TWINSCAN XT:1060K

248-nm Step and Scan

Description

The TWINSCAN XT:1060K 248-nm Step-and-Scan system is a dual-stage KrF lithography tool with the highest NA and productivity in the industry, designed for 300-mm wafer production.

Combining the imaging power of the variable 0.93-NA Carl Zeiss Starlith 4X reduction lens with AERIAL-E illuminator technology, the XT:1060K extends volume-proven KrF technology to ≤ 80-nm resolution. Extending critical KrF technology reduces customer's cost per layer while benefiting from mature KrF processing.

Highly line-narrowed 40-W KrF lasers with variable frequency control, in combination with the high optical transmission of the optical system, provide a production throughput of 205 300-mm wph with the lowest possible cost of operation.

The XT:1060K is ideal for metal, via and implant layers at the 2X-nm technology node and beyond, both memory and logic applications. In addition, imaging matching to other TWINSCAN KrF systems and excellent overlay matching to TWINSCAN ArF and KrF systems is provided enabling seamless integration in a high volume manufacturing environment.

Technical Specifications

Lens	
Wavelength:	248 nm
NA:	0.50–0.93
Resolution:	≤ 80 nm
Field size, for reticle with pellicle	
• Max X:	26.0 mm
• Max Y:	33.0 mm
Aberrations RMS z5—z37:	≤ 2.1 nm
Overlay	
Dedicated chuck:	≤ 3.5 nm
Matched-machine:	≤ 5.0 nm
Production Throughput	
50-mJ/cm ^{2} exposure dose	
26 x 33-mm field size	
• 300-mm wafers, 96 shots:	≥ 205 wph

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Key Features and Benefits

Variable 0.93-NA 248-nm Projection Lens

In-line catadioptric lens design with advanced lens manipulators, supporting full 26 x 33-mm field, 4X reduction and reticle compatibility with existing refractive designs.

AERIAL-E Illuminator

Enables continuous-variable conventional and off-axis illumination with an extended zoom maintaining high throughput.

Superior Overlay

The XT:1060K is equipped with the latest overlay improvements resulting in dedicated chuck overlay of ≤ 3.5 nm (full wafer) and matched machine overlay of ≤ 5 nm (full wafer).

LithoGuide ILIAS

Very accurate system set-up and sophisticated monitoring of imaging parameters.

High-Speed Dual-Stage Technology

Industry leading throughput for high volume manufacturing enabling highest number of good wafers per day.

40-W KrF Laser Technology With Frequency Control

The perfect combination of high laser power for high throughput and efficient use of laser pulses for the lowest possible laser cost of operation.

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