OpenGL hardware matrix

Extensions exposed by OpenGL implementations

May 2014, G-Truc Creation

GF / Fermi: GeForce 400 series, GeForce 500 series GK / Kepler: GeForce 600 series, GeForce 700 series

GM / Maxwell: GeForce 750

EG / Evergreen: Radeon HD 5000 series, Radeon HD 6000 series

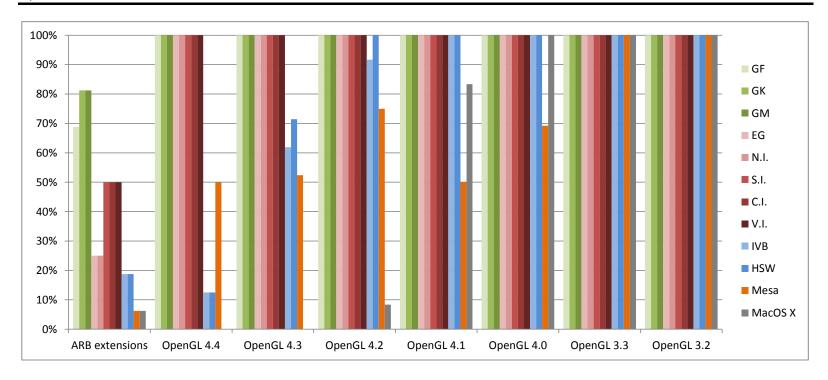
N.I. / Northern Islands: Radeon HD 6900 series

S.I. / Southern Islands: Radeon HD 7000 series, Radeon R7 250X, Radeon R7 265, Radeon R9 280 C.I. / Sea Islands: Radeon HD 7790, Radeon R7 240, Radeon R7 250, Radeon R7 260, Radeon R9 270

V.I. / Volcanic Islands: Radeon R9 290 IVB / Ivy Bridge: HD4000, HD2500

HSW / Haswell: Iris 5000 series, HD 4X00 series

Vendor	NVIDIA					AMD			Int	tel	Mesa	Apple	
Drivers version									34	12	git-10.1	10.9	
Release date									29/01	/2014	20/02/2013	01/10/2013	
Platforms	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X	
ARB extensions	69%	81%	81%	25%	25%	50%	50%	50%	19%	19%	6%	6%	
OpenGL 4.4	100%	100%	100%	100%	100%	100%	100%	100%	13%	13%	50%	0%	
OpenGL 4.3	100%	100%	100%	100%	100%	100%	100%	100%	62%	71%	52%	0%	
OpenGL 4.2	100%	100%	100%	100%	100%	100%	100%	100%	92%	100%	75%	8%	
OpenGL 4.1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	50%	83%	
OpenGL 4.0	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	69%	100%	
OpenGL 3.3	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%	



Nomenclature:

Supported

Not supported

Support added from previous report

OpenGL Extensions	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
KHR texture compression astc ldr	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Х
ARB robustness	V	V	V	Χ	Χ	Χ	Χ	Χ	V	V	Χ	Χ
ARB sparse texture	V	V	V	Χ	Χ	V	V	V	Χ	Χ	Χ	X
ARB shading language include	V	V	V	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	V
ARB shader stencil export	Χ	Χ	Χ	V	V	V	V	V	Χ	Χ	Χ	X
ARB shader group vote	V	V	V	Χ	Χ	V	V	V	Χ	Χ	Χ	X
ARB shader draw parameters	V	V	V	Χ	Χ	V	V	V	Χ	Χ	Χ	X
ARB seamless cubemap per texture	Χ	V	V	V	V	V	V	V	Χ	Χ	Χ	X
ARB robustness isolation	V	V	V	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	X
ARB robust buffer access behavior	V	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	Χ	X
ARB debug output	V	V	V	V	V	V	V	V	V	V	V	X
ARB indirect parameters	V	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	Χ	X
ARB compute variable group size	V	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
ARB compatibility	V	V	V	V	V	V	V	V	V	V	Χ	Χ
ARB cl event	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	X
ARB bindless texture	X	V	V	X	Χ	V	V	V	X	Χ	Χ	X
Support	69%	81%	81%	6 25%	25%	50%	50%	50%	19%	19%	69	6%

OpenGL Extensions	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
EXT texture sRGB decode	V	V	V	V	V	V	V	V	V	V	Х	V
EXT texture mirror clamp	V	V	V	V	V	V	V	V	Χ	Χ	X	V
EXT shader integer mix	V	V	V	V	V	V	V	V	V	V	V	X
EXT shader image load formatted	Χ	Χ	V	X	Χ	Χ	Χ	Χ	Χ	Χ	Х	Х
EXT framebuffer multisample blit scaled	V	V	V	Χ	Χ	Χ	Χ	Χ	Χ	Χ	X	V
EXT direct state access	V	٧	V	V	V	V	V	V	Χ	Χ	Х	Х
EXT depth bounds test	V	V	V	Χ	Χ	V	V	V	Χ	Χ	X	V
EXT clip control	Χ	Χ	Χ	Χ	Χ	X	Χ	Χ	V	V	X	X

NV vertex buffer unified memory	V	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	Χ	X
NV texture multisample	V	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
NV texture barrier	V	V	V	V	V	V	V	V	X	Χ	Х	V
NV shader thread shuffle	Χ	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	Х	X
NV shader thread group	V	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	Х	Χ
NV shader buffer store	V	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ
NV shader buffer load	V	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	X	X
NV shader atomic float	V	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	X	X
NV multisample coverage	V	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	Х	X
NV explicit multisample	V	V	V	V	V	V	V	V	X	Χ	X	X
NV depth buffer float	V	V	V	V	V	V	V	V	X	Χ	Х	Χ
NV copy image	V	V	V	V	V	V	V	V	X	Χ	X	X
NV bindless texture	X	V	V	X	Χ	Χ	Χ	Χ	Х	Χ	Х	X
NV bindless multi draw indirect	V	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	X	Χ
NV blend equation advanced	V	V	V	X	Χ	Χ	Χ	Χ	Χ	Χ	Х	X
INTEL map texture	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	V	X	X
INTEL fragment shader ordering	X	Χ	Χ	Χ	Χ	V	V	V	V	V	X	X
INTEL conservative rasterization	X	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	V	X	X
AMD vertex shader viewport index	X	Χ	Χ	V	V	V	V	V	X	Χ	Х	Χ
AMD vertex shader layer	X	Χ	Χ	V	V	V	V	V	X	Χ	X	X
AMD transform feedback4	X	Χ	Χ	Χ	Χ	V	V	V	X	Χ	Х	X
AMD transform feedback3 lines triangles	X	Χ	Χ	Χ	V	V	V	V	X	Χ	X	X
AMD stencil operation extended	X	Χ	Χ	Χ	Χ	V	V	V	X	Χ	Х	Χ
AMD sparse texture pool	X	Χ	Χ	Χ	Χ	Χ	V	V	X	Χ	X	X
AMD sparse texture	X	Χ	Χ	Χ	Χ	V	V	V	X	Χ	X	X
AMD shader trinary minmax	X	Χ	Χ	Χ	Χ	V	V	V	X	Χ	X	X
AMD shader stencil value export	X	Χ	Χ	Χ	Χ	V	V	V	X	Χ	Χ	X
AMD shader stencil export	X	Χ	Χ	V	V	V	V	V	X	Χ	X	X
AMD seamless cubemap per texture	X	V	V	V	V	V	V	V	X	Χ	X	X
AMD sample positions	X	Χ	Χ	V	V	V	V	V	X	Χ	X	X
AMD query buffer object	X	Χ	Χ	V	V	V	V	V	X	Χ	Χ	Χ
AMD pinned memory	X	Χ	Χ	V	V	V	V	V	X	Χ	X	X
AMD occlusion query event	X	Χ	Χ	Χ	Χ	Χ	V	V	X	Χ	Х	Χ

AMD interleaved elements	Χ	Χ	Χ	Χ	Χ	V	٧	٧	X	Χ	Χ	X	
AMD gpu shader int64	Χ	Χ	Χ	Χ	Χ	V	٧	٧	Χ	Χ	Χ	Χ	
AMD gcn shader	Χ	Χ	Χ	Χ	Χ	V	V	٧	Χ	Χ	Χ	Χ	
AMD framebuffer sample positions	Χ	Χ	Χ	Χ	Χ	V	٧	٧	Χ	Χ	Χ	Χ	
AMD blend minmax factor	Χ	Χ	Χ	Χ	V	V	V	V	Χ	Χ	Χ	Χ	
ATI texture mirror once	V	V	V	V	٧	V	V	٧	Χ	Χ	Χ	V	
Support	49%	57%	59%	32%	35%	59%	62%	62%	11%	14%	3	3%	11%
OpenGL 4.4	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS	S X
ARB buffer storage	V	V	٧	V	٧	٧	٧	٧	٧	٧	V	X	
ARB clear texture	V	V	V	V	٧	V	V	V	Χ	Χ	Χ	Х	
ARB enhanced layouts	V	V	V	V	٧	V	V	V	Χ	Χ	Χ	Χ	
ARB multi bind	V	V	V	V	٧	V	V	V	Χ	Χ	Χ	Χ	
ARB query buffer object	V	V	V	V	٧	V	V	٧	Χ	Χ	Χ	Χ	
ARB texture mirror clamp to edge	V	V	V	V	V	V	V	V	Χ	Χ	V	X	
ARB texture stencil8	V	V	V	V	V	٧	V	V	Χ	Χ	V	X	
ARB vertex type 10f 11f 11f rev	V	V	V	V	V	V	V	V	Χ	Χ	V	X	
	V 100%		V 100%	•	•	•		•	* *	,,	•)%	0%
ARB vertex type 10f 11f 11f rev	V 100%			•	•	•		•	* *	,,	•	**	0%
ARB vertex type 10f 11f 11f rev	V 100% GF			•	•	•		•	* *	13%	•	**	
ARB vertex type 10f 11f 11f rev Support		100%	100%	100%	100%	100%	100%	100% V.I.	13%	13%	50)%	
ARB vertex type 10f 11f 11f rev Support OpenGL 4.3	GF	5 100% GK	100% GM	100% EG	100% N.I.	100% S.I.	100% C.I.	100% V.I.	13% IVB	13% HSW	50 Mesa	MacOS	
ARB vertex type 10f 11f 11f rev Support OpenGL 4.3 ARB vertex attrib binding	GF	GK V	6 100% GM V	100% EG V	100% N.I. V	100% S.I. V	100% C.I. V	100% V.I. V	13% IVB V	13% HSW V	50 Mesa V	MacOS	
ARB vertex type 10f 11f 11f rev Support OpenGL 4.3 ARB vertex attrib binding ARB texture view	GF	GK V	6 100% GM V V	100% EG V V	100% N.I. V	100% S.I. V	100% C.I. V	100% V.I. V	13% IVB V X	13% HSW V	50 Mesa V	MacOS	
ARB vertex type 10f 11f 11f rev Support OpenGL 4.3 ARB vertex attrib binding ARB texture view ARB texture storage multisample	GF	GK V V V	GM V V V	100% EG V V	100% N.I. V V	100% S.I. V V	100% C.I. V V	100% V.I. V	13% IVB V X	13% HSW V X	Mesa V V	MacOS	
ARB vertex type 10f 11f 11f rev Support OpenGL 4.3 ARB vertex attrib binding ARB texture view ARB texture storage multisample ARB texture query levels	GF	GK V V V	GM V V V V	100% EG V V V	100% N.I. V V V V	100% S.I. V V V	100% C.I. V V V	100% V.I. V V V	13% IVB V X V	HSW V X V X	Mesa V V V	MacOS X X X X	
ARB vertex type 10f 11f 11f rev Support OpenGL 4.3 ARB vertex attrib binding ARB texture view ARB texture storage multisample ARB texture query levels ARB texture buffer range	GF	GK V V V V V V	GM V V V V V V	100% EG V V V V	100% N.I. V V V V V	100% S.I. V V V V	100% C.I. V V V V	100% V.I. V V V V	13% IVB V X V	HSW V X V V	Mesa V V V V	MacOS X X X X X	
ARB vertex type 10f 11f 11f rev Support OpenGL 4.3 ARB vertex attrib binding ARB texture view ARB texture storage multisample ARB texture query levels ARB texture buffer range ARB stencil texturing	GF	GK V V V V V V V V V V V V V V V V V V V	GM V V V V V V V V V V V V V V V V V V V	100% EG V V V V V	100% N.I. V V V V V	100% S.I. V V V V V	100% C.I. V V V V V	100% V.I. V V V V	13% IVB V X V V V	13% HSW V X V V V	Mesa V V V V V V	MacOS X X X X X X	
ARB vertex type 10f 11f 11f rev Support OpenGL 4.3 ARB vertex attrib binding ARB texture view ARB texture storage multisample ARB texture query levels ARB texture buffer range ARB stencil texturing ARB shader storage buffer object	GF	GK V V V V V V V V V V V V V V V V V V V	GM V V V V V	100% EG V V V V V V	100% N.I. V V V V V V	100% S.I. V V V V V V	100% C.I. V V V V V V	100% V.I. V V V V V V V V	13% IVB V X V X V X	HSW V X V V V V V	Mesa V V V V V X	MacOS X X X X X X X X	
ARB vertex type 10f 11f 11f rev Support OpenGL 4.3 ARB vertex attrib binding ARB texture view ARB texture storage multisample ARB texture query levels ARB texture buffer range ARB stencil texturing ARB shader storage buffer object ARB shader image size	GF	GK V V V V V V V V V V V V V V V V V V V	GM V V V V V V	100% EG V V V V V V V	100% N.I. V V V V V V V	100% S.I. V V V V V V V V	100% C.I. V V V V V V	100% V.I. V V V V V V V	13% IVB V X V X V V	13% HSW V X V V V V	Mesa V V V V V X X	MacOS X X X X X X X X X	
ARB vertex type 10f 11f 11f rev Support OpenGL 4.3 ARB vertex attrib binding ARB texture view ARB texture storage multisample ARB texture query levels ARB texture buffer range ARB stencil texturing ARB shader storage buffer object ARB shader image size ARB program interface query	GF	GK V V V V V V V V V V V V V V V V V V V	GM V V V V V V V V V V V V V V V V V V V	100% EG V V V V V V V	100% N.I. V V V V V V V	100% S.I. V V V V V V V V V V	100% C.I. V V V V V V V	100% V.I. V V V V V V V V V V	13% IVB V X V X V V V	13% HSW V X V V V V V	Mesa V V V V V X X X V V	MacOS X X X X X X X X X X	
ARB vertex type 10f 11f 11f rev Support OpenGL 4.3 ARB vertex attrib binding ARB texture view ARB texture storage multisample ARB texture query levels ARB texture buffer range ARB stencil texturing ARB shader storage buffer object ARB shader image size ARB program interface query ARB multi draw indirect	GF	GK	GM V V V V V V V V V V V V V V V V V V V	100% EG V V V V V V V V V V V V	100% N.I. V V V V V V V V V V	100% S.I. V V V V V V V V V V V V V V V V V V	100% C.I. V V V V V V V V V	100% V.I. V V V V V V V V V V	13% IVB V X V X V V V V	13% HSW V X V V V V V	Mesa V V V V V X X X	MacOS X X X X X X X X X X X	

ARB fragment layer viewport	V	V	V	٧	V	٧	V	٧	Χ	Χ	Χ	Χ	
ARB explicit uniform location	V	V	V	V	V	V	V	٧	Χ	Χ	Χ	Х	
ARB ES3 compatibility	V	V	V	V	V	V	V	V	V	V	V	X	
KHR debug	V	V	V	V	V	V	٧	٧	V	V	V	X	
ARB copy image	V	V	V	V	V	V	V	٧	V	V	X	X	
ARB compute shader	V	V	V	V	V	V	V	٧	Χ	V	Χ	Х	
ARB clear buffer object	V	V	V	V	V	V	V	V	Χ	Χ	V	X	
ARB arrays of arrays	V	V	V	V	V	V	V	٧	V	V	Χ	X	
Support	100%	6 100%	100%	100%	100%	100%	100%	100%	62%	71%		52%	0%
OpenGL 4.2	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacO:	S X
ARB transform feedback instanced	V	V	٧	V	٧	٧	٧	٧	٧	٧	V	X	
ARB texture compression bptc	V	V	V	V	٧	V	V	٧	V	V	Χ	Х	
ARB texture storage	V	V	V	V	٧	V	V	٧	V	V	V	X	
ARB shading language packing	V	V	V	V	V	V	٧	٧	٧	V	V	X	
ARB shading language 420pack	V	V	V	V	V	٧	٧	٧	٧	V	V	X	
ARB shader image load store	V	V	V	V	V	V	V	٧	Χ	V	Χ	X	
ARB shader atomic counters	V	V	V	V	V	V	V	٧	V	V	V	X	
ARB map buffer alignment	V	V	V	V	V	V	V	V	V	V	V	X	
ARB internalformat query	V	V	V	V	V	V	V	V	V	V	V	V	
ARB conservative depth	V	V	V	V	V	V	V	V	V	V	V	X	
ARB compressed texture pixel storage	V	V	V	V	V	V	V	V	V	V	Χ	X	
ARB base instance	V	V	V	V	V	V	V	V	V	V	V	X	
Support	100%	6 100%	100%	100%	100%	100%	100%	100%	92%	100%		75%	8%
OpenGL 4.1	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacO	S X
ARB viewport array	V	V	٧	V	٧	٧	٧	٧	٧	٧	V	V	
ARB vertex attrib 64bit	V	V	V	V	V	V	V	V	V	V	Χ	V	
ARB shader precision	V	V	V	V	V	V	٧	٧	٧	V	Χ	V	
ARB separate shader objects	V	V	V	٧	V	V	V	V	V	V	Χ	V	
ARB get program binary	V	V	V	V	V	V	٧	٧	٧	V	٧	X	
ARB ES2 compatibility	V	V	V	٧	V	V	V	V	V	V	V	V	
Support	100%	6 100%	100%	100%	100%	100%	100%	100%	100%	100%		50%	83%

OpenGL 4.0	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
ARB transform feedback3	V	V	V	V	N.I.	5.I. V	V.I.	V.I.	V	V	V	Wacos X
ARB transform feedback2	V	V	V	V	V	V	V	V	V	V	V	V
ARB texture query lod	V	V	V	V	V	V	V	V	V	V	V	V
ARB texture gather	V	V	V	V	V	V	V	V	V	V	V	V
ARB texture cube map array	V	V	V	V	V	V	V	V	V	V	V	V
ARB texture buffer object rgb32	V	V	V	V	V	V	V	V	V	V	V	V
ARB tessellation shader	V	V	V	V	V	V	V	V	V	V	X	V
ARB shader subroutine	V	V	V	V	V	V	V	V	V	V	Χ	V
ARB sample shading	V	V	V	V	V	V	V	V	V	V	V	V
ARB gpu shader5	V	V	V	V	V	V	V	V	V	V	Х	V
ARB gpu shader fp64	V	V	V	V	V	V	V	V	V	V	Х	V
ARB draw indirect	V	V	V	V	V	V	V	V	V	V	V	V
ARB draw buffers blend	V	V	V	٧	٧	V	V	٧	V	٧	V	V
Support	1009	% 100%	100%	100%	100%	100%	100%	100%	100%	100%		69% 100%
•												
OpenGL 3.3	GF	GK	GM	EG	N.I.	S.I.	C.I.	V.I.	IVB	HSW	Mesa	MacOS X
OpenGL 3.3 ARB vertex type 2 10 10 10 rev	GF V	GK V	GM V	EG V	N.I.	S.I. V	C.I.	V.I.	IVB V	HSW V	Mesa V	MacOS X V
·												
ARB vertex type 2 10 10 10 rev	V	V	V	V	V	V	V	V	V	V	V	V
ARB vertex type 2 10 10 10 rev ARB timer query	V	V	V V	V V	V V	V V	V V	V V	V V	V V	V	V V
ARB vertex type 2 10 10 10 rev ARB timer query ARB texture swizzle	V V V	V V V	V V V	V V V	V V V	V V V	V V V	V V V	V V V	V V V	V V V	V V V
ARB vertex type 2 10 10 10 rev ARB timer query ARB texture swizzle ARB texture rgb10 a2ui	V V V	V V V	V V V	V V V	V V V	V V V	V V V	V V V	V V V	V V V	V V V	V V V
ARB vertex type 2 10 10 10 rev ARB timer query ARB texture swizzle ARB texture rgb10 a2ui ARB shader bit encoding	V V V V	V V V V	V V V V	V V V V	V V V V	V V V V	V V V V	V V V V	V V V V	V V V V	V V V V	V V V V
ARB vertex type 2 10 10 10 rev ARB timer query ARB texture swizzle ARB texture rgb10 a2ui ARB shader bit encoding ARB sampler objects	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V	V V V V	V V V V V
ARB vertex type 2 10 10 10 rev ARB timer query ARB texture swizzle ARB texture rgb10 a2ui ARB shader bit encoding ARB sampler objects ARB occlusion query2	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V	V V V V V
ARB vertex type 2 10 10 10 rev ARB timer query ARB texture swizzle ARB texture rgb10 a2ui ARB shader bit encoding ARB sampler objects ARB occlusion query2 ARB instanced arrays	V V V V V V	V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V	V V V V V V	V V V V V V	V V V V V V	V V V V V V	V V V V V V	V V V V V V	V V V V V V	V V V V V V
ARB vertex type 2 10 10 10 rev ARB timer query ARB texture swizzle ARB texture rgb10 a2ui ARB shader bit encoding ARB sampler objects ARB occlusion query2 ARB instanced arrays ARB explicit attrib location	V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V	V V V V V V V	V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V	V V V V V V V	V V V V V V V	V V V V V V V	V V V V V V
ARB vertex type 2 10 10 10 rev ARB timer query ARB texture swizzle ARB texture rgb10 a2ui ARB shader bit encoding ARB sampler objects ARB occlusion query2 ARB instanced arrays ARB explicit attrib location ARB blend func extended	V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V	V V V V V V V	V V V V V V V	V V V V V V V V V V V V V V V V V V V	V V V V V V V	V V V V V V V	V V V V V V V	V V V V V V V	V V V V V V V
ARB vertex type 2 10 10 10 rev ARB timer query ARB texture swizzle ARB texture rgb10 a2ui ARB shader bit encoding ARB sampler objects ARB occlusion query2 ARB instanced arrays ARB explicit attrib location ARB blend func extended Support	V V V V V V V V	V V V V V V V V	V V V V V V V V	V V V V V V V V	V V V V V V V V	V V V V V V V V	V V V V V V V V V	V V V V V V V V	V V V V V V V V	V V V V V V V V V	V V V V V V V	V V V V V V V V 100%

ARB sync	V	V	V	V	V	V	V	V	V	V	V	V	
ARB seamless cube map	V	V	V	V	V	V	V	V	V	V	V	V	
ARB provoking vertex	V	V	V	V	V	V	V	V	V	V	V	V	
ARB geometry shader4	V	V	V	V	V	V	V	V	V	V	V	V	
ARB fragment coord conventions	V	V	V	V	V	V	V	V	V	V	V	V	
ARB depth clamp	V	V	V	V	V	V	V	V	V	V	V	V	
ARB draw elements base vertex	V	V	V	V	V	V	V	V	V	V	V	V	
Support	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		100%	100%