Microscope composition

CCD Camera
Optical path switch lever
Excitation & Emission filter
Excitation light shutter
(Light is intercepted
when drawing shutter lever out.)
Excitation light body
Diopter adjustment knob
Intensity
Reflected Illumination
Focus knob
Zoom knob
Reflected Illumination
Excitation light power supply
Transmitted light
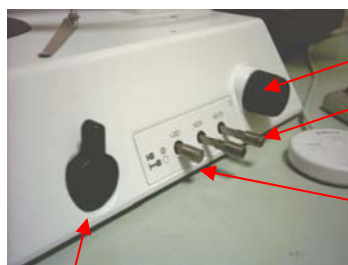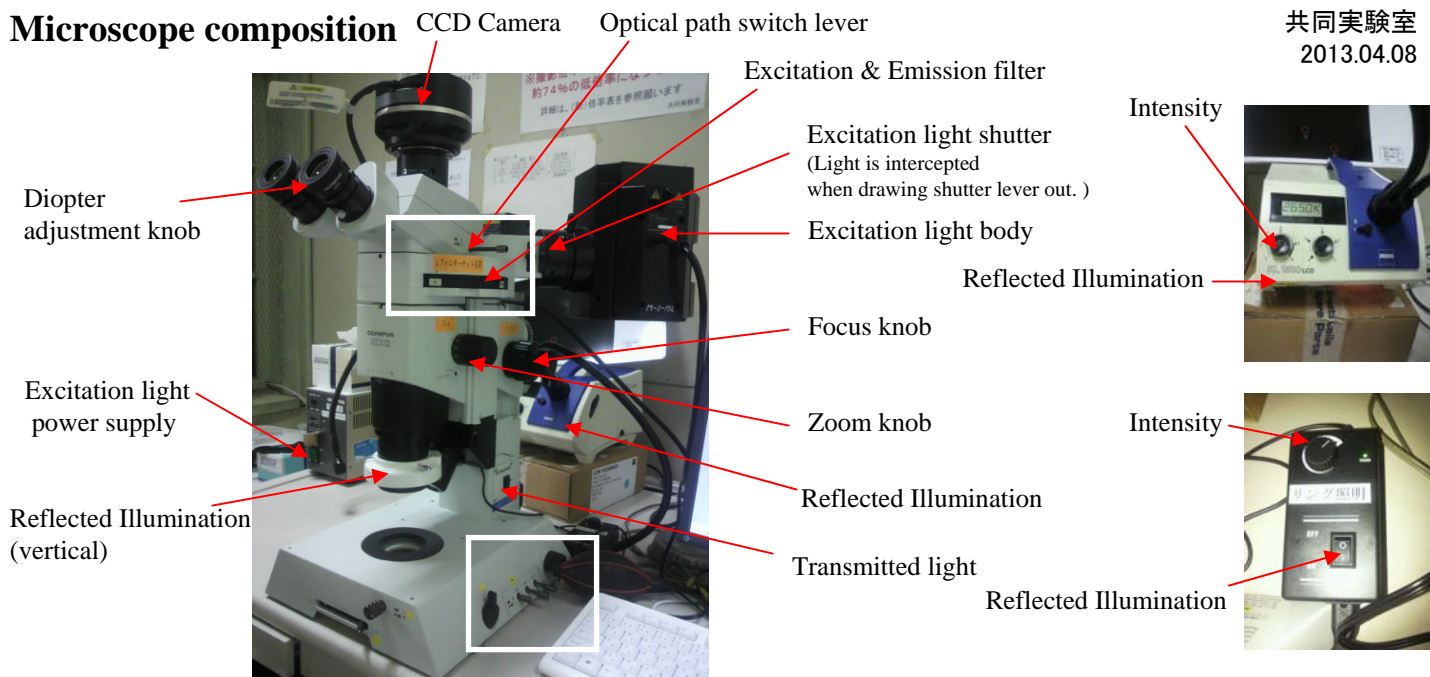Intensity
Reflected Illumination
(vertical)
Reflected Illumination

Transmitted light intensity
Neutral Density filter(25%,6%)
Light Balance Daylight filter
Mirror

Optical path switch lever
⌐ microscopic observation
⌐— Camera shooting
Excitation & Emission filter

Filter list			
	Tag	Excitation / Emission	Dye
1	U	(Ex:330-385 / Em:420-)	DAPI,Hoechst
2	GFP	(Ex:460-490 / Em:510-)	FITC,GFP,Cy2
3	GFPA	(Ex:460-490 / Em:510-550)	FITC,GFP,Cy2
4	G	(Ex:510-550 / Em:590-)	Rhodamine,PI,PE,Cy3
5	none	no filter	brightfield observation

Method of microscopic observation

Diopter adjustment

1. Change the optical path into the observation side.
2. Adjust 'diopter adjustment knob' to 0.
3. Put the slide glass. Adjust the focus.
4. Make the magnification the highest magnification.
   Adjust the focus.
5. Turn the diopter adjustment knob to adjust the diopter.
   (Adjust one eye at a time)

Bright-field observation(slide glass)

1. Change the optical path into the observation side.
2. Turn on transmitted light.
3. Increase transmitted light intensity.
4. Push in 'Light balance daylight filter'.
5. Adjust intensity with 'Neutral density filter'.
6. Select emission fileter position to 'none'.
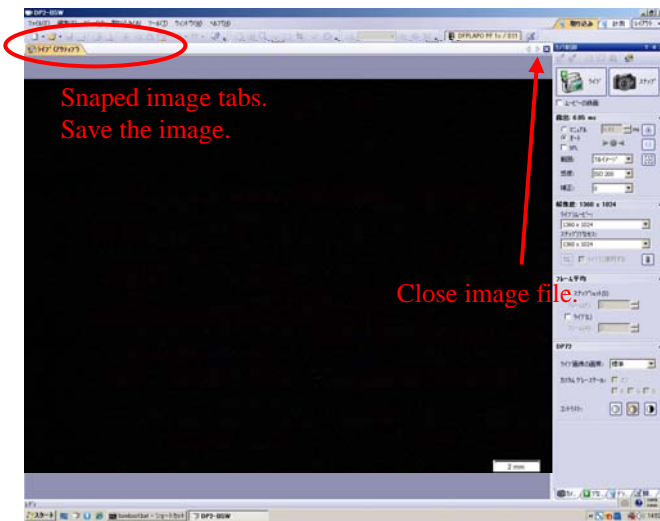7. Adjust the focus.
8. Perform camera shooting operations.

Bright-field observation(Three-dimensional object)

1. Change the optical path into the observation side.
2. Turn on reflected illumination.
3. Increase reflected illumination intensity.
4. Select emission fileter position to 'none'.
5. Move the flexible arm and hit the light.
6. Adjust the focus.
7. Fine adjustment of lighting position.
   (attention to uneven lighting , shadow)
8. Perform camera shooting operations.

Fluorescence observation

1. Turn on the excitation light power supply.
   (wait about 20 minutes to stabilize)
2. Pull out the excitation light shutter.
3. Change the optical path into the observation side.
4. Select the fluorescence filter.
5. Push in the excitation light shutter.
6. Adjust the focus.
7. Perform camera shooting operations.

※If excitation light is not required, Pull out the shutter.

Method of camera shooting

adjust white balance (bright-field)

adjust black balance (Fluorescence)

Snaped image tabs.
Save the image.

Close image file.

⑤

カメラ制御 ? ꝗ ✕

① ⑥

ライブ スナップ

Start/Stop preview

ムービーの録画

露出: 5.00 s

② マニュアル 5 s

オート

SFL

④

感度: ISO 200

Trimming function
Trimming is enabled
when a frame is displayed in the preview.

解像度: 1360 x 1024

ライブ/ムービー:

1360 x 1024

スナップ/プロセス:

1360 x 1024

③ ライブに適用する

enlarges the trimming image.

Camera shooting method

1. Start the DP2-BSW software on the desktop.
2. Change the optical path into the camera shooting.
   Illuminate the sample.
3. Click the live(ライブ) button. Preview starts on another tab. [①]
4. Set the exposure(露出) setting to auto(オート). (In case of fluorescent shooting, check on SFL.) [②]
5. Adjust the focus while watching the screen.
   (Use the trimming function when making fine adjustments. Release after use.) [③]
6. Set the exposure setting to manual(マニュアル). Click + or - button,and fine adjustment of the exposure. [② ④]
7. If necessary, execute white/black balance. [⑤]
   (After clicking the icon, drag the background part in the image.)
8. Press the snap(スナップ) button to take pictures. (A new image tab is created.)[⑥]
9. Save the image with a name. (select file(ファイル) - save as(名前を付けて保存))
   TIFF format is recommended.

Caution !! The image does not have length information. When put the scale bar , calibrate the image.
To calibrate, do not forget the magnification.

How to use DP2-BSW software
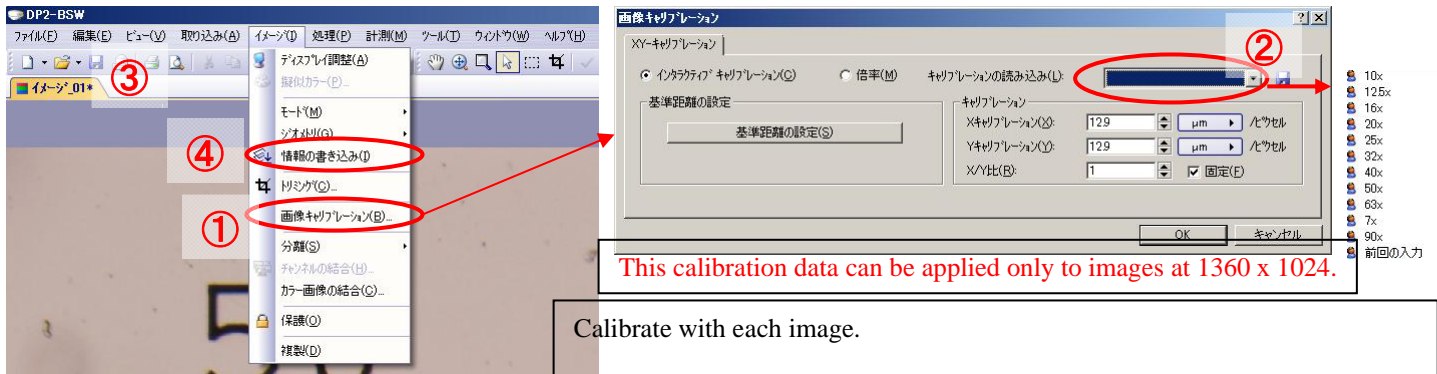
This calibration data can be applied only to images at 1360 x 1024.

Calibrate with each image.

Scale bar is not written until execute "Writing information(情報の書き込み)".
If you execute "Write information", you can not erase it.

How to calibrate

1. Display the image you want to insert the scale bar.
2. Select Image(イメージ) - Calibrate image(画像キャリブレーション). [①]
3. Select the magnification from the list and press OK. [②]

You can customize the scale bar.
(Tool(ツール) – Option(オプション))

Font style

Line style

Length

Position

How to insert a scale bar

1. Select View(ビュー) – Scale bar(スケールバー). Scale bar is displayed. [③]
2. Select Image(イメージ) - Writing information(情報の書き込み). [④]
   A confirmation will be displayed, so answer "yes(はい)".
3. Save the image with a name.
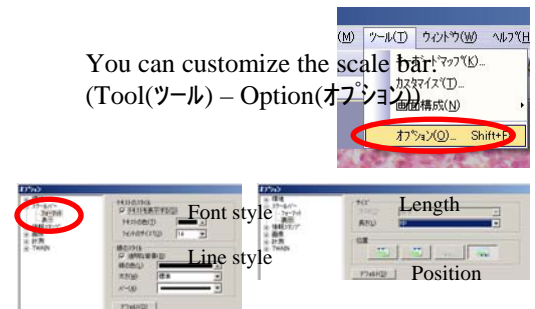
Measurement

※Execute image calibration first.

1. Select Measurement(計測) – Measurement tools window(計測ツールウィンドウ). Tool window is displayed. [⑤]
2. Click the shape icon you want to use. Click inside the image to write the object. Information on the object is displayed. [⑥]
   To change the color, right-click the object name in the list. Select "change color(色の変更)". [⑦]
   To delete the object, right-click the object name in the list. Select "delete measurement object(計測オブジェクトの削除)".
3. To write an object to an image, select Image(イメージ) - Write information(情報の書き込み). Save the image with a name. [④]
4. If you need a list of measurements, click the export icon. Select Excel format or Text format. [⑧]
   Save the list.

Delete   Export

Measurement tools

<This is bright-field only>
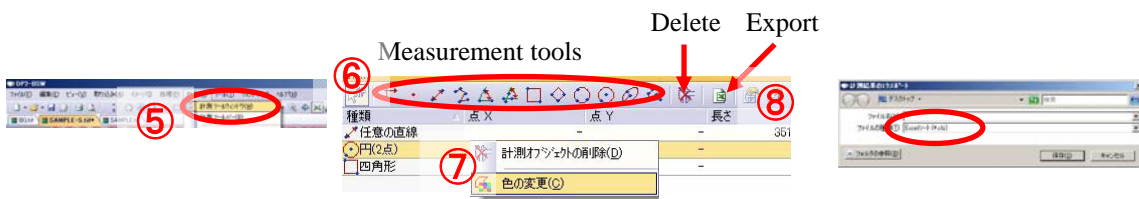
Shading correction (Removal of luminance unevenness)

※Make the exposure of background image and sample image the same value.

1. Execute white balance with nothing put. Take a picture. (This is background image) [Camera shooting method ⑤ ⑥]
2. Take a sample picture. (If you need an image before correction, save it.)
3. The sample image and the background image must be in the image tab.(The screen display must be a sample image.) [⑨]
4. Select Processing(処理) - Image adjustment(画像調整) - Shading correction(シェーディング補正). [⑩]
5. Select the background image in the "Select a correction image(補正画像の選択)" item and click OK. [⑪]
   Correction is done.(Brightness will become brighter.)