SUPERPOSITION BENCHMARK: INNOVATIVE SSRTGI LIGHTING IN REAL TIME

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Superposition Benchmark is a next-generation GPU benchmark that continues the line of UNIGINE benchmarks, famous for outstanding and innovative 3D graphics. The UNIGINE team developed a brand-new lighting effect that makes an interactive real-time–rendered environment look photorealistic: screen-space ray tracing global illumination (SSRTGI), a technology that brings rendered ray tracing closer to real physics. Ordinary screen-space effects, such as SSAO and SSGI, do not treat objects as obstacles for light rays, so they are not able to provide realistic lighting simulation. They produce only a rough imitation, while SSRTGI provides real 180-degree ray tracing for each pixel in the scene with a fixed number of steps per ray to define occlusions. This ray-tracing technique provides ambient occlusion with more realistic shadows between the objects. The use of bent normals helps to reduce the noise and smooth borders of shadows, while global illumination recreates light reflections from surfaces. Working together, these effects provide incredibly realistic lighting and shadow-play simulation for real-time interactive rendering.

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