

1000 spheres, 2 lights, 9 jittered, chance of hit 0.05, reflective 0.1 primary rays $p = 600 \times 400 \times 9$

Actually it doesn't matter how many spheres there are only the chances of hitting one.

p = 2,160,000

secondary: $s0 = 2 \times p \times 0.05 = 216,000$ $r0 = p \times 0.05 \times 0.1 = 10,800$ first bounce $s1 = 2 \times r0 \times 0.05$ = 108 $r1 = r0 \times 0.05 \times 0.1$ = 54

second bounce $s2 = 2 \times r1 \times 0.05 = 5.4$

total = p + s0 + r0 + s1 + r1 + s2=2,160,000 + 216,000 + 10,800 + 108 + 54 + 5.4 = 2,386,970

