

LIGHTTELLS Corporation Limited
Coffee Roast Degree Analyzer

CM-100+
BLACK EDITION
User Manual



Product Introduction

The CM-100+ portable degree of Roasting meter is designed to help you measuring the degree of roast for both whole bean and ground coffee. It is portable, user-friendly, accurate and easy to use. It provides you quick accurate SCAA Gourmet numeric scales result and also display a variety of name terminology corresponding to the result (Light, City, Italian, etc). The results are automatically stored in the CM-100+ internal memory and can be easily re-checked on display.

Package Contents

- CM-100+ x 1
- 5V Power Adapter x 1
- micro USB Power cable x 1
- Detachable Sample Dish x 2
- Measuring Spoon x 1
- Straightedge x 1
- Reference Gray Card (for calibration use) x 1
- User Manual with Limited Warranty Page x 1

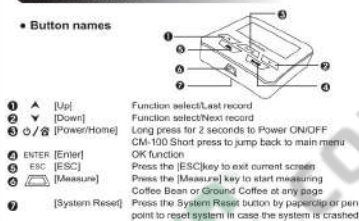
Major Function

- Fast and easy calibration for better accuracy measurement
- Results in SCAA Gourmet scale
- Historical measuring record
- Embedded SCAA and Common Roast Names
- Calendar and Time settings
- Auto Power Saving
- Quick measuring key

WARNING:
NEVER LOOK AT THE LEDS WHILE THE CM-100+ IS POWERED ON

CM-100+ Hardware

• Button Names



• Power ON/OFF

Click on the [Power button] for two seconds to power on CM-100+. A warm-up process (60 seconds) will start before CM-100+ is ready to work.
You may skip the warm-up process by pressing the [ESC button], but it is recommended DO NOT skip the warm-up process in order to get better accuracy of the roasting degree.

• 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-100+. It takes around 3 hours for fully charge from a drained battery. After full charged, the CM-100+ could be able to continuous working up to 6 hours.

WARNING:
CM-100+ might not be able to powering on when the battery is completely drained. Please connect the charger to CM-100+ for few minutes in order to power on CM-100+.

CM-100+ User Interface

• Measure

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 with the edge of the dish. Put the CM-100+ unit on top of the dish properly, enter the [Measure] menu, select the DUT type (whole bean or ground), short click on the [Measurement button] or [ENTER button] to start measuring. A short beep sound will notify you when the measurement is done. The Gourmet numeric scales result and terminology name will be shown on the screen.

WARNING: After you have chosen the DUT type (whole bean or ground) by press [ENTER] button for measurement, CM-100 measures the type you have chosen of any time in any manual.

• Calibration

Before calibrating, please full charge the battery and turn on the power for at least 0.5 hour.
Calibrate: Place the Reference Gray Card on the table with labeled side down, put the CM-100+ on top of the Reference Gray Card, click [ENTER button] to start calibration. A short beep sound will notify you after the calibration is done.
If the calibration results error, please make sure the gray card is covered properly then do calibration again.

• Setup

<Auto Power Off>
CM-100+ will automatically turn off the power after idling a period of time. Selection: 5 min, 10 min, 30 min and Disable.
<Date and Time>
Setup Calendar and Time



WARNING: CM-100 would turn off the power anytime in order to protect the battery when the power is in low battery status when the Auto Power Off function is disabled

• Roast name display type

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

SCAA Gourmet Result	Common	SCAA Names
91 <= Gourmet <= 130	Light	Extremely Light
81 <= Gourmet <= 90	Light	Very Light
71 <= Gourmet <= 80	Medium	Light
61 <= Gourmet <= 70	High	Medium Light
51 <= Gourmet <= 60	City	Medium
41 <= Gourmet <= 50	Full City	Moderately Dark
31 <= Gourmet <= 40	French	Dark
0 <= Gourmet <= 30	Italian	Very Dark

<Reset To Factory>
Reset all the settings to factory default setting.



WARNING: All the history records will be erased, the calendar/time will be reset to default setting.

• History

Each measurement is automatically stored in CM-100+. CM-100+ can store up to 200 measurement records from the most recent to the oldest. Please use Up/Down button for record review.

The single record can be deleted (ex: the record was not measured correctly), press [ENTER] at the record you wanna delete, an "Are you sure to delete this data?" message will show up on the screen. Press [ENTER] to delete, or press [ESC] to ignore.

Specification

Display	2.6" OLED Panel
Battery	Li-polymer 1150 mAh Battery
Light	Infra-red LED
Sensor	Infra-red Sensor
Log	200 records
Weight (Main unit)	230 g
Dimension (Main unit)	L: 123.4 mm W: 123.4 mm H: 132.0 mm
Working Temp.	0 - 45°C
Storage Temperature	-10 - 70°C
AC Adapter	110 - 240V, 50/60Hz
Charging input	5V, 0.5A
Certification	CE, FCC

• Warranty Information

This Limited Warranty applies to LIGHTTELLS product model name CM-100 purchased from an authorized LIGHTTELLS dealer by the original purchaser for normal use and not for resale. LIGHTTELLS warrants that a CM-100 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-100+ Coffee Roast degree Analyzer

Serial Number: _____

Date of Purchase: _____ YY

_____ MM _____ DD

Customer Name: _____

Customer Address: _____

Authorized Dealer Name / Stamp



Lighttells Corp. Ltd.
http://www.lighttells.com

105mm

LIGHTTELLS Corporation Limited

Coffee Roast Degree Analyzer

CM-100+

BLACK EDITION

使用手冊



• 焙度名稱及顯示方式

SCAA Gourmet Result	Common	SCAA Names
91 <= Gourmet# <= 130	Light	Extremely Light
81 <= Gourmet# <= 90	Light	Very Light
71 <= Gourmet# <= 80	Medium	Light
61 <= Gourmet# <= 70	High	Medium Light
51 <= Gourmet# <= 60	City	Medium
41 <= Gourmet# <= 50	Full City	Moderately Dark
31 <= Gourmet# <= 40	French	Dark
0 <= Gourmet# <= 30	Italian	Very Dark

<回復出廠設定>

所有的設定都會回復到出廠時的設定值。



▲ 注意：選擇回復出廠設定時，所有的量測記錄都會被清除，日期時間設定會回復到原廠設定。

產品介紹

CM-100+咖啡焙度儀是一款用來測量豆類及咖啡粉焙度的專業精密儀器。它具有攜帶方便、精準、容易使用的特點。它能快速準確地提供SCAA標準數據。也可以顯示不同的焙度名稱(Light, City, Italian, 等等)。量測數據會自動儲存到儀器內部的記憶體。

產品包裝內容

- CM-100+主機 x 1
- 充電線 x 1
- micro USB 充電線 x 1
- 可拆式鍵盤 x 2
- 量匙 x 1
- 刮尺 x 1
- 校正用的灰卡 x 1
- 使用手冊(包括保修書) x 1

主要功能

- 快速且容易操作的校正方式讓量測更為精準
- SCAA標準量測數值(5-130)
- 歷史量測記錄
- 單筆量測歷史記錄
- SCAA名稱及一般常用焙度名稱
- 日期及時間設定
- 自動關機時間設定
- 快捷量測鍵讓您一鍵完成測量

▲ 警告：電源開關時請勿重觸CM-100+內部的LED

• 歷史記錄

每次的測量值都會被自動地儲存在CM-100+裡，CM-100+可以儲存最近一次到前200次的量測記錄。請以 [上/下] 鍵 查閱各筆記錄。

若要刪除單筆歷史記錄(例如放好或沒好量測的記錄)，在該筆量測記錄畫面按下[ENTER] 將會出現詢問 "Are you sure to delete this data?"，按下[ENTER]以刪除該筆資料。按下 [ESC] 則刪除資料。

產品規格

螢幕	2.8" OLED 面板
電池	1150毫安培小時的鋰電池
光 源	近紅外線
感 應 器	近紅外線感應器
記憶	200筆
重 量(主機重量)	230 g (Main unit 主機重量)
尺 寸(主機尺寸)	L: 123.4 mm
	W: 123.4 mm
	H: 132.0 mm
工作溫度	0 - 45°C
儲存溫度	-10 - 70 攝氏度
充 電 器	110 - 240V, 50/60Hz
充電輸入電壓	5V, 0.5A
安規認證	CE, FCC

CM-100+ 硬體

• 按鍵名稱



- 1 [方向鍵上] 功能選擇上一筆資料
- 2 [方向鍵下] 功能選擇下一筆資料
- 3 [Y] 長按兩秒用以開啟/關閉電源，短按用以回到首頁。
- 4 [ENTER] 確定或量測
- 5 [ESC] 跳出目前畫面
- 6 [量測鍵] 在任何畫面只要按下量測鍵就可以量測咖啡焙度的數據。
- 7 [系統重置鍵] 若產品在使用中發生異常現象，請以系統計或筆尖輕觸[重置鍵]用以重置產品。

• 電源開/關

長按[電源鍵]兩秒用以開啟CM-100+。在CM-100+能夠正確工作之前必須等待60秒的暖機時間。您可以按下[ESC]鍵以跳過暖機步驟，但是為了得到更為精確的數據，我們不建議您跳過暖機步驟。

• 充電

請將充電器插在AC110/220電源插座上，並插上USB充電線將microUSB那一端連接至CM-100+的充電口。一個完全沒電的情況下，CM-100+需要大約3小時的充電時間。在完全充電電的狀態下，CM-100+最多大約能夠連續使用4個小時。

▲ 當電池的電量過低時是會關機的電力時，有可能會關不了機。此時請插上充電器並關它充電幾分鐘後再開機。

CM-100+ 使用者介面

• 量測

在開始量測豆子或豆粉之前，請將待測物放在豆盤中並以直尺將豆子或豆粉表面與豆盤的高度齊平並鋪平。將CM-100+放在豆盤上，進入Measure畫面，選擇待測物的類別(豆子或是豆粉)後，按一下測量的[測量鍵]或是[ENTER]鍵開始量測。在聽到蜂鳴的響聲後即表示量測完畢，豆子或豆粉的焙度及名稱會顯示在螢幕上。

▲ 在您選擇豆子或豆粉之前，無論何時或在暖機過程按下 [量測鍵] 都會以已經選取的類別量測。

• 校正

校正前請先將電源充滿，並開機達半小時以上。請將校正卡(序號標顯朝下)放在平坦的表面上，並將CM-100+正確放在校正卡上，選擇Calibration 選項後按下[ENTER]鍵，聽到蜂鳴的響聲後即完成校正。若校正後出現Error 字樣，請您再次確定CM-100+有正確放在校正卡上並且四邊都密合後，再做一次校正。

● 原廠建議每年校正一次即可，不帶每次量測時都需校正

• 設定

<自動關機>
CM-100+在關閉一段時間後會自動關機。您可以選擇自動關機的時限：5分鐘、10分鐘、30分鐘及不關機(Disable) 出廠預設時間為五分鐘。

<日期及時間>
設定日期及時間

▲ 選擇不關機時，為了保護電池壽命，CM-100+可能隨時會在低電量時自動關機。

產品保修卡

品名: CM-100+ Coffee Roast degree Analyzer

序號:

購買日期: ____YY(西元年)

____MM(月) ____DD(日)

客戶姓名:

客戶地址:

經銷商名稱/公司章



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http://www.lighttells.com

一、本保固卡足以本卡記載事項內容做維修保固請詳閱。

1. 維修保固，自購買日起算一年內為保固期限，保固期間內發生故障，請憑本保固卡及本公司維修單做維修保固。
2. 本產品在市場銷售時之安全告知，在規範下安全使用。
3. 在保固期下本公司產品若因保固期間內發生故障時，本公司將免費維修處理。
4. 應由保固卡內保固商填單請保存或透過遞送或對換，本公司將不予理會。
5. 保固卡必須有銷售商簽章及詳細說明日期或維修日期一併寄回原廠辦理，無此簽章之保固卡效力將以原廠出貨日期起算一年內為保固期限。
6. 代理商或經銷商之服務及附加的配件和贈品，由代理商或經銷商負責。
7. 保固期間內之產品維修費用，請逕往該產品之經銷商或本公司洽詢。
8. 本產品在保固期內如發生故障，請將產品寄回本公司處理。
9. 本產品在保固期內請勿拆開或損壞，否則保固失效。若因使用不當，造成產品損壞或故障，本公司恕不負責。
10. 本保固卡之條款內容增加、修改、刪除、更新，本公司保留對原文更新/刪/修改權利。
11. 本公司保留對所有其他未於此聲明之服務，不論明示或隱含，除了履行法律限制之範圍外，任何書面上或符合特定目的之明示性服務，皆不在產品之服務保固範圍內。

二、保固有效期間內，有下列情形之一，不予免費維修保固。

1. 使用不當造成故障或損壞，因意外造成，因其他產品造成，而導致產品故障及損壞或未依說明書指示正確操作者。
2. 消耗性零件之更換(電池、消耗性零件、消耗品、量尺、校正片)。
3. 隨意拆解、摔落、浸水、靜電造成產品故障或損壞或外觀上的刮傷等。
4. 火災、水災、地震、雷擊或環境因素，其他因自然現象之不可抗力因素，導致產品故障或損壞。
5. 特殊情況下不依照保固卡時間本身可承受範圍加超高溫、高濕度、或腐蝕或海邊鹽分及粉上等等環境使用。
6. 指定外電源使用，導致產品故障或損壞。
7. 非經由本公司指定之服務處或自行拆卸，導致保固失效或損壞。