

TECHNICAL DATA

KRF SERIES

KRF M230Y



**DUV Resist for
DRAM Applications**

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Technical Data

KRF M230Y

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130nm Lines & Spaces:

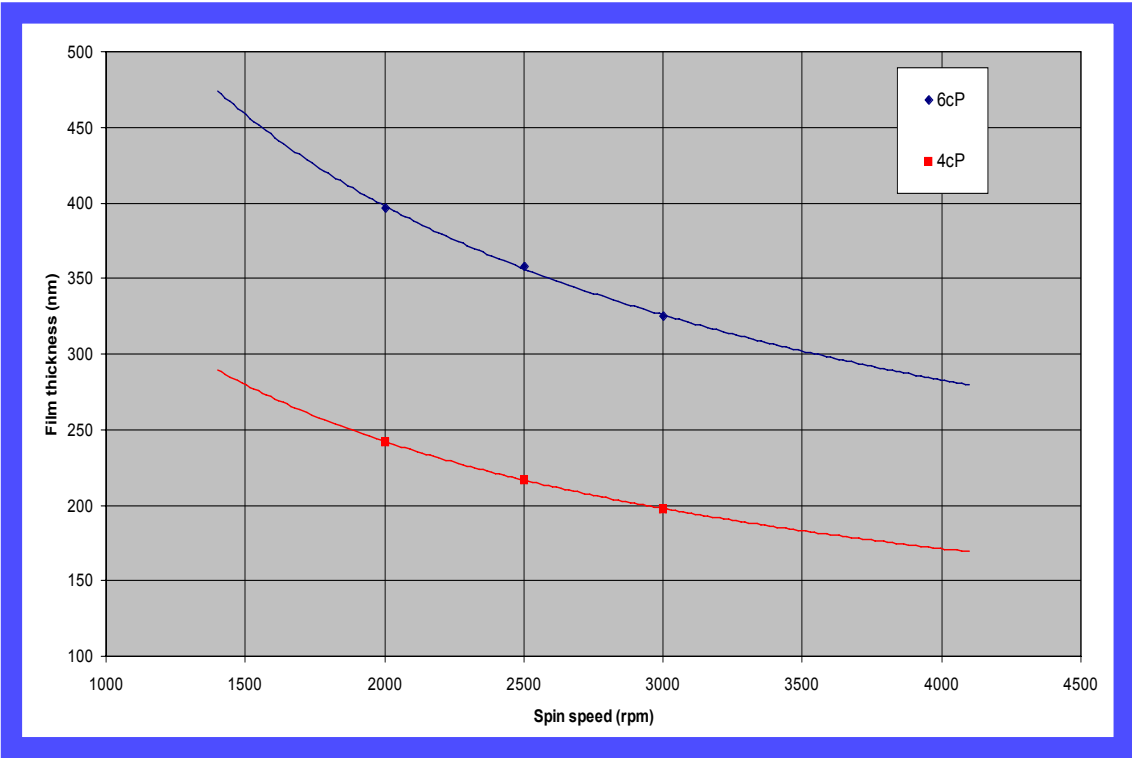
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Process Parameters

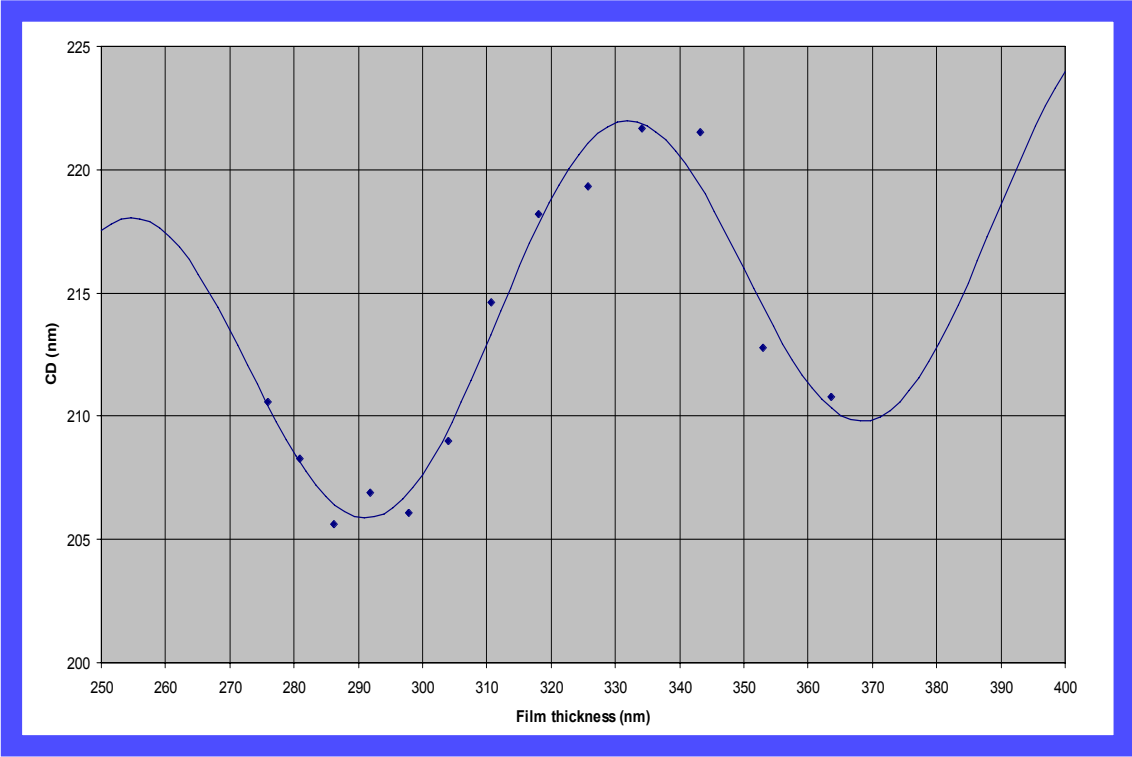
Substrate:	Silicon
BARC:	60nm DUV42P
BARC Bake:	175°C, 60s
Resist Thickness:	330 nm
Soft Bake:	130°C, 90s
Exposure:	ASML/750 NA = 0.70, $\sigma = 0.80/0.50$ AttPSM (6%HT)
Features:	1:1 Dense L/S 1:1.5 Semi-Dense L/S
Post Exposure Bake:	130°C, 90s
Development:	TMAH 2,38wt% 60s Single Puddle



M230Y Spin Speed Curve



M230Y CD Swing Curve





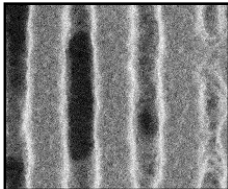
M230Y Exposure Latitude

110nm Lines & Spaces

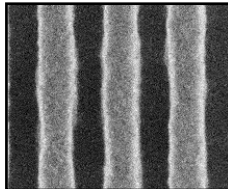
Defocus: 0.0μm

1:1 Dense Lines & Spaces:

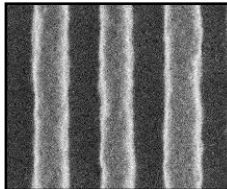
32.0mJ



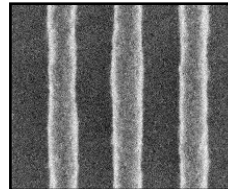
33.0mJ



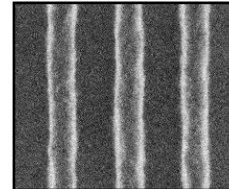
34.0mJ



35.0mJ

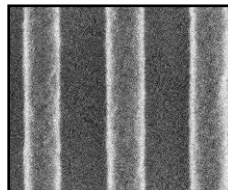


36.0mJ

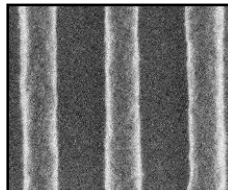


1:1.5 Semi-Dense Lines & Spaces:

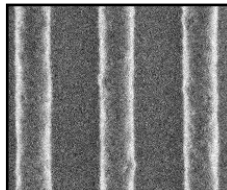
21.0mJ



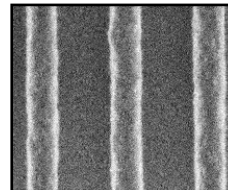
22.0mJ



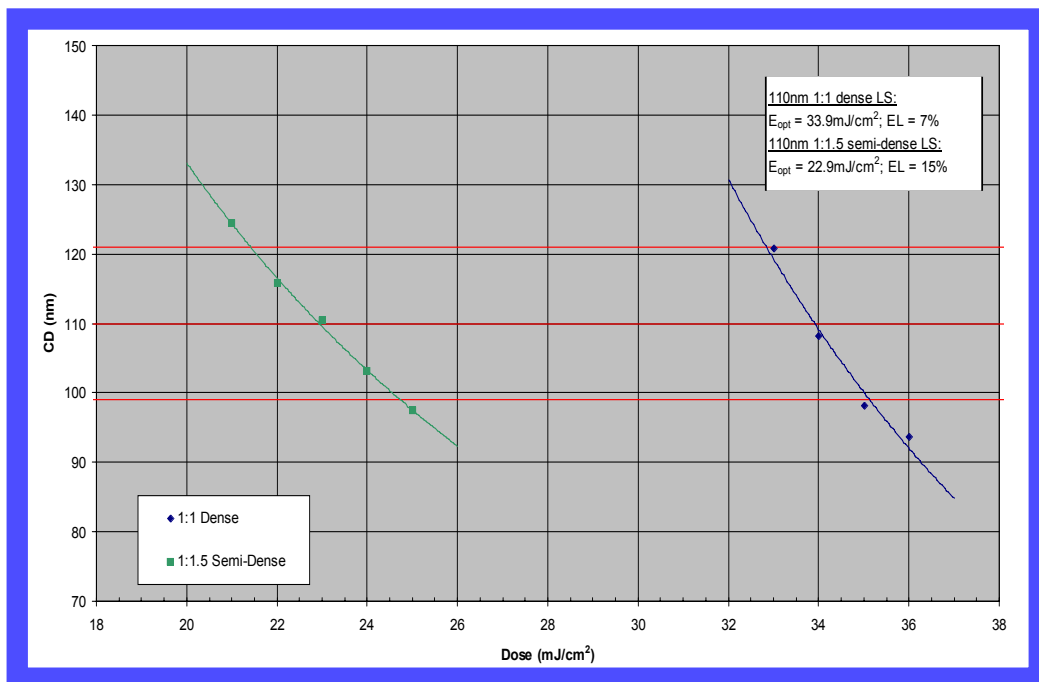
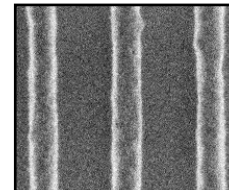
23.0mJ



24.0mJ

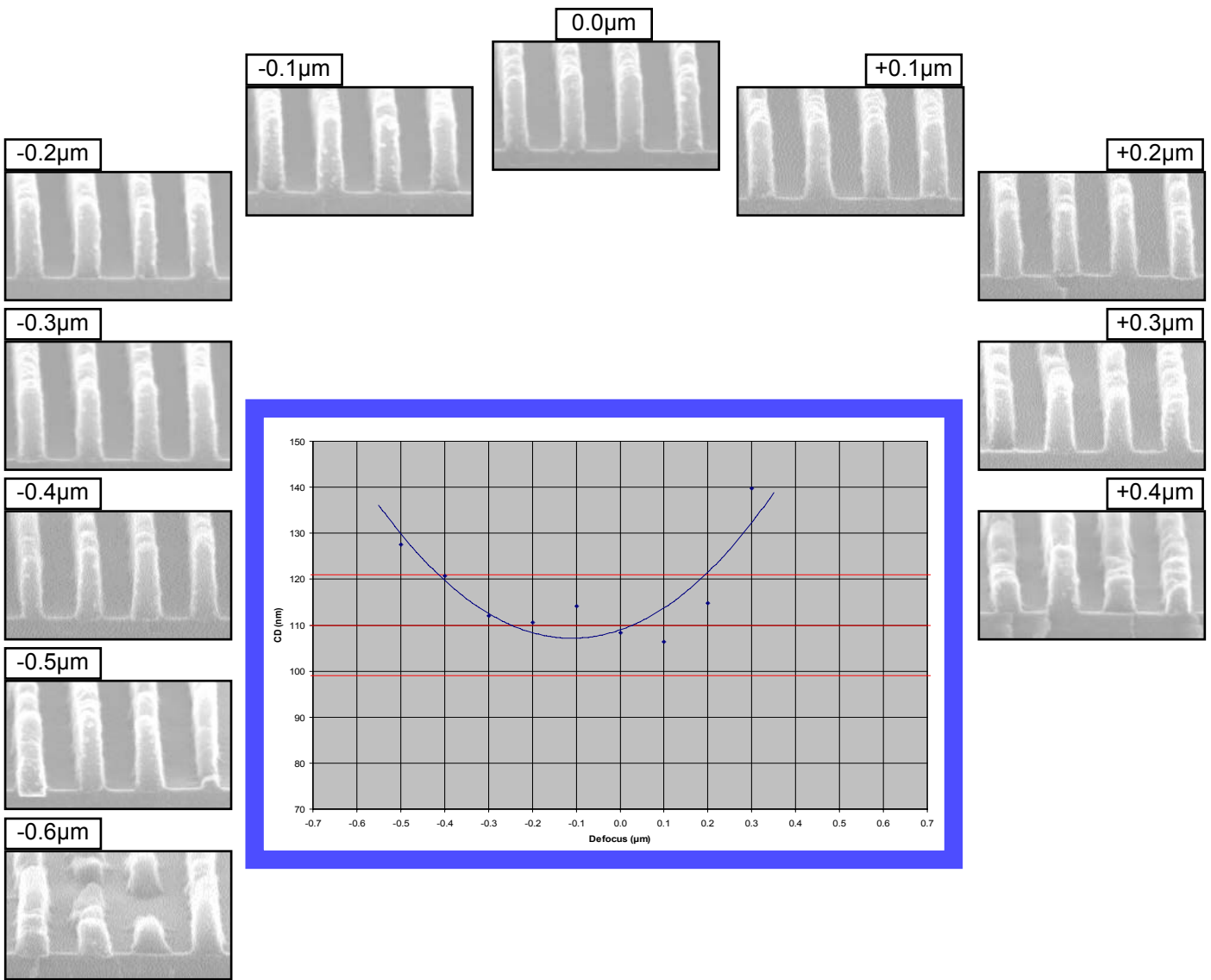


25.0mJ





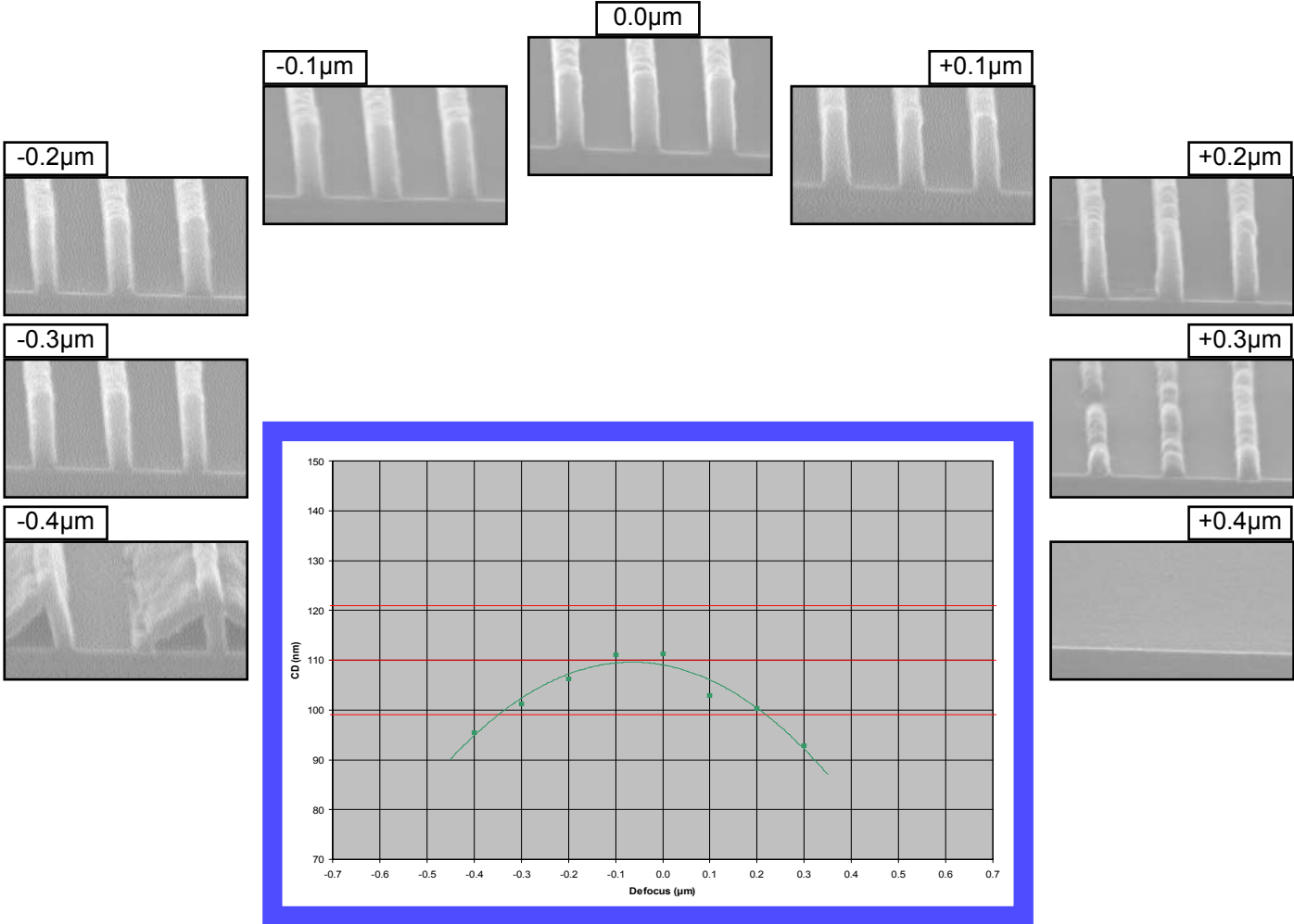
M230Y Focus Latitude
110nm 1:1 Dense Lines & Spaces
Energy: 34.0mJ/cm²



CD SEM DOF = 0.60µm
Profile DOF = 0.60µm



M230Y Focus Latitude
110nm 1:1.5 Semi-Dense Lines & Spaces
Energy: 23.0mJ/cm²



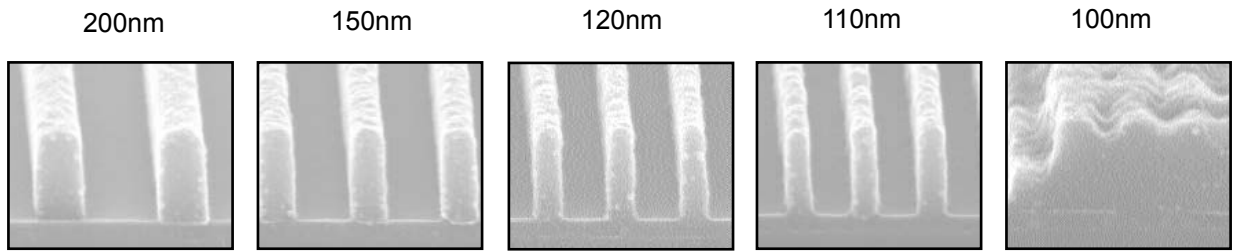
CD SEM DOF = 0.50µm
Profile DOF = 0.40µm



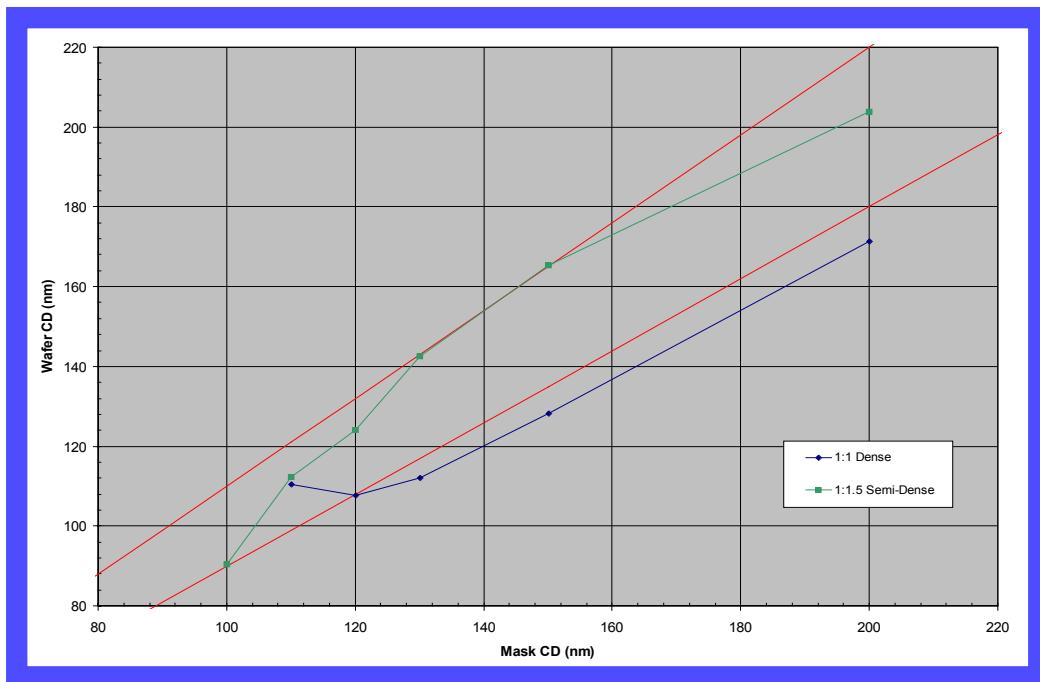
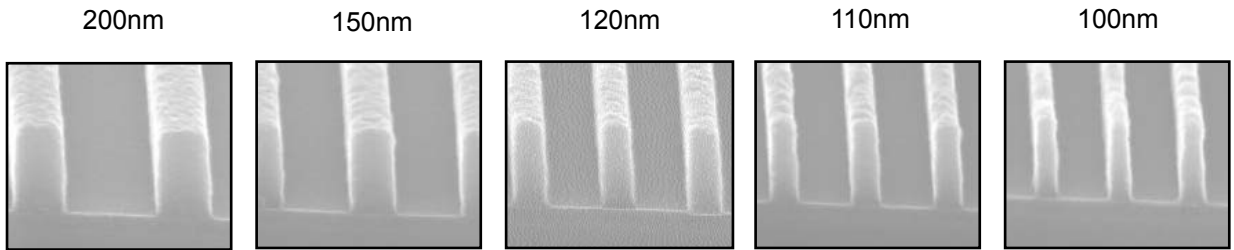
M230Y Resolution and Linearity

Lines & Spaces
Defocus: 0.0 μ m

1:1 Dense Lines & Spaces (at 34.0mJ/cm²):



1:1.5 Semi-Dense Lines & Spaces (at 23.0mJ/cm²):





M230Y Exposure Latitude

130nm Lines & Spaces

Defocus: 0.0 μ m

1:1 Dense Lines & Spaces:

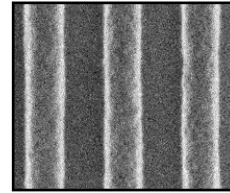
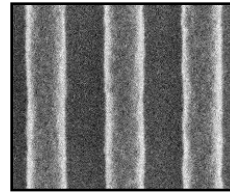
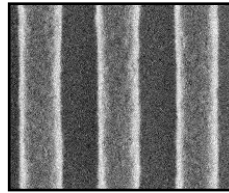
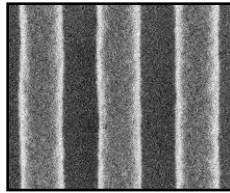
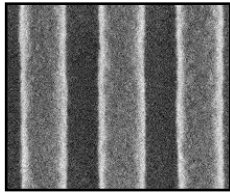
28.0mJ

29.0mJ

30.0mJ

31.0mJ

32.0mJ



1:1.5 Semi-Dense Lines & Spaces:

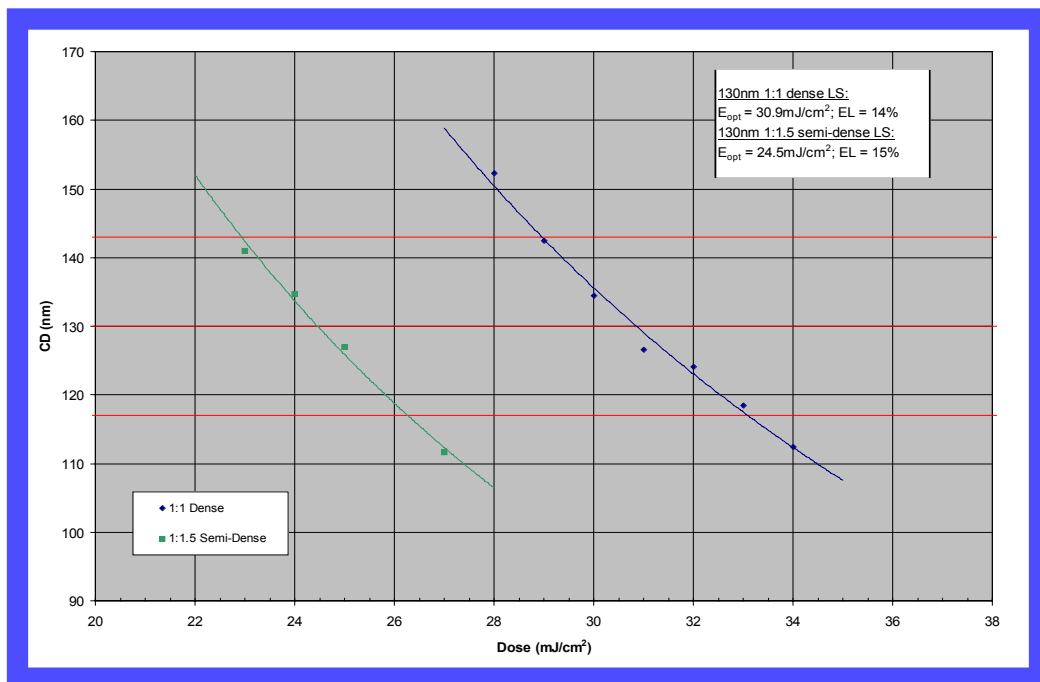
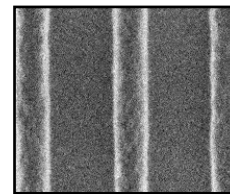
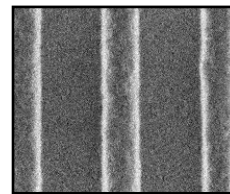
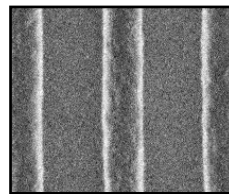
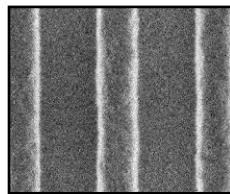
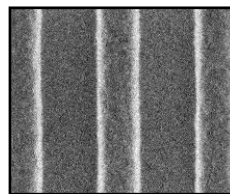
23.0mJ

24.0mJ

25.0mJ

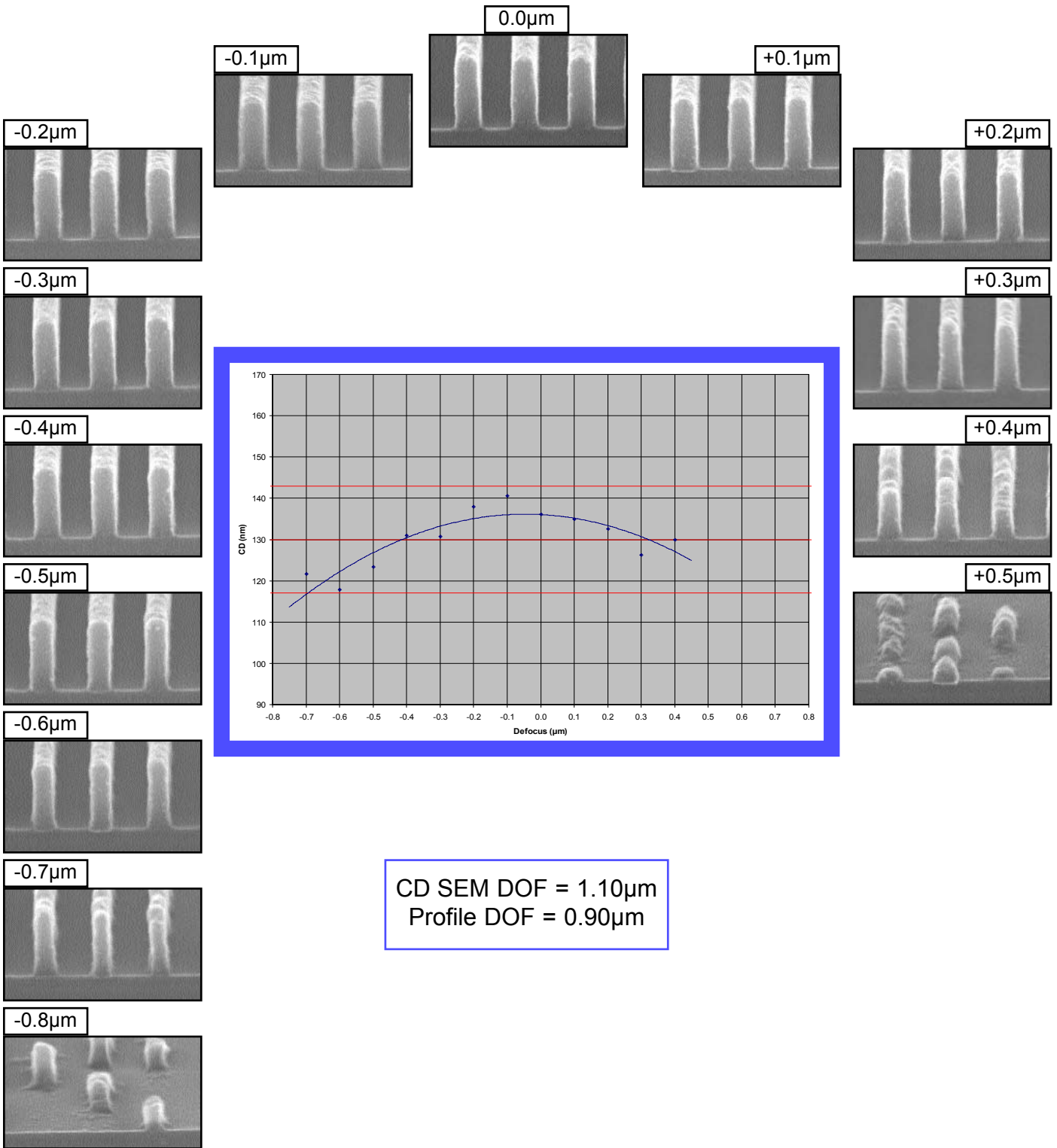
26.0mJ

27.0mJ





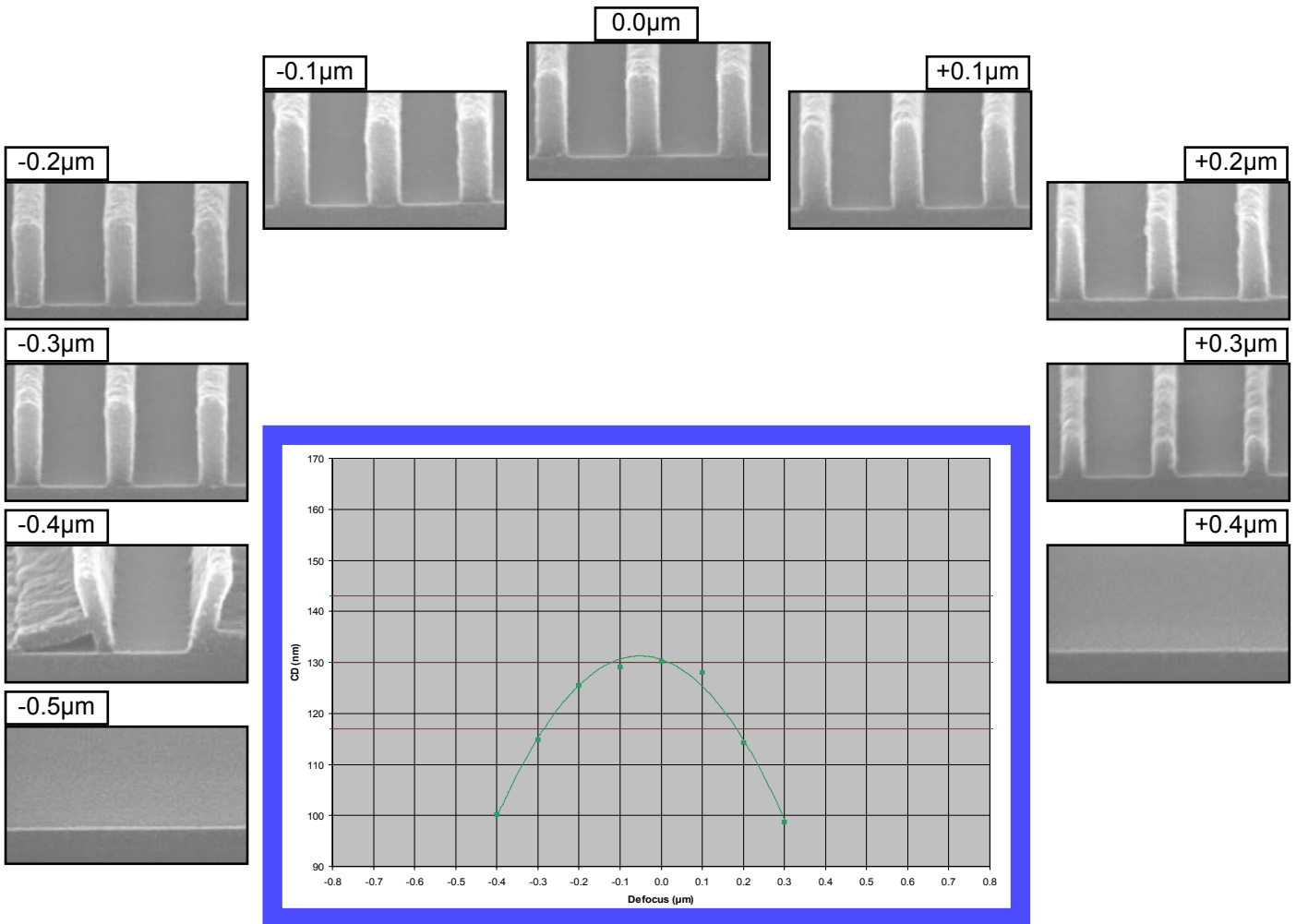
M230Y Focus Latitude
130nm 1:1 Dense Lines & Spaces
Energy: 30.0mJ/cm²



CD SEM DOF = 1.10µm
Profile DOF = 0.90µm



M230Y Focus Latitude
130nm 1:1.5 Semi-Dense Lines & Spaces
Energy: 25.0mJ/cm²



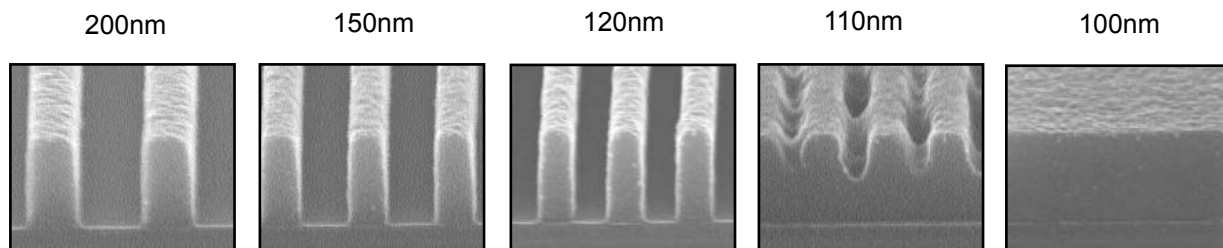
CD SEM DOF = μm
Profile DOF = $0.50\mu\text{m}$



M230Y Resolution and Linearity

Lines & Spaces
Defocus: 0.00 μ m

1:1 Dense Lines & Spaces (at 30.0mJ/cm²):



1:1.5 Semi-Dense Lines & Spaces (at 25.0mJ/cm²):

