TUNDRA DRONE

AUTOMOVING LIGHT FOR DJI MAVIC 2

USER MANUAL



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USE AND CARE OF THE PRODUCT - CUSTOMER RESPONSIBILITY

The Drone Pilot shall only use the **Tundra Drone Automoving light for DJI Mavic 3** (hereafter product) as described in this manual.

Drones, aircraft, or unmanned aerial vehicles (UAVs) (hereafter aircraft or drone) mounted with the Product from Tundra Drone AS (hereafter Tundra Drone) shall only be used in accordance with the regulations for drone flying in the country in which the Drone Pilot operates. The Drone Pilot must ensure that the drone, where the Product is mounted, is insured at all times with statutory liability insurance if required by national law in the country were operating the aircraft.



The Drone Pilot understands that using a Product from Tundra Drone on drones may entail a higher risk because mounting additional drone equipment on the drone may affect the performance of the drone itself, in both the short and long term. It is therefore recommended that the Drone Pilot performs more frequent maintenance of the drone than the drone manufacturer's recommendations, to ensure that performance is not reduced. Furthermore, additional drone equipment mounted to the drone may increase the likelihood that weather and other conditions may affect the drone's flight characteristics. The Drone Pilot understands that these constitute conditions that the Drone Pilot must be especially careful with when flying the drone. The Drone Pilot must read and understand the user manuals for both the drone and the product from **Tundra Drone** before the product is used, and then carry out their own training with these in a calm, delimited, and safe area, before the Drone Pilot takes the product from **Tundra Drone** into ordinary use.



Negligent use of drones with mounted drone equipment may lead to crashes, accidents or other dangers to the environment and people. If an incident as mentioned causes damage or death to people and animals, or damage to buildings, other physical objects or surroundings, and/or economic loss or damage, the Drone Pilot agrees that the Drone Pilot cannot hold Tundra Drone liable for damages, and the Drone Pilot cannot thold Tundra Drone liable for damages, and the Drone Pilot maives the right to pursue Tundra Drone via legal action in any country. Should claims be made against Tundra Drone Pilot, or for breach of public and private regulations and permits, the Drone Pilot is obliged to indemnify Tundra Drone. This also applies if the damage occurs to a third party.

IMPORTANT SAFETY INFORMATION

Use with caution:

- The product output is high intensity light. Do not look directly to the product's flood light when the light is turned on. The product's high intensity light can harm or cause permanent damage to human eyes!
- Do not turn on the light before you have positioned the light away from yourself and other people.
- · Do not use the product in rain, snow or wet weather conditions.
- Do not expose the device for moisture.
- Do not place the device where it can be exposed to excessive heat or a dusty environment.
 - Do not turn ON the Flood light of Automoving Light if the aircraft's propellers are not rotating. Lack of additional cooling from the aircraft's propellers may cause the Automoving light to overheat and malfunction.
- Do not look directly at the floodlight LED outlet when the light is turned on. It can harm or cause permanent damage to human eyes.
- The Flood light should be quickly turned OFF after landing to avoid burning or damaging the Electronics, LED's, Ground or the Landing pad.
- The product is equipped with a rechargeable lithium battery. Lithium batteries may have regulations and limitations for transportation, especially with aeroplanes.



When flying with Automoving light, the drone battery will drain at a faster rate. It is recommended to initiate the return to home process with a higher battery level than usual.



CHARGING THE AUTOMOVING LIGHT BATTERY

Use the provided battery charger kit to fully charge the Automoving light Battery before first use. Charging time for empty battery is up to 2 hours



Keep the Battery unit as shown in the image to get the access to the Charging plug on the bottom side.

2



Connect the AC power adapter to the Battery charging plug.



Connect the AC power adapter to a power source (100-240 V, 50/60 Hz). The AC power adapter will display a "Red" LED light when charging.



The Automoving light battery is fully charged when the "Green" LED light is turned on.

Disconnect the AC power adapter from the power source and disconnect the AC power adapter from the Automoving light battery once the battery is fully charged.

Charging time: 2 hours (empty to 100%)



- DO NOT charge an Automoving light Battery immediately after the flight as the temperature may be too high. Wait until the battery cools down to room temperature before charging again.
- The ideal charging temperature is about 10°C to 30°C (50°F to 85°F).
- The Automoving light Battery charger hub (included only in Large operations kit) can charge up to six batteries.

Δ

PREPARE THE DJI RC REMOTE CONTROLLER'S DJI GO 4 APP BEFORE FIRST FLIGHT

1. Connect your smart phone to the DJI Mavic 2 Remote controller and Power ON the DJI Remote controller



- 2. Open the DJI GO 4 app from your Smart phone
- 3. Go to "Settings" by tapping ••• (General Settings button)



4. Tap on the 📩 (Remote Controller Settings button)

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Tap on the menu on the right side of C2 and Scroll up till you find the Turn on/off Head LEDs option, Tap on that to program this function to the C2 button.

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6. You have now successfully prepared the DJI GO 4-app for the first flight with the Automoving light





Do not turn on the Automoving Light without attaching with the drone. Lack of additional cooling from the aircraft's propellers may cause the Automoving light to overheat and malfunction.

PREPARE THE AUTOMOVING LIGHT AND MOUNT TRACKING STICKERS TO THE AIRCRAFT'S CAMERA BEFORE FIRST FLIGHT



Clean the surface on the aircraft's camera before mounting the Tracking Stickers. Avoid using strong detergents as it may cause damage to the aircrafts paint.

1



Mount the Green Tracking (sticker) to the center of the circle on the aircraft's camera.



Do not use too much pressure when mounting the tracking marks, adding too much pressure have a chance to damage the aircraft's camera gimbal mechanism.



Mount the Red Tracking Sticker on the aircraft's camera (see illustration). The red tracking sticker should be aligned in parallel with the aircraft camera's direction.



camera and to the center of the circle)

DJI Mavic 2 Zoom Camera

Tracking marks mounted on a DJI Mavic 2 Zoom's camera.



DJI Mavic 2 Enterprise Advance Camera

Tracking marks mounted on a DJI Mavic 2 Enterprise Advance camera.



Make sure you are using the correct Tracking stickers. Design of stickers are different for each type of DJI Mavic 3 drone.

HOW TO USE THE DJI REMOTE CONTROLLER WITH THE AUTOMOVING LIGHT

- 1. Prepare the DJI Mavic 2 Aircraft for flight.
- 2. Power up the aircraft and make sure that the DJI GO 4 app connects to the aircraft.
- Turn ON/OFF the aircraft's front LEDs by pressing C2 button on the DJI Remote controller. The Automoving light will then be turned ON/OFF in sync with the aircraft's front LEDs being turned ON/OFF.





Automoving light will turn ON/OFF in sync with the Aircraft's camera movement once Automoving light is mounted to the drone successfully.



MOUNT THE AUTOMOVING LIGHT ON THE AIRCRAFT AND PREPARE FOR TAKEOFF



Prepare the aircraft for flight by following the instructions from your Aircraft's user manual



Make sure the Red and Green Tracking Stickers are mounted before you proceed

1



Place the Automoving light unit and the aircraft next to each other. Use one hand to lift the aircraft and one hand to lift the Automoving light unit.



- Lift the aircraft from the ground with one hand and lift the Automoving light unit with your other hand.
- · Position the Automoving light unit below the aircraft.



Hold the Automoving light unit in a 45-degree angle and slide it above the aircraft's body above the rear aircraft arm. While doing this, simultaneously start to change the angle of the Automoving light unit so that it is positioned in parallel with the aircraft's body at the end of the sliding movement.

3



Correctly mounted.

Place the aircraft on the ground with the Automoving light mounted, to prepare for the mounting of the battery.

5

4



Insert the Automoving light Battery into the Automoving light's battery slots.



Press IN the "Battery Latches" on both sides of the battery and position the Battery with the Automoving light unit battery slots



Slide the battery forward along the battery slots into the Automoving light unit until it locks.

7



Make sure the battery is mounted securely and that the Battery Latches have "Click" into place on both sides.

9



The image on the illustration shows correctly mounted battery.

When correctly mounted, there should be "No Gap" between the Battery and the Automoving light unit as shown in the illustration.



The Automoving light's Battery is also used to securely mount and lock the Automoving light unit to the aircraft.

Now mount the Automoving light's cable and cover the aircraft's right foot front LED with the cable plug that contains a light sensor.

10



Lift the aircraft's front leg and place the cable plug at the bottom with the cap facing upwards.

11



Slide the cable plug upwards until it reaches the front LED.



Slightly lift the edge of the cap to be able to slide the cable plug fully above the front LED.

13



Slide it upwards until it fully covers the aircraft's front LED.



Loosen the Velcro that is attached to the cable

15



Fasten the cable below the drone's arm with the Velcro.

Connect the USB C connector to the USB C port on the Automoving Light.



Make sure the aircraft's propellers are not touching the cable or the Velcro after attaching them below the drone's arm.

16



The Automoving light is now complete and securely mounted on the aircraft.

17



- To start up the Automoving light hold the Power Button on the battery down for about 3 seconds. The battery will start with indicating charge level in four steps where 1 flash is empty and 4 flashes is full. After 5 seconds the Top Strobe will start to flash continuously in sync with the Bottom strobe.
- The Floodlight LED will flash once on startup and once more when ready for use. Boot-up time is about 30 seconds.



Turn on the aircraft.

19



Turn on the aircraft's Remote controller and make sure it connects to the aircraft.



Before taking off, make sure the Aircraft Status Bar in DJI GO 4 app displays Ready to Go.



Turn on the aircraft's front LEDs with the Remote controller's C2 button.



When controlling the aircraft camera's tilt with the Gimbal Dial, the Automoving light automatically follows the camera's tilt angle, for optimal illumination.



Do not use the Gimbal Dial when the aircraft is on the ground and also during the Takeoff or Landing to avoid damaging the Flood light.

	Lack of additional cooling from the aircraft's propellers may cause the Automoving light to overheat and malfunction.
0	 Do not look directly at the floodlight LED outlet when the light is turned on. It can harm or cause permanent damage to human eyes.
Warning	The Flood light should be quickly turned OFF after landing to avoid burning or damaging the Electronics, LED's, Ground or the Landing pad.
	 Do not turn ON the Flood light of Automoving Light if the aircraft's propellers are not rotating. Lack of additional cooling from the aircraft's propellers may cause the Automoving light to overheat and malfunction.



The Flood light will be automatically dimmed when the when the electronics on the Automoving light gets overheated.

22



You are now ready for take-off ! Fly safely !

AUTOMOVING LIGHT WEB SETUP PAGE

Web Setup Page is a platform which can be used for Updating the Automoving light Software, Calibrating the Flood light, change the Activation of Flood light and more.

How to activate the hotspot and login to Web setup page?



- Once the Automoving light is booted up, press the mode button once to activate the Wifi Hotspot in the Automoving light and connect to the Wifi "tundradrone" with the password "tundradrone" with a computer, phone or tablet.
- 2) Open a web browser and type http://192.168.0.5:5000 on the address bar and press enter.

Abbreviation's used

- LDR Flood light can be activated by turning on the drone's Auxiliary Bottom Light.
- GESTURE Flood light can be activated by tilting the Drone Camera by pressing the "C2 button" from horizontal to straight down (90° down) and back within 2 seconds with the DJI Remote controller.



By pressing the Mode Button once, the WiFi Hotspot will be activated. The "Camera LED" will keep flashing while WiFi Hotspot is activated. Press the mode button one more time to deactivate WiFi Hotspot.



Do not look directly to the product's floodlight when the light is turned on. The product's high intensity light can harm or cause permanent damage to human eyes!

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Activate Flood light using Drones Front LED Light

On the Automoving light web setup page, select the 4th tab "Device Settings" to activate the Flood light by turning ON/OFF the drone Front LED light.

- Activation of the flood light is done by selecting the option "LDR" as marked in the image.
- Then click on Apply settings.

2

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Calibration of Flood Light

On the Automoving light web setup page, select the 3rd tab "Servo calibration" to calibrate the Flood light with the drone camera.

(Do the calibration only when it is needed, the unit is calibrated with the aircraft camera by default)

- To calibrate the flood light change only the value on Initial Angle column.
- Values entered should be between -15 to -85.
- Then click on Configure.

AUTOMOVING LIGHT SOFTWARE UPDATE

Update the software on your Automoving light for better experience. Software of Automoving light can be updated in two different ways as shown below:





If you have received your unit before "March 2023" then you will have to Flash the SD Card in your Automoving light. After the update you will be able to update your device wirelessly also.

1



Use any web browser and type https://tundradrone.com/support/ to open the Tundra Drone web support page and select "Automoving Light".

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	SUPPORT FOR TUNDRA DRONE AUTOMOVING LIGHT
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Select the "Software update" link shown below for the type of Automoving light which you want to do the update.

(Above image shows how the "Automoving Light for DJI MAVIC 3" software update link is selected)

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SOFTWARE UPDATE		
Update the unfineare on your Automoving light for better experience.		
Jure BD 2022. This version for the issue with the large turning fully off when swertesting. We are now gradually deceasing the intensity of the large if therpeature goes too high. Normally the temperature nover much that threahold value. Other features:		
 added the possibility to not the intensity of the floadlight from the web artup page Web setup page will now show the version number of both the web setup page and the controller software 		
April 20th 2023: This release let the user do the calibration of the lamp angle easily to match the angle of the drone camera. Other features in this update:		
 parallelity is under the multiple brained of constant light, this is used for soming the light brain long distance, for example share, planning where planning where a some planning wher		
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Setup remote controller for controlling the Automoving light		

This is the page where you can find more details about each software updates we have released for Automoving Light.

Select the "Download latest software" link for getting the latest update files. (Above image shows the "Automoving Light for DJI MAVIC 3" software update page)

UPDATE THE SOFTWARE WIRELESSLY



Click and download all three latest files listed below "Update files".



1 How to activate the hotspot and login to Web setup page?



Once the Automoving light is booted up.

Press the mode button once to activate the Wifi Hotspot in the Automoving light and connect to the Wifi "tundradrone" with the password "tundradrone" with a computer, phone or tablet.

Open any web browser and type http://192.168.0.5:5000 on the address bar and press enter.



If the Software version on the device is " v1.2.5 " or above, by pressing the Mode Button once, the WiFi Hotspot will be activated. The "Camera LED" will keep flashing while WiFi Hotspot is activated. Press the mode button one more time to deactivate WiFi Hotspot.

2 How to update the software using Web setup page?



- · Select "Software update" tab from the Web Setup page.
- Drag and drop the latest "tundra_uix_server_xx.xx.xx.dbe" file and let it finish updating.
- Drag and drop the latest "tundra_hotspot_xx.xx.xx.dbe" file and let it finish updating.
- After that update is done drag and drop the latest "tundra_green_app_xx.xx.xx.dbe" and let the unit install and reboot.
- After the reboot is finished, restart the unit by turning OFF & ON to repeat the steps above for connecting to hotspot and open Web Setup page.
- Check bottom of the Web Setup page to validate the current software version running on your device.

UPDATE THE SOFTWARE BY FLASHING SD CARD



Click and download the latest files listed below "Image files".



Make sure to download "Image file for Automoving light xx.xx.xx (update release date)" file before proceeding to next step.

1



Use tweezers or other suitable tool to pull out the SD card without damaging it



Do not damage the SD Card while removing or reinstalling from the Automoving light



Insert the SD card to the SD card slot on your computer

- 3 Download and install "balena Etcher" software from internet to your PC. link for download: https://etcher.balena.io/
- 4 Flashing the SD card with the downloaded "Image file".

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🕼 Clone drive			

- Select "Flash from file" and select the downloaded Image file from website.
- _ Select the "Target device (SD Cad)" and proceed forward by clicking "Flash button".
- _ After the flashing is done the software will be validated by "balenaEtcher", once the validating is done close "balenaEtcher" software and safe remove the SD Card from your PC.
- 5 Reinstall the SD card to Automoving light and secure the SD Card by closing the Rubber Part.

AUTOMOVING LIGHT CHARGE HUB

Automoving light Charge Hub is compatible for charging six batteries in an order of the charge available in the batteries. Charge Hub can help to make the battery charging efficient and save time.

How to charge the batteries with Charge Hub

To power the Charge Hub AC power adapter is used, when the adapter is connected the Power LED will be turned ON with Green color.



6 batteries can be connected at a time to the Charge Hub, the battery with highest charge level will be charged first and the lowest will be charged last, if more than one batteries are connected at the same time.

- When the batteries are connected to the Charge Hub the Status LED will indicate with Orange color light to show the battery connected to is charging.
- · If the Status LED color is Green it shows that the battery is fully charged.
- · if the Status LED color is Red it shows that the battery is in queue for charging.

AUTOMOVING LIGHT LENS KIT CHANGING

Automoving light is compatible with different type of Lens Kits to have better user experience to the customer. The Lens Kit's are add-ons which can be purchased separately from the Tundra Drone website.



Use a flat Screw Driver to pop out the lens locking given on both top and bottom side for the Heatsink



Before attaching the Lens Kit to Heatsink, make sure the Lens Kit is cleaned with a Dry Clean Cloth. If there is water/ moisture present inside the Lens Kit it can cause LED or Electronics malfunction.



Hold the Lens Kit with the hand and pull out once unlocked.

3



To attach the Lens Kit, align both the flanges (top and bottom flanges) of the Lens Kit to the Heatsink and push towards Heatsink to lock the.

** Make sure both Top & Bottom lock is engaged before use.

SUPPORT

For technical support please contact us https://tundradrone.com/support

If you have any questions about this document, please contact TUNDRA DRONE by sending a email to support@tundradrone.com

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Designed in Norway

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