



COLOUR CALIBRATION & PROJECTOR SETUP FOR CAMERA CLUB USE

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AGENDA

1. Run through this presentation.
2. Setup projector to default & mirror screen – check slides.
3. Set LT to extended display, check resolution, set projector to natural – check slides.
4. Calibrate projector – check slides.
5. Run through Dicentra test pattern – modify projector if necessary & note settings, along with distance and screen size.
6. Questions/comments on calibration.
7. Questions/comments on competition entries/Dicentra.

REASON FOR THIS DOCUMENT

1. There seems to be much confusion in setting personal colour calibration for PDI editing for Camera Club Competitions.
 2. Projector and computer (laptop) setup is not always at its best for presenting PDI's.
- After various discussions and much research, I present here the settings that seem to be most sensible, but I am open to suggestion/changes that may be better. Please contact me if you have suggestions.
 - Please note – this presentation is based on using PC's and not Apple MAC.

MONITOR COLOUR CALIBRATION

- For the calibration presented here, I have used a Colormunki Photo with Calibrite ccStudio v1.1.2 software. The settings described should be common to other devices and software, but maybe in a different format.
- Calibration:
 1. Recommended by my calibration software, is for step one to be – Reset Monitor (or Projector) to factory default. [This may not be the case depending on the monitor you use, some have their own calibration].
 2. If the monitor has a colour temperature setting in the OSD (monitor Menu) set it to 6500K (D65). If not, don't worry the PC calibration will cover it.
 3. If the Calibration Software has a “Photo” setting, use it, this should configure the following settings.

MONITOR COLOUR CALIBRATION SETTINGS

1. White Point – CIE Illuminant **D65**
2. Luminance - **120 cd/m²** [Candela per square metre]. This brightness figure is the standard for editing PDI's, which are projected images. Print workers may set this to 60 or 80 cd/m², for example, where prints are reflected light, hence much dimmer and reflect how the print looks. This is part of the problem when a print worker produces PDI's.
3. Tone response curve – **Standard (default) 2.2** [Compensates for difference between how a display renders luminance and the human eye perceives it. 2.2 is close to the native gamma of modern LCD panels.]
4. Follow the instructions, for your calibration tool, to complete the process.
5. Don't forget when you have finished the calibration, save the profile for each screen calibrated.

[Note – some monitors will save calibration at the monitor (i.e BenQ) others will save on the PC.]

MONITOR COLOUR CALIBRATION SETTINGS

Choose your display's target white point and luminance

Select your display



Display 1



HP Z24x
CN44110C0R



HP ZR2440w
CN43120C9Q

Photo

Video

Custom

DCI P3

White Point

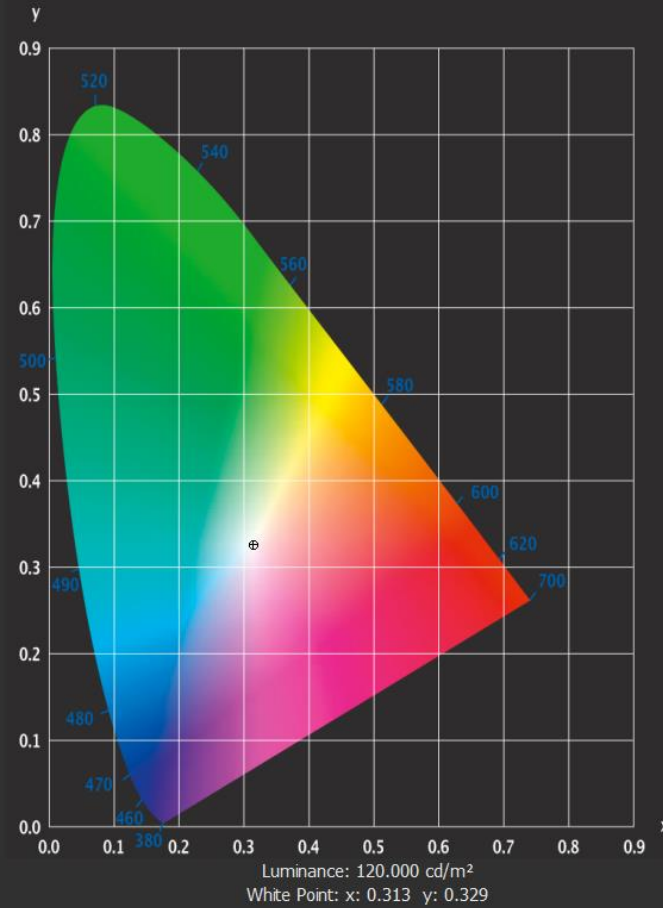
CIE Illuminant D65

Luminance

120 cd/m²

Gamma

Tone Response Curve: Standard (default) 2.20



PROJECTOR SETUP

1. When using the projector with the club laptop, **do not “mirror display”**, if you do:
 1. Both devices will be set to the resolution of the smallest screen, in our case 1366 x 768 of the laptop and not the 1920 x 1080 of the projector.
 2. In addition, you will only be able to calibrate one device, i.e projector and both screens will use this profile, hence, in this case the laptop will be wrongly calibrated.
2. **Always use “Extend these displays”** then both will be at the correct resolution and both can be calibrated separately. [Assuming no one has changed the display resolution, in the PC setup, to the wrong figures].

PROJECTOR CALIBRATION

1. Your room lighting should be the same when you profile your projector as it will be when you project your program content.
2. Club Projector – Epson EH-TW5300 – resolution 1920 x 1080.

PROJECTOR CALIBRATION

1. The “ColorMunki” will need to be on a flat surface that is a distance smaller than 1.5 times the height of the projector screen. If this is an issue you can try to move it closer and see if the device then begins to pick up the screen. The software will have you go through the alignment process and during this time if the screen is not detected moving the device closer or further away from the projector screen can assist with this.
2. About Projector Settings
 1. A projector profile describes the colour gamut and colour behaviour of your projector. Applications like Adobe Photoshop need a profile to accurately display your images on screen.
 2. The projector profile is built based on the following: ambient lighting, colour of projector screen, projector distance from screen, brightness, contrast, colour temperature, etc. Therefore, changing any of these variables or any settings on your projector will invalidate the profile and require you to build a new one. Be sure to profile in the exact same environment you plan to present your work in to avoid this.
 3. We recommend you reset your projector to factory defaults when possible, and select the largest colour space available such as sRGB, Photo, D65 etc.

PROJECTOR CALIBRATION

1. Following a factory default reset, the colour mode in the projector menu, is set to “**BrightCinema**”, which appears to be too contrasty for PDI’s and it is recommended to use the “**Natural**” setting for colour management.
2. ccStudio recommends setting the projector white point to “**Native**”, please refer to the following slide.
3. Follow the instructions, for your own system, to calibrate the projector and save the profile.

PROJECTOR CALIBRATION

Help

Projector White Point

We recommend selecting Native White Point for projector profiling. This will give you the widest gamut your device is capable of.

If you prefer to use a preset illuminant, select one from the dropdown.

- To simulate a standard viewing booth, choose **CIE Illuminant D50**.
- To simulate mid-morning or mid-afternoon daylight, choose **CIE Illuminant D55**.
- To simulate noon daylight, choose **CIE Illuminant D65**.
- To simulate cooler daylight, choose **CIE Illuminant D75**.

Projector Settings

Choose your projector's target white point

Select your display



Display 1



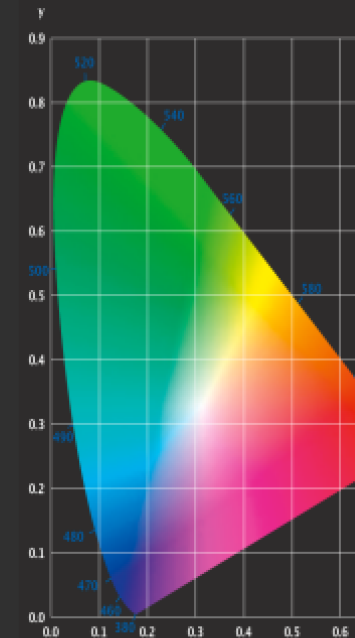
HP Z24x
CN44110C0R



EPSON PJ
0000

White Point

Native (recommended)



Luminance: M

White Point: M

MONITOR/PRINTER CALIBRATION

- Suggested settings for print workers [Presentation by Glyn Dewis for Calibrite/Park Cameras]:
 - Luminance – 60 (to 80) cd/m² [experiment for your own environment].
 - White Point (Colour Temperature) – 5600K.
 - Colour Space (Monitor ICC profile) – Adobe RGB.
 - Gamma – 2.2
 - Some calibrations software may have additional settings:
 - Gamma - Use L* if available.
 - For Black & White – use Enhanced Gamma Calibration, if available.
 - Set Black Point – 0.5cd/m², if available.
 - ICC Version – for up to date software use V4, for older versions (i.e PS, etc.), use V2.

PRINTING NOTES [GLYN DEWIS]

1. Glyn's presentation was based on using an Epson SC-P900 (A2) & Canon PRO-300 (A3+).
2. One of the papers used during the presentation – Permajet Smooth Rag.
3. Canon PRO-300 – to compare colour settings, from Canon Professional Print & Layout, use the “Pattern Print”.
4. It was found that using the printer software for both Epson and Canon gave superior results to printing direct from the editing application (i.e. Lightroom).
5. Black Point Compensation – set “ON” if using “Relative”, “OFF” for “Perceptual”.

PRINTING NOTES – COMPARISON CANON SOFTWARE SUGGESTIONS

Printing with Impression Close to That on Monitor

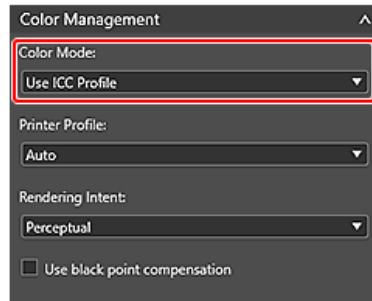
You can print with an impression close to that on the monitor by correctly reflecting the characteristics of the data displayed on the monitor.

»» Important

- To print with an impression close to that on the monitor, we recommend that you set the monitor and ambient light as follows.
 - Monitor
 - Color temperature: D50 (5000 K)
 - Luminance: 120 cd/m²
 - Gamma: 2.2
 - Ambient light
 - D50 fluorescent lamps designed for color evaluation (color temperature: 5000 K, high color rendering properties)
 - Brightness when viewing printed materials: 500 lx ± 125 lx

PRINTING NOTES – COMPARISON CANON SOFTWARE SUGGESTIONS

2. In **Color Management** on the **General Settings** tab, set **Color Mode** to **Use ICC Profile** or **Driver Matching**.



Select a color mode according to the color space of the image to be printed. Canon recommends the following combinations.

Color Space	Color Mode
Adobe RGB	Use ICC Profile (Rendering Intent: Perceptual)
sRGB	Driver Matching (Rendering Intent: Perceptual (Photo))

»» Important

- If you select **Use ICC Profile**, set **Rendering Intent** to **Perceptual**.
- If you select **Driver Matching**, set **Rendering Intent** to **Perceptual (Photo)**.

CAMERA CLUB SPECIFIC NOTES

- Competition Rules for entry.
- Dicentra rules and image entry format.

- Follow Club Competition League Rules...

Projected Digital Images (PDI)

Digital Images for projection: Files should be 1600 pixels wide by 1200 pixels high (landscape format). Portrait images should be a maximum of 1200 high.

The file type must be JPG with a file extension *.jpg

Images should be supplied in the sRGB colour space to match that used by the projector.

Digital Images for projection must be submitted by the deadline given in the programme using the name format,

(Title) by (member number) .jpg for example *Sunset by 021.jpg*

All images to be emailed to the competition secretary at: competitions@crickladedcameraclub.org

It is the members' responsibility to ensure they are aware of deadlines. Entries received after the cut-off will not be accepted.

Prints

All prints must be mounted. The overall size of the mount must not exceed 50 x 40 cm and must bear a fully completed label on the reverse of the mount. Pre-printed labels will be made available on Club nights.

Prints may be brought on the night of the competition, but Titles (and if possible a PDI of the print to aid the competition secretary in matching the print) must be supplied 10 days in advance by email to the competition secretary at : competitions@crickladedcameraclub.org

COMPETITION NOTES

- Dicentra Rules....
Resolution must match projector, not the PDI size, otherwise projector setup will give an error.

Max Width (px) Max Height (px):
Colour space

Randomise Images

Images | Folder/Files | **Scoring** | Organiser | Judges

Enter details of the scoring that will be used at the competition.

Randomise

Mark Scheme

Min Mark Max Mark Half Marks?:

Tie Break

Auto Certs for marks better or equal to

Rules

Use this form to update the rules for the selected competition
Be sure to work through each tab to define all aspects
(Red icons indicate errors or missing values)

Comp name:

Comp type:

Venue:

Comp date: + 1 Year

Closing date:

Images | Folder/Files | Scoring | Organiser | Judges

Enter details about the permitted number of entries, image size and format below.

Images/club Exactly

Max. images pp

Max Width (px) Max Height (px):

Colour space

Reject oversize images

Reject images with wrong colour space

Allow limited image count

Allowed file type JPEG TIFF

Border colour

Thumb size px Knock-out comp?

Rules

Use this form to update the rules for the selected competition
Be sure to work through each tab to define all aspects
(Red icons indicate errors or missing values)

Comp name:

Comp type:

Venue:

Comp date: + 1 Year

Closing date:

Images | Folder/Files | Scoring | Organiser | Judges

Enter details about the folder and file name conventions you require entrants to use.

Folder name:

eg. Janice Tremaine

File name: + +

+

eg. Sunset Scene by Bill Giles

Comp. has Entry Numbers

Clear

COMPETITION NOTES

- Dicentra Image Entry format.....

