

Local Flare Effects and Correction in ArF Lithography

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We developed a method of correcting line width variations due to mid-range flare (which we call local flare) originating from the exposure tool. Local flare effects can be calculated using a model with a double Gaussian point spread function. Line width uniformity was improved by mask pattern correction based on our local flare effects modeling. In addition, a hybrid system that can use two optimal correction parameters with or without a double-exposure region was applied to gate layer lithography.