

by Gary M. Davis				
Autodesk 3ds Max Rendering Engines	SCANLINE	QUICKSILVER	MENTAL RAY	IRAY
Developer	Autodesk	Autodesk	NVIDIA	NVIDIA
Target use(r)	General purpose	Fast turnaround, non photoreal	General purpose	Photorealism
CPU Rednering	Y	Y	Y	Y
GPU Acceleration	N	DirectX 9.0 (Shader Model 3.0) or higher	N	NVIDIA Cuda (ram fit)
Standard Shader Support	Y	Y	Y	N
A+D / ADSK Matlib support	N	Y except Self-Illum and Round Corners	Y	Y
Suggested shaders Methods	Standard, Raytraced, Blend, Composite scanline and raytracing	Standard, Arch+Design, ADSK Matlib, progressive	[ANY], Arch+Design, ADSK Matlib, Carpaint, Mental Ray Bucketed Rasterizer and raytracing	Arch+Design, ADSK Matlib progressive
Indirect Illumination	Light Tracer, Radiosity	Optional	Final Gather, Global Illumination, or both	Always enabled, adjustable bounce limits
Exposure Control	Optional	Optional	Optional	Requires mr Photographic Exposure Control
Photometric Support	Y	N	Y	Y
Photometric Daylight	N	N	Y	Y
Skylight	Y	Y	Y	Y
Area Lights/Shadows	Y	Y	Y	Y
Render to Texture	Y	N	Y	N
Render Elements	Y	Limited	Y	N
In Camera DOF	Only multi-pass	Y	Y	Y
In Camera Motion Blur	Object and Image blur	Only multi-pass	Y	Y
16 bit integer output (aka 48bit)	Y	Y	Y	Y
Floating Point HDR Output	N	N	Y	Y
BRDF	N	N	Y	Y
Network Rendering	Y	Y but often not required	Y	Y but if no GPU ram fit then CPU rendered
PROS	Easy to use Fast @ general purpose Can "pause" renders Light Tracer simple to use	Extremely fast Several easy to use NPR looks DOF costs nothing	Most powerful and broadest toolset Use almost any included shader or map type Use any included light type Complexity simplified by templates Distributed Bucket Rendering (DBR) Effecient use of all CPUs	Small learning curve GPU acceleration excellent Materials from Acad, Revit, Inventor DOF and MoBlur cost nothing
CONS	Light Tracer can be slow Little ongoing development	Not capable of photorealism Minimal NPR editing	Steep Learning Curve. Lots of tweaking FG/GI renders can be slow if set poorly	Nothing but realism Lacks Render Elements (passes) Speed requires heavy hardware

TIPS	Camera Mapping	Use mental ray for Material Editor	Shader Render Element	Use mental ray for Material Editor
	Hair and Fur	Hardware AO pass possible	Fast with Ink and Paint shader (raytracing)	Can use both CPU and GPU machines
	Fast matte passes	Animation = iterations	A+D optimizations at shader level	Multiple GPUs/CPU for Activeshade vs. finals
	AA overrides at shader level		Global optimizations at renderer level	Animations = iterations for no flicker
	Game Cinematics (no conversions)		Skip GI and go with FG	Unlimited iterations = "walk away" renders
	Image Motion blur (incl. particles)		FG along path = for moving objects	
			Contours (NPR outlines)	
Combination Workflows	Scanline with AO from mr or QS	Animation tests for other renderers	local iray previews for network mental ray jobs	matte passes from other renderers
	RTT		RTT	