

Reactor	Cambridge Savannah
Date	10-Jan-20
Growth	HfO2 on 4" silicon wafer
Expected growth rate	1.1-1.3 Angstrom per cycle
Expected Refractive Index	1.90-2.05
Recipe Name	1 HfO2_200_10nm-??Acyc
Growth Temperature	200 °C
Precursor	TEMAH
Number of Cycles	180
Angstroms grown	193.7980 Angstroms
Gaertner Refractive Index	2.0314 n
Gaertner growth rate (A/cycle)	1.08 Ang/cyc
VASE Thickness	Angstroms
VASE MSE	MSE
VASE Refractive index	n
VASE growth rate (A/Cycle)	0 Ang/cyc

Gaertner measurements	Thickness (A)	R.I.
Top Left	197.51	2.0338
Top Right	192.93	2.0358
Center	192.31	2.0273
Bottom left	193.46	2.0278
Bottom Right	192.78	2.0321
Average	193.7980	2.0314

Recipe information

Dose Time:	150 milliseconds
Dose Purge Time:	7 seconds
Dose Purge Flow:	20 SCCM
Water Dose Time:	25 milliseconds
Water Purge Time:	7 seconds
Water Purge Flow:	20 SCCM
Bubbler jacket temp (Oven)	75 °C

Note: New oven