## **OpenGL Matrix - September 2013**

## **G-Truc Creation**

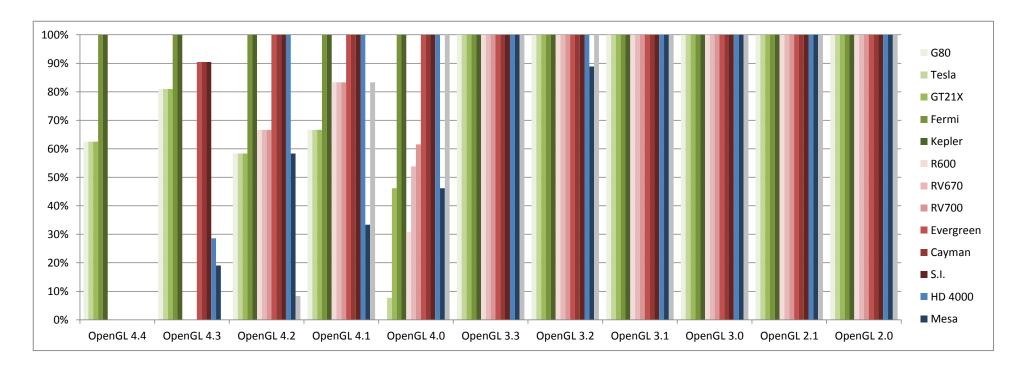
Vendor			NVIDIA	Ą					AMD			Intel	Mesa	Apple	
Drivers version		3	326.98 b	eta					13.4			10.18.10.3277	git-9.2	10.9.pre	
Release date		2	28/08/20	)13				24	/04/2013			30/08/2013	30/03/2013	14/03/2013	
Platforms	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa	MacOS X	
OpenGL 4.4	63%	63%	63%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
OpenGL 4.3	81%	81%	81%	100%	100%	0%	0%	0%	90%	90%	90%	29%	19%	0%	
OpenGL 4.2	58%	58%	58%	100%	100%	67%	67%	67%	100%	100%	100%	100%	58%	8%	
OpenGL 4.1	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	100%	33%	83%	
OpenGL 4.0	0%	8%	46%	100%	100%	31%	54%	62%	100%	100%	100%	100%	46%	100%	
OpenGL 3.3	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
OpenGL 3.2	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	89%	100%	
OpenGL 3.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
OpenGL 3.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
OpenGL 2.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
OpenGL 2.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	

## Nomenclature:

Supported

Not supported

Support added from previous report



OpenGL Extensions	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa	MacOS X
KHR texture compression astc ldr	Χ	Χ	Х	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Х	Х	Χ
ARB robustness	V	V	V	V	V	Χ	Χ	Χ	Χ	Χ	Χ	X	X	Χ
ARB sparse texture	Χ	Χ	Χ	V	V	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
ARB shading language include	V	V	V	V	V	Χ	Χ	X	Χ	Χ	Χ	Χ	X	V
ARB shader stencil export	X	Χ	Χ	Χ	Χ	Χ	Χ	Χ	V	V	٧	X	Χ	X
ARB shader group vote	X	Χ	Χ	V	V	Χ	Χ	X	Χ	Χ	Χ	Χ	X	X
ARB shader draw parameters	X	Χ	Χ	V	V	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
ARB seamless cubemap per texture	Χ	Χ	Χ	Χ	V	Χ	Χ	Χ	Χ	Χ	Χ	Χ	X	Χ
ARB robustness isolation	V	V	V	V	V	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
ARB robust buffer access behavior	V	V	V	V	V	Χ	Χ	X	Χ	Χ	Χ	X	Χ	X
ARB debug output	V	V	V	V	V	V	V	V	V	V	V	X	V	X

ARB indirect parameters	Χ	Χ	Χ	V	V	X	Χ	Χ	X	Х	Χ	Χ	X	Χ	
ARB compute variable group size	Χ	Χ	Χ	V	V	Х	Χ	Х	Х	Х	Х	Х	X	Х	
ARB compatibility	V	V	V	V	V	V	V	V	V	V	V	V	X	Χ	
ARB cl event	Χ	Χ	Χ	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Χ	
ARB bindless texture	X	Χ	Χ	Х	V	X	Χ	Х	Χ	X	Х	X	X	Χ	
EXT texture sRGB decode	Χ	Χ	Χ	V	V	X	Χ	Х	V	V	V	V	X	V	
EXT texture mirror clamp	V	V	V	V	V	V	V	V	V	V	V	X	X	V	
EXT framebuffer multisample blit scaled	Χ	Χ	Χ	V	V	X	Х	Х	Χ	Х	Х	X	Х	V	
EXT direct state access	V	V	V	V	V	V	V	V	V	V	V	X	X	X	
EXT depth bounds test	V	V	V	V	V	X	Χ	Х	Χ	Х	V	X	Х	V	
NV vertex buffer unified memory	V	V	V	V	V	X	Χ	X	Χ	X	X	Χ	X	X	
NV texture multisample	V	V	V	V	V	X	Χ	Х	Χ	Х	Х	Χ	Х	Х	
NV texture barrier	V	V	V	V	V	V	V	V	V	V	V	X	X	V	
NV shader buffer store	X	Χ	Χ	V	V	X	Χ	Х	Χ	Х	Х	X	Х	X	
NV shader buffer load	V	V	V	V	V	X	Χ	X	Χ	Х	Х	Χ	X	X	
NV shader atomic float	X	Χ	Χ	V	V	X	Χ	Х	Χ	Х	Х	Χ	X	Х	
NV multisample coverage	V	V	V	V	V	X	Χ	Х	Χ	Х	Х	X	X	Х	
NV explicit multisample	V	V	V	V	V	V	V	V	V	V	V	X	X	Χ	
NV copy image	V	V	V	V	V	V	V	V	V	V	V	X	X	Х	
NV bindless texture	X	Χ	Χ	Χ	V	X	Χ	Χ	Χ	X	X	Χ	X	Χ	
NV bindless multi draw indirect	X	Χ	Χ	V	V	X	X	X	Χ	X	X	X	X	X	
NV blend equation advanced	Χ	Χ	Χ	V	V	X	Χ	X	Χ	Χ	X	Χ	X	Χ	
INTEL map texture	X	Χ	Χ	X	X	Χ	X	X	Χ	X	X	V	X	X	
ATI texture mirror once	V	V	V	V	V	V	V	V	V	V	V	X	X	V	
AMD vertex shader viewport index	X	Χ	Χ	Χ	X	Χ	Χ	X	V	V	V	X	X	Χ	
AMD vertex shader layer	X	Χ	Χ	Χ	Χ	Χ	Χ	X	V	V	V	X	X	Χ	
AMD transform feedback3 lines triangles	X	Χ	Χ	X	X	X	Χ	Х	X	V	V	X	X	Х	
AMD stencil operation extended	X	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	X	V	X	X	Χ	
AMD sparse texture	X	Χ	Χ	X	X	X	X	Х	Χ	Х	V	X	Х	Х	
AMD shader trinary minmax	X	Χ	Χ	X	Х	Χ	Χ	Х	Χ	Х	V	X	X	Х	
AMD seamless cubemap per texture	Χ	Χ	Χ	Х	V	X	Χ	V	V	V	V	X	X	Х	
AMD sample positions	Χ	Χ	Χ	Х	Х	V	V	V	V	V	V	X	Х	Х	
AMD query buffer object	Χ	Χ	Χ	Χ	Χ	X	Χ	Х	V	V	V	X	Х	Χ	

AMD pinned memory	X	Χ	Χ	Χ	Χ	V	V	V	V	V	V	X	X	X	
AMD blend minmax factor	X	X	Χ	Χ	Χ	Χ	Χ	Χ	Χ	V	V	X	X	X	
Support	37%	37%	37%	61%	70%	22%	229	% 24%		35%	39% 48%	6	7%	2%	15%
	600	<b>-</b> 1	CT24V		1/ 1	D.COO.	D) /C7/	DV700	_	-	6.1	LID 4000		M 00	/
OpenGL 4.4	G80	Tesla			Kepler			RV700			nan S.I.	HD 4000	Mesa	MacOS	Х
ARB buffer storage	X	X	X	V	V	X	X	X	X	X	X	X	X	X	
ARB clear texture	X	X	X	V	V	X	X	X	X	X	X	X	X	X	
ARB enhanced layouts	V	V	V	V	V	X	X	X	X	X	X	X	X	X	
ARB multi bind	V	V	V	V	V	X	X	X	X	X	X	X	X	X	
ARB query buffer object	X	X	X	V	V	X	X	X	X	X	X	X	X	X	
ARB texture mirror clamp to edge	V	V	V	V	V	X	Χ	X	X	X	X	X	X	X	
ARB texture stencil8	V	V	V	V	V	Χ	Χ	X	Х	X	Х	X	X	Х	
ARB vertex type 10f 11f 11f rev	V	V	V	V	V	X	Χ	Χ	Χ	X	Χ	X	X	Χ	
Support	81%	81%	81%	100%	100%	0%	09	% 0%		90%	90% 90%	6	29%	19%	0%
OpenGL 4.3	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergre	een Caym	nan S.I.	HD 4000	Mesa	MacOS	X
GL ARB vertex attrib binding	V	V	V	V	V	X	Χ	Χ	Χ	X	Χ	Χ	X	Χ	
GL ARB texture view	V	V	V	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	X	Χ	
GL ARB texture storage multisample	V	V	V	V	V	X	Χ	Χ	V	V	V	X	X	Χ	
GL ARB texture query levels	V	V	V	V	V	X	Χ	Χ	V	V	V	X	X	X	
GL ARB texture buffer range	V	V	V	V	V	X	Χ	Χ	V	V	V	X	V	X	
GL ARB stencil texturing	V	V	V	V	V	X	Χ	Χ	V	V	V	Χ	Х	X	
GL ARB shader storage buffer object	X	Х	Χ	V	V	X	Χ	Χ	V	V	V	V	X	Χ	
GL ARB shader image size	X	Χ	Χ	V	V	Х	Χ	Х	V	V	V	Х	X	Χ	
GL ARB program interface query	V	V	V	V	V	X	Χ	Χ	V	V	V	V	X	Χ	
GL ARB multi draw indirect	X	Х	Х	V	V	Х	Χ	Х	V	V	V	V	X	Χ	
GL ARB invalidate subdata	V	V	V	V	V	X	Χ	Χ	V	V	V	X	V	X	
GL ARB internalformat query2	V	V	V	V	V	Х	Χ	Х	V	V	V	Х	X	Х	
GL ARB framebuffer no attachments	V	V	V	V	V	Х	Χ	Х	V	V	V	Х	Х	Х	
GL ARB fragment layer viewport	V	V	V	V	V	Χ	Χ	Χ	V	V	V	Х	Х	Х	
GL ARB explicit uniform location	V	٧	V	V	V	Χ	Χ	Χ	V	V	V	X	X	Χ	
GL ARB ES3 compatibility	V	V	V	V	V	Χ	Χ	Х	V	V	V	Х	V	Х	
GL KHR debug	V	V	V	V	V	Χ	Χ	Χ	V	V	V	V	V	X	

GL ARB copy image	V	V	V	V	V	Χ	Χ	Χ	V	V	V	Χ	X	Χ
GL ARB compute shader	X	Х	Х	V	V	Χ	Х	X	V	V	V	V	Х	Х
GL ARB clear buffer object	V	V	V	V	V	Χ	Χ	Х	V	V	٧	Х	Х	X
GL ARB arrays of arrays	V	V	V	V	V	Χ	Χ	Х	V	V	٧	V	X	Χ
Support	81%	6 81%	81%	100%	100%	0%	0%	0%	90%	90%	90%	29%	19%	0%
OpenGL 4.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa	MacOS X
GL ARB transform feedback instanced	Χ	Χ	Χ	V	V	٧	V	V	٧	V	V	V	V	Χ
GL ARB texture compression bptc	X	Χ	Χ	V	V	Χ	Χ	Χ	V	V	V	V	Х	Χ
GL ARB texture storage	V	V	V	V	V	V	V	V	V	V	V	V	V	Х
GL ARB shading language packing	V	V	V	V	V	V	V	V	V	V	٧	V	V	Χ
GL ARB shading language 420pack	V	V	V	V	V	٧	V	V	V	V	٧	V	Х	X
GL ARB shader image load store	X	Χ	Х	V	V	Χ	Χ	X	V	V	V	V	X	X
GL ARB shader atomic counters	X	Χ	Χ	V	V	Χ	Χ	Х	V	V	٧	V	Х	X
GL ARB map buffer alignment	V	V	V	V	V	V	V	V	V	V	V	V	V	X
GL ARB internalformat query	V	V	V	V	V	V	V	V	٧	V	V	V	V	V
GL ARB conservative depth	V	V	V	V	V	V	V	V	٧	V	V	V	V	X
GL ARB compressed texture pixel storage	<u>.</u> V	V	V	V	V	V	V	V	٧	V	V	V	X	X
GL ARB base instance	X	Χ	Χ	V	V	Χ	Χ	Χ	V	V	V	V	V	X
Support	58%	6 58%	58%	100%	100%	67%	67%	67%	100%	100%	100%	100%	58%	8%
OpenGL 4.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa	MacOS X
GL ARB viewport array	V	V	V	V	V	V	V	V	V	V	V	V	X	V
GL ARB vertex attrib 64bit	X	Χ	Χ	V	V	Χ	Χ	Χ	V	V	V	V	Χ	V
GL ARB shader precision	X	Χ	Χ	V	V	V	V	V	V	V	V	V	X	V
GL ARB separate shader objects	V	V	V	V	V	V	V	V	V	V	V	V	Χ	V
GL ARB get program binary	V	V	V	V	V	V	V	V	V	V	V	V	V	Χ
GL ARB ES2 compatibility	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Support	67%	67%	67%	100%	100%	83%	83%	83%	100%	100%	100%	100%	33%	83%
	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	<b>RV700</b>	Evergreen	Cayman	S.I.	HD 4000	Mesa	MacOS X
OpenGL 4.0	GOU	i Caia	GIZIA	1 (11111					- 0	· ·				
OpenGL 4.0 GL ARB transform feedback3	X	Х	X	V	V	V	V	V	V	V	V	V	V	V

GL ARB texture query lod	X	Χ	V	V	V	Χ	Χ	V	V	V	V	V	V	V	
GL ARB texture gather	X	Χ	V	V	V	Χ	V	V	V	V	V	V	X	V	
GL ARB texture cube map array	X	Χ	V	V	V	Χ	V	V	V	V	V	V	V	V	
GL ARB texture buffer object rgb32	X	Χ	Χ	V	V	V	V	V	V	V	V	V	V	V	
GL ARB tessellation shader	X	Χ	Χ	V	V	Χ	Χ	Χ	V	V	V	V	X	V	
GL ARB shader subroutine	X	Χ	Χ	V	V	Χ	Χ	Χ	V	V	V	V	X	V	
GL ARB sample shading	X	Χ	V	V	V	Χ	V	V	V	V	V	V	X	V	
GL ARB gpu shader5	X	Χ	Χ	V	V	Χ	Χ	Χ	V	V	V	V	X	V	
GL ARB gpu shader fp64	X	Χ	Χ	V	V	Χ	Χ	Χ	V	V	V	V	X	V	
GL ARB draw indirect	V	Χ	Χ	1/	V	V	Χ	Χ	V	V	V	V	X	V	
OL AND GIAW HIGHECL	^	٨	^	V	V	^	^	^	V	<u> </u>	•	<u> </u>	/\	•	
GL ARB draw buffers blend	X	X	V	V	V	V	V	V	V	V	V	V	V	V	
·	X X 0%	Χ	V	V	V	V	V	V	V	V		V	V 0%	V 46%	100%
GL ARB draw buffers blend	X 09	Χ	V	V	V	V	V	V	V	V	V	V	V	V 46%	100%
GL ARB draw buffers blend	X 0% G80	Χ	V % 46%	V	V	31%	V 54%	V	6 1	V 100% 100%	V 6 100%	V	V	46% MacOS	
GL ARB draw buffers blend Support		X 6 89	V % 46%	4 100%	V 100%	31%	V 54%	V % 62%	6 1	V 100% 100%	V 6 100%	V 10	0%		
GL ARB draw buffers blend Support OpenGL 3.3		X 6 89 Tesla	V % 46%	4 100%	V 100%	31%	V 54% RV670	V % 62%	6 1	V 100% 100% een Cayman	V 6 100% S.I.	V 10 HD 4000	0% Mesa	MacOS	
GL ARB draw buffers blend Support  OpenGL 3.3 GL ARB vertex type 2 10 10 10 rev		X 6 89 Tesla	V % 46%	Fermi	V 100% Kepler V	31%	V 549 RV670 V	V 62% RV700 V	Evergre	V 100% 100% een Cayman V	V 6 100% S.I. V	V 10 HD 4000 V	Mesa	MacOS V	
GL ARB draw buffers blend Support  OpenGL 3.3 GL ARB vertex type 2 10 10 10 rev GL ARB timer query		X 6 89 Tesla V V	V 46% GT21X V	Fermi V	V 100% Kepler V	R600 V	V 54% RV670 V V	V 62% RV700 V V	Evergre V V	V 100% 100% een Cayman V V	V 6 1009 S.I. V	V 10 HD 4000 V V	Mesa V	MacOS V V	
GL ARB draw buffers blend Support  OpenGL 3.3 GL ARB vertex type 2 10 10 10 rev GL ARB timer query GL ARB texture swizzle		X 6 89 Tesla V V V	V 46% GT21X V V	Fermi V V V	V 100% Kepler V V	R600 V V	V 549 RV670 V V V	V 62% RV700 V V	Evergre V V	V 100% 100% een Cayman V V	V 6 1009 S.I. V V	V 10 HD 4000 V V V	Mesa V V	MacOS V V V	
GL ARB draw buffers blend Support  OpenGL 3.3 GL ARB vertex type 2 10 10 10 rev GL ARB timer query GL ARB texture swizzle GL ARB texture rgb10 a2ui		X 6 89 Tesla V V V	V 46%  GT21X  V  V  V	Fermi V V V	V 100% Kepler V V V V	R600 V V V	V 549 RV670 V V V V V	V 6 62% RV700 V V V	Evergre V V V	V 100% 100% een Cayman V V V V	S.I. V V V V	V 10 10 V V V V V V V	Mesa V V V V	MacOS V V V	

OpenGL 3.2	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa	MacOS X
GL ARB vertex array bgra	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL ARB texture multisample	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL ARB sync	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL ARB seamless cube map	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL ARB provoking vertex	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL ARB geometry shader4	V	V	V	V	V	V	V	V	V	V	V	V	X	V

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**GL** ARB instanced arrays

Support

GL ARB explicit attrib location

GL ARB blend func extended

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100% 100%

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100%

GL ARB fragment coord conventions	V	V	٧	V	٧	V	٧	V	V	V	٧	V	V	V
GL ARB depth clamp	V	V	V	V	V	V	V	V	V	V	٧	V	V	V
GL ARB draw elements base vertex	V	٧	V	V	V	V	V	V	V	V	٧	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	89%	100%
OpenGL 3.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa	MacOS X
GL ARB uniform buffer object	V	V	V	V	V	V	V	V	٧	V	٧	V	V	V
GL EXT texture snorm	V	٧	V	V	V	V	V	V	V	V	٧	V	V	V
GL ARB texture rectangle	V	V	V	V	V	V	V	V	٧	V	٧	V	V	V
GL ARB texture buffer object	V	٧	V	V	V	V	V	V	V	V	٧	V	V	V
GL NV primitive restart	V	V	V	V	V	V	V	V	٧	V	٧	V	V	V
GL ARB draw instanced	V	V	V	V	V	V	V	V	٧	V	٧	V	V	V
GL ARB copy buffer	V	V	V	V	V	V	V	V	٧	V	٧	V	V	V
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OpenGL 3.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa	MacOS X
CL ADD wartow array chiest	V	N /	V	V	17	N /								
GL ARB vertex array object	V	V	V	V	V	V	V	V	V	V	V	V	V	V
GL AKB Vertex array object  GL EXT transform feedback	V	V	V	V	V	V	V	V	V	V	V	V		V V
<u> </u>	V V			•										•
GL EXT transform feedback	V V V	V	V	V	V	V	V	V	V	V	٧	V	V V	V
GL EXT transform feedback GL ARB texture rg	V V V V	V V	V	V V										
GL EXT transform feedback GL ARB texture rg GL EXT texture shared exponent	V V V V	V V V	V V V	V V	V V V									
GL EXT transform feedback GL ARB texture rg GL EXT texture shared exponent GL EXT texture integer	V V V V V	V V V	V V V V	V V V V	V V V V	V V V V	V V V V	V V V V	V V V	V V V V	V V V V	V V V	V V V V	V V V V
GL EXT transform feedback GL ARB texture rg GL EXT texture shared exponent GL EXT texture integer GL ARB texture float	V V V V V	V V V V												
GL EXT transform feedback GL ARB texture rg GL EXT texture shared exponent GL EXT texture integer GL ARB texture float GL ARB texture compression rgtc	V V V V V V	V V V V V V V	V V V V V V V	V V V V V	V V V V V	V V V V V V	V V V V V							
GL EXT transform feedback GL ARB texture rg GL EXT texture shared exponent GL EXT texture integer GL ARB texture float GL ARB texture compression rgtc GL EXT texture array	V V V V V V	V V V V V V V V	V V V V V V V V	V V V V V	V V V V V	V V V V V V V V	V V V V V	V V V V V	V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V	V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V
GL EXT transform feedback GL ARB texture rg GL EXT texture shared exponent GL EXT texture integer GL ARB texture float GL ARB texture compression rgtc GL EXT texture array GL EXT packed float	V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V
GL EXT transform feedback GL ARB texture rg GL EXT texture shared exponent GL EXT texture integer GL ARB texture float GL ARB texture compression rgtc GL EXT texture array GL EXT packed float GL EXT packed depth stencil	V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V
GL EXT transform feedback GL ARB texture rg GL EXT texture shared exponent GL EXT texture integer GL ARB texture float GL ARB texture compression rgtc GL EXT texture array GL EXT packed float GL EXT packed depth stencil GL ARB map buffer range	V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V
GL EXT transform feedback GL ARB texture rg GL EXT texture shared exponent GL EXT texture integer GL ARB texture float GL ARB texture compression rgtc GL EXT texture array GL EXT packed float GL EXT packed depth stencil GL ARB map buffer range GL ARB half float vertex	V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V
GL EXT transform feedback GL ARB texture rg GL EXT texture shared exponent GL EXT texture integer GL ARB texture float GL ARB texture compression rgtc GL EXT texture array GL EXT packed float GL EXT packed depth stencil GL ARB map buffer range GL ARB half float vertex GL ARB half float pixel	V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V
GL EXT transform feedback GL ARB texture rg GL EXT texture shared exponent GL EXT texture integer GL ARB texture float GL ARB texture compression rgtc GL EXT texture array GL EXT packed float GL EXT packed float GL EXT packed depth stencil GL ARB map buffer range GL ARB half float vertex GL ARB half float pixel GL EXT gpu shader4	V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V

GL NV conditional render	V	V	V	V	V	V	V	V	٧	V	V	V	V	V	
GL ARB color buffer float	V	V	V	V	V	٧	V	V	٧	V	V	V	V	V	
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	10	0%	100%	100%
OpenGL 2.1	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa	MacOS	X
GL EXT texture sRGB	V	V	V	V	V	V	V	V	٧	V	V	V	V	V	
GL ARB pixel buffer object	V	V	V	V	V	V	V	V	٧	V	V	V	V	V	
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	10	0%	100%	100%
OpenGL 2.0	G80	Tesla	GT21X	Fermi	Kepler	R600	RV670	RV700	Evergreen	Cayman	S.I.	HD 4000	Mesa	MacOS	Χ
GL ARB vertex shader	V	V	V	V	V	V	V	V	٧	V	V	V	V	V	
GL ARB texture non power of two	V	V	V	V	V	V	V	V	٧	V	V	V	V	V	
GL EXT stencil two side	V	V	V	V	V	V	V	V	٧	V	V	V	V	V	
GL ARB shading language 100	V	V	V	V	V	V	V	V	V	V	٧	V	V	V	
GL ARB shader objects	V	V	V	V	V	٧	V	V	V	V	V	V	V	V	
GL ARB point sprite	V	V	V	V	V	V	V	V	V	V	٧	V	V	V	
GL ARB fragment shader	V	V	V	V	V	V	V	V	V	V	V	V	V	V	
GL ARB draw buffers	V	V	V	V	V	V	V	V	V	V	V	V	V	V	
GL EXT blend equation separate	V	V	V	V	V	V	V	V	V	V	V	V	V	V	
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	5 10	0%	100%	100%