



# phase-out AZ5214E EU version

Photoresist comparison NEGATIVE processing

February 4, 2021  
Wiesbaden



MERCK

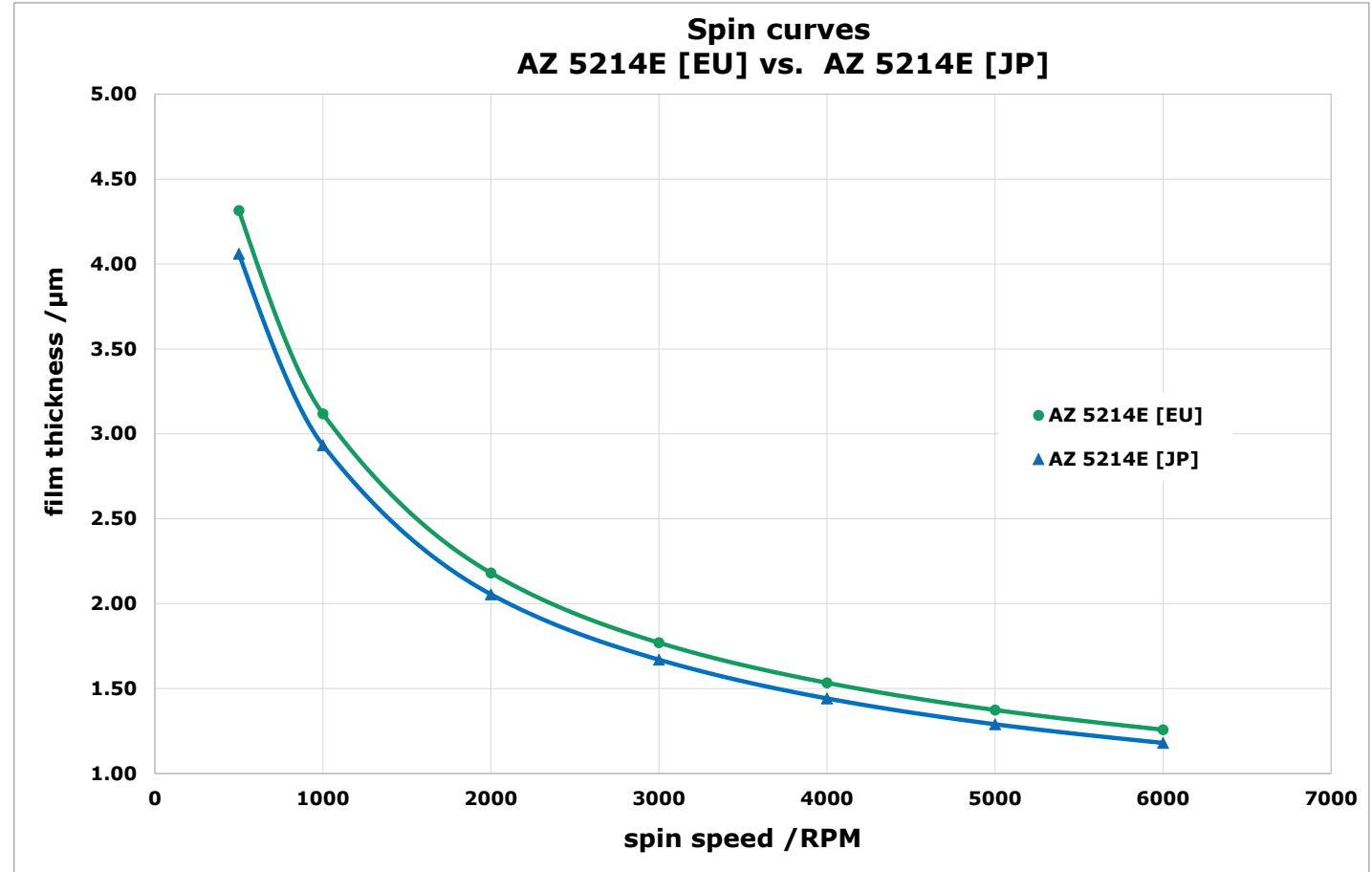
1. **Spin curve comparison**
2. **Process parameters**
3. **Exposure Latitude**
4. **Linearity**
5. **Focus Latitude**

# Phase-out AZ5214E EU version

## Spin Curve comparison

spin speed /RPM	film thickness / $\mu\text{m}$	
	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



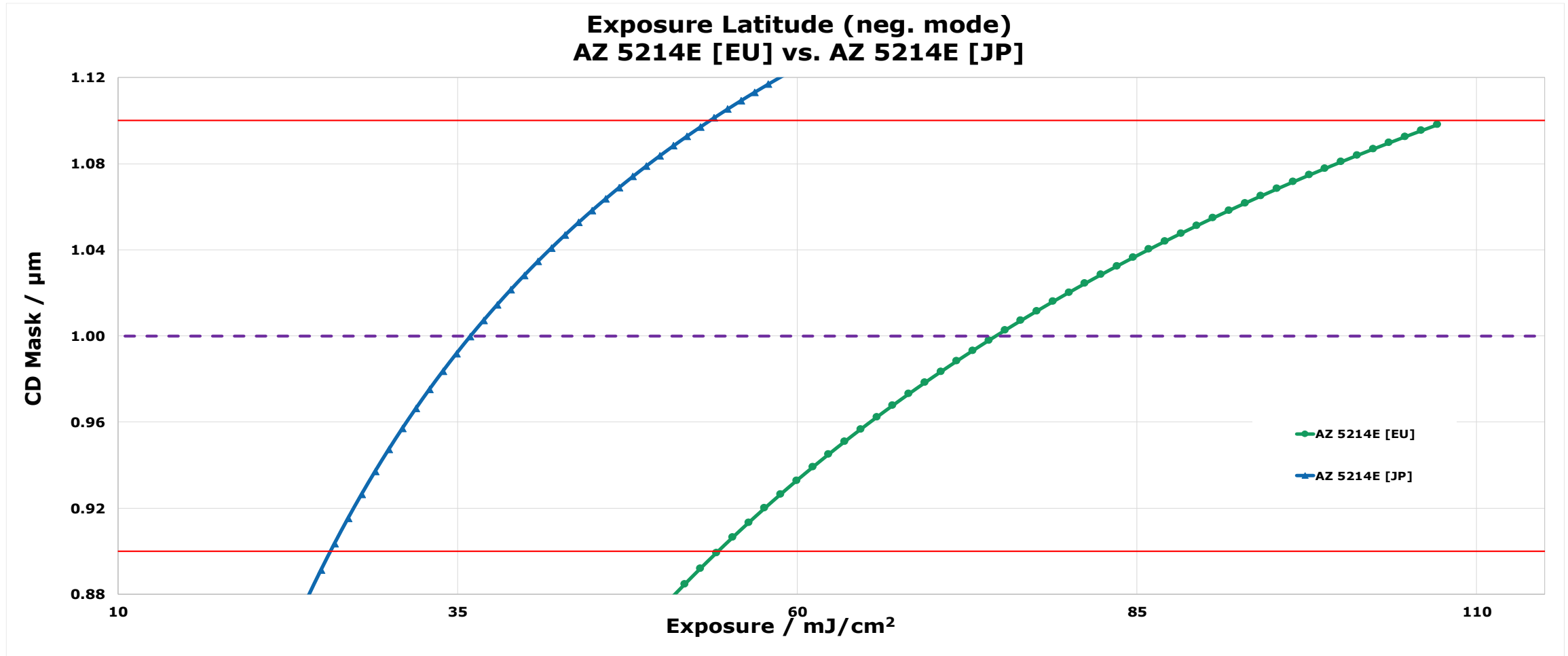
# Phase-out AZ5214E EU version

# Process Parameters negative processing

	AZ 5214E [EU]	AZ 5214E [JP]
<b>Substrate</b>	<b>6" bare silicon (HMDS prime)</b>	
<b>Photoresist name</b>	<b>AZ 5214E [EU]</b>	<b>AZ 5214E [JP]</b>
<b>Film thickness</b>	<b>1.422 μm</b>	
<b>RPM</b>	<b>4610</b>	<b>4182</b>
<b>Softbake</b>	<b>105°C / 60 s</b>	
<b>Exposure Tool</b>	<b>Nikon i-line Stepper</b>	
<b>Dose to print</b>	<b>74.64 mJ/cm<sup>2</sup></b>	<b>35.96 mJ/cm<sup>2</sup></b>
	<b>@ L / S: 1.00 μm</b>	
<b>Flood exposure</b>	<b>900 mJ/cm<sup>2</sup>, Hg lamp</b>	
<b>Post Exposure bake</b>	<b>120°C / 60 s</b>	
<b>Developer name</b>	<b>AZ 726 MIF</b>	
<b>Developing condition</b>	<b>1 x 60 s</b>	

# Phase-out AZ5214E EU version

## Exposure Latitude

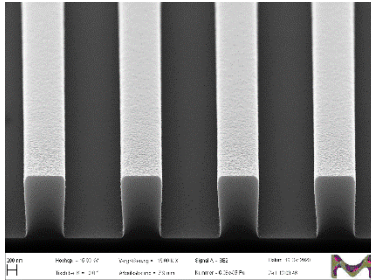


# Phase-out AZ5214E EU version

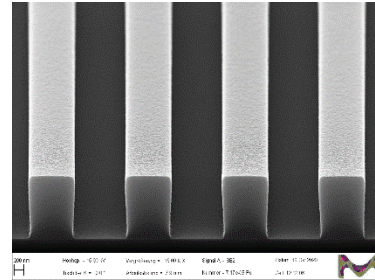
# Exposure Latitude negative processing

AZ 5214E  
[EU]

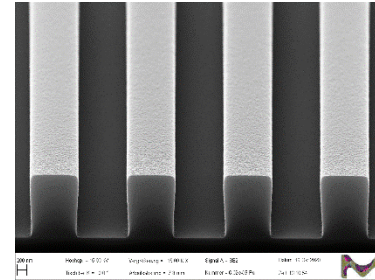
Exposure: 53 mJ/cm<sup>2</sup>  
CD: 1.00 μm



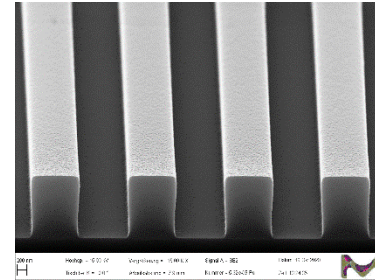
Exposure: 75 mJ/cm<sup>2</sup>  
CD: 1.00 μm



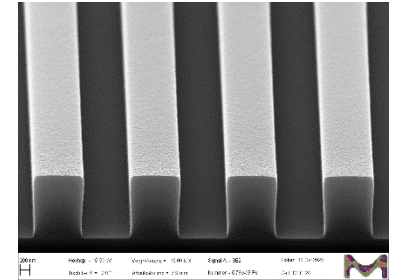
Exposure: 83 mJ/cm<sup>2</sup>  
CD: 1.00 μm



Exposure: 97 mJ/cm<sup>2</sup>  
CD: 1.00 μm

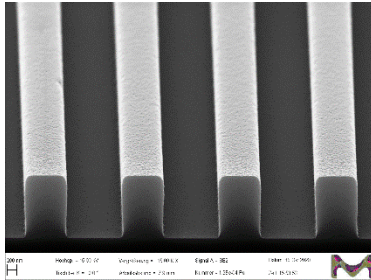


Exposure: 102 mJ/cm<sup>2</sup>  
CD: 1.00 μm

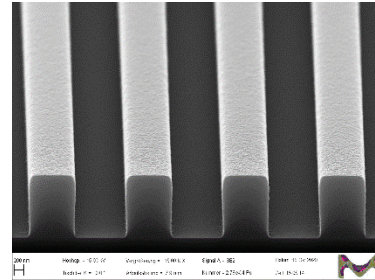


AZ 5214E  
[JP]

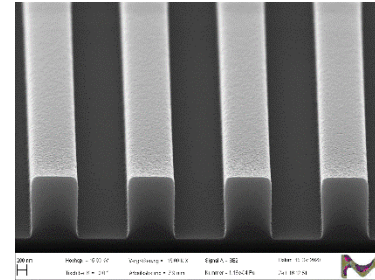
Exposure: 28 mJ/cm<sup>2</sup>  
CD: 1.00 μm



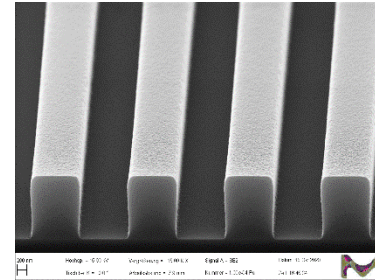
Exposure: 36 mJ/cm<sup>2</sup>  
CD: 1.00 μm



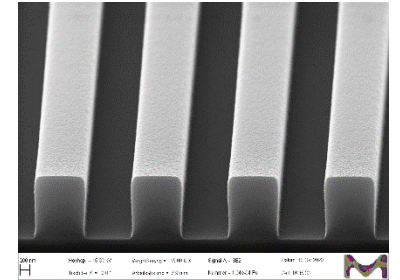
Exposure: 41 mJ/cm<sup>2</sup>  
CD: 1.00 μm



Exposure: 47 mJ/cm<sup>2</sup>  
CD: 1.00 μm

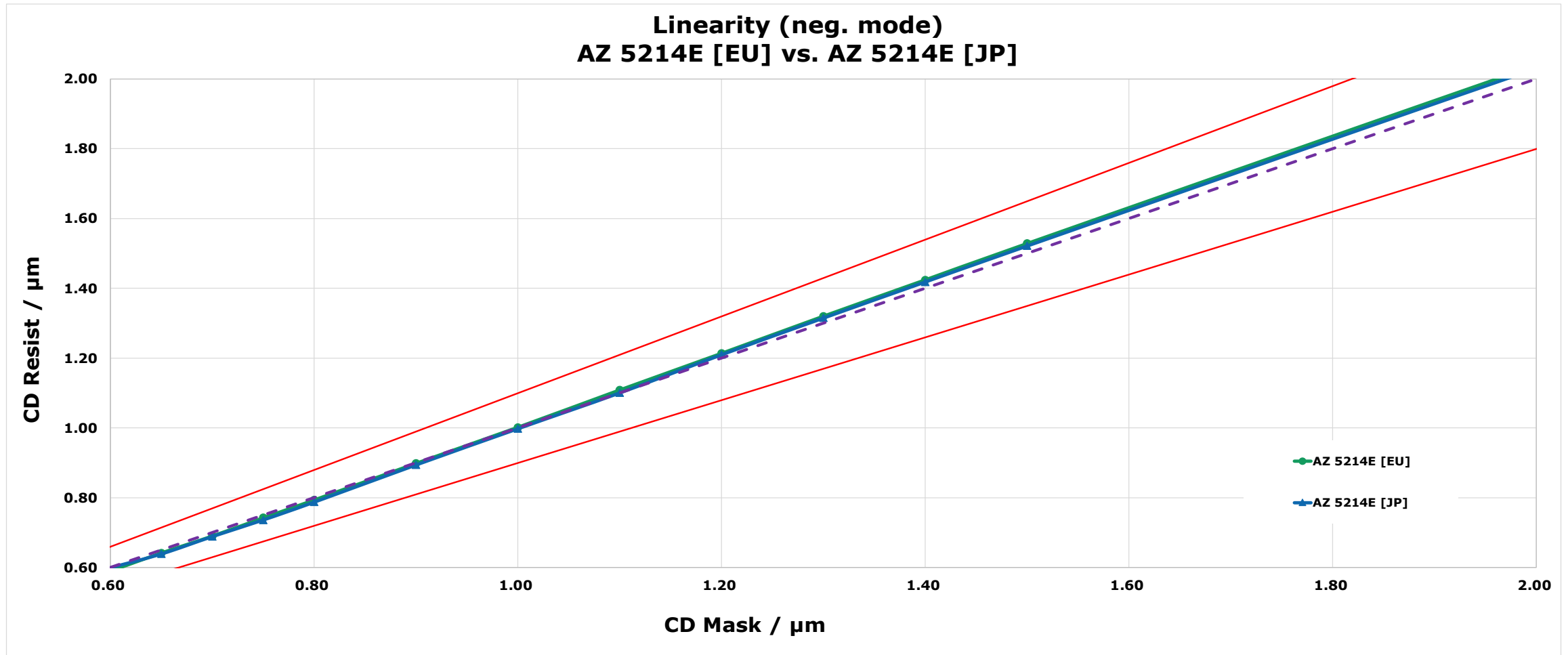


Exposure: 52 mJ/cm<sup>2</sup>  
CD: 1.00 μm



# Phase-out AZ5214E EU version

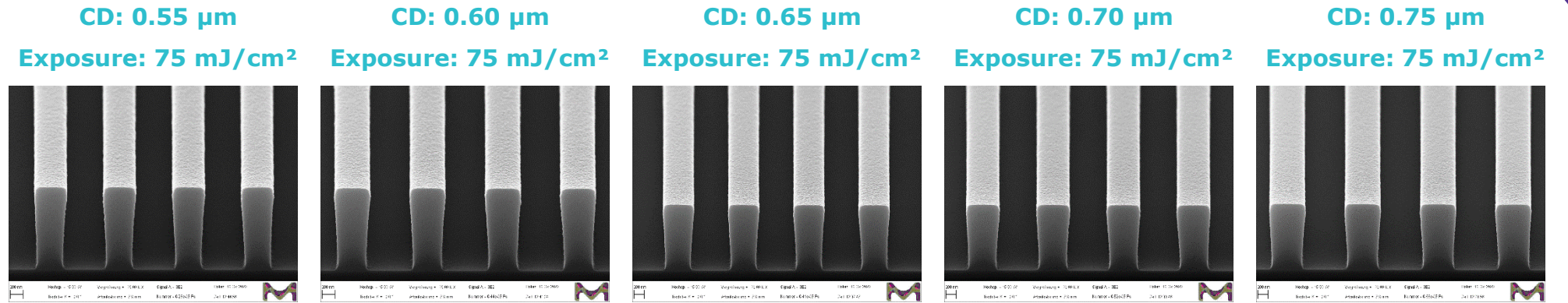
## Linearity



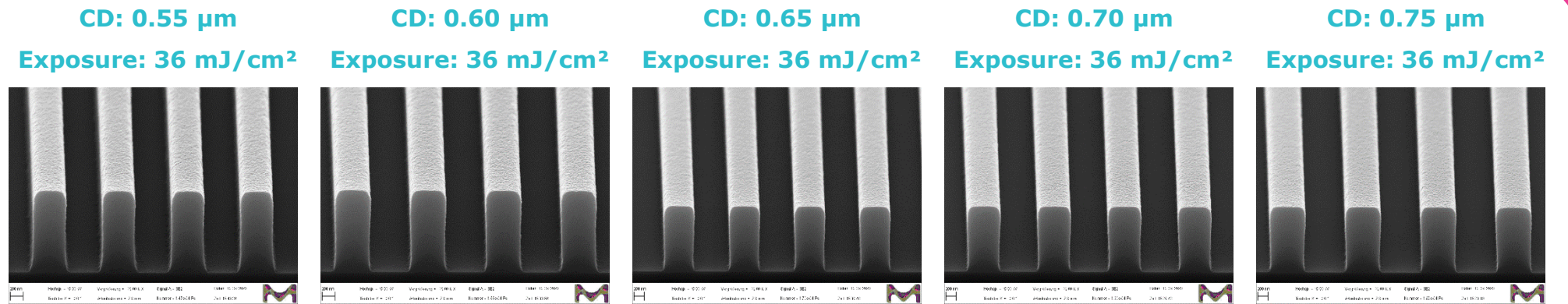
# Phase-out AZ5214E EU version

# Linearity negative processing

AZ 5214E  
[EU]



AZ 5214E  
[JP]

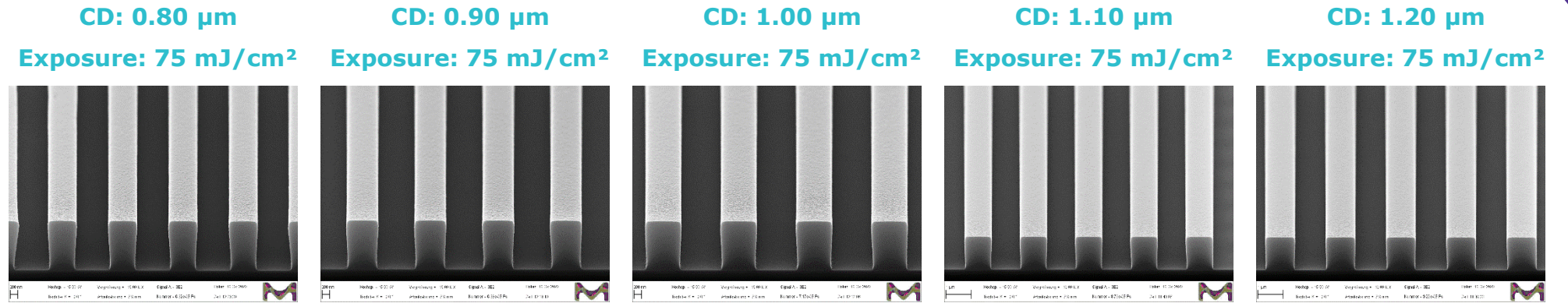




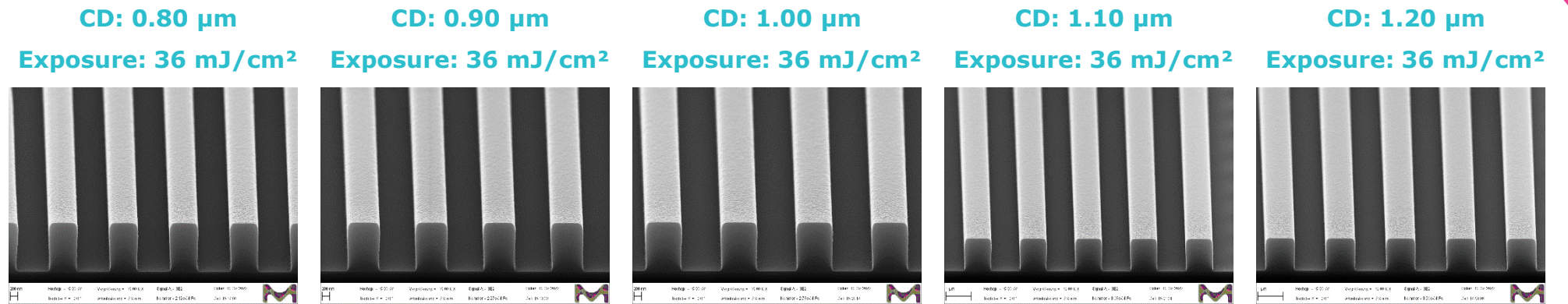
# Phase-out AZ5214E EU version

# Linearity negative processing

AZ 5214E  
[EU]



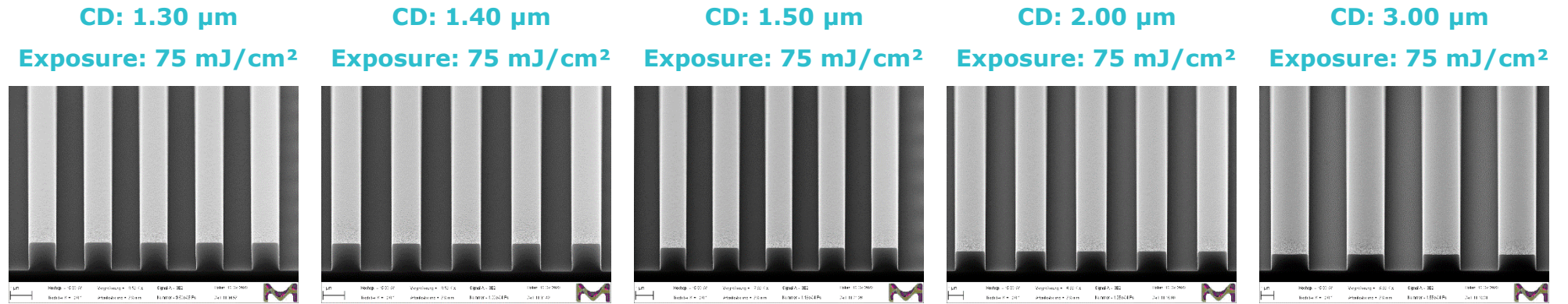
AZ 5214E  
[JP]



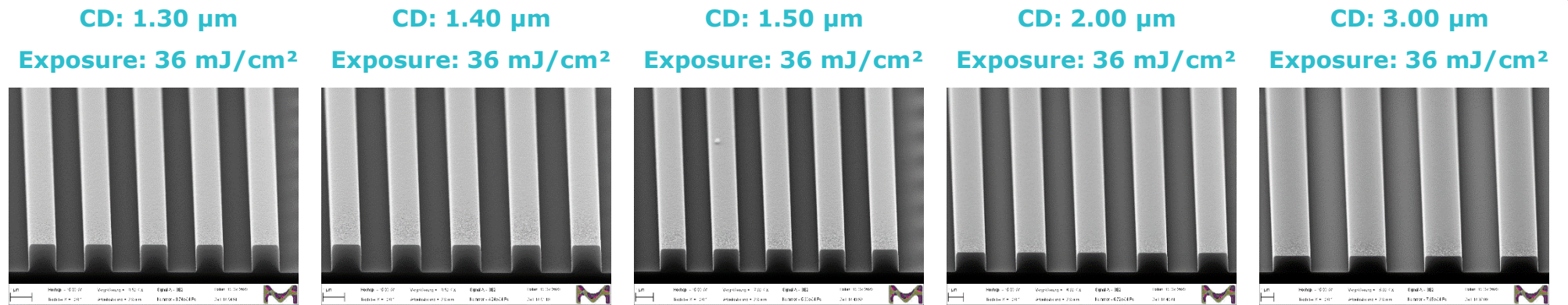
# Phase-out AZ5214E EU version

# Linearity negative processing

AZ 5214E  
[EU]

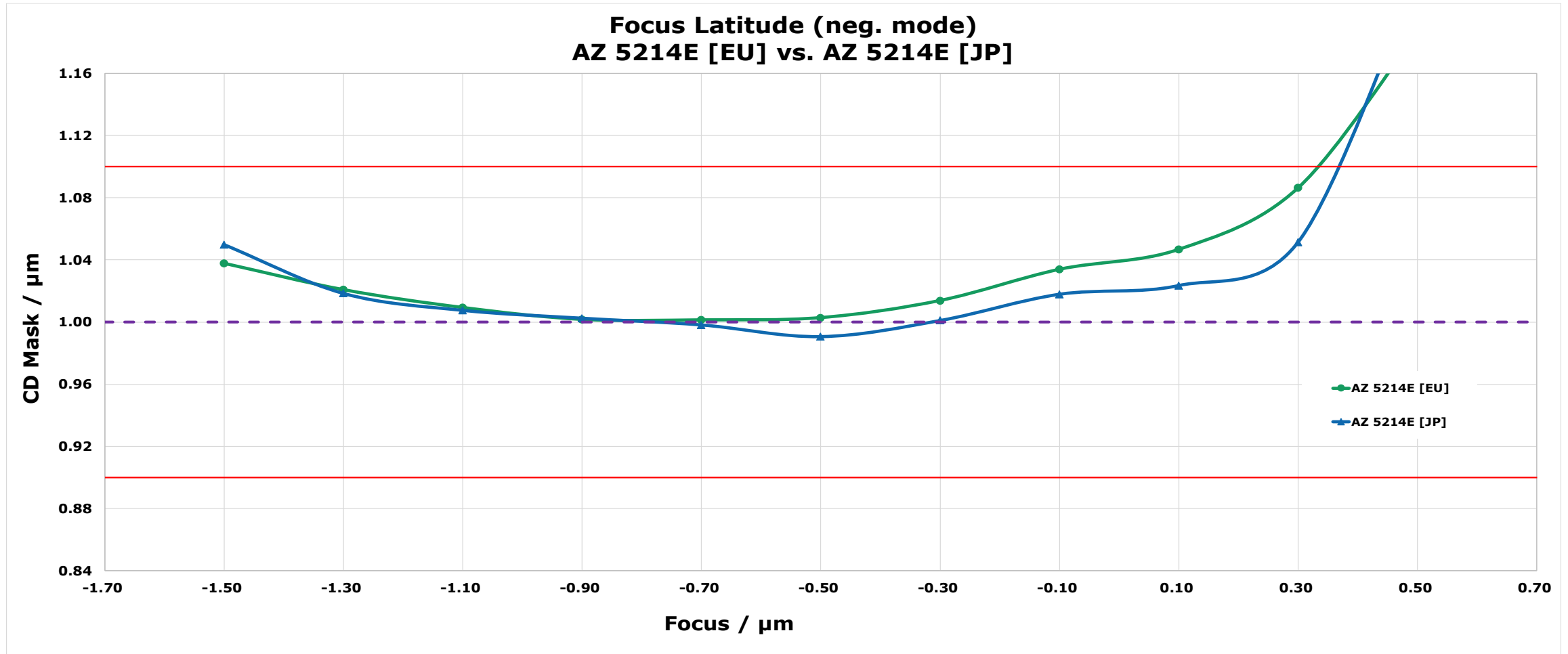


AZ 5214E  
[JP]



# Phase-out AZ5214E EU version

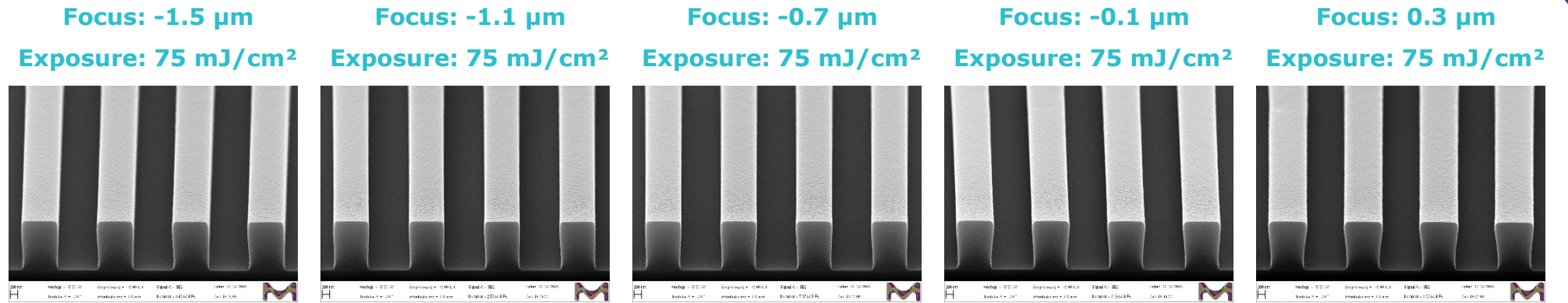
## Focus Latitude



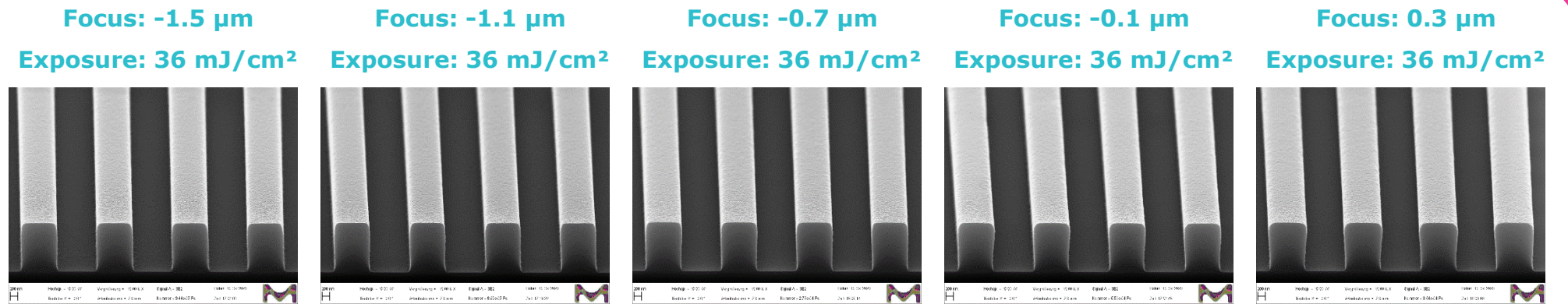
# Phase-out AZ5214E EU version

# Focus Latitude negative processing

AZ 5214E  
[EU]



AZ 5214E  
[JP]



# Disclaimer

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