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**datacolor**

datacolor
LCM200 Data
Color Light Color
Meter

# datacolor LCM200 Data Color Light Color Meter User Manual

**Contents**

# datacolor

**datacolor LCM200 Data Color Light Color Meter**

**About the Datacolor LightColor Meter**

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The Datacolor LightColor Meter is an incident meter. This means that it will measure the light falling on the subject or take general ambient measurements. To take a measurement, the LightColor Meter is best used placed near your subject to measure the light where your subject is located. For instance, if you are photographing a person, place the dome of the meter facing away from their face to measure the light.

- The dome on the LightColor Meter has two positions, down and up. Use the dome in the up position to take a measurement from a wider angle. Press the dome down to take a measurement from a narrower angle.
- For instance, if you want to take a measurement of the general ambient light you can use the dome in the up position for the widest area. If you want to measure the light falling on a person, press the dome into the meter.
- The Datacolor LightColor Meter is not a spot meter. A spot meter can be used to measure the light that reflects off a subject. With a spot meter, you will point it where you want to measure and receive a measurement.
- A camera's light meter is a spot meter, you use it to measure the scene or object you compose in the

viewfinder. The LightColor Meter is an incident meter which you use to measure the light from the subject's perspective, not the camera's perspective.

## Datacolor LightColor Meter Mechanical Features

### 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.
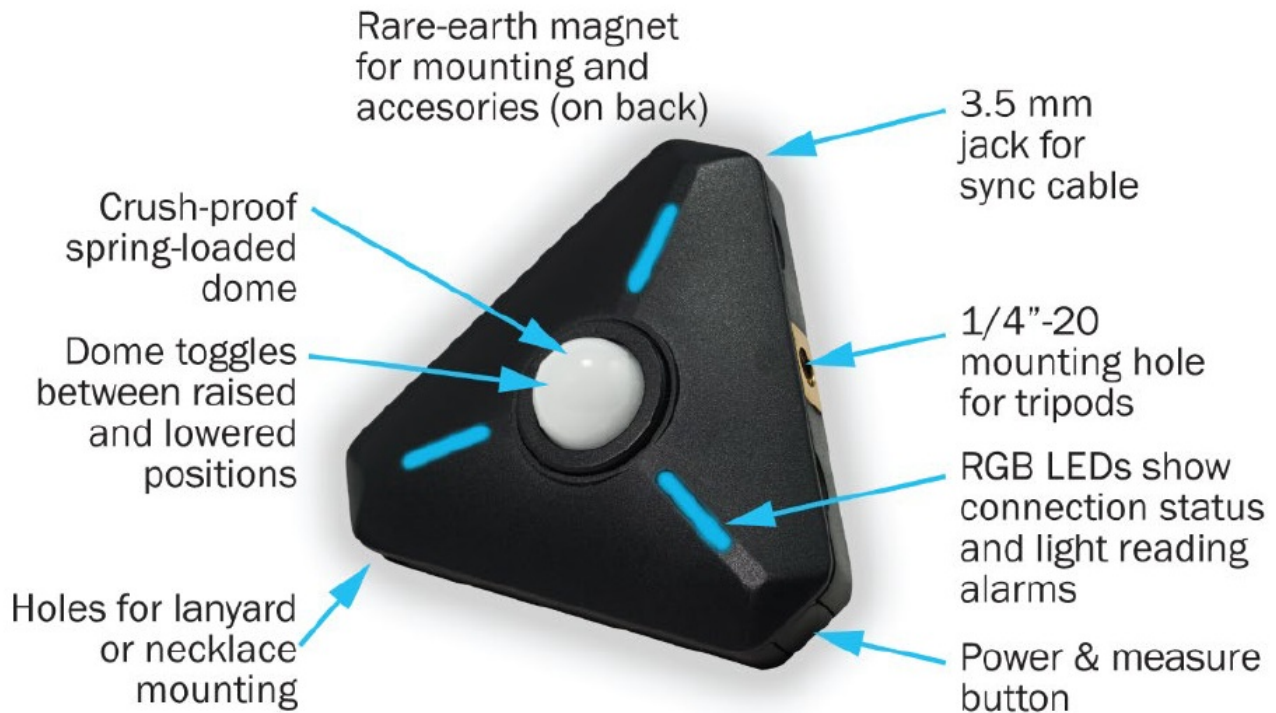


### Magnetic Accessories
The powerful rare-earth magnet on the back of the meter can be used to mount the meter to a ferrous metal surface or another magnet.
In addition, the Datacolor LightColor Meter comes with two magnetic mounting accessories to help you hold and mount your meter in a variety of 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. The Alligator Clip accessory can be used to attach the meter to fabric.

## What's in the Box

- LCM200, Datacolor LightColor Meter
- Offset-T Finger Magnetic Accessory
- Alligator Clip Magnetic Accessory
- Carrying Case
- Two (2) AAA Batteries

## 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 referenced in each battery slot.

**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 Datacolor LightColor Meter App is available to download to your smartphone for free from these sites online:

Search for "Datacolor LightColor Meter" The app will appear in the search results.

## Connect Your LightColor Meter

- Power On

  Turn on the LightColor Meter using the power button on the corner of the meter.
- Start the App

  Open the Datacolor LightColor Meter App on your smartphone. The LEDs will appear blue when the meter is not connected to your phone.
- Connect

  The app will find the meter automatically. Click "Connect" and the meter will connect to the phone. When connected, the meter LEDs will briefly flash green, then stop flashing. NOTE: If this is the first time the meter is connecting to the app, you will be asked to register your device.
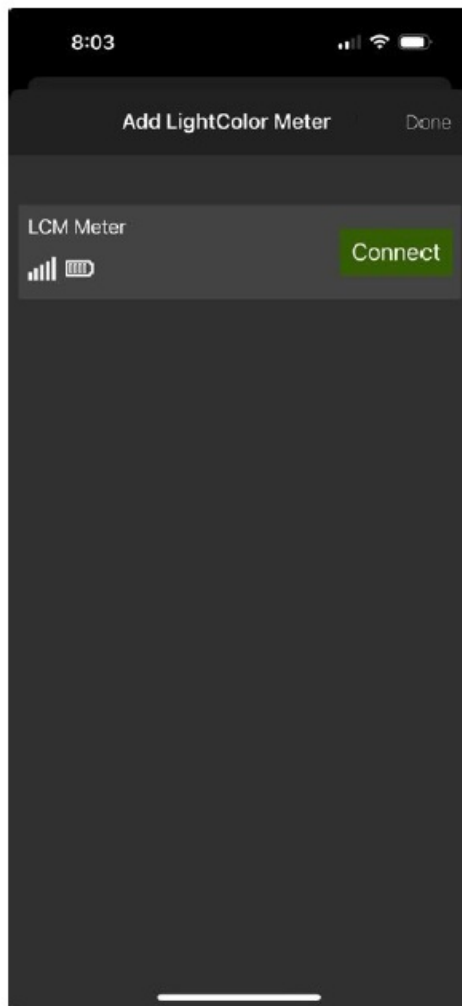
When the LightColor Meter and the App connect, you will see a blue band with the device's name on it, as in the illustration below.

## Meter Settings

The Meter Settings allow you to control connectivity and default functionality of your LightColor Meter.

Bonding your smartphone to your device ensures that you control its settings. Bonding also allows you to rename the device or update the device's firmware. Once the device is bonded to your smartphone, it will automatically connect to the app when the app is open, and the device is powered on.
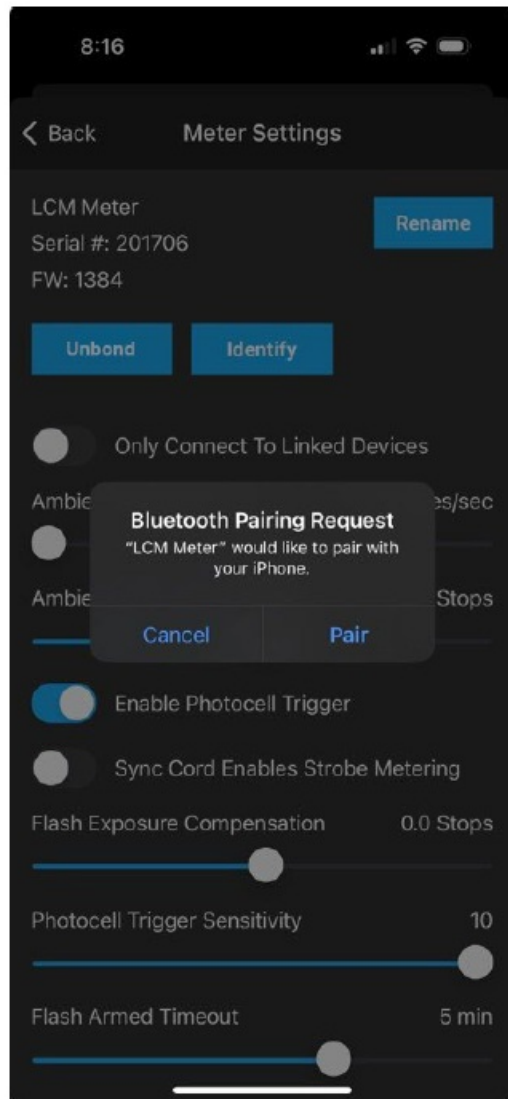
To bond a meter, go to the Meter Settings menu either by pressing the blue bar with the connected meter on it (don't click on the "Disconnect" button) or the gear icon from any measurement window Press the "Bond" button – under your meter information.
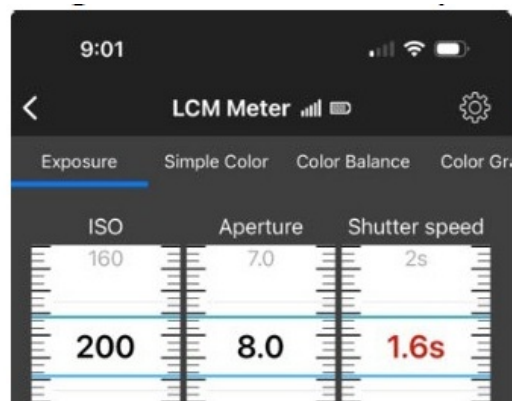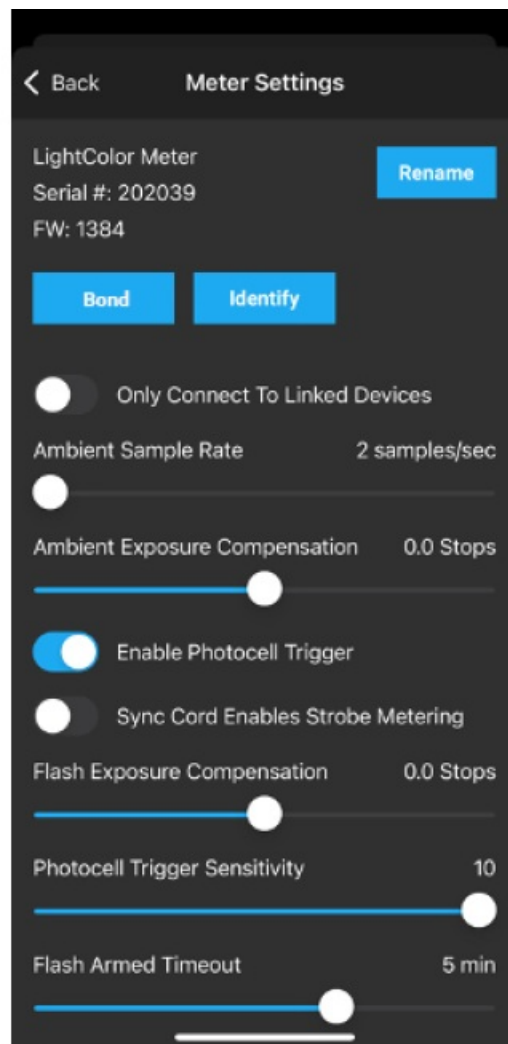
The phone will respond with a Bluetooth pairing request. Select the "Pair" option. The phone and meter will be bonded.

**Identify**

The other button under the LightColor Meter information is Identify. This 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 in a rainbow pattern. Click "Stop Identifying" to end.
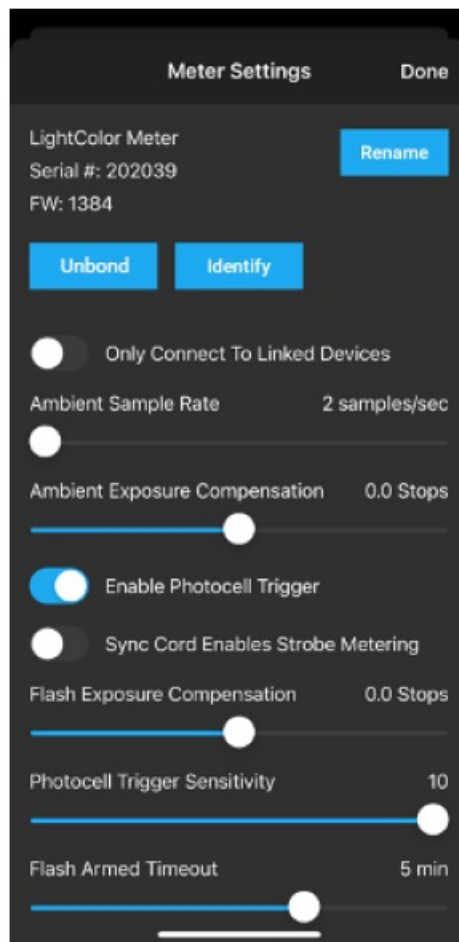
**Renaming Your Meter**
Once your meter has been bonded to your smartphone, you can rename the LightColor Meter.
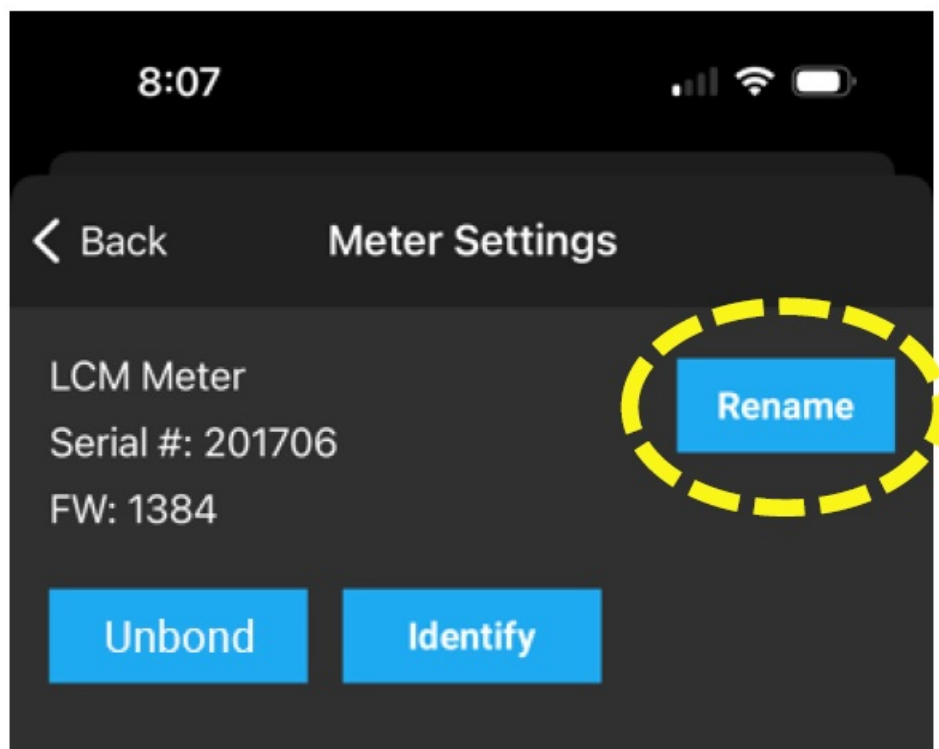


- Click "Rename," and the pop-up screen for entering the name will appear.

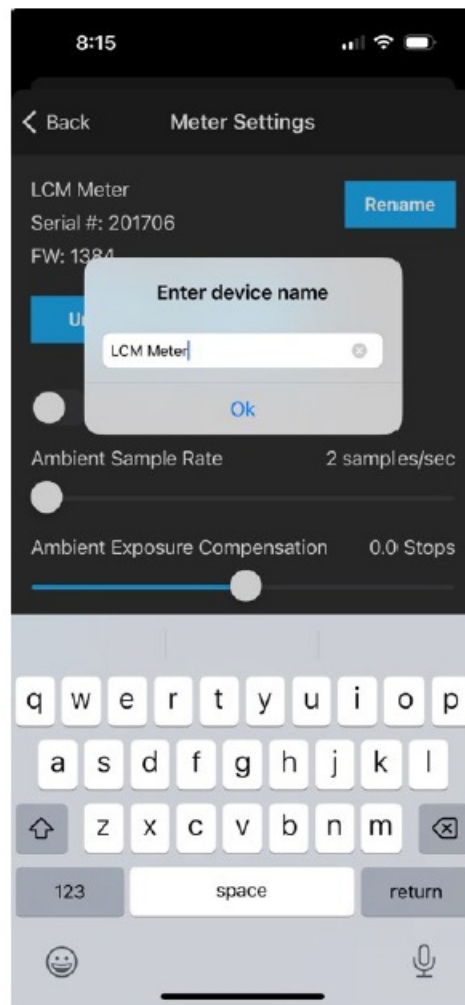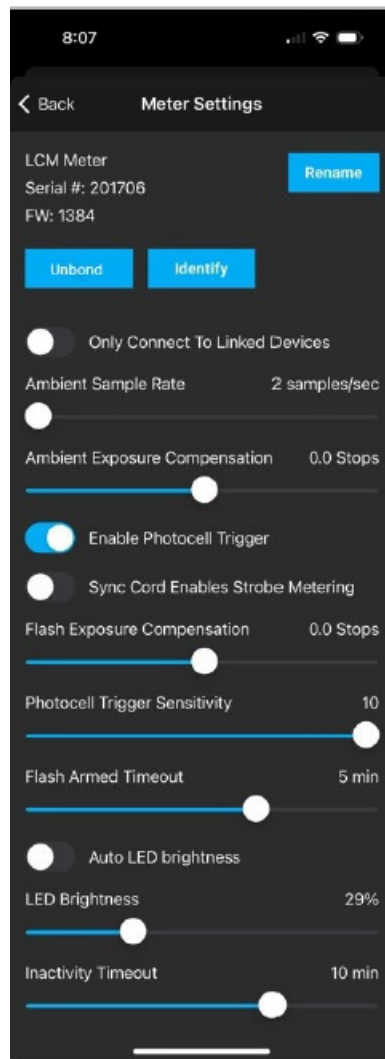- Enter your new meter name and press "Ok."
- There are several other technical settings for your LightColor Meter in Meter Settings.

**Only Connect to Bonded Devices**
Enabling this setting allows you to only connect with LightColor Meters which have been bonded to your device.

- **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).

- **Ambient Exposure Compensation**

  Ambient Exposure Compensation allows you to override all measurements in any exposure mode. Use this feature to fine tune the default measurements to match your creative needs.

- **Enable Photocell Trigger**

  There is a separate photocell in the LightColor Meter 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**

  Use this function if you would like to use the sync cord port to fire the strobe. Briefly pressing the power button on the meter once will fire the strobe(s).

- **Flash Exposure Compensation**

  Flash Exposure Compensation allows you to override flash exposure measurements picked by the LightColor Meter. Use this feature to fine tune the default measurements to match your creative needs.

- **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.

- **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 seconds to 30 minutes.

- **Auto LED Brightness**

  Allows the meter to determine the LED Brightness of the lights on the LightColor Meter.

- **LED Brightness**

  This setting manually controls the LED brightness of the lights on the LightColor Meter.

- **Inactivity Timeout**

  Allows the LightColor Meter to automatically power down after a certain period of time. The time can be set in the Inactivity Timeout slider. Values can range from 10 seconds to 30 minutes.

  To exit, click the "Back" option in the upper left portion of the screen. On the next screen, click "Done" in the upper-right.

**Tiles**
This screen acts like a home screen for the LightColor Meter. You can customize certain functionalities of the app to report measurement values in one location so you can quickly get a summary of the measuring that the LightColor Meter is performing for one or multiple LightColor Meters.
To add a Tile, press the "+" icon on the screen.
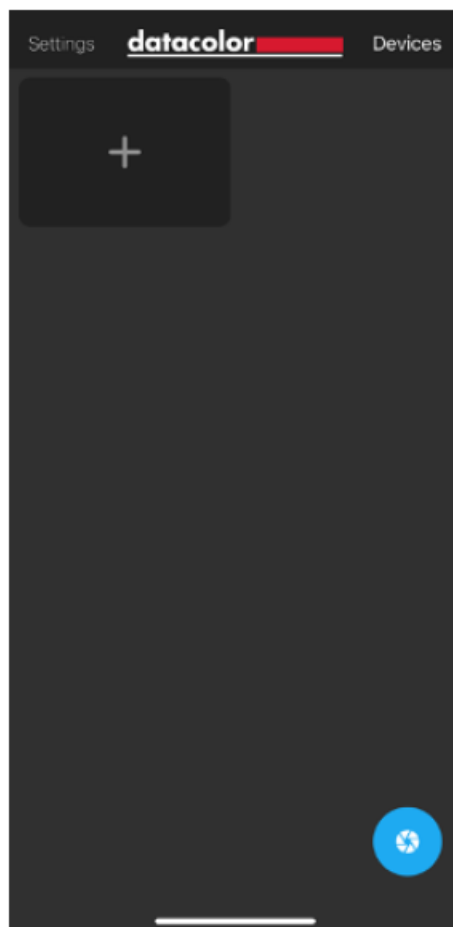


Select the type of tile you want the app to report from the screen.
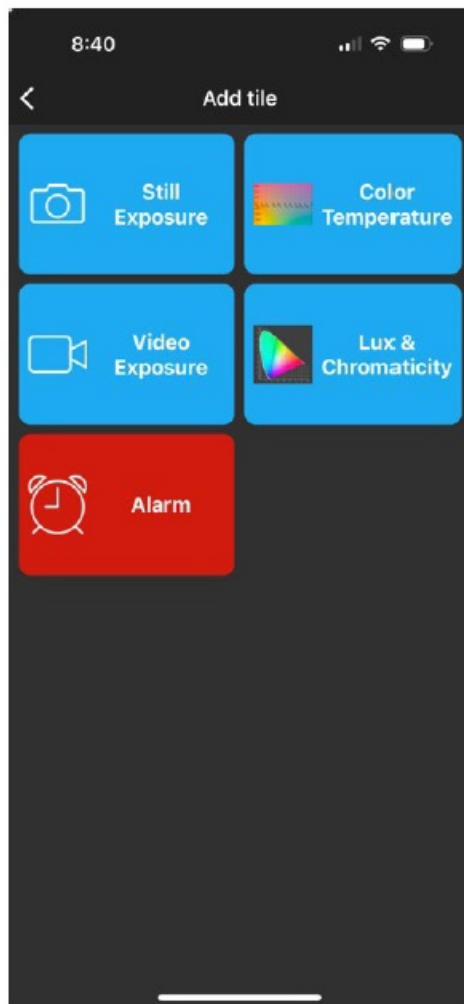
For example, if you select "Still Exposure", you will then select the meter you want to report this information for. This step is for situations in which multiple meters are used.

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.



**Example Tiles**

In the bottom right of this screen is a button to take a new measurement with the LightColor Meter. Doing so will update all the measurements on the 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. For example, one tile could be set to ISO 100 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 LightColor Meter app supports connecting multiple meters to your smartphone.



To delete a tile, long press on the tile and an X icon will appear in the upper left corner of each tile allowing you to remove the tile. Click Done in the upper right of the app when you have deleted the tiles.

## 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.

### Monitor Ambient
When enabled, 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.

### Monitor Flash
Flash monitoring will prepare the LightColor Meter to detect and measure a flash when it fires. When Flash monitoring is on, the LightColor Meter will illuminate between blue and purple, readings will also update on the app.

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, changes the roller to blue as you change the ISO and Shutter speed, the F-number will change.

**Flash Metering**
The LightColor Meter 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 enable Flash Metering, turn on the Monitor Flash setting at the bottom of this screen.
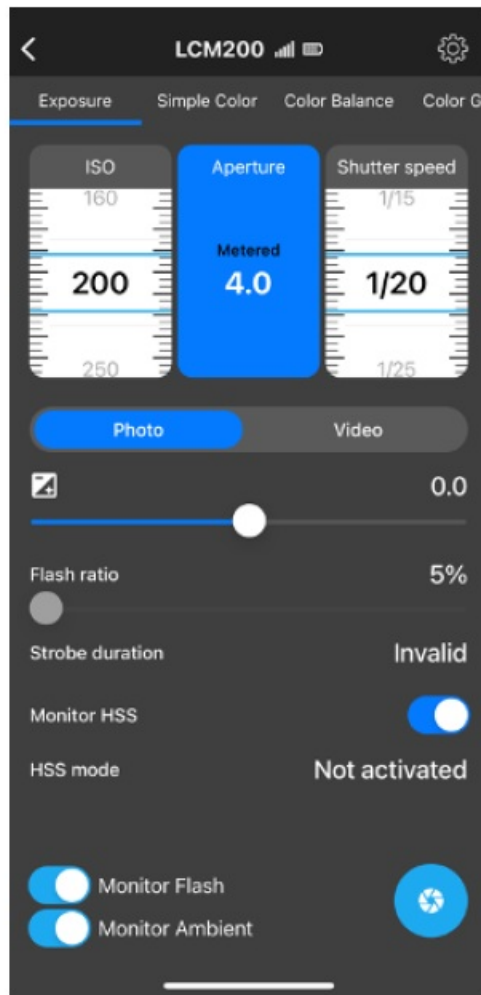
The meter will glow cyan (on and off) indicating that it is waiting for a trigger event – that is, the flash. Press the F-number wheel and those settings will turn red. The red colored numbers indicate the aperture will range as you change the exposure time and ISO.

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.

**Metering for Video & Cine**
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 ISO, Aperture and Shutter Angle / Speed (can be switched in app settings).

**ND Filter**
If using an ND Filter on your lens, you can press the ND Filter button and select the appropriate ND filter that is being used.

**Frame Rate**
Use this setting to indicate the Frame Rate you are using by pressing the button and set the appropriate rate.
Video mode also includes measurements for Color Temp and Color Shift.
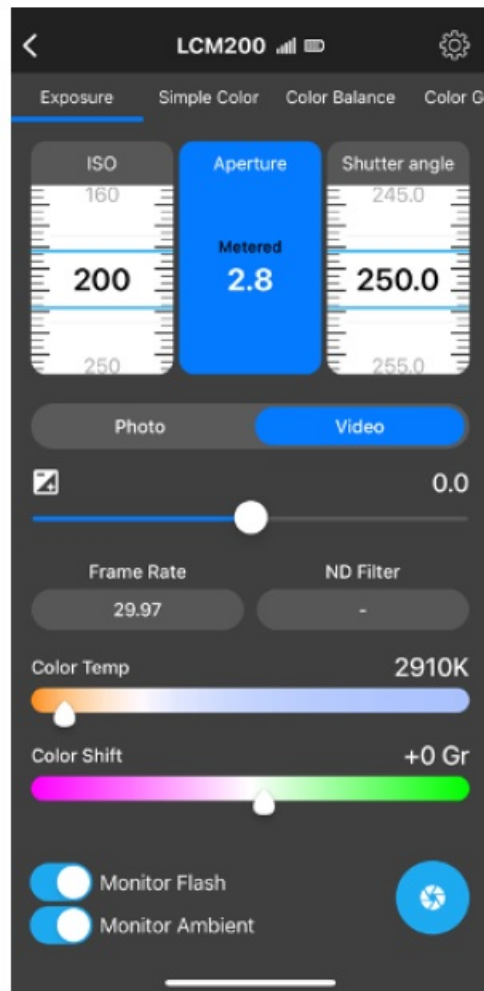
**In the appendix, you will see the complete list of settings for Frame Rate and Shutter Angle.

**Simple Color**
Simple Color is a measurement of color temperature for Ambient and Strobe lighting. For both Ambient and Strobe, light is measured in Kelvin Temp with the Color Shift. The Color Shift units can be measured in Green filter steps or Duv. This can be set in the Meter Settings under the Color Shift Units section.

To take a measurement, click on the blue shutter button in the bottom right of the screen.

**Monitor Flash**
Flash monitoring will prepare the LightColor Meter to detect and measure a flash when it fires. When Flash monitoring is enabled, the LightColor Meter will illuminate between blue and purple.

**Monitor Ambient**
Ambient monitoring will take ambient measurements at set intervals (set in the Meter Settings). When Ambient monitoring is on, the LightColor Meter will blink yellow-green and Readings will update on the app.
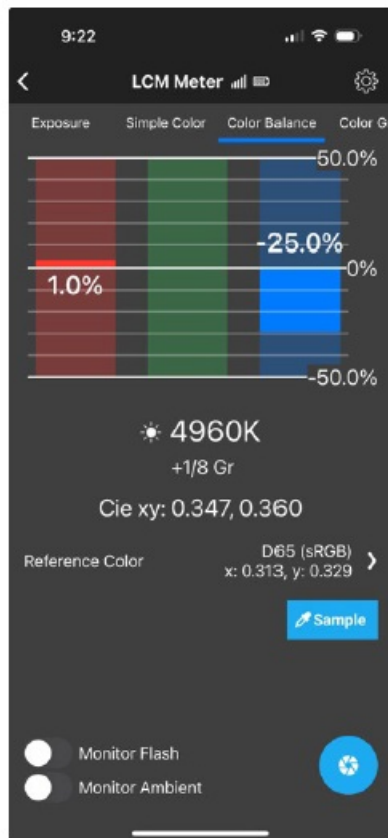
## Color Balance

This screen compares meter readings to a selected reference light source or color temperature using RGB values. Using this screen shows the adjustments to Red, Green or Blue channels needed to match the measured light to the reference light.

Under the RGB graph, you will see the measured Color Temp and the Color Shift with the Cie xy coordinates for the measurement.

## Reference Color

The selection for Reference Color allows you to choose the reference color to compare the LightColor Meter measurements.

D65 (sRGB)

D50

6500 K

5500 K

5000 K

A (tungsten)

E
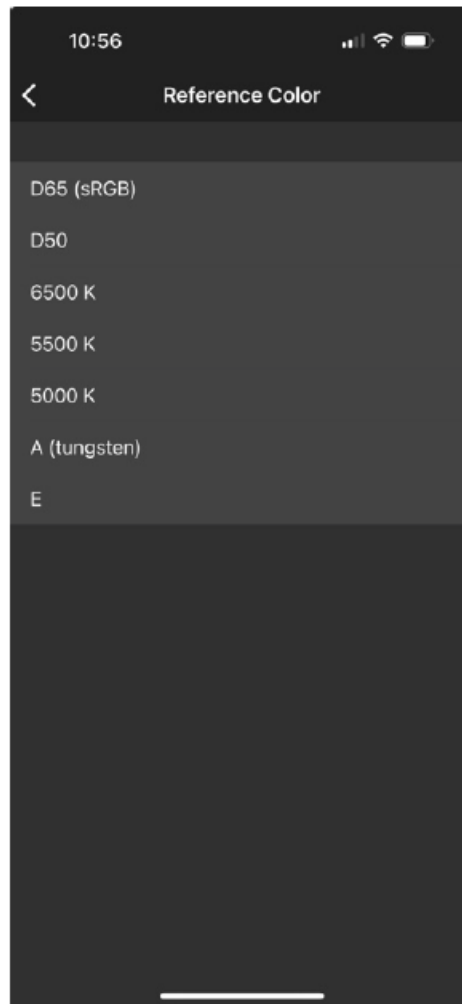
**Sample**
By pressing the Sample button, you can measure the light and use that as the Reference Color instead of one of the presets.

**Monitor Flash**
Flash monitoring will prepare the LightColor Meter to detect and measure a flash when it fires. When Flash monitoring is enabled, the LightColor Meter will illuminate between blue and purple.

**Monitor Ambient**
Ambient monitoring will take ambient measurements at set intervals (set in the Meter Settings). When Ambient monitoring is on, the LightColor Meter will blink yellow-green and Readings will update on the app.
To take a measurement, click on the blue shutter button in the bottom right of the screen.

**Color Graph**
You can also view the color temperature by clicking on the Color Graph tab. The measured light source and meter name is displayed as a white dot on a color graph.
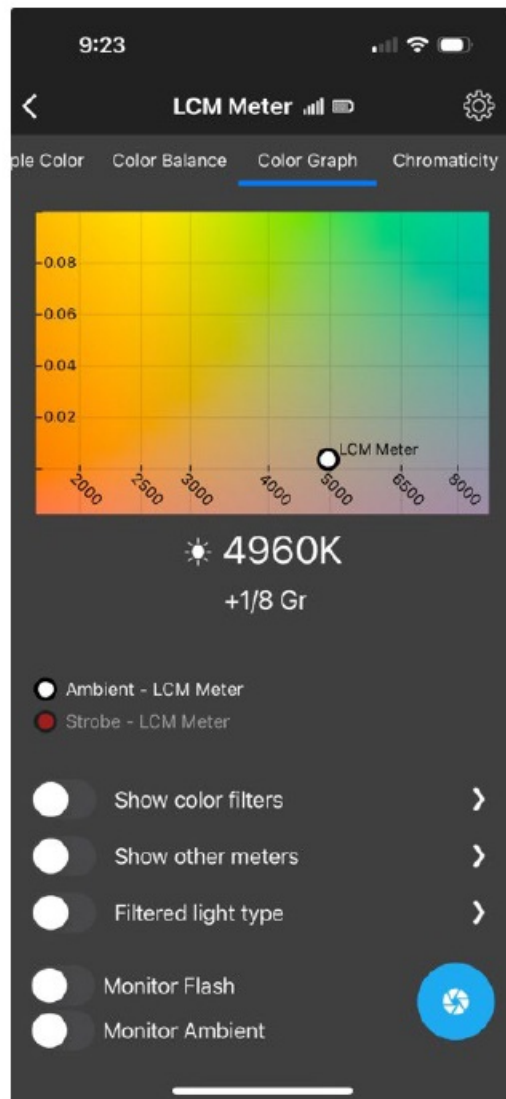
**Show Color Filters**
See the next section, Using the Color Filter Library

**Show Other Meters**
To show more than one LightColor Meter on the Color Graph, enable the feature with the switch on the left.
To select which LightColor Meter(s) to show on the graph, click on the right-arrow to the right of Show Other Meters and choose the meter(s).

**Filtered Light Type**
To choose the Filtered Light Type feature, enable the switch on the left of the text.
To choose a Filtered Light Type, click on the arrow next to the text.

**Monitor Flash**
Flash monitoring will prepare the LightColor Meter to detect and measure a flash when it fires. When Flash monitoring is enabled, the LightColor Meter will illuminate between blue and purple.

**Monitor Ambient**
Ambient monitoring will take ambient measurements at set intervals (set in the Meter Settings). When Ambient monitoring is on, the LightColor Meter will blink yellow-green and Readings will update on the app.

**Using the Color Filter Library**

To help you determine the best filter to use, the LightColor Meter app supports popular color filters from filter libraries which can be viewed on the Color Graph.

The Color Filters can be used to select a filter to match multiple lights/flashes, match one or more lights/flashes to a main light, match a light/flash to ambient light or for creative effects.
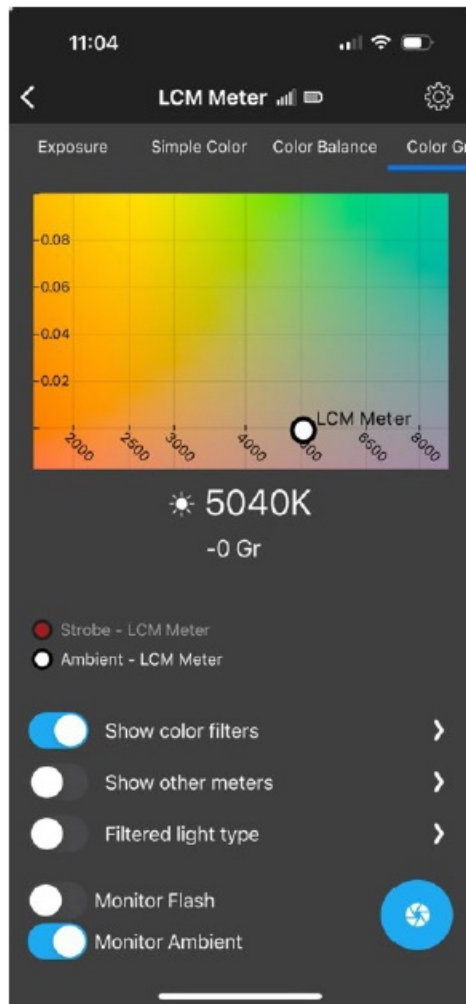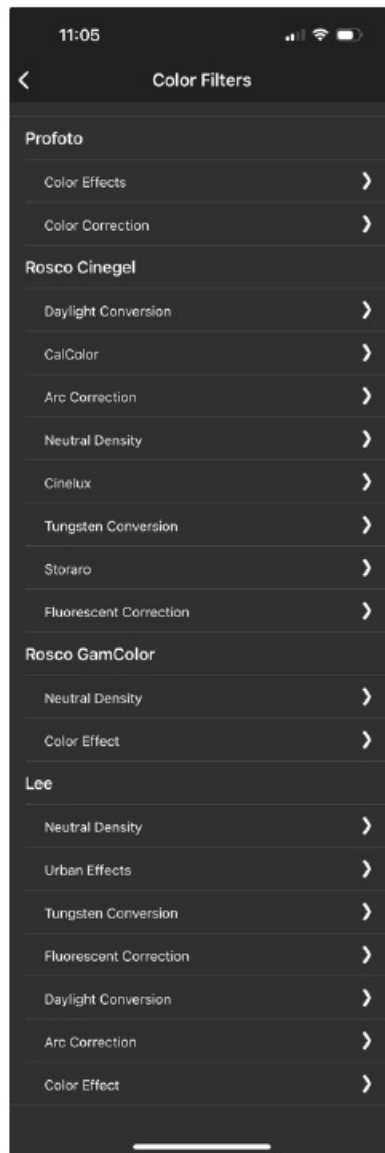
**Show Color Filters**
To show the filters on the graph, enable the feature with the switch on the left.
To select which color filters to show on the graph, click on the right-arrow to the right of the Show Color Filters text.

In Color Filters, you will see a list of supported filter brands and their filter categories. Select one or more filters to show on the Color Graph.

When you have finished making selections, press the back button at the top left of the screen.
On the Color Graph, you will now see additional data points that represent the simulation of the light through the chosen Color Filters
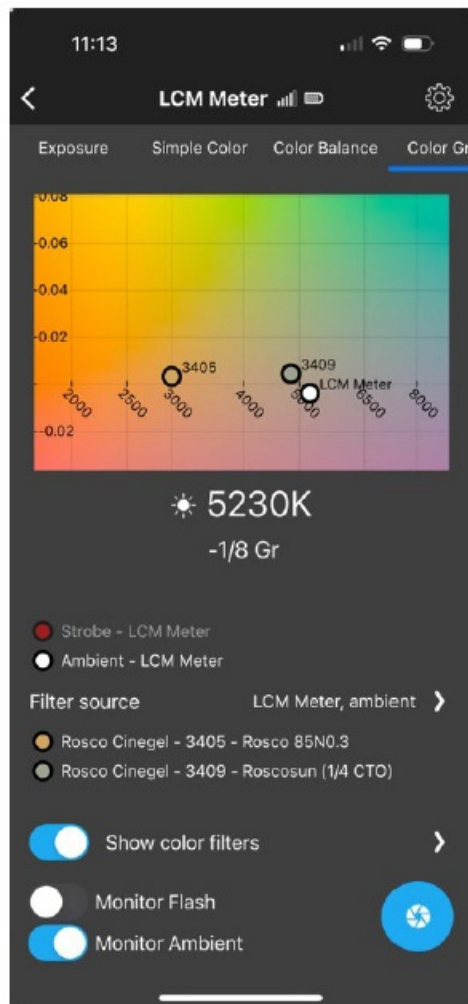
**Chromaticity**

Chromaticity will provide a light measurement in Lux as well as a graphical representation of the Color Temp and Color Shift for the measurement on the CIE xy color space diagram.

To take a measurement, click on the blue shutter button in the bottom right of the screen
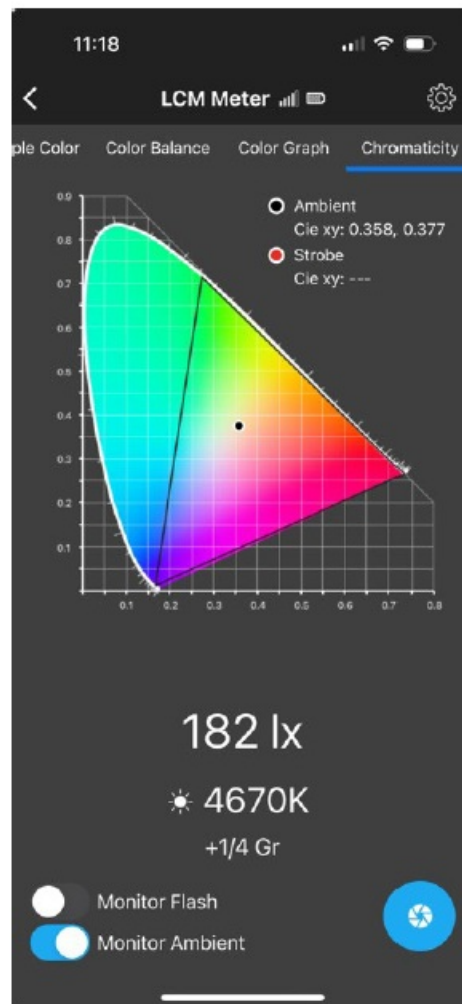
**Monitor Flash**
Flash monitoring will prepare the LightColor Meter to detect and measure a flash when it fires. When Flash monitoring is enabled, the LightColor Meter will illuminate between blue and purple.

**Monitor Ambient**
Ambient monitoring will take ambient measurements at set intervals (set in the Meter Settings). When Ambient monitoring is on, the LightColor Meter will blink yellow-green and Readings will update on the app.

**Unbonding**
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 Datacolor 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 or you have just lost connection to your smartphone. |
| Green | Blinking, brief, then stops | The meter just connected to the LightColor Meter app. |
| 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 | The LightColor Meter will illuminate with a blinking rainbow pattern when connected to the app and the Identify button is pressed in the Meter Settings. Useful to identify a meter when using more than one. |
| Magenta | Blinking | The power button on the meter has been pressed and held for 8-10 seconds to erase the bond between your meter and your smartphone.<br><br>or<br><br>During a firmware update, the meter will blink magenta. |
| Red | Blinks 3 times while the power is on. Will continue to blink red 3 times, at short intervals. | Battery power is low, change the batteries soon. |
| 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 or replace batteries. |
| LEDs flash red three times and then flash blue continuously in a rotating pattern. | The app has stopped, or the meter has disconnected from the app. The meter is now looking for a connection.<br>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.<br>2. Restart both the app and the meter.<br>3. Connect the LightColor Meter again |
| Meter will not connect. | 1. Turn on Location Services (LS). On Android phones this is required. If LS is off, the LightColor Meter 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.<br>2. Clear the bond from your phone and your meter:<br>    **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.<br>    **2b**. Go to your smartphone Settings, Connected Devices, Bluetooth. Find the LightColor Meter entry and Forget it.<br>3. From the settings -> Bluetooth section, turn off Bluetooth. The reason for doing this is to reset the Bluetooth. Give it 10 or 15 seconds and turn Bluetooth back on.<br>4. Turn on the meter.<br>5. Start the LightColor Meter App.<br>6. For iOS, you will need to select "Scan" to find the meter. For Android, tap and pull down on the screen to scan again. |

## Specifications

| | |
|---|---|
| **Supported Smartphone Operating Systems** | Apple iOS 8.1+ <br><br> 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. <br><br> Shutter Speed: 1/64,000 to 30 sec. in 1/3 stop incr. Shutter Angle: 1 to 358 <br><br> Aperture: f/0.5 to f/144 <br><br> Frame Rate: 1 to 1000, plus Custom <br><br> Exposure Compensation: +/- 3 stops in 1/3 or 1/10 stop incr. |
| **Metering Modes** | Ambient – manual or continuous monitoring Flash with sync cord <br><br> 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) <br><br> Dome protrudes an additional 0.3" (8 mm) H |
| **Weight** | 1.75 oz (49 g) without batteries <br><br> 2.5 oz (73 g) with batteries |

**Conformance Table**

| User Manual available | Digital Form |
|---|---|
| Datacolor address | Datacolor Inc.<br><br>5 Princess Road<br><br>Lawrenceville, NJ 08648 United States of America |
| Model # | LCM200 |
| Electrical rating | 3 Vdc, 20 mA |
| Operating environment | Indoor |
| Rated altitude | 2000m |
| Rated ambient temperature | 5 – 40°C |
| Rated Humidity | 0 – 100% non-condensing |
| Wet location | Do not use in wet location |
| Pollution degree | PD2 (normal everyday use) |
| IP rating | IPX0 |
| Impact rating | N/A |
| Cleaning instruction | Clean with common household solvents |
| Protection statement | Do not use in a manner not specified in this manual. |

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

## Documents / Resources



**datacolor LCM200 Data Color Light Color Meter** [pdf] User Manual
LCM200, LCM200 Data Color Light Color Meter, LCM200, Data Color Light Color Meter, Light Color Meter, Color Meter, Meter

## References

- ⊕ **Datacolor LightColor Meter - Apps on Google Play**
- ⊕ **Datacolor LightColor Meter on the App Store**
- **User Manual**