



Time Lapse Camera TLC120

User Manual

brinno
brilliant innovation

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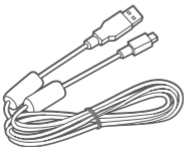
Package Contents



Time Lapse Camera(TLC120)



8GB SD Card



Micro USB Cable



QuickGuide

Specifications

Model No.	TLC120
Waterproof	IPX4
Image Sensor	HDR Sensor with 4.2 μ m pixel size
Optics Lens	Low Distortion Fixed Aspherical Lens Aperture: F2.0 Field of View:112°
Time Lapse Video	AVI Format(HD 720P)
Memory Storage	SD/SDHC Card(Supported up to 32 GB)
Power Source	Li-Po Rechargeable Battery(1500mAh) DC IN: 5V(Micro USB Connector)
Battery Life	1.5 days with a 2 seconds time interval 20 days with a 5 minutes time interval
Wireless	Wi-Fi(802.11 b/g), Bluetooth 4.0
Brinno APP	Android 4.4 / iOS 7.0 above
Camera Size	60x60x33.5 mm
Camera Weight	101 g

**Before You Begin
Taking Photo**

Download APP

Installing the Brinno Camera APP on yoursmartphone



Brinno Camera



Android



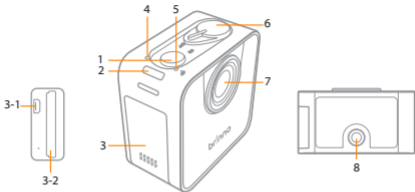
iOS

For more information please go to:

www.brinno.com/tlc120



Camera Parts



1. Shutter Button
2. Strap Eyelet
3. Memory Card Cover
 - 3-1. Micro USB Socket
 - 3-2. SD Card Slot
4. Status LED Indicator*¹
5. Wi-Fi/Bluetooth Lamp*²
6. Power ON/OFF Switch
7. Lens
8. Tripod Mount(size: 1/4")

*¹ Status LED Indicator

Red(Battery):
Battery Low
SD Card Error

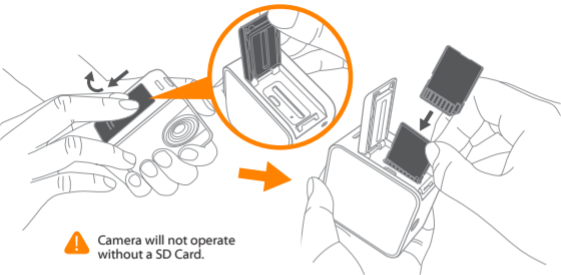
Green(Recording):
Capturing: flashes once while capturing
Standby: Press "OK" button, flashes once

Orange: Battery in Charge

*¹ Wi-Fi/Bluetooth Lamp

Blue(Wi-Fi/BLE):
Connecting: flashing
Wi-Fi/BLE ON: on

Installing the SD Card



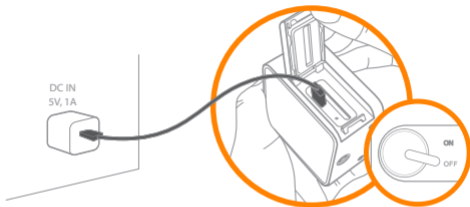
Camera will not operate without a SD Card.

What Size SD Card Should I Use

SD card size	Stored photos
4 GB SD Card	30,000
8 GB SD Card	60,000
16 GB SD Card	120,000
32 GB SD Card	240,000

* Based on a selected image quality setting of "Good"

Charging the Camera Battery



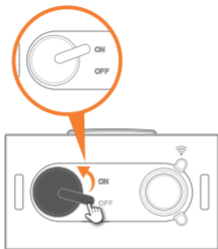
(Please note that the USB wall adapter is not included.)

Charging the camera via a Micro USB adapter.
(Camera should be turned Off)



- * First time battery charge requires 6 hours.
- * Battery charging, LED Orange.
Battery full, LED green.

Power on the Camera



Before you start, please go to "**Menu>General Setting**" then Tap "Sync with Phone" to set Date&Time.

Set Data & Time
13:30 1/14/2015 ↻

SYNC

Start Your Camera

Connecting Camera

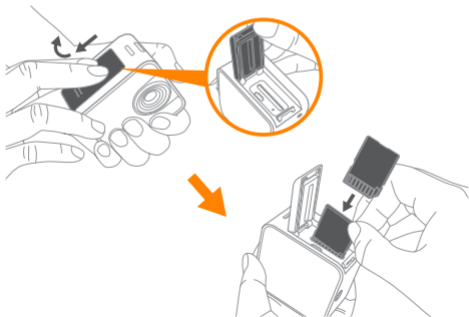
Before you begin:

Download and install the TLC120 APP on your phone.

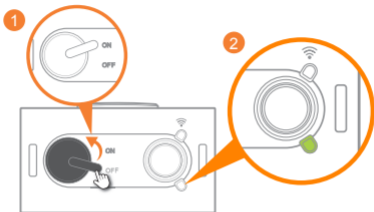
Charge both your phone and Camera.

Check that a SD Card is installed in your camera.

1. Insert SD card.



2. Turn on camera power waiting ELD turns green.



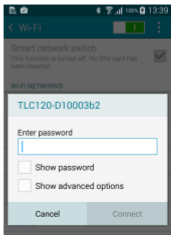
3. On your phone settings:

3-1. Turn on Bluetooth

3-2. Turn on WiFi,

Select "TLC120-XXXXXX"

Password:12345678

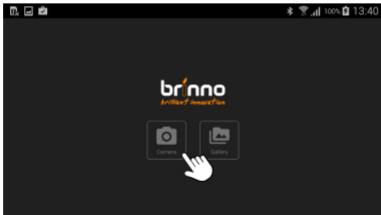


4. On your camera App:

4-1. Tap App icon



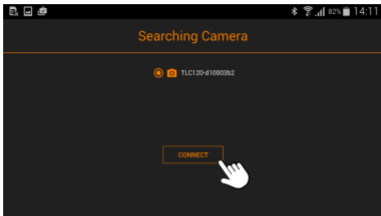
4-2. Tap Camera icon to Searching Camera



4-3. Select camera SSID, Tap "Connect"

4-4. You will see the Main Screen, now have fun with your Brinno time lapse camera.

4-3. Select camera SSID, Tap "Connect"



4-4. You will see the Main Screen, now have fun with your Brinno time lapse camera.

Preview Screen



1. Scene Setting (Page 30)

Daylight/Twilight/Night/Moon/Star

2. Time Interval Setting (Page 31)

ASAP/1 Sec/5 Sec/10 Sec/20 Sec/30 Sec/
1 Min/5 Min/10 Min/1 Hr/4 Hr/24 Hr/Custom

3. Time Lapse Frame Rate (Page 32)

1 FPS/5 FPS/10 FPS/15 FPS/20 FPS/30 FPS

4. Exposure (Page 33)

5. Menu (Page 34)

6. Photo Shooting

7. Start/Stop Recording

8. Playback

9. White Balance Mode Status

10. HDR Range Status

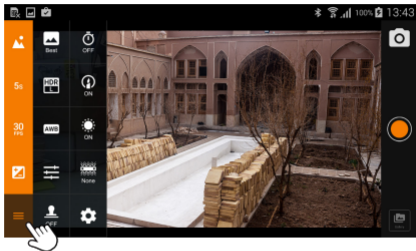
11. Time Stamp On

12. Timer On


13. Battery Status

14. Storage Status

Menu Screen



- 
Image Quality
 Best/Better/Good
- 
HDR Range
 High/Medium/Low
- 
White Balance
 Auto/Daylight/Shade
 /Cloudy/4000 FI-C/3300 FI-C
 /Incandescent
- 
Custom Image
 Saturation/Contrast/Sharpness
- 
Time Stamp
 ON/OFF

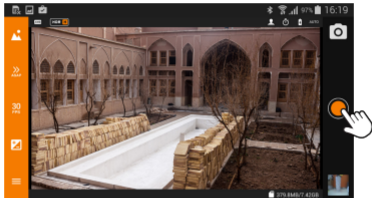
- 
Timer
 ON/OFF
- 
Low Light Recording
 ON/OFF
- 
LED Indicator
 ON/OFF
- 
Band Filter
 None/50Hz/60Hz
- 
General Settings

Time Lapse Shooting

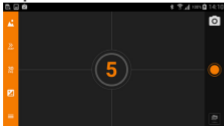
Create Time Lapse Video

Start Recording (with Brinno Camera App)

Step 1: Tap "  " to start recording.

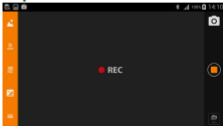


Step 2



Countdown number will appear on screen.

Step 3



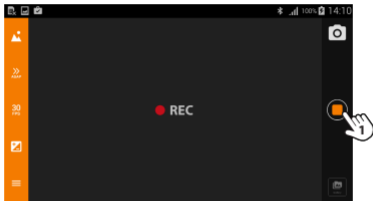
"REC" displayed on screen, start time lapse recording.



You can exit App when "REC" displayed on the screen.

Stop Recording

Step 1: Tap "  " to stop recording.



Step 2: After few seconds, screen will show Finished, then tap "OK" to save your video.

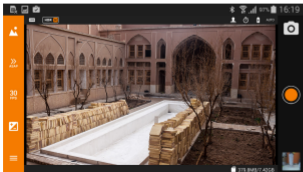


Step 3: After tap "OK", camera will back to main screen.

IF WiFi signal lost.

Go to your phone settings, connect to WiFi again and return to the App.

Tap "  " to show preview.



WiFi connected.



Brinno Camera app
demo video

Start Recording (without Brinno Camera App)

Step 1: Turn on camera power, when LED turns Green.



Step 2: Hold shutter button for 1 second (the Green LED will flash once), then release shutter button, the LED will flash while it's capturing.



Stop Recording

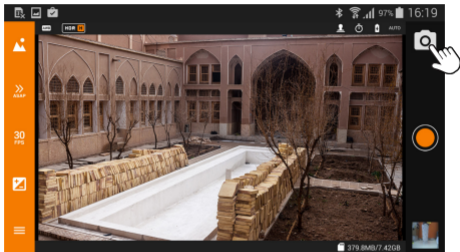
Hold shutter button for 2 second (the Green LED will flash once), the Green LED will turn solid, it means the time lapse video completed!



The camera will operate in previous settings, or factory default settings.

Take Photos

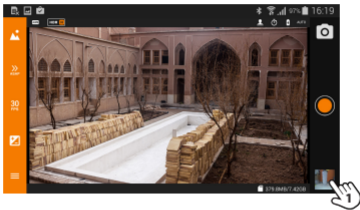
Tap "📷" to take photos.



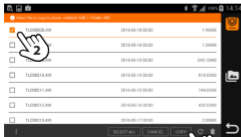
View and Share

Playback of videos

- Tap "Playback" to go gallery.



- Select videos you want to playback, then tap "COPY".




- Tap "  " icon to go your phone document, then select file.



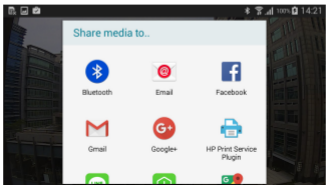
- Tap "  " icon to play your video.



 You should copy files to your mobile device before playing your time lapse video.

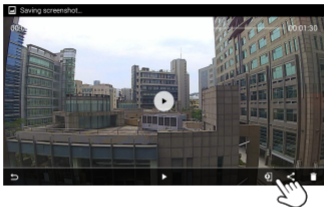
Share

At video playback screen, tap "  " icon, choose any social media you want to share!

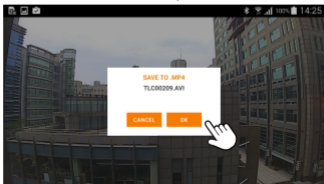


Save Video to your phone

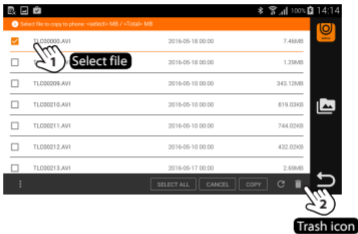
At video playback screen, tap "📁" icon, convert your video to MP4 format and save to your phone.



Tap "OK" to start format convert and save to phone (camera roll).

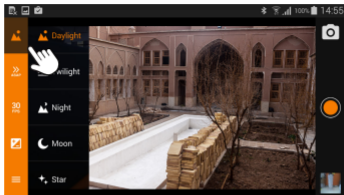


Delete Video



Setting

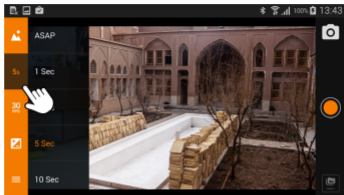
Scene



Option	Description
Daylight	For any photography situation in Daytime .
Twilight	Special setting for Sunrise & Sunset photography. Capture interval ASAP mode: 1 seconds per picture.
Night	Special setting for Nighttime photography. Low ISO setting, long exposure time. Capture interval ASAP mode: 2 seconds per picture.
Moon	Special setting for Moon photography. Low ISO setting, extra long exposure time up to 2 sec. Capture interval ASAP mode: 4 seconds per picture.
Star	Special setting for Star photography. Low ISO setting, super extra long exposure time up to 4 sec. Capture interval ASAP mode: 8 seconds per picture.

Time (Sec.)	Daylight	Twilight	Night	Moon	Star
The longest exposure time	1/15	0.5	1	2	4
The shortest capture interval	0.2~1	1	2	4	8

Time Interval



 Capture Interval range: From below 1 second to 24 hours.

What setting should I use

Subject	Description	Capture interval	Playback Rate
Daily Life	Recording kids, pets all parts of daily life	1~ 30 seconds	10~30
Party	Recording family parties, public events, and happy time all around	1~10 seconds	10~30
Traveling	Recording your trips, short and long	ASAP	10~30
Plant	Recording Flowers growing, or gardening over a period of time	1~30 min	15~30
Construction	Recording a building being built or any construction project	1 min~ 24 hr	15~30
Biking	Recording a bike ride or trip	1 sec	10~30
Face time lapse	You're the leading character in your time lapse videos	Shutter line	5

Time Lapse Frame Rate

You can change the videos FPS (frames per second) playback with this setting.

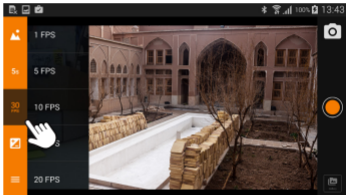
Generally, 10 FPS is suitable for Time Lapse Video, but depending on your needs you can use 1 - 30 FPS.

1 FPS:

If the video plays at 1 frame per second, the video will not look smooth, and the video length will be longer.

30 FPS:

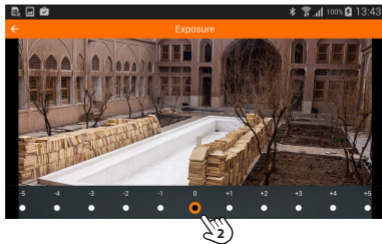
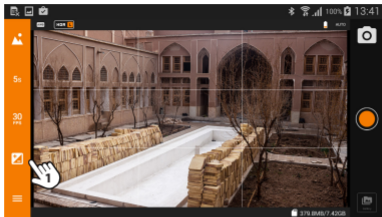
If the video plays at 30 frames per second, the video will look smooth, and the video length will be shorter.



15 FPS(Frames Per Second) means: 15 frames are played in 1 second.

Option	Video playback speed	Shooting subject
1 FPS	Very slow	Slide show
5 FPS	Slow	Stop motion, Face time lapse
10 FPS	Medium	Biking
15 FPS	Medium	Flowers growing, Educational endeavors
20 FPS		
30 FPS	Fast	Parties, Sunrises, Sunsets, Natural settings.

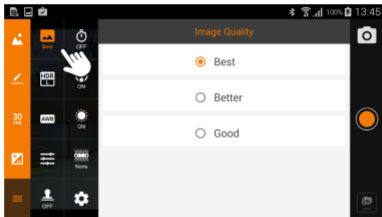
Exposure



Menu Setting

Image Quality

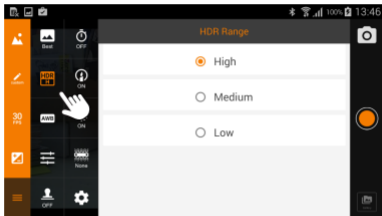
The Image Quality setting lets you choose a different image quality to fit your needs, and the image quality will determine the number of frames that can be stored on the SD Card.



Option	Single frame size	Description	4 GB SD card capability
Best	≈200~ 400 Kb	Low compression rate produces maximum image data for highest quality images.	≈ 14,000 photos
Better	≈150~ 300 Kb	General usage	≈ 20,000 photos
Good	≈70~ 150 Kb	High compression rate produce less image data, best for long capture periods.	≈ 30,000 photos

HDR Range








HDR (High Dynamic Range) setting let's you choose the required HDR setting:



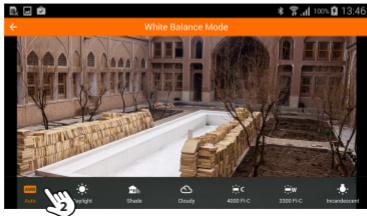
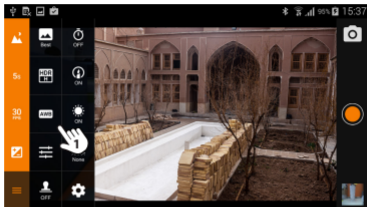
Option	Description (For example)
High	Suggested setting for sunrise or sunset.
Medium	For any standard shooting situation.
Low	For portraits.

White Balance Mode

At the default setting of Auto (AWB), the camera automatically adjusts white balance so that a white subject will appear white regardless of the color of the light source. It may however be necessary to match white balance to the light source under mixed lighting or when photographing a subject that is a solid color.

Option		Description	Color Temperature
	Auto	The camera will adjust the white balance automatically.	Approx. 4000 to 7000K
	5000 Day	Balance automatically.	Approx. 5000K
	7000 Shad	Use when shooting in the shade.	Approx. 7000K
	6000 Clou	Use when shooting on a cloudy day.	Approx. 6000K
	4000 Fl-C	Use when shooting under fluorescent light Cool White.	Approx. 4000K
	3300 Fl-C	Use when shooting under fluorescent light Warm White.	Approx. 3300K
	2800 Inc	Use when shooting under Tungsten light .	Approx. 2800K

White Balance Mode



Custom Image



Saturation Setting



White Balance Mode

Contrast Setting

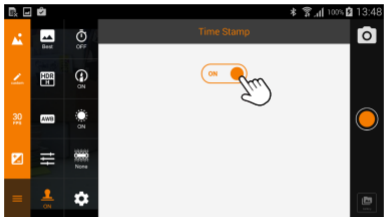


Sharpness Setting



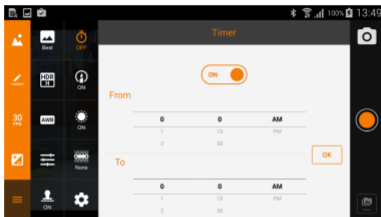
Time Stamp

You can choose if you want the time stamp to show at bottom of your video.



Timer

The Timer will allow you to pre-set a recording period. (eg. 8 am – 5 pm)



After setting up the time, then tap "Recording" to activate camera. The camera will automatically activate at the start recording time you selected.



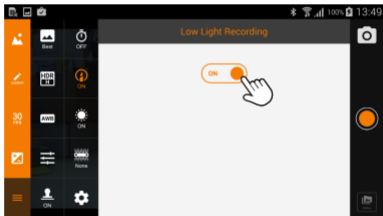
Once you activate timer, your camera will only work at the timer setting period.

Low Light Recording

You can choose to set up your camera to record videos in a low light environment or not. (< 5 Lux).

ON: Allows your camera to record video in a low light environment.

OFF: Your camera will go to sleep in a low light environment.

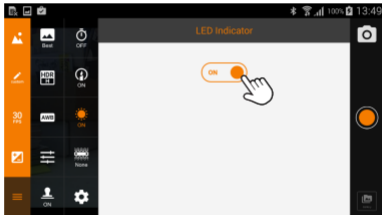


LED Indicator

You can choose whether or not the LED indicator will flash while capturing each frame.

ON: When the camera is capturing a frame, the LED indicator will flash once.

OFF: During capture period the LED indicator will not flash at all.



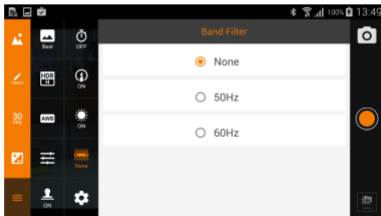
Band Filter

Select the correct fluorescent lighting frequency to match your indoor lighting frequency.

None: For outdoor environment.

50 Hz: Europe

60 Hz: USA



We suggest you use **None** when the scene is outdoors.

Advanced Setting

The screenshot shows the 'General' settings page of the TLC120 camera. The interface includes a left sidebar with icons for various camera modes and a main content area with several settings, each with a corresponding button to modify it.

You can reset your camera back to the default settings.

Function	Setting
Capture mode	Time Lapse
Capture interval	2 seconds
Time Lapse Playback Rate	10 FPS
White Balance Mode	Auto
Image Quality	Better
Scene	Daylight
HDR Range	Medium
Time Stamp	ON
Low Light Recording	ON
LED Indicator	ON
Band Filter	None

References

WARNING

BSMI 有電池產品

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

警告

本電池如果更換不正確會有爆炸的危險。請依製造商說明書處理過之電池。

NCC LP0002

低功率電波輻射性電機管理辦法

第十二條 經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

FCC

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This device complies with part 15 of the FCC Rules.

Operation is subject 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.

FCC RF Radiation Exposure Statement:

1. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
2. This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

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