



phase-out AZ5214E EU version

Photoresist comparison POSITIVE processing

February 4, 2021
Wiesbaden



MERCK

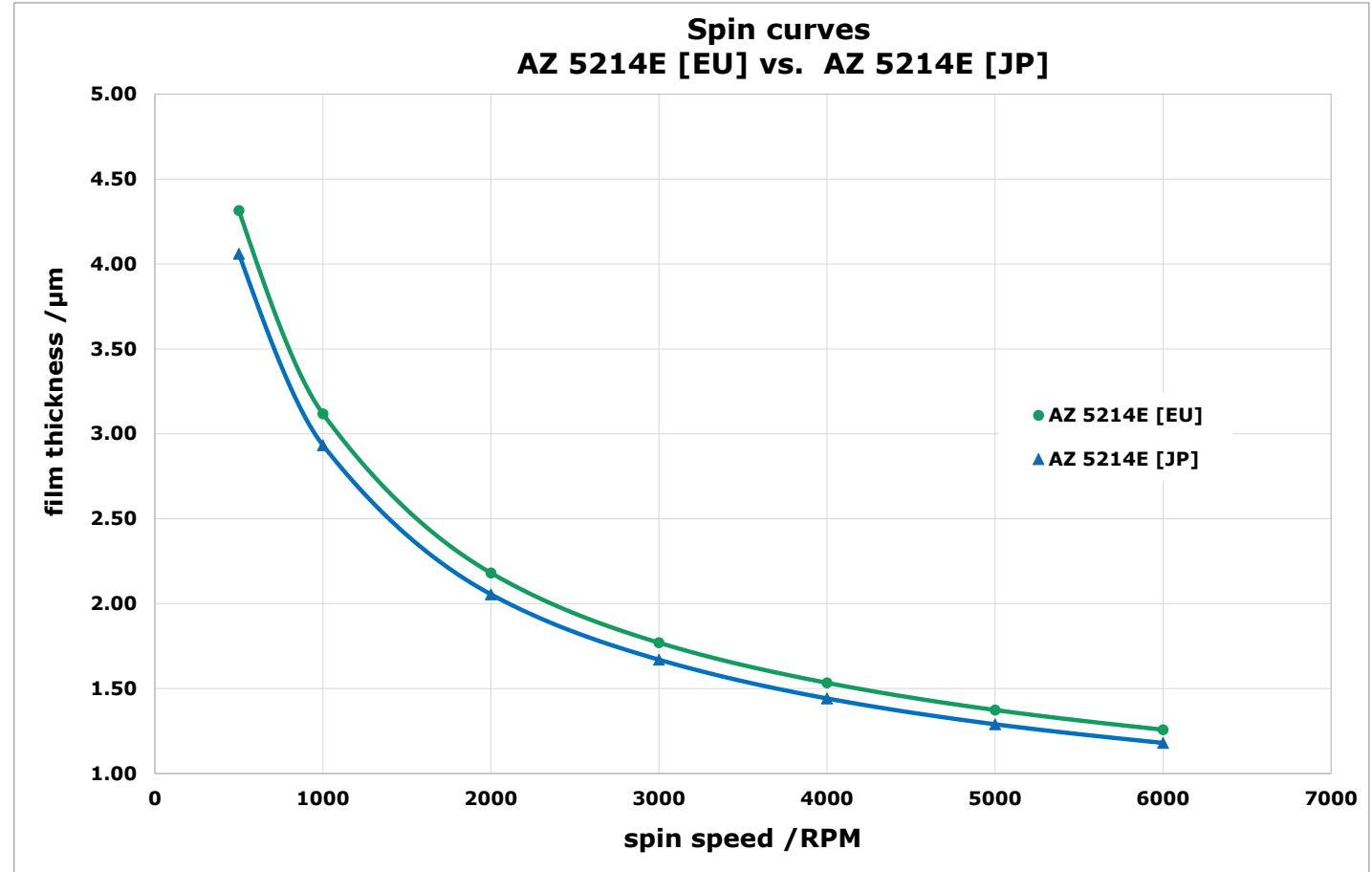
1. Spin curve comparison
2. Process parameters
3. Exposure Latitude
4. Linearity
5. Focus Latitude

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Spin Curve comparison

spin speed /RPM	film thickness / μm	
	AZ 5214E [EU]	AZ 5214E [JP]
500	4.32*	4.06*
1000	3.12	2.93
2000	2.18	2.06
3000	1.77	1.67
4000	1.53	1.44
5000	1.37	1.29
6000	1.26	1.18

* no ideal coating at this speed



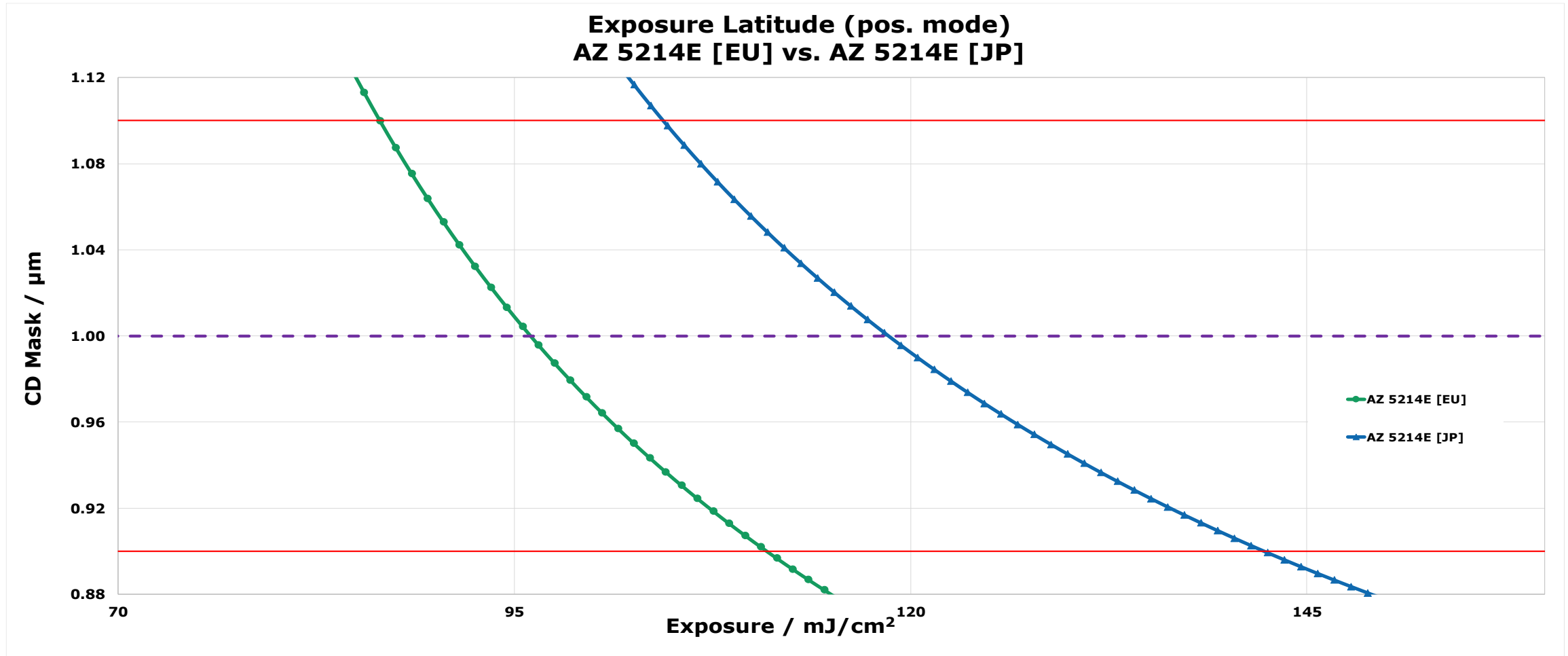
Phase-out AZ5214E EU version

Process Parameters positive processing

	AZ 5214E [EU]	AZ 5214E [JP]
Substrate	6" bare silicon (HMDS prime)	
Photoresist name	AZ 5214E [EU]	AZ 5214E [JP]
Film thickness	1.422 μm	
RPM	4610	4182
Softbake	105°C / 60 s	
Exposure Tool	Nikon i-line Stepper	
Dose to print	96.02 mJ/cm²	118.59 mJ/cm²
	@ L / S: 1.00 μm	
Developer name	AZ 726 MIF	
Developing condition	1 x 60 s	

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Exposure Latitude

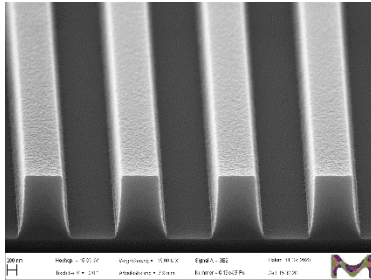


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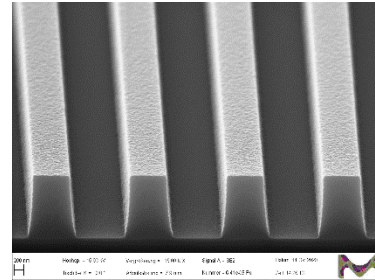
Exposure Latitude positive processing

AZ 5214E
[EU]

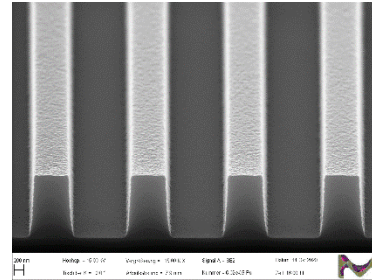
Exposure: 87 mJ/cm²
CD: 1.00 μm



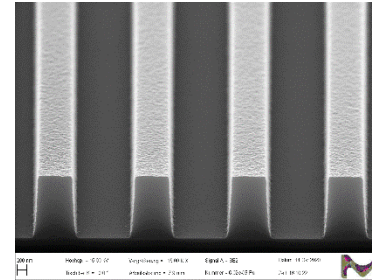
Exposure: 95 mJ/cm²
CD: 1.00 μm



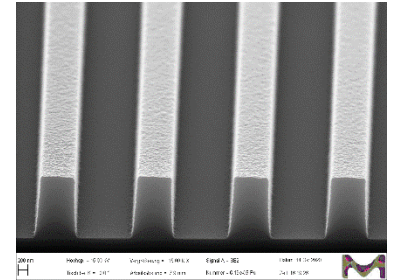
Exposure: 103 mJ/cm²
CD: 1.00 μm



Exposure: 108 mJ/cm²
CD: 1.00 μm

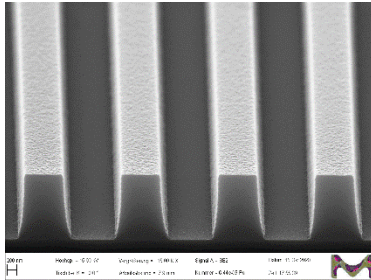


Exposure: 113 mJ/cm²
CD: 1.00 μm

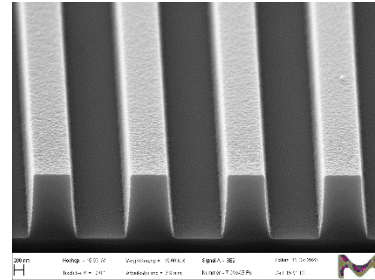


AZ 5214E
[JP]

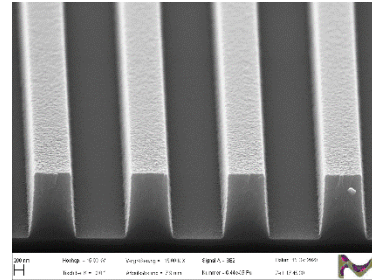
Exposure: 105 mJ/cm²
CD: 1.00 μm



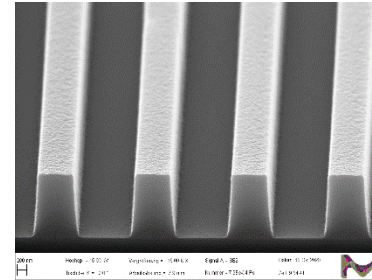
Exposure: 120 mJ/cm²
CD: 1.00 μm



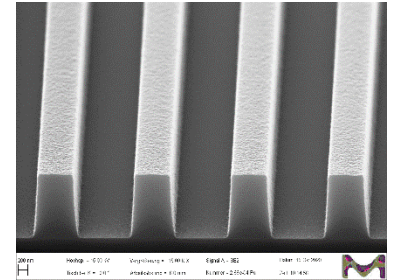
Exposure: 125 mJ/cm²
CD: 1.00 μm



Exposure: 133 mJ/cm²
CD: 1.00 μm

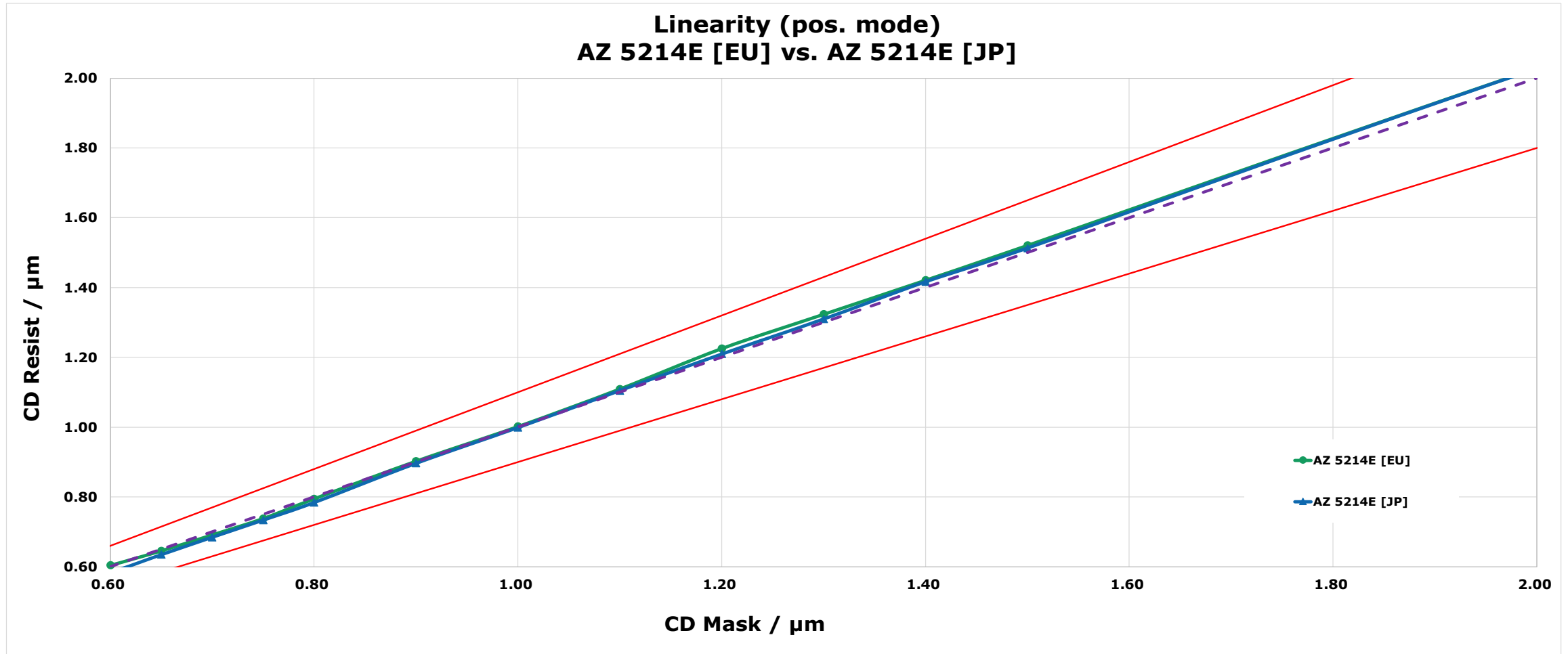


Exposure: 138 mJ/cm²
CD: 1.00 μm



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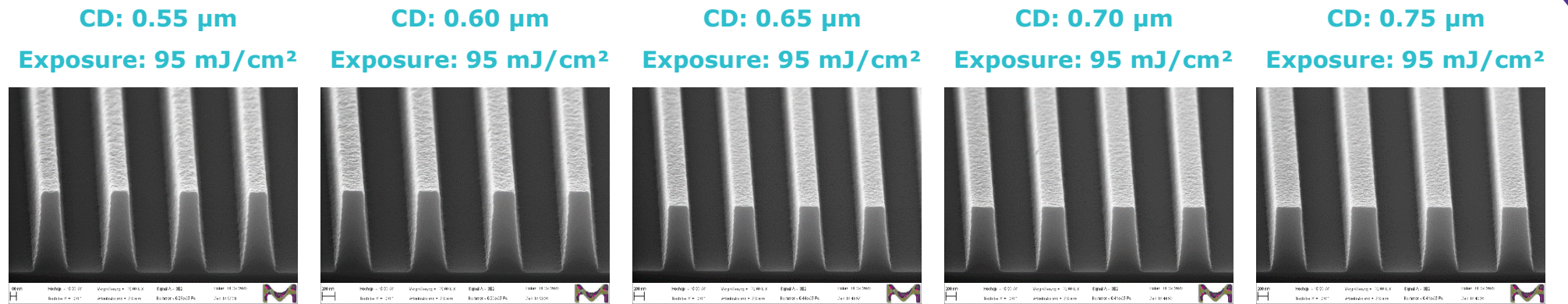
Linearity



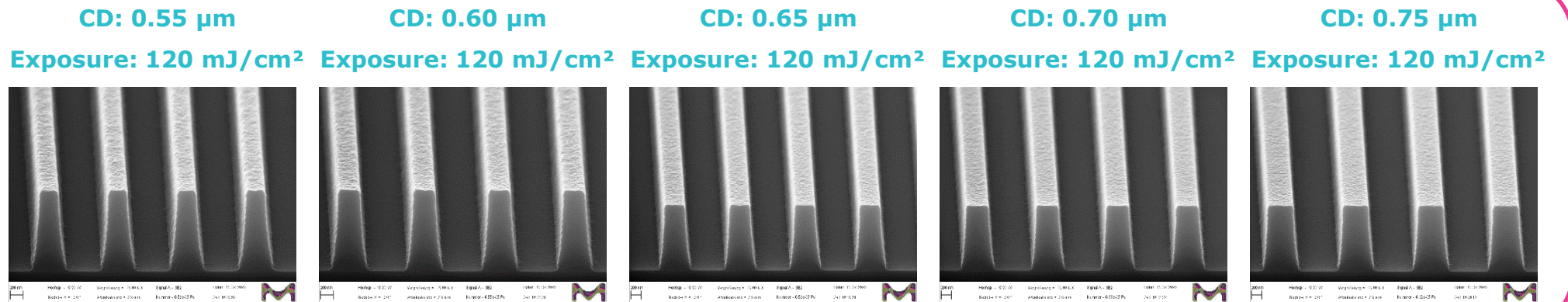
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Linearity positive processing

AZ 5214E
[EU]



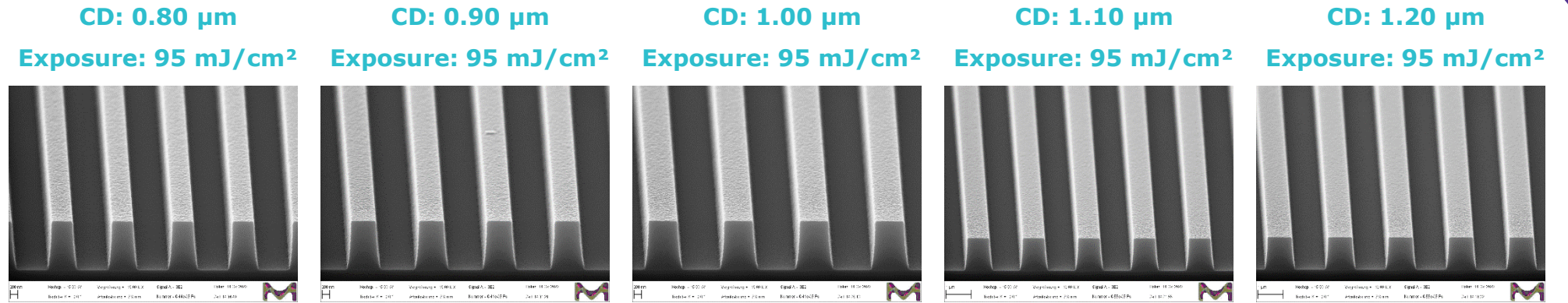
AZ 5214E
[JP]



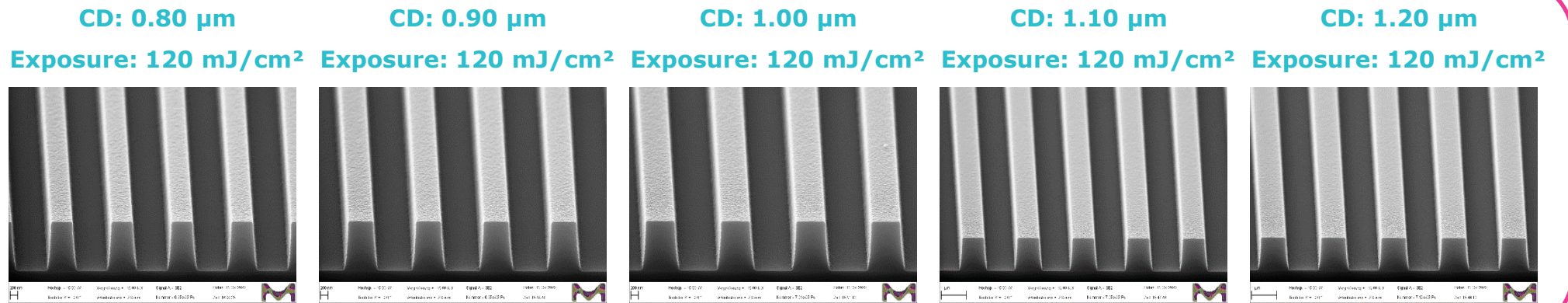
Phase-out AZ5214E EU version

Linearity positive processing

AZ 5214E
[EU]



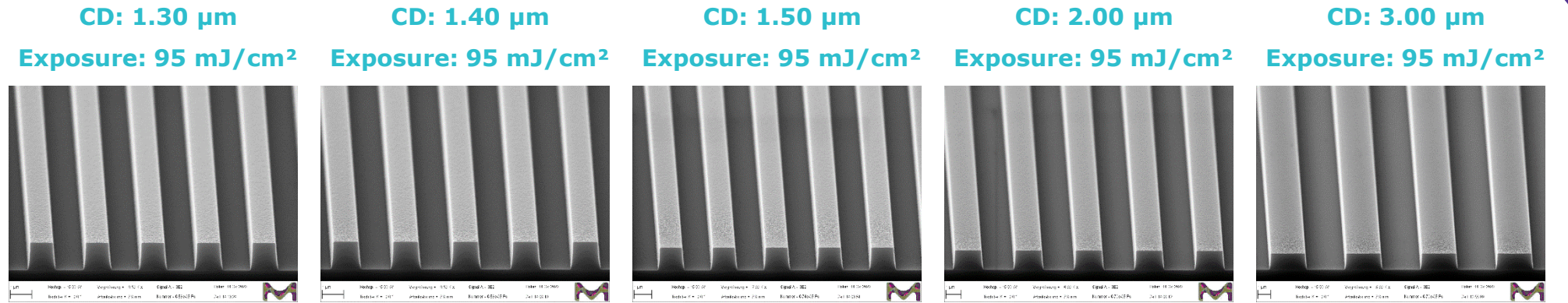
AZ 5214E
[JP]



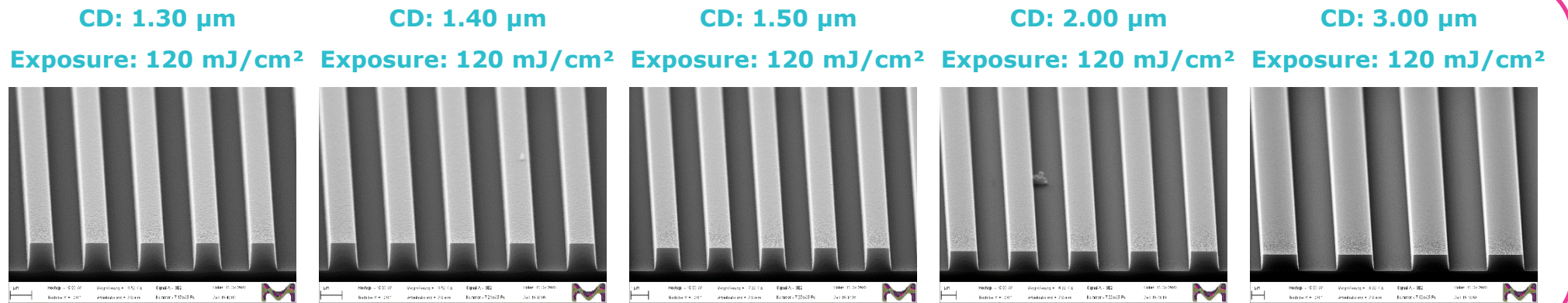
Phase-out AZ5214E EU version

Linearity positive processing

AZ 5214E
[EU]

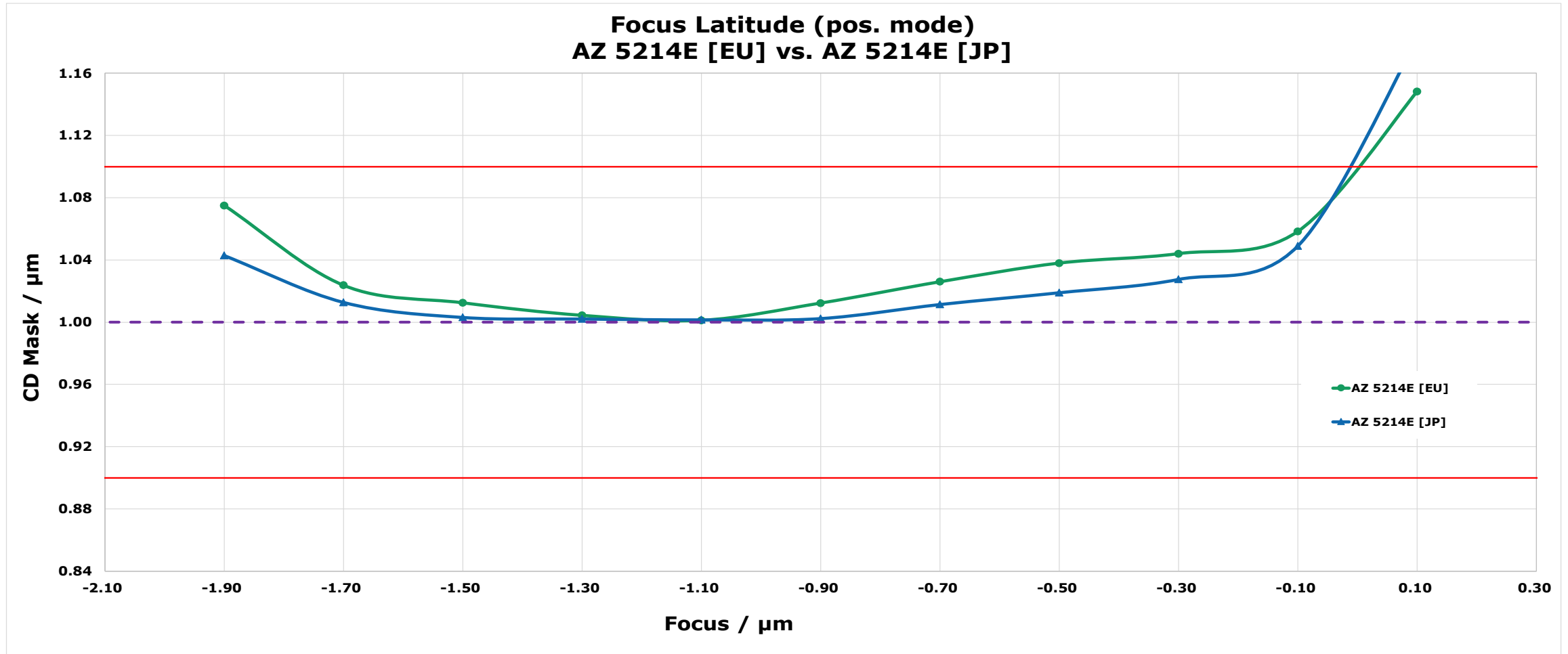


AZ 5214E
[JP]



Phase-out AZ5214E EU version

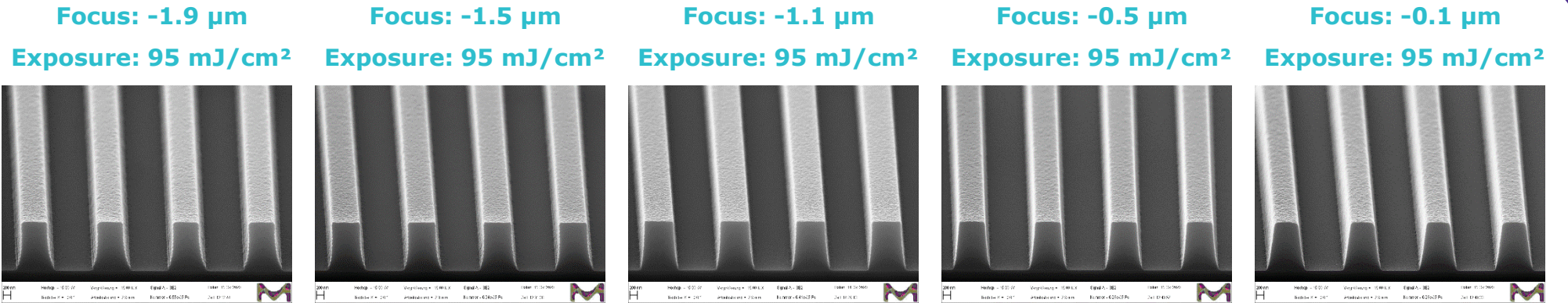
Focus Latitude



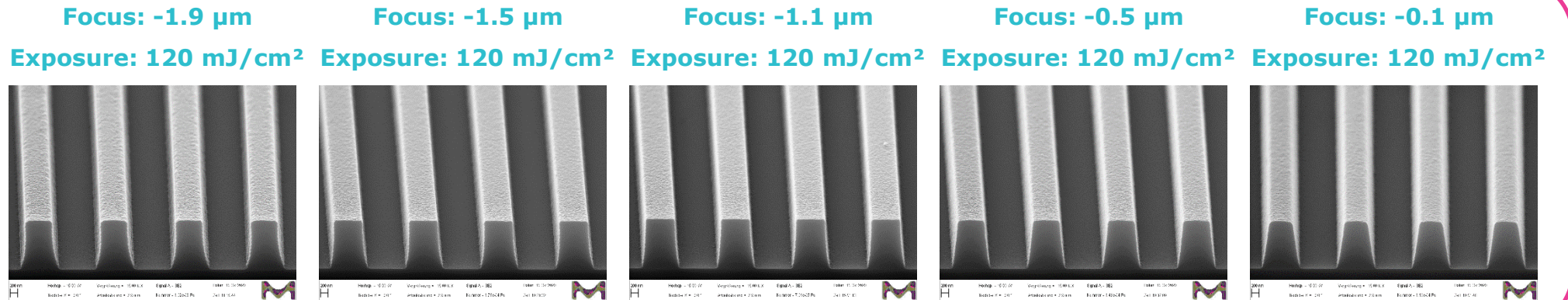
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Focus Latitude positive processing

AZ 5214E
[EU]



AZ 5214E
[JP]



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