



PAS 5500/850C

DUV Step-and-Scan

Description

The PAS 5500/850C 248-nm Step-and-Scan system enables 110-nm mass production. Since the initial introduction of the PAS 5500/850, the PAS 5500/850 series have become the worldwide standard for both 110-nm logic and 110-nm memory applications.

The PAS 5500/850C can be configured with a number of options that enable ultra low- k_1 in manufacturing, extending application of the PAS 5500/850C well below 110 nm.

Technical Specifications

Lens	
Wavelength:	248 nm
NA:	0.55–0.80 (variable)
Resolution:	≤ 110 nm
Field size, for reticle with pellicle	
• Max X:	26.0 mm
• Max Y:	33.0 mm
CD Uniformity @ 0.11- μ m L/SCD Uniformity @ 0.11- μ m isolated lines	
• BF:	≤ 8 nm
• Over 0.4- μ m defocus:	≤ 10 nm
CD Uniformity @ 0.11- μ m isolated lines	
• BF:	≤ 8 nm
• Over 0.3- μ m defocus:	≤ 14 nm
Distortion (Dynamic):	≤ 13 nm
Overlay	
Single-machine:	≤ 15 nm
Matched-machine:	≤ 25 nm
Production Throughput	
50-mJ/cm ² exposure dose	
• 200-mm wafers, 46 shots:	≥ 135 wph
AERIAL Illumination	
Conventional Annular	
• Intensity:	≥ 3300 mW/cm ² (@ NA Max)
• σ max:	0.88
• σ min:	0.31
Annular	
• Intensity:	≥ 3300 mW/cm ² (@ NA Max)
• σ out:	0.40–0.88
• σ in:	0.16–0.64
• Integrated slit uniformity:	≤ 0.7%
Lasers	
Type:	Cymer ELS6610
Power:	20 W
Beam Delivery:	≤ 20-m remote capability

Key Features and Benefits

Variable 0.8-NA Deep UV Projection Lens

Production resolution down to 110 nm.

AERIAL II Illuminator

Provides the ultimate flexibility in illumination modes at maximum throughput.

PAS 5500 Step-and-Scan Body

Commonality with i-line and 193-nm Step-and-Scan tools for economic mix-and-match.

ATHENA Advanced Alignment Combined With Reticle Blue Align

Increased alignment accuracy for a wide variety of processes. Ultra stable over time.

Includes 20-W KrF Laser Technology with Variable Laser Frequency Control

Combines high laser power for high throughput with efficient use of laser pulses for the lowest possible laser cost of operation.

Batch Streaming with ARMS

Provides continuous-flow manufacturing.

