**Step-by-Step Guide for Self-Test of 17 mm Fluorescent Projectile Brightness**

Device required:

Use any of the following phones: iPhone 15 Pro, Xiaomi 14, and HUAWEI Mate 60 Pro. Use the designated software and set camera parameters to capture continuously launched 17 mm projectiles. Measure the average brightness of these projectiles to assess if the energy-charging device meets the installation requirements.

Step-by-step instructions:

1. If you use iPhone 15 Pro or Xiaomi 14, you need to download and install Blackmagic Camera.
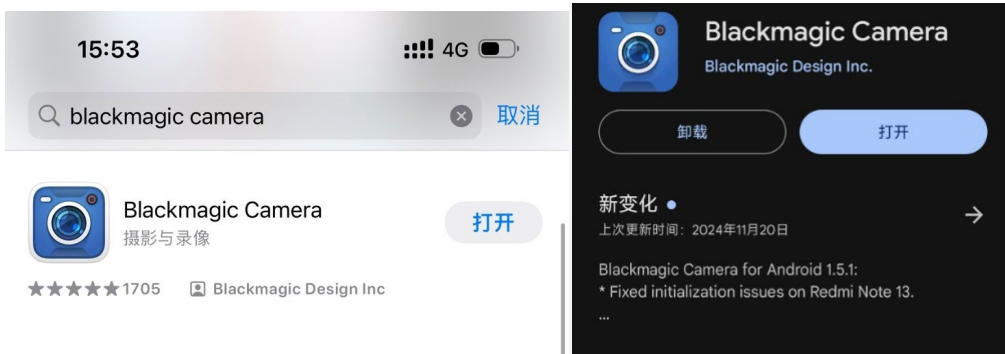
In the settings of Blackmagic Camera, choose HD as the resolution for recording videos. Then tap Codec, choose H.265, and set the bit rate to 18 Mbps.
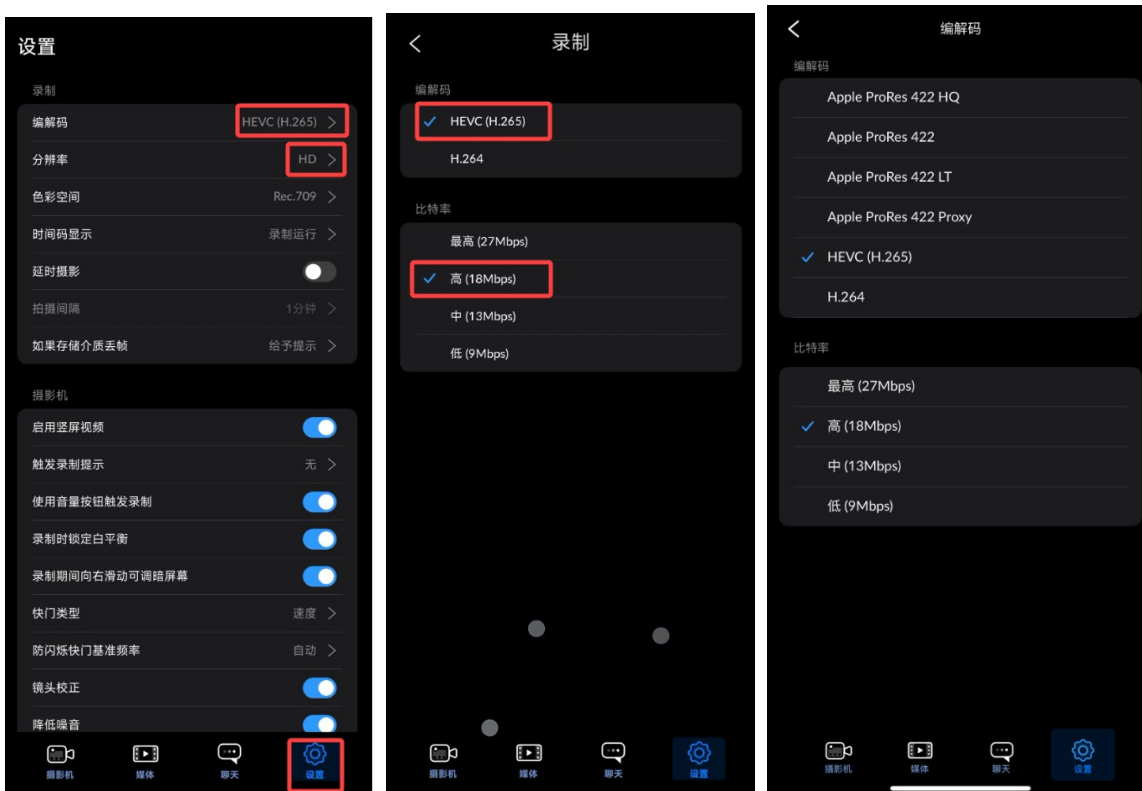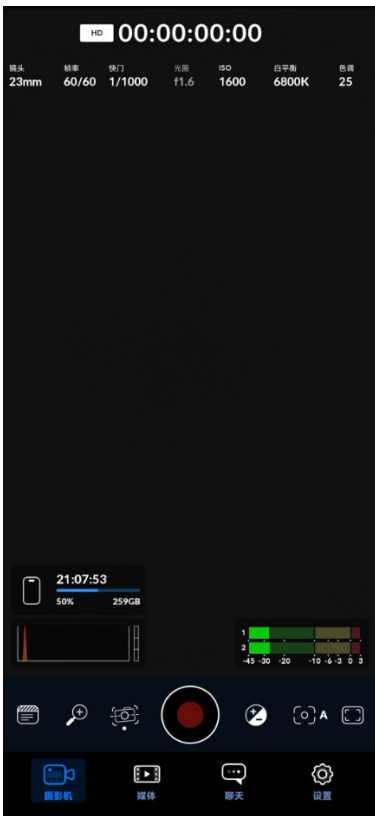

If you use HUAWEI Mate 60 Pro, open the native camera app, set the video resolution to [16:9] 1080p and the frame rate to 60fps.
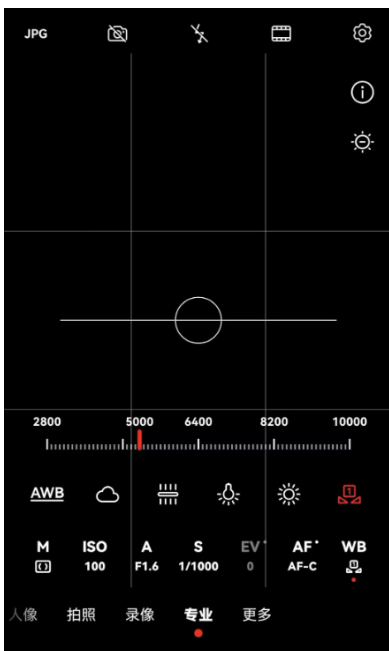
2. For iPhone 15 Pro/iPhone 15 Pro Max: Set Lens to 24 mm, ISO to 400, Shutter to 1/1000, White balance to 4500, Tint to 15, and FPS to 60.

3. For Xiaomi 14: Set Lens to 23 mm, ISO to 1600, Shutter to 1/1000, White balance to 6800, Tint to 25, and FPS to 60.

For HUAWEI Mate 60 Pro: Use the 24 mm (1×) lens, and set ISO to 100, Shutter to 1/1000, Aperture to F1.6, White balance to 5000, and FPS to 60.

4. Record a video to conduct an environmental light test, in which the illuminance must measure below 10 lux.


5. Position the phone at a 1.0-1.4 m distance directly in front of the Speed Monitor Module's light indicator and record a 3-second or longer video of continuously launched projectiles. (The radio frequency must be between 10 Hz and 20 Hz.)

6. Manually capture five images from the video recorded. Capture images in the middle of continuous launching. Each image must include a projectile in flight, 10-30 cm from the muzzle. Do not capture images of the initial shot or the first shot following a launching interruption. We recommend that you use PotPlayer to capture images from videos. You can pause the video and then right-click within the playback window to capture an image. The number of frames of the captured image should be recorded at the same time. The image should be named A_xxx.jpg (where xxx represents the number of frames). You can view the current number of frames by pressing Tab in the playback window.
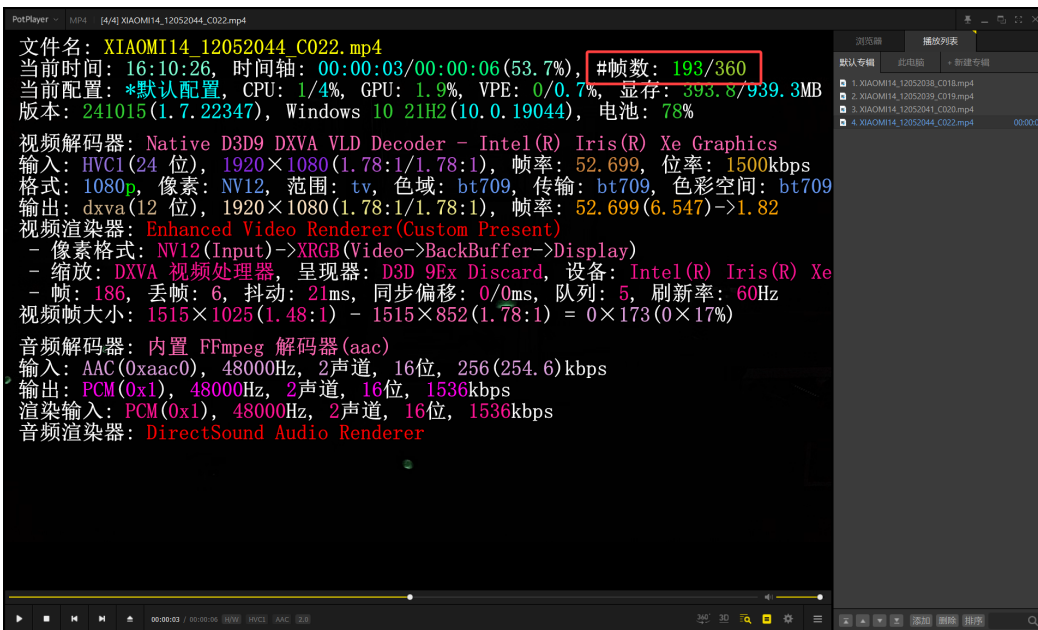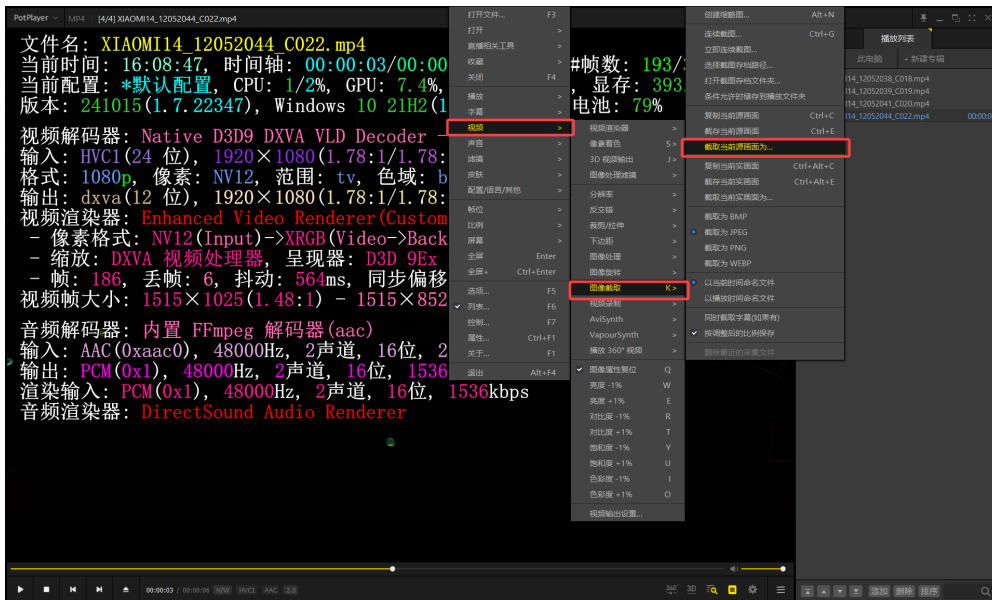
7. Copy the captured images to the "images" folder located in the same directory as 17mmBulletTest.exe.
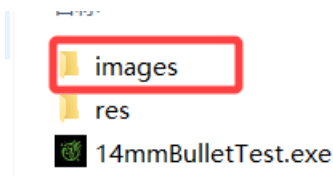
8. Run 17mmBulletTest.exe and process the images as instructed. Note: The absolute paths and filenames of the images must not contain Chinese characters.

9. In the opened image, draw a bounding box around the 17 mm projectile. The bounding box must closely surround the projectile.
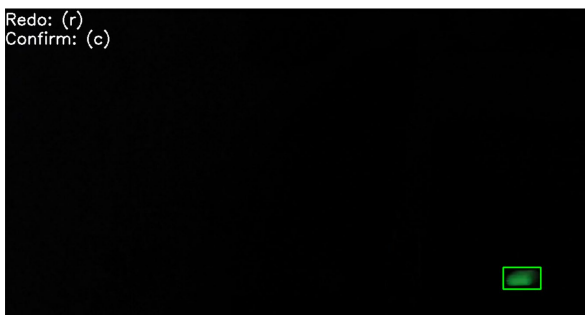
10. Repeat step 9 until all images are processed. The results are saved in the "res" folder.

11. Take the results of five images and calculate the average as the effective brightness value of projectiles exiting the muzzle.

For iPhone 15 Pro, a brightness value greater than 95 indicates the test is passed.

For Xiaomi 14, a brightness value greater than 170 indicates the test is passed.

For HUAWEI Mate 60 Pro, a brightness value greater than 130 indicates the test is passed.

12. Upload all images used to calculate the test result and the original video.

Please take the brightness self-test seriously, and do not attempt to pass the test using methods not provided herein.