

2 Hands-on-access fab. Equipment



Draft chamber ~6"
HF/HNO₃/H₂SO₄/HCl etc.

Vacuum oven ~6"
Yamato DP-31

Brush scrubber ~6"
Zenryo post polishing

Spin dryer 4", 6"
SEMTOOL PSC101 x3



Spin dryer ~6"
Toho Kasei ZAA-4 x2

Inert oven ~6"
Yamato DN63H

UV curing ~4"
Ushio UMA-802

Curing oven ~6"
Yamato DN43H



Pattern generator ~6"
NSK TZ-310
For emulsion / Cr mask making, up to 7inch

Laser writer ~9"
Heidelberg instruments DWL2000CE

Spin coater ~6"
Actec ASC-4000 x2
Mikasa 1H-DX3 x2

Clean oven ~6"
Yamato DE02 x2



EB lithography ~6"
Elionix ELS-G125S
Max130keV, 4mm, up to 6"

Stepper 4", 6"
Canon FPA1550M4W
g line, 0.65μm, 4inch

Double-side aligner ~6"
Suss MA6/BA6 x2

Spray developer ~6"
Ades ADE-3000S
8 inch, vacuum/mechanical chuck



Oxidation/diffusion furnace ~6"
TEL XL-7

Middle-current ion implanter ~4"
ElNissin ion NH-205R
Max. 180keV, 0.6mA

Annealing ~6"
AG Associates AG4100
1000°C

Metal diffusion furnace ~4"
Koyo Indberg ModelZ70



Asher ~6"
Branson IPC4000
13.5MHz, 600W

Plasma cleaner ~6"
Yamato PDC210

Surface planer 4", 8"
Disco DAS8920

Water laser ~8"
Shibuya LAMCS AQL-1900



Wafer polisher ~6"
BN technology Bn52, Bn62

Electroplating ~6"
Yamamoto Cu, Ni, Sn, Au

Wafer bonder ~6"
Suss SB6e

Dicer ~6"
Disco DAD5222E



Wire bonder Chip
West Bond etc.
Al, Au

Reflow furnace ~4"
Shinko FB-260H/TE

Laser marker ~4"
GSI WM-8

Sand blaster ~6"
Shinto



Wafer aligner 8"
EVG Smart View

Wafer bonder 8"
EVG 520

Epoxy injection chamber 8"
EVG 520

UV imprinting ~4"
Toshiba machine ST50



Thermal imprinting ~50mm
Origin electric Reprint-T50A
MAX 650°C, 30MN

TOF-SIMS
CAMECA TOF-SIMS IV

FIB ~3"
GE SM5200

AFM ~8"
Digital Instruments Dimension3100



LP-CVD ~6"
Kokusai
SiN, Poly-Si, NSG

PECVD ~6"
Kokusai
Epi-Poly Poly-Si, 1100°C

PECVD ~6"
JPEL VDS-5000
SiN, SiO₂

PECVD ~8"
Sumitomo MPX-CVD
SiN, SiO₂



PE-CVD ~8"
Sumitomo MPX-CVD
TEOS SiO₂

Sputtering ~6"
Anelva SPF-730
8inch target x3
Al, AlSi

Sputtering ~8"
Shibaura CFS-4ESII
3inch target x3
Stage cooling x1, heating x1

Sputtering ~8"
Shibaura L-888
3inch target x4, Load lock
Automatic transfer x10 wafers



W-CVD 4"
Applied materials Precision 5000

EB evaporation ~6"
Anelva EVC-1501

Automatic sol-gel deposition ~4"
Technofine PZ-604

MOCVD ~8"
Wacom Doctor-T
PZT, up to 8inch



Sputtering (high temp.) 8"
Yotec 21-0604

ALD ~6"
Technofine ALK-600

ICP-RIE ~6"
ULVAC NE-550

Chemical dry etcher (CDE) ~4"
Shibaura CDE-7



Si Deep-RIE x4 ~8"
Sumitomo MUC21
SiF₄, C₄F₈

Dry etcher ~6"
Anelva DEA-506
For SiN, SiO₂ etching

Dry etcher 4"
Anelva L-507DL
For Si etching

Al RIE 4"
Shibaura HRRE-100
Cl₂, BCl₃



RIE ~6"
Ulvac RH-1515Z
Cl₂, BCl₃, SF₆, CF₄, CHF₃, Ar, O₂, N₂

ECR etcher 3"
Anelva ECR0001
3 inch GaAs, AlGaIn, etc

Vapor HF ~8"
Sumitomo Primax JEtch

KOH-TMAH ~6"



Ar ion milling 6" x 4, 4" x 6
NS, Hakuto 20BE-C

Wafer dust counter ~6"
Topcon WM-3

Film thickness measurement ~6"
Nanometric NanoSpec 3000

Surface profiler ~6"
Dektak8
Tencor AlphaStep 500



Depth measurement ~6"
Union Hsomet

4-terminal probe ~6"
Solid State Measurements SSM150

Spreading resistance measurement ~6"
Solid State Measurements SSM150

IR microscope ~6"
Olympus, Hamamatsu



Laser/white light confocal microscope ~6"
Laserlec
OPTELICS HYBRID L3-SD

Digital microscope ~8"
Keyence and Kunoh

SEM ~12"
Hitachi S3700N
EDX

FE-SEM Chip
Hitachi S5000



Ellipsometry ~6"
Photonic lattice SE-101
ULVAC

X-ray micro CT ~6"
Comscan techno
Scanomat D16TS110

Ultrasonic microscope ~12"
Insight IS350

Line-focus-beam acoustic microscope