

# ***SEKONIC***

## ***Data Transfer Software***

Version 6.10 (for Windows)

Version 6.10 (for Macintosh)

## **Software Guide**



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This documentation has been prepared assuming basic knowledge of personal computers (hereinafter, "PC") and the use of Windows and Macintosh operating systems.

Concerning PC use and the use of Windows and Macintosh operating systems, please refer to the accompanying respective manuals.

Please note that on-screen displays and menus may differ from those shown in this documentation. Explanations provided in this documentation use mostly Macintosh screens.

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## To ensure safe operation, read this first!

Be sure to read these Safety Precautions before using the Product and make sure you operate the Product correctly.



### **WARNING!**

This symbol indicates the risk of death or personal injury for the operator of the Product whenever information marked with this symbol is disregarded while using the Product.



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This symbol indicates important information or a limitation. Be sure to read information marked with this symbol to avoid operational errors.

### **Reference**

This symbol indicates reference information for operations, information about related functions, etc. Reading of such information is highly recommended.

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# 1. Overview of Data Transfer Software and Exposure Profiling

## (1) Main functions of *Data Transfer Software*

*Data Transfer Software* is application software for (i) creating and editing camera exposure profiles, (ii) editing light meter settings (custom setting and user settings, etc.) and (iii) updating light meter firmware, transferring camera exposure profiles to the light meter unit as well as for implementing all other related settings.

### ◆ Applied light meter

*Data Transfer Software* can be used in exposure meter described below.

- \* SPEEDMASTER L-858D series      \* LITEMASTER PRO L-478 series
- \* DIGITALMASTER L-758 series

## (2) What is a camera exposure profile?

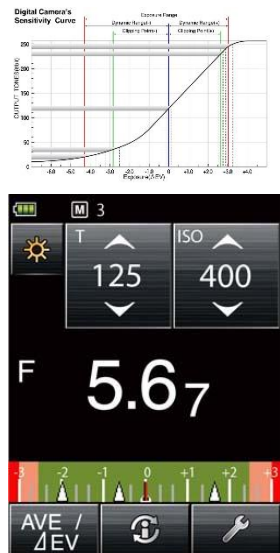
A camera exposure profile plays two main roles.

- [1] It can be used to display on a light meter the unique dynamic range and clipping point of the digital camera you are using.
- [2] To display more accurate exposure values on the light meter, it records unique variations in the camera, lens shutter speed, aperture, etc. that you are using and reflects them in the exposure display.

### ◆ Transfers the unique sensor characteristics of the digital camera to the light meter

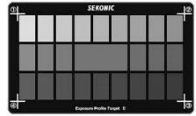
The dynamic range and clipping point differ depending on the camera you are using, so it is necessary to pay careful attention to how well the color and detail are captured in the highlight and shadow areas when you take a picture.

By creating a camera exposure profile in *Data Transfer Software* and transferring it to the light meter, you can display on the LCD screen on the light meter unit the unique sensor characteristics of the digital camera you are using as the dynamic range and clipping point, which makes it possible to instantly check whether or not a subject falls within the exposure range.



- ◆ Achieves more accurate exposure by matching the camera you are using with the light meter display

Even if you set exposure values measured on a light meter in the camera, you may not obtain the standard exposure due to variations in the camera, lens shutter speed and aperture you are using.



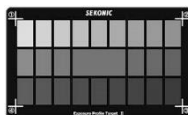
If this happens, you can use *Data Transfer Software* to match the values on the light meter with the camera variations by correcting the display in the light meter so that it is possible to obtain the standard exposure.

- \* This function takes the characteristics of the camera you are using into account and achieves better correction compared to prescribed correction functions that correct the measured results uniformly.

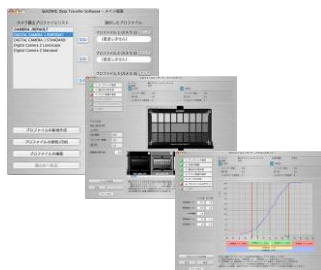


### (3) Using *Data Transfer Software* to create a profile

- ◆ Make a test exposure using your camera and Exposure Profile Targets to create a camera exposure profile.



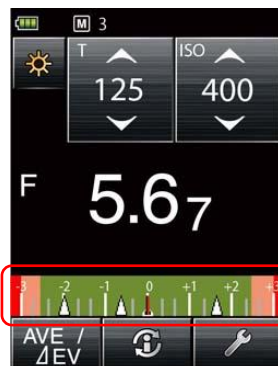
- ◆ Create a camera exposure profile in *Data Transfer Software* based on the test exposure data.



- ◆ Transfer the camera exposure profile to the light meter.



- ◆ Using a camera exposure profile makes it possible to view an exposure display that matches the camera conditions, so you can achieve more accurate exposure control.
- ◆ An exposure profile allows you to visually check on the LCD whether or not the highlight and shadow areas of the subject are within the exposure range. (Displayed on the scale at the bottom of the LCD display)
  - Green part: Clipping point
  - Orange part: Dynamic range



## 2. Test Shooting

### (1) Equipments required for test shooting

#### a) Prepare the following equipment for making the test shooting.

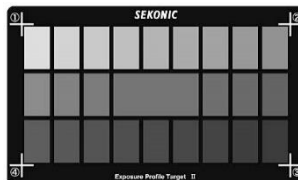
1. Camera and lens                      The camera and lens that you shoot with most. If you shoot with several lenses you may want to create a profile for each lens.
2. Light meter                              SPEEDMASTER L-858D series, LITEMASTER PRO L-478 series or DIGITALMASTER L-758 series to make exposure measurements.
3. Target                                      Exposure Profile Target. Exposure Profile Target II (See page 13), X-rite's ColorChecker (See page 14) or Datacolor SpyderCHECKR (See page 15).
4. Tripod                                      Sturdy tripod to mount camera and lens. The position of the Exposure Profile Target must be the same for all exposures to create a successful profile.
5. Lighting Equipment                      Use photographic lamps, flash, etc.  
Natural sunlight can also be used as long as there is uniform brightness across the (exposure profile) target and no change in brightness during the test shot.
6. Light Stand                                If suitable wall or surface is not available, mount the Exposure Profile Target on a light stand.

## b) Exposure Profile Target II (sold separately)

### 1. Gray Patch Scale

This target consists of a central 18% gray patch that is surrounded by 25 patches arranged in 1/6<sup>th</sup> stop values that are successively brighter and darker.

Camera exposure profiles can be created using test shooting either in the Normal Mode producing three shots (standard exposure, a +3EV and a -3EV) or the Extended Mode producing five shots (standard exposure, +4EV, -4EV, +8EV and -8EV).



Gray patch scale

### 2. 18% Gray Card

This is used to set white balance for digital cameras and measure exposure using the reflected light mode.



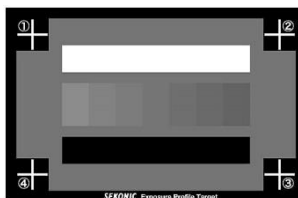
18% Gray card

## c) Exposure Profile Target (sold separately)

### 1. Gray Patch Scale

It consists of 7 patches arranged in 1/6<sup>th</sup> stop decreasing reflectance. The patch set is surrounded by an 18% reflectance gray field with white and black bars above and below respectively.

Camera exposure profiles can be created using test shooting either in the Normal Mode producing 11 shots (standard exposure and ten stepped exposures of +/-5EV in successive 1EV steps) or the Extended Mode producing 21 shots (standard exposure and 20 stepped exposures of +/-10EV in successive 1EV steps).



Gray patch scale

### 2. 18% Gray Card

This is used to set white balance for digital cameras and measure exposure using the reflected light mode.



18% Gray card

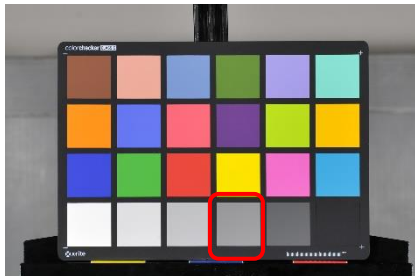
#### d) ColorChecker

ColorChecker is an X-Rite product. In the same way as Exposure Profile Target II, camera exposure profiles can be created using test shooting either in the Normal Mode producing three shots (standard exposure, +3EV and -3EV) or the Extended Mode producing five shots (standard exposure, +4EV, -4EV, +8EV and -8EV). Note however that the line of profile graph created with the ColorChecker will be not as smooth as with the Exposure Profile Target or Exposure Profile Target II.



#### ◆NOTE!

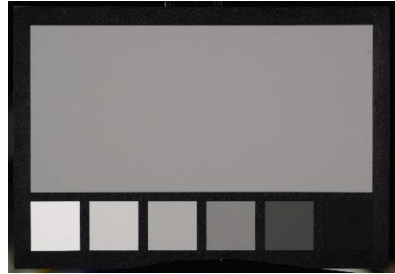
- Classic and Passport are supported by the *Data Transfer Software*.
- As the 18% gray patch does not exist in ColorChecker, use the gray patch third from bottom right (highlighted by the red enclosing line) when measuring reflected light with light meter. *Data Transfer Software* will automatically compensate.



## e) SpyderCHECKR

SpyderCHECKR is a Datacolor Inc. product.

In the same way as Exposure Profile Target II, camera exposure profiles can be created using test shooting either in the Normal Mode producing three shots (standard exposure, +3EV and -3EV) or the Extended Mode producing five shots (standard exposure, +4EV, -4EV, +8EV and -8EV). Note however that the line of profile graph created with the SpyderCHECKR will be not as smooth as with the Exposure Profile Target or Exposure Profile Target II.



### ◆NOTE!

- As the 18% gray patch does not exist in SpyderCHECKR, use the upper gray patch (highlighted by the red enclosing line) when measuring reflected light with light meter. *Data Transfer Software* will automatically compensate.



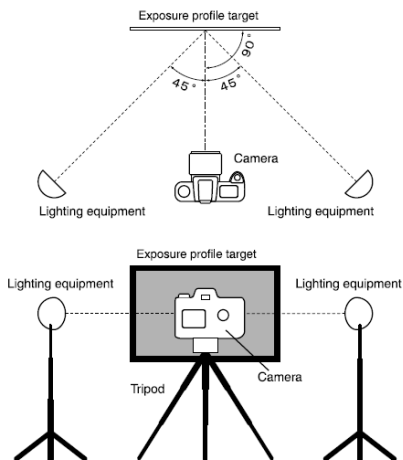


## (2) Equipment Setup

- ① Place target stand approximately one meter away from background wall and then position camera and tripod (and lighting equipment if necessary).
- ② Firmly secure the 18% gray card attached to the target so that it is perpendicular to the camera.
- ③ If using lighting equipment, use two units to minimize illumination unevenness, and illuminate the target at 45-degree angles as is done for reproduction shooting. Position the lights so that they are at the same height as the target and the camera.



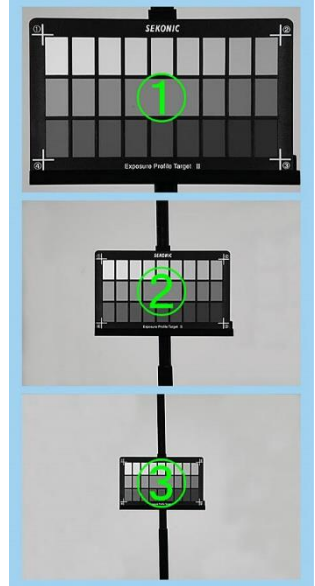
- ④ Turn off your camera's auto-focus system, anti-shake function or any other functions which performs compensation. If those function works during the shooting, it may affect to the test result.
- ⑤ Perform a custom white balance according to your camera's instruction manual using the 18% gray surface of the target.



- ⑥ The camera position will vary depending on the minimum shooting distance of the lens.  
Please position the equipment to where you can get the largest shot of the target (photo 1).

The minimum target size in frame needs to be 50% or more (photo 2).

If the target appears small in the frame, data collection will not be accurate (photo 3).



- ⑦ To step expose in test shooting, set the camera's exposure mode to manual mode, and then set ISO sensitivity to be used in test shooting.

#### ◆Reference

- For the best results, be sure to use the equipment (camera, lens, light etc) that you use for shooting. Any change in the lighting or equipment (production lot or camera firmware version) may affect the outcome.

### (3) Shooting Images

#### a) Determining exposure settings for ambient light

##### 1. Hot Lights

- i. Set your light meter to a) incident light (with the extended lumisphere), b) ambient light mode c) select aperture priority mode.
- ii. Set the aperture at the three stops smaller than maximum aperture and set ISO sensitivity.
- iii. Take an incident light reading with the meter positioned in front of the 18% patch on the targets.
- iv. For best results, the shutter speed reading should be at or near the middle setting enough to bracket (ex. 1/30s). You may need to adjust the distance of the hot lights or aperture selected on the meter to achieve this shutter speed setting. Then use the meter's contrast function and take readings at several points around the Target to check the uniformity of the lighting. Illumination readings over the entire surface of the target should not differ more than +/- 0.1EV.

With certain light sources (natural light such as sunlight, etc.), lighting adjustment is impossible. Also, depending on the conditions, (ISO sensitivity of the exposure profile to be created, the camera in use, or the limit of lens shutter speed or f-stop) +/- 3EV stepped exposure (for Exposure Profile Target II, ColorChecker or SpyderCHECKR) or +/- 5EV stepped exposure (for Exposure Profile Target) may not be possible with above aperture and shutter speed. In these cases, set the aperture and shutter speed which you can get maximum EV difference at a fixed aperture as standard exposure.

#### ◆ NOTE!

- Lens aperture settings

The *Data Transfer Software* requires entering standard exposure settings when you create a camera exposure profile. If the lens you are using has a maximum aperture that is not a full, standard aperture, example f/2.5, round the number up to the next full aperture, example f/2.8. Then use this number when determining the shooting aperture for the lens. For a lens maximum aperture of f/2.8, the shooting aperture is f/8 (three stops smaller than maximum aperture).

Full stop aperture values are as follows:

FNo. 0.5, 0.7, 1.0, 1.4, 2.0, 2.8, 4.0, 5.6, 8.0, 11, 16, 22, 32, 45, 64, 90, 128

## ◆Reference

- Contrast Function

Rotate the lumisphere retracting ring to securely align the mark on the ring with the retracted lumisphere mark. (flat diffuser function) Set the meter at the center of the target and measure. Touch Average/Contrast function button to set the value as standard value.

While holding down the measuring button, the difference from the standard value will be displayed continuously in terms of an EV value.

- v. Under the same lighting conditions, set the meter to incident light mode and take a reading of surface of the target. Also set the meter to reflected light mode and take a reading of the central 18% reflectance patch with the meter located at the camera position. Then record the aperture (with 0.1 increments), shutter speed and ISO sensitivity value. These values will be required to put in Data Transfer Software later to create the exposure profile.  
Please refer to the NOTE! (page 14) for reflected light measuring with ColorChecker.  
Please refer to the NOTE! (page 15) for reflected light measuring with SpyderCHECKR.
- vi. Set the white balance of camera manually by shooting 18% gray target with standard exposure. If you use auto white balance, camera may give compensation automatically along with the change of the lighting, and you may have different value than the meter. Please set the white balance manually to have a constant result.  
For details of white balance setting, see the instruction manual that came with your camera.

---

## 2. Sunlight

- i. When using the sun for ambient illumination, use a diffuser to adjust the aperture value to f/5.6 (three stops smaller than maximum aperture) and shutter speed to 1/30 sec at ISO 100.

### ◆Reference

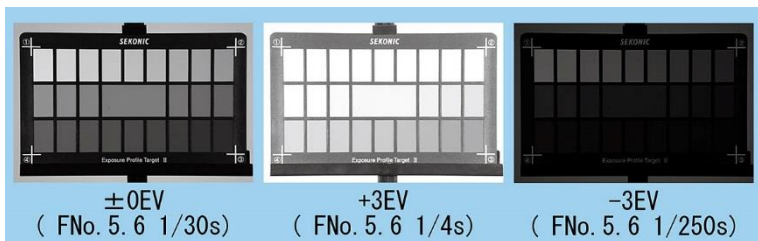
- It is recommended to take incident meter readings to find a location that will assure the above condition is met. If shot in direct sunlight, you may have difficulty shooting the full exposure sequence.
  - Shooting early or late in the day is not recommended as the lighting changes very quickly during this time.
- ii. Set your light meter to a) incident light (with the extended lumisphere), b) ambient light mode c) select shutter speed priority mode and set at 1/30 sec.
  - iii. Set the meter to incident light mode and take a reading of surface of the target. Also set the meter to reflected light mode and take a reading of the central 18% reflectance patch with the meter located at the camera position. Then record the aperture (with 0.1 increments), shutter speed and ISO sensitivity value. These values will be required to put in Data Transfer Software later to create the exposure profile.  
Please refer to the NOTE! (page 14) for reflected light measuring with ColorChecker.  
Please refer to the NOTE! (page 15) for reflected light measuring with SpyderCHECKR.
  - iv. Set the white balance of camera manually by shooting 18% gray target with standard exposure. If you use auto white balance, camera may give compensation automatically along with the change of the lighting, and you may have different value than the meter. Please set the white balance manually to have a constant result.  
For details of white balance setting, see the instruction manual that came with your camera.

3. Shooting a bracketed exposure sequence of the targets. Please refer to the images below for the vertical orientation of each exposure profile target. Please kindly note that if the vertical orientation is different, the correct exposure profile will not be created.

In the following explanation, it is assumed that shooting is in “Normal Mode”, where exposure range fits into  $\pm 5\text{EV}$ .

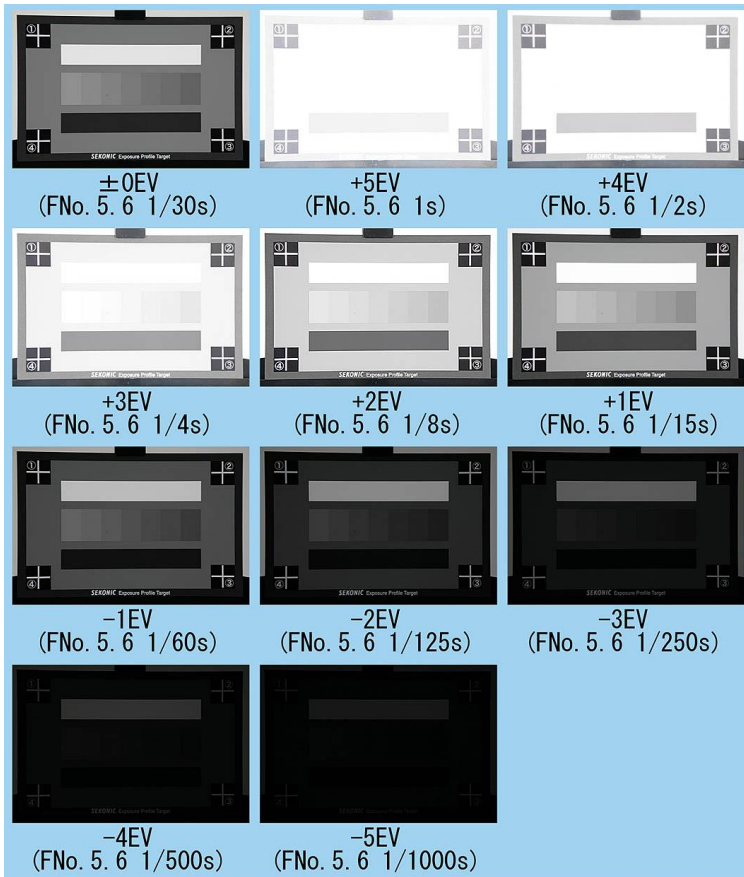
#### < Exposure Profile Target II >

- After shooting the standard exposure using the meter's incident light settings, manually change the camera shutter speed to shoot one shot at  $+3\text{EV}$  over the one used for the standard exposure. Then change the shutter speed to take one shot  $-3\text{EV}$  under the one used for standard exposure.
- The example below assumes meter settings and a standard exposure of  $f/5.6$  at  $1/30$  second. Your settings might be different.



## < Exposure Profile Target >

- After shooting the standard exposure using the meter's incident light settings, manually change the camera's shutter speed to shoot a range of exposures from +5EV to -5EV in 1 EV steps.
- The example below assumes meter settings and a standard exposure of f/5.6 at 1/30 second. Your settings might be different.



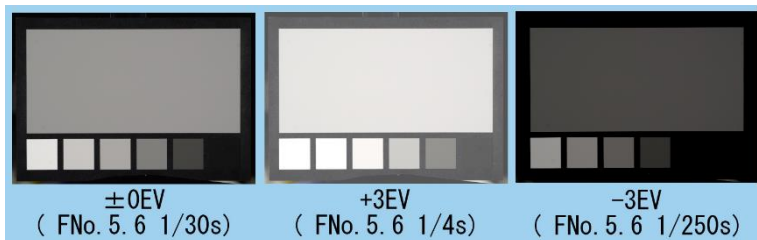
### < ColorChecker >

- Same as Exposure Profile Target II, shoot in standard exposure and then shoot at +3EV and -3EV while changing the shutter speed.
- The example below assumes meter settings and a standard exposure of f/5.6 at 1/30 second. Your settings might be different.



### < SpyderCHECKR >

- Same as Exposure Profile Target II, shoot in standard exposure and then shoot at +3EV and -3EV while changing the shutter speed.
- The example below assumes meter settings and a standard exposure of f/5.6 at 1/30 second. Your settings might be different.





#### ◆ Reference

- In the above, it is assumed that shooting is in "Normal Mode" where exposure range fits into +/-5EV.

If dynamic range of your camera is more than that, please use "Extended Mode" to create +/-10 EV of exposure range.

If the Extended Mode is required, refer to the following table in order to perform test shooting.

Exposure range scale  Type of target	Normal Mode (+/-5EV)		Extended Mode (+/-10EV)	
	No. of selected images	Exposure settings for test image	No. of selected images	Exposure settings for test image
Exposure Profile Target II	3	Standard, +3EV, -3EV	5	Standard, +/-4EV, +/-8EV
Exposure Profile Target	11	Standard, +/-5EV in 1 step	21	Standard, +/-10EV in 1 step
X-rite ColorChecker	3	Standard, +3EV, -3EV	5	Standard, +/-4EV, +/-8EV
Datacolor SpyderCHECKR	3	Standard, +3EV, -3EV	5	Standard, +/-4EV, +/-8EV

#### 4. Save the test images in the computer.

Save test images used to create exposure profile in the same folder (See page 55).

---

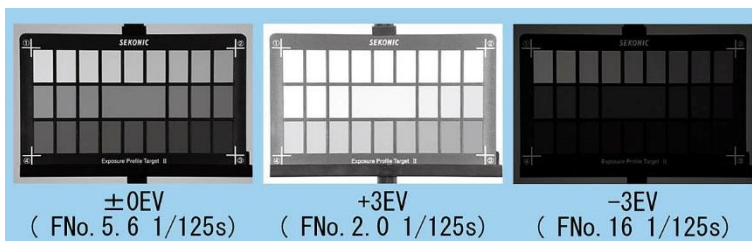
## **b) Determining exposure settings for electronic flash**

- i. Set your light meter to a) incident light (with the extended lumisphere), b) flash light mode c) set the shutter speed you use in the shooting (Make sure that the setting are within the specifications of the camera and flash system)
- ii. Take an incident light reading with the meter positioned in front of the 18% patch on the targets.
- iii. For best results, the shutter speed reading should be at or near the middle setting enough to bracket (ex. 1/30s). You may need to adjust the distance of the hot lights or aperture selected on the meter to achieve this shutter speed setting. Then use the meter's contrast function and take readings at several points around the Target to check the uniformity of the lighting. Illumination readings over the entire surface of the target should not differ more than  $\pm 0.1\text{EV}$ .
- iv. Under the same lighting conditions, set the meter to incident light mode and take a reading of surface of the target. Also set the meter to reflected light mode and take a reading of the central 18% reflectance patch with the meter located at the camera position. Then record the aperture (with 0.1 increments), shutter speed and ISO sensitivity value. These values will be required to put in Data Transfer Software later to create the exposure profile.
- v. Set the white balance of camera manually by shooting 18% gray target with standard exposure. If you use auto white balance, camera may give compensation automatically along with the change of the lighting, and you may have different value than the meter. Please set the white balance manually to have a constant result.  
For details of white balance setting, see the instruction manual that came with your camera.
- vi. Shooting a bracketed exposure sequence of the targets. Please refer to the images below for the vertical orientation of each exposure profile target. Please kindly note that if the vertical orientation is different, the correct exposure profile will not be created.  
Depending on the amount of flash light,  $\pm 3\text{EV}$  or  $\pm 5\text{EV}$  stepped exposure may not be possible. In this case, move the flash position to adjust the light volume. If the position is changed, please record the EV difference from the first shoot. (This correction value will be required to put in Data Transfer Software later to create the exposure profile.)

In the following explanation, it is assumed that shooting is in “Normal Mode” where exposure range fits into  $\pm 5\text{EV}$ . For shooting in Extended Mode, please refer to the Reference on page 24.

### < Exposure Profile Target II >

- After shooting the standard exposure using the meter's incident light settings, manually change the aperture value to shoot one shot at  $+3\text{EV}$  over the one used for the standard exposure. Then change the aperture value to take one shot  $-3\text{EV}$  under the one used for standard exposure.
- The example below assumes meter settings and a standard exposure of  $f/5.6$  at  $1/125$  second. Your settings might be different. Make sure that the setting are within the specifications of the camera and flash system.

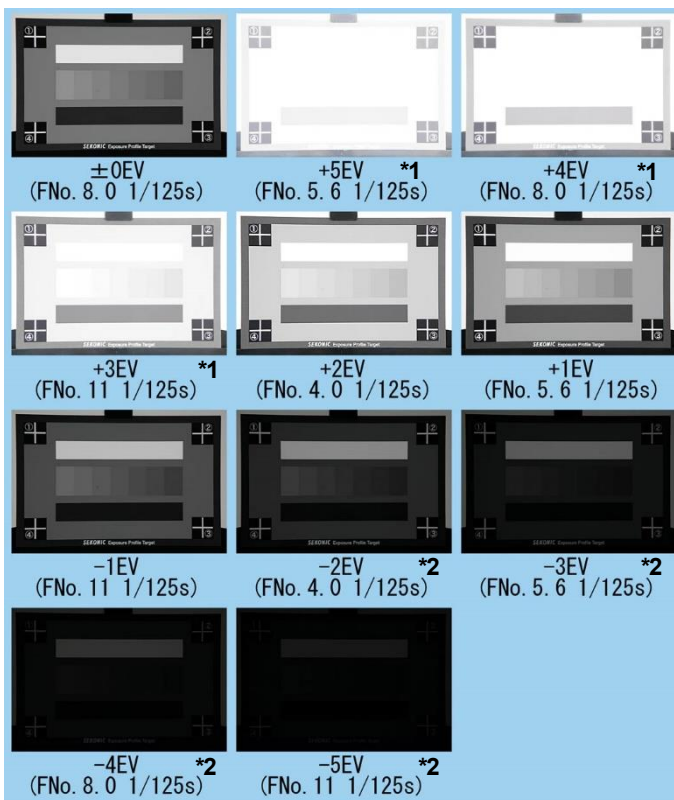


## < Exposure Profile Target >

- After shooting the standard exposure using the meter's incident light settings, manually change the aperture value to shoot a range of exposures from +5EV to -5EV in 1 EV step.
- The example below assumes meter settings and a standard exposure of f/8.0 at 1/125 second. Your settings might be different. Make sure that the setting are within the specifications of the camera and flash system.
- Amount of light is corrected in the example below.

\*1 +4EV correction

\*2 -4EV correction



### < ColorChecker >

- Same as Exposure Profile Target II, shoot in standard exposure and then shoot at +3EV and -3EV while changing the aperture value and light output.
- The example below assumes meter settings and a standard exposure of f/5.6 at 1/125 second. Your settings might be different. Make sure that the setting are within the specifications of the camera and flash system.



### < SpyderCHECKR >

- Same as Exposure Profile Target II, shoot in standard exposure and then shoot at +3EV and -3EV while changing the aperture value and light output.
- The example below assumes meter settings and a standard exposure of f/5.6 at 1/125 second. Your settings might be different. Make sure that the setting are within the specifications of the camera and flash system.



## ◆ Reference

How to get stepped exposure (with Exposure Profile Target II)

Example: Using the lens with maximum aperture FNo. 2.8

See the table to the right for aperture settings and flash brightness readings needed to achieve the full +/- 5EV exposure range.

EV	Exposure (FNo. )	Light Output (FNo. )
+5EV	5. 6	32
+4EV	8. 0	
+3EV	11	
+2EV	4. 0	8. 0
+1EV	5. 6	
0EV	8. 0	
-1EV	11	2. 0
-2EV	4. 0	
-3EV	5. 6	
-4EV	8. 0	
-5EV	11	

- Standard exposure (aperture) is FNo. 8.0 which is +3 stops from maximum aperture
- After shooting the standard exposure using the meter's incident light settings, use the aperture settings in the green area of the table to manually set the lens aperture to FNo. 4.0 (for +2EV), FNo. 5.6 (+1EV), and FNo. 11(-1EV).
- Adjust the power level or move flash heads closer to the Exposure Profile Target II to make a light output value of FNo. 32, +4 f/stops more than the standard exposure. Then take exposures with the lens aperture manually set to FNo. 5.6 (for +5EV), FNo. 8.0 (for +4EV), and FNo. 11 (for +3EV) as shown in the blue area.
- Adjust the power level, move the heads further from the Exposure Profile Target II, or add diffuser to the flash heads to make a light output value of FNo. 2.0, -4 f/stops less than the standard exposure. Then take exposures with the lens aperture manually set to FNo. 4.0 (for -2EV), FNo. 5.6 (for -3EV), FNo. 8.0 (for -4EV), and FNo. 11 (for -5EV) as shown in the yellow area.
- When you create a camera exposure profile using the images taken above, you will need to enter a correction value in the *Data Transfer Software*. For the image taken at iii (+ correction), enter 4.0 in the "Light Output Correction" box. For the image taken at iv (- correction), enter -4.0EV in the "Light Output Correction" box.



## ◆ Reference

- When you have test shooting using a bright lens FNo.2.0 or smaller, and with ISO sensitivity 800 or higher, the setting output is -5EV from the standard exposure. In this case sometimes you are not able to measure with light meter since the light amount is too small. In this case set the light amount which can be measured by light meter, and test shoot by setting the value stopped down as much as the aperture value which can not be set.

### Example

Lens: Maximum aperture FNo.2.0

ISO sensitivity: 800

Set light output: +5EV higher than middle tone (FNo.5.6)

Lower measuring limit of light meter at ISO800 is FNo.1.4. (When ISO sensitivity is 100, lower measuring limit of light meter is 0.5. But the ISO800 is 3 steps higher than 100, so the lower limit should be set at FNo.1.4 which is 3 steps higher.) On the other hand, the light output you need to set is FNo.1.0 which is +5EV higher than FNo.5.6, and it exceed the lower limit of light meter. So the test shooting should be done by setting the middle tone 1 step higher since the light output is 1 step higher. In short, under these conditions, standard value is FNo.8.0, not FNo.5.6.

- Full stop aperture values are as follows:  
FNo. 0.5, 0.7, 1.0, 1.4, 2.0, 2.8, 4.0, 5.6, 8.0, 11, 16, 22, 32, 45, 64, 90, 128

## 7. Save the test images in the computer.

Save test images used to create exposure profile in the same folder (See page 59).

### 3. Data Transfer Software Installation Guide

#### ◆NOTE!

- If an earlier version of *Data Transfer Software* is installed, please uninstall it and install the latest version of *Data Transfer Software*.

#### (1) Macintosh version

##### a) Setup

In order to use *Data Transfer Software*, please install the application and the USB driver from the bundled CD-ROM, or install the application from Sekonic website.

<https://www.sekonic.com/support/downloads>

Follow the steps below to install.

##### b) Operating environment

Software	<i>Data Transfer Software Version 6.10</i> (this software)
OS *1	macOS 10.13 macOS 10.14 macOS 10.15
Models	Macintosh with a standard USB interface *2*3
CPU	Intel CPU (compatible with operating conditions of OS) *2
RAM	Compatible with operating conditions of OS
Hard disk space	Same as above
Display	Screen resolution: At least 1024 x 768, Color quality: At least 16-bit

\*1 If you are using a Macintosh computer, be sure to use the Macintosh version of the software. Operation of the Windows version is not guaranteed when running in Virtual PC for the Mac.

\*2 Intel CPU (except Core 2 Duo and earlier) dedicated. 68k computers and Power PCs not supported.

- \*3
- The operating system must be preinstalled on the computer.
  - Proper operation may not be possible on certain Macintosh models and configurations.
  - Proper operation is not guaranteed on a Macintosh with an upgraded operating system or an add-on USB interface.
  - Proper operation is not guaranteed over connections through a USB hub.



### c) Installing the software

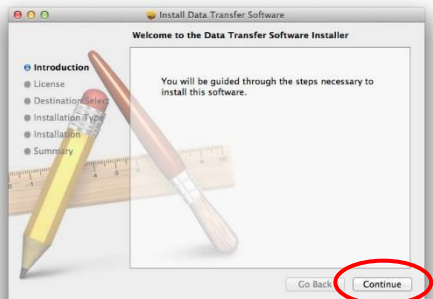
1. Turn on your Macintosh and start up macOS.
2. Download the Data Transfer Software (for Macintosh) from Sekonic home page below.

<https://www.sekonic.com/support/downloads>

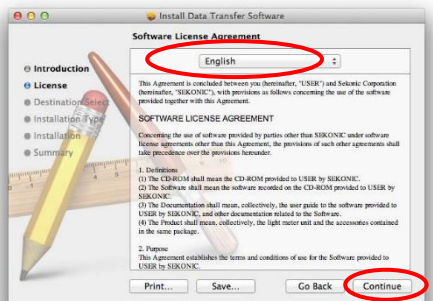
3. To start the installation, unzip the installer and double-click the "SEKONIC Data Transfer Software.pkg" icon.



4. Click the [Continue] button.



5. The license agreement is displayed. Select [English], read the agreement, and then click the [Continue] button.



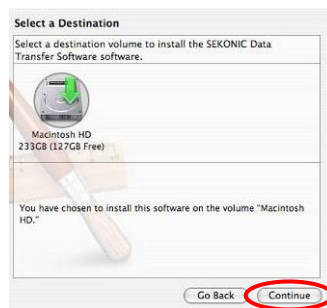
#### ◆ NOTE!

- If you select a language that differs from the OS on your computer, *Data Transfer Software* can be installed, but corrupted characters may be displayed. If you accidentally install the wrong language version of *Data Transfer Software*, please uninstall it, and then re-install the correct language version. For information about uninstalling the software, see "d) Uninstalling the software". (See page 36)

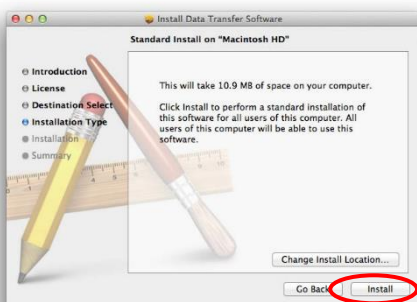
6. After reading the license agreement, click the [Agree] button if you agree to its terms and conditions.



7. Check if the volume of the installation folder is correct, and then click the [Continue] button.

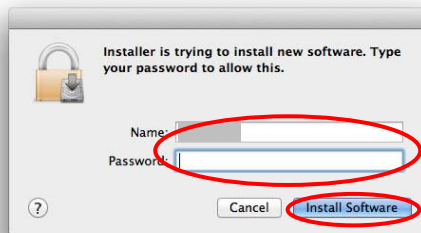


8. You are now ready to install *Data Transfer Software*. To continue, click the [Install] button.



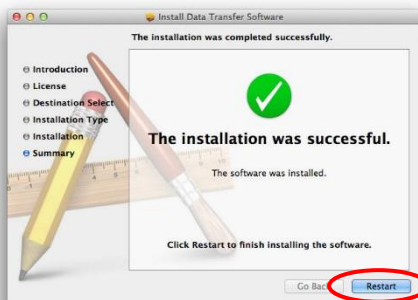
9. Authentication is run.

Make entries in “Name” and “Password” and click the [Install Software] button.



10. Installation is now complete.

You must restart your computer after the installation, so click the [Restart] button. The computer restarts.



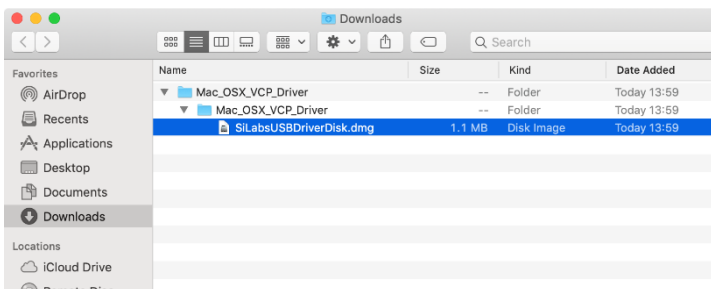
11. If you use L-758 series, please follow the steps below to install the USB driver.

( i ) Download the latest driver for Macintosh from “Download for Macintosh OSX” in the following web page.

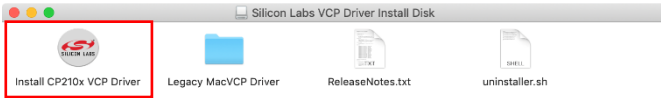
<https://www.silabs.com/products/development-tools/software/usb-to-uart-bridge-vcp-drivers>

( ii ) Double click the file “SiLabsUSBDriverDisk.dmg” in the folder you downloaded.

\* If the file has been downloaded as a ZIP file “Mac\_OSX\_VCP\_Driver.zip”, double click the file to decompress it first.



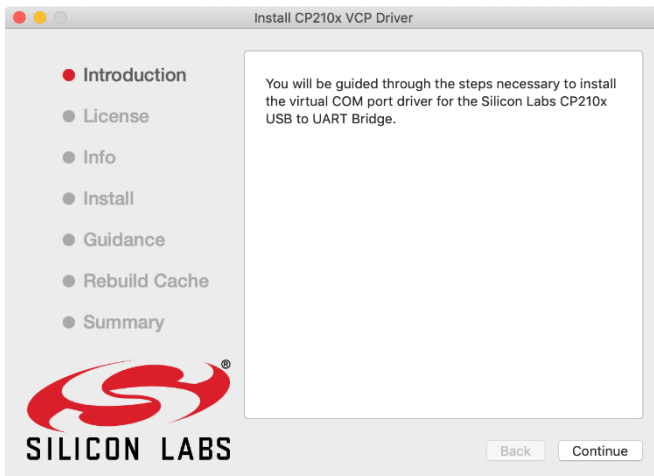
( iii ) The following screen is displayed. Double click “Install CP210x VCP Driver”.



If the following dialog is displayed, click the [Open] button to continue the installation.



( iv ) The installer appears. Follow the instructions on the screen to finish the installation.



About the other installation procedures, please read “ReleaseNotes.txt” of ( iii ).

## d) Uninstalling the software

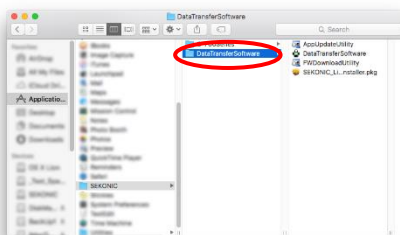
### ◆ NOTE!

- Perform the following procedure only if the *Data Transfer Software* is no longer needed on your computer.

### ◆ Reference

- The profile data remains even if the application is uninstalled.  
If you want to completely delete the profile data, select [Delete] profiles before uninstalling the application. (See page 49.)

1. Quit all applications that are currently running on your computer.
2. Open "Macintosh HD" and then double-click the "Applications" folder.
3. Select "DataTransferSoftware" folder in the "Application"-"SEKONIC" folder and drag-and-drop it in the Recycle Bin (Trash) to delete the application.



4. If you use L-758 series, please follow the steps below to uninstall the USB driver.
  - ( i ) Mount "SiLabsUSBDriverDisk.dmg" in the same way as the procedure to install the driver (P.34-).
  - ( ii ) Execute the file "uninstall.sh" through the Mac terminal.  
In the standard environment, you can uninstall the USB driver from your Mac by executing following command.

```
/Volumes/Silicon Labs\ VCP\ Driver\ Install\ Disk/uninstaller.sh
```

## (2) Windows version

### a) Setup

In order to use *Data Transfer Software*, please install the application and the USB driver from the bundled CD-ROM, or install the application from Sekonic website.

<https://www.sekonic.com/support/downloads>

Follow the steps below to install.

### b) Operating environment

Software	<i>Data Transfer Software Version 6.10</i> (this software) USB driver
OS	Windows ® 8.1 (32/64-bit version) * <sup>1</sup> Windows ® 10 (32/64-bit version) * <sup>2</sup>
Models	PC equipped as standard with USB interface * <sup>3</sup>
CPU	Compatible with operating conditions of OS
RAM	Same as above
Hard disk space	Same as above
Display	Screen resolution: At least 1024 x 768, Color quality: At least 16-bit

\*<sup>1</sup> Windows 8.1 / Windows 8.1 Pro / Windows 8.1 Enterprise.

\*<sup>2</sup> Home / Pro / Enterprise.

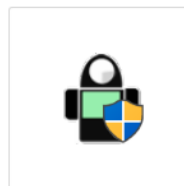
- \*<sup>3</sup>
- The operating system must be the one preinstalled on the computer.
  - Proper operation may not be possible on certain computer models and configurations.
  - Proper operation is not guaranteed on a computer with an upgraded operating system or an add-on USB interface, a homemade computer, a shop-made computer, or in an emulator environment (such as Virtual PC).
  - Proper operation is not guaranteed over connections through a USB hub.

### c) Installing the software

1. Turn on your PC and start up Windows.
2. Download the Data Transfer Software (for Macintosh) from Sekonic home page below.

<https://www.sekonic.com/support/downloads>

3. Unzip the installer and double-click the [AutoRun.exe] file.

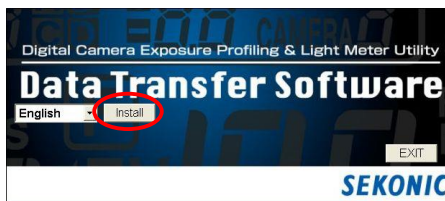


AutoRun.exe

4. OS User Account Control asks permission to install the program.  
When the screen to the right is displayed, click the [Yes] button.



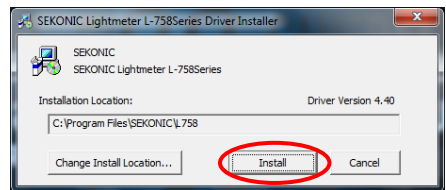
5. When the screen below is displayed, select the desired language in the dropdown list.  
Click the [Install] button.



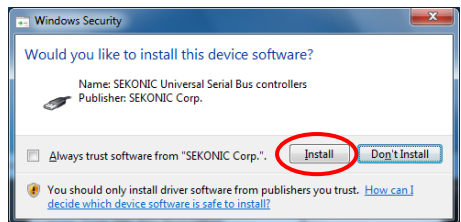
◆NOTE!

- If you select a language that differs from the OS on your computer, *Data Transfer Software* can be installed, but corrupted characters may be displayed. If you accidentally install the wrong language version of *Data Transfer Software*, please uninstall it, and then re-install the correct language version. For information about uninstalling the software, see "d) Uninstalling the software". (See page 44)

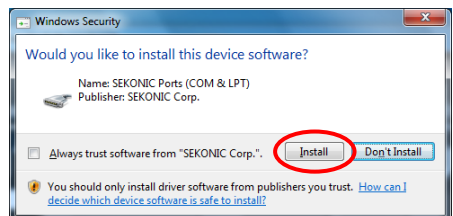
6. Click the [Install] button.



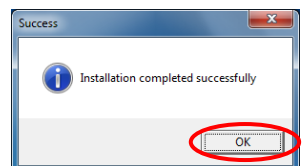
7. Click the [Install] button.



8. Click the [Install] button.

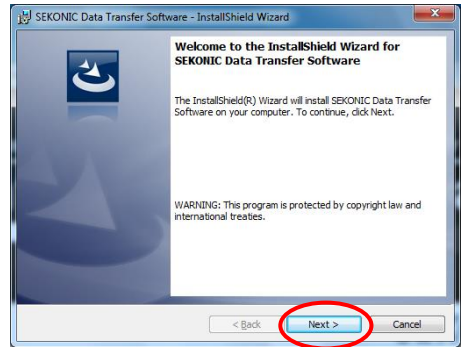


9. To continue installing the application software, click the [OK] button.

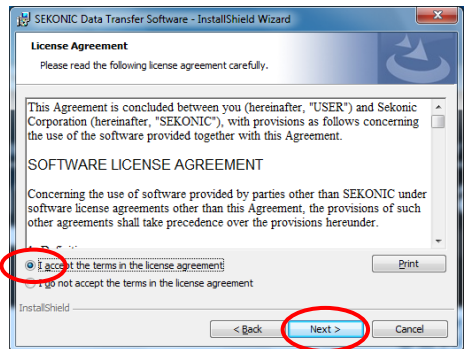




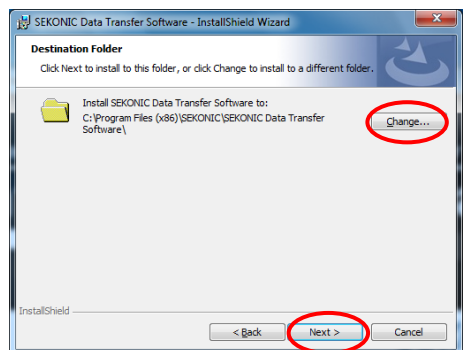
10. Next, install *Data Transfer Software*.  
To continue, click the [ Next ] button.



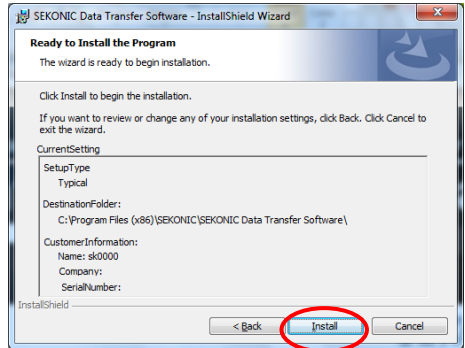
11. If you agree with the terms of the license agreement, select "I accept..." and then click [ Next ].  
You cannot proceed if you select "I do not accept..."



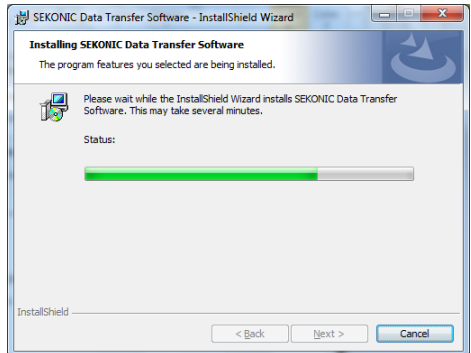
12. Confirm that you are installing the software in the desired folder, and then click the [ Next ] button.  
If you want to change to a different folder, click the [Change] button and then select the folder you want.



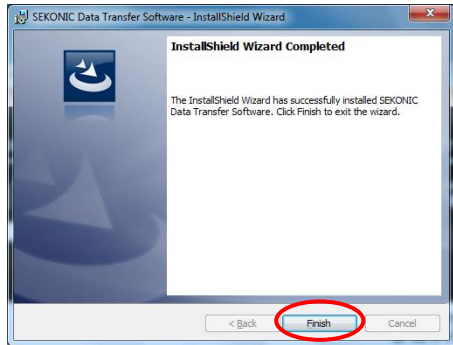
13. You are now ready to install *Data Transfer Software*.  
To continue, click the [Install] button.



14. A screen showing the progress of the *Data Transfer Software* installation is displayed.

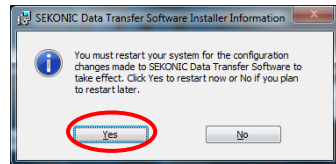


15. Installation is now complete.  
Click the [Finish] button.



◆NOTE!

- Depending on your operating system, your computer may prompt you to restart after you have installed the software. If you are prompted to restart, restart your computer immediately. Click the [Yes] button.



16. If this is the first time for you to connect the light meter to your computer, proceed to Step 16.

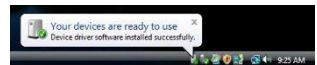
Install the hardware that is necessary for recognizing the light meter. For information about connecting the light meter to your computer, see "4. Basic Operation". (See page 45.)

Please also note that in the following installation, depending on the OS, environment or conditions, the displays in Steps 16 and beyond may not be appeared or the contents may be different.

17. The screen to the right is displayed. Click the display area.



18. The screen to the right is displayed, and the installation is finished.



◆NOTE!

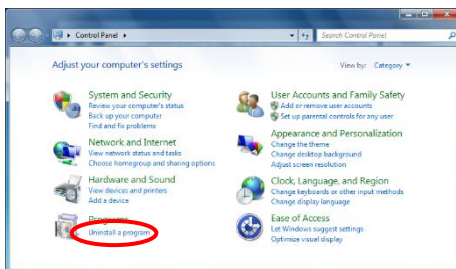
- Whenever you connect or disconnect the USB cable, be sure to do so in the proper sequence. Disconnecting the USB cable while data is being transferred may result in the loss of data or circuit damage.

## d) Uninstalling the software

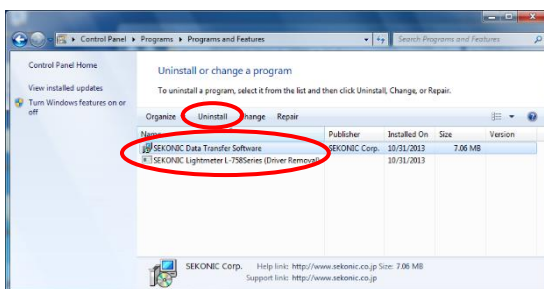
### ◆NOTE!

- Perform the following procedure only if the *Data Transfer Software* is no longer needed on your computer.

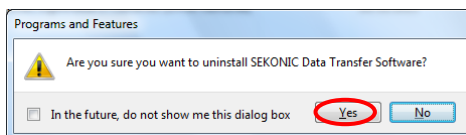
- Quit all applications that are currently running on your computer.
- From "My Computer," open Control Panel and then double-click "Uninstall a program".



- Select "Data Transfer Software" (or "SEKONIC Lightmeter L-758series (Drive Removal)") and then click [Uninstall].



- A confirmation screen will appear, so click on the "Yes" button to start uninstalling, and then uninstall will be completed.



### ◆Reference

- The profile data remains even if the application is uninstalled. If you want to completely delete the profile data, select [Delete] profiles before uninstalling the application. (See page 49.)

## 4. Basic Operation

### (1) How to connect the light meter to your computer

- 1) USB cable is needed.

#### ◆NOTE!

- For the L-858D Series, use a USB (A) male to micro (B) male cable.
- For the L-478/ L-758 Series, use a USB (A) male to mini (B) male cable.
- Make sure to use the USB data cable for data communication instead of USB cable for charging only.



- 2) Connect the USB cable to your computer.

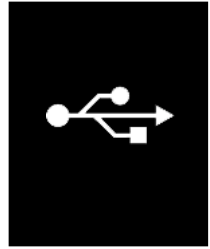


- 3) Check that the light meter is turned off.
- 4) Connect the USB cable to the light meter.



- 5) Turn on the light meter.

If everything is connected properly, a USB icon will appear on the light meter LCD screen.



- 6) Connection is now complete.

Start *Data Transfer Software* in one of the ways described below.

- Macintosh version

Click the *Data Transfer Software* icon in the dock on the desktop.



- Windows version

Double-click the icon (shown to the right) on your desktop.



#### ◆ NOTE!

- If you do not follow the procedure above, there is a possibility that a communication error occurs.
- When *Data Transfer Software* is running and the light meter is on, do not disconnect the USB cable.  
If you do, *Data Transfer Software* may not operate properly when you reconnect the cable.

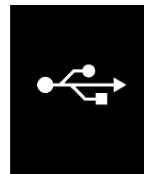
If a communication error occurs, first quit *Data Transfer Software*, follow the instructions in “**(1) How to connect the light meter to your computer**” to reconnect the USB cable, and start *Data Transfer Software* again.  
(See page 45.)

---

## (2) How to disconnect the light meter from your computer

1) Quit the *Data Transfer Software* application.

2) Turn off the light meter. The USB icon disappears from the LCD screen.



3) Disconnect the USB cable from the light meter.



4) Disconnect the USB cable from the computer.

### ◆NOTE!

- Please be sure to close the USB port cover whenever you are not using the meter.

## 5. Data Transfer Software Operations

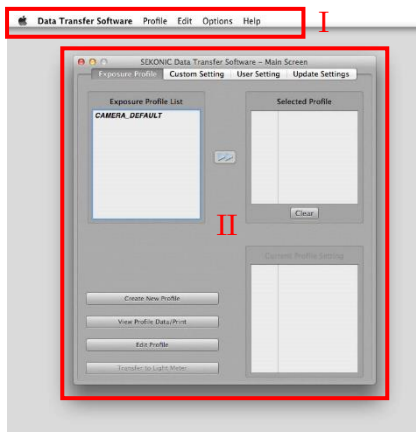
### (1) Main Screen Explanation

(The screens from the Macintosh version are used in the following explanation.)

Once the *Data Transfer Software* opens, the menu bar [ I ] and main screen [ II ] will be displayed. By switching between the tabs on the main screen, the following four screens can be displayed.

- [1] Exposure Profile (See page 54)
- [2] Custom Setting (See page 82)
- [3] User Setting (See page 83)
- [4] Update Settings (See page 85)

Double click on a tab title to switch to that screen.



### (2) Menu bar and functions

The menu bar contains five menus.

#### a) Data Transfer Software

This menu contains the basic *Data Transfer Software* operation commands.

1. About SEKONIC *Data Transfer Software*  
Shows the version and system information for *Data Transfer Software* you are using.
2. Quit SEKONIC *Data Transfer Software*  
Quits *Data Transfer Software*.



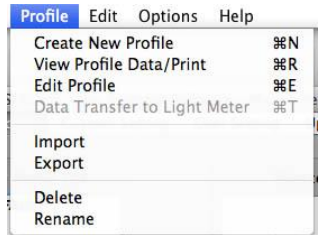
#### ◆ Reference

- These commands are in the following locations in the Windows version.  
About SEKONIC *Data Transfer Software*: Menu bar – Help  
Exit SEKONIC *Data Transfer Software*: Menu bar – Profiles



## b) Profiles

Contains general operation commands for camera exposure profiles.



### 1. Create New Profile

Allows you to create a camera exposure profile.  
(Same operation as the **Create New Profile** button in the **Main screen**)

### 2. View Profile Data/Print

Allows you to check and print the camera exposure profile data you created.  
(Same operation as the **View Profile Data/Print** button in the **Main screen**)

### 3. Edit Profile

Allows you to edit the camera exposure profile you created.  
(Same operation as the **Edit Profile** button in the **Main screen**)

### 4. Data Transfer to Light meter

Allows you to transfer the camera exposure profile you created to the light meter.  
(Same process as the **Data Transfer to Light meter** button in the **Main screen**.)

### 5. Import

Use this command to add the camera exposure profile you created in *Data Transfer Software* on a different computer to the Camera Exposure Profile List in *Data Transfer Software* on the computer you are using.

### 6. Export

Use this command to copy the camera exposure profile you created in *Data Transfer Software* to a different computer.

### 7. Delete

Allows you to delete a camera exposure profile.  
You can start the same operation by selecting the camera exposure profile in the **Camera Exposure Profile List** in the **Main screen** and right-clicking it (or holding down the “ctrl” key and clicking it (Macintosh only)).

### 8. Rename

Allows you to change the name of a camera exposure profile.  
You can start the same operation by selecting the camera exposure profile in the **Camera Exposure Profile List** in the **Main screen** and right-clicking it (or holding down the “ctrl” key and clicking it (Macintosh only)).

### ◆NOTE!

- Camera exposure profiles to be exported are normally saved as “Ver. 3” formats for *Data Transfer Software Ver. 3.0 to Ver. 6.0*. For *Data Transfer Software Ver. 2.0*, select “Ver. 2.” as the format when saving.
- Profiles created in Manual Mode and/or by using ColorChecker or SpyderCHECKR targets cannot be exported in the “Ver. 2” format.

## c) Edit Profile

Contains commands that help input operations in the camera exposure profile name input screen.

### 1. Cut

Allows you to cut some of the characters that have been entered in the camera exposure profile name input screen. \*

### 2. Copy

Allows you to copy some or all of the characters that have been entered in the camera exposure profile name input screen. \*



### 3. Paste

Allows you to paste the characters that were cut or copied in the camera exposure profile name input screen. \*

- \* You can start the same operation by clicking a camera exposure profile in the screen that allows you to select a camera exposure profile name and right-clicking it (or holding down the “ctrl” key and clicking it). (Macintosh only)

### ◆NOTE!

- “Special Characters...” appears only in Macintosh.

## d) Options

Contains option functions in *Data Transfer Software*.

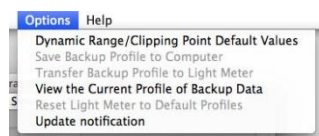
### 1. Defaults of Calculation Setting Change

Allows you to change the default values for Dynamic Range (+), Clipping Point (+), Middle Tone, Dynamic Range (-) and Clipping Point (-) when you create a new camera exposure profile.

Click the level value for the item you want to change, and enter the prescribed level value from the keyboard.

Note that you can click the **Defaults** button to return the settings to the Sekonic standard values.

Click the **OK** button after you have changed the settings to enable the settings and return to the **Main screen**.



### ◆ NOTE!

- If you changed the Dynamic Range/Clipping Point settings in Advanced mode or by changing the exposure range, only the selected camera exposure profile is changed.  
Note that the default level value always takes precedence when you create a new camera exposure profile.

### 2. Save Backup Profile to Computer

Loads the data from the camera exposure profile set in the light meter onto the computer and saves it.

### 3. Transfer Backup Profile to Light meter

Loads the data from the camera exposure profile saved on the computer and transfers it to the light meter..

You can use this command on data from a camera exposure profile created in an earlier version of *Data Transfer Software*.

## ◆NOTE!

- Backup profiles are in a different file format (".csv" extension) than camera exposure profiles created in *Data Transfer Software* (".sp" extension) so that they can be transferred to the light meter, so be aware of the following points.
  - Multiple camera exposure profiles on the light meter are managed as a single file. (You cannot manage only the camera exposure profiles you want.)
  - You can check the data in a backup profile, but you cannot edit it. If you edit it, you may not be able to read the backup profile.
  - You cannot create characteristic curve graphs from the data in a backup profile.
  - Profiles created in the older version (Ver. 1.2) of *Data Transfer Software* are in the same CSV format as files after they have been transferred to the light meter. Therefore, if you want to transfer a profile created in an older version of *Data Transfer Software* to the light meter, use Transfer Backup Profile.

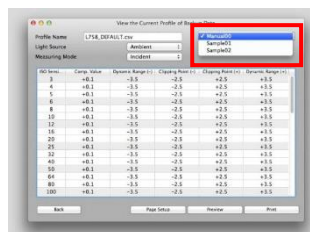
## 4. View the Current Profile of Backup Data

Allows you to display and print details of a camera exposure profile that was backed up onto a computer from the light meter in a table.

In the area outlined in red in the figure to the right, you can switch the camera exposure profile to be displayed.

Display and print the following settings for the camera exposure profile shown in the table.

- 1) Compensation Value
- 2) Clipping Point (+)
- 3) Dynamic Range (+)
- 4) Dynamic Range (-)
- 5) Clipping Point (-)



## ◆NOTE!

- All of the settings in the camera exposure profile displayed in the screen are displayed using one of four combinations of light source type (ambient or flash) and measurement method (incident light or reflected light). Check the light source type and measurement method for the data being displayed in the screen.

## 5. Reset of Profile in Light meter

Allows you to return a camera exposure profile in the light meter to the Sekonic standard values.

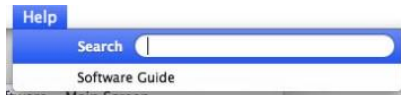
Name	Standard Value
Clipping Point (+)	+3.5
Dynamic Range (+)	+2.5
Compensation Value	0.0
Dynamic Range (-)	-2.5
Clipping Point (-)	-3.5

## 6. Update Report Setting Screen

You can select whether the Update Notification Function is activated or not when the Data Transfer Software is launched (See page 87).

## e) Help

Allows you to view the Software Guide (electronic version of this guide).



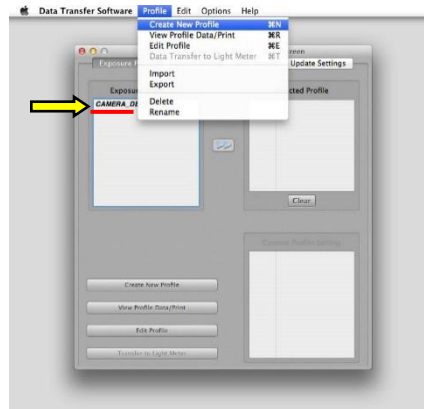
### (3) Exposure Profile Tab and Functions

The **Exposure Profile Tab** is the basic operations screen that is displayed when you start *Data Transfer Software*. The following frequent operations can be used in the Exposure Profile Tab.

- Create New Profile
- View/Print Profile
- Profile Edit
- Transfer to Light Meter

Exposure Profile List shows the created profiles. Select the profiles in this list to transfer to the light meter.

Right after installing the software, "CAMERA\_DEFAULT" is listed, which is same profile in the light meter's default setting.



#### a) Create New Profile

Allows you to create a camera exposure profile.

The following 3 modes can be used to create camera exposure profiles.

##### ◆ Quick Mode

Creates a camera exposure profile from test exposure data containing light meter measurements for a single light source (ambient or flash) and a single ISO.

##### ◆ Advanced Mode

Creates a more accurate camera exposure profile from test exposure data containing light meter measurements for each type of light source and each ISO. Further, with the Advance Mode, there are two modes available: the Normal Mode for creating camera exposure profiles in an exposure range of +/-5EV as well as the Extended Mode for creating camera exposure profiles in an exposure range of +/-10EV.

##### ◆ Manual Mode

Creates a camera exposure profile from direct input of obtained from tests with other targets, general data supplied by the manufacturer or other testing service.



#### 1) Quick Mode

Click the **Create New Profile** button in the **Exposure Profile Tab**.

The **Select Profile Mode** screen is displayed. Click the **Quick Mode** button.

## 1. Select Target

Select the exposure profile target used for the test exposure.

Click on the button heading the target name to be used in test shooting.

Click the **Next** button after you have made your selection.

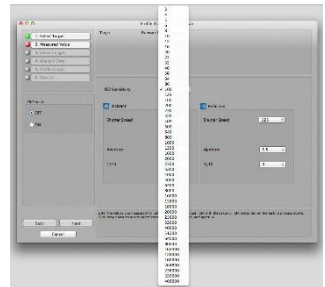


## 2. Measured Value

Enter the standard exposure values measured using the light meter when you took the test shooting.

Select the ISO sensitivity, the incident / reflected light and the measurements (shutter speed, aperture, 1/10 step measurements) from the pull-down menus.

If the profile is for a digital CINE camera, switch ON the Cine mode. Instead of the shutter speed, frame rate and shutter opening angle setting column will be displayed, and you can make your selections.



Click the **Next** button after you have made all of your selections.

### ◆NOTE!

- Be sure to either enter or check the measurements from the light meter. The differences between the light meter values and the exposure data from the test exposure are calculated as compensation values, so if you transfer a camera exposure profile in which the wrong measurements were entered, the measured values for the light meter will change.

### ◆Reference

- The 1/10 step measurement is the fraction displayed in the measurement area of the light meter.

Measured value in 1/10 step increments.

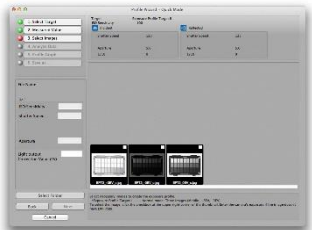
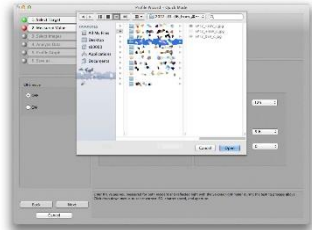


### 3. Select Test Images

Select the folder that contains the test images of the digital camera used to make the camera exposure profile, and click the **Open** button.

The image data is displayed as thumbnails in the folder. Select the necessary images. Only test images in the same folder can be selected.

Click the white square in the top right of the thumbnail image to select it with a checkmark, which will be displayed in the white square.



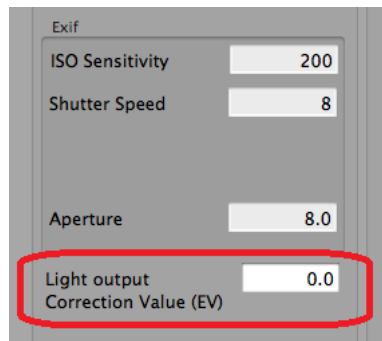
Target Type	No. of selected images	Exposure settings for selected image
Exposure Profile Target II	3	Standard, $\pm 3\text{EV}$
Exposure Profile Target	11	Standard, each step of $\pm 5\text{EV}$
ColorChecker	3	Standard, $\pm 3\text{EV}$
SpyderCHECKR	3	Standard, $\pm 3\text{EV}$

Once you select necessary images, **Next** button will be selectable and makes it possible to make another selection.

If you have selected the correct images, click the **Next** button.

#### ◆ NOTE!

- When you adjusted the light output in shooting, you need to input the correction value in each test images. Input the correction value (in EV) into the box of "Light output correction value" (See page 25, 29 ).



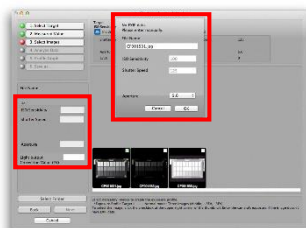


## ◆ Reference

- The image formats that can be loaded are JPEG and TIFF(8bit No-compression). (RAW data cannot be loaded.) If you selected the wrong folder, click the **Select Folder** button and reselect the folder containing the test exposure data.

Note that it is easier to select images if you separate the test shooting images by saving in separate folders by each ISO and light source.

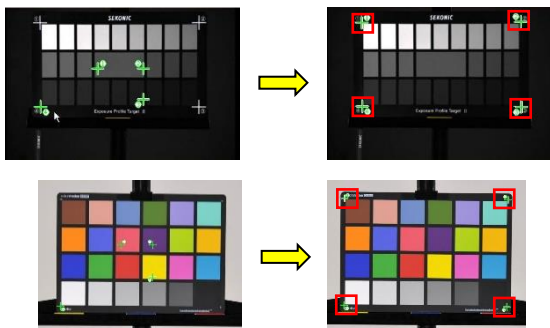
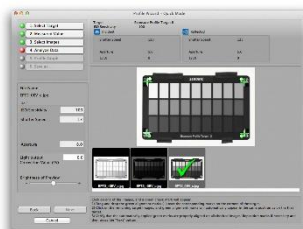
- When you click a thumbnail image, a preview is displayed and Exif information is displayed on the left side of the screen. Check the Exif information as you select your images. If you select an image in which Exif information is not embedded, a screen for entering image exposure conditions appears.



## 4. Analyze Data

Specify the range on the test image for automatically loading patch densities.

Click on the displayed thumbnail for the image for specifying the range. (The auto positioning function will overlay green cross marks ① to ④ on the four cross marks in the corners of the thumbnail.) If the green cross marks are not correctly positioned, they can be drag-and-drop maneuvered over the corner cross marks.



#### ◆Reference

- If you cannot see the cross marks in the four corners because the test image is too overexposed or underexposed, use the **Brightness of Preview** slider to adjust the preview.

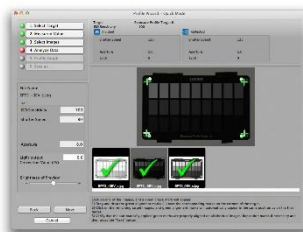
#### ◆NOTE!

- The automatic alignment function is based on the white crosses at the four corners of the target. If you are using a target without a cross mark, please adjust the position manually.

The auto positioning function uses the target's white corner cross marks as the criteria, so if a target without cross marks is being used, you will need to position the green cross marks manually.

Set the reading range for all of the images using the same procedure. If you selected Exposure Profile Target II, ColorChecker or SpyderCHECKR, you select three images, and if you selected Exposure Profile Target, you select 11 images. In either case, it becomes possible to select the Next button once you set the reading range on the necessary images.

When you click the **Next** button, image analysis starts and the characteristic curve is calculated.



#### ◆Reference

- The cross marks are automatically placed in the same position as is aligned in the previous image. If the position of test image remains the same, you can easily set the range by selecting the thumbnail images as is.

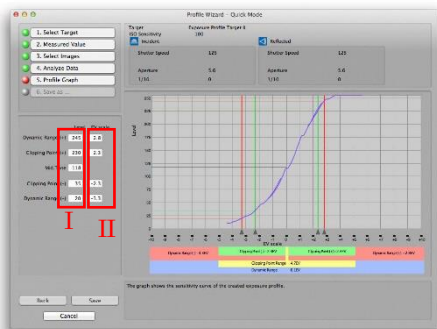
We recommend that you fix the exposure profile target in place during the shooting.

## 5. Profile Graph

Shows a graph of the sensitivity curve from the test image data.

In the area of [I], the level value (under 8-bit) for each setting is displayed.

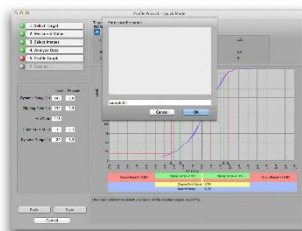
In the area of [II], the distances from the Middle Tone to the dynamic ranges and the clipping points are displayed in the EV values.



## 6. Save as ...

To save the camera exposure profile you created, click the **Save** button.

**Next**, the file name input dialog is displayed, so after entering the file name, click the **OK** button. After the profile is saved, the screen returns to the Exposure Profile Tab.



### ◆NOTE!

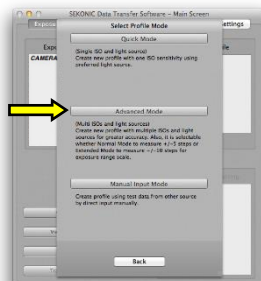
- Only single-byte alphanumeric characters are valid for use in camera exposure profile names. You can enter up to 31 characters for the file name.
- In this **Quick Mode**, the exposure profiles created using a single ISO and a single light source, are also all reflected in other ISOs and light sources.

## 2) Advanced Mode

Click the **Create New Profile** button in the **Exposure Profile Tab**.

The **Select Profile Mode** screen is displayed.

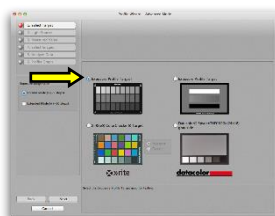
Click the **Advanced Mode** button.



### 1. Select Target

Select the exposure profile target used for the test exposure.

Click the button in front of the target name to select it.



If you have selected ColorChecker, go onto select Classic or Passport.

For selection of exposure range scale, select Normal Mode to measure the  $\pm 5$ EV range. Select Extended Mode to measure  $\pm 10$ EV range.

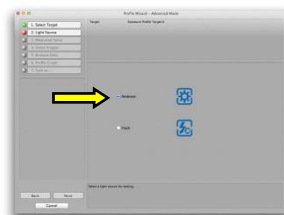
Click the **Next** button after you have made your selection.

### 2. Select Light Source

Select the light source (ambient or flash) used in the test shooting.

Click the button in front of the light source name to select it.

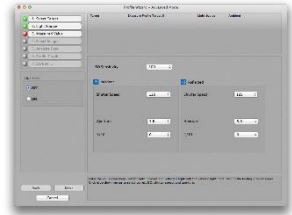
Click the **Next** button after you have made your selection.



### 3. Measured Value

Enter the standard exposure values measured using the light meter when you took the test shooting.

Select the ISO sensitivity, the incident / reflected light and the measurements (shutter speed, aperture, 1/10 step measurements) from the pull-down menus.



If the test shooting camera is not a still one but a movie camera, switch ON the cine mode. Instead of the shutter speed, frame rate and shutter opening angle setting column will be displayed, and you can make your selections.

Click the **Next** button after you have made all of your selections.

#### ◆NOTE!

- Be sure to either enter or check the measurements from the light meter. The differences between the light meter values and the exposure data from the test shoot are calculated as compensation values, so if you transfer a camera exposure profile in which the wrong measurements were entered, the measured values for the light meter will change.

#### ◆Reference

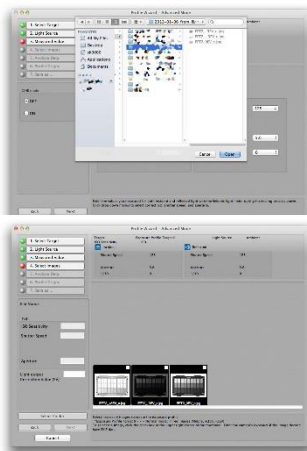
- The 1/10 step measurement is the fraction displayed in the aperture value area of the light meter.



Measured value in 1/10 step increments.

#### 4. Select Test Images

Select the folder that contains the test images of the digital camera used to make the camera exposure profile, and click the **Open** button.



The image data is displayed as thumbnails in the folder. Select the necessary images.

Only test images in the same folder can be selected.

Click the white square in the top right of the thumbnail image to select it with a checkmark, which will be displayed in the white square.

**Table 1**

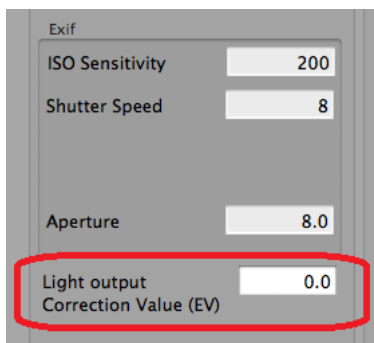
Exposure range scale  Target type	Normal Mode		Extended Mode	
	No. of selected images	Exposure settings for selected images	No. of selected images	Exposure settings for selected images
Exposure Profile Target II	3	Standard, +/-3EV	5	Standard, +/- 4EV, +/-8EV
Exposure Profile Target	11	Standard, Each step for +/-5EV	21	Standard, each step for +/-10EV
ColorChecker	3	Standard, +/-3EV	5	Standard, +/- 4EV, +/-8EV
SpyderCHECKR	3	Standard, +/-3EV	5	Standard, +/- 4EV, +/-8EV

Once you select necessary images, **Next** button will be selectable and makes it possible to make another selection.

If you have selected the correct images, click the **Next** button.

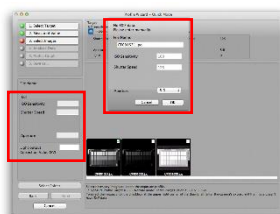
### ◆NOTE!

- When you adjusted the light output in shooting, you need to input the correction value in each test images. Input the correction value (in EV) into the box of "Light output correction value" (See page, 29 ).



### ◆Reference

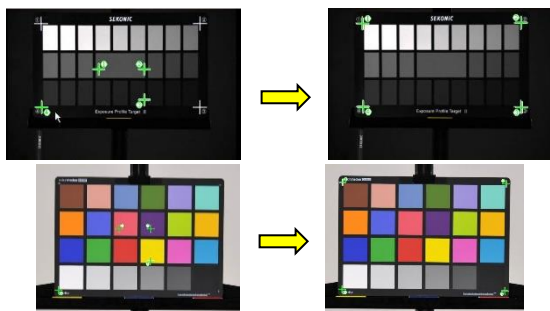
- The image formats that can be loaded are JPEG and TIFF. (RAW data cannot be loaded.)
- If you selected the wrong folder, click the **Select Folder** button and reselect the folder containing the test exposure data.  
Note that it is easier to select images if you separate the test shooting images by saving in separate folders by each ISO and light source.
- When you click a thumbnail image, a preview is displayed and Exif information is displayed on the left side of the screen. Check the Exif information as you select your images.  
Note that if you select an image in which Exif information is not embedded, a screen for entering image exposure conditions appears.



## 5. Analyze Data

Click on the displayed thumbnail for the image for specifying the range. (The auto positioning function will overlay green cross marks ① to ④ on the four cross marks in the corners of the thumbnail.)

If the green cross marks are not correctly positioned, they can be drag-and-drop maneuvered over the corner cross marks.



### ◆Reference

- If you cannot see the cross marks in the four corners because the test image is too overexposed or underexposed, use the **Brightness of Preview** slider to adjust the preview.

### ◆NOTE!

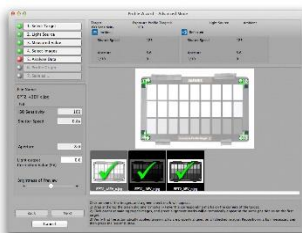
- The automatic alignment function is based on the white crosses at the four corners of the target. If you are using a target without a cross mark, please adjust the position manually.

The auto positioning function uses the target's white corner cross marks as the criteria, so if a target without cross marks is being used, you will need to position the green cross marks manually.

Set the range for all of the images using the same procedure.

Only the number of images for “No. of selected images” in Table 1 (page 49) need be set as the reading range for images to enable selection of the **Next** button.

When you click the **Next** button, image analysis starts and the characteristic curve is calculated.





## ◆ Reference

- The cross marks are automatically placed in the same position as is aligned in the previous image. If the position of test image remains the same, you can easily set the range by selecting the thumbnail images as is. We recommend that you fix the exposure profile target in place during the shooting.

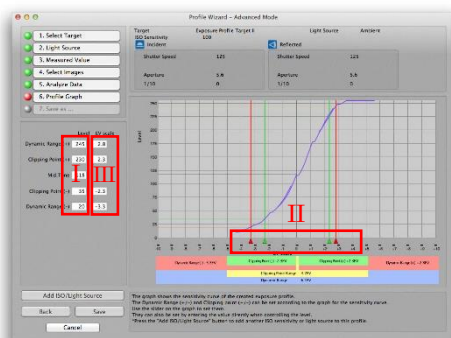
## 6. Profile Graph

Shows a graph of the sensitivity curve from the test image data.

In the area of **[ I ]**, the level value (under 8-bit) for each setting is displayed.

If you directly enter the level value from the keyboard, you can change the exposure range.

The triangle cursors in the sensitivity curve graph [clipping point (+/-) and dynamic range (+/-) points] move in response to the level value you enter, and the EV scale value changes as well.



If you click the mouse on the triangle cursors [clipping point (+/-) and dynamic range (+/-) points] in the area of **[ II ]**, you can drag and drop them to change the exposure range.

The level value and the EV scale change according to the new positions of the triangle cursors.

In the area of **[ III ]**, the difference in the number of exposure steps (EV scale) from the Middle Tone is displayed. You can change the exposure range by directly entering the difference in the number of exposure steps (EV scale) from the keyboard.

The level value as well as the triangle cursors on the sensitivity curve graph move according to the difference in the number of steps (EV scale) that is entered.

### ◆NOTE!

- The size relationship between the five points is in order from dynamic range (-)  $\leq$  clipping point (-)  $\leq$  Middle Tone  $\leq$  clipping point (+)  $\leq$  dynamic range (+), so the level value input or the cursor movement cannot deviate from this order.

### ◆Reference

- The operations in [I], [II] and [III] in the sensitivity curve graph display screen are mutually connected. If you make a change to one of them, the result is reflected in all of them.
- A rough summary of the dynamic range and clipping point settings is given below.
  - 1) Dynamic range: Range of the number of exposure steps that can be reproduced on the digital camera being used, from the shadow areas to the highlight areas. Set the highest value in Dynamic range (+) and set the darkest shadow value in Dynamic range (-).
  - 2) Clipping point : Area where the contrast between light and dark in an image is clear with respect to the changes in EV values. Set the two end points in the area on the sensitivity curve graph where the slope of the curve is linear (straight line). Note that the change between light and dark in the image (contrast) between the dynamic range and the clipping point is more gradual with respect to the changes in EV values.
- If you need to consider standards for printing, you can set the level values that can be rendered during printing in the clipping points, and set the dynamic ranges outside of clipping points.
- It is easier to use the triangle cursors (4) to set the level values at the clipping points and dynamic ranges based on the characteristic curve graph.
- If the clipping points and dynamic ranges are decided in advance, it is convenient to set by entering numbers directly

## 7. Add ISO/Light Source

You can click the **Add ISO/Light Source** button to add the data of different ISOs and light sources to the camera exposure profile currently being created in order to increase the accuracy of the profile.

To add the data, click the **Add ISO/Light Source** button.

### ◆NOTE!

- When the [Cancel] button is pressed on the way to add profile, the dialog to confirm whether you save or not that profile in case the profile to be added is not saved.

### ◆Reference

- In **Advanced Mode**, profiles created with only one ISO and light source are also all reflected in the other ISOs and light sources. By using **Add ISO/Light Source**, you turn the profile created from the test image into actual measured values, and profiles with ISOs in between are automatically calculated, which increases the accuracy.
- When you select **Add ISO/Light Source**, you are repeating the operations from “2. Select Light Source” to enter the data.
- While you are adding a profile, the ISO displayed in blue characters in the pull-down menu displayed in the “3.Measured Value” screen indicates that exposure profile data already exists. (In the Windows version, a red checkmark is placed Next to the ISO.)

## 8. Save

To save the camera exposure profile you created, click the **Save** button.

Next, the file name input dialog is displayed. Enter the file name and click the OK button. After the profile is saved, the screen returns to the Exposure Profile Tab screen.



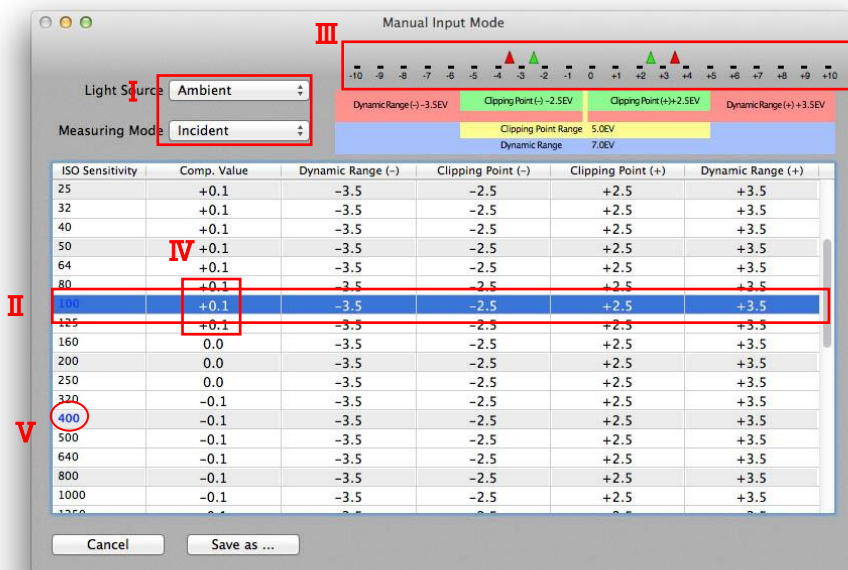
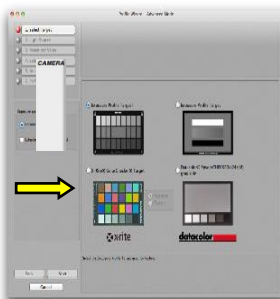
### ◆NOTE!

- Only single-byte alphanumeric characters are valid for use in camera exposure profile names. You can enter up to 31 characters for the file name.

### 3) Manual Mode

Click the **Create New Profile** button in the **Exposure Profile Tab**.

The **Profile Mode Selection Screen** will be displayed, so click the **Manual Mode** button.



1. In the area highlighted by [I], select type of light source and measuring system.
2. In the area highlighted by [II], select the sensitivity specific data related to the ISO sensitivity you want to change.
3. The following are the two methods for inputting numeric values.
  - (a) Input using light range scale [III]

If you click the mouse on the triangle cursors, you can drag and drop them to change the exposure range. Move the red triangle cursors to change the dynamic range and move the green triangle cursors to change the cropping range. The positions of the triangle cursors are integrated with each of the numeric values of the dynamic range and cropping range.

(b) Direct input of numeric values **[IV]**

Place the mouse at a location to be changed, and double click to enable direct value input.

4. To change sensitivity specific data for other ISO sensitivity, repeat items 2 and
5. Once a sensitivity specific data line has been changed, the ISO sensitivity will turn blue **[V]**. (With the Windows version, a red check mark is added in front of the ISO sensitivity.) If you double click the ISO sensitivity or the red check mark, the changed settings will be deleted, and the settings will return to the default ones.
6. Click the **Save** button to save the created camera exposure profile. Next, the file name input dialog is displayed. Enter the file name and click the **OK** button. After the profile is saved, the screen returns to the Exposure Profile Tab screen.

◆ **NOTE!**

- Only single-byte alphanumeric characters are valid for use in camera exposure profile names. You can enter up to 31 characters for the file name.

## b) View Profile Data/Print

Allows you to check and print the camera exposure profile data you created. You can view and print camera exposure profiles using one of the following two View/Print modes.

### ◆ Single profile

Allows you to display a data table and a graph for a single camera exposure profile to view or print.

### ◆ Multiple profiles

Allows you to display sensitivity curves for multiple camera exposure profiles in the same graph to view or print.

You can also display sensitivity curves for each ISO in a single camera exposure profile in the same graph to view or print.

## (1) Single Profile

Click the **View Profile Data/Print** button in the **Exposure Profile Tab**.

The Select Profile screen is displayed. Click the **Single Profile** button.

In "Single Profile" there are "Data Table" and "Graph" screens. **[I]**

### ◆ Data Table

Allows you to check a list of the data to be transferred to the light meter.

### ◆ Graph

Allows you to visually check a camera exposure profile using a sensitivity curve graph.

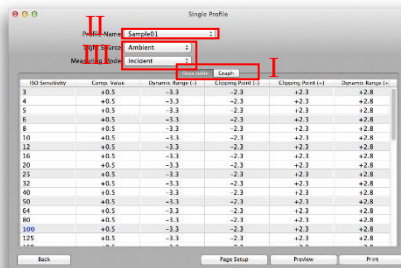


## 1. Data Table display

Select the profile you want to view in Profile Name.

Select the camera exposure profile from the **[II]** Profile Name pull-down menu.

Then make selections in **[III]** Light Source, Measuring Mode.



## ◆Reference

- The ISOs in blue in the “Data Table” and “Graph” screens are actual measurements calculated from the test image data.  
(In the Windows version, a red checkmark is placed next to the ISO.)  
The ISOs in black are calculated values obtained through simulation.

## Print Function :

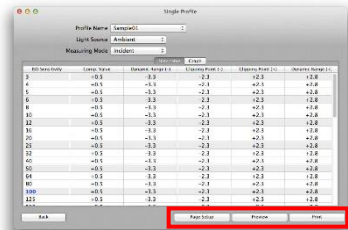
To print, click the **Print** button.

To continue, follow the instructions for your printer.

Click the **Page Setup** button to make print settings. (Macintosh only)

To continue, follow the instructions for your printer to make the settings.

Click the **Preview** button to preview the print. (Macintosh only)

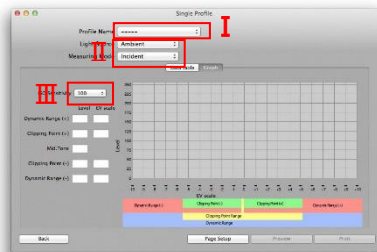


## 2. Graph display

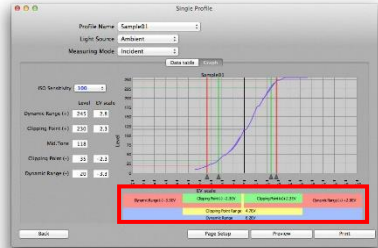
Select the profile you want to view in “Profile Name” [I].

Select the camera exposure profile from the **Profile Name** pull-down menu.

Then make selections in [II] **Light Source**, **Measuring Mode** and **ISO sensitivity** [III].



The widths of the dynamic range and the clipping point in the camera exposure profile are indicated by the number of exposure steps (EV scale) at the bottom of the graph.



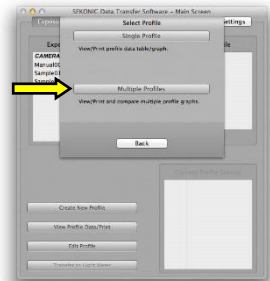
## ◆ Reference

- The graph of the measured values obtained from the exposure data is displayed in solid lines, and the graph of the calculated values obtained through simulation is displayed in dotted lines. The simulation calculates the difference in EV between two ISOs with actual measurements when a difference in EV in the dynamic range and clipping point occurs between two ISOs so that the change is uniform.
- Because the Manual Input Mode includes only the minimum and maximum dynamic range points, the system has no data to create a sensitivity characteristic curve. Therefore, no Graph will be produced from the data.

## (2) Multiple Profiles

Click the **View Profile Data / Print** button in the **Exposure Profile Tab**.

The **Select Profile** screen is displayed. Click the **Multiple Profiles** button.



In Multiple Profiles there are **[I]Camera Comp** and **ISO Comp** screens.

### ◆ Camera Comparison

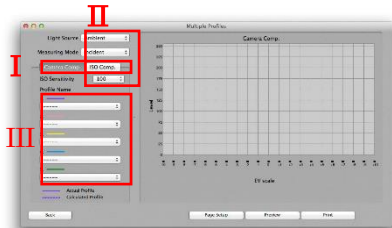
Allows you to display and compare the sensitivity curves from multiple camera exposure profiles in the same graph.

### ◆ ISOs Comparison

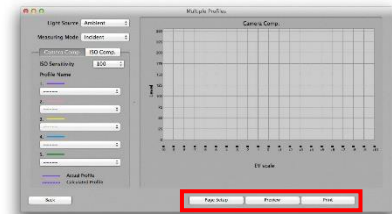
Allows you to display and compare the sensitivity curves for each ISO in a single camera exposure profile in the same graph.



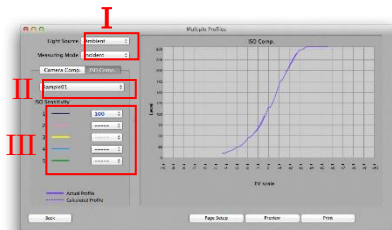
1. Camera Comparison display  
Make selections in the **[II] Light Source, Measuring Mode and ISO sensitivity.** pull-down menus.  
Then select the camera exposure profiles you want to compare in the **[III] Profile Name** pull-down menu.  
You can compare up to five camera exposure profiles.



For Print Function, see page 70.



2. ISOs Comparison display  
Select the comparison conditions from the **Light Source** and **Measuring Mode** pull-down menus.  
Next, select the camera exposure profile for which you want to compare ISOs in the **Profile Name** pull-down menu.  
Then select the ISOs you want to compare in the “ISO” pull-down menu.  
You can display up to five ISOs at the same time.



- Select the comparison conditions from the **Light Source** and **Measuring Mode** **[I]** pull-down menus.  
Next, select the camera exposure profile for which you want to compare ISOs in the **Profile Name** **[II]** pull-down menu.  
Then select the ISOs you want to compare in the **ISO** **[III]** pull-down menu.  
You can display up to five ISOs at the same time.

### c) Edit Profile

Allows you to edit a camera exposure profile.

You can edit a camera exposure profile using one of the following two modes.

#### ◆ Change Exposure Range

Allows you to change the clipping point (+/-) and the dynamic range (+/-) for the camera exposure profile you created.

#### ◆ Add ISO/Light Source

Allows you to add shoot data of other light sources and ISO sensitivities to the camera exposure profile you already created to increase the accuracy of your camera exposure profile.

#### ◆ Add Profile (Manual Mode)

Allows you to add shoot data of other light sources and ISO sensitivities to the camera exposure profiles created in manual mode.

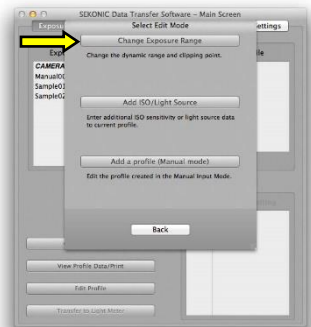
### (1) Change Exposure Range

Allows you to change the clipping point and dynamic range settings while viewing the sensitivity curve graph.

Click the **Edit Profile** button in the **Exposure Profile Tab**.

The **Select Edit Mode** screen is displayed.

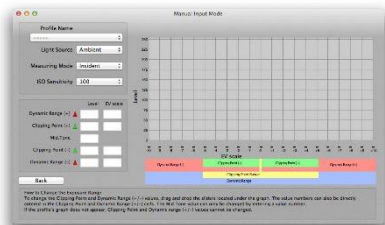
Click the **Change Exposure Range** button.



#### 1. Select the camera exposure profile.

Select the camera exposure profile whose exposure range you want to change in the **Profile Name** pull-down menu.

Then make selections in **Light Source**, **Measuring Mode** and **ISO sensitivity**.



## ◆NOTE!

- The exposure range changes are made to the actual measurements, so only the actual measurement graph is displayed. The ISOs in blue are actual measurements analyzed from the test images. (In the Windows version, a red checkmark is placed next to the ISO.)
- The camera exposure profiles created in accordance with normal shoot data are the profiles accommodated by “Change Exposure Range”. To change profiles created in Manual Mode, use “Add Profile (Manual Mode)”.

## 2. Change the exposure range

The sensitivity curve graph for the camera exposure profile is displayed.

In [I], the preset level value (0 to 255) under the 8-bit is displayed. If you directly enter the level value from the keyboard, you can change the exposure range.

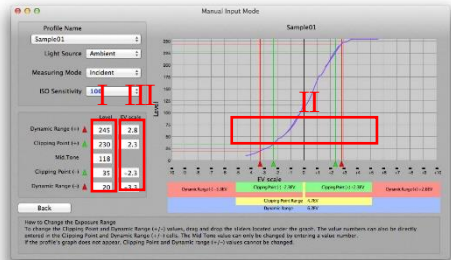
The triangle cursors in the sensitivity curve graph (clipping point +/- and dynamic range +/-) move in response to the level value you enter, and the EV scale value changes as well.

If you click the mouse on the triangle cursors (clipping point +/- and dynamic range +/-) in the area of [II], you can drag and drop them to change the exposure range.

The level value and the EV scale change according to the new positions of the triangle cursors.

In the area of [III], the difference in the number of exposure steps (EV scale) from the Middle Tone is displayed. You can change the exposure range by directly entering the difference in the number of steps from the keyboard.

The level value as well as the triangle cursors on the sensitivity curve graph move according to the difference in the number of steps that is entered.



## ◆NOTE!

- The size relationship between the five points is in order from dynamic range (-) ≤ clipping point (-) ≤ Middle Tone ≤ clipping point (+) ≤ dynamic range (+), so the level value input or the cursor movement cannot deviate from this order.



### (3) Add Profile (Manual Mode)

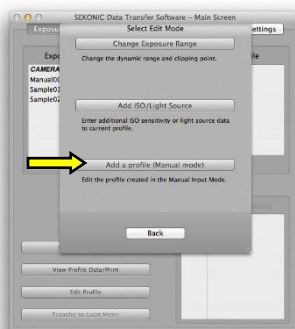
Click the **Edit Profile** button in the **Exposure Profile Tab**.

The **Select Edit Mode** screen will appear, so click the **Add Profile (Manual Mode)** button to select.

#### 1. Select Camera Exposure Profile

The **Select Profile** screen will be displayed, so select the camera exposure profile you want to add and click the **OK** button.

The operations from here on are the same as creating a new profile in **Manual Mode** (See page 67).



#### ◆NOTE!

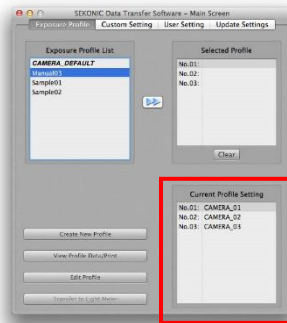
- The camera exposure profiles created using Manual Mode are the profiles accommodated by Add Profile (Manual Mode). This mode cannot be used to add profiles to work already created using normal shoot data.

## d) Transfer to Light meter

Transfer the camera exposure profile you created to the light meter.

### 1. Current Profiles Setting.

The **Selected Profile** becomes active, and the camera exposure profiles set in the light meter are displayed in **Current Profiles Setting**.



### 2. Select the camera exposure profile.

Click the camera exposure profile you want to set in the light meter in “Camera Exposure Profile List” in the **Main screen** to select it.

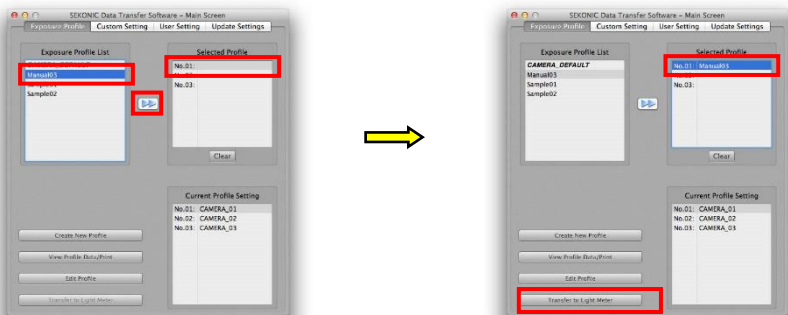
(The selected camera exposure profile is highlighted in blue.)

Click the line numbers you want to set from within the selected profile.

(The selected line background color will become inverted.)

Click the  button and set the selected camera exposure profile in the **selected profile**.

The **Transfer to Light meter** button becomes active.



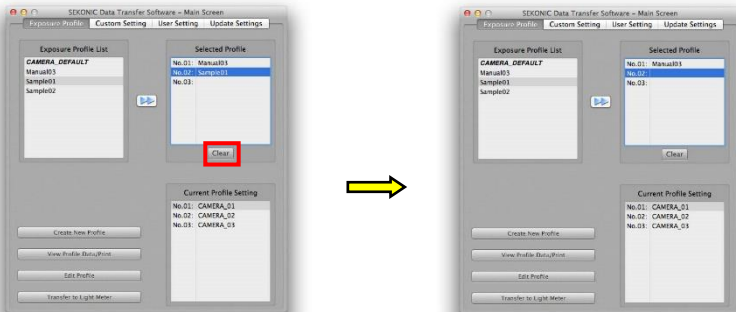
### ◆ Reference

- You can drop and drag the camera exposure profiles that you want to set in the light meter from within the **Camera Exposure Profile List** to the **selected profile**. You can move the profiles by using the mouse to drag in the **selected profiles**.
- The forward setting for camera exposure profiles does not have to be set for all **selected profiles**. Therefore, when you want to change No. 1 for the light meter, just set the camera exposure profile for No. 1, and transfer the data, leaving the other columns empty. When columns are empty, the camera exposure profiles saved in the light meter will not be overwritten.
- When transferring your camera exposure profile data, you can also transfer “CAMERA\_DEFAULT” to keep the default setting in your meter.

### 3.Cancel the selected camera exposure profile

If there is no camera exposure profile set, the **selected profile** column will be empty. So, if you want to keep the current profile set in the actual light meter, leave the **selected profile** column empty.

Note that if you set a profile by mistake, you can click the **Clear** button to return to an empty column.



#### 4. Transfer to the light meter.

Click the **Transfer to Light meter** button.

A dialog is displayed, and a message saying “Overwrite the profile data in the light meter?” is displayed. Click the **OK** button to continue transferring the data.

If the data is transferred successfully, a dialog is displayed saying, “Profile transfer completed” to inform you that the transfer is complete. Click the **OK** button to finish.



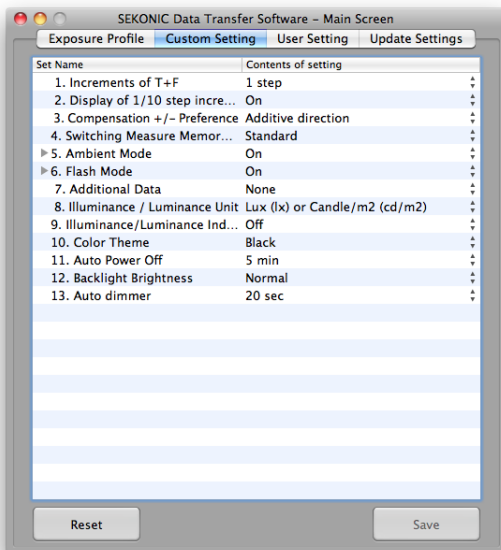


## (4) Custom Setting Tab

You can display the contents of custom setting on the connected light meter, and you can transfer on-screen changes to the light meter.

Displaying and changing the contents of custom setting can be done only when the light meter is connected.

Click the “Contents of setting”, and the pull-down menu appear to select the setting values.



### ◆ Reference

- Click the icon of ► to display the list of “Set Name”.
- For Windows, double click the “Contents of setting” to display the pull-down menu, and then click to select the setting values.

After changing the settings on screen, press the **Save** button to rewrite the settings of the light meter.

### ◆ Reference

- If you press the **Reset** button, all the settings on screen will return to default setting. Then press **Save** button to rewrite the settings of the light meter to default one.

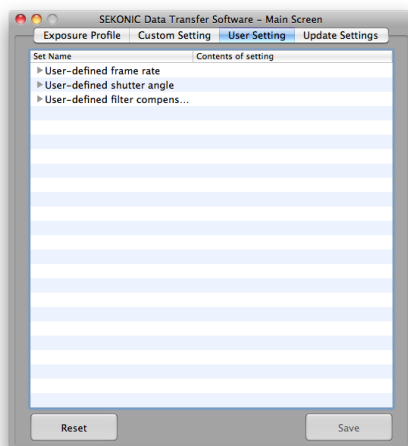
## (5) User Setting Tab (L-858D/L-478 Series)

You can display the user setting values on the connected light meter, and you can transfer on-screen changes to the light meter.

You can display and change the user setting only when the light meter is connected.

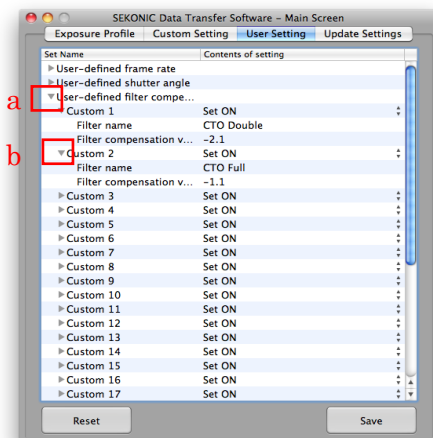
In the L-858D/L-478 Series, the following user settings will be displayed and changed.

- Frame rate
- Shutter angle
- Filter compensation



### <Example of setting “User-defined filter compensation”>

- Click the icon of ► at the “User-defined filter compensation” in Set Name.
- Click the icon of ► at “Custom # (1 to 30)” which you want to change to display the Contents of setting.



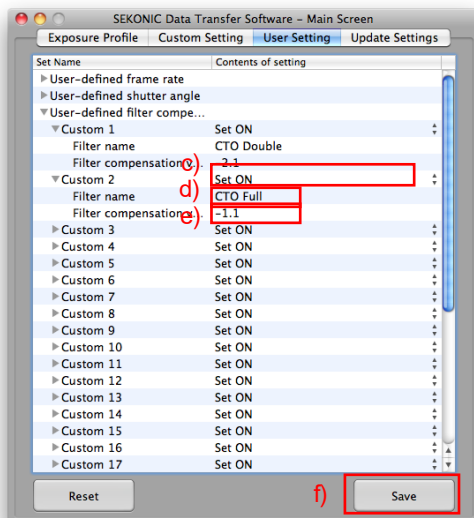
### ◆ Reference

- Custom 1 to 24 have the filter compensation name and value preset by Sekonic. You can overwrite them, or use Custom 25 to 30 for your own setting if you want to keep preset Custom 1 to 24 and add the new name and value.

- c) When clicking “Set ON”, the pull-down menu appears to select ON or OFF whether this user defined setting is displayed in the L-858D/L-478 Series.

#### ◆Reference

- For Windows, double-click the “Contents of setting” and then click to display the pull-down menu of other setting values.



- d) Double-click the Contents of setting for Filter name to input.

#### ◆NOTE!

- Only single-byte alphanumeric characters, space, hyphen (-), and period (.) are valid for names to input. You can enter up to 31 characters.

- e) Double-click the Contents of setting for Filter compensation value to input the compensation amount value.

#### ◆NOTE!

The compensation amount range of the filter differs depending on the firmware of the main body of the light meter. The compensation amount range is as follows.

<b>L-858D</b>	FW version 17 or higher	-20.0EV to +20.0EV
	FW version 15 or less	-12.0EV to +12.0EV
<b>L-478 series</b>		-12.0EV to +12.0EV

- 
- f) After changing the settings on screen, press the **Save** button to rewrite the settings of the light meter.

◆Reference

- If you press the **Reset** button, all the settings on screen will return to default setting. Then press **Save** button to rewrite the settings of the light meter to default one.
- This function could not be used with the L-758 Series.

## (6) Update Settings Tab

### a) Update Settings Screen

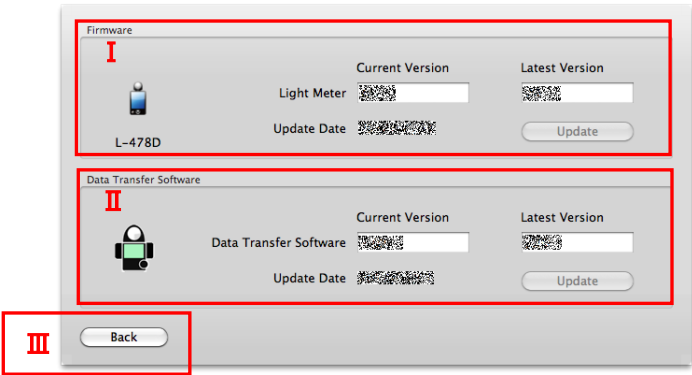
You can update the firmware of light meters and the latest Data Transfer Software.

Press the **Update Check** button.



### b) Update Check Screen

Based on updated information provided by connecting to the Sekonic web site, you can use this screen to check the latest light meter firmware as well as the latest version of *Data Transfer Software*, and download them to update.



### [ I ] Firmware

When a newer version of the firmware for the connected light meter has been released, the **Update** button will become activated and ready to be pressed. Press the **Update** button to start downloading the newer firmware, and when the download is complete, the update will take place automatically.

### [ II ] Data Transfer Software

When a newer version of your Data Transfer Software has been released, the **Update** button will become activated and ready to be pressed. Press the **Update** button to start downloading the newer software, and when the download is complete, the update will take place automatically, followed by a restart of the equipment.

### [ III ] Back Button

Press the **Back** button to close the Update Check screen.

#### ◆NOTE!

- The firmware version for light meter is displayed while light meter is connected with computer.
- In case that it is not impossible to connect with Sekonic website, the version number doesn't appear in "Latest Version".
- The update function can be used when Sekonic's web site ([www.sekonic.co.jp](http://www.sekonic.co.jp)) can be viewed with the internet connection being used with the personal computer running the *Data Transfer Software*.
- If HTTP proxy server settings are required for use of a web browser, be sure to make the same settings in the client proxy setting screen.
- *Data Transfer Software* cannot be used for other operations during the update (from pressing the Update button until update is completed).

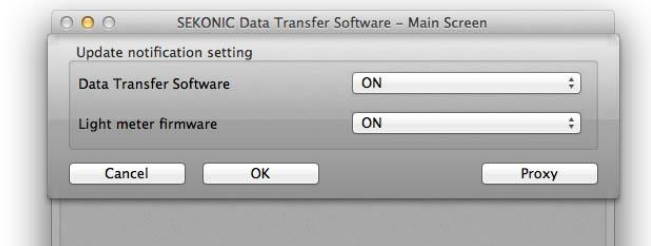
## c) Update Notification Setting Screen

The update notification settings are in Options (O) of the menu bar.

You can select whether the Update Notification Function is activated or not when the Data Transfer Software is launched.

### Update Notification Function:

When the Data Transfer Software Update Notification setting is ON, you will be automatically notified about update information. The Update Check Screen will be displayed automatically when a new version becomes available.



When the **Firmware Update Notification** setting is ON, you will be automatically notified about update information. The **Update Check Screen** will be displayed automatically when a new version becomes available.

Update Check Screen by Update Notification Function is automatically displayed only when Data Transfer Software is launched. When you set it OFF to ON, go to Update Check Screen manually, and press the button of "Update Check".

Function	Setting	Notification Method	Update Method
<i>Data Transfer Software Update Notification</i>	ON	If a new version exists on the website, the “Update Confirmation Screen” will be displayed automatically. This screen will not be displayed if there is no new version.	The user presses the Update button at the <b>Update Check Screen</b> to update.
	OFF	There will be no notifications.	The user manually presses the <b>Update Check</b> button at the <b>Update Setting Screen</b> , to display the display the <b>Update Check Screen</b> , and then presses the <b>Update</b> button to update.
Firmware Update Notification	ON	If a version of the light meter firmware newer than the one on the connected light meter exists on the website, the “Update Confirmation Screen” will be displayed automatically. This screen will not be displayed if there is no new version.	The user presses the Update button at the <b>Update Check Screen</b> to update.
	OFF	There will be no notifications	The user manually presses the <b>Update Check</b> button at the <b>Update Setting Screen</b> , to display the display the <b>Update Check Screen</b> , and then presses the <b>Update</b> button to update.

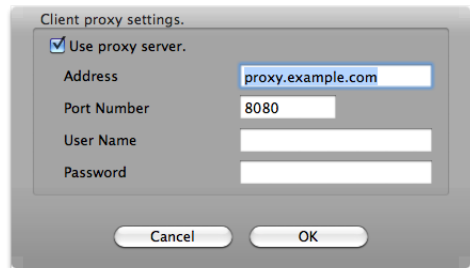
If the **Proxy** button is pressed, the **Client Proxy Setting Screen** will be displayed.



## d) Setting Client Proxy

If HTTP proxy server settings are required in order to be able to use the update notification function, set them at this screen.

If HTTP proxy server settings are required in the web browser settings of the personal computer loaded with the Data Transfer Software, set them in the same way at this screen.



Client proxy settings.

☒ Use proxy server.

Address: proxy.example.com

Port Number: 8080

User Name:

Password:

Cancel OK

### ◆NOTE!

- If you change the settings at this screen, press the OK button in this screen and then also press the OK button in the Update Notification Setting Screen. And restart the *Data Transfer Software*.

- Use HTTP Proxy Server

Check mark this to designate the HTTP proxy server available for the network environment you are using.

- Address

Designate the address of the HTTP proxy server.

- Port

Designate the port number for the HTTP protocol.

\* If user ID is required to access the proxy server, set user name and password as follows.

- User name

Designate user name for HTTP protocol.

- Password

Designate password for HTTP protocol.

## 6. Appendix

### (1) About Exposure

There are two exposure values: a standard exposure value and a proper exposure value. Understanding the meanings of these two exposure values is the key to better photography.

#### a) Standard Exposure Value

Exposure values (EV) are calculated based on illuminance (in the case of an incident light meter), or luminance (in the case of a reflected light meter). The calculation formulas used by these light meters contain constants called "calibration constants," which are the values that produce the differences in EV values. These constants are defined for specific ranges by each manufacturer. These values are what the manufacturers use to set their standard exposure values.

Note that since this explanation is based on the image reproduction, the term "Middle Tone" is used in *Data Transfer Software* (application),.

#### ◆ Reference

The following are the calibration constants used in Sekonic light meters.

Incident Light Meter Calibration Constant: C=340 (Lumisphere)  
C=250 (Lumidisc)

Reflected Light Meter Calibration Constant: K=12.5

#### b) Proper Exposure Value

To obtain the final images they want, skilled photographers often modify the exposure values displayed in light meters based on their instincts and personal preferences. This means that depending on the photographer's intentions, a different exposure value may be used even when shooting the exact same subject. For example, when taking a picture of a forest that has rays of sunlight shining brightly between the trees.

If a photographer wants to highlight the rays of sunlight, he would measure the entire scene and use an exposure lower than the standard exposure to darken the trees, which makes the appearance of the sunbeams more striking. In this case, the proper exposure value is one that produces less exposure.

On the other hand, if the photographer wants to capture the mood inside the forest while still maintaining the image of the rays of sunlight shining through, he might measure the entire scene and use an exposure somewhat higher than the standard exposure. In this case the higher value would be the proper exposure value.

The proper exposure value is the one that produces the image that the photographer is trying to achieve.

## (2) Sensitometry

"Sensitometry" is a term that was created by combining the words "sensitivity" and "measurement".

In the film camera era, a densitometer and other equipment were required to monitor the color temperature and brightness of the light source, exposure time and conditions, developing time, and film image density, equipment that most people did not have.

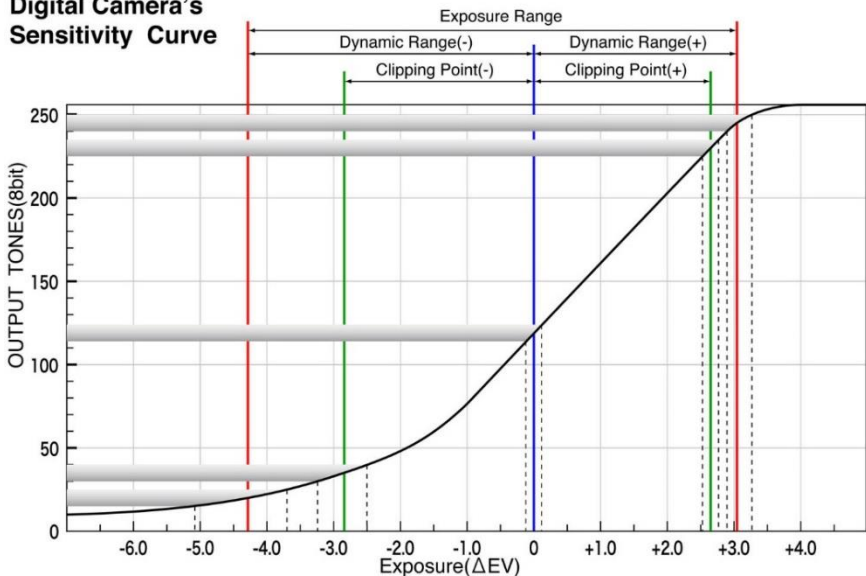
With the dawn of the digital camera age, however, image editing software has created an environment in which just about anyone can measure shooting conditions.

Here we will explain how to use a digital camera with a light meter to obtain good photographs and provide an understanding of some of the thinking behind sensitometry.

### a) Sensitivity Characteristic Curve

This is a graph of the relationship between the amount of exposure (light source brightness + subject reflectivity) and output (digital camera)

**Digital Camera's  
Sensitivity Curve**



The graph above is presented to help explaining sensitivity characteristics. Not all digital camera characteristics are represented in this graph.

In an actual camera, there would be three graphs, one each for R, G, and B. Here we will assume that all three colors have identical characteristics, so we show only one graph.

In this graph, brightness differences are expressed as EV values based on the Middle Tone. The vertical axis of the graph is the output level (8-bit color).

Level 0 is black, while level 255 is white.

This graph shows how brightness differences in the subject will appear as brightness differences on a photograph.

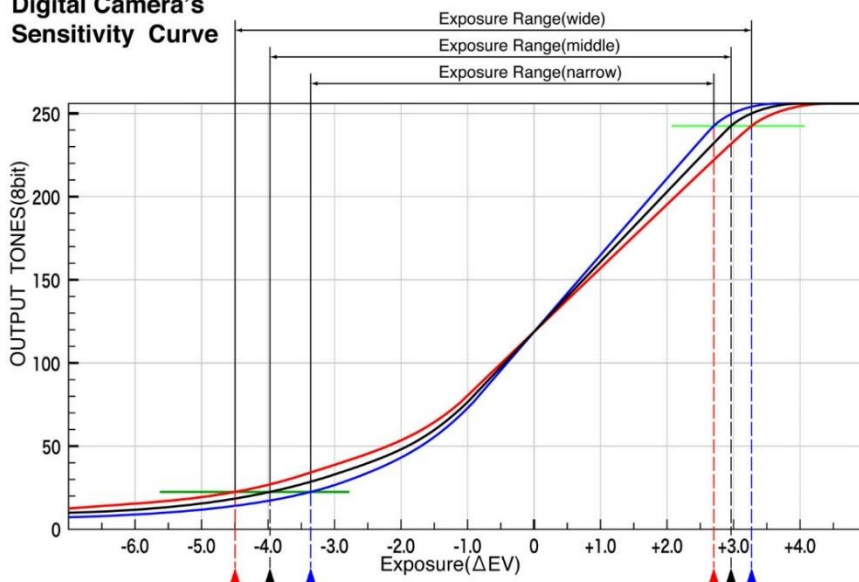
More specifically, by using a light meter to measure the brightness of a subject, it is possible to know how the brightness will appear in the photograph based on the exposure setting of the camera.

For example, after you measure the highlights in a subject, you can determine numerically whether the measured area can be reproduced photographically (without blooming or highlight block up). You also can numerically determine whether the shadows can be reproduced photographically (without pixel noise or grain).

Some digital cameras have highlight and shadow warning functions, but the applied light meter uses an EV scale, which makes it easier to check for blooming highlights or grain shadows using the number of aperture or shutter speed steps.

The graph above is one example to help explaining sensitivity curves.

### Digital Camera's Sensitivity Curve



Digital cameras with red sensitivity curves have the widest exposure range, making them capable of reproducing from -4.5 EV to the Middle Tone on the shadow side and from approximately 3.2 EV from the Middle Tone on the highlight side. (If the dynamic range (-) is 25 and the dynamic range (+) is 240 in *Data Transfer Software*) In addition, if there is a steep curve near the Middle Tone for all of the red, black and blue sensitivity curves, and the camera is capable of capturing data such that the further the curves move away from the Middle Tone, the flatter the curves become. The amount of change in the output level will be the same as the brightness near the Middle Tone, indicating that the camera is capable of reproducing clear contrast between the highlights and the shadows. On the other hand, if the change in output level is less than the change in brightness at a point that is far from the Middle Tone, this indicates that the camera is being made to be more able to reproduce fine detail in the highlight and shadow areas, which is difficult to reproduce, by controlling the density changes for the brightness changes.

The purpose of finding out the characteristic curve of your digital camera is not to find out if the characteristics are good or bad. By understanding the characteristics of your digital camera, you will be able to understand how it will reproduce the brightness of a subject that you measure using a light meter.

If you can shoot with lighting that uses the maximum exposure range of your digital camera, you will be able to take shots that bring out the best characteristics of your camera.

#### ◆ Reference

The Middle Tone, dynamic range (-), clipping point (-), clipping point (+) and dynamic range (+) settings will differ depending on how you think about image reproduction.

At Sekonic, we use the following values as our default standard values. The numbers in parentheses indicate the standard range.

Middle Tone	118 (113~123)
Dynamic Range (-)	20 (15~25)
Clipping Point (-)	35 (30~40)
Clipping Point (+)	230 (225~235)
Dynamic Range (+)	245 (240~250)

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## b) Middle Tone

The standard sensitivity level \*1 of a digital camera is called the "Middle Tone" by Sekonic.

For the standard range, Sekonic uses a setting of 113 to 123. If you feel that there is a difference between the measured data and the setting, you can adjust it to the appropriate value.

From the test exposure data, *Data Transfer Software* finds the level value for the Middle Tone that you set and calculates the difference between the exposure conditions that can be obtained from this Middle Tone value (aperture and shutter speed values) and the measured value from the light meter as the "Compensation Value".

\*1 Standard Sensitivity Level: The sensitivity measurement standard value (118 in 8-bit color), is the Y-value (green) that corresponds to an 18% standard neutral gray subject when the digital maximum output (255 in 8-bit color) in the sRGB color space corresponds to a subject reflectivity of 100%.

## c) Clipping Point

The clipping point means the range where the output level changes the same amount with respect to the changes in photographic exposure. At Sekonic, the range from the Middle Tone in the highlight direction is called the "clipping point (+)", and the range in the shadow direction is called "clipping point (-)". You can set 0 EV to +10 EV for clipping point (+) and -10 EV to 0 EV for clipping point (-). The setting range (level) should be set in accordance with the specifications of the digital camera you are using and what type of images you are trying to achieve. Sekonic uses the ranges of 225 to 235 for clipping point (+) and 30 to 40 for clipping point (-) as a guide. If you feel that there is a difference between the measured data and the setting, you can adjust it to the appropriate value.

\*2 Photographic Exposure: This is the amount of light that reaches the sensor or film after passing through the lens. Put more simply, it is the brightness of the subject.

#### d) Dynamic Range

The dynamic range means the range where the sensor output becomes gradually smaller with respect to changes in the photographic exposure, and is the area where texture and tone can be photographically reproduced. At Sekonic, the range from the Middle Tone in the highlight direction is called the "dynamic range (+)", and the range in the shadow direction is called the "dynamic range (-)". You can set 0 EV to +10 EV for dynamic range (+) and -10EV to 0 EV for dynamic range (-).

The setting range (level) should be set in accordance with the specifications of the digital camera you are using and what type of images you are trying to achieve. The values (especially on the shadow side) will depend on how much plugging up you find acceptable in the shadows and how much blowing out you find acceptable in the highlights.

Sekonic uses the ranges of 240 to 250 for dynamic range (+) and 15 to 25 for dynamic range (-) as a guide. If you feel that there is a difference between the measured data and the setting, you can adjust it to the appropriate value.

#### ◆Reference

If you are shooting with printing in mind, you can make the following types of settings.

Clipping point: Level values that can be rendered in print

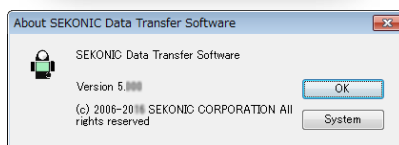
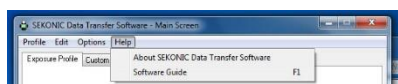
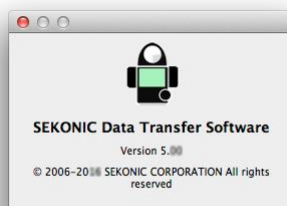
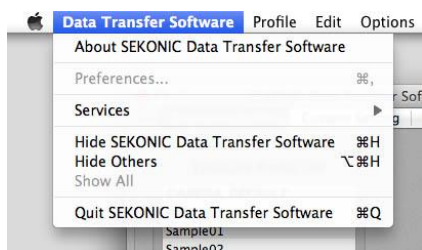
Daynamic range: Dynamic range or clipping point of the image that is photographed

As a result, the brightness of the subject is not measured just by the characteristics of the digital camera sensor when you take the picture, it also considering the dynamic range for printing.

## 7. Troubleshooting

This section provides information about what to do when you encounter some of the most common problems that may occur while using *Data Transfer Software*. Before contacting Sekonic, check the information here to see if you can solve the problem on your own. We recommend that you keep notes of messages that appear on your screen and other details. They will come in handy as you look for information in this troubleshooting guide and if you need to contact Sekonic.

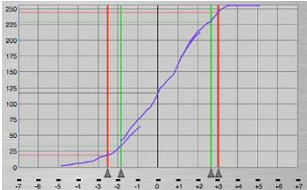
Make sure you first select “About SEKONIC *Data Transfer Software*” in the “*Data Transfer Software*” menu on the Macintosh computer to find out which version you are using. In the Windows version, click on “About SEKONIC Data Transfer Software” in the “Help” menu to check the version of the software.



Problem	Recommended Action
Screen text characters are corrupted.	If you installed the wrong language version of the driver and <i>Data Transfer Software</i> , uninstall them. Next re-install <i>Data Transfer Software</i> for the language version that matches the language of your operating system. (Macintosh: See Page 36.) (Windows: See Page 43.)
Cannot enter a file name.	Enter up to 31 single-byte alphanumeric characters for the file name. Double-byte characters are not supported. (See Page 58.)



Problem	Recommended Action
My computer does not recognize the light meter.	<ol style="list-style-type: none"> <li>1. Use a computer that meets the <i>Data Transfer Software</i> system requirements. (Macintosh: See Page 31.) (Windows: See Page 37.)</li> <li>2. Use the USB data cable for data communication instead of USB cable for charging only. (See Page 44.)</li> <li>3. Check whether or not the light meter is on.</li> <li>4. Complete driver installation. (Macintosh: See Page 32.) (Windows: See Page 38.)</li> </ol>
A file saved on my computer will not open with <i>Data Transfer Software</i> .	<p>Editing a file with software other than <i>Data Transfer Software</i> may make it unreadable by <i>Data Transfer Software</i>. Be sure to use <i>Data Transfer Software</i> to edit files.</p>
<i>Data Transfer Software</i> suddenly shut down.	<ol style="list-style-type: none"> <li>1. When PC operation stops Restart PC. (Data in mid-edit in <i>Data Transfer Software</i> will be lost.)</li> <li>2. For Macintosh (if normal shutdown is not possible) <ol style="list-style-type: none"> <li>(1) Press the PC's Option + Command + Esc keys and force quit the <i>Data Transfer Software</i>.</li> <li>(2) Restart <i>Data Transfer Software</i>. (Data in mid-edit in <i>Data Transfer Software</i> will be lost.)</li> </ol> </li> <li>3. For Windows (if normal shutdown is not possible) <ol style="list-style-type: none"> <li>(1) Press PC's Ctrl + Alt + Delete keys and launch "Task Manager".</li> <li>(2) Select "Application" tab and then select "<i>Data Transfer Software</i>" above "Task".</li> <li>(3) Press "End Task" button.</li> <li>(4) If the "Program not responding..." message appears, press the End Process button.</li> <li>(5) If a message saying that End is selected for non responding program <b><i>Data Transfer Software</i>. . exe...</b>, press "Don't send".</li> <li>(6) Restart the <i>Data Transfer Software</i>. (Data in mid-edit in <i>Data Transfer Software</i> will be lost).</li> </ol> </li> </ol>

Problem	Recommended Action
<p>The <b>Data Transfer Software</b> text display extends out too far.</p> <p>*Windows only</p>	<p>From the Windows Control Panel, display the Display Properties dialog box.</p> <p>Select the "Settings" tab and then click the [Advanced] button.</p> <p>On the "General" tab, select "Normal size (96 DPI)" for "DPI setting".</p> <p>Restart your computer and then restart <i>Data Transfer Software</i>. Note that any data being edited in <i>Data Transfer Software</i> will be lost at this time.)</p>
<p>The graph line shifted.</p> 	<p>The exposure was incorrect when the shot was taken.</p> <ul style="list-style-type: none"> <li>Ambient light</li> </ul> <ol style="list-style-type: none"> <li>If you shoot using a shutter speed that is close to the camera's maximum speed, a difference arises between the published value and the actual value, which may change the amount of exposure and cause the lines on the graph to shift.</li> </ol> <p>Adjust the amount of light (decrease the amount of light) so that the camera shutter speed does not approach its maximum speed.</p> <p>In addition, when you select an image in "Select Test Image", enter the amount of shift in the light output correction value.</p> <p>In the example to the left, the lowest data in the graph is shifting to the right, so enter a correction of about -0.3 EV.</p>

Problem	Recommended Action
<p>While creating the profile, the following message appears.</p> <p>"Calculation failure. Confirm the measured value, selected images, or position of green cross marks."</p>	<p>The result of calculation unable to create the graph of profile. This message appears in case that input value of light meter's measured value, selected images or selected area with cross mark is wrong.</p> <p>Be aware of following points to try to create the profile again.</p> <ol style="list-style-type: none"> <li>(1) The selected target in the screen of "Select Target" is correct (the one used in shooting)</li> <li>(2) The input value of light meter in the screen of "Measured Value" is correct</li> <li>(3) The selected target in the screen of "Select Images" is correct (the one used in shooting)</li> <li>(4) The "Light output correction value" in the screen of "Select Images" is correct</li> <li>(5) Manually input EXIF data in the screen of "Select Images" is correct when the images don't have the EXIF data</li> <li>(6) The green cross marks in the screen of "Analyze Data" are located properly</li> </ol>

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