



A U R I O N
T H I N K I N G A H E A D

Aurion Anlagentechnik GmbH

Plasma technology – RF technology

Plasma systems
as of February 2015

Aurion Anlagentechnik GmbH



RIE-Systems



KIVOS 750



KIVOS 500



KIVOS 350



CYLOS 400



CYLOS 160



RIE-Systems comparison

System type	Chamber size	Electrode size	Number of electrodes
KIVOS 750	750 x 750 x 750 mm ³	500 x 500 mm ²	Up to 5
KIVOS 500	500 x 500 x 500 mm ³	400 x 400 mm ²	Up to 3
KIVOS 350	350 x 350 x 350 mm ³	300 x 300 mm ²	1
CYLOS 400	Diameter 400 mm	Diameter 250 mm	1
CYLOS 160	Diameter 160 mm	Diameter 65 mm	1



KIVOS 750 RIE



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KIVOS 750 RIE

Application	Goal	Material	Process gas	Power density W / cm ²	Rate nm / s
Ashing	Removing photo resist	ZEP 7000	O ₂	0.25	1
Cleaning	Removing Polyimid	Polyimid	O ₂ + SF ₆	0.16	2.2
	Removing cooling lubricants	P 3	O ₂	0.3	2 - 4
		C 20			
		Avilub CLP 46			
Etching	Etching of Platinum	Pt	Ar	1.5	0.6
	Etching of Bismuth-Telluride	Bi ₂ Te ₃	Ar	3.1	6



KIVOS RIE

KIVOS Series	Reactive Ion etching	Chamber size	Amount of electrodes	Low power / high power	EU / US supply voltage	Option: Heating	Electrode size		Total electrode area	Fix (f) / Drawer (d)	Loading capacity (amount of wafers)			Total RF power	RF power density
							mm x mm		cm²	f,d	6"	8"	12"	W	W/cm²
KIVOS-	RIE -	500-	1-	LP-	US EU	-T	400	400	1600	f	4	1	1	600	0,38
				HP-	US EU	-T	400	400	1600	f	4	1	1	5000	3,13
			3-	LP-	US EU	-T	400	400	4800	d	12	3	3	1600	0,33
				HP-	US EU	-T	400	400	4800	d	12	3	3	5000	1,04
		750-	1-	LP-	US EU	-T	500	500	2500	f	5	4	1	600	0,24
				HP-	US EU	-T	500	500	2500	f	5	4	1	5000	2,00
			3-	LP-	US EU	-T	500	500	7500	f	15	12	3	1600	0,21
				HP-	US EU	-T	500	500	7500	f	15	12	3	5000	0,67
			5-	LP-	US EU	-T	500	500	12500	d	25	20	5	2500	0,20
				HP-	US EU	-T	500	500	12500	d	25	20	5	5000	0,40



CYLOS 160 RIE + PECVD



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CYLOS 400 RIE



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Custom made PECVD systems



Example:

- load lock chamber with manual manipulator
- process chamber (electrode diameter 100 mm, substrate temperature 800 °C)



Custom made combination systems

KIVOS 500 RIE + PECVD



KIVOS 350 RIE + PECVD



CYLOS 160 RIE + PECVD



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Multi chamber systems

- 1x load lock chamber with cassette elevator
- 1x transfer chamber with vacuum robot
- 2x process chamber (electrode size 470 x 570 mm²)
- 2-channel optical emission spectroscopy





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