

illuminati
INSTRUMENT CORP



**Illuminati Wireless Light and Color Meter
Model IM150**

User Manual

About the IM150

The Illuminati IM150 is the world's first Bluetooth-enabled wireless light and color meter. Use it with your smartphone to get light and color readings for your digital still and/or video camera. The meter measures the correct exposure and color from continuous light sources including LEDs, HMI, the sun, and tungsten, along with strobe. Meter readings are then transmitted to your smartphone via Bluetooth and displayed in the Illuminati App – available for both iPhone and Android.

Then, simply enter the meter readings into your camera to obtain the correct exposure and white balance settings for your scene. Metering your scene will help you maintain accurate, consistent exposure and color balance – the key to a more productive image-making experience both during setup and during post-production.

What's in the Box

- IM150, Illuminati Light and Color Meter
- Offset-T Finger Magnetic Accessory
- Alligator Clip Magnetic Accessory
- Hardshell Case
- Two (2) AAA Batteries

Quick Start

The IM150 QuickStart guide is shown below for your reference. Detailed instructions can be found further in this document.

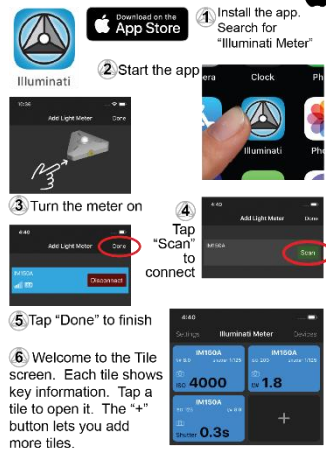


Thank you for purchasing a IM150 light and color meter. Please visit our website to view the user manual, additional information, and instructional videos: www.illuminatiinstruments.com

Installing the batteries and powering on



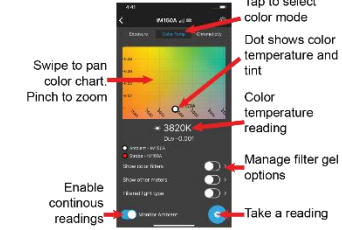
Using with an iPhone



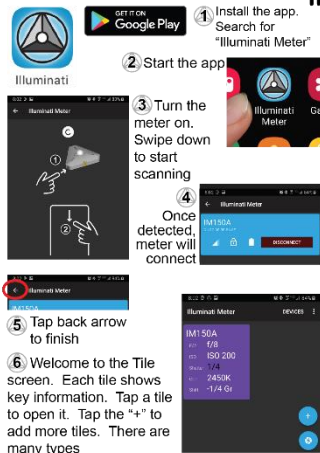
Measuring Exposure



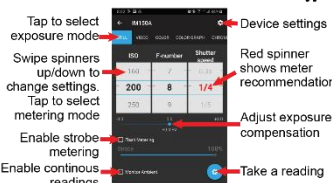
Measuring Color



Using with an Android Phone



Measuring Exposure



Measuring Color



Unbonding the meter from a device

The meter will pair with up to eight devices over Bluetooth. If you experience connection problems or ever need to unbind the meter from a device, use the following procedure:

1. Turn the meter off by holding the power button for 3 seconds.
2. Hold the power button until the LEDs flash purple (About 6 sec)
3. Go to your device's Bluetooth settings and "Forget" (iOS) or "Unpair" (Android) the meter.

Mounting and using accessories



For more product information, please visit our website: www.illuminatiinstruments.com

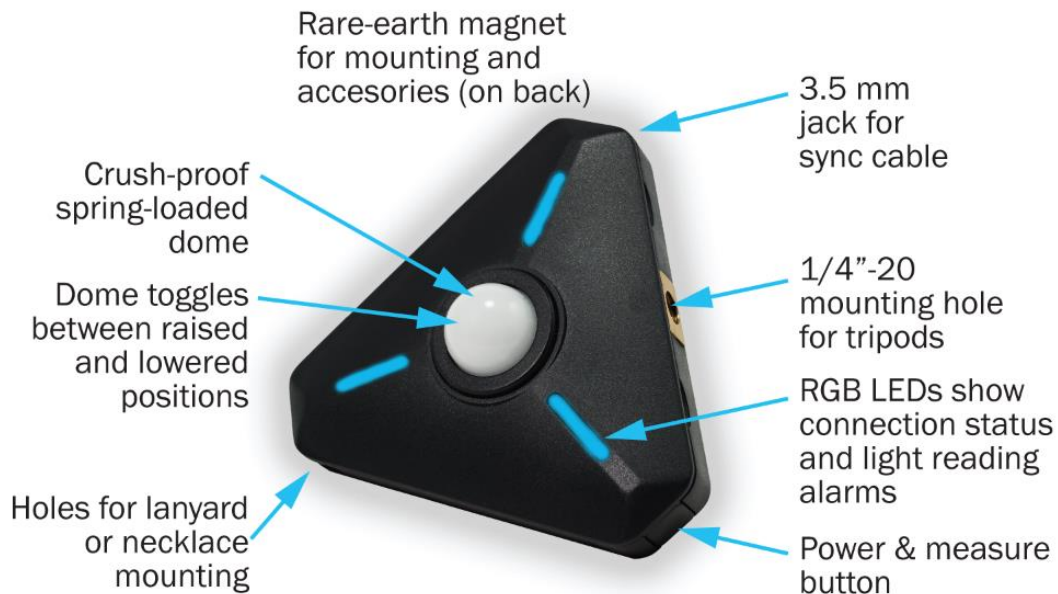
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IM150 Mechanical Features

The IM150 has many thoughtfully-designed physical features to help you with your image-making tasks.

Meter Design

On the meter itself are several important features including the power button, features that help you mount or hold the meter, useful dome position settings, and a jack for synching strobes. The illustration below shows these.



Magnetic Accessories

The powerful rare-earth magnet on the back of the meter can be used to mount the meter to a ferrous metal surface or another magnet.

In addition, the Illuminati Meter comes with two magnetic mounting accessories to help you hold and mount your meter in a variety of situations. The Finger-T magnetic accessory can be used to hold the meter in your hand or it can be used to place your meter on a flat surface, such as a fabric or paper background. The Alligator Clip accessory can be used to attach the meter to fabric.

Getting Started

Install Batteries

Open the case. The case is held closed by two rare-earth magnets. Insert your fingernails into the detents on either side of ¼-20 threaded tripod mounting hole on one edge of the meter, and pull to separate the lid from the body of the meter.



Insert the Batteries. Insert two (2) AAA batteries as shown. Be sure to observe the polarities.



Close the case. The correct orientation of the lid is easy to determine – simply line up the two sets of magnets: one set in the lid and one set in the body of the meter. Position the lid’s hook first, then let the lid close. You will feel a click when the magnets engage.

Download the App

The Illuminati App is available to download to your smartphone for free from these sites online:



Search for “Illuminati Meter”. The app will appear in the search list.



Illuminati

Connect Your IM150

Power On

Turn on the IM150 using the power button on the corner of the meter.

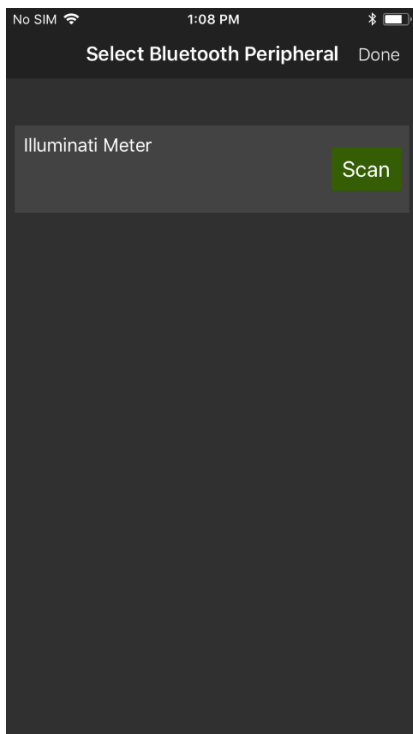
Start the App

Start the Illuminati App on your smartphone. The LEDs will appear blue when the meter is not connected to your phone.

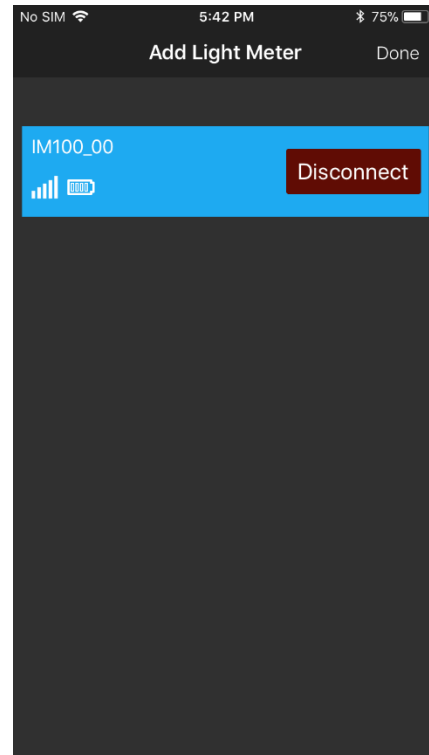
Connect

iPhone: The app will find the meter. Click “Scan”, and the meter will connect to the phone. When connected the meter LEDs will briefly flash green, then stop flashing.

Android: The app finds the meter and connects automatically. You will know this has happened when you see the LEDs briefly flash bright green and then turn off. No need for the step below.



When the meter and the App connect, you will see a blue band with the device’s name on it, as in the illustration below.



Bond

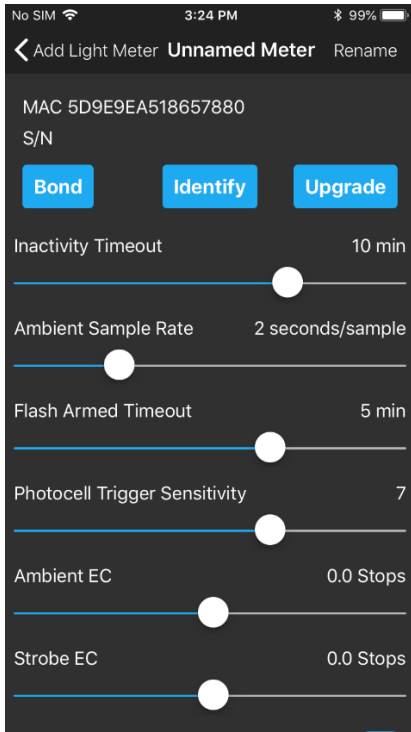
While not necessary, bonding is needed if:

- there are other IM150 meters in the vicinity and you want to ensure connectivity between your own smartphone and your illuminati meter
- you want to rename your meter
- you want to update the meter’s firmware

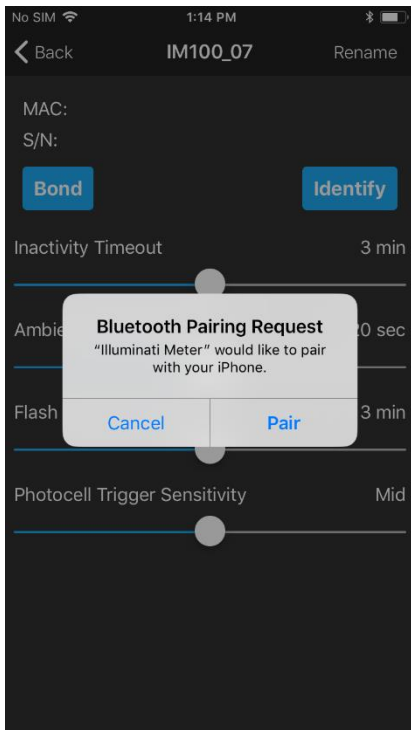
Bonding your meter to your phone ensures that you control its settings. If this is not an issue for you, you may not need to bond your meter. Bonding is required for you to rename your meter (instructions further below).

Press the blue bar with the connected meter on it (don’t click on the “Disconnect” button).

Press the “Bond” button – upper left.

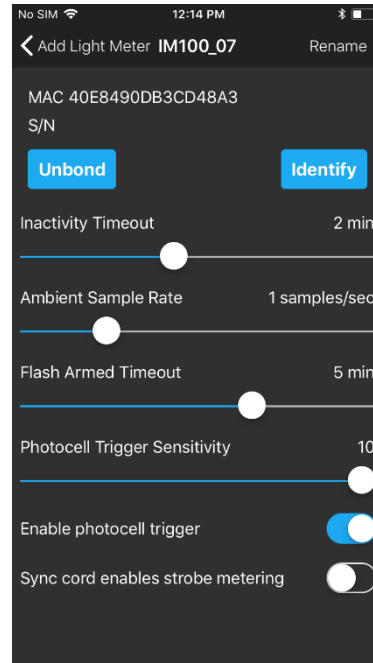


The phone will respond with a Bluetooth pairing request. Select the “Pair” option. The phone and meter will be bonded.



Identify

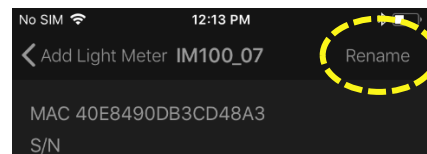
The other button, “Identify” is useful in situations where multiple meters are used, and you want to know which meter is which. Simply press the “Identify” button, and the LEDs will blink magenta. “Click “Stop Identifying” to end the identify more.



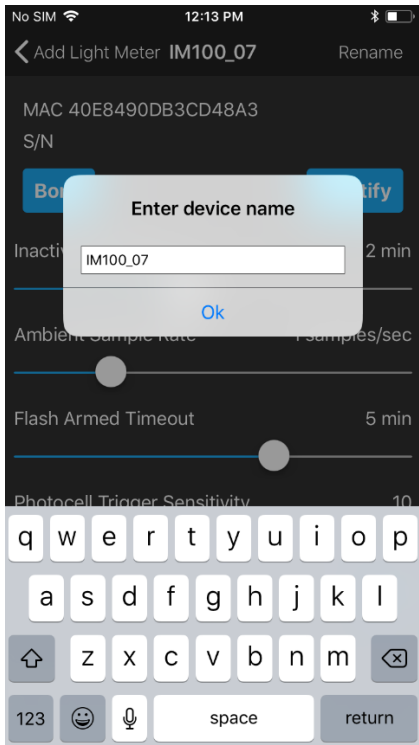
Click the “Back” option in the upper left portion of the screen. In the next screen, click “Done” in the upper-right.

Renaming Your Meter

Once your meter has been bonded to your smartphone, you can rename the meter, if you like.



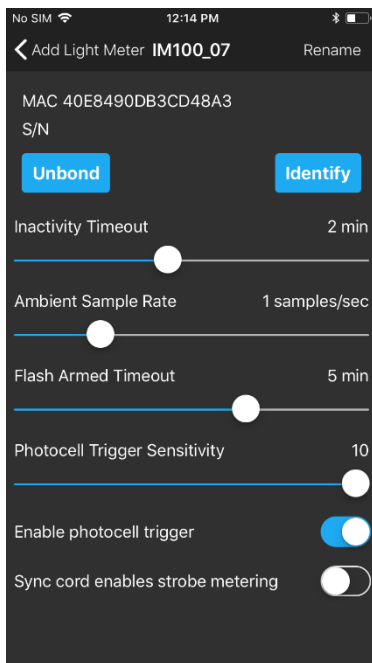
In the upper right corner of the smartphone screen is the “Rename” feature. Click “Rename”, and the pop-up screen for entering the name will appear.



Enter your new meter name and press “Ok”.

Technical Settings

In addition to the bonding, identifying, and renaming functions, there are several other technical settings for your meter. There are four sliders and two buttons for setting various parameters for your meter.



Inactivity Timeout

If the meter is inactive for a period of time, it will automatically power down. The time can be set in the Inactivity Timeout slider. Values can range from 10 sec. to 30 mins.

Ambient Sample Rate

The meter can be set to sample the ambient lighting at a set interval. Values can range from 5 samples/sec (1 sample every 0.2 secs.) to 60 seconds per sample (1 sample per minute).

Flash Armed Timeout

The flash trigger can be armed and waiting for a trigger event. This setting controls the amount of time until the meter exits “Flash Armed” mode. Values can range from 5 secs. To 30 minutes.

Photocell Trigger Sensitivity

This control sets the sensitivity of the flash trigger. Values range from 1 to 10. Set it to a high value if there are few, if any, other light sources in the area. If there are several other light sources in the vicinity that could trigger the cell, a low value will ensure the flash will trigger properly.

Enable photocell trigger

There is a separate photocell in the IM150 that looks for the rapidly increasing light levels produced by a flash. You can choose to turn this photocell off, if you are not using flash lighting.

Sync cord enables strobe metering

There is a sync cord port on one corner of the IM150. Enable this function if you would like to use the sync cord port to fire the strobe. Pressing the power button once, briefly, will fire the strobes.

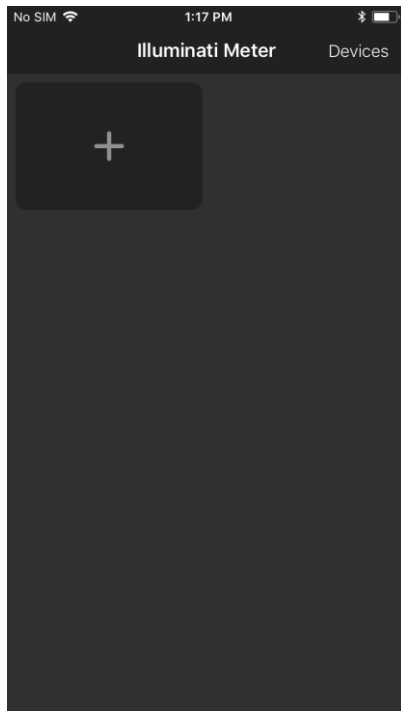
Return to Metering Function

When you are done, press arrow next to the “Add Light Meter” text in the upper left of the screen.

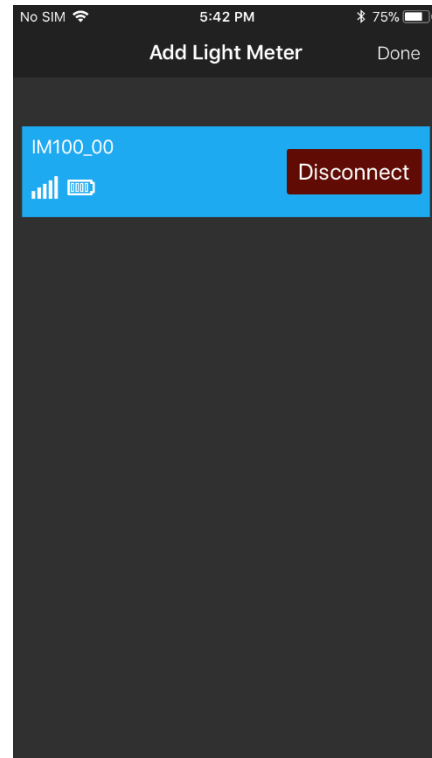
Then, on the next screen, press, “Done” in the upper right of the screen.

Adding Tiles

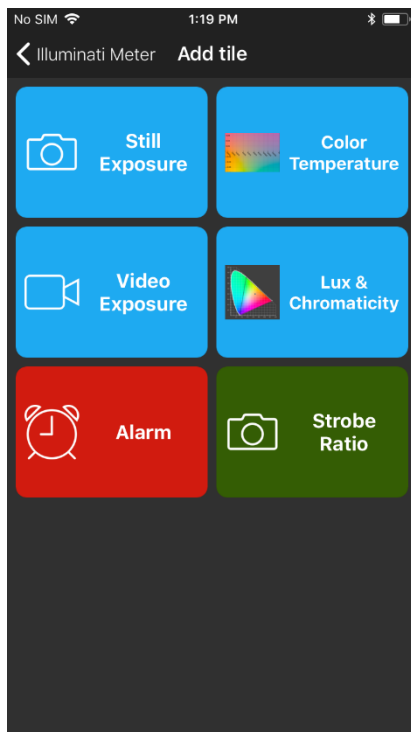
Press the “+” in the upper left of the screen.



Select Still Exposure, for example. You will then select the meter you want to report this information for. The reason for this step is for situations in which multiple meters are used.

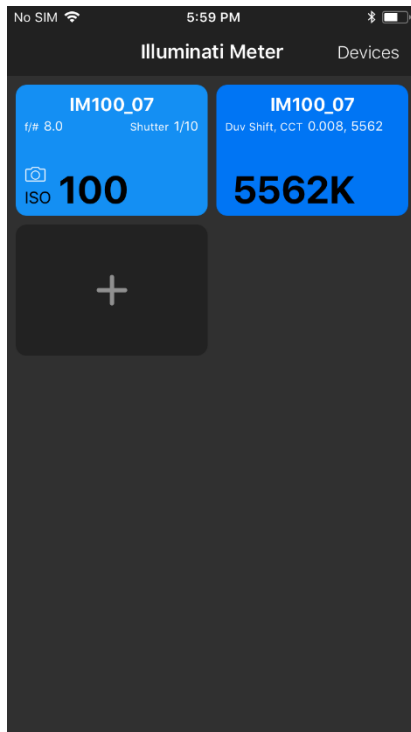


Select the type of metering you want the app to report. Select an option from the screen.

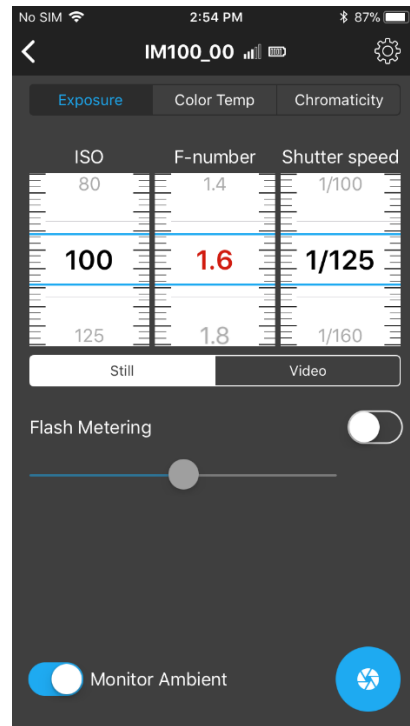


The meter will then take you to the TILE screen where you can see tiles for your meter reading options. You can also create other tiles for the information listed above.

You can see the creation of tiles on the next page.



Example Tiles



You can change ISO, F-number and Shutter speed using the UI. You select which of the values to range by simply clicking on the middle of the roller. Clicking in the middle of the F-number roller in the illustration above, has turned the numbers

Setting Exposure Conditions

If you select the tile with exposure information on it, you will then enter a screen with a TAB marked “Exposure”. This is where you read and set the exposure conditions for your meter. There are two other tabs at the top: Color Temperature and Chromaticity. More about them a bit later.

There is a switch on the Exposure TAB called “Monitor Ambient”. For illustration purposes, select this option. The LEDs on the meter will start flashing yellow-green every second or so and the readings on the meter will update with each LED flash. The sampling interval is set in the Settings screen, accessed by touching the gear icon in the upper right corner of the screen. Look for the settings labeled, “Ambient Sample Rate”. Set the sample to 1 or 2 seconds per sample.

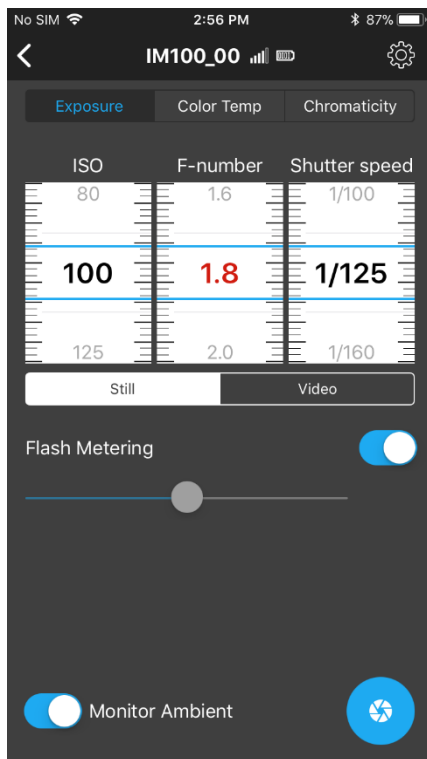


red. As you change the ISO and Shutter speed, the F-number will change.

Flash Metering

The IM150 and App support flash metering either in cord or cordless mode. In cordless mode, a special sensor and circuit in the meter sense when the flash begins to fire and tracks the flash power and duration instantaneously. It also simultaneously tracks the ambient exposure.

To turn flash metering, on, navigate to the EXPOSURE TAB and locate the “Flash Metering” control. Push the slider switch next to “Flash Metering” to the right.



The meter will glow cyan (on and off) indicating that it is waiting for a trigger event - that is, the flash. Press the F-number wheel and those settings will turn red. The red colored numbers indicates the aperture will range as you change the exposure time and ISO.

Set the ISO and Shutter speed to your desired settings. Shutter speed will usually be the flash sync speed for your camera.

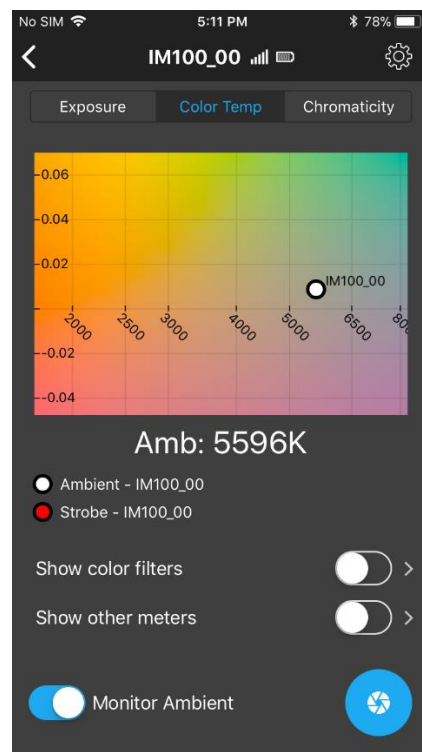
You will see that an aperture is reported, but that is just for the ambient conditions. At the

next step the App and meter will give you the aperture.

Fire the flash. The meter will respond with the correct aperture for your ISO, shutter speed, and flash power.

Viewing the Color Temperature

You can also view the color temperature by clicking on the Color Temp tab. The light source is displayed as a white dot on a color graph.



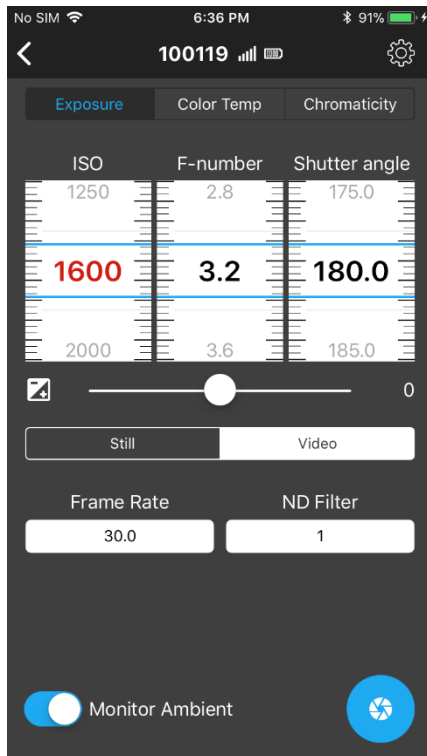
Adding more tiles. See the section above on Adding Tiles. You can have multiple tiles for your meter and also multiple meters showing up on your tile screen.

It is also possible to have two tiles with different exposure settings. One tile could be set to ISO 100, for example, and the other to ISO 1600 – each showing the correct exposure values for that particular condition.

However, flash exposure and ambient monitoring cannot exist in two different tiles simultaneously. The meter supports one or the other. It is, however, possible to add a second meter to monitor another lighting condition. The App supports connecting multiple meters to your smartphone.

Metering Moving Images

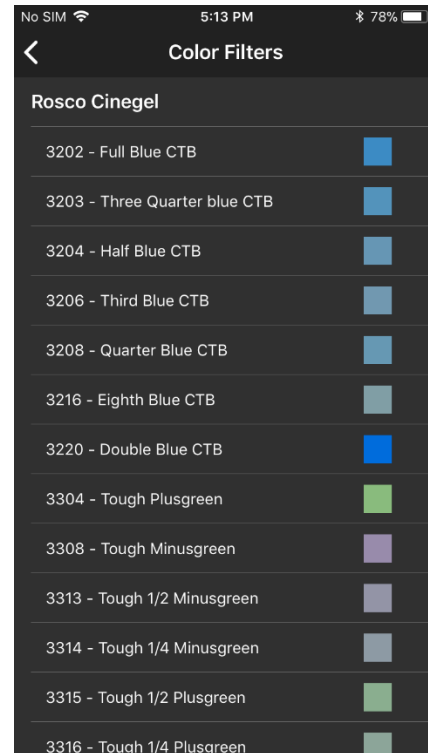
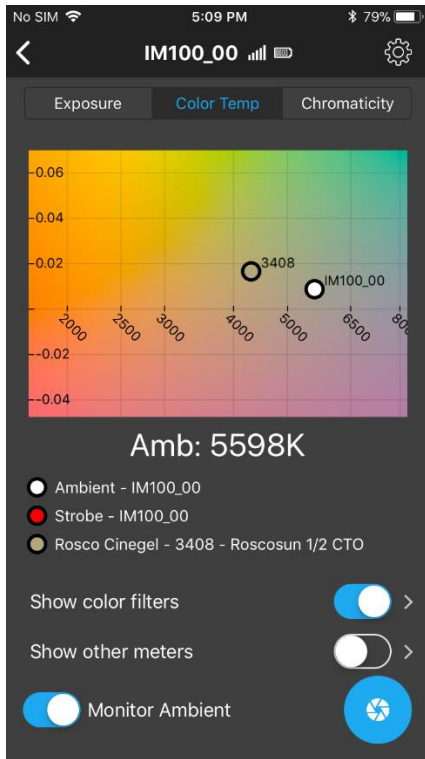
The meter can also be used to determine the exposure in terms that video and cinema cameras use. In the EXPOSURE tab, you can set the meter to Video mode and use Frame Rate, Shutter Angle, and T-stops.



In the appendix, you will see the complete list of settings for Frame Rate and Shutter Angle.

Color Filter Library

The app supports popular color filters from both the Lee and the Rosco filter libraries which can be viewed on the Color Temperature graph.



To show the filters on the graph, locate the “Show color sliders” button, and push it to the right. To select which color filters to show, click on the right-arrow next to the button. You will see a list of supported filters. Select one or more filters to show.

When you have finished making selections, press the left-arrow button at the top left of the screen.

Unbond

Perhaps you are loaning the meter to a friend or troubleshooting a faulty wireless connection. In such cases, it is helpful to unbond the two devices.

Unbond your Meter from your Phone.

Power the meter off by pressing and holding the power button. The LEDs will flash white and then fade indicating power is off. Now, press and hold the power button for 8-10 seconds. At the end of this time, the LEDs will flash

magenta, indicating the previous meter bonding information has been erased.

Unbond your Phone from your Meter

iPhone: Open the iOS Settings app. Select the Bluetooth option and the phone will look for devices. Click on the “i” icon and select “Forget this device”.

Android: Open the Android Settings app and look for connected devices. Find Illuminati Meter in the list. Click on the “gear” icon and select “FORGET”.

LED Colors and Meanings

LED Color	Duration	Meaning
Blue	Blinking, continuous	Power is on. Waiting to connect to your smartphone. Can also mean that you have just lost connection to your smartphone.
Green	Blinking, brief, then stops	The meter just connected to your smartphone.
Yellow-Green	Blinking, continuous	Connected to your smartphone and sending a new reading every time the LEDs flash. You will most often see this when "Monitor Ambient" mode is selected.
Rainbow	Blinking, continuous	You have clicked the Identify button in the App UI. The meter with the LEDs blinking in a rainbow pattern is connected to the app. Useful to identify meters if you have more than one.
Magenta	Blinking	The power button on the meter has been pressed and held for 8-10 seconds to erase the bonding between your meter and your smartphone. or During a firmware update, the meter will blink magenta.
Red	Blinks 3 times while power is on. Will continue to blink red 3 times, at short time intervals.	Battery power is low. Change the batteries.
White	Fades out	Power is turning off. You can turn the power off by pressing the power button for about 1.5 seconds.

Troubleshooting Guide

Symptom	Possible Reason and Remedy
LEDs flash red three (3) times in succession after power on.	This is the low battery warning. Check/replace batteries.
LEDs flash red three times and then flash blue continuously in a rotating pattern.	<p>The app has stopped, or the meter has disconnected from the app. The meter is now looking for a connection.</p> <ol style="list-style-type: none"> 1. Turn the meter off by pressing and holding the power button for 1.5 seconds. The LEDs will flash red then turn white and fade. 2. Stop the app. 3. Restart both the app and the meter.
Meter will not connect.	<ol style="list-style-type: none"> 1. Turn on Location Services (LS). On Android phones this is required. If LS are off, the app won't find the meter. If LS was off, try connecting again. If LS was on and there is still no connection, proceed to step 2. 2. Clear the bonding states in your phone and your meter: <ol style="list-style-type: none"> 2a. Press and hold the meter's power button for 10 seconds – until you see the LEDs start to blink magenta. Then let go of the button. Turn off the meter. 2b. Go to your smartphone Settings, Connected Devices, Bluetooth. Find the Illuminati Meter entry and Forget it. 3. From the settings -> Bluetooth section, turn off Bluetooth. The reason for doing this is to reset the Bluetooth "stack". Give it 10 or 15 seconds and turn Bluetooth back on. 4. Turn on the meter. 5. Start the App. 6. For iOS, you will need to select "Scan" to find the meter. For Android, pull down from the

Specifications

Supported Smartphone Operating Systems	Apple iOS 8.1+ Android 4.3+
Connectivity	Bluetooth 4.0 (BLE)
Exposure Measuring Range	1.0 to 1,000,000 lux (-1 to 18 EV)
Color Temperature Range	1,600 K to 20,000 K
Setting Ranges	ISO: 3 to 409,600 in 1/3 stop incr. Shutter Speed: 1/64,000 to 30 sec. in 1/3 stop incr. Shutter Angle: 1 to 358 Aperture: f/0.5 to f/144 Frame Rate: 1 to 1000, plus Custom Exposure Compensation: +/- 3 stops in 1/3 or 1/10 stop incr.
Metering Modes	Ambient - manual or continuous monitoring Flash with sync cord Cordless flash with pre-flash rejection
Flash Sync Connector	3.5 mm (1/8") jack
Operating Range	Up to 80 ft (24 m). Actual range will vary
Battery Type	Two AAA (UM4) batteries
Dimensions	3.0" W x 2.8" D x 0.9" H (78 x 70 x 22 mm) Dome protrudes an additional 0.3" (8 mm) H
Weight	1.75 oz (49 g) without batteries 2.5 oz (73 g) with batteries



This product is Bluetooth registered.

Regulatory Agency Statements

FCC COMPLIANCE STATEMENT

CAUTION: Changes or modifications not expressly approved could void your authority to use this equipment

This device complies with Part 15 of the FCC Rules. Operation to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

INDUSTRY CANADA STATEMENT

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.