



Combining Point and Line Samples for Direct Illumination: Supplemental

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1. Additional results

Here we include expanded and alternate versions of some of the figures from the main paper.

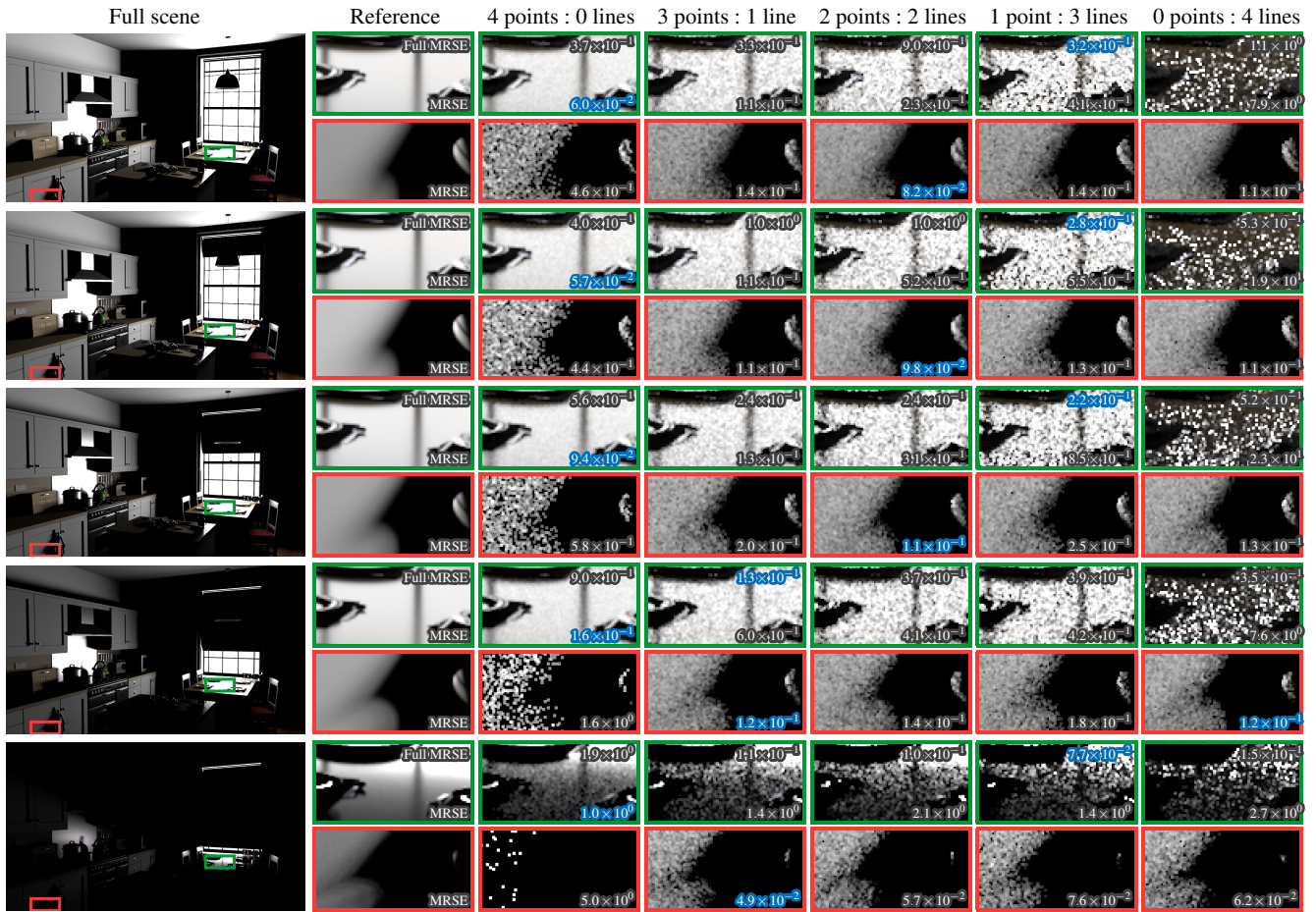


Figure 1: An expanded version of Figure 9 from the main paper, but with additional rows. At equal time (150s), we compare the effect of MISing between BSDF point samples and vertical solid-angle line samples at different ratios. We use four light samples per surface intersection and divvy the samples according to the ratio above each column. Best MRSE for each row is highlighted in blue. The BSDF strategy clearly dominates on the shiny table near the light source, but struggles in the penumbra region behind the towel. At equal time, MIS (specifically, the split 1 point : 3 lines) consistently achieves the best MRSE across the full image.

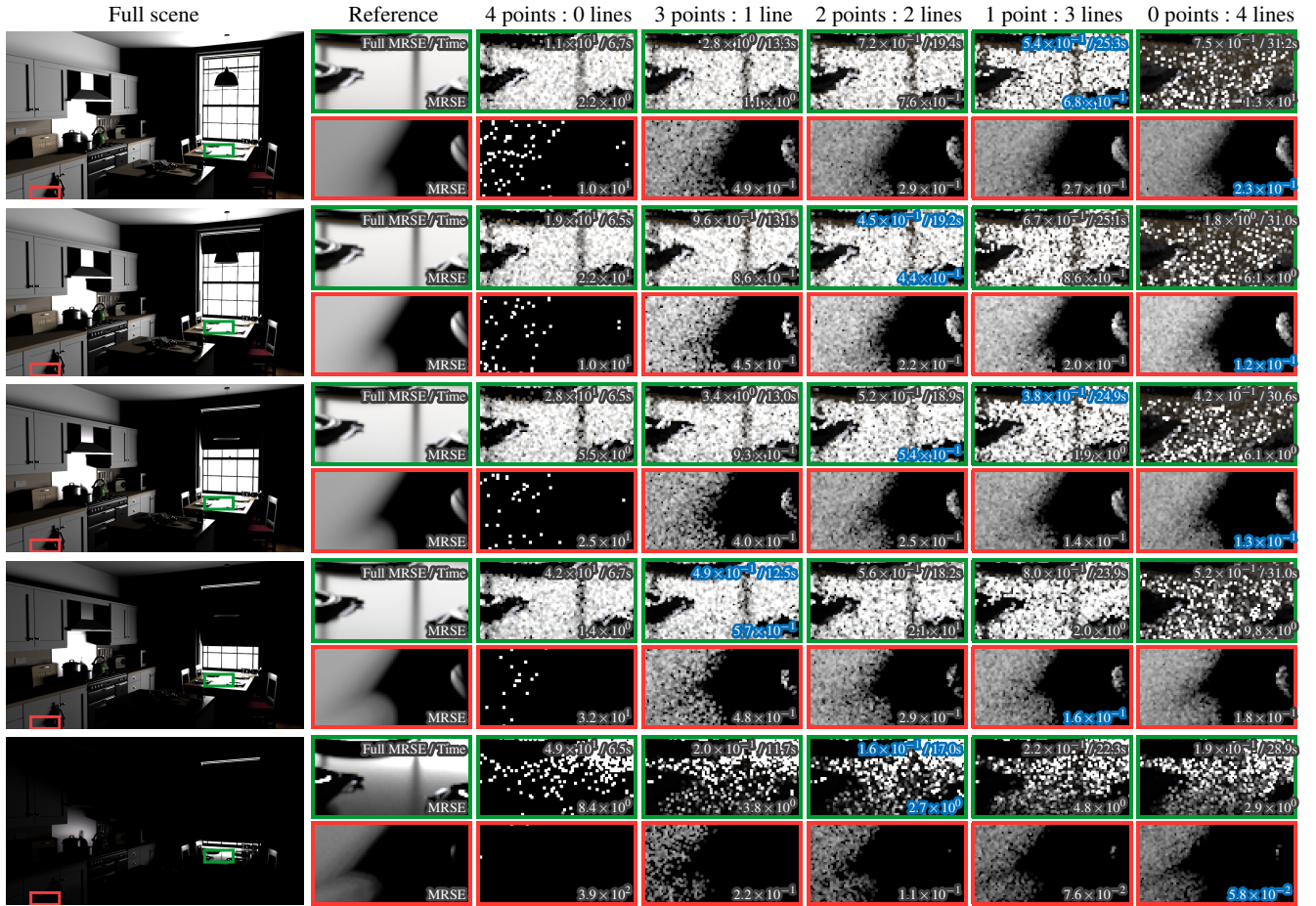


Figure 2: An alternate version of supplemental Fig. 1, where instead of equal time we use an equal sample count of one surface intersection per pixel and four light samples per intersection, using a random sampler. Render times are shown in addition to MRSE, and best MRSE for each row is highlighted in blue. Here, the line strategy clearly dominates in the penumbra region around the towel, while MIS between the two strategies is generally more effective in the shiny table region and over the whole image.

Table 1: We compare total cost (in seconds) to evaluate visibility for solid-angle points and lines in each scene from the main paper for a one-sample-per-pixel render. Lines consistently take more time to evaluate visibility than points, though the magnitude of the difference depends heavily on the complexity of the scene.

	Diffuse Monolith (Fig. 3/7)	Glossy Monolith (Fig. 1)	Glossy Monoliths (Fig. 6)	Cornell Box (Fig. 8)	Outer Product (Fig. 10)	Kitchen (Fig. 9)	Bathroom (Fig. 11)
Points / Lines (Ratio)	0.251 / 0.387 (1.5×)	0.246 / 0.426 (1.7×)	0.178 / 0.459 (2.6×)	0.265 / 0.317 (1.2×)	0.738 / 0.894 (1.2×)	1.324 / 34.566 (26×)	1.290 / 71.288 (55×)