



# 8

# PlanIt! for Photographers

ALL-IN-ONE PLANNING APP FOR LANDSCAPE PHOTOGRAPHERS

QUICK USER GUIDES



# Exposure

# Exposure

1

With the auto-exposure (AE) in modern cameras, many photographers started to forget the concepts such as exposure value, exposure triangle, and exposure compensation as they depend on the camera to do it for them. However, knowing the exposure is still key to successful photo shots. The Exposure page will let you experiment the exposure settings beforehand, so that you don't need to fumble with the camera settings while the perfect timing lapses before you.

The exposure value ("EV") represents equivalent combinations of lens aperture and shutter speed that result in the same exposure for given lighting conditions. For a given ISO speed, EV corresponds to a specific light level; by convention, values are given for ISO 100, which is indicated as "EV at ISO 100" or sometimes as "EV<sub>100</sub>". See the Wikipedia article [Exposure value](#) for more information. In PlanIt, "EV" always means "EV<sub>100</sub>".

Choose Exposure Mode      Exposure Value at ISO 100      Exposure Compensation      With or Without an ND Filter



3

2

What does this mean? It means in a scene with an exposure value of 15, if you are using a shutter speed of 1/250, aperture f/8, ISO 100 to take a picture, you will get a picture that is 1 stop over exposed.

You may ask, how do I know the exposure value for the scene is 15? Answer: It is mostly by experience but this app can help.

# Exposure Value



Let's review some typical exposure settings.

1

**The Sunny 16 Rule:** On a sunny day and with a setting of ISO 100, you set the aperture to f/16 and the shutter speed to the reciprocal of the ISO. For example, if the aperture is f/16 and the ISO is 100, then the shutter speed would be 1/100 of a second.

See below. It means the exposure value for the sunny day is 14.6.

 Manual **EV 14.6 (Auto)**  No filter  
 100  f/16 **ISO 100**

2

**The Looney 11, 8, 5.6 Rule:** On a clear day and when the full moon is high in the sky, with an ISO of 100, you set the aperture to f/11 and the shutter speed to the reciprocal of the ISO. For example, for the full Moon, if the aperture is f/11 and the ISO is 100, then the shutter speed would be 1/100 of a second. If the Moon is a gibbous or half Moon, change the aperture to f/8. If a crescent Moon, change the aperture to f/5.6.

 Manual **EV 13.6 (Auto)**  No filter  
 100  f/11 **ISO 100**

3

**The Night Skyline Rule:** For city skyline at night, you set the shutter speed to 30 seconds, aperture to f/8, and ISO to 100.

 Manual **EV 1.1 (Auto)**  No filter  
 Timer  30"  f/8.0 **ISO 100**

4

**The Milky Way Rule:** For a Milky Way photo on a dark night, you set the shutter speed to 30 seconds, aperture to f/2.8 and ISO to 3200. By keeping the same EV, you may reduce the shutter speed to avoid star-trails by increasing the aperture or ISO.

 Manual **EV -6.9 (Auto)**  No filter  
 Timer  30"  f/2.8 **ISO 3200**

# Exposure Values for Some Typical Cases

From the previous page, you get an idea of typical exposure values for certain scenes .

Exposure Value  
at ISO 100

1

 Manual **EV 15.0**  +1 (Auto)  No filter  
 250  f/8.0 **ISO100**

If you tap on the Exposure Value, you will see a list of exposure values and the corresponding scenarios. I highlighted four exposure values used on the previous page.

2

You may want to capture two subjects with different exposure values, e.g., a full Moon at EV 14 and a night skyline at EV 1. The difference is 13 stops. Modern cameras can capture up to 10 to 11 stops, which means there is no way you can capture both in one photo without one over exposed or the other under-exposed. Knowing that beforehand, you will be well prepared to take two photos using different exposure settings.

EV at ISO 100	
19	Subject lit by high intensity xenon arc lamp
18	Subject lit by high pressure mercury vapor lamp
17	White buildings or subjects in bright sunlight
16	Subject in bright sunlight on light sand or snow
15	<u>Bright or strong hazy sun (distinct, sharp shadows)</u>
14	Subject in weak, hazy sun (soft shadows, sun visible through clouds), <u>full moon (as subject)</u>
13	Subject in bright daylight (no shadows, sun makes bright area in clouds), just before sunset
12	Subject in heavy overcast (sun location not visible), subject in open shade
11	Sunsets
10	Skylines immediately after sunset, subjects in deep shade
9	Skylines 10 minutes after sunset, neon lights, stage lighting, spotlighting
8	Brightly lit shop windows, bonfires, floodlit sports, bright fluorescent lighting
7	Brightly lit streets, indoor sports, stage shows, circuses, interior of dense forest
6	Brightly lit domestic interiors at night, computer screens, fairgrounds and amusement parks
5	Domestic interiors at night, subject lit by campfire or bonfire
4	Subjects by candle light, floodlit buildings and structures, subject under bright street lighting
3	Fireworks (open shutter), Christmas lights
2	Lightnings (open shutter), lunar eclipse
1	<u>Distant view of city skyline or floodlit buildings</u>
0	Subject lit by weak artificial light
-1	Subject lit by dim or indirect artificial light
-2	Snowscape lit by full moon
-3	Landscape lit by full moon
-4	Meteors (open shutter), close-up lit by full moon, landscape lit by quarter moon
-5	Landscape lit by crescent moon, starry night sky
-6	Landscape lit by starlight only, aurora borealis and australis
-7	
-8	<u>Center of the milky way</u>
-9	

# ND Filter Calculator

Tap on the Manual or the first button on the Exposure page to choose a different mode.

## Choose an Exposure Mode

**Acquire the exposure value**

**Manual Mode**  
You choose the exposure value.

**ND Calculator**  
Calculate the shutter speed required after using an ND filter

**Scene Mode**  
Calculate the exposure value based on the ambient natural light at the selected time. You only choose the cloud condition or a special subject.

**Incident Light Meter Mode**  
The exposure value is measured by the light sensor of your device. The maximum value will be recorded for the period.

**Reflected Light Meter Mode**  
The exposure value is measured using your phone camera by collecting the reflected light from the scene.

**Picture Mode**  
The exposure value is read from an existing picture as long as the picture has the required EXIF attributes.

CANCEL

1

Manual EV 15.0 +1 (Auto) No filter

250 f/8.0 ISO100

Select the ND Calculator, you will see the calculator below.

2

3

ND Calculator 200 10 stops

Timer 5" (Auto)

Tap the shutter speed on the first row to choose the shutter speed before adding the ND filter. Tap on the filter button to choose an ND filter, the shutter speed on the second row will be the shutter speed with the ND filter you choose.

**ND filter**

No filter

1 stop (ND 2 or ND 0.3)

2 stops (ND 4 or ND 0.6)

3 stops (ND 8 or ND 0.9)

4 stops (ND 16 or ND 1.2)

5 stops (ND 32 or ND 1.5)

6 stops (ND 64 or ND 1.8)

7 stops (ND 128 or ND 2.1)

CANCEL

# Scene Exposure Mode



So far, you may notice that the Exposure page has nothing to with the current time or the map below it. That's right. But if you choose the Scene Mode, the map and the current time will be used. Simply speaking, the Scene Mode provides suggested exposure settings based on the current time and the location and the Sun and the Moon elevation. Note the time of the day and the EV value. The EV value was set by the app when the time changes.

## Acquire the exposure value

### Manual Mode

You choose the exposure value.

### ND Calculator

Calculate the shutter speed required after using a ND filter

### Scene Mode

Calculate the exposure value based on the ambient natural light at the selected time. You only choose the cloud condition or a special subject.

### Incident Light Meter Mode

The exposure value is measured by the light sensor of your device. The maximum value will be recorded for the period.

### Reflected Light Meter Mode

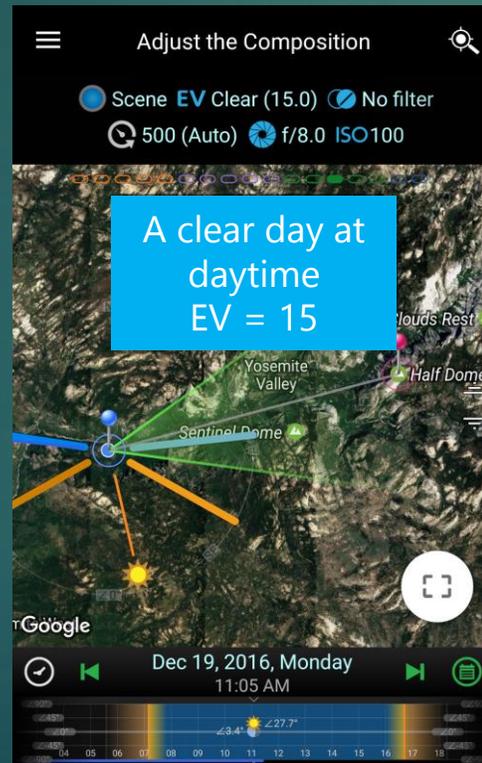
The exposure value is measured using your phone camera by collecting the reflected light from the scene.

### Picture Mode

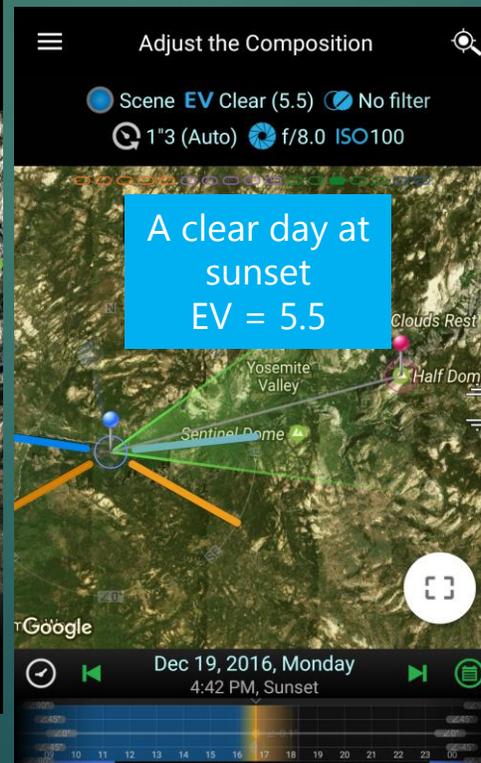
The exposure value is read from an existing picture as long as the picture has the required EXIF attributes.

CANCEL

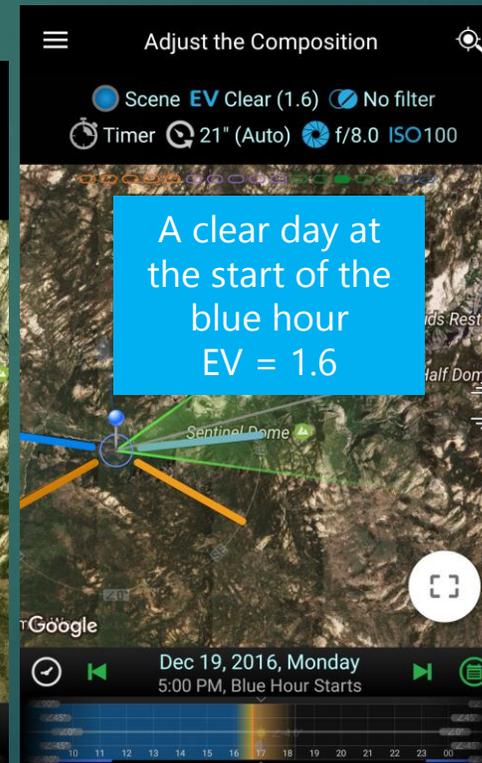
1



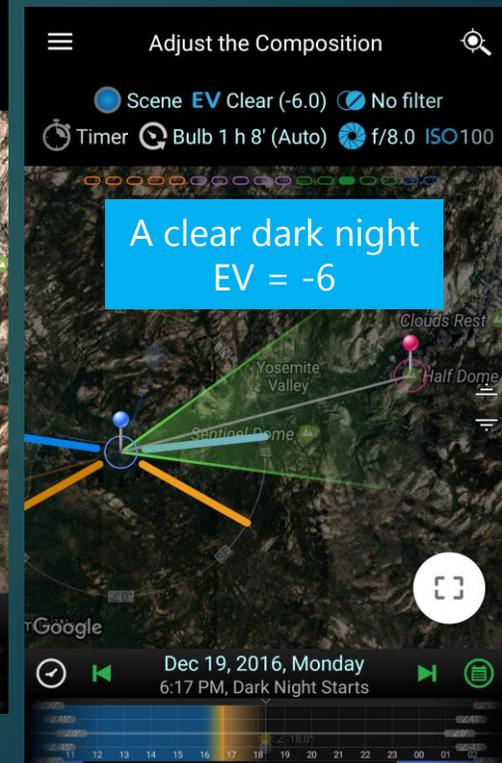
A clear day at daytime  
EV = 15



A clear day at sunset  
EV = 5.5



A clear day at the start of the blue hour  
EV = 1.6

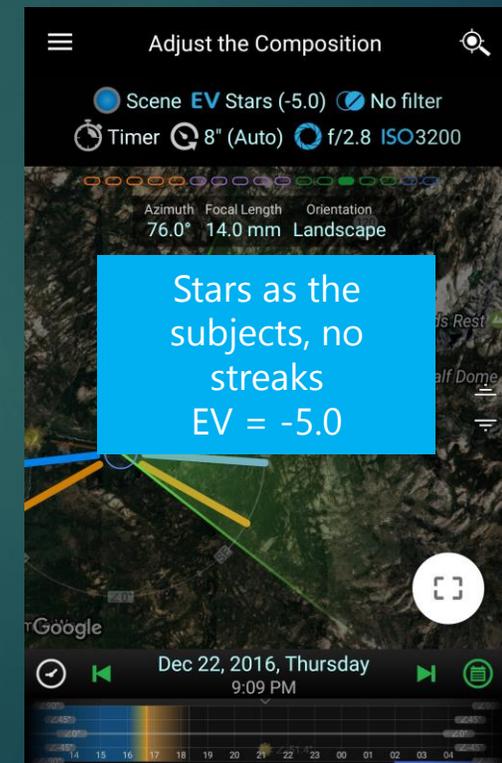
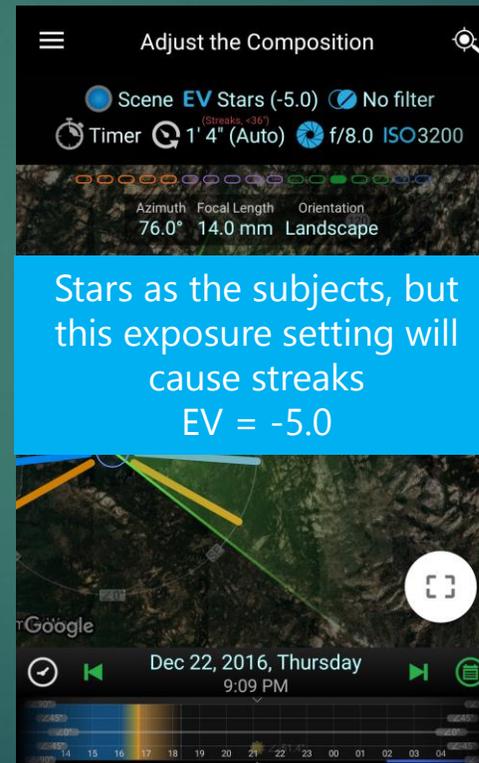
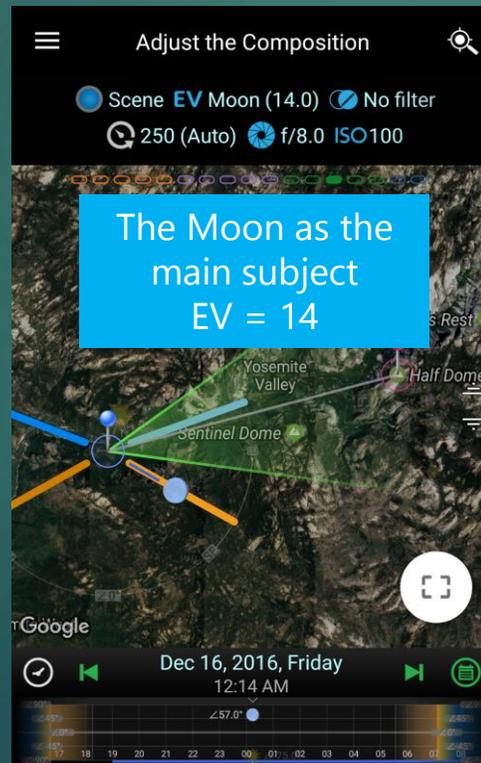
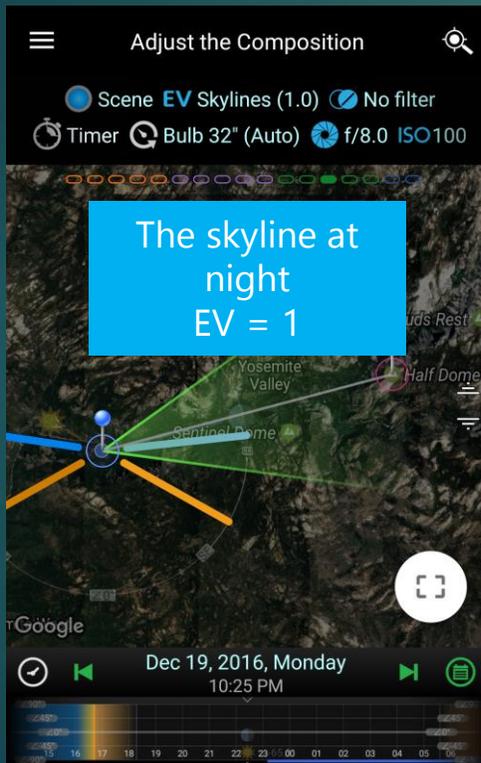


A clear dark night  
EV = -6

# Scene Exposure Mode – Other Subjects



You can also tap on the EV value to select a different weather condition or different subjects. For example, an overcast day would have a different exposure from that of a clear day. The correct exposure for the Moon is certainly different from the exposure for a skyline at night, even though they are at the same time.



# Light Meters



We have a built-in incident and reflective light meter in the Android version of the app but only a reflective light meter in the iOS version (because the iOS doesn't grant us the access to the built-in light sensor).

These light meters are not meant to replace a professional light meter because they can not detect low light very well. Anything below EV 1 is not accurate.

## Acquire the exposure value

### Manual Mode

You choose the exposure value.

### ND Calculator

Calculate the shutter speed required after using an ND filter

### Scene Mode

Calculate the exposure value based on the ambient natural light at the selected time. You only choose the cloud condition or a special subject.

### Incident Light Meter Mode

The exposure value is measured by the light sensor of your device. The maximum value will be recorded for the period.

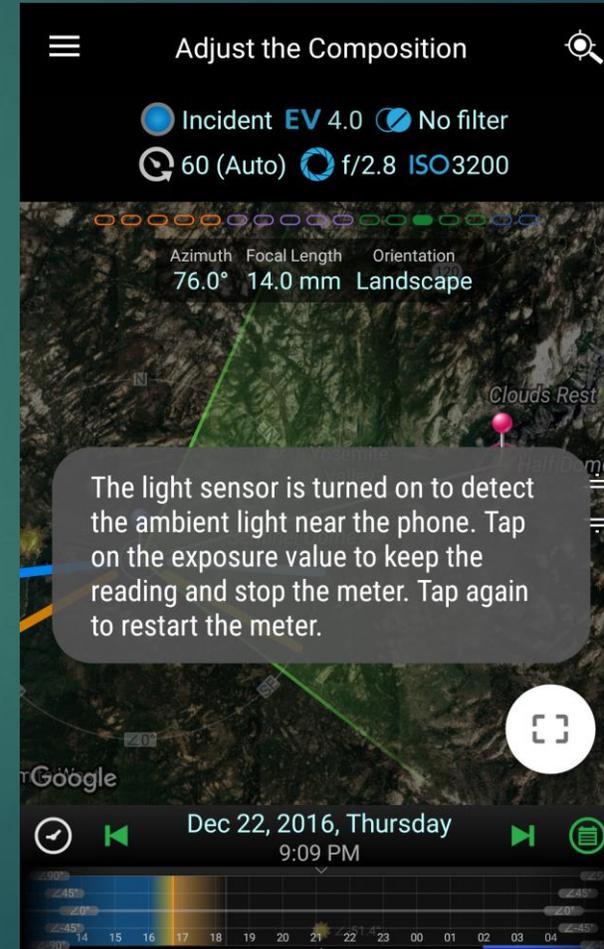
### Reflected Light Meter Mode

The exposure value is measured using your phone camera by collecting the reflected light from the scene.

### Picture Mode

The exposure value is read from an existing picture as long as the picture has the required EXIF attributes.

CANCEL



# Exposure Settings from a Picture

The last mode on the Exposure page is the Picture mode. You can load a picture from your phone and read the exposure settings (part of the EXIF) from it if they are available.

Tap here to load a picture

**Acquire the exposure value**

**Manual Mode**  
You choose the exposure value.

**ND Calculator**  
Calculate the shutter speed required after using an ND filter

**Scene Mode**  
Calculate the exposure value based on the ambient natural light at the selected time. You only choose the cloud condition or a special subject.

**Incident Light Meter Mode**  
The exposure value is measured by the light sensor of your device. The maximum value will be recorded for the period.

**Reflected Light Meter Mode**  
The exposure value is measured using your phone camera by collecting the reflected light from the scene.

**Picture Mode**  
The exposure value is read from an existing picture as long as the picture has the required EXIF attributes.

CANCEL

1

Adjust Composition

Picture EV 4.7 (Auto) No filter

40 f/2.0 ISO626

Azimuth Focal Length Orientation  
76.0° 14.0 mm Landscape

Yosemite Valley Sentinel Dome Half Dome Clouds Rest

Google

Dec 22, 2016, Thursday 9:09 PM

The exposure value is set successfully

2

3

These three values are read from the picture. The EV is calculated automatically.

4

This message means the EXIF is available. If not available, it will show the message here.