

LIGHTTELLS Corporation Limited
Coffee Roast Degree/
Uniformity/Ground-Size Analyzer

CM-200 User Manual



Product Introduction

The CM-200 portable Coffee Roast Degree/Uniformity/Ground-Size Analyzer is designed to measure the roast degree, roast uniformity for both whole bean and ground bean, and it can also analyze the distribution of ground size. It is a useful portable tool with its user-friendly interface, accurate performance and reliable quality. It provides you accurate SCAA Gourmet numeric scales result and display a variety of name terminology corresponding to the result (Light, City, Italian, etc). Besides roast degree, it also provides the color uniformity of how your coffee beans were roasted, and if you would like to check how your grinder performs, the CM-200 can analyze the distribution of ground size, this would make your grinder calibration much easier.

Package Contents

- CM-200 x 1
- Spare Particle Tray x 10
- 5V Power Adapter x 1
- micro USB Power cable x 2
- Detachable inner dish x 2
- Detachable outer dish x 1
- Bean Spoon x 1
- Particle Spoon x 1
- Straightedge x 1
- Calibration plate x 1
- Particle Diffusor (with Particle Tray) x 1
- User Manual with Limited Warranty Page x 1
- Screw Driver x 1

Main Features

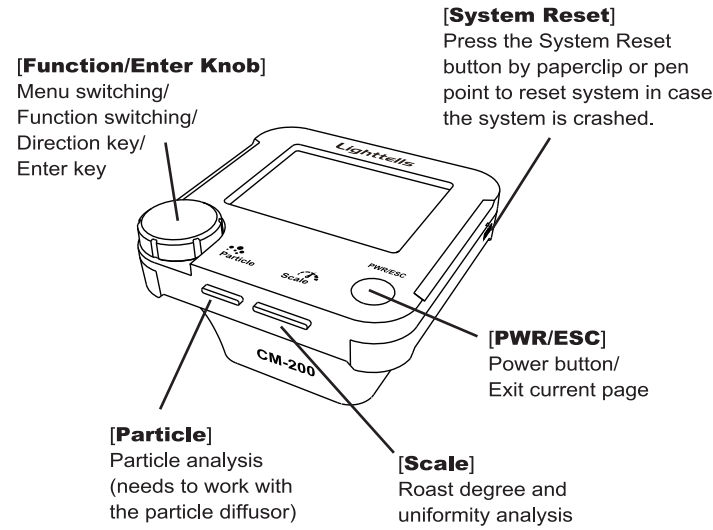
- No warming up is needed
- Automatic whole bean/ground bean recognition
- Roast degree analysis
- Uniformity of roast color analysis
- Ground size analysis
- Fast and easy calibration for better accuracy measurement
- Results in SCAA Gourmet scale
- 100 records of <Scale> and <Particle>

- Embedded SCAA and Common Roast Names
- Calendar and Time settings
- Sieve Style selection
- Auto Power Saving
- <Particle> and <Scale> measuring quick key

▲ WARNING: NEVER LOOK AT THE LEDS INSIDE THE LIGHT MASK WHILE THE CM-200 IS POWERED ON

CM-200 Hardware

• Button names



• Power ON/OFF

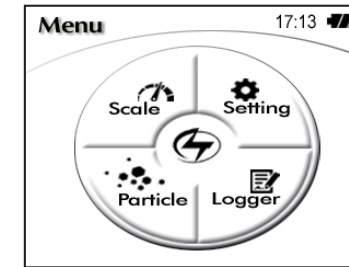
Click on the [PWR/ESC] button for two seconds to power on/off CM-200.
CM-200 features thermal compensation, no warming up is needed.

• Charging

Plug the power adapter to an AC 110/220 outlet, connect the micro USB cable between the power adapter and the micro USB port of CM-200. It takes around 5 hours for fully charge from a drained battery. After full charged, the CM-200 could be able to continuous working up to 8 hours.

▲ CM-200 might not be able to power on when the battery is completely drained. Please connect the charger to CM-200 for few minutes in order to power on CM-200.

CM-200 Main Menu



• Scale

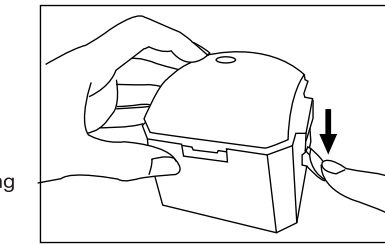
Before measuring Ground Coffee/Whole Beans, please get the DUT (device under test) ready in the sample dish and use the straight edge to keep the DUT flat surface is level to the edge of the dish.
Put the CM-200 unit on top of the dish properly, switch to <Scale> with the [Function/Enter Knob] key, short click on the [Function/Enter Knob] button or click on the [Scale] key, a short

beep sound will notify you when the measurement is done. The Bean Type, Gourmet numeric scale result, terminology name and the uniformity of roasting color will show on the screen. Press [Function/Enter Knob] button for detailed uniformity result.
Bean Type Auto Recognition: Choose < Auto > in the <Bean Selection> of <Setting> menu.
Ground Bean: If the Auto recognition doesn't work properly, choose <Ground> in the <Bean Selection> of <Setting> menu.
Whole Bean: If the Auto recognition doesn't work properly, choose <Bean> in the <Bean Selection> of <Setting> menu.

• Particle

Before analyzing the distribution of ground beans, it is recommended to sampling a certain amount of ground bean from a shaking box (shake at least 10 times before sampling) then sit the Particle Tray on the diffusor, pick certain amount with the particle spoon then put the sample on the particle tray, put the cover on top of the diffusor, hold the diffusor with your hand and press the stick down to the bottom of the diffusor with another hand in order to evenly distribute the ground beans. You can do several times in order to get better diffusion. Then remove the cover, sit the CM-200 on top of the diffusor, click [Particle] key or switch to <Particle> with [Function/Enter Knob] then click on [Function/Enter Knob] for analyzing the particle size distribution. It would take around 30 seconds to calculate the distribution and display on the screen.

If you would like to get an average particle distribution, press [Function/Enter Knob] to enable the averaging function, press [Function/Enter Knob] again to stop the averaging function and show the average particle

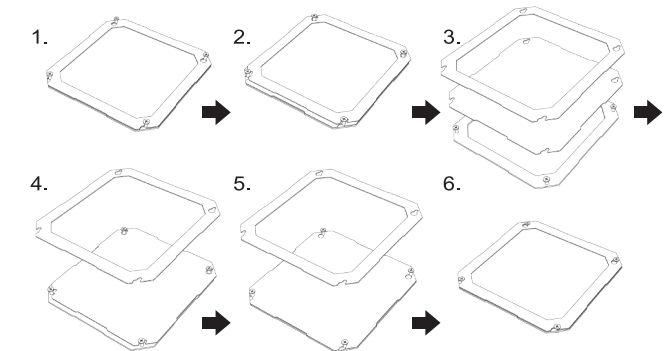


distribution. For example, no matter how many times of particle distribution has measured, when you press [Function/Enter Knob] then the averaging function is triggered, you will get the average distribution when you press [Function/Enter Knob] again. (Note: if you exit the particle menu, or started the averaging function, the average result will be reset).
The maximum of average count is 10 times.

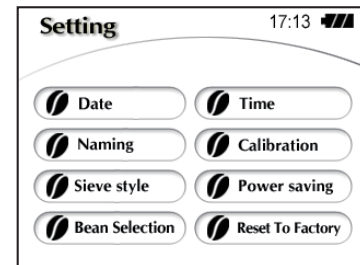
Fool-Proof design: The diffusor won't work if the CM-200 was sitting on top of it in order to prevent the particle contaminated on the camera lens of CM-200.

• Replacing the tray of particle diffusor:

- Step 1: Unlock the 4 screws (no need to take them off) with the screw driver attached inside the hard case of CM-200
- Step 2: move the top fixing frame a bit outward and take it off
- Step 3: move the old tray a bit outward and take it off
- Step 4: put a new tray on top of the bottom fixing frame and move a bit inward
- Step 5: put the top fixing frame on top of the new tray and move a bit inward
- Step 6: Lock the 4 screws



CM-200 Setup Menu



• Setting

<Date >

Setup the calendar with [Function/ENTER Knob], click [Function/ENTER Knob] to store and go for next field.

<Time >

Setup the time with [Function/ENTER Knob], click [Function/ENTER Knob] to store and go for next field.

<Naming >

You can choose Common or SCA roast names with [Function/ENTER Knob], click [Function/ENTER Knob] to store your setting. (see Table 3.3)

<Calibration >

Enter the <Calibration> menu, follow the instruction for calibrating CM-200 :
Place the Reference Gray Card on the table with labeled side down, put the CM-200 on top of the Reference Gray Card, click [Function/ENTER Knob] to start calibration. A short beep sound will notify you after the calibration is done.
If the calibration was failed, please make sure the gray card is covered properly then do calibration again. If the error is still there, please contact your dealer for help.

<Sieve style >

Switch to following display type with [Function/ENTER Knob] and click on the [Function/ENTER Knob] to store your setting.
ASTM No. Tyler No. Size (um)

<Power saving >

CM-200 will automatically turn off the power after idling a certain time.
[Control Knob] selection: 5 min, 10 min, 30 min and Disable.

****CM-200 would turn off the power anytime in order to protect the battery when the power is in extremely low level even the Auto Power Off function is disabled**

<Bean Selection >

Switch to following display type with [Function/ENTER Knob] and click on the [Function/ENTER Knob] to store your setting.
Auto Ground Bean

<Reset To Factory >

Click on the [Function/ENTER Knob] to reset to factory settings.
Note: All the stored record will be erased from the memory.

• Roast name display type

You can choose Common or SCAA roast names. (see Table)

SCAA Gourmet Result	Common	SCAA Names
91<= Gourmet# < 140	Light	Extremely Light
81<= Gourmet# <90	Cinnamon	Very Light
71<= Gourmet# <80	Medium	Light
61<= Gourmet# <70	High	Medium Light
51<= Gourmet# <60	City	Medium
41<= Gourmet# <50	Full City	Medium Dark
31<= Gourmet# <40	French	Dark
0<= Gourmet# <=30	Italian	Very Dark

<Logger >

Each measurement is automatically stored in CM-200. CM-200 can store up to 100 measured records from the most recent to earlier of both <Particle> and <Scale> results. Switch [Function/ENTER Knob] for <Scale> or <Particle> record, click on the [Function/ENTER Knob] and switch [Function/ENTER Knob] for checking logs. One click on the [Function/ENTER Knob] for detailed log, long press on the [Function/ENTER Knob] for deleting log.

Specification

Display	2.8" TFT Colorful Panel
Battery	Li-polymer 2300 mAh Battery
Light	Infra-red LED
Sensor	Infra-red Sensor
Camera	High resolution CMOS camera
Log	100 records
Weight (Main unit)	328 g (Main unit)
Dimension (Main unit)	H: 137mm L : 95mm W: 95mm
Working Temp.	0 - 45 °C
Storage Temperature	-10 - 70 °C
AC Adapter	110 - 240V, 50/60Hz
Charging input	5V, 0.5A
Certification	CE, FCC, RoHS

• Warranty Information

This Limited Warranty applies to LIGHTTELLS product model name CM-200 purchased from an authorized LIGHTTELLS dealer by the original purchaser for normal use and not for resale. LIGHTTELLS warrants that a CM-200 product is free from defects in materials and workmanship, with the exceptions stated below.
This limited warranty lasts for 1 year from date of purchase, depending on when and where it was originally purchased. A valid proof of purchase may be required to prove eligibility. If you do not have a valid proof of purchase, the limited warranty period will be measured from the date of sale from LIGHTTELLS to the authorized distributor.

The limited warranty does not cover damage resulting from improper or unreasonable use or maintenance, misuse, accident, modification or alteration to hardware or software, tampering, unsuitable physical or operating environment beyond product specifications, or failure caused by a product for which LIGHTTELLS is not responsible. There is no warranty of uninterrupted or error-free operation. There is no warranty for product with removed or altered identification labels. LIGHTTELLS DOES NOT PROVIDE ANY OTHER WARRANTIES OF ANY KIND, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SOME JURISDICTIONS DO NOT ALLOW THE LIMITATION OF IMPLIED WARRANTIES, SO THIS LIMITATION MAY NOT APPLY TO YOU. LIGHTTELLS is not responsible for returning to you product which is not covered by this limited warranty.

Limited Warranty Card

Model Name: CM-200 Coffee Roast Degree/Uniformity/Ground-Size Analyzer

Serial Number: _____

Date of Purchase: _____ YY

_____ MM _____ DD

Customer Name: _____

Customer Address: _____

Authorized Dealer Name / Stamp _____



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