



Colour Calibration Algorithms

Technical note

Document title: technical note - Colour Calibration Algorithms
Document number: 1008
Revision: 01
Date: June 2018

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Contents

1	Introduction	5
2	Extended algorithms categories	6
3	Category ‘Colour calibration chart’	6
4	Category ‘Colour calibration table’	6
5	Category ‘Color interpolation’	6
6	Comments	6

1 Introduction

Keysens vAlgorithms are collections of functions written in C and contained in DLLs. The functions implement machine vision and data processing algorithms. *Keysens* software, like *vDevelop* and the runtimes *vProcess*, *RuntimeGigE*, *RuntimeGigEUser*, etc, load several algorithms DLLs and *algorithms description files* contained in the algorithms directory, alg.

For building machine vision applications one makes a project with *vDevelop*. Projects consist of several parameters for camera settings and communications with installation devices like robots, PLCs and HMIs, and the most important, an algorithms script: a list of algorithms that will be executed sequentially.

One of such algorithms library is the *Colour Calibration Collection*, whose files are named:

File	Description
color_calibration_algorithms.dll	The algorithms functions.
color_calibration_algorithms.txt	The algorithms description file.

This technical note briefly describes the algorithms contained in this library.

2 Extended algorithms categories

The algorithms in the *Colour Calibration Collection* are distributed in categories:

Category	Description
Colour calibration chart	Algorithms to generate colour charts (images) used for colour calibration.
Colour calibration table	Algorithms to generate colour calibration tables.
Colour interpolation	Algorithms to convert sensed colours to calibrated colours using a calibration table.

Following, the algorithms in every category are described.

3 Category ‘Colour calibration chart’

Colour calibration chart			
Algorithm	Input	Output	Description
COLOR_CHART	RAW	RAW	Create an image with coloured squares from colour values.

4 Category ‘Colour calibration table’

Colour calibration table			
Algorithm	Input	Output	Description
FIT_PLANE	DAT	DAT	Fits a plane to the input points.
PLANES_INTERSECTIONS	DAT	DAT	Points of intersection of 3-tuples of planes.
RGB_CUBE_FACES	DAT	DAT	Extract points or planes that form a face of the RGB cube.
RGB_CUBE_PLANES	DAT	DAT	Fit planes to points measured from a grid in the RGB cube.

5 Category ‘Color interpolation’

Colour interpolation			
Algorithm	Input	Output	Description
RGB_TRILINEAR_INTERPOLATION	RAW	RAW	Apply a trilinear interpolation to convert the colors of an image.

6 Comments

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