PhotoBuddy

1.2.1

Users Manual

Settings
Initial Setup

Before you work with PhptoBuddy you need to set it up. All you have to do is selecting the camera you would like to use.

• **Camera**
  Opens a list of available camera modells (sorted by manufactor). If your camera is not in the list you can select a sensor size (movie or still cameras) at the bottom of the list. If the sensor size is not available either, you can manually enter it when you select the *User defined Camera*.
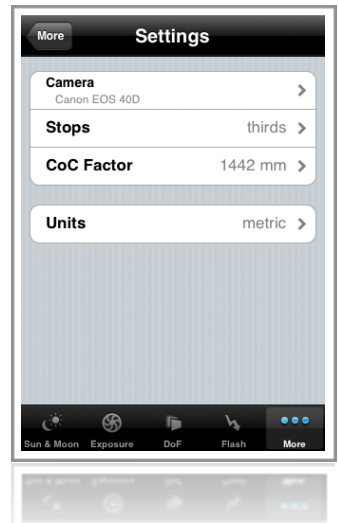
• **Stops**
  Lets you choose between full, half and thrid stops.

• **CoC Factor**
  Allows you to adjust the cameras CoC for large scale (de-)magnifactaions of printouts (See the *Depth of Field* section for more details). Most users can ignore this setting.

• **Units**
  Lets you choose the units PhotoBuddy uses (metric or imperial/english)

Exposure

This module allows you to set up an exposure and adjust the ISO, Shutter Speed or f-Number whille keeping the exposure you initially did set up.

Settings Dial
Allows you to set up/change the exposure parameters

Target Field Selection
The selected value will be calculated when one of the other two values change

Click on the open lock on the right of the *Target Field Selection* to set up the exposure you want to shoot with.

When done select the value you want to calculate. Changing any of the two other fields will recalculate the selected value making sure the exposure remains constant.

The Presets View (select the *Presets* Button on the top right) allows you to set up the exposure for some of the most common lighting situations. It also allows you to set the exposure based on the exposure value (bottom of the list).
Simply tap the item you want to use and the *Settings Dial* will change accordingly.

Depth of Field

The Depth of Field module is seperated in 4 basic sections. You can test some of the calculation results online at http://iphone.ambertation.de/photobuddy/dof.

Camera Settings
Contains all settings you make on your camera.
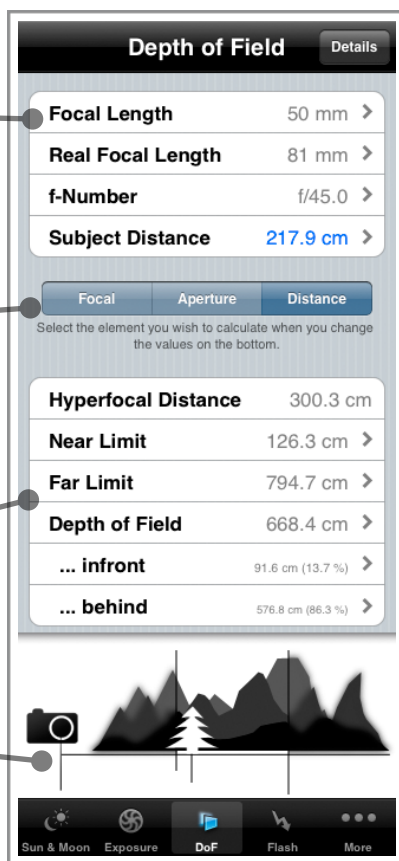
Target Field Selection
The selected target field is relevant for the *interactive graphic* and when you change a value in the *DoF Parameter* section.

DoF Parameters
The Parameters as calculated from the specified camera settings.

Interactive Graphic
Use touch and slide on the graphic to modify the target field.

Depth of Field	Details
Focal Length	50 mm >
Real Focal Length	81 mm >
f-Number	f/45.0 >
Subject Distance	217.9 cm >

Focal	Aperture	Distance

Select the element you wish to calculate when you change the values on the bottom.

Hyperfocal Distance	300.3 cm
Near Limit	126.3 cm >
Far Limit	794.7 cm >
Depth of Field	668.4 cm >
... infront	91.6 cm (13.7 %) >
... behind	576.8 cm (86.3 %) >

Sun & Moon   Exposure   **DoF**   Flash   More

Depth of Field
Camera Settings

- **Focal Length** setting of your lens
  Use the *Real Focal Length* value if the focal length for your lenses is not specified for a full format sensor

- **Real Focal Length** of your lens on your camera
  If the lens you use specifies the focal length for a full format sensor, this is the effective focal length you will get on your camera

- **f-Number** you want to shoot with

- Subject **Distance**
 Denotes the distance between the camera and the point you focused on

Changing any of the above values will immediatelly update the *Depth of Field Parameters* in the lower section of the module. The *Target Field Selection* has no influence on the DoF calculation from the camera parameters.

Depth of Field
DoF Parameters

- ### Hyperfocal Distance
  If you focus on a point that is beyond the hyperfocal distance everything between the hyperfocal distance and infinity will be sharp
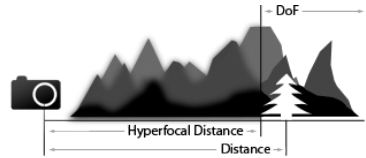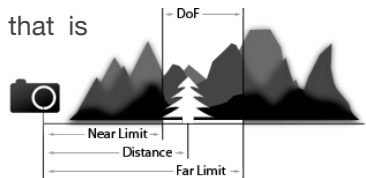

- ### Near Limit
  The point closest to the camera that is brought into an acceptable focus

- ### Far Limit
  The point farthest from the camera that is brought into an acceptable focus

- ### Depth of Field
  The extension of all points that are acceptable sharp in the image

- ### ... infront
  The space infront of the focused subject that is considered sharp (absolute values and percentage)

- ### ... behind
  The space behind of the focused subject considered sharp

Changing any of the above values will immediatelly update the *Camera Settings* in the upper section of the module. The *Target Field Selection* determins which camera setting remains unchanged for this inverse calculation.

The depth of field calculation depends on what is considered sharp in an image. PhotoBuddy is set up to deliver results for

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the most common cases. However if you plan to do large scale printouts of your photographs you may want to change the default settings provided.

## The Circle of Confusion (CoC)

When you select your camera model in the settings module, you automatically choose the correct CoC for your camera. The CoC is derived from the sensor/film size of the camera and is a basic measure for what is considered sharp.

As discussed in the previous section, the default CoC should be fine for most users. But if you need to do large scale prints that are watched from close range you may need to change the CoC as viewers will notice more and more unfocused areas in an image as they reduce the viewing distance.

When PhotoBuddy calculates the CoC from the sensor size, it divides the sensors diagonal by a given CoC-Factor. By default this Factor is set to 1442, which is a good value for regular prints. When you need to do (de-)magnifications without changing the view distance you need to adjust this factor acordingly.

PhotoBuddy offers presets for the CoC-Factor and in addition allows you to specify a custom value or derive the value from various parameters (like the print resolution, magnification scale and view distance).

Go to the Settings module and tap the *CoC Factor* to change this setting.
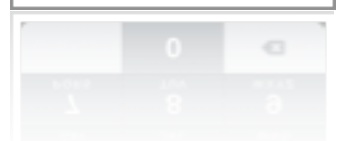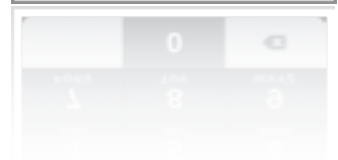
Depth of Field
Interactive Graphic

The graphic on the lower end of the module serves two purposes. Whenever you change anything in the *Camera Settings* or the *DoF Parameters*, the graphic will update to reflect your changes.

You can also tap and slide with your finger on the graphics. This will adjust the camera setting specified by the *Target Field Selection*. Sliding from left to right will increase the selected field, from right to left will decrease it.

The Details View (open it by tapping the *Details* button on the top right) explains what each of the four vertical lines denotes in the graphic.

The Graphic reflects the relative position of the Subject in the focused area of your image as well as a notion of the overall size of the focused range.
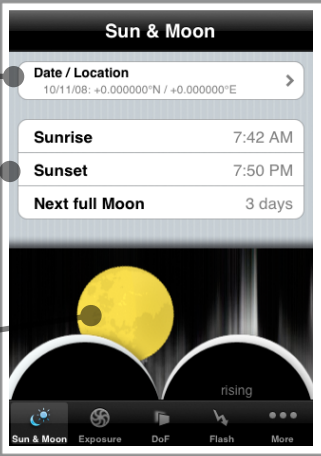
Sun & Moon

In the Sun & Moon module you can check when the sun will rise or set, when the next full moon is and what phase the moon is in. All for a selected date and location

Date/Location Setup
Click this area to set the date and location

Results
The tree rows present the caulculated results for the specified date and location

Moon Phase
The image represents the moon phase for the selected day

The Date/Location Setup lets you specify the current date and your location.

If you use an iPhone you can tap the cross hairs next to the text fields to automatically retive your current location.

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Distance

When you know the dimensions of a given object, you can use this module to calculat the minimal distance to that object to completley capture it on your photograph.

- **Width/Height Switch**
  The button on the top right of the view will switch the width and height parameters for you

- **Object Width/Height**
  The size of the object in reality.

- **Focal Length** setting
  Use the *Real Focal Length* value if the focal length for your lenses is not specified for a full format sensor

- **Real Focal Length** for your camera
  If the lens you use specifies the focal length for a full format sensor, this is the effective focal length you will get on your camera

- **Min. Distance** to assume
  Assume at least this distance to the object to completley capture it on your photograph
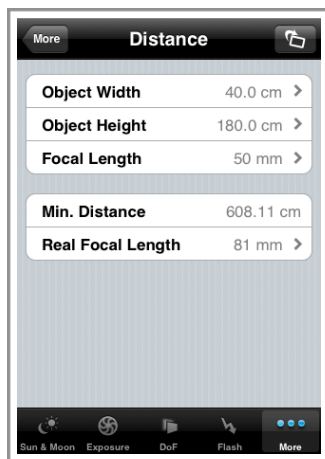
Bulb Timer

The Bulb Timer is convenient if you need to use shutter speeds longer than supported by your camera - up to 14 hours.

Select the exposure time you want to shoot whith. When youstart the exposure on your camera hit the start button of th module.

The time will beginn to tick down.
You will hear a sound for each of the last three seconds that pass.

Stop exposing your photograph when the timer runs out.

Flash

This Module allows you to calculate the distance of an object that a given flash can still bring into light.

Settings
Camera and Flash related settings for the scene

Target Field Selection
The selected value will be calculated when one of the other three values change

- **Guide Number**
  The Guide Number of the flash you use

- **Subject Distance**
  The suggested distance of the object you focus on. Objects at this distance will be exposed correct

- **f-Number**
 The aperture set on your camera

- **ISO**
  The ISO sensivity set on you camera

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Grey Wedge

The Grey Wedge displayed can be used as a reference for color correction.

Please note that this can only serve as a reference. The screen of the iPhone is not color calibrated, so the displayed grey tones are not neutral. However, since they are off by a constant value, you can still use it to color calibrate images.

The *Color Temp.* Button on the top right will open a list of common color temperatures you can manually set on your camera.
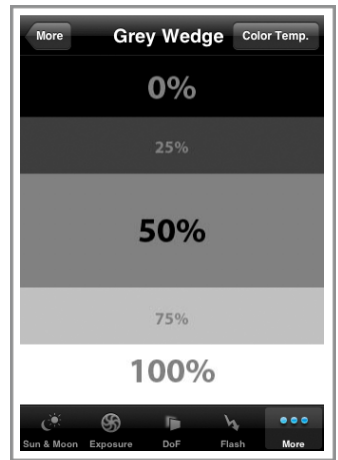
Measure Distances
from Photographs

This feature is only available on 1st generation iPhones.

When you open the value selection for a distance field (like the *Subject Distance* in the DoF module, you will notice a Button with the label *from Photo* on the top right.

Tap it to get to the Measure Screen. If you did not take a photo yet the built in camera view will start allowing you to take one.

When you use the image you took, you will see a screen similar to the one on the right. In order to determin the distance of an object, you need to know either it's height or width.

First you need to mark the object in the photograph. Tap once on one end of the object and a second time on the other end. You will see two circles, a line and a marking the object and a rectangle with the real world length of that line.

If the endpoints are not set correct you can tap on them and move your fingers around to move the end points (The magification image allows you to do a precise selection).

Once you finished tap on the rectangle with the distance value and the blue border. A picker will apear, where you can specify the length of the line you just drew in reality (i.e the objects height). The bar on the bottom of the screen will display the distance to that object.
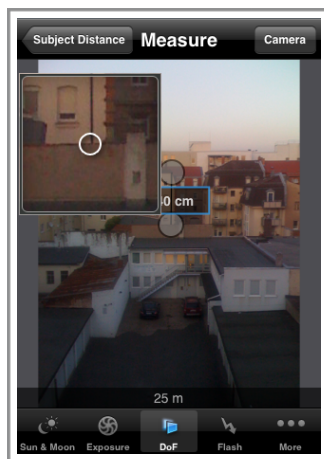
Bellows Compensation

When the bellows is extended for close-up work, an exposure correction factor must be determined and applied. This module allows ou to calculate that factor and apply it to your current settings in the *Exposure Module*.

- **Focal Length** setting
  Use the *Real Focal Length* value if the focal length for your lenses is not specified for a full format sensor

- **Real Focal Length** for your camera
  If the lens you use specifies the focal length for a full format sensor, this is the effective focal length you will get on your camera
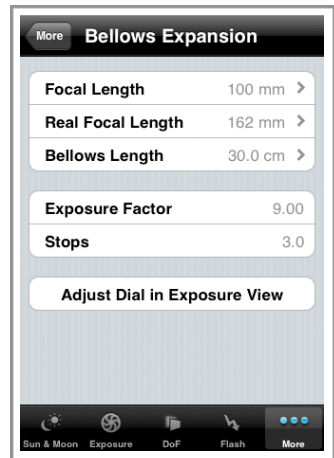
- **Bellows Length**
  Distance from the center of the lens to the film plane.

- **Exposure Factor**
  Multiply your current shutter setting with this value to correct your exposure
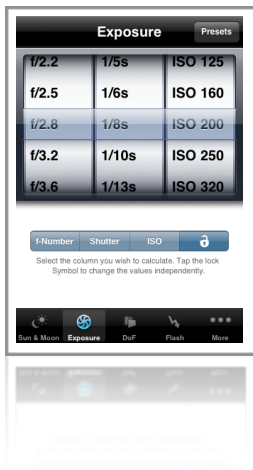
- **Stops**
  Change your f-number the given number of stops to correct your exposure

You can use this module just to calculate the exposure multiplicator or the number of stops. It can also apply the

found multiplicator to your current settings in the *Exposure Module* if you proceed as follows.

1. Open the *Exposure Module*, and set up the exposure you determined with a light meter or by other means.
2. Switch to the *Bellows Compensation Module* and set the *Focal Length* as well as the *Bellows Length*. The *Exposure Factor* and the *Stops* value will change accordingly.
3. When everything is set to your needs, tap the *Adjust Dial in Exposure View* button. PhotoBuddy will bring you back to the *Exposure Module*, multiplies the shutter speed with the calculated *Exposure Factor* and displays the resulting value.

Pleas note that the Shutter Speed may change less stops as displayed in the *Bellows Compsensation* Module due to rounding effects.