

# Scripting with VBScript

## Basic Data Types

### Points

Points are transferred as an array of 2 values. Depending on the context the points contain float or of LONG values.

### Sizes

Sizes are transferred as an array of 2 values. Depending on the context the sizes contain float or of LONG values.

### Rectangles

Rectangles are transferred as an array of 4 values. Depending on the context the sizes contain float or of LONG values.

The first 2 values are the position of the rectangle, the following 2 are the width and the height. The width and the height always have to be larger than or equal to 0.

### Ranges

A range is transferred as an array of 2 LONGs. The first one is the position of the range, the second one is its length.

## Interfaces

### IApplication

Used by *Application* object.

### Properties

Property	Type	Description
ActiveDocument	<a href="#">IPLDocument</a> *	The top document.
Count	LONG	(Read-only) The number of documents.
Item(index)	<a href="#">IPLDocument</a> * LONG, Range [0;Count - 1]	(Read-only) The document with the given index.
Visible	Boolean	Visibility of PhotoLine

### Methods

Method	Type	Description
GetIdentityMatrix	<a href="#">IPLMatrix</a> *	Creates an identity matrix.
GetPerspectiveMatrix(rectangle, corners)	<a href="#">IPLMatrix</a> * float[4] float[8]	Creates a transformation matrix, that maps a rectangle to a quadrilateral. Returns an error, if the corners don't form a valid perspective transformation.
GetRotationMatrix(degrees)	<a href="#">IPLMatrix</a> * float	Creates a rotation matrix. Optionally, it uses the given reference point as fix point.

Method	Type	Description
[, referencePoint])	float[2] (optional)	
GetScaleMatrix( scaleX, scaleY [, referencePoint])	<a href="#">IPLMatrix</a> * float float float[2] (optional)	Creates a scaling matrix. Optionally, it uses the given reference point as fix point.
GetTranslationMatrix( offsetX, offsetY)	<a href="#">IPLMatrix</a> * float float	Creates a translation matrix.
Index( document)	LONG <a href="#">IPLDocument</a> *	Returns the index of the given document.
InputDialog( [title [, description [, defaultValue]])	String String (optional) String (optional) String (optional)	Query user for a value with an input dialog. You can optionally set the title of the dialog, the description of the input field and a default value. If not set or empty, the title is “PhotoLine”, the description is “Value:” and the default value is empty. If the user cancels the dialog, the return value will be an empty string.
Open( filename [, optionKey, optionValue]++)	<a href="#">IPLDocument</a> * String String, variable	Opens a document file and returns the resulting document. OptionKey and optionValue are optional key-value pairs, that are dependent of the file format and are parameters for the document import. Additionally, there is are the following keys: - “AddToRecentFiles” as Boolean. Default: FALSE - “Data” as Byte [] or Base64 string or hex string: If present, the document will be opened with this data instead of a file. - “CreatePlaceholder” as Boolean: TRUE: The new document will contain a single placeholder layer containing the file/data. Default: FALSE - “EmbedFile” as Boolean: If “CreatePlaceholder” is TRUE, “EmbedFile” controls whether the file data will be embedded in the new document. Default: FALSE
OpenAsPlaceholder( filename [, optionKey, optionValue]++)	<a href="#">IPLDocument</a> * String String, variable	Opens a document file as placeholder and returns the resulting document. OptionKey and optionValue are optional key-value pairs, that are dependent of the file format and are parameters for the document import. Additionally, there is the key “EmbedFile” with a Boolean value. The default value is FALSE.
OpenDialog	String[]	Shows an Open dialog and allows the user to select files. Returns an array of filenames as strings.

## IPLColor

Used by *Color* object.

If a property or method takes a IPLColor as parameter, you can usually use a float[] instead.

If the type is named “IPLColor \* (variable, count)”, the color will be created based on the number of elements in the float array:

- 1 element creates a CMGray color.

- 3 elements create a CMRGB color.

- 4 elements create a CMCMYK color.

If the type is named “IPLColor \* (variable, RGB)”, PhotoLine will create a CMRGB color. In this case the number of elements has to be 3 or 4 (with alpha).

## Properties

Property	Type	Description
ApplyTransparency	Boolean	Only for document colors: False: if applied, the colors inside the document keep their transparency. True: if applied, the color inside the document get the transparency from the document color.
Gradient	<a href="#">IPLDictionary</a> *	If the color is not a <a href="#">gradient</a> , this property is set to null/nothing.
Matrix	<a href="#">IPLMatrix</a> *	If the color is a pattern or gradient, matrix is the transformation of the content. Otherwise it is null/nothing.
Model	<a href="#">ColorModel</a>	The color model of the color.
Name	String	The name of the color.
SpotColor	Boolean	Only for document colors: Defines whether the color is a spot color. Spot colors must have a name.
Values	float[], default range [0;1]	The color values of the color. The number of elements depends on the model of the color. The last element is the color’s alpha value. If this property is set, the alpha value is optionally and 1 (opaque) is used if it’s missing.

## IPLColorProfile

Implemented by the *ColorProfile* object.

## Properties

Property	Type	Description
Data	Byte []	(Read-only) The data of the color profile.
Model	<a href="#">ColorModel</a>	(Read-only) The color model of the color profile.
Name	String	(Read-only) The name of the color profile.
RenderingIntent	<a href="#">RenderingIntent</a>	(Read-only) The rendering intent of the color profile.
Path	String	(Read-only) The file path of the color profile. May be empty.

## Methods

Method	Type	Description
Init( profile, renderingIntent)	None variable <a href="#">RenderingIntent</a>	Initialize a color profile. The color profile can be initialized by - another IPLColorProfile - a string defining the full pathname to a color profile - a string with the name of an installed color profile - a byte array containing the profile data

Method	Type	Description
IsEqual( otherProfile)	Boolean IPLColorProfile *	Checks two color profiles for equality.

## IPLCurve

Implemented by the *Curve* object.

If a property or method takes a IPLCurve as parameter, you can usually use a float[] instead. In that case, PhotoLine will create a CTSpline curve and the type is named “IPLCurve \* (variable)” in this description.

## Properties

Property	Type	Description
Points	float []	The curve points. A normal curve has at least 2 points, resulting in an array size of 4.
Type	<a href="#">CurveType</a>	The curve type.

## IPLDictionary

Implemented by the *Dictionary* object. It is an interface to describe data and contains key-value pairs. The key is always a string and the type of the value is variable.

## Properties

Property	Type	Description
Count()	LONG	(Read-only) The number of keys in the dictionary.
Item( key)	variable String	Access the content of a key-value pair.
Key( index)	String LONG	(Read-only) The key at the given index.

## Methods

Method	Type	Description
Add( [dictionary]   [key, value]+)	None IPLDictionary * String, variable	Initialize a dictionary. The color profile can be initialized by - another IPLDictionary - a sequence of key-value pairs
Remove( key)	None String	Remove a key. If the key doesn't exist, nothing is done.

## IPLDocument

Implemented by the *Document* object.

## Properties

Property	Type	Description
ActiveLayer	<a href="#">IPLLayer</a> *	The active layer of the active page. May be null/nothing.
ActivePage	<a href="#">IPLPage</a> *	The active page.
Application	<a href="#">IApplication</a> *	The application.

Property	Type	Description
ColorProfile	<a href="#">IPLColorProfile</a> *	The color profile of the document. May be null/nothing.
Colors	<a href="#">IPLColor</a> *[]	An array of colors assigned to the document. Every color must have a unique name.
Count	LONG	(Read-only) The number of pages.
DocumentMode	Boolean	False: The document is in picture mode True: The document is in document mode
Item(index)	<a href="#">IPLPage</a> * LONG, Range [0;Count - 1]	(Read-only) The document with the given index.
Path	String	The file path of the document.
Resolution	float	The resolution of the document in dpi.
RootLayer	<a href="#">IPLLayer</a> *	(Read-only)The root layer of the active page.
SelectedLayers	<a href="#">IPLLayerArray</a> *	The selected layers of the active page. If there are entries, the first entry is always the active layer.
Size	LONG[2]	Size of the document in pixels.
TextStyles(paragraphStyles)	<a href="#">IPLDictionary</a> *[] Boolean	An array of IPLDictionaries, that describe the <a href="#">text styles</a> assigned to the document. If paragraph styles is True, it will return the paragraph styles, otherwise the character style.

## Methods

Method	Type	Description
CanChangeDocumentMode	Boolean	Checks whether DocumentMode can be changed.
Close(option)	None <a href="#">CloseOption</a>	Closes the document.
Copy([options]   [optionKey, optionValue]++)	None <a href="#">IPLDictionary</a> * String, variable	Copy a merged image of the document to the clipboard. The available options are described <a href="#">here</a> .
DeletePageContainer(position)	None LONG	Delete a page container at the given position.
DoOperation(operationName [, options]   [, optionKey, optionValue]++)	None String <a href="#">IPLDictionary</a> * String, variable	Execute the operation with the given name. The options are optional and can either be set using an IPLDictionary or by using key-value pairs.
Duplicate()	IPLDocument *	Duplicates the document.
DuplicatePageContainer(srcPageOrPosition, destPageOrPosition)	<a href="#">IPLPage</a> * <a href="#">IPLPage</a> * or LONG <a href="#">IPLPage</a> * or LONG	Duplicate a page container. The page container can be specified either as a position or an IPLPage. The destination position can also be either a position or a page container. In the second case the duplicated page container will be inserted after that. The result is the new page container.
Export(filename [, options]   [, optionKey, optionValue]++)	None String <a href="#">IPLDictionary</a> * String, variable	Export the document with the given filename (including path). The export options are optional and can either be set using an IPLDictionary or by using key-value pairs. The available options are dependent of the file format.
Index(document)	LONG <a href="#">IPLPage</a> *	Returns the index of the given document.
InsertPageContainer(position)	None LONG	Insert a new page container at a given position. Optionally you can insert an already existing page

Method	Type	Description
[, pageToInsert])	<a href="#">IPLPage</a> *	container. If missing, a new page container will be created.
Merge( [page]   [layer]   [array of layers])	IPLImage * <a href="#">IPLPage</a> * IPLLayer * IPLLayer * or IPLLayer *[]	Merges the document or optionally a page or a layer or an array of layers to a single image. The result is the newly created image or NULL, if nothing has been created.
MovePageContainer( srcPageOrPosition, destPageOrPosition)	None <a href="#">IPLPage</a> * or LONG <a href="#">IPLPage</a> * or LONG	Move to page container to another position. The page container can be specified either as a position or an IPLPage. The destination position can also be either a position or a page container. In the second case the source page container will be inserted after that.
Paste	<a href="#">IPLLayerArray</a> *	Paste the content of the clipboard as new layers. It returns the newly created layers. The new layers are inserted after the selected layers.
Save()	None	Save the document. If the document is untitled, an error is reported.
SaveAs( filename [, options]   [, optionKey, optionValue]++)	None String <a href="#">IPLDictionary</a> * String, variable	Save the document with the given filename (including path). The export options are optional and can either be set using an IPLDictionary or by using key-value pairs. The available options are dependent of the file format.
SaveDialog( [dialogTitle] [, defaultFilename])	String String	Show a save dialog for the document. You can set a dialog title and a default filename. If not set, default values are used. It returns the selected filename or an empty string, if the dialog was left by using "Cancel".
ShowOperationDialog( operationName [, options]   [, optionKey, optionValue]++)	<a href="#">IPLDictionary</a> * String <a href="#">IPLDictionary</a> * String, variable	Show the dialog of the operation with the given name. The operation is not executed. The return value can be used for DoOperation later on. The options are optional and can either be set using an IPLDictionary or by using key-value pairs. Returns the user's settings or nothing/null, if the user clicked cancel.

## IPLImage

Implemented by the *Image* object. It is an interface, that offers access to all properties of a PhotoLine image layer.

IPLImage inherits from [IPLLayer](#).

## Properties

Property	Type	Description
Alpha	Boolean	(Read-only) Returns whether the picture has an alpha channel.
BitsPerChannel	LONG	(Read-only) The bit depth of the picture (1, 8, 16 or 32).
Picture	<a href="#">IPLPicture</a> *	The picture of the image.
PictureSize	LONG[2]	(Read-only) The <a href="#">size</a> of the picture.
PictureType	<a href="#">PictureType</a>	The type of the picture. This property is a combination of the values defined in PictureType. A possible value is (PTRGB   PT16Bit   PTApha).

## Methods

Method	Type	Description
InitPicture( pictureType, size [, initialValue])	None <a href="#">PictureType</a> LONG[2] variable	Initialize the picture with a certain type and size. Optionally you can fill the newly created picture with - a single value (float) - a float[] with one entry per picture channel - an <a href="#">IPLColor</a>

## IPLLayer

Implemented by the *Layer*, *Image*, *Vector* and *Text* object. It is an interface, that offers access to all basic properties of a PhotoLine layer.

## Properties

Property	Type	Description
Adjustment( index)	IPLDictionary * LONG, range [0; AdjustmentsCount - 1]	The adjustment with the given index.
Adjustments	<a href="#">IPLDictionary</a> *[]	Array of dictionaries, that describe the adjustments attached to a layer. See <a href="#">Operations applicable to images and as adjustments</a> .
AdjustmentsCount	LONG	(Read-only) The number of adjustments attached to the layer.
BlendMode	<a href="#">BlendMode</a>	The blend mode/mix mode of the layer.
Bounds( coordinateSystem, boundsType)	float[4] <a href="#">CoordinateSystem</a> <a href="#">BoundsType</a>	(Read-only) The bounds of the layer as <a href="#">rectangle</a> .
ChannelMask	LONG	The color channels of the document that are modified by the layer. This is a bit mask. In a RGB document 1 is red, 2 is green und 4 is blue. So a value of 6 means, that green and blue is modified.
Children	<a href="#">IPLLayerArray</a> *	(Read-only) An array with the children of the layer.
Clipping	Boolean	True: The layer is either a clipping layer or a layer mask.
ClippingWidth	float	For clipping layers, layer masks and adjustment layer and a value > 0: an optional blur applied to mask, that is created by the layer.
ColorProfile	<a href="#">IPLColorProfile</a> *	The color profile of the layer. This property is usually null/nothing.
Count	LONG	(Read-only) The number of children.
Document	<a href="#">IPLDocument</a> *	(Read-only) The layer's document.
First	IPLLayer *	(Read-only) The first child of the layer or nothing.
Intensity	float, range [-2;2]	The layer's intensity (1 = 100%)
InvertClipping	Boolean	For clipping layers, layer masks and adjustment layer: The effect of the layer is inverted.
Item( index)	IPLLayer * LONG	(Read-only) The child with the given index.
Isolated	Boolean	True: The layer is drawn isolated (isn't affected by its

Property	Type	Description
		background).
Last	IPLayer *	(Read-only) The last child of the layer or nothing/null.
LayerMask	Boolean	If Clipping and LayerMask are true, the layer is a layer mask.
MatrixToPage	<a href="#">IPLMatrix</a> *	The transformation of the layer relative to the page. This value is a concatenation of MatrixToParent of the layer with the MatrixToParent of its ancestors.
MatrixToParent	<a href="#">IPLMatrix</a> *	The transformation of the layer relative to its parent.
ModifiesTransparency	Boolean	True: The layer modifies the transparency of its background.
Name	String	The layer's name.
Next	IPLayer *	(Read-only) The layer's following layer (the layer above it) or nothing/null.
Origin( coordinateSystem, boundsType)	float[2] <a href="#">CoordinateSystem</a> <a href="#">BoundsType</a>	The position of the top left corner of a layer. This is only the top left corner in CSLayer.
Page	<a href="#">IPLPage</a> *	(Read-only) The layer's page.
Parent	IPLayer *	(Read-only) The layer's parent.
PixelAlignment	<a href="#">Alignment</a>	The content of the layer is aligned to the document pixels. Only used with Layer, Image and Vector.
Position	LONG	The layer's index inside its parent.
Previous	IPLayer *	(Read-only) The layer's preceding layer (the layer below it) or nothing/null.
Quality	<a href="#">Quality</a>	The layer's rendering quality.
ReferencePoint( coordinateSystem)	float[2] <a href="#">CoordinateSystem</a>	The layer's reference point. This point can be adjusted by the user, and can be used as fix point for rotations, scaling, ...
RelativeColors	Boolean	True: If the layer uses pattern colors, the patterns will be transformed just the same as the layer.
Root	IPLayer *	(Read-only) The deepest ancestor of the layer or the layer itself.
Size( coordinateSystem, boundsType)	float[2] <a href="#">CoordinateSystem</a> <a href="#">BoundsType</a>	The size of a layer.
Type	<a href="#">LayerType</a>	(Read-only) The layer's type.
Visible	Boolean	Visibility of layer.

## Methods

Method	Type	Description
Copy( [options]   [optionKey, optionValue]+)	None <a href="#">IPLDictionary</a> * String, variable	Copy the layer or – if it is an image – optionally the selection to the clipboard. The available options are described <a href="#">here</a> .
CreateDocument( options)	<a href="#">IPLDocument</a> * LONG ( <a href="#">LayerCreateDocumentFlags</a> )	Duplicates the layer and creates a new document containing that duplicate.

Method	Type	Description
Delete()	None	Delete the layer.
DoOperation( operationName [, options]   [, optionKey, optionValue]++)	IPLayer String <a href="#">IPLDictionary</a> * String, variable	Execute the operation with the given name. The options are optional and can either be set using an IPLDictionary or by using key-value pairs. If the operation creates a new layer, the result is that new layer. Otherwise, the layer for which DoOperation() was called is returned.
Duplicate( index   afterLayer)	IPLayer * LONG IPLayer *	Duplicate the layer and returns the duplicated layer. The duplicate is either inserted as child in the original's parent or behind another layer.
DuplicateVirtual( index   afterLayer)	IPLayer * LONG IPLayer *	Duplicate the layer and returns the duplicated layer. The duplicate is either inserted as child in the original's parent or behind another layer. This other layer has to be in the same document as the original layer.
Index( child)	LONG IPLayer *	The index of the given child layer. Child has to be a child of the called layer.
Insert( layer   layers, index   afterLayer)	None IPLayer * <a href="#">IPLayerArray</a> *(variable) LONG IPLayer *	Insert one or more layers as child. The layers are either inserted at a position or after another layer.
InsertAdjustment( index,  [dictionary]   [key, value]++)	None LONG, range [0; AdjustmentsCount] IPLDictionary * String, variable	Insert a new adjustment. The adjustment can either be a IPLDictionary or a sequence of key-value pairs.
Paste( [index   afterLayer])	<a href="#">IPLayerArray</a> * LONG IPLayer *	Paste the content of the clipboard as new layers. It returns the newly created layers. The new layers are inserted as child at a given index or behind another layer.
RemoveAdjustment( index)	None LONG, range [0; AdjustmentsCount - 1]	Remove an adjustment.
Save( filename [, options]   [, optionKey, optionValue]++)	None String <a href="#">IPLDictionary</a> * String, variable	Save the layer with the given filename (including path). The export options are optional and can either be set using an IPLDictionary or by using key-value pairs. The available options are dependent of the file format.
ShowOperationDialog( operationName [, options]   [, optionKey, optionValue]++)	<a href="#">IPLDictionary</a> * String <a href="#">IPLDictionary</a> * String, variable	Show the dialog of the operation with the given name. The operation is not executed. The return value can be used for DoOperation later on. The options are optional and can either be set using an IPLDictionary or by using key-value pairs. Returns the user's settings or nothing/null, if the user clicked cancel.

## IPLayerArray

Implemented by the *LayerArray* object.

If a property or method takes a IPLayerArray as parameter, you can often either use an IPLayer or an array of IPLayers instead. This is indicated by the type name "IPLayerArray \* (variable)".

## Properties

Property	Type	Description
Count	LONG	(Read-only) The number of layers in the array.
Item(index)	variable LONG, range [0;Count - 1]	The layer at the given index.

## Methods

Method	Type	Description
Copy([options]   [optionKey, optionValue]+)	None <a href="#">IPLDictionary</a> * String, variable	Copy the layers in the array to the clipboard. The available options are described <a href="#">here</a> .
Index(layer)	LONG <a href="#">IPLLlayer</a> *	The index of the given layer or -1, if it isn't in the array.
Insert(layer, position)	None <a href="#">IPLLlayer</a> * LONG (optional)	Insert layer in the array. If no position is given, the layer is appended.
Remove(index   layer)	None LONG <a href="#">IPLLlayer</a> *	Remove the entry at a given index or a layer..
Sort()	None	Sort the layers in the array according to their position in the document.

## IPLLLineStyle

Implemented by the *LineStyle* object.

If a property or method takes a IPLLLineStyle as parameter, you can usually use a float instead. In that case, PhotoLine will create a line style with the given float value used as width. This is indicated by the type name "IPLLLineStyle \* (variable)".

## Properties

Property	Type	Description
AdjustDashLength	Boolean	True: The length of the dashes is adjusted, so that they fit to the corners of the path.
Alignment	<a href="#">LineStyleAlignment</a>	The alignment of the line on a path.
ArrowLength	Float	The length of an optional arrow (1 is 100%)
ArrowWidth	Float	The width of an optional arrow (1 is 100%)
DashLengths	Float []	An array with the lengths of the line style dashes. May be empty.
DashPhase	Float	The starting position inside the dashes. Usually 0.
EndCap	LONG ( <a href="#">LineStyleCap</a> )	The appearance of the end of the line.
Join	<a href="#">LineStyleJoin</a>	The join type.
MaximumWidth	Float, range [MinimumWidth;1]	(Read-only) If a width curve is set, this value can be used to stretch the width of the curve. Usually 1.
MinimumWidth	Float, range [0;MaximumWidth]	(Read-only) If a width curve is set, this value can be used to stretch the width of the curve. Usually 0.
StartCap	LONG ( <a href="#">LineStyleCap</a> )	The appearance of the start of the line.

Property	Type	Description
Width	float	The line width. If smaller than 0, the line is invisible.
WithCurve	IPLCurve *	(Read-only)The shape of the line style or nothing/null.

## Methods

Method	Type	Description
SetWidthCurve( curve, minWidth, maxWidth)	None <a href="#">IPLCurve</a> * (variable) float (optional) float (optional)	Set the width for variable width line styles. MinWidth and maxWidth can be used for scaling the line width.

## IPLMatrix

Implemented by the *Matrix* object. It controls the transformation of layers, points, sizes and rectangles.

If a property or method takes a IPLMatrix as parameter, you can usually use a float[] instead. This is indicated by the type name “IPLMatrix \* (variable)”. In that case, PhotoLine will create transformation matrix with the given values. The number of elements has to be 6 or 9. If the values don’t result in a valid transformation, PhotoLine will return an error.

## Methods

Method	Type	Description
Concatenate( matrix [, otherMatrices]+)	IPLMatrix * IPLMatrix * (variable) IPLMatrix * (variable)	Concatenate the matrix with one or more other matrices.
Invert()	IPLMatrix *	Calculate the inverse of the matrix.
TransformPoints( points)	float[2 * n] float[2 * n]	Transform n <a href="#">points</a> .
TransformRectangles( rects)	float[4 * n] float[4 * n]	Transform n <a href="#">rectangles</a> .
TransformSizes( sizes)	float[2 * n] float[2 * n]	Transform n <a href="#">sizes</a> .

## IPLPage

Implemented by the *Page* object.

## Properties

Property	Type	Description
ActiveLayer	<a href="#">IPLLayer</a> *	The active layer of the page. May be null/nothing.
ColorProfile	<a href="#">IPLColorProfile</a> *	The color profile of the page. May be null/nothing.
RootLayer	<a href="#">IPLLayer</a> *	(Read-only)The root layer of the page.
SelectedLayers	<a href="#">IPLLayerArray</a> *	The selected layers of the page. If there are entries, the first entry is always the active layer.
Size	LONG[2]	Size of the page in pixels.

## Methods

Method	Type	Description
Copy( [options]   [optionKey, optionValue]+)	None <a href="#">IPLDictionary</a> * String, variable	Copy a merged image of the page to the clipboard. The available options are described <a href="#">here</a> .
DoOperation( operationName [, options]   [, optionKey, optionValue]+)	None String <a href="#">IPLDictionary</a> * String, variable	Execute the operation with the given name. The options are optional and can either be set using an IPLDictionary or by using key-value pairs.
Paste	<a href="#">IPLLayerArray</a> *	Paste the content of the clipboard as new layers. It returns the newly created layers. The new layers are inserted after the selected layers.
ShowOperationDialog( operationName [, options]   [, optionKey, optionValue]+)	<a href="#">IPLDictionary</a> * String <a href="#">IPLDictionary</a> * String, variable	Show the dialog of the operation with the given name. The operation is not executed. The return value can be used for DoOperation later on. The options are optional and can either be set using an IPLDictionary or by using key-value pairs. Returns the user's settings or nothing/null, if the user clicked cancel.

## IPLPicture

Implemented by the Picture object. It represents a pixel picture. It is the datatype contained in [IPLImages](#).

## Properties

Property	Type	Description
Alpha	Boolean	(Read-only) Returns whether the picture has an alpha channel.
BitsPerChannel	LONG	(Read-only) The bit depth of the picture (1, 8, 16 or 32).
Size	LONG[2]	The <a href="#">size</a> of the picture.
Type	<a href="#">PictureType</a>	The type of the picture. This property is a combination of the values defined in PictureType. A possible value is (PTRGB   PT16Bit   PTAAlpha).

## Methods

Method	Type	Description
Init( pictureType, size [, initValue])	None <a href="#">PictureType</a> LONG[2] variable	Initialize the picture with a certain type and size. Optionally you can fill the newly created picture with - a single value (float) - a float[] with one entry per picture channel - an <a href="#">IPLColor</a>

## IPLText

Implemented by the Text object. It is an interface, that offers access to all properties of a PhotoLine text layer. IPLText inherits from [IPLL ayer](#).

## Properties

Property	Type	Description
Attribute( index, attributeName [, range = 0])	Variable LONG String LONG[2], out	Access the <a href="#">text attribute</a> with the given name at the given index. Returns the range of the attribute optionally.
Attributes( index [, range = 0])	<a href="#">IPLDictionary</a> * LONG LONG[2], out	Access the <a href="#">text attributes</a> at the given index. Returns the range of the attributes optionally.
AutoFlowIn	Boolean	True: The text layer can create a text flow to the previous page automatically.
AutoFlowOut	Boolean	True: The text layer can create a text flow to the next page automatically.
NextInFlow	IPLText *	The next text layer in the text flow. This property must not be set for text text layers with AutoFlowOut equal to true.
Text( [index = 0] [, count = -1])	String LONG LONG	Text text in the given range. Accesses the text from index 0 with no index, and accesses to the end of the text with no count.
TextRange	LONG[2]	(Read-only) The range of the text in the text layer. If the text layer is not part of a text flow, this is the complete text.
TextLength	LONG	(Read-only) The length of the text in characters. If the text layer is part of a text flow, this is the length of the complete text.
VerticalAlignment	<a href="#">TextVerticalAlignment</a>	The vertical alignment of the text.

## Methods

Method	Type	Description
ParagraphRange( index)	LONG[2] LONG	Returns the paragraph range for the given index.
SetAttribute( range, attributeName, newValue)	None LONG[2] String variable	Changes the attribute with the given name. The type of the new value depends on the attribute. If applicable, you can set partial attribute and only the set values will be transferred to the text layer.
SetAttributes( range, newAttributes)	None LONG[2] <a href="#">IPLDictionary</a> *	Changes the attributes in the given range.

## IPLVector

Implemented by the *Vector* object. It is an interface, that offers access to all properties of a PhotoLine vector layer. IPLVector inherits from [IPLL ayer](#).

## Properties

Property	Type	Description
FillColor( index)	<a href="#">IPLColor</a> * (variable, RGB)	Fill color in the attribute set with the given index.
LineColor( index)	<a href="#">IPLColor</a> * (variable, RGB)	Line color in the attribute set with the given index.

Property	Type	Description
index)		
LineStyle( index)	<a href="#">IPLLineStyle</a> * (variable)	Line style in the attribute set with the given index.
VectorAttributes	<a href="#">IPLDictionary</a> *[]	The <a href="#">fill and line attributes</a> of the vector layer. Each dictionary contains an optional - fill color - line color - line style
VectorAttributesCount	LONG	The number of <a href="#">attributes</a> .
VectorPath	<a href="#">IPLVectorPath</a> *	The vector path of the layer.

## Methods

Method	Type	Description
InsertPoints( index [, pointType, points] +)	None LONG LONG float[]	Insert a sequence of points. The index must not be inside a curve. The point type has to be VPTMoveTo, VPTLineTo or VPTCurveTo. If the point type is VPTMoveTo, the first point of the points array will be a MoveTo, the following ones will be LineTos. If point type is VPTCurveTo, the points array must have a multiple of 3 points, resulting in a multiple of 6 float values.
InsertVectorAttribute( index)	None LONG, range [0;VectorAttributesCount]	Insert a new empty attribute set.
RemovePoints( index, count)	None LONG LONG	Remove a range of points. You must not delete partial curves.
ReplacePoints( index, points)	None LONG float[2 * n]	Replace n points at the given index with the given points.
RemoveVectorAttribute( index)	None LONG, range [0;VectorAttributesCount-1]	Remove an attribute set.

## IPLVectorPath

Implemented by the VectorPath object. It is the datatype contained in [IPLVector](#).

## Properties

Property	Type	Description
Count	LONG	(Read-only) The number of points in the path.
Points	Float[2 * Count]	(Read-only) The <a href="#">points</a> of the vector path.
PointTypes	BYTE[COUNT] ( <a href="#">VectorPointType</a> )	(Read-only) For each point the corresponding type.

## Methods

Method	Type	Description
Insert( index [, pointType, points]+)	None LONG LONG float[]	Insert a sequence of points into a path. The index must not be inside a curve. The point type has to be VPTMoveTo, VPTLineTo or VPTCurveTo. If the point type is VPTMoveTo, the first point of the points array will be a MoveTo, the following ones will be LineTos. If point type is VPTCurveTo, the points array must have a multiple of 3 points, resulting in a multiple of 6 float values.
Remove( index, count)	None LONG LONG	Remove a range of points. You must not delete partial curves.
Replace( index, points)	None LONG float[2 * n]	Replace n points at the given index with the given points.

## Enumerations

### Alignment

Value	Description
AlignDefault = 0	Use the inherited alignment.
AlignToPixels = 1	Align to the document pixels.
AlignDont = 2	Don't align.

### BarcodeType

BarcodeType is used as parameter for the [Barcode](#) operation.

Value	Description
BarcodeI25 = 0	I25 barcode
BarcodeEAN8 = 1	EAN8 barcode
BarcodeEAN13 = 2	EAN13 barcode
BarcodeUPCA = 3	UPCA barcode
BarcodeUPCE = 4	UPCE barcode
BarcodeISBN = 5	ISBN code
BarcodeC39 = 6	C39 barcode
BarcodeEAN128 = 7	EAN128 barcode
BarcodeC93 = 8	C93 barcode
BarcodeC128 = 9	C128 barcode
BarcodeQR = 10	QR code
BarcodeC39E = 11	C39E barcode

## BlendMode

Value	Description
BMNormal = 0	Normal
BMMultiply = 1	Multiply
BMDissolve = 2	Dissolve
BMScreen = 3	Screen
BMOverlay = 4	Overlay
BMSoftLight = 5	Soft light
BMHardLight = 6	Hard light
BMColorDodge = 7	Color dodge
BMColorBurn = 8	Color burn
BMDarken = 9	Darken
BMLighten = 10	Lighten
BMDifference = 11	Difference
BMExclusion = 12	Exclusion
BMLinearDodge = 13	Linear dodge/add
BMRemove = 14	Remove
BMLinearBurn = 15	Linear burn
BMHardMix = 16	Hard mix
BMLinearLight = 17	Linear light
BMVividLight = 18	Vivid light
BMPinLight = 19	Pin light
BMLighterColor = 20	Lighter color
BMDarkerColor = 21	Darker color
BMSubtract = 22	Subtract
BMDivide = 23	Divide
BMHue = 24	Hue
BMSaturation = 25	Saturation
BMColor = 26	Color
BMLuminance = 27	Luminance

## BoundsType

BoundsType defines various types of bounds used in combination with [IPLLayers](#).

Value	Description
BTGeometric = 0	The geometric bounds define the base coordinate system of a layer. With vector layers, these bounds include the vector path, but not the outline. With text, these bounds are the rectangle, that can contain the text.
BTLayout = 1	The layout bounds are used by PhotoLine for setting the position and size of a layer.
BTAlignment = 2	The alignment bounds are used by PhotoLine for aligning

Value	Description
	layer next to each other.
BTContent = 3	The content bounds are the area occupied by the content of a layer. With vector layers, the outline is included. With text, the content is only the area containing text.

## CloseOption

CloseOption is used as parameter for [IPLDocument::Close](#).

Value	Description
COSave = 0	If the document has unsaved changes, it will be saved before closing. If the document is untitled, an error will be reported.
CODontSave = 1	The document will be closed without saving.
COAsk = 2	If the document has unsaved changes, the user will be prompted for saving. If the user cancels closing, an error will be reported.

## CoordinateSystem

The coordinate system defines, how sizes or positions are set or returned by an [IPLayer](#).

Value	Description
CSPage = 0	The page coordinate system. To convert values from CSLayer to CSPage, the values have to be multiplied with the layer's MatrixToPage.
CSGroup = 1	The coordinate system of a layer's parent. To convert values from CSLayer to CSGroup, the values have to be multiplied with the layer's MatrixToParent.
CSLayer = 2	The layer's native coordinate system.

## ColorModel

The ColorModel is used for [IPLColor](#).

Value	Description
CMGray = 0	Gray
CMRGB = 1	RGB
CMCMYK = 2	CMYK
CMHIS = 10	HIS
CMHSV = 11	HSV
CMLab = 12	Lab

## ColorSpaceMode

The ColorSpaceMode can be used with gradients and some operations. It defines how pixels or color data are written.

Most operations allow only a subset of these modes.

Value	Description
CSMNative = 0	Data will be written using the native color space of the

Value	Description
	destination.
CSMHIS = 1	HIS
CSMHSV = 2	HSV
CSMLab = 3	Lab
CSMRGB = 4	RGB
CSMCYMK = 5	CMYK
CSMGray = 6	Grays

## CurveType

The CurveType is used for [IPLCurve](#).

Value	Description
CTBezier = 0	Interpolation by bezier curves.
CTSpline = 1	Interpolation by splines.
CTLagrange = 2	Use Lagrange interpolation.
CTLinear = 3	Use linear interpolation.

## EXIFPreviewMode

Value	Description
EPMAAlways = 0	Always create an EXIF preview.
EPMKeepExisting = 1	If there is already an EXIF preview, create an updated version.
EPMNever = 2	Never create an EXIF preview.

## EXRCompression

Value	Description
ECNone = 0	No compression.
ECRLE = 1	Run length encoding.
ECZIP = 2	Deflate for single scanlines.
ECZIPBlock16 = 3	Deflate for scanline block with 16 lines.
ECPIZ = 4	Wavelet compression.
ECPXR24 = 5	24 bit deflate.
ECB44 = 6	Lossy compression.
ECB44A = 7	Extended B44.

## GradientInterpolation

GradientInterpolation defines the interpolation of gradient colors.

Value	Description
GILinear = 0	Linear Interpolation.
GICubic = 1	Cubic Interpolation.

## GradientSpread

GradientSpread defines the interpolation of gradient colors.

Value	Description
GIContinue = 0	The gradient will continue with the end color.
GIRect = 1	The colors will repeat reflected at the gradient end.
GIRepet = 2	The colors will repeat at the gradient end.

## GradientType

Value	Description
GTLin = 0	Linear gradient.
GTCirc = 1	Circular gradients.
GTRad = 2	Radial gradient.
GTRadFull = 3	Reflected radial gradient.

## InterpolationMode

InterpolationMode defines several types of interpolations.

Value	Description
IMNextPixel = 0	No Interpolation.
IMBilin = 1	Bilinear.
IMLanczos3 = 2	Lanczos 3.
IMLanczos8 = 4	Lanczos 8.
IMMitchellNetravali = 5	Mitchell-Netravali.
IMCatmullRom = 6	Catmull-Rom.
IMCubicSpline = 7	Cubic Spline.
IMLiquid = 8	Only available for the <a href="#">Scale</a> operation in combination with images.

## LayerCreateDocumentFlags

Value	Description
LCDInvisible = 1	The new document is not visible.

## LayerType

Value	Description
LTImage = 1	An image layer.
LTVector = 2	A vector layer.
LTText = 4	A text layer.
LTGroup = 8	A group.
LTVirtualCopy = 16	The virtual copy of another layer.
LTPlaceholder = 32	A placeholder.

## LineStyleAlignment

Value	Description
LSAAlignCenter = 0	The line lies on the vector path.
LSAAlignInside = 1	The line is inside the vector path.
LSAAlignOutside = 2	The line is outside the vector path.

## LineStyleCap

Value	Description
LSCButtCap = 0	Butt cap.
LSCRoundCap = 1	Round cap.
LSCSquareCap = 2	Square cap.
LSCArrowCap = 128	The start/end is an arrow. Used in combination with the other values.

## LineStyleJoin

Value	Description
LSJMiterJoin = 0	Miter join.
LSJRoundJoin = 1	Round join.
LSJBevelJoin = 2	Bevel join.

## MakeSelectionMode

Modes for combining a new selection with the current one.

Value	Description
MSMSet = 0	The new selection replaces the current one.
MSMAdd = 1	The new selection is added.
MSMSub = 2	The new selection is subtracted..
MSMIntersect = 3	The resulting selection is the intersection of the current and the new one.

## NoiseType

Value	Description
NTNone = 0	No noise.
NTTurbulence = 1	Turbulence.
NTFractalSum = 2	Sum of fractals.
NTNoise = 3	Simple noise.

## ParagraphAlignment

Value	Description
PALeft = 0	Left aligned text.
PARight = 1	Right aligned text.

Value	Description
PACenter = 2	Centered text.
PAJustified = 3	Justified text.
PAJustifiedAll = 4	Justified text, including the last line of a paragraph.

## ParagraphRegister

Value	Description
PRNone = 0	No line is aligned to the line register.
PRWholeParagraph = 1	All lines of the paragraph are aligned.
PRFirstLine = 2	Only the first line is aligned to the line register.

## PDFColorMode

PDFColorMode controls, how color data inside a document is converted on export.

Value	Description
PDFDocument = 0	Color data is not converted.
PDFCMYK = 1	Color data is converted to CMYK. Gray data is not converted.
PDFGray = 2	Color data is converted to gray.
PDFX1a = 3	Colors are converted conforming to PDF/X1a.
PDFX3 = 4	Colors are converted conforming to PDF/X3.

## PDFCompressionMode

PDFCompressionMode controls the compression of colored images.

Value	Description
PDFFlate = 0	Flate compression (Zlib).
PDFJPEGHIGHQuality = 1	High quality JPEG (not allowed for TextCompressionMode).
PDFJPEGMEDIUMQuality = 2	Medium quality JPEG (not allowed for TextCompressionMode).
PDFJPEGLowQuality = 3	Low quality JPEG (not allowed for TextCompressionMode).
PDFFlateFast = 4	Faster, but weaker flate compression.
PDFUncompressed = 5	No compression.

## PDFFontEmbedding

Value	Description
PDFNoEmbedding = 0	Fonts are not embedded.
PDFEmbedOptionalVector = 1	If allowed, fonts are embedded. Otherwise they are converted to vector. This is the only allowed option for PDF/X1a and PDF/X3.
PDFEmbed = 2	Allowed fonts are embedded.
PDFConvertToVector = 3	All fonts are converted to vector.

## PDFTransparencyMode

PDFTransparency controls, how transparency is converted on export.

Value	Description
PDFReplaceWithBackground = -1	Transparency is replaced by an opaque image.
PDFDitherBayer = 0	Dither transparency, thus creating bileveled transparency.
PDFDitherCoarse = 1	Dither transparency, thus creating bileveled transparency.
PDFDitherVertical = 2	Dither transparency, thus creating bileveled transparency.
PDFDitherHorizontal = 3	Dither transparency, thus creating bileveled transparency.
PDFDitherFine = 4	Dither transparency, thus creating bileveled transparency.
PDFDitherOrdered = 5	Dither transparency, thus creating bileveled transparency.
PDFDitherOrderedFat = 6	Dither transparency, thus creating bileveled transparency.
PDFDither45 = 7	Dither transparency, thus creating bileveled transparency.
PDFDitherThreshold = 8	Use a threshold for transparency, thus creating bileveled transparency.
PDFFullTransparency = 1000	If possible, export transparency unmodified. This option does not work in combination with the <a href="#">PDF color modes</a> PDFX1a and PDFX3.

## PictureType

The type of a pixel picture is defined by the values of PictureType. There are 3 sections in this enumeration:

- the color model
- the bit depth
- a flag whether there is an alpha channel

So examples for valid picture types are “PTGray + PT8Bit + PTAAlpha” or “PTCMYK + PT16Bit”.

Value	Description
PTGray = 0	Gray
PTRGB = 1	RGB
PTCMYK = 2	CMYK
PTBitmap = 3	1 bit image
PTLab = 10	Lab
PTMask = 255	Mask to get the color model from a picture type.
PT8Bit = 0	8 Bit image
PT32Bit = 4096	32 bit (float) image
PT16Bit = 8192	16 bit image
PTAlpha = 16384	Image with alpha

## Quality

Value	Description
QualityDefault = 0	Use the inherited/default quality.
QualityAntialias = 1	Always use antialiasing/interpolation.

Value	Description
QualityNoAntialias = 2	Never use antialiasing/interpolation.

## RenderingIntent

RenderingIntent declares the possible rendering intents for ICC color profiles.

Value	Description
RIAutomatic = -1	Use the default rendering intent of the color profile.
RIPerceptual = 0	Perceptive.
RIRelativeColorimetric = 1	Relative colorimetric.
RISaturation = 2	Saturation.
RIAbsoluteColorimetric = 4	Absolute Colorimetric.

## ResizeMode

SizeMode is used as parameter for the [Resize](#) operation.

Value	Description
ResizeNormal = 0	The resize parameter will define the new size.
ResizeResize = 1	The resize parameter will be added to the original size.
ResizeFormula = 2	The new size and the position of the original content will be expressed as formulas. “w” and “h” are the original size, “dw” and “dh” are the document size.

## ResizeHorizontalAlignment

SizeMode is used as parameter for the [Resize](#) operation.

Value	Description
ResizeLeft = 0	The original content will be aligned left inside the new area.
ResizeRight = 1	The original content will be aligned right inside the new area.
ResizeHorizontalCentered = 2	The original content will be centered inside the new area.
ResizeHorizontalAbsolute = 3	There is no automatic alignment.

## ResizeVerticalAlignment

SizeMode is used as parameter for the [Resize](#) operation.

Value	Description
ResizeTop = 0	The original content will be aligned top inside the new area.
ResizeBottom = 1	The original content will be aligned bottom inside the new area.
ResizeVerticalCentered = 2	The original content will be centered inside the new area.
ResizeVerticalAbsolute = 3	There is no automatic alignment.

## ScaleMode

Scale is used as parameter for the [Scale](#) operation.

Value	Description
SMNormal = 0	The resulting size is set in pixels by the parameters “ValueX” and “ValueY”. With documents, “DPI” can be used to set the resolution.
SMDPI = 1	“DPI” is used as new dpi value.
SMPercent = 2	“ValueX” and “ValueY” are the scaling values in percent (100: no scaling).
SMWidth = 3	“ValueX” is the new width.
SMHeight = 4	“ValueY” is the new height.
SMFit = 5	The object is scaled proportionally to fit in “ValueX” and “ValueY”.
SMUnused = 6	Unused
SMFormula = 7	“FormulaX”, “FormulaY” and “FormulaDPI” are formulas for the new width, height and dpi. “w”, “h” and “d” can be used as constant for the original width, height and dpi.

## SVGCompressionMode

Value	Description
SVGPNGFast = 0	Fast, but weaker PNG compression.
SVGPNGStrong = 1	Strong, but slower PNG compression.
SVGJPEGLow = 2	Low quality, small size JPEG.
SVGJPEGMid = 3	Medium quality, medium size JPEG.
SVGJPEGHigh = 4	High quality, large size JPEG.

## TabType

Value	Description
TLeft = 0	Left aligned tab.
TTRight = 1	Right aligned tab.
TTCentered = 2	Centered tab.
TTDecimal = 3	Tab with alignment to a decimal point character.

## TextVerticalAlignment

TextVerticalAlignment defines the options for vertical alignment of text layer.

Value	Description
TVATop = 0	The text is at the top of the layer frame (default).
TVACenter = 1	The text is centered.
TVABottom = 2	The text is at the bottom.

## VectorPointType

Each point in a [IPLVectorPath](#) has an associated type. This type is a combination of three parts:

- the point type
- if a point is part of a curve, the subindex of the point (from 0 to 2)
- a flag whether the point is selected

Value	Description
VPTMoveTo = 0	The start of a (sub) path, a “Move To”.
VPTLineTo = 1	A line point.
VPTCurveTo = 2	A point, that is part of a curve. A curve always has 3 points: the control point 1 (index 0), the control point 2 (index 1) and the end point (index 2).
VPTTypeMask = 3	The and-mask to isolate the point type.
VPTIndexMask = 12	If a point is a curve point, VPTIndexMask and VPTIndexShift can be used to get index of the curve point: (type & VPTIndexMask)>>VPTIndexShift
VPTIndexShift = 2	See VPTIndexMask.
VPTSelected = 128	If set, the point is selected. With curve points you must not select the control points (the ones with the index 0 and 1).

## Operations

Operations can be executed on [documents](#), [pages](#) and [layers](#). Every operation has a unique name and optional parameters. The parameters can either be set by using a single [IPLDictionary](#) or by key-value pairs.

If key-value pairs are used, the key is always a string and is the name of the parameter. The value is dependent of the type of parameter.

## Operations applicable to all objects

All of the operations have the optional parameter “ShowDialog”. If it is set to true, PhotoLine will show the dialog of the operation before executing it.

## Action

This operation executes an action. You can either execute an action installed in PhotoLine by using its name or a saved action by passing its path or its binary data.

Parameter	Type	Description
Data	Byte [] or Base64 string or hex string	(Optional) The binary data of a saved action.
Name	String	(Optional) The name of the action.
Path	String	(Optional) The path of a saved action.

## Barcode

This operation creates a barcode layer.

Parameter	Type	Description
Font	String	(Optional) The font used for the description of the barcode. Not used, if ShowText is FALSE. Default: "Arial"
Position	float[4]	The rectangle defining the position of the barcode.
ShowText	LONG (boolean)	(Optional) The barcode operation can display the value of the barcode below the actual barcode as text. Default: FALSE
Type	LONG ( <a href="#">BarcodeType</a> )	(Optional) The type of the barcode. Default: QR code (BarcodeQR)
Value	String	The content of the barcode. Must not be empty.

## Resize

Resize can operate with [documents](#), [pages](#) and [images](#) and changes the size of that object.

Parameter	Type	Description
Color	<a href="#">IPLColor</a> * (variable, count)	(Optional) For documents the color that will be used for new areas. Default: white
FormulaX, FormulaY, FormulaW, FormulaH	String	If Mode is Formula (2): The new size of the object and the position of the original content in this new area as formula. The formulas can use the values "w" and "h" (original size) and "dw" and "dh" (document size).
Mode	LONG (ResizeMode)	(Optional) The resize mode: 0: Normal mode (the new size will be the value of Size). 1: Resize mode (the new size will be the original size plus the value of Size). 2: Formula mode (the size and position are defined by formulas). Default: 0
Horizontal, Vertical	LONG ( <a href="#">ResizeHorizontalAlignment</a> or <a href="#">ResizeVerticalAlignment</a> )	(Optional) The alignment of the original content inside the new area. Default: 3 (ResizeHorizontalAbsolute/ResizeVerticalAbsolute:use Position)
Position	float[2]	(Optional) If Mode is 3, the position of the original content inside the new area. Default: (0; 0)
Size	float[2]	The new size.

## Rotate

Parameter	Type	Description
Angle	float	The rotation angle in degrees (counter-clockwise). Either that or "Radiant" has to be set.
Crop	LONG (boolean)	(Optional) TRUE: The result will be cropped removing parts not filled by the original content-
Interpolation	LONG ( <a href="#">InterpolationMode</a> )	The interpolation mode used for scaling images.
Radians	float	The rotation angle in radians (counter-clockwise). Either that or "Angle" has to be set.

## Scale

Parameter	Type	Description
Mode	LONG ( <a href="#">ScaleMode</a> )	The scale mode.
Interpolation	LONG ( <a href="#">InterpolationMode</a> )	The interpolation mode used for scaling images.
ValueX	float	For the modes SMNormal, SMPercent, SMWidth and SMFit the new width. SMPercent expects percent values, the rest pixels.
ValueY	float	For the modes SMNormal, SMPercent, SMHeight and SMFit the new height. SMPercent expects percent values, the rest pixels.
ValueDPI	float	For the modes SMNormal and SMDPI the new dpi value.
FormulaX FormulaY FormulaDPI	String	The new width/height/dpi as formula. “w”, “h” and “d” can be used as the original width, height and dpi.

## Operations applicable to images and as adjustments

### AdaptiveSharpen

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.
Special	float, range [0;100]	The filter threshold.

### AdaptiveSoften

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.

Parameter	Type	Description
Special	float, range [0;100]	The filter threshold.

## ChannelMixer

Parameter	Type	Description
Mode	LONG (boolean)	(Optional) False: normal, channel-wise mode. True: Brightness mode: Factor1 and Offset1 are the values for the new brightness. Default: False
Factor1 Factor2 Factor3 Factor4	Float[4], range[-2;+2]	The factors for each channel of the image, that will be used to produce the new channel value. Example with RGB and Factor1 values {0.7, 0.2, 0.1}: $newR = oldR * 0.7 + oldG * 0.2 + oldB * 0.1$
Offset1 Offset2 Offset3 Offset4	Float, range [-2;2]	(Optional) Offset that will be added the new channel value. Default: 0

## ChromaticAberration

Parameter	Type	Description
BlueShift	float, range [-10;10]	(Optional) Scaling of the blue channel in pixels. Default: 0
Center	Float[2], range [0;1]	(Optional) Relative center of scaling. Default: (0.5;0.5)
RedShift	float, range [-10;10]	(Optional) Scaling of the red channel in pixels. Default: 0
WidthCompensation	LONG (boolean)	(Optional) True: Depending on the size of the image a different scaling factor may be applied to x and to y. Default: Falses

## Clouds

Parameter	Type	Description
Color1	<a href="#">IPLColor</a> * (variable, RGB)	(Optional) The first cloud color. Default: black.
Color2	<a href="#">IPLColor</a> * (variable, RGB)	(Optional) The second cloud color. Default: white.
Contrast	Float, range [0;1]	(Optional) Contrast of the created clouds. 0.5 is the neutral value. Default: 0.5
Intensity	Float, range [0;1]	(Optional) Intensity of the created clouds. 0.5 is the neutral value. Default: 0.25
NoiseAmplitudeStep	Float, range [1;4]	(Optional) Amplitude scaling of the additional noises for NTTurbulence and NTFractalSum. Default: 2
NoiseDetail	Float, range [1;256]	(Optional) Resolution of clouds, higher values create more fine grained clouds. Default: 4
NoiseDetailStep	Float, range [1;8]	(Optional) Detail scaling of the additional noises for NTTurbulence and NTFractalSum. Default: 2
NoiseScaleX	Float, range [1;64]	(Optional) Additional scaling of NoiseDetail in x direction. Default: 1
NoiseScaleY	Float, range [1;64]	(Optional) Additional scaling of NoiseDetail in y direction. Default: 1
NoiseSteps	LONG, range [1;6]	(Optional) Number of overlapped noise functions for

Parameter	Type	Description
		NTTurbulence and NTFractalSum. Default: 4
NoiseType	LONG ( <a href="#">NoiseType</a> )	(Optional) Noise type, that is the base of the cloud creation. NTNone is not allowed. Default: NTFractalSum

## ColorBalance

Parameter	Type	Description
Data	LONG[9], range [-100;100]	Three groups of three values. 0 to 2: cyan-red correction 3 to 5: magenta-green correction 6 to 8: yellow-blue correction. The first value corrects the shadows, the second the midtones and the third the highlights.
Preserve	LONG (boolean)	(Optional) Preserve luminosity. The default value is false.

## ColorCorrection

Parameter	Type	Description
BlueYellow	float, range [-0.25;0.25]	(Optional) Shift along the blue-yellow axis. Default: 0
GreenRed	float, range [-0.25;0.25]	(Optional) Shift along the green-red axis. Default: 0
FixWhitePoint	LONG (boolean)	(Optional) True: Don't change bright areas, the effect on saturated colors is stronger. Default: True

## ColorLookup

Parameter	Type	Description
Profile	<a href="#">IPLColorProfile</a> * (variable)   String	Either a color profile or a file path to 3D look-up table.

## ColorTemperature

Parameter	Type	Description
Temperature	LONG, range [2000;13000]	Color temperature.
WorkMode	LONG (boolean)	(Optional) False: Set the given temperature. The color profile of the image defines the source color temperature. True: The given temperature is the source color temperature. The color profile defines the destination temperature. Default: False

## ColorToTransparency

Parameter	Type	Description
Color	<a href="#">IPLColor</a> * (variable, count)	The color, that will be made transparent.
SimpleMode	LONG (boolean)	(Optional) False: Convert a color range to transparent. True: Use a simple calculation. Default: True
HueSize	Float, range [0°;180°]	(Optional) If SimpleMode is false: The hue range, that will be made transparent.

Parameter	Type	Description
		Default: 30°
BrightnessStrength	Float, range [0;2]	(Optional) If SimpleMode is false: The strength with which the transparency is influenced by the brightness. Default: 1
SaturationStrength	Float, range [0;2]	(Optional) If SimpleMode is false: The strength with which the transparency is influenced by the saturation. Default: 1
SaturationFilter	LONG (boolean)	(Optional) If SimpleMode is true: Controls whether the saturation influences the result. Default: True
LowLimit HighLimit	Float, range [0;1]	(Optional) Used range of the calculated transparency. Default: 0 and 1

## CorrectHighlights

CorrectHighlights is an adjustment, that will only be created by the import of raw files. Over exposed raw files often create magenta highlights, and it is CorrectHighlights job to fix that.

Parameter	Type	Description
Limit	float, range [0;1]	(Optional) Brightness values above this limit will be corrected. Default: 1

## Curves

Parameter	Type	Description
PictureType	LONG ( <a href="#">PictureType</a> )	(Optional) The picture type which the curves are defined for. If not set, it is assumed to be the picture type of the image.
Contrast	LONG, range [0;100]	(Optional) The contrast.
Brightness	LONG, range [0;100]	(Optional) The brightness.
Gamma	float, larger than 0	(Optional) The gamma value.
CurveMain	<a href="#">IPLCurve</a> * (variable)	(Optional) The curve that controls the brightness.
Curve1 – Curve4	<a href="#">IPLCurve</a> * (variable)	(Optional) The curves for the channels 1 to 4.

## Custom

Parameter	Type	Description
Bias	LONG	(Optional) Offset added to the result of the filter kernel. Default: 0
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
Clamp	LONG (boolean)	(Optional) True: The end result of “filter kernel / divider + bias” is clamped to the range [0;255]. Default: False
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative

Parameter	Type	Description
Data	Float[9]   float[25]	The values of a 3x3 or a 5x5 filter kernel.
Divider	LONG	(Optional) Divider for the result of the filter kernel. Default: 1
Intensity	Float, range [0;1]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1

## Denoise

Parameter	Type	Description
IntensityIntensity	Float, range [0;1]	(Optional) Intensity of intensity noise reduction. Default: 1
ThresholdIntensity	Float, range [0;1]	(Optional) Threshold for intensity noise reduction. Default: 0.04
SizeColor	Float, range [0;20]	(Optional) Filter size for color noise reduction. If absent, no color noise reduction. Default: no value.
SizeIntensity	Float, range [0;20]	(Optional) Filter size for intensity noise reduction. If absent, no intensity noise reduction. Default: no value.

## Dither

Parameter	Type	Description
Angle	Float, range [0°;360°]	(Optional) Angle of dither pattern. Default: 0°
RasterSize	Float, range [4;100]	(Optional) Size of dither pattern. Default: 32

## Exposure

Parameter	Type	Description
Brightness	Float, range [-150;150]	(Optional) Brightness
Contrast	Float, range [-50;100]	(Optional) Contrast
Exposure	Float, range [-20;20]	(Optional) Exposure.
Gamma	Float, range [0;9]	(Optional) Gamma. Default: 1
Offset	Float, range [-0.5;0.5]	(Optional) Offset

## FalseColor

Parameter	Type	Description
Gradient	IPLDictionary * ( <a href="#">Gradient</a> )	The gradient used.

## GaussianBlur

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative

Parameter	Type	Description
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.
Special	float, range [0;100]	The filter threshold.

## Grain

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.
Special	float, range [0;100]	The grain density.

## GrayMixer

Parameter	Type	Description
Tint	LONG (boolean)	(Optional) True: The result will be tinted. Default: False
Color	IPLColor * (variable, RGB)	(Optional) If Tint is true, this is the color of the tint.
Factors	Float[8], range [-1;1]	The factors with which the single color ranges influence the result.

## Highpass

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.

## Histogram

Parameter	Type	Description
Auto	LONG (boolean)	(Optional) True: The parameters are preset with values

Parameter	Type	Description
		calculated from the image (cannot be used with adjustments).
Gamma	float[]   float, larger than 0	(Optional) The gamma values to be set.
PicMin PicMax OutputMin OutputMax	float[]   float, range [0;1]	(Optional) [PicMin;PicMax] is the picture range, that will be mapped to [OutputMin;OutputMax].

If you use float arrays for Gamma, PicMin, PicMax, OutputMin and OutputMax, the values will be applied to the corresponding channel. With RGB pictures, float[3] will be used for the sum channel. With gray it is a bit weird: float[3] controls the gray channel. This way RGB values can be used for gray and viceversa.

With gray and RGB you can set a single float value instead of an array. With RGB this will control the sum channel, with gray it will control the single image channel.

## HorizontalEdge

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	Float, 1.5 or 2.5	The filter radius.
Special	float, range [0;100]	The filter threshold.

## HueEditor

Parameter	Type	Description
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMHIS, CSMHSV, CSMLab or CSMRGB. The default value is CSMHSV.
Brightness	<a href="#">IPLCurve</a> * (variable)	(Optional) The correction curve for brightness.
Hue	<a href="#">IPLCurve</a> * (variable)	(Optional) The correction curve for hue.
Saturation	<a href="#">IPLCurve</a> * (variable)	(Optional) The correction curve for saturation.

## HueSaturation

Parameter	Type	Description
Colorize	LONG (boolean)	(Optional) True: Colorize mode. The default value is false.s
Hue	float	(Optional) Colorize: Hue in the range [0;1] Other: Hue change in the range [-0.5;0.5]
Saturation	float	(Optional) Colorize: Saturation in the range [0;1] Other: Saturation change in the range [-1;1]

Parameter	Type	Description
Brightness	float	(Optional) Colorize: Intensity in the range [0;1] Other: Intensity change in the range [-1;1]
Ranges	float[7*n], 0 <= n <= 6	(Optional) If not in colorize mode, Ranges describes the modifications applied to up to 6 hue ranges. Every sequence has a length of 7 floats: The first 4 floats define the hue range, that will be modified. The other 3 are the hue, saturation and intensity change.

## LightShadow

Parameter	Type	Description
Auto	LONG (boolean)	(Optional) True: The parameters are preset with values calculated from the image (cannot be used with adjustments).
LightGamma	Float, range [0;1]	(Optional) Gamma applied to the lights. Default: 1
LightIntensity	Float, range [0;1]	(Optional) Stretching of the lights. 0: No stretching. Default: 0
LightMin	Float, range [0;1]	(Optional) Amount of lights range, that will be clipped. 0: Nothing is clipped. Default: 0
ShadowGamma	Float, range [1;2]	(Optional) Gamma applied to the shadows. Default: 1
ShadowIntensity	Float, range [0;1]	(Optional) Stretching of the shadows. 0: No stretching. Default: 0
ShadowMin	Float, range [0;1]	(Optional) Amount of shadows range, that will be clipped. 0: Nothing is clipped. Default: 0

## Median

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius. The diameter is rounded to the next odd integer value.

## OptimizeHDR

OptimizeHDR maps the pixel values of a 32-bit-HDR image to a [0;1] range.

Parameter	Type	Description
Gamma	float, larger than 0	(Optional) The gamma value to be set.
Min Max	float	The pixel value range, that will be mapped to [0;1].

## MatchColors

Parameter	Type	Description
DestinationAverage	float[3], range [0;1]	Average of the destination pixel values.
DestinationDeviation	float[3], range [0;1]	Deviation of the destination pixel values.
DestinationReadFromSelection	LONG (boolean)	(Optional) UI setting. True: Read destination pixel values from the selection only.
SourceAverage	float[3], range [0;1]	Average of the source pixels values.
SourceDeviation	float[3], range [0;1]	Deviation of the source pixel values.
SourceReadFromSelection	LONG (boolean)	(Optional) UI setting. True: Read source pixel values from the selection only.
Strength	float[3], range [0;2]	Strength of the adjustment, float[0] controls the brightness, float[1] and float[2] control the color.
UseMask	LONG (boolean)	(Optional) True: Edit only in the selection area. Default: Use the PhotoLine setting.

## Maximum

Maximum is a square, channel-wise maximum filter.

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.

## MaximumRound

MaximumRound is a round, channel-wise maximum filter. For large radii it is significantly slower than Maximum.

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.
Special	float, range [0;100]	The filter threshold.

## Minimum

Minimum is a square, channel-wise minimum filter.

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.

## MotionBlur

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.
Special	float, range [0;360[	(Optional) The filter direction. Default: 0

## OutlineFilter

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius. The diameter is rounded to the next odd integer.
Special	float, range [0;100]	The filter threshold.

## Perturbation

Parameter	Type	Description
Granularity	Float, range [0;1]	(Optional) 0: The result is smooth, 1: the result is extremely fine grained. Default: 0.8
Distance	Float, range [0;0.5]	(Optional) The range of the effect. Default: 0.2

## Relief

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	Float, 1.5   2.5	The filter radius.
Special	Float, 0   45   90   135   180   225   270   315	(Optional) The filter direction. Default: 0

## RemoveDirt

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius. The diameter is rounded to the next odd integer value.

## RemoveDisturbance

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000

Parameter	Type	Description
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius. The diameter is rounded to the next odd integer value.
Special	float, range [0;100]	The filter threshold.

## ReplaceColor

Parameter	Type	Description
DestinationColor	<a href="#">IPLColor</a> * (variable, RGB)	The destination color.
DestinationTolerance	float, range [0;1]	The range of the destination color.
SourceColor	<a href="#">IPLColor</a> * (variable, RGB)	The color, that should be replaced.
SourceTolerance	float, range [0;1]	The color range, that should be replaced.

## Roughen

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.
Special	float, range [0;100]	The density of the noise.

## SelectiveColorCorrection

SelectiveColorCorrection has 9 sets of parameters, one set for each available color range. Each set is an array of 4 floats and each of these floats corrects one color aspect:

- float[0]: cyan
- float[1]: magenta
- float[2]: yellow
- float[3]: black

Parameter	Type	Description
Red	float[4]	(Optional) Red
Yellow	float[4]	(Optional) Yellow
Green	float[4]	(Optional) Green
Cyan	float[4]	(Optional) Cyan

Parameter	Type	Description
Blue	float[4]	(Optional) Blue
Magenta	float[4]	(Optional) Magenta
White	float[4]	(Optional) White
Gray	float[4]	(Optional) Gray
Black	float[4]	(Optional) Black

## Sharpen

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.

## Soften

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.

## Sponge

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use

Parameter	Type	Description
		for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius. The diameter is rounded to the next odd integer value.

## Threshold

Parameter	Type	Description
Threshold	float, range [0;1]	The threshold value.

## UnsharpMasking

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.
Special	float, range [0;100]	The filter threshold.

## VerticalEdge

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	Float, 1.5 or 2.5	The filter radius.
Special	float, range [0;100]	The filter threshold.

## WhitePoint

Parameter	Type	Description
Auto	LONG (boolean)	(Optional) True: The parameters are preset with values calculated from the image (cannot be used with adjustments).
Color	<a href="#">IPLColor</a> * (variable, RGB)	(Optional) The color that should become white. Default: white.

Parameter	Type	Description
FixWhitePoint	LONG (boolean)	(Optional) If WhitePoint uses the gray point mode (Mode is 1), the FixWhitePoint controls whether white is a fix color, that shouldn't be modified. Default: False.
Gamma	float, range [0;5]	(Optional) Gamma value applied to the image. Default: 1
Limit	Float, range [0;1]	(Optional) If WhitePoint uses the gray point mode (Mode is 1), Limit controls the brightness value, that corresponds to the color. Default: 1
Mode	LONG	(Optional) 0: White point mode 1: Gray point mode Default: 0

## Operations applicable to images

### Descreen

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	Float, larger than 0.5	The filter radius.
Special	float, range [0;100]	The filter threshold.

### Invert

Invert the colors of an image.

### VariableBlur

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.
Special	float, range [0;1]	(Optional) Contrast value applied to depth values.

Parameter	Type	Description
		Default: 0.5

## WipeEffect

Parameter	Type	Description
Channels	LONG, bit mask	(Optional) A bit mask defining the channels to filter. 1 is the first color channel, 2 the second, ... The last one is the alpha channel. There are two special values: 0x40000000: Filter every color channel 0x80000000: Filter alpha Default value: 0xc0000000
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) CSMNative, CSMHIs and CSMLab. Default: CSMNative
Intensity	Float, range [-5;5]	(Optional) Intensity, 1 corresponds to 100%. Do not use for adjustments. Default: 1
Radius	float, larger than 0.5	The filter radius.
Special	float, range [0;360]	(Optional) The filter direction in degrees. Default: 0

## Operations Related to Layer Masks

### ApplyLayerMaskToAlpha

This operation only works in combination with a layer mask of an image. It copies the contents of the layer mask to the alpha channel of the image and deletes the layer mask afterwards.

### ApplyLayerMaskToMask

This operation only works in combination with a layer mask of an image. It creates a selection based on the content of a layer mask.

### CreateLayerMask

This operation adds a layer mask to a layer.

### CreateLayerMaskFromAlpha

This operation adds a layer mask to a layer. The layer mask is initialized with the transparency of the layer. If the layer is an image, its alpha channel will be removed.

### CreateLayerMaskFromLayer

This operation converts the layer into a layer mask of its preceding layer.

### CreateLayerMaskFromMask

This operation converts the current selection into a layer mask of the layer. The selection is removed afterwards..

## Operations Manipulating Selections

### BorderSelection

This operation creates a new selection that is a border around the current one.

Parameter	Type	Description
Relative	LONG (Boolean)	(Optional) Defines whether the border width is a percent value relative to the selection size or the number of pixels. Default: false
Size	float	The border width, either the number of pixels or a relative value in the range of [0;0.5].

### ClearSelection

This operation clears the selection. It doesn't edit any layer and doesn't have options.

### ContractSelection

This operation contracts the current selection mask.

Parameter	Type	Description
Relative	LONG (Boolean)	(Optional) Defines whether the size change is a percent value relative to the selection size or the number of pixels the selection will contract. Default: false
Size	float	The resize value, either the number of pixels or a relative value in the range of [0;1].

### ExpandSelection

This operation expands the current selection mask.

Parameter	Type	Description
Relative	LONG (Boolean)	(Optional) Defines whether the size change is a percent value relative to the selection size or the number of pixels the selection will expand. Default: false
Size	float	The resize value, either the number of pixels or a relative value. A relative value of 0.5 will expand the selection by half of its current size.

### FillSelection

This operation fills the selection of an image layer with a color. If there is no selection, the whole image is filled.

Parameter	Type	Description
Color	<a href="#">IPLColor</a> * (variable, count)	(Optional) The color used to fill the selection. If missing, the foreground color will be used.

### InvertSelection

This operation inverts the selection. If there is no selection, it creates an empty selection.

## MakeSelection

This operation creates or modifies a selection based on the opacity of the layer it is applied to. If the operation is applied to a document or page, it will base the selection on the active layer.

Parameter	Type	Description
Mode	LONG ( <a href="#">MakeSelectionMode</a> )	(Optional) The creation mode.

## Dictionaries

### Dictionaries for File Exports

On saving/exporting an object, you can use customized export settings. All settings are optional. If no customized settings are used, the values set inside PhotoLine are used.

Additionally to the file format options, there are:

Key	Value	Description
AddToRecentFiles	LONG (Boolean)	(Optional) If true, the used filename will be added the list of recently used files. Only used in combination with the Save and Save command of <a href="#">IPLDocument</a> or with ShowDialog set to true. Default: false
ShowDialog	LONG (Boolean)	(Optional) True: The file dialog is shown. Default: false
Title	String	(Optional) A title for the file dialog.

### The BMP Parameters

Key	Value	Description
ColorDepths	LONG	(Optional) 0: Automatic, depending on the content, 8, 15, 16, 24
Transparency	LONG (Boolean)	(Optional): True: Create transparent BMP.

### The DDS Parameters

Key	Value	Description
SaveMipMaps	LONG (boolean)	(Optional) True: Save mipmaps.

### The EXR Parameters

Key	Value	Description
Compression	LONG ( <a href="#">EXRCompression</a> )	(Optional) The compression used.

### The GIF Parameters

Key	Value	Description
Interlace	LONG (boolean)	(Optional) True: Create an interlaced GIF.

### The JPEG Parameters

Key	Value	Description
Compress	LONG, range [0;100]	(Optional) The resulting image quality.

Key	Value	Description
Progress	LONG (boolean)	(Optional) TRUE: Create a progressive JPEG.
EXIFPreview	LONG ( <a href="#">EXIFPreviewMode</a> )	(Optional) Controls whether an EXIF preview image is created.
ColorSubsampling	LONG (boolean)	(Optional) False: Use standard subsampling. True: Use subsampling for better color quality.

## The JPEG 2000 Parameters

Key	Value	Description
Compress	LONG, range [0;100]	(Optional) The resulting image quality.
Lossless	LONG (boolean)	(Optional) True: The file is compressed lossless.

## The JPEG XR Parameters

Key	Value	Description
Compress	LONG, range [0;100]	(Optional) The resulting image quality.
Lossless	LONG (boolean)	(Optional) True: The file is compressed lossless.

## The PDF Parameters

Key	Value	Description
Bleed	float	(Optional) The bleed width in inch.
ClipImages	LONG (boolean)	(Optional) True: Clipped images are cropped.
ClipToBleed	LONG (boolean)	(Optional) True: A clipping rectangle is created, so that everything outside the bleed rect is clipped.
ColorMode	LONG ( <a href="#">PDFColorMode</a> )	(Optional) The treatment of colors.
FontEmbedding	LONG ( <a href="#">PDFFontEmbedding</a> )	(Optional) controls the embedding of fonts.
MaxResolution	LONG	(Optional) The maximum resolution of images. Images with a higher resolution will be scaled down. 0: Don't scale any images.
OnlyPrintable	LONG (boolean)	(Optional) Only printable layers are exported.
PictureCompression	LONG ( <a href="#">PDFCompressionMode</a> )	(Optional) The compression mode for colored images.
Preview	LONG (Boolean)	(Optional) If true, a small preview image is created.
TextCompression	LONG ( <a href="#">PDFCompressionMode</a> )	(Optional) The compression mode for text data.
TransparencyMode	LONG ( <a href="#">PDFTransparencyMode</a> )	(Optional) The treatment of transparency.

## The PLD Parameters

Key	Value	Description
Compress	LONG	(Optional) 0: No compression, 3: best compression, 5: faster compression

## The PNG Parameters

Key	Value	Description
Compress	LONG, range [0;9]	(Optional) 0: No compression, 9: best compression
Interlace	LONG (boolean)	(Optional) True: Create an interlaced PNG.

## The SVG Parameters

Key	Value	Description
EmbedFonts	LONG	(Optional) 0: Keep text unchanged, 3: convert text to vector
ImageCompression	LONG ( <a href="#">SVGCompressionMode</a> )	(Optional) Image Compression

## The TIFF Parameters

Key	Value	Description
Compression	LONG	(Optional) 1: No compression 3: CCITT/Fax3 4: CCITT/Fax4 32773: PackBits 32946: ZIP
SaveLayers	LONG (boolean)	False: The document will be reduced to a background layer before saving. True: Every layer of the document will be exported as separate image.

## The WebP Parameters

Key	Value	Description
Compress	LONG, range [0;100]	(Optional) The resulting image quality.
Filter	LONG (boolean)	(Optional) True: A prefilter is applied.

## Dictionaries for IPLColor

### Gradient Dictionary

The Gradient dictionary defines the appearance of gradients. If a property or method expects an [IPLColor](#), you can usually also use a Gradient dictionary instead.

Key	Value	Description
ColorMode	LONG ( <a href="#">ColorSpaceMode</a> )	(Optional) The colors of the gradient will be interpolated in this color model.
Colors	IPLColor *[] (variable, RGB)	An array of colors defining the color stops. If this property is set, you can use an array of float arrays instead. The float array data will be interpreted as RGB.
Gammas	Float[number of colors[ - 1]], range ]0;1[	(Optional) Gamma value used for interpolation of two colors. The number of float values must be equal to or 1 less than the number of colors.
Interpolation	LONG ( <a href="#">GradientInterpolation</a> )	(Optional)The interpolation used to interpolate the colors.
Name	String	(Optional)Name of the gradient.

Key	Value	Description
Points	float[4]	(Optional)Start and end point of gradient in a unity coordinate system. If not set, [0 0.5 1 0.5] will be used.
Scale	float	(Optional) A circular gradient allows scaling the gradient perpendicular to the line defining it. Values smaller than 1 compress the gradient, values larger than 1 stretch it. Default: 1
Spread	LONG ( <a href="#">GradientSpread</a> )	(Optional)Repeating behavior of the gradient. Default value is GSContinue.
Stops	float[number of colors], range [0;1]	The stop positions of the colors. The positions must be ascending.
Type	LONG ( <a href="#">GradientType</a> )	(Optional)The type of gradient. Default value is GTLinear.

## Dictionaries for Text

### Text Styles Dictionary

The text styles dictionary is used to define a character or a paragraph styles. Character styles must not and paragraph styles must have a paragraph attribute.

Key	Value	Description
Name	String	Name of the text styles. Text styles must have a unique name.
Parent	String	(Optional) The name of the parent style. Attributes which are equal to the parent style, are inherited. The parent style must exist.
Follow	String	(Optional, only paragraph styles)The name of the following style.
Attributes	<a href="#">IPLDictionary</a> *	The <a href="#">text attributes</a> of the style.

### Text Attributes Dictionary

The text styles dictionary is used to define a character or a paragraph styles. Character styles must not and paragraph styles must have a paragraph attribute.

Key	Value	Description
Attachment	<a href="#">IPLDictionary</a> *	(Optional)A text attribute defining an <a href="#">attachment</a> like page number, document name, ... Attachments may only be assigned to a single character with the hex value 0x02 which symbolizes attachments in the text.
AutoKerning	LONG	(Optional) != 0: use the font kerning as it is defined in the font. Default value: 1
Baseline	float	(Optional) Distance of the text to the baseline.
Color	<a href="#">IPLColor</a> * (variable, count)	The color of the text.
Font	<a href="#">IPLDictionary</a> *	The <a href="#">font dictionary</a> defining the font.
Kerning	float	(Optional) Manual kerning: additional distance between two characters.
Ligatures	LONG	(Optional) != 0: use the ligatures as defined in the font. Default value: 1

Key	Value	Description
Outline	<a href="#">IPLDictionary</a> *	(Optional) <a href="#">Outline</a> dictionary. If this key exists, the text will be outlined.
Paragraph	<a href="#">IPLDictionary</a> *	The <a href="#">paragraph</a> attribute. The paragraph attribute must not change inside a paragraph.
Superscript	LONG	(Optional) -1: subscript, 0: normal, 1: superscript
TextStyle	String	(Optional) The name of the character style assigned to the text.
Underline	<a href="#">IPLDictionary</a> *	(Optional) <a href="#">Underline</a> dictionary.

## Dictionaries Used in Text Attributes

### *The Attachment Dictionary*

Text attributes containing an attachment attribute must only be assigned to a single character and this character must be 0x02 which symbolizes text attachments in the text.

Key	Value	Description
Type	String	There are the following types: - Date - PageNumber - PageCount - Document name

The other keys in this dictionary depend on the type.

### Date

Key	Value	Description
Date	String	(Optional) The date has the format “day:month:year”
DayOffset	LONG	(Optional) The number of days added to the date.
Format	LONG	(Optional) != 0: Use long format. Default: Use short format.
MonthOffset	LONG	(Optional) The number of months added to the date.
YearOffset	LONG	(Optional) The number of years added to the date.

### DocumentName

The document name doesn't have any additional keys.

### PageCount

Key	Value	Description
Offset	LONG	(Optional) An offset added to the page count.

### PageNumber

Key	Value	Description
Offset	LONG	(Optional) An offset added to the page number.

### *The Font Dictionary*

Key	Value	Description
FamilyName	String	The name of the font family

Key	Value	Description
PostScriptName	String	The postscript name of the font.
Scale	float	(Optional) A horizontal scaling of the font. 1 means no additional scaling, 0.5 halves the character width, 2 doubles it.
Size	float	The size of the font.
Style	LONG	(Optional) 0: No special style, 1: italic
Weight	LONG, range ]0;1000]	Weight of the font. 300 is light, 400 is normal/regular, 700 is bold.
Width	LONG, range ]0;1000]	Width of the font. 300 is condensed, 500 is medium and 700 is expanded.

If PostScriptName is set and a font with that name exists, FamilyName, Style, Weight and Width don't have to be set, because they are implicitly defined by the properties of that font.

### ***The Outline Dictionary***

The Outline dictionary controls the appearance of outlined text.

Key	Value	Description
Color	<a href="#">IPLColor</a> * (variable, count)	The color of the outline.
LineStyle	<a href="#">IPLLineStyle</a> *	The line style of the outline.

### ***The Paragraph Dictionary***

The Outline dictionary controls the formatting of paragraphs. It must not change inside a paragraph.

Key	Value	Description
After	float	(Optional) An additional space after a paragraph. The default value is 0.
Alignment	LONG ( <a href="#">ParagraphAlignment</a> )	The alignment of the paragraph. The default value is PLeft (0).
Before	float	(Optional) An additional space before a paragraph. The default value is 0.
Connect	LONG (Boolean)	(Optional) True: The paragraph will be on the same page as the next paragraph. The default value is false.
FirstIndent	float	(Optional) The indentation of the first line of the paragraph. This value must be larger than or equal to 0. The default value is 0.
FixLine	LONG (Boolean)	(Optionally) True: The Line key controls the distance between two baselines inside a paragraph. False: The Line key is an additional offset between two lines. The default value is false.
LeftIndent	float	(Optional) The indentation of all lines of the paragraph except the first one. This value must be larger than or equal to 0. The default value is 0.
Line	float	(Optional) The line distance between two lines of the paragraph. FixLine controls its exact meaning. The default value is 0.
Register	LONG ( <a href="#">ParagraphRegister</a> )	(Optional) Controls whether the lines of the paragraph should be placed on the line register. The default value is PRNone (0).

Key	Value	Description
RightIndent	float	(Optional) The right indentation of the paragraph. If the value is larger than 0, it is relative to the left edge of text layer. In that case it has to be larger than the left indent. If the value is smaller than 0, it is relative to the right edge of the text layer. The default value is 0.
StickStart	LONG	(Optional) The number of following lines, that have to be on the same page as the first paragraph line. The default value is 0.
StickEnd	LONG	(Optional) The number of preceding lines, that have to be on the same page as the last paragraph line. The default value is 0.
Style	String	(Optional) The name of the paragraph style assigned to the text.
Tabs	IPLDictionary *[]	(Optional) An array of tab dictionaries, that define the tabs for the paragraph.

If PostScriptName is set and a font with that name exists, FamilyName, Style, Weight and Width don't have to be set, because they are implicitly defined by the properties of that font. In other words: PostScriptName will override these settings.

### **The Tab Dictionary**

The Tab dictionary defines the properties of a tab..

Key	Value	Description
Type	LONG ( <a href="#">TabType</a> )	(Optional) The tab type (left, right, ...) The default value is TTLeft (0).
Position	float	The position of the tab. The position must be larger than or equal to 0.
Filler	String	(Optional) Fill character used for the tab space. Only the first character of the string is used. The default value is no fill character.
Decimal	String	(Optional) If the type is TTDecimal, the value defines the decimal character, that will be used for alignment. Only the first character of the string is used. The default value is “.”.

### **The Underline Dictionary**

The Outline dictionary controls the appearance of outlined text.

Key	Value	Description
Color	<a href="#">IPLColor</a> * (variable, count)	(Optional) The color of the outline. If absent, the text color will be used.
LineStyle	IPLLineStyle *	(Optional) The line style of the outline. If absent, the default value for the font will be used as line width.
Position	float	(Optional) Offset factor for underline position. Positive values move the line up. Default: 0

### **Vector Attributes Dictionary**

The vector attributes dictionary is used to define the appearance of a vector layer.

Key	Value	Description
FillColor	<a href="#">IPLColor</a> * (variable, RGB)	(Optional) The fill color. If it is missing, the vector layer will not be filled.
LineColor	<a href="#">IPLColor</a> * (variable, RGBs)	(Optional) The line color. If it is missing, the vector layer will not be stroked.
LineStyle	<a href="#">IPLLineStyle</a> * (variable)	(Optional) The line style. If it is missing, the vector layer will not be stroked.

## Other Dictionaries

### Copy Options Dictionary

These are the available options for copying layer data to the clipboard ([IPLDocument](#), [IPLPage](#), [IPLL ayer](#), [IPLL ayerArray](#)). Not all options are applicable in every situation.

Key	Value	Description
Clear	LONG (Boolean)	(Optional) True: Delete the copied parts after copying. True is only allowed, if <ul style="list-style-type: none"> <li>used with a single image layer (<a href="#">IPLImage</a>)</li> <li>used with a layer array (<a href="#">IPLL ayerArray</a>) and “Selection” is set to false.</li> </ul> Default: false
Defringe	LONG (Boolean)	(Optional) True: Remove the color fringe at the edge of the copied selection. This is only applicable, if “Selection” is true and the command is applied to <ul style="list-style-type: none"> <li>a single image layer (<a href="#">IPLImage</a>)</li> <li>a page (<a href="#">IPLPage</a>) or documents (<a href="#">IPLDocument</a>)</li> </ul> Default: false
Selection	LONG (Boolean)	(Optional) False: Copy the selected layers. True: Copy the contents of the selection, if there is any. If there is no selection, the selected layers will be copied. True is not allowed for a list of layers. Default: false

## Adjustments

Adjustments are a subset of the available operations, that can be applied to images. The parameters of the adjustments are stored in IPLDictionaries. All adjustment dictionaries contain the key “Type” whose value is the name of the operation as string. The other keys and values are the parameters of the operation.

The available adjustments are listed in [Operations applicable to images and as adjustments](#).