



Appearance eXchange Format (AxF)
















The Digital Twin of a Physical Material

The inability to capture and manage complex material appearance data in a single, editable, portable file format has been an obstacle to improving the virtualization of products. In practice, many complex design and production workflows rely on a variety of different software packages, and different file formats must be used in parallel. This poses serious issues when consistency in color and appearance needs to be achieved. X-Rite's Appearance eXchange Format (AxF) is the first file format exclusively designed for system-independent storage of measured digital appearance.

AxF is a binary digital file format that delivers a standardized format for storing and communicating complex materials appearance data. It is used within X-Rite's Total Appearance Capture (TAC) Ecosystem, and it can be ingested into a variety of CAD, PLM, 3D rendering and plug-in solutions used in product design, development, manufacturing, sales and marketing. One file format to use in any solution where material images are utilized. It is an industry first that is helping brands reduce cycle times, control costs and ensure consistency in color and appearance.

- AxF is not restricted to a single representation of surface reflectance. From a single spectrum up to full BSSRDF, it supports continuous appearance representations, including parametric BRDF models as well as BTF measurements.
- AxF is scalable, extensible and portable, ensuring efficient access for large data volumes of gigabytes or more. Extensions can be defined without harming existing support in third-party applications. SDKs are available for Windows and Linux operating systems with support for Mac under development.
- Includes a built-in set of material representations designed for compatibility with existing SVBRDF-based workflows.

AxF Render Engine Compatibility Matrix

	ORGANIZATION	Plugin	Current Version	Current SDK Support	SVBRDF	CPA
NATIVE INTEGRATION						
 AUTODESK VRED™	Autodesk	-	2018.4	1.4	✓	✓
 KeyShot® <small>by Luxion</small>	Luxion	-	7.2.109	1.4	✓	✓
 UNREAL <small>ENGINE</small>	Epic Games	-	4.20	1.4	✓	
Vidya	 HUMAN SOLUTIONS ASSYST AVM	-	20.17	1.4	✓	
 NVIDIA® Iray®	NVIDIA	 3DS MAX	1.6.1	1.4	✓	✓
 NVIDIA® Iray®	NVIDIA	 MAYA®	1.6.0	1.4	✓	✓
 NVIDIA® Iray®	NVIDIA	Rhino ceros®	1.5.282	1.4	✓	✓
Patchwork 3D	 LUMISCAPHE	-	8	1.3	✓	
 Maxwell	Next Limit Technologies	3DS Max, Maya, Sketchup, Rhinoceros, Rhinoceros for MAC, ArchiCAD, REVIT, CINEMA 4D, FormZ, ICAD3D+	4.2	1.4	✓	
RADEON <small>PRORENDER</small>	AMD	 3DS MAX	2.2	1.4	✓	
RADEON <small>PRORENDER</small>	AMD	 MAYA®	2.3	1.4	✓	
RADEON <small>PRORENDER</small>	AMD	Blender	1.6	1.4	✓	
Substance Designer	 allegorithmic	-	2017.2	1.4	✓	
EXPORT						
V-Ray	Chaos Group	V-Ray for Maya	3.6	N/A	✓	
Mental Ray	NVIDIA		3.14	N/A	✓	
Modo	Foundry		12.0	N/A	✓	
Unity	Unity		2017.3.1	N/A	✓	