Fixture]
Clamp	Clamping of the substrates with or without spacers in between	with Spacers	[with Spacers, without Spacers]
Lower Sub.	Lower substrate is opaque or transparent	Glass	[Glass / Silicon]
Upper Sub. Thick [2]	Thickness of the upper sub-strate	500 µm	[0...2000]
Lower Sub. Thick [2]	Thickness of the lower sub-strate	500 µm	[0...2000]

[1] These parameters are only available with special optional hard- and software.
[2] These parameters are only available after activating the FUNCTION UNI-Bond.

3.2 List of Abbreviations

Θ	Theta rotation
Al. Gap	Alignment gap
AL400	Large gap alignment system
BA	Bond aligner
BSA	Bottom side alignment
BsSubPx	WEC with spacers beside substrate
CIC	Constant intensity controller
Cont	Contact
DIP	Mikro switch at microcontroller card
DVCU	Digital video control unit
E	Error message
Exp.	Exposure
Exp. T.	Exposure time
Flood-E	Exposure type: flood exposure(without mask)
F-WEC	Force-sensor WEC
GlobCont	Global WEC, contact mode
GlobSpac	Global WEC, spacer mode
GWEC	Global wedge error compensation
Hard	Exposure type: hard contact
Hard Ct	Exposure type: hard contact
HC Wait T.	Hard contact wait time
IR	InfraRed
ISA	Inter substrate alignment
L:F	Load the substrate by fixture
L:S	Load the substrate by slide
LED	Light emitting diode
Low Vac	Exposure type: low vacuum contact
Lvac-Ct	Exposure type: low vacuum contact
M.Pin	Middle pin
MA	Mask aligner
Mholder	Mask holder

N2	Nitrogen
NFH	Near field holography
P	Purge (nitrogen)
Pgm.	Program
Pre. Vac	Pre vacuum
Prox	Exposure type: proximity
S	Substrate (square or irregular shape)
SBSA	Single bottom side alignment
Soft	Exposure type: soft contact
Soft-Ct	Exposure type: soft contact
STG	stage
SW	software
TH	Theta
Tri-B	Triple stack bonding
TSA	Top side alignment
Type A	A type of chuck for anodic bonding
Type B	A type of chuck for silicon to silicon pre bonding
U:F	Unload substrate by fixture
U:S	Unload substrate by slide
Vac	Exposure type: vacuum contact
Vac-Ct	Exposure type: vacuum contact
W	Round wafer
WEC	Wedge error compensation
Xl, Xr	X-coordinate, left/right objective
Yl, Yr	Y-coordinate, left/right objective
Z	position of substrate/wafer relative to mask 0 means contact