Functional Description 4

This chapter lists the implementation-dependent functionality of Solaris PEX. It covers Enumerated Type Information, Implementation-Dependent Constants, PHIGS Workstation Dynamics, Lookup Tables, GSEs, GDPs, and Escapes.

Enumerated Type Information

Table 4-1 through Table 4-51 lists the enumerated types supported in this version of Solaris PEX. Each supported value is listed along with its mnemonic string and a brief description. The strings are returned exactly as shown.

Sun-Specific Enumerated Types

Sun-specific enumerated values always begin with `0x85` (bit `10000101`) in the first two bytes. CGE extended enumerated values always begin with `0x90` (bit `10010000`) in the first two bytes. The most significant bit (MSB) indicates that the enumerated type value is a vendor extension; that is, it is not part of the standard enumerated values defined by the X Consortium. The remaining bits of the first two bytes indicate which vendor has defined the value.

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Table 4-1 PEXETMarkerType

Value	Mnemonic	Symbol	Description
1	Dot	.	The smallest displayable dot at the marker position. Ignore the marker_scale attribute.
2	Cross	+	A plus sign with intersection at the marker position.
3	Asterisk	*	An asterisk with intersection at the marker position.
4	Circle	○	An unfilled circle with center at the marker position.
5	X	×	A multiplication sign with intersection at the marker position.
0x8500	SunSquare	❑	An unfilled square with center at the marker position.
0x8501	SunBowtieNE		An unfilled bowtie figure with intersection at the marker position and oriented with upper square in the upper right hand quadrant, lower square in the lower left hand quadrant.
0x8502	SunBowtieNW		An unfilled bowtie figure with intersection at the marker position and oriented with upper square in the upper left hand quadrant, lower square in lower right hand quadrant.

Table 4-2 PEXETATextStyle

Value	Mnemonic	Description
1	NotConnected	Draw the annotation text with no line connecting it to the reference point.
2	Connected	Draw the annotation text with a line connecting it to the reference point. Draw this line using the current line attributes.

Table 4-3 PEXETLineType

Value	Mnemonic	Description
1	Solid	Draw with a solid, unbroken line.
2	Dashed	Draw with a dashed line.
3	Dotted	Draw with a dotted line.
4	DashDot	Draw with a line of alternating dots and dashes.
0x8500	SunLongDash	Draw with a line of long dashes.
0x8501	SunDotDashDot	Draw with a line of dot followed by dash followed by dot, repeating.
0x8502	SunCenter	Draw with a line of a long dash followed by a short dash, repeating.
0x8503	SunPhantom	Draw with a line of a long dash followed by two short dashes, repeating.
0x9000	ExtLineTypeCenter	Draw with a line of a long dash followed by a short dash, repeating.
0x9001	ExtLineTypePhantom	Draw with a line of a long dash followed by two short dashes, repeating.

Table 4-4 PEXETPolylineInterpMethod

Value	Mnemonic	Description
1	None	Perform no color interpolation between polyline vertices. If the endpoints of a segment have different color values, Solaris PEX uses the color of the first vertex for drawing the entire segment.
2	Color	Linearly interpolate between the color values at the vertices, if any such colors were specified.

Table 4-5 PEXETCurveApproxMethod

Value	Mnemonic	Description
1	ImplementationDependent	This type is ConstantBetweenKnots (the same as value 2).
2	ConstantBetweenKnots	Tessellate the curve with equal parametric increments between successive pairs of knots. The value of *tolerance* controls tessellation of the curve. If the *tolerance* is not an integer value, truncate it and only use the integer portion. If *tolerance* is less than or equal to zero, evaluate the curve only at the parameter limits and at the knots that are within the specified parameter range. If *tolerance* is greater than zero, evaluate the curve at the parameter limits, at the knots that are within the specified parameter range, and at the number of positions specified by *tolerance* between each pair of knots.
3	WCS_ChordalSize	Tessellate the curve until the length of each line segment (chord) in world coordinates is less than *tolerance*.
4	NPC_ChordalSize	Tessellate the curve until the length of each line segment (chord) in normalized projection coordinates is less than *tolerance*.
5	DC_ChordalSize	Tessellate the surface until the length of each line segment (chord) in device coordinates is less than *tolerance*.
6	WCS_ChordalDev	Tessellate the curve until the maximum deviation (in world coordinates) between the line and the curve is less than *tolerance*.
7	NPC_ChordalDev	Tessellate the curve until the maximum deviation (in normalized projection coordinates) between the line and the curve is less than *tolerance*.
8	DC_ChordalDev	Tessellate the curve until the maximum deviation (in device coordinates) between the line and the curve is less than *tolerance*.
9	WCS_Relative	Maintain a relative level of quality based on *tolerance* independent of scaling in world coordinates.
10	NPC_Relative	Maintain a relative level of quality based on *tolerance* independent of scaling in normalized projection coordinates.
11	DC_Relative	Maintain a relative level of quality based on *tolerance* independent of scaling in device coordinates.

Table 4-6 PEXETInteriorStyle

Value	Mnemonic	Description
1	Hollow	Do not fill the interiors of surface primitives, but draw the boundary using the surface color. If the surface primitive is clipped as a result of modeling, view, or workstation clipping, draw the boundary along the clipped boundary as well.
2	Solid	Fill the interiors of surface primitives using the surface color.
4	Hatch	Fill the interiors of the surface primitives using the surface color and the hatch style index specified by the interior style index.
5	Empty	Do not draw the interior of the surface primitive and the boundary at all.
0x9000	ExtInteriorStyleTexture	Fill the interiors of surface primitives using texture maps.

Currently, there are no X Consortium-wide registered hatch styles. Sun has defined the following 24 styles as listed in Table 4-7.

Table 4-7 PEXETHatchStyle

Value	Mnemonic	Description
0x8501	SunHorizontal	Horizontal lines
0x8533	SunHorizontalDouble	Double-spaced horizontal lines
0x8565	SunHorizontalTransparent	Transparent horizontal lines
0x8597	SunHorizontalDoubleTransparent	Double-spaced transparent horizontal lines
0x8502	SunVertical	Vertical lines
0x8534	SunVerticalDouble	Double-spaced vertical lines
0x8566	SunVerticalTransparent	Transparent vertical lines
0x8598	SunVerticalDoubleTransparent	Double-spaced transparent vertical lines
0x8503	SunDiagonal45	45-degree angled lines
0x8535	SunDiagonal45Double	Double-spaced 45-degree angled lines
0x8567	SunDiagonal45Transparent	Transparent 45-degree angled lines
0x8599	SunDiagonal45DoubleTransparent	Double-spaced transparent 45-degree angled lines
0x8504	SunDiagonal135	135-degree angled lines

Table 4-7 PEXETHatchStyle (Continued)

Value	Mnemonic	Description
0x8536	SunDiagonal135Double	Double-spaced 135-degree angled lines
0x8568	SunDiagonal135Transparent	Transparent 135-degree angled lines
0x859a	SunDiagonal135DoubleTransparent	Double-spaced transparent 135-degree angled lines
0x8505	SunGridRectangular	Rectangular grid
0x8537	SunGridRectangularDouble	Double-spaced rectangular grid
0x8569	SunGridRectangularTransparent	Transparent rectangular grid
0x859b	SunGridRectangularDoubleTransparent	Double-spaced transparent rectangular grid
0x8506	SunGridDiagonal	Diagonal grid
0x8538	SunGridDiagonalDouble	Double-spaced diagonal grid
0x856a	SunGridDiagonalTransparent	Transparent diagonal grid
0x859c	SunGridDiagonalDoubleTransparent	Double-spaced transparent diagonal grid
0x9000	ExtHatchStyle45Degrees	45-degree angled lines
0x9001	ExtHatchStyle135Degrees	135-degree angled lines

Table 4-8 PEXETSurfaceEdgeType

Value	Mnemonic	Description
1	Solid	Draw the surface edge with a solid, unbroken line.
2	Dashed	Draw the surface edge with a dashed line.
3	Dotted	Draw the surface edge with a dotted line.
4	DashDot	Draw the surface edge with a line of alternating dots and dashes.
0x8500	SunLongDash	Draw the surface edge with a line of long dashes.

Table 4-8 PEXETSurfaceEdgeType (Continued)

Value	Mnemonic	Description
0x8501	SunDotDashDot	Draw the surface edge with a line of dot followed by dash followed by dot, repeating.
0x8502	SunCenter	Draw the surface edge with a line of a long dash followed by a short dash, repeating.
0x8503	SunPhantom	Draw the surface edge with a line of a long dash followed by two short dashes, repeating.

Table 4-9 PEXETReflectionModel

Value	Mnemonic	Description
1	NoShading	Perform no light source shading computation. Light source illumination does not affect the surface color effectively, shaded color equals intrinsic color.
2	Ambient	Use only the ambient terms of the lighting equation. The shaded color will be the intrinsic color as seen under ambient light.
3	Diffuse	Use only the ambient and diffuse terms of the lighting equation. The shaded color will be the intrinsic color as seen under ambient light, plus a diffuse reflection component from each light source.
4	Specular	Use all of the ambient, diffuse, and specular terms of the lighting equation during the light source shading computation. The shaded color will be the same as for *Diffuse*, plus a specular reflection component from each light source.

Table 4-10 PEXETSurfaceInterpMethod

Value	Mnemonic	Description
1	None	Use the color resulting from a single light source computation for the entire surface. Perform no interpolation across surface interiors or edges.
2	Color	Compute the colors at the vertices of the surface using the current reflection model. Then linearly interpolate these colors across the interior of the surface or along the edges.

Table 4-11 PEXETSurfaceApproxMethod

Value	Mnemonic	Description
1	ImplementationDependent	This type is ConstantBetweenKnots (the same as 2).
2	ConstantBetweenKnots	Tessellate the surface with equal parametric increments between successive pairs of knots. The two *tolerance* values control tessellation in each of the two parameter dimensions. If the *tolerance* values are not integer values, truncate them and use only the integer portions of each. If *u_tolerance* is less than or equal to zero, evaluate the surface only at the *u* parameter limits in the *u* direction, and at the *u* knots that are within the specified parameter range. If *u_tolerance* is greater than zero, evaluate the surface at the *u* parameter limits in the *u* direction, at the *u* knots that are within the specified parameter range, and at the number of positions specified by *u_tolerance* between each pair of knots. Use the value of *v_tolerance* similarly to control the evaluation in the *v* direction.
3	WCS_ChordalSize	Tessellate the surface until the length of each line segment (chord) in world coordinates in the *u* parameter direction is less than the specified *u_tolerance* value, and the length of every line segment in world coordinates in the *v* parameter direction is less than the specified *v_tolerance* value.
4	NPC_ChordalSize	Tessellate the surface until the length of each line segment (chord) in normalized projection coordinates in the *u* parameter direction is less than the specified *u_tolerance* value, and the length of every line segment in normalized projection coordinates in the *v* parameter direction is less than the specified *v_tolerance* value.
5	DC_ChordalSize	Tessellate the surface until the length of each line segment (chord) in device coordinates in the *u* parameter direction is less than the specified *u_tolerance* value, and the length of every line segment in world coordinates in the *v* parameter direction is less than the specified *v_tolerance* value
6	WCS_PlanarDev	Tessellate the surface into facets: subdivide the surface until the absolute value of the maximum deviation, in world coordinates, between any facet and the surface is less than *u_tolerance*. *v_tolerance* is ignored.
7	NPC_PlanarDev	Tessellate the surface into facets: subdivide the surface until the absolute value of the maximum deviation, in normalized projection coordinates, between any facet and the surface is less than *u_tolerance*. *v_tolerance* is ignored.

Table 4-11 PEXETSurfaceApproxMethod (Continued)

8	DC_PlanarDev	Tessellate the surface into facets: subdivide the surface until the absolute value of the maximum deviation, in device coordinates, between any facet and the surface is less than *u_tolerance*. *v_tolerance* is ignored.
9	WCS_Relative	Maintain a relative level of quality based on *u_tolerance* independent of scaling in world coordinates. *v_tolerance* is ignored.
10	NPC_Relative	Maintain a relative level of quality based on *u_tolerance* independent of scaling in normalized projection coordinates. *v_tolerance* is ignored.
11	DC_Relative	Maintain a relative level of quality based on *u_tolerance* independent of scaling in device coordinates. *v_tolerance* is ignored.

Table 4-12 PEXETTrimCurveApproxMethod

Value	**Mnemonic**	**Description**
1	ImplementationDependent	This type is ConstantBetweenKnots (the same as 2).
2	ConstantBetweenKnots	Tessellate the trim curve with equal parametric increments between successive pairs of knots. The *tolerance* value controls tessellation of the trim curve. If *tolerance* is not an integer value, truncate it and use only the integer portion. If *tolerance* is less than or equal to zero, evaluate the trim curve only at the parameter limits and at the knots that are within the specified parameter range. If *tolerance* is greater than zero, evaluate the trim curve at the parameter limits, at the knots that are within the specified parameter range, and at the number of positions specified by *tolerance* between each pair of knots.

Table 4-13 PEXETModelClipOperator

Value	**Mnemonic**	**Description**
1	Replace	Use the specified half-spaces to create a new composite model clip volume to replace the current composite model clip volume.
2	Intersection	Intersect the specified half-spaces with the current composite model clip volume to compute a new composite model clip volume.

Table 4-14 PEXETColorType

Value	Mnemonic	Description
0	Indexed	A color that is passed as an unsigned 16-bit integer (that is, it is of type TABLE_INDEX). The integer value is used as an index into a color lookup table. Dereferencing of an indexed color value occurs at the time of rendering, the time when the actual color value is needed for rendering an output primitive.
1	RGBFloat	A color that is passed as three floating-point values, in the order red [0-1], green [0-1], blue [0-1]. A color in this format has a type defined by COLOR_RGB_FLOAT: [r, g, b: PEXFLOAT].
5	RGBInt8	A color that is passed as a unit of four bytes, in the order of red, green, blue. A color in this format has a type defined by COLOR_RGB_INT8:[r, g, b, pad: CARD8].
6	RGBInt16	A color that is passed as a unit of eight bytes, in the order of red, green, blue. A color in this format has a type defined by COLOR_RGB_INT16:[r, g, b, pad: CARD16].

Table 4-15 PEXETFloatFormat

Value	Mnemonic	Description
1	IEEE_754_32	An IEEE 754 standard 32-bit floating-point value

Table 4-16 PEXETLightType

Value	Mnemonic	Description
1	Ambient	A light source that affects all surface primitives uniformly. Ambient light sources have only a color attribute.
2	WCS_Vector	A light source that is specified in world coordinates with a color and a direction vector.
3	WCS_Point	A light source that is specified in world coordinates with a color, a position, and two attenuation coefficients.

Table 4-16 PEXETLightType (Continued)

Value	Mnemonic	Description
4	WCS_Spot	A light source that is specified in world coordinates with a color, a position, a direction vector, a concentration exponent, two attenuation coefficients, and a spread angle.

Table 4-17 PEXETHLHSRMode

Value	Mnemonic	Description
1	Off	Draw all output primitives in the order they are processed. Make no attempt to remove hidden surfaces.
2	ZBuffer	Resolve visibility at each pixel, using a depth- or z-buffering technique. The z-buffering method and number of bits of precision in the *z*-value are device-dependent.
6	ZBufferId	Same as ZBuffer, except that the HLHSRId is used to enable and disable z-buffering.

Table 4-18 PEXETPickDeviceType

Value	Mnemonic	Description
1	DC_HitBox	The picking aperture is defined by a pick position and a pick distance, both in device coordinates. The shape of the hit box (square, circle, and so forth) is implementation-dependent. The pick distance defines the half-width or radius of the hit box.
2	NPC_HitVolume	The picking aperture is defined by two points that define a hit volume in NPC space. Any primitives intersecting with the volume will be selected.

Table 4-19 PEXETColorApproxType

Value	Mnemonic	Description
1	ColorSpace	Convert the rendering pipeline color into a color with three individual color components.

Table 4-20 PEXETColorApproxModel

Value	Mnemonic	Description
1	RGB	red, green, blue

Table 4-21 PEXETRenderingColorModel

Value	Mnemonic	Description
0	ImplementationDependent	This type is RGB (the same as 1).
1	RGB	red, green, blue color model

Table 4-22 PEXETParametricSurfaceCharacteristics

Value	Mnemonic	Description
1	None	No additional surface characteristics beyond the current surface attributes.
2	ImplementationDependent	An implementation-dependent method that displays the shape of the surface. Do not distinguish between front- and back-facing portions of the surface. The appearance of the representation is controlled by the appropriate set of primitive attributes for the representation. How the representation interacts with any interior rendering indicated by the interior attributes is implementation-dependent. The data record is ignored for this type.

Table 4-22 PEXETParametricSurfaceCharacteristics (Continued)

Value	Mnemonic	Description
3	IsoparametricCurves	Draw isoparametric curves on the surface. The data record contains the number of curves to draw in each of the parameter dimensions and their placement. If the placement is *Uniform*, space the specified number of curves evenly between the parameter limits of the surface; also draw curves at the parameter limits. If the placement is *NonUniform*, space the specified number of curves evenly between each pair of knots; also draw curves at the knots. In both cases, only draw the portions of isoparametric curves that are within the interior of the surface as defined by any trimming curves. Do not distinguish between front- and back-facing portions of the surface. The tessellation and appearance of the isoparametric curves are controlled by the surface approximation criteria and the polyline attributes, respectively. Draw isoparametric curves in addition to any interior rendering indicated by the interior style or back interior style attributes. Isoparametric curves have higher visual priority than the primitive's filled or hollow interiors, but lower priority than the primitive's edges.

Table 4-23 PEXETPickOneMethod

Value	Mnemonic	Description
1	Last	Return the last primitive picked.
3	VisibleAny	Return any picked primitive which is visible, considering the current HLHSR mode.

Table 4-24 PEXETPickAllMethod

Value	Mnemonic	Description
1	All	Return all primitives which are within or which intersect the pick aperture.
2	Visible	Return only the visible primitives which are within or which intersect the pick aperture.

Table 4-25 PEXETGDP2D

Value	Mnemonic	Description
0x8502	SunCircle	Circle 2D
0x8503	SunCircularArc	Circular Arc 2D
0x8504	SunCircularArcClose	Circular Arc Close 2D
0x8505	SunAnnotationCircle	Annotation Circle 2D
0x8506	SunAnnotationCircularArc	Annotation Circular Arc 2D
0x8507	SunAnnotationCircularArcClose	Annotation Circular Arc Close 2D
0x8508	SunEllipse	Ellipse 2D
0x8509	SunEllipticalArc	Elliptical Arc 2D
0x850a	SunEllipticalArcClose	Elliptical Arc Close 2D
0x850b	SunAnnotationEllipse	Annotation Ellipse 2D
0x850c	SunAnnotationEllipticalArc	Annotation Elliptical Arc 2D
0x850d	SunAnnotationEllipticalArcClose	Annotation Elliptical Arc Close 2D
0x850f	SunRectangularGrid	Rectangular Grid 2D
0x8510	SunRadialGrid	Radial Grid 2D

Table 4-26 PEXETGDP

Value	Mnemonic	Description
0x8502	SunCircle	Circle 3D
0x8503	SunCircularArc	Circular Arc 3D
0x8504	SunCircularArcClose	Circular Arc Close 3D
0x8505	SunAnnotationCircle	Annotation Circle 3D
0x8506	SunAnnotationCircularArc	Annotation Circular Arc 3D

Table 4-26 PEXETGDP

Value	Mnemonic	Description
0x8507	SunAnnotationCircularArcClose	Annotation Circular Arc Close 3D
0x8508	SunEllipse	Ellipse 3D
0x8509	SunEllipticalArc	Elliptical Arc 3D
0x8510	SunEllipticalArcClose	Elliptical Arc Close 3D
0x8511	SunAnnotationEllipse	Annotation Ellipse 3D
0x8512	SunAnnotationEllipticalArc	Annotation Elliptical Arc 3D
0x8513	SunAnnotationEllipticalArcClose	Annotation Elliptical Arc Close 3D
0x8514	SunRectangularGrid	Rectangular Grid 3D
0x8515	SunRadialGrid	Radial Grid 3D
0x8516	SunTriangleList	Triangle List 3D
0x8401	E&S_Spheres	List of Spheres
0x8402	E&S_Spheres_withRadii	List of Spheres with Radii
0x8403	E&S_Spheres_withColors	List of Spheres with Colors
0x8404	E&S_Spheres_withRadii&Colors	List of Spheres with Radii and Colors
0x8405	E&S_Cylinders	Lists of Cylinders
0x8406	E&S_Cylinders_withRadii	Lists of Cylinders with Radii
0x8407	E&S_Cylinders_withColors	Lists of Cylinders with Colors
0x8408	E&S_Cylinders_withRadii&Colors	Lists of Cylinders with Radii and Colors

Table 4-27 PEXETGSE

Value	Mnemonic	Description
0x8501	SunSetHighlightColor	Set Highlight Color
0x8504	SunSetTextSlantAngle	Set Text Slant Angle
0x8505	SunSetAnnotationTextSlantAngle	Set Annotation Text Slant Angle

Table 4-27 PEXETGSE

Value	Mnemonic	Description
0x8507	SunSetStrokeAntiAliasParameters	Set Stroke Anti-Aliasing Parameters
0x8509	SunSetEndcap	Set Endcap
0x850a	SunSetStrokeJoin	Set Stroke Join
0x850b	SunSetSilhouetteEdgeFlag	Set Silhouette Edge Flag
0x850c	SunSetSurfaceTransparencyCoefficient	Set Surface Transparency Coefficient
0x8401	E&S_Sphere_Radius	Sphere Radius
0x8402	E&S_Sphere_Precision	Sphere Divisions
0x8403	E&S_Cylinder_Radius	Cylinder Radius
0x8404	E&S_Cylinder_Precision	Cylinder Divisions

Table 4-28 PEXETEscape

Value	Mnemonic	Description
1	SetEchoColor	Set echo color
0x8401	ES_ESCAPE_DBLBUFFER	Set the specified Drawable to be double-buffered
0x8402	ES_ESCAPE_SWAPBUFFER	Swap buffers on the specified Drawable
0x8403	ES_ESCAPE_SWAPBUFFERCONTENT	Inquire the state of the specified double-buffered Drawable
0x8701	HP_ESCAPE_DFRONT	Set rendering buffer
0x8505	SunDefineMarkerType	User-definable markers
0x8506	SunGetMarkerDescription	Report user-definable marker
0x8507	SunChangeExtendedRendererAttributes	Change extended renderer attributes
0x8508	SunGetExtendedRendererAttributes	Report extended renderer attributes
0x8509	SunGetExtendedRendererAttributeDynamics	Report extended renderer attributes dynamics
0x8510	SunFlushRenderer	Flushes all pending output commands

Table 4-28 PEXETEscape

Value	Mnemonic	Description
0x9000	ExtEscapeChangePipelineContext	Set pipeline context extended
0x9001	ExtEscapeGetPipelineContext	Get pipeline context extended
0x9002	ExtEscapeChangeRenderer	Change renderer attributes extended
0x9003	ExtEscapeGetRendererAttributes	Get renderer attributes extended
0x9004	ExtEscapeSetTableEntries	Set table entries extended
0x9005	ExtEscapeGetTableEntries	Get table entries extended
0x9006	ExtEscapeGetTableEntry	Get table entry entended
0x9007	ExtEscapeCreateTM	Create texture map
0x9008	ExtEscapeCreateTMDescription	Create texture map description
0x9009	ExtEscapeFreeTM	Free texture map
0x900a	ExtEscapeFreeTMDescription	Free texture map description
0x900b	ExtEscapeFetchElements	Fetch elements extended
0x900c	ExtEscapeQueryColorApprox	Inquire supported color approximation
0x900d	ExtEscapeCreateTMExtraData	Create extra texture data

Table 4-29 PEXExtETEnumType

Value	Mnemonic	Description
0x9000	ExtEnumType	Extended enumerated types
0x9001	ExtOC	Extended output commands
0x9002	ExtPC	Extended pipeline context attributes
0x9003	ExtRA	Extended renderer attributes
0x9004	ExtLUT	Extended lookup tables
0x9005	ExtID	Extended implementation dependent constants
0x9006	ExtTMRenderingOrder	Extended texture mapping rendering order

Table 4-29 PEXExtETEnumType

Value	Mnemonic	Description
0x9007	ExtTMCoordSource	Extended texture mapping coordinate source
0x9008	ExtTMCompositeMethod	Extended texture mapping composition method
0x9009	ExtTMTexelSampleMethod	Extended texture mapping sample method
0x900a	ExtTMBoundaryCondition	Extended texture mapping boundary condition
0x900b	ExtTMClampColorSource	Extended texture mapping clamp color source
0x900c	ExtTMDomain	Extended texture mapping domain
0x900d	ExtTexelType	Extended texture mapping texel types
0x900e	ExtTMResourceHint	Extended texture mapping resource hints
0x900f	ExtTMType	Extended texture mapping types
0x9010	ExtTMParameterizationMethod	Extended texture mapping parameterization method
0x9011	ExtTMPerspectiveCorrection	Extended texture mapping perspective correction
0x9012	ExtTMSampleFrequency	Extended texture mapping sample frequency
0x9013	ExtPrimitiveAAMode	Extended primitive anti-aliasing mode
0x9014	ExtPrimitiveAABlendOp	Extended primitive anti-aliasing blending operation
0x9015	ExtLineCapStyle	Extended line cap style
0x9016	ExtLineJoinStyle	Extended line join style

Table 4-30 PEXExtETOC

Value	Mnemonic	Description
0x9000	ExtOCTMPerspectiveCorrection	Set texture mapping perspective correction
0x9001	ExtOCTMSampleFrequency	Set texture mapping sample frequency
0x9002	ExtOCTMResourceHints	Set texture mapping resource hints
0x9003	ExtOCActiveTextures	Set texture mapping active textures
0x9004	ExtOCBFActiveTextures	Set texture mapping backface active textures

Table 4-30 PEXExtETOC

Value	Mnemonic	Description
0x9005	ExtOCFillAreaSetWithData	Extended fill area set with data
0x9006	ExtOCSetOfFillAreaSets	Extended set of fill area sets with data
0x9007	ExtOCTriangleStrip	Extended triangle strip with data
0x9008	ExtOCQuadrilateralMesh	Extended quadrilateral mesh with data
0x9009	ExtOCPrimitiveAA	Set primitive anti-aliasing
0x900a	ExtOCLineCapStyle	Set line cap style
0x900b	ExtOCLineJoinStyle	Set line join style
0x900c	ExtOCEllipse	Ellipse
0x900d	ExtOCEllipse2D	2D ellipse
0x900e	ExtOCCircle2D	2D circle
0x900f	ExtOCEllipticalArc	Elliptical Arc
0x9010	ExtOCEllipticalArc2D	2D Elliptical Arc
0x9011	ExtOCCircularArc2D	2D Circular Arc

Table 4-31 PEXExtETPC

Value	Mnemonic	Description
0x9000	ExtPCTMPerspectiveCorrection	Texture mapping perspective correction method
0x9001	ExtPCTMResourceHints	Texture mapping resource hints
0x9002	ExtPCTMSampleFrequency	Texture mapping sample frequency
0x9003	ExtPCActiveTextures	Texture mapping active textures
0x9004	ExtPCBFActiveTextures	Texture mapping backface active textures
0x9005	ExtPCPrimitiveAA	Primitive anti-aliasing mode and blend function
0x9006	ExtPCLineCapStyle	Line cap style
0x9007	ExtPCLineJoinStyle	Line join style

Table 4-32 PEXExtETRA

Value	Mnemonic	Description
0x9000	ExtRATMBindingTable	Texture mapping binding table renderer attribute
0x9001	ExtRATMCoordSourceTable	Texture mapping coordinate source table renderer attribute
0x9002	ExtRATMCompositionTable	Texture mapping composition table renderer attribute
0x9003	ExtRATMSamplingTable	Texture mapping sampling table renderer attribute

Table 4-33 PEXExtETLUT

Value	Mnemonic	Description
0x9000	ExtLUTTMBinding	Texture mapping binding table
0x9001	ExtLUTTMCoordSource	Texture mapping coordinate source table
0x9002	ExtLUTTMComposition	Texture mapping composition table
0x9003	ExtLUTTMSampling	Texture mapping sampling table

Table 4-34 PEXExtETID

Value	Mnemonic	Description
0x9000	ExtIDMaxTextureMaps	Maximum simultaneously active texture maps per primitive
0x9001	ExtIDMaxFastTMSize	Maximum size of any dimension of the base level of a texture map which allows an optimized implementation
0x9002	ExtIDPowerOfTwoTMSizesRequired	Indicates whether all texel arrays defining a texture must be powers of two.
0x9003	ExtIDSquareTMRequired	Indicates whether a texture map must have equally sized dimensions.

Table 4-35 PEXExtETTMRenderingOrder

Value	Mnemonic	Description
0x9000	ExtTMRenderingOrderPreSpecular	The texture map is to be applied to the primitive before the speculation reflection calculations.
0x9001	ExtTMRenderingOrderPostSpecular	The texture map is to be applied to the primitive after the speculation reflection calculations.

Table 4-36 PEXExtETTMCoordSource

Value	Mnemonic	Description
0x9000	ExtTMCoordSourceVertexCoord	The source texture coordinate values are the vertex coordinate.
0x9001	ExtTMCoordSourceVertexNormal	The source texture coordinate values are the vertex normal.
0x9002	ExtTMCoordSourceFloatData	The source texture coordinate values are the vertex's floating point data list.

Table 4-37 PEXExtETTMCompositeMethod

Value	Mnemonic	Description
0x9000	ExtTMCompositeReplace	Texture map data replaces the primitive's current data.
0x9001	ExtTMCompositeModulate	Texture map data and primitive data are blended.
0x9002	ExtTMCompositeBlendEnvColor	The primitive color and a constant environment color are blended by the texture map color.
0x9003	ExtTMCompositeDecal	Texture map color and primitive color are blended by the texture map alpha.
0x9004	ExtTMCompositeDecalBackground	Texture map color and background color are blended according to the texture map alpha.
0x9005	ExtTMCompositeReplaceBlendedColors	The primitive color is replaced by two constant colors modulated by the texture color.

Table 4-38 PEXExtETTMTexelSampleMethod

Value	Mnemonic	Description
0x9000	ExtTMTexelSampleSingleBase	The closest single texel selected by the texture coordinates is sampled from the base texture map level.
0x9001	ExtTMTexelSampleLinearBase	The neighboring texels selected by the texture coordinate(s) in the base texture map level are weighted average.
0x9002	ExtTMTexelSampleSingleInMipmap	The closest single texel selected by the texture coordinate(s) is sampled from the closest texture map level to the sample depth.
0x9003	ExtTMTexelSampleLinearInMipmap	The neighboring texels selected by the texture coordinate(s) are sampled from the closest texture map level to the sample depth. Their weighted average is used.
0x9004	ExtTMTexelSampleSingleBetweenMipmaps	The closest texel selected by the texture coordinate(s) is sampled from the two closest texture map levels to the sample depth. The texel found at the exact sample depth by linear interpolation between these two sampled texels is used.
0x9005	ExtTMTexelSampleLinearBetweenMipmaps	The neighboring texels selected by the texture coordinate(s) are sampled from the two closest texture map levels to the sample depth. A weighted average is taken of those texels on each of the texture map levels.

Table 4-39 PEXExtETTMBoundaryCondition

Value	Mnemonic	Description
0x9000	ExtTMBoundaryCondClampColor	A color specified by the clamp color source is applied.
0x9001	ExtTMBoundaryCondBoundary	Texture map boundary color is applied.
0x9002	ExtTMBoundaryCondWrap	Texel sampling wraps back to the opposite texture map border.
0x9003	ExtTMBoundaryCondMirror	Texel sampling is reversed across the texture map.

Table 4-40 PEXExtETTMClampColorSource

Value	Mnemonic	Description
0x9000	ExtTMClampColorSourceAbsolute	Primitive intrinsic color is applied.
0x9001	ExtTMClampColorSourceExplicit	The explicitly specified color is used.

Table 4-41 PEXExtETTMDomain

Value	Mnemonic	Description
0x9000	ExtTMDomainColor1D	1D texture map
0x9001	ExtTMDomainColor2D	2D texture map

Table 4-42 PEXExtETTexelType

Value	Mnemonic	Description
0x9000	ExtTexelLuminanceFloat	A texel which is passed as a floating point value [0.0 -> 1.0] representing an intensity
0x9001	ExtTexelLuminanceInt8	A texel which is passed as an unsigned 8-bit integer [0 -> 255] representing an intensity
0x9002	ExtTexelLuminanceInt16	A texel which is passed as an unsigned 16-bit integer [0 -> 65535] representing an intensity
0x9003	ExtTexelLuminanceAlphaFloat	A texel which is passed as two floating point values [0.0 -> 0.1] representing an intensity and an alpha value
0x9004	ExtTexelLuminanceAlphaInt8	A texel which is passed as two unsigned 8-bit integers [0 -> 255] representing an intensity and an alpha value
0x9005	ExtTexelLuminanceAlphaInt16	A texel which is passed as two unsigned 16-bit integers [0 -> 65535] representing an intensity and an alpha value
0x9006	ExtTexelRGBFloat	A texel which is passed as three floating point values [0.0 -> 1.0] representing the red, green, and blue components of a color

Table 4-42 PEXExtETTexelType (Continued)

Value	Mnemonic	Description
0x9007	ExtTexelRGBInt8	A texel which is passed as three unsigned 8-bit integers [0 -> 255] representing the red, green, and blue components of a color
0x9008	ExtTexelRGBInt16	A texel which is passed as three unsigned 16-bit integers [0 -> 65535] representing the red, green, and blue components of a color
0x9009	ExtTexelRGBAlphaFloat	A texel which is passed as four floating point values [0.0 -> 0.1] representing the red, green, and blue components of a color and an alpha value
0x9010	ExtTexelRGBAlphaInt8	A texel which is passed as four unsigned 8-bit integers [0 -> 255] representing the red, green, and blue components of a color and an alpha value
0x9011	ExtTexelRGBAlphaInt16	A texel which is passed as four unsigned 16-bit integers [0 -> 65535] representing the red, green, and blue components of a color and an alpha value

Table 4-43 PEXExtETTMResourceHint

Value	Mnemonic	Description
0x9000	ExtTMResourceHintNone	No optimization considerations in particular are made.
0x9001	ExtTMResourceHintSpeed	Optimize for speed consideration.
0x9002	ExtTMResourceHintSpace	Optimize for space consideration.

Table 4-44 PEXExtETTMType

Value	Mnemonic	Description
0x9000	ExtTMTypeMipMap	Mipmap texture map

Table 4-45 PEXExtETTMParameterizationMethod

Value	Mnemonic	Description
0x9000	ExtTMParamExplicit	The primitive's texture coordinates are explicitly defined by the texture coordinate source in the current texture coordinate source lookup table.
0x9001	ExtTMParamReflectSphereVRC	The source texture map coordinates are a reflection vector which is normalized and conceptually projected onto an infinite sphere (with (0,0,0) as its origin) projection object. Calculations are performed in VRC space after the vertex and its normal have been transformed to VRC space.
0x9002	ExtTMParamReflectSphereWC	The source texture map coordinates are a reflection vector which is normalized and conceptually projected onto an infinite sphere (with (0,0,0) as its origin) projection object. Calculations are performed in WC space after the vertex and its normal have been transformed to WC space.
0x9003	ExtTMParamLinearVRC	The vertex coordinates are transformed to VRC by using the current composite model transform and the current view orientation transform. The transformed vertex coordinates are then used to linearly project the values.

Table 4-46 PEXExtETTMPerspectiveCorrection

Value	Mnemonic	Description
0x9000	ExtTMPerspCorrectNone	No perspective correction
0x9002	ExtTMPerspCorrectPixel	Perspection correction is applied per pixel

Table 4-47 PEXExtETTMSampleFrequency

Value	Mnemonic	Description
0x9000	ExtTMSampleFrequencyPixel	Texture map texels are sampled once for each pixel.

Table 4-48 PEXExtETPrimitiveAAMode

Value	Mnemonic	Description
0x9000	ExtPrimAANone	No anti-aliasing.
0x9001	ExtPrimAAPoint	Aliasing corrections are made to “point” primitives.
0x9002	ExtPrimAAVector	Aliasing corrections are made to “vector” primitives.
0x9003	ExtPrimAAPointVector	Aliasing corrections are made to “point” and “vector” primitives.
0x9004	ExtPrimAAPolygon	Aliasing corrections are made to “polygon” primitives.
0x9005	ExtPrimAAPointPolygon	Aliasing corrections are made to “point” and “polygon” primitives.
0x9006	ExtPrimAAVectorPolygon	Aliasing corrections are made to “vector” and “polygon” primitives.
0x9007	ExtPrimAAPointVectorPolygon	Aliasing corrections are made to “point”, “vector”, and “polygon” primitives.

Table 4-49 PEXExtETPrimitiveAABlendOp

Value	Mnemonic	Description
0x9000	ExtPrimAABlendOpImpDep	The blending function is calculated based on surface transparency coefficient.

Table 4-50 PEXExtETLineCapStyle

Value	Mnemonic	Description
0x9000	ExtLineCapStyleButt	The wide line is square at the endpoint with no projection beyond.
0x9001	ExtLineCapStyleRound	The wide line has a circular arc with the diameter equal to the linewidth, centered on the endpoint.
0x9002	ExtLineCapStyleProjecting	The wide line is square at the end, but the path continues beyond the endpoint for a distance equal to half the linewidth.

Table 4-51 PEXExtETLineJoinStyle

Value	Mnemonic	Description
0x9000	ExtLineJoinStyleImpDep	The wide line segments are joined in a device-dependent fashion.
0x9001	ExtLineJoinStyleRound	Two line segments are joined by rendering a circular arc whose diameter is equal to the linewidth and whose centerpoint is the vertex between the two segments.
0x9002	ExtLineJoinStyleMiter	The outer edges of the wide line segments extend to meet at an angle.
0x9003	ExtLineJoinStyleBevel	The two line segments are joined by applying the butt cap style to each of them and rendering the triangular notch left between them.

4

Implementation-Dependent Constants

Table 4-52 lists the values of the implementation-independent constants in Solaris PEX.

Table 4-52 Implementation-Dependent Constants

Name	Type	Value
NomLineWidth	CARD32	1
NumSupportedLineWidths	CARD32	0[1]
MinLineWidth	CARD32	1
MaxLineWidth	CARD32	1000
NomEdgeWidth	CARD32	1
NumSupportedEdgeWidths	CARD32	0[1]
MinEdgeWidth	CARD32	1
MaxEdgeWidth	CARD32	1000
NomMarkerSize	CARD32	11
NumSupportedMarkerSizes	CARD32	0[1]
MinMarkerSize	CARD32	1
MaxMarkerSize	CARD32	MAXINT
MaxNameSetNames	CARD32	256
MaxModelClipPlanes	CARD32	10
TransparencySupported	CARD32	1 (TRUE)
Dithering Support	CARD32	hardware dependent
MaxNonAmbientLights	CARD32	8
MaxNURBOrder	CARD32	10
MaxTrimCurveOrder	CARD32	6
BestColorApproxValues	CARD32	PEXColorApproxAnyValues
DoubleBufferingSupported	CARD32	hardware dependent[2]

Table 4-52 Implementation-Dependent Constants (Continued)

Name	Type	Value
MaxHitsEventSupported	CARD32	0 (FALSE)
ChromaticityRedU	PEXFLOAT	0.628
ChromaticityRedV	PEXFLOAT	0.346
LuminanceRed	PEXFLOAT	1.0
ChromaticityGreenU	PEXFLOAT	0.268
ChromaticityGreenV	PEXFLOAT	0.588
LuminanceGreen	PEXFLOAT	1.0
ChromaticityBlueU	PEXFLOAT	0.150
ChromaticityBlueV	PEXFLOAT	0.070
LuminanceBlue	PEXFLOAT	1.0
ChromaticityWhiteU	PEXFLOAT	0.313
ChromaticityWhiteV	PEXFLOAT	0.329
LuminanceWhite	PEXFLOAT	1.0

1. A value of 0 indicates a continuous range of values are supported between the minimum and maximum values for these attributes.
2. See "Double Buffering with Escapes" on page 10 for details.

4

Lookup Tables

Table 4-53 lists the maximum number of entries definable for each lookup table. Table 4-54 through Table 4-64 lists the predefined entries for each lookup table type.

Table 4-53 Maximum Definable Entries for Lookup Table Types

Name	Maximum Number of Entries
LineBundle	1024
MarkerBundle	1024
TextBundle	1024
InteriorBundle	1024
EdgeBundle	1024
Pattern	0[1]
TextFont	1024
Color	256
View	64
Light	1024
DepthCue	1024
ColorApprox	32
TMBinding[2]	32
TMCoordSource[2]	32
TMComposition[2]	32
TMSampling[2]	32

1. Pattern lookup tables are not supported in Solaris PEX.

2. These lookup tables are defined as part of the COSE CGE PEX 5.1 extensions.

Table 4-54 Predefined Line Bundle Entries

Index	Line type	Interpolation method	Color	Line width scale factor	Approximation type	Approximation value
1	Solid	None	(*Indexed*, 1)	1.0	implementation-dependent	1.0
2	Dashed	None	(*Indexed*, 1)	1.0	implementation-dependent	1.0
3	Dotted	None	(*Indexed*, 1)	1.0	implementation-dependent	1.0
4	Dash-dot	None	(*Indexed*, 1)	1.0	implementation-dependent	1.0
5	Long-dash	None	(*Indexed*, 1)	1.0	implementation-dependent	1.0
6	Dot-dash-dot	None	(*Indexed*, 1)	1.0	implementation-dependent	1.0
7	Center	None	(*Indexed*, 1)	1.0	implementation-dependent	1.0
8	Phantom	None	(*Indexed*, 1)	1.0	implementation-dependent	1.0

Table 4-55 Predefined Marker Bundle Entry

Index	Marker type	Marker size scale factor	Color
1	Asterisk	1.0	(*Indexed*, 1)

Table 4-56 Predefined Text Bundle Entries

Index	Font Index	Text Precision	Expansion Factor	Character Spacing	Color
1	1	Stroke	1.0	0.0	(*Indexed*, 1)

Table 4-57 Predefined Text Font Bundle Entries

Index	Value	Explanation
1	Roman.M	Each Text Font Lookup Table entry is a list of font identifiers. The Solaris PEX server allows a maximum of 64 font identifiers per entry and sets all 64 font ids of this predefined entry to a server-generated id that corresponds to the default font *Roman_M*.

Table 4-58 Predefined Interior Bundle Entry

Index	Attribute	Value
1	interior_style	1 (hollow)
	interior_style_index	1
	reflection_model	1 (none)
	surface_interp	1 (none)
	bf_interior_style	1 (hollow)
	bf_interior_style_index	1
	bf_reflection_model	1 (none)
	bf_surface_interp	1 (none)
	surface_approx	{1, 1.0, 1.0}
	surface_color	{*Indexed*, 1}
	reflection_attr	{1.0, 1.0, 1.0, 0.0, 0.0, (*Indexed*, 1)]
	bf_surface_color	{*Indexed*, 1}
	bf_reflection_attr	{1.0, 1.0, 1.0, 0.0, 0.0, (*Indexed*, 1)]

Table 4-59 Predefined Depth Cue Bundle Entries

Index	Depth Cue Mode	Depth Cue Reference Planes	Depth Cue Scale Factors	Color
0	PEXOff	(0.0, 1.0)	(1.0, 1.0)	(*Indexed*, 0)
1	PEXOn	(0.0, 1.0)	(0.0, 1.0)	(*Indexed*, 0)

Table 4-60 Predefined Edge Bundle Entries

Index	Edge flag	Edge type	Edge width scale factor	Color
1	Off	Solid	1.0	(*Indexed*, 1)
2	Off	Dashed	1.0	(*Indexed*, 1)
3	Off	Dotted	1.0	(*Indexed*, 1)
4	Off	Dash-dot	1.0	(*Indexed*, 1)
5	Off	Long-dash	1.0	(*Indexed*, 1)
6	Off	Dot-dash-dot	1.0	(*Indexed*, 1)
7	Off	Center	1.0	(*Indexed*, 1)
8	Off	Phantom	1.0	(*Indexed*, 1)

Table 4-61 Predefined Light Bundle Entries

Index	Type	Color	Direction
1	Ambient	(*Indexed*, 1)	None
2	Directional	(*Indexed*, 1)	[1.0, 1.0, 1.0]
3	Directional	(*Indexed*, 1)	[-1.0, 1.0, 1.0]
4	Directional	(*Indexed*, 1)	[1.0, -1.0, 1.0]
5	Directional	(*Indexed*, 1)	[1.0, 1.0, -1.0]

Table 4-62 Predefined View Entries

Index	Orientation Matrix	Mapping Matrix	Clip Limits	Clip Flag
0 (full view)	$\begin{bmatrix} 1.0 & 0.0 & 0.0 & 0.0 \\ 0.0 & 1.0 & 0.0 & 0.0 \\ 0.0 & 0.0 & 1.0 & 0.0 \\ 0.0 & 0.0 & 0.0 & 1.0 \end{bmatrix}$	$\begin{bmatrix} 1.0 & 0.0 & 0.0 & 0.0 \\ 0.0 & 1.0 & 0.0 & 0.0 \\ 0.0 & 0.0 & 1.0 & 0.0 \\ 0.0 & 0.0 & 0.0 & 1.0 \end{bmatrix}$	$\begin{bmatrix} 0.0 & 1.0 \end{bmatrix}$ $\begin{bmatrix} 0.0 & 1.0 \end{bmatrix}$ $\begin{bmatrix} 0.0 & 1.0 \end{bmatrix}$	ClipAll
1 (top view)	$\begin{bmatrix} 1.0 & 0.0 & 0.0 & 0.0 \\ 0.0 & -1.0 & 0.0 & 0.0 \\ 0.0 & 1.0 & 0.0 & 0.0 \\ 0.0 & 0.0 & 0.0 & 1.0 \end{bmatrix}$	$\begin{bmatrix} 0.1 & 0.0 & 0.0 & 0.25 \\ 0.0 & 0.1 & 0.0 & 0.75 \\ 0.0 & 0.0 & 0.25 & 0.5 \\ 0.0 & 0.0 & 0.0 & 1.0 \end{bmatrix}$	$\begin{bmatrix} 0.05 & 0.45 \end{bmatrix}$ $\begin{bmatrix} 0.55 & 0.95 \end{bmatrix}$ $\begin{bmatrix} 0.0 & 1.0 \end{bmatrix}$	ClipAll
2 (off axis view)	$\begin{bmatrix} 0.7071 & 0.0 & -0.7071 & 0.0 \\ -0.4083 & 0.8165 & -0.4083 & 0.0 \\ 0.5774 & 0.5774 & 0.5774 & 0.0 \\ 0.0 & 0.0 & 0.0 & 1.0 \end{bmatrix}$	$\begin{bmatrix} 0.1 & 0.0 & 0.0 & 0.75 \\ 0.0 & 0.1 & 0.0 & 0.75 \\ 0.0 & 0.0 & 0.25 & 0.5 \\ 0.0 & 0.0 & 0.0 & 1.0 \end{bmatrix}$	$\begin{bmatrix} 0.55 & 0.95 \end{bmatrix}$ $\begin{bmatrix} 0.55 & 0.95 \end{bmatrix}$ $\begin{bmatrix} 0.0 & 1.0 \end{bmatrix}$	ClipAll

Table 4-62 Predefined View Entries (Continued)

Index	Orientation Matrix	Mapping Matrix	Clip Limits	Clip Flag
3 (front view)	$\begin{bmatrix} 1.0 & 0.0 & 0.0 & 0.0 \\ 0.0 & 1.0 & 0.0 & 0.0 \\ 0.0 & 0.0 & 1.0 & 0.0 \\ 0.0 & 0.0 & 0.0 & 1.0 \end{bmatrix}$	$\begin{bmatrix} 0.1 & 0.0 & 0.0 & 0.25 \\ 0.0 & 0.1 & 0.0 & 0.25 \\ 0.0 & 0.0 & 0.25 & 0.5 \\ 0.0 & 0.0 & 0.0 & 1.0 \end{bmatrix}$	$\begin{bmatrix} 0.05 & 0.45 \end{bmatrix}$ $\begin{bmatrix} 0.05 & 0.45 \end{bmatrix}$ $\begin{bmatrix} 0.0 & 1.0 \end{bmatrix}$	ClipAll
4 (right side view)	$\begin{bmatrix} 0.0 & 0.0 & -1.0 & 0.0 \\ 0.0 & 1.0 & 0.0 & 0.0 \\ 1.0 & 0.0 & 0.0 & 0.0 \\ 0.0 & 0.0 & 0.0 & 1.0 \end{bmatrix}$	$\begin{bmatrix} 0.1 & 0.0 & 0.0 & 0.75 \\ 0.0 & 0.1 & 0.0 & 0.25 \\ 0.0 & 0.0 & 0.25 & 0.5 \\ 0.0 & 0.0 & 0.0 & 1.0 \end{bmatrix}$	$\begin{bmatrix} 0.55 & 0.95 \end{bmatrix}$ $\begin{bmatrix} 0.05 & 0.45 \end{bmatrix}$ $\begin{bmatrix} 0.0 & 1.0 \end{bmatrix}$	ClipAll
5 (bottom view)	$\begin{bmatrix} 1.0 & 0.0 & 0.0 & 0.0 \\ 0.0 & 0.0 & 1.0 & 0.0 \\ 0.0 & -1.0 & 0.0 & 0.0 \\ 0.0 & 0.0 & 0.0 & 1.0 \end{bmatrix}$	$\begin{bmatrix} 0.1 & 0.0 & 0.0 & 0.5 \\ 0.0 & 0.1 & 0.0 & 0.5 \\ 0.0 & 0.0 & 0.25 & 0.5 \\ 0.0 & 0.0 & 0.0 & 1.0 \end{bmatrix}$	$\begin{bmatrix} 0.3 & 0.3 \end{bmatrix}$ $\begin{bmatrix} 0.7 & 0.7 \end{bmatrix}$ $\begin{bmatrix} 0.0 & 1.0 \end{bmatrix}$	ClipAll

Table 4-63 Predefined Color Entries

Color Index	Color Type	Red	Green	Blue	Description
0	RGB	0.0	0.0	0.0	Black
1	RGB	1.0	1.0	1.0	White
2	RGB	1.0	0.0	0.0	Red
3	RGB	0.0	1.0	0.0	Green
4	RGB	0.0	0.0	1.0	Blue
5	RGB	1.0	1.0	0.0	Yellow
6	RGB	0.0	1.0	1.0	Cyan
7	RGB	1.0	0.0	1.0	Magenta

Table 4-64 Predefined Color Approximation Entries

Index	Type	Model	Maximum	Dither	Multipliers	Weights	Base Pixel
0	ColorSpace	RGB	5, 5, 5,	0 (off)	1, 6, 36	1.0, 1.0, 1.0	16