v 0.101

MANUAL

v 0.101 beta

catEYE

catEYE is a pixel picker and color meter which analysis the master screen display of Windows and OSX platforms.

Color at different positions can be evaluated in **multiple patch mode**. It is also possible to track color along a given straight line from the screen in **line mode**.

It is based on CIE-L*a*b, CIE-L*C*H, LS+h, YCbCr (Rec709) evaluation methods. Color Space data is shown in two dimension as Waveform Monitor and Vectorscope.
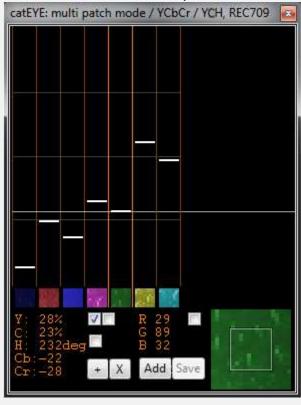
multiple patch mode is useful for:
⇒ color correction
⇒ color grading
⇒ skintone analysis
⇒ noise analysis
⇒ color matching

line mode is useful for:
⇒ color correction
⇒ color grading
⇒ skintone analysis
⇒ noise analysis
⇒ resolution analysis
⇒ depth of field analysis

Master Form: multi patch mode

catEYE: multi patch mode / YCbCr / YCH, REC709

Y: 28%
C: 23%
H: 232deg
Cb:-22
Cr:-28

R 29
G 89
B 32

+ X   Add Save

Key Elements of Master Form

⇒ Data Display - Waveform Monitor

Displays color results of pixel patches depending on checkbox selection and color space

⇒ Data Labels and Checkboxes

Data Labels show numeric results of one selected patch depending on color space. Checkboxes will activate display of either Y/L, CH and/or RGB

⇒ Patch Loupe

Shows area which is used for pixel color data

⇒ Data Container Buttons

The Data Container is used to compare with actual color information. By means of the buttons you can add and delete data container. Furthermore, a screenshot of the master form will help compare old with new

⇒ File Save Buttons

For external use RGB and Position data can be stored in a file format easy to import into a spreadsheeds

Global Keyboard Shortcut

Key "q"
Adds a patch at master screen of mouse position

Key "w"
Deletes all patches

Displays color results of pixel patches depending on checkbox selection and color space

Left Click
Selection color patch

Double Left Click
Switch to line mode

Shift+Left Click
toggle between different form height presets

Strg + Left Click + Mouse Move Up/Down
Semi-transparent blend of Form

Middle Click
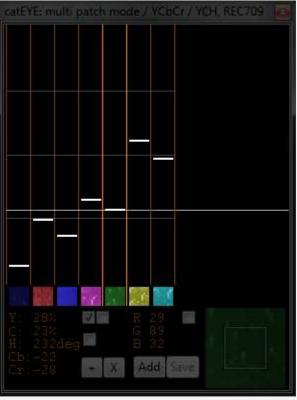Change to standard form width

Right Click
Toggle between different data point displays
 # all data points
 # mean + mean of single data of container
 # mean + mean of whole data of container

Data Labels and Checkboxes

catEYE: multi patch mode / YCbCr / YCH, REC709

(b) (c) (d)
(a)

Y: 28%
C: 23%
H: 232deg
Cb:-22
Cr:-28

R 29
G 89
B 32

Add Save

Data Labels show numeric results of one selected patch depending on color space

Right Click Labels
Toggle between YCbCr/YCH, CIE-L*a*b*/CIE-L*C*H* and La_sb_s/LS^+h

Middle Click Labels
Opens vectorscope form
Resize vectorscope to height of master form

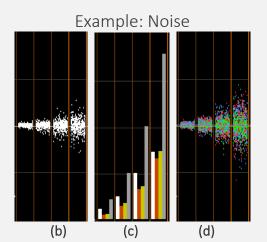**Double Left Click on Labels**
Deletes all color patches

Checkbox (a)
Activates display of C (Chrominance) and H (HUE) results

Checkbox (b)
Activates display of Y (Luminance) or L (Lightness)

Checkbox (c)
Activates histogram display of noise analysis
 # white: standard deviation of Y (Luminance) or L (Lightness)
 # red: standard deviation of Cb or a channel
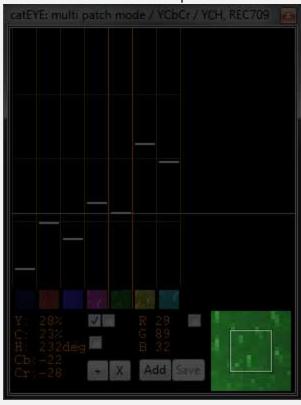*# yellow: standard deviation of Cr or b channel*
 # grey: color distance of YCbCr or Lab

Remarks: It is very important to analyze noise at the original size (zoom 100%) of the monitor display

Checkbox (d)
Activates display of RGB results

Example: Noise

(b)   (c)   (d)

Patch Loupe

Shows area which is used for pixel color data

Double Click
Toggle between different patch sizes (20x20;10x10;4x4;2x2 pixel)

Right Click
In case of selected patch it toggles between
#normal patch display
#averaged color patch display if data copy is activated (inner color actual/outer data container data)

before

after

compare of averaged colors

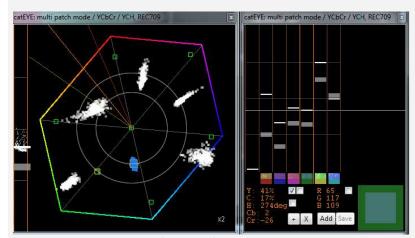The Data Container is used to compare with actual color information.

'+' Button Left Click
Adds new data to Container. Old container data and new data will be averaged. Screenshot of form is taken.
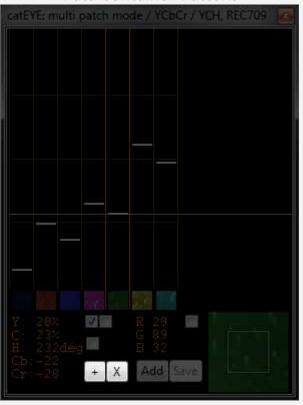
'X' Button Left Click
Shows screenshot of form which was taken before.
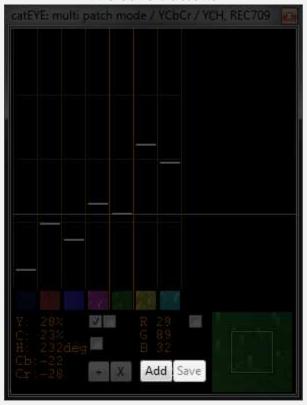
'X' Button Right Click
Deletes Container Data

compare data via data container

File Save Buttons

For external use RGB and Position data can be stored in a file format easy to import into a spreadsheeds

'Add' Button Left Click
Adds RGB-Color and XY-Position data to txt file.

'Save' Button Left Click
Saves all collected data into 'Data_MultiPatchMode.txt' file. It's stored in directory for catEYE application.

Vectorscope can be displayed as CbCr and a*b* diagram. Activation takes place via Master Form. Evaluation is derived either from Line Mode or Patch Mode.

Double Left Click
Zoom to x1,x2,x3,x4

Shift + Left Click+ Mouse Move Up/Down
Rotates Vectorscope

Right Click
Rotates Vectorscopes to standard position. In case of L*a*b*-Vectorscope it rotates also to position where Skinline HUE would be in place with YCbCr HUE. Useful when working with color wheels.

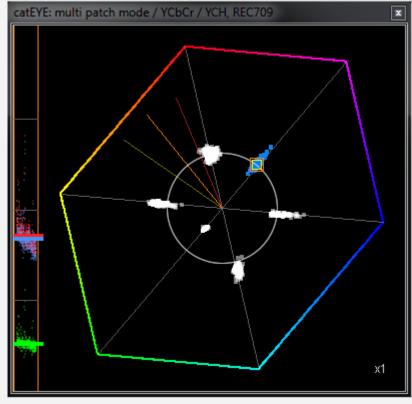Strg + Left Click + Mouse Move Up/Down
Semi-transparent blend of Form

Alt + Left Click + Mouse Move Up/Down
Changes brightness of the background. If the background is pure black plotted points are white whereas selected turn blue. In case background is grey plotted points have color whereas selected turn white.
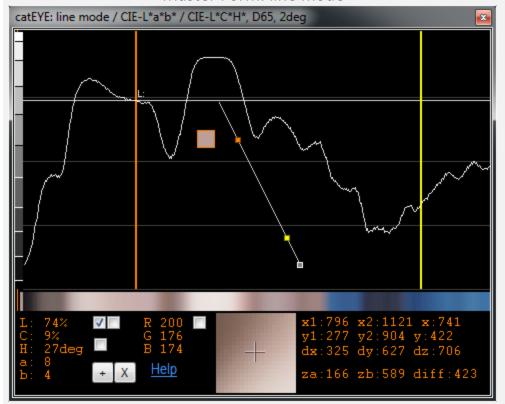
Left Click on Upper Half
Resets to non-transparent blend of Form

Vectorscope

catEYE: multi patch mode / YCbCr / YCH, REC709

x1

Master Form: line mode

catEYE: line mode / CIE-L*a*b* / CIE-L*C*H*, D65, 2deg

L:	74%	R 200
C:	9%	G 176
H:	27deg	B 174
a:	8	
b:	4	

+ X   Help

x1:796 x2:1121 x:741
y1:277 y2:904 y:422
dx:325 dy:627 dz:706

za:166 zb:589 diff:423

This color meter tracks color information along a given straight line from the screen monitor.

Key Elements of Master Form

⇒ Plot-Diagram - Waveform Monitor
Displays color results of the straight line path depending on checkbox selection and color space

⇒ Color Bar
Shows the color of the scanned line, which is just 1 pixel wide but in a zoomed manner

⇒ Loupe
Helps to set startin and end point

⇒ Data Labels and Checkboxes
Data Labels show numeric results of one selected line depending on color space. Checkboxes will activate display of either Y/L, SH/CH,RGB and/or MTF curves

Global Keyboard Shortcut

Key "q" + Mouse Move + Key "q"
Sets starting point (b) and end point (b) of line.

Key "w"
Changes plot style

Displays color results of the straight line path depending on checkbox selection and color space.

(a) Relative position (x,y) and color of Mouse
(b) Start point (x1,y1) of line corresponds to left hand side of plot
(c) End point (x2,y2) of line corresponds to right hand side of plot
(d) 1st Position (za) corresponds to orange marker line (f)
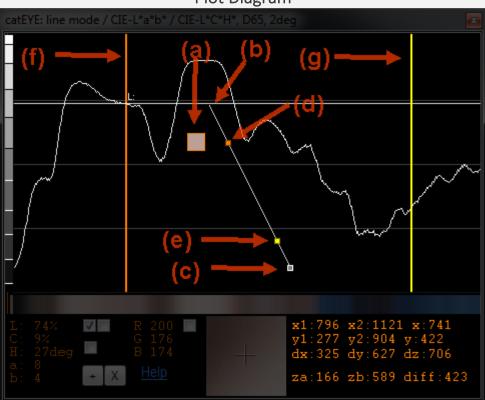(e) 2nd Position (zb) corresponds to yellow marker line (g)

Value
dz: Distance in pixels between (b) and (c)
diff: Distance in pixels between (d) and (e)

Tip:
If you need to find a certain positions on screen, move the mouse that (a) comes right to the middle of (b),(c),(d) or (e)

Plot Diagram

catEYE: line mode / CIE-L*a*b* / CIE-L*C*H*, D65, 2deg

(f)   (a)   (b)   (g)
(d)
(e)
(c)

L: 74%   R 200   x1:796 x2:1121 x:741
C: 9%   G 176   y1:277 y2:904   y:422
H: 27deg   B 174   dx:325 dy:627   dz:706
a: 8
b: 4   + X   Help   za:166 zb:589 diff:423

Plot Diagram

Left Click or Right Click
Resets point (f) and (g) to zero, deletes orange and yellow distance lines

Shift + Left Click
Toggle between different form height presets

Strg + Left Click + Mouse Move Up/Down
Semi-transparent blend of Form

Double Left Click
Switch to multiple patch mode

Middle Click
Resize width of master form to distance between start point (b) and end point (c) of line

Shows the color of the scanned line, which is just 1 pixel wide but in a zoomed matter.

Left Click + (move left or right)
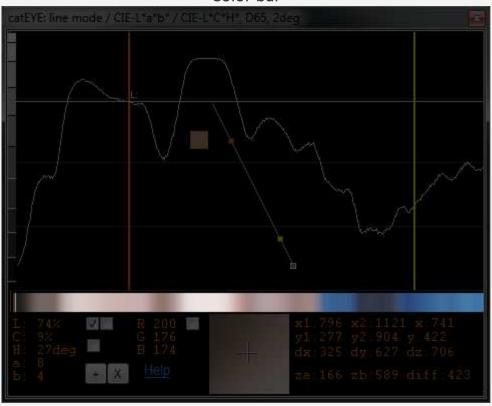Sets orange position (d) corresponding to (f)

Right + (move left or right)
Sets yellow position (e) corresponding to (g)

Value
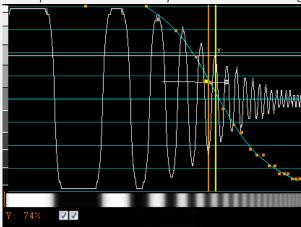diff: Distance in pixels between (d) and (e)

Color bar

Data Labels and Checkboxes

Example: Resolution by MTF curve fitting

Data Labels show numeric results of one selected point depending on color space

Right Click Labels
Toggle between YCbCr/YCH and CIE-L*a*b*/CIE-L*C*H*

Middle Click Labels
Opens vectorscope form
Resize vectorscope to height of master form

Double Left Click on Labels
Changes plot style

Checkbox (a)
Activates display of H (HUE) and C (Chrominance) results

Checkbox (b)
Activates display of Y (Luminance) or L (Lightness)

Checkbox (c)
Activates MTF curve fitting for resolution tests

Remarks: It is very important to analyze at the original size (zoom 100%) of the monitor display

Right Click on Checkbox (c)
Freezes min/max points for MTF curve fitting for resolution tests

Checkbox (d)
Activates display of RGB results