

ColorAnt CLI Documentation

Usage:

ColorAnt <inputfile> [<inputfile> <inputfile> ...] -w <workflowfile> [-o <outputfile>]

or

ColorAnt <inputfile> [<inputfile> <inputfile> ...] -t <toolname> [-p <parameters>] [-o <outputfile>]

Available options:

[-t | --tool] <toolname>: Set the tool to be used.

[-p | --param] <key>=<value>[,<key>=<value>,...]: Set the tool params (tool needs to be specified beforehand).

[-w | --workflow] <workflow file>: Define a workflow to be applied.

[-o | --output] <output file>: Specify a file to which the resulting data should be written. The ColorAnt binary will exit after processing has completed (can be overwritten with the -g switch, see below).

[-h | --help] [listtools | listpredefined | <toolname>]: Print help (see below) and exit.

[-g | --gui]: Start the UI instead of terminating after processing the command line when specifying an output file.

Multiple parameters can be put as -p <key>=<value>,<key>=<value> or -p <key>=<value> -p <key>=<value>.

Not specifying an output file will result in the processed data to be output to the console.

Help:

ColorAnt -h (displays this text).

ColorAnt -h listtools (lists the available tools).

ColorAnt -h listpredefined (lists the available predefined color charts).

ColorAnt -h <toolname> (lists the parameters and eligible values of the specified tool).

Available tools:

Average

Brightener

CIEConversion

Correction

CustomChart

DataReport

EditColor

EnumeratePatches

Evaluation

ExportDensity

ExportLab

ExportXYZ

ExtractEsko

Filter

ICCTransformation

Intersection

Layout

Link

PatchesFromImage

Redundancies

Reorder

Rescale

Smoothing

ToneValue

Unlink

WhiteBlackCorrection

For more information on each tools parameters, type '-h <toolname>'

Average

Average several data sets into one data set.

Available parameters:

AveragingMode: The method to use for the calculation of averaged values

Eligible values:

Auto: Automatic averaging

Arithmetic: Arithmetic averaging

Median: Averaging using median

Weighted: Averaging according to weighted values

RemoveRedundancies: A boolean value signifying whether to remove redundancies

Eligible values: YES | true | 1 | NO | false | 0

Invocation example:

```
ColorAnt <inputfile> -t Average -p Mode=3,RemoveRedundancies=true -o <outputfile>
```

Brightener

Correct data for optical brighteners.

Available parameters:

BrightenerAmount: Amount of brightener correction

Eligible values:

0.0...100.0: Percentage value determining the strength of the brightener correction

Invocation example:

```
ColorAnt <inputfile> -t Brightener -p BrightenerAmount=100.0 -o <outputfile>
```

CIEConversion

Change the standard observer and illumination of data sets.

Available parameters:

Mode | DstMode: The destination illumination mode

SrcMode: The source illumination mode

Eligible values:

D50: Standard illumination D50

D65: Standard illumination D65

A: Illumination method A

Kelvin: Color temperature in Kelvin

XYZ: XYZ value

Emission: A file with emissive spectral data

Uniform: Equal Energy Spectrum

Further information: Spectral data only needs destination illumination specified

DstWhite: The destination white value

SrcWhite: The source white value (only applicable with Lab/XYZ input)

Observer: The observer where applicable

Eligible values:

2: 2° Observer

10: 10° Observer

Correction

Correct and detect faulty measurement.

Available parameters:

CorrectErrors:	Correct bad measurements
Eligible values:	YES true 1 NO false 0
CorrectOverprint:	Optimize overprints
Eligible values:	YES true 1 NO false 0
CorrectBrighterThanSubstrate:	Controls whether measurement data brighter than the substrate (paper white) will be corrected
Eligible values:	YES true 1 NO false 0
CorrectMode:	Correction mode as integer
Eligible values:	
1:	Correct bad measurements
2:	Optimize overprints
4:	Controls whether measurement data brighter than the substrate (paper white) will be corrected
Further information:	The values may be added in order to combine them
3:	Correct bad measurements & Optimize overprints
5:	Correct bad measurements & Controls whether measurement data brighter than the substrate (paper white) will be corrected
6:	Optimize overprints & Controls whether measurement data brighter than the substrate (paper white) will be corrected
7:	Correct bad measurements & Optimize overprints & Controls whether measurement data brighter than the substrate (paper white) will be corrected
ProtectLights:	Protect lights
Eligible values:	
0.0...50.0:	Percentage value from which the correction shall be performed. Values below are protected.

Invocation example:

```
ColorAnt <inputfile> -t Correction -p Mode=3,ProtectLights=10.0 -o <outputfile>
```

CustomChart

Create custom test charts.

Available parameters:

Mode:	The type of chart that should be created.
Eligible values:	
Profiling:	Create typical test charts for profiling printers
Flexo:	Similar to the Profiling mode. Generates more patches in the highlights to better capture the behavior of flexographic presses
Update:	Generate test charts with a minimum amount of patches to be used in conjunction with the Update Profile module in CoPrA or for the Iteration of DeviceLink profiles.
Linearization:	Creates color ramps for each ink channel. Linearization charts only contain patches of the primaries.
CxFX4Wedge:	This option creates a full CxF/X-4 chart including a black gradient. A full CxF/X-4 chart contains the full tone and tints of one or multiple spot colors placed on white and black.
InkSplitting:	Creates ramps for each channel and two color overprints for all channel combinations. This adds more patches to linearization charts and is intended for creating ink splitting DeviceLink profiles.

SpotColorLib:	This option creates a SpotColor library.
ColorSpace:	The color space of the chart to be generated. Needs to be specified before setting 'ColorName' or 'CIESample'.
Eligible values:	
Gray:	Grayscale color space
RGB:	RGB color space
CMYK:	CMYK color space
nCLR:	MultiColor space with n channels.
cls1:	ColorLogic Spot Color Library.
Further information:	Minimum value for MultiColor channels is 1, maximum value is 15. E.g. 7CLR denotes MultiColor data with 7 channels.
SpotColorCount:	The number of spot colors the chart should contain. Needs to be specified for spot color library mode before setting 'ColorName' or 'CIESample'.
Eligible values:	1 ... 99
ChannelIndex:	The index of the channel that subsequent calls to 'ColorName' and 'CIEValue' are to be applied to.
Eligible values:	0 ... (n - 1)
ColorName:	The name of the channel specified by 'ChannelIndex'.
CIESample:	The Lab or RGB value for the full tone of the channel specified by 'ChannelIndex'.
Eligible values:	Three floating point values prefixed by Lab or RGB, e.g. "RGB 255 0 0" or "Lab 54.67 76.38 73.52".
MinPatches:	The minimum amount of patches to be generated (has to be >= 1)
InkLimit:	The TAC of the custom chart.
Eligible values:	
100 ... (n * 100):	The TAC can be set to more than 400% or as low as 100%. By default, the value is set to 400.
Further information:	Since the upper limit is 100% per channel, the TAC depends on the number (n) of channels in the data, e.g. '700' for 7 channels.

Invocation example:

```
ColorAnt -t CustomChart -p Mode=Profiling,ColorSpace=CMYK,MinPatches=900 -p
ChannelIndex=0,ColorName=Cyan,CIESample="RGB 0 255 255" -p
ChannelIndex=1,ColorName=Magenta,CIESample="RGB 255 255 0" -p
ChannelIndex=2,ColorName=Yellow,CIESample="RGB 0 255 255" -p
ChannelIndex=3,ColorName=Black,CIESample="RGB 0 0 0" -o CMYK-900.txt
ColorAnt -t CustomChart -p
Mode=SpotColorLib,ColorSpace=cls1,SpotColorCount=3,MinPatches=11 -p
ChannelIndex=0,ColorName=Mocha,CIESample="Lab 37.88 24.64 48.51" -p
ChannelIndex=1,ColorName=Flora,CIESample="Lab 88.77 -59.59 53.50" -p
ChannelIndex=2,ColorName=Orchid,CIESample="Lab 44.84 67.14 -86.34" -o
SpotColors.txt
```

DataReport

Create custom reports for measurement data.

Available parameters:

ReportFile: The filename of the report. The general file name rules fo the operating system apply. The extension (e.g. '.pdf') is optional and will be added if not specified according to the value of "ReportFormat"

ReportPath:	The path the report file shall be written to
ReportFormat:	The output format that the report shall have
Eligible values:	
PDF:	Output the report as a PDF file
XML:	Output the report as an XML file
ReportQuality:	Check measurement data quality
Eligible values:	YES true 1 NO false 0
ReportTVI:	Include the tone value increase curves in the report
Eligible values:	YES true 1 NO false 0
ReportLin:	Include the linearity curves in the report
Eligible values:	YES true 1 NO false 0
ReportG7:	Include G7 linearity information in the report
Eligible values:	YES true 1 NO false 0
ReportMatchProcessColors:	Determine whether a close match between the measured solid process colors and the reference solid process colors can be achieved.
Eligible values:	YES true 1 NO false 0
ReportCheckPrintStandard:	Compare the measurement data with a selected print standard
Eligible values:	YES true 1 NO false 0
ReportPrintStandard:	Sets the reference profile for the print standard comparison (i.e. the path to the reference profile)
ReportFindPrintStandard:	Find the best matching profile for comparison (single data set only)
Eligible values:	YES true 1 NO false 0
ReportAutoLaunch:	Automatically open the report file
Eligible values:	YES true 1 NO false 0

EditColor

Edit, add, delete, copy, cut, paste color patches.

Available parameters:

EditMode:	The edit mode
Eligible values:	
Edit:	Change the specified patch to the given value
Delete:	Remove the specified patch from the chart
Add:	Add a patch to the chart
Cut:	Remove the specified patch from the chart and copy its value to the clipboard
Paste:	Paste a value from the clipboard to the specified location in the chart
PatchID:	An integer value determining the index of the patch to be edited (starting with 0!)
ChartID:	An integer value determining the index of the chart to edit (starting with 0!)
Val:	A color value for the specified patch, e.g. "96.0 45.7 -23.8". Needs to be in the colorspace of the specified chart. Only valid for 'Edit' & 'Add'.

EnumeratePatches

Enumerate the patches of a chart

Available parameters:

This tool has no parameters

Further information: The sample Ids of the chart will be enumerated from 1 through n, with n being the number of patches contained within the chart. Existing sample Ids will be overwritten.

Invocation example:

```
ColorAnt <inputfile> -t EnumeratePatches -o <outputfile>
```

Evaluation

Evaluation of proof measurement data.

Available parameters:

EvaluationMethod: The evaluation method to be used

Eligible values:

ISO12647-7: Evaluation according to ISO12647-7 (Contract Evaluation)

ISO12647-8: Evaluation according to ISO12647-8 (Validation Print)

PSDSideBySide: Evaluation according to Fogra PSD (Side by Side)

PSDMediaRelative: Evaluation according to Fogra PSD (Media Relative)

EvaluationReference: The path to the reference the input data shall be evaluated against. Can be either a profile or e.g. a CGATS file containing reference data

ReportFile: The filename of the report. The general file name rules for the operating system apply. The extension (e.g. '.pdf') is optional and will be added if not specified according to the value of "ReportFormat"

ReportPath: The path the report file shall be written to

ReportFormat: The output format that the report shall have

Eligible values:

PDF: Output the report as a PDF file

XML: Output the report as an XML file

EvaluationOutput: The type of output the report tool shall generate

Eligible values:

Report: Output full report

Further information: The following parameters are mainly for informational purposes

EvaluationJob: The job description for the evaluation

EvaluationPrinter: The printer being evaluated

EvaluationSubstrate: The substrate used

EvaluationPrintCondition: The used print condition

EvaluationCreationDate: The date of the evaluation

EvaluationMeasCondition: The used measurement condition

EvaluationCalibrationDate: The calibration date of the measurement device

EvaluationNotes: Notes that shall be added to the evaluation report

EvaluationSpotColorIdc: A list of channel indices determining the positions of Spot Colors. Channels that are not explicitly marked as Spot Colors are interpreted as Process Colors. Affects the ISO 12647 and PSD Side-by-Side modes.

Eligible values: 0 ... n-1

Further information: The list must be separated by semicolon (;) with no whitespaces. The indices must start with '0', i.e. '0' is the first channel, '1' the second one and so forth.

ExportDensity

Export density data for a given spectral data set (optionally including Lab values)

Available parameters:

Path: The path to the file that the converted data should be saved in. This parameter can be omitted when specifying an output file using the '-o' or '--output' command line switch.

DensityMode | Mode: The status used for the conversion calculation

Eligible values:

Status-E: Mainly Europe, higher yellow density than Status-T

Status-T: Mainly America

Status-A: Mainly photographic industry

Maximum-Density: Based on absorption maximum

Further information: If not specified, the tool defaults to the setting specified in its preference settings

AddLab: Whether to add Lab data to the file

Eligible values: YES | true | 1 | NO | false | 0

Invocation example:

```
ColorAnt <inputfile> -t ExportDensity -p Mode=1,AddLab=true -o <outputfile>
```

ExportLab

Export a given spectral dataset to Lab

Available parameters:

Path: The path to the file that the converted data should be saved in. This parameter can be omitted when specifying an output file using the '-o' or '--output' command line switch.

Invocation example:

```
ColorAnt <inputfile> -t ExportLab -o <outputfile>
```

ExportXYZ

Export a give spectral dataset to XYZ

Available parameters:

Path: The path to the file that the converted data should be saved in. This parameter can be omitted when specifying an output file using the '-o' or '--output' command line switch.

Invocation example:

```
ColorAnt <inputfile> -t ExportXYZ -o <outputfile>
```

ExtractEsko

Extracts data out of a 7C data set to generate a 4×4 Equinox test chart.

Available parameters:

This tool has no parameters

Further information: Equinox is a Multicolor profiling application from Esko that has special requirements for creating test charts for Multicolor profiling.

Invocation example:

```
ColorAnt <inputfile> -t ExtractEsko -o <outputdir>
```

Filter

Filters data according to the given parameters

Available parameters:

Mode: The name of the filter mode

Eligible values:

FilterPrimaries: Filter the primaries

FilterFullTones: Filter the full tones

FilterCorners: Filter the corners

FilterCxFX4: Filter CxF/X-4 data

FilterCxFX4PlusK: Filter CxF/X-4 data with black channel gradient

Invocation example:

```
ColorAnt <inputfile> -t Filter -p Mode=FilterCorners -o <outputfile>
```

ICCTransformation

Use ICC device and DeviceLink profiles to test impact on data.

Available parameters:

Index: The index for the profile the subsequent parameters are applied to. Doesn't need to be set when only one profile is utilized.

Further information: Needs to be set before applying more than one profile/RI

ConvertFromLab: A boolean value determining whether to start the conversion from CIE data (only applicable if CIE data is present in the input data set)

Eligible values: YES | true | 1 | NO | false | 0

ConvertFromLabRI: The rendering intent to use when converting from CIE

Eligible values:

Perceptual: Perceptual rendering intent

RelativeColorimetric: Relative colorimetric rendering intent

Saturation: Saturation rendering intent

AbsoluteColorimetric: Absolute colorimetric rendering intent

BlackCompensation: Black compensation rendering intent (ColorLogic specific)

Profile: The profile to be applied (index may be needed to be specified when applying more than one profile)

RI: The rendering intent to be used when applying the selected profile (index may be needed to be specified when applying more than one profile)

Eligible values:

Perceptual: Perceptual rendering intent

RelativeColorimetric: Relative colorimetric rendering intent

Saturation: Saturation rendering intent

AbsoluteColorimetric: Absolute colorimetric rendering intent
BlackCompensation: Black compensation rendering intent (ColorLogic specific)

Intersection

Find identical device values in two data sets and output the result into a new chart.

Available parameters:

RemoveRedundancies: A boolean value determining whether to remove redundancies

Eligible values: YES | true | 1 | NO | false | 0

Invocation example:

```
ColorAnt <inputfile> -t Intersection -p RemoveRedundancies=true -o <outputfile>
```

Layout

Change the layout of a chart according to the given parameters

Available parameters:

This tool has no parameters

Further information: Only one of the following parameters need to be given, the other one results from the amount of patches.

Width: An integer value representing the new width of the chart layout

Height: An integer value representing the new height of the chart layout

Invocation example:

```
ColorAnt <inputfile> -t Layout -p Width=20 -o <outputfile>
```

Link

Combine sets of measurement data.

Available parameters:

LinkMode: The method to use for the recalculation of the white point

Eligible values:

Link: Link charts by concatenating them

MergeCIEAndDCS: Merge charts with different color space classes (i.e. DCS & PCS)

MergeByChannelNames: Merge charts by channel names

Invocation example:

```
ColorAnt <inputfile> -t Link -p Mode=Link -o <outputfile>
```

PatchesFromImage

Creates an image-related test chart based on a loaded image by extracting the most common/important colors from that image.

Available parameters:

ImageFile: The path to the image file from which the chart should be created

PatchCount: An integer specifying how many patches should be created for the chart

AddCornerPoints: A boolean value specifying if corner values should be added

Eligible values: YES | true | 1 | NO | false | 0

Invocation example:

```
ColorAnt <inputfile> -t PatchesFromImage -p ImageFile=<path to image file>,PatchCount=600,AddCornerPoints=YES -o <outputfile>
```

Redundancies

Correct redundancies in measurement data

Available parameters:

RedundancyMode | Mode: The redundancy mode

Eligible values:

0 Auto:	Auto (depends on the number of redundant patches)
1 Arithmetic:	Arithmetic (equal for all patches)
2 Median:	Median (selects typical values)
3 Weighted:	Weighted (prefers data near the arithmetic average)

RedundancyRemove: Whether to physically remove redundant patches

Eligible values: YES | true | 1 | NO | false | 0

Invocation example:

```
ColorAnt <inputfile> -t Redundancies -p Mode=Median -o <outputfile>
```

Reorder

Rotate, mirror, sort test charts.

Available parameters:

Mode: The name of the reorder mode

Eligible values:

SwapRowsCols:	Swap rows with columns
Rotate90:	Rotate by 90°
Rotate180:	Rotate by 180°
Rotate270:	Rotate by 270°
MirrorV:	Mirror vertically
MirrorH:	Mirror horizontally
SortChannelWise:	Sort channelwise
SortChannelWiseReverse:	Sort channelwise (reverse)
SortChannelCount:	Sort by channel count
SortSampleID:	Sort by sample Id
SortSampleName:	Sort by sample name

Invocation example:

```
ColorAnt <inputfile> -t Reorder -p Mode=SwapRowsCols -o <outputfile>
```

Rescale

Recalculate data to a different color chart

Available parameters:

RescaleFile: The path to the reference the chart shall be rescaled to

RescaleProfile: The path to a reference profile which characteristics shall be used

Invocation example:

```
ColorAnt <inputfile> -t Rescale -p RescaleFile=</Path/To/RescaleFile.txt> -o
<outputfile>
ColorAnt <inputfile> -t Rescale -p
RescaleFile=</Path/To/RescaleFile.txt>,RescaleProfile=</Path/To/RescaleProfile.icc>
-o <outputfile>
```

Smoothing

Automatically smooth measurement data.

Available parameters:

SmoothAmount: Smoothing factor (%)

Eligible values:

0.0...100.0: Percentage value determining the strength of the smoothing

ProtectLights: Protect lights

Eligible values:

0.0...50.0: Percentage value from which the smoothing shall be performed. Values below are protected.

Invocation example:

```
ColorAnt <inputfile> -t Smoothing -p SmoothAmount=100.0,ProtectLights=10.0 -o
<outputfile>
```

ToneValue

Correct measurement data to a specific set of curves.

Available parameters:

ToneValueMode | Mode: Mode determining which type of tone value correction shall be applied

Eligible values:

Profile: Path to a profile to be used as a reference

G7: Correct tone value according to G7 -- CMYK only

ISO20654: Correct tone value according to ISO20654

G7&ISO20654 | G7+ISO20654: Use G7 to correct CMYK, ISO20654 for additional MultiColor channels

ISO20654MConly: Apply ISO20654 correction only to MultiColor channels and leaves CMYK untouched

MeasData: Correct bad measurements

SaveACV: Export linearization data as Photoshop ACV

Eligible values: YES | true | 1 | NO | false | 0

SaveXML: Export linearization data as ISO18620 XML

Eligible values: YES | true | 1 | NO | false | 0

ExportPath: Path where exported linearization data shall be saved

ProtectLights: Protect lights

Eligible values:

0.0...50.0: Percentage value from which the smoothing shall be performed. Values below are protected.

Invocation example:

```
ColorAnt <inputfile> -t ToneValue -p Mode=G7,ProtectLights=10.0 -o <outputfile>
```

```
ColorAnt <inputfile> -t ToneValue -p
```

```
Mode=ISO20654,SaveXML=true,ExportPath=<export path> -o <outputfile>
```

Unlink

Separates the measurement data from reference data.

Available parameters:

This tool has no parameters

Further information: Splits files with reference and measurement data into two individual files

Invocation example:

```
ColorAnt <inputfile> -t Unlink -o <outputfile>
```

WhiteBlackCorrection

Apply manual corrections to paper white

Available parameters:

WhiteColor: The CIE value for the new whitepoint as a vector (e.g. "95.0 1.49 -5.99 Lab")

BlackColor: The CIE value for the new blackpoint as a vector (e.g. "11.43 0.37 -1.48 Lab")

WhiteMode | Mode: The method to use for the recalculation of the white point

Eligible values:

ColorLogicStandard: White point correction according to ColorLogic method (standard)

ISO13655: White point correction according to ISO 13655

RelativeColorimetric: Relative colorimetric

Invocation example:

```
ColorAnt <inputfile> -t WhiteBlackCorrection -p Mode=ISO13655,WhiteColor="95.0 1.49 -5.99 Lab" -o <outputfile>
```

```
ColorAnt <inputfile> -t WhiteBlackCorrection -p Mode=ColorLogicStandard,WhiteColor="95.0 1.49 -5.99 Lab",BlackColor="11.43 0.37 -1.48 Lab" -o <outputfile>
```