

# Orion® Dynamo™ Pro 155Wh Lithium Power Supply

#2309 - US VERSION #2313 - EU AC VERSION

#2314 - UK AC VERSION

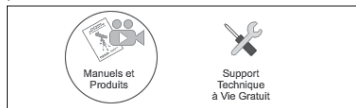


## Français

❶ Pour obtenir le manuel d'utilisation complet, veuillez vous rendre sur le site Web [OrionTelescopes.eu/fr](http://OrionTelescopes.eu/fr) et saisir la référence du produit dans la barre de recherche.

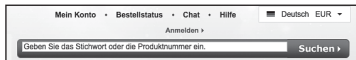


❷ Cliquez ensuite sur le lien du manuel d'utilisation du produit sur la page de description du produit.

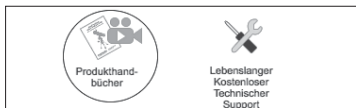


## Deutsche

❶ Wenn Sie das vollständige Handbuch einsehen möchten, wechseln Sie zu [OrionTelescopes.de](http://OrionTelescopes.de), und geben Sie in der Suchleiste die Artikelnummer der Orion-Kamera ein.



❷ Klicken Sie anschließend auf der Seite mit den Produktdetails auf den Link des entsprechenden Produkthandbuchs.



## Español

❶ Para ver el manual completo, visite [OrionTelescopes.eu](http://OrionTelescopes.eu) y escriba el número de artículo del producto en la barra de búsqueda.

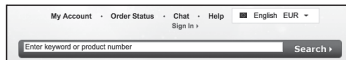


❷ A continuación, haga clic en el enlace al manual del producto de la página de detalle del producto.



## Italiano

❶ Per accedere al manuale completo, visitate il sito Web [www.OrionTelescopes.com](http://www.OrionTelescopes.com). Immettere the product item number nella barra di ricerca



❷ Fare quindi clic sul collegamento al manuale del prodotto nella pagina delle informazioni sul prodotto.



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Congratulations on your purchase of an Orion Dynamo™ Pro Lithium Power Supply. The generous 155 Watt-hour battery capacity provides power for all of your observing needs. In addition to powering your astronomical instruments, the Dynamo Pro also serves as a power supply for a multitude of devices. It includes three 12 volt outputs (15-amp max), three USB outputs (2.1A Max), and a 100 watt AC output, as well as a red LED flashlight with multiple brightness options.

## 1. Operation

### Powering 12 Volt Devices (12v/15A output)

The Dynamo Pro will operate up to three devices, powered through the 12v DC output 5.5mm (2.1mm internal) sockets (**figure 2**). A single 5.5mm to 12v female cigarette lighter socket is provided. If your 12v device does not have a cigarette lighter style plug or a 5.5mm DC cable, then you will need to purchase an adapter. 5.5mm DC cables (5.5mm outer diameter/2.1mm inner diameter) can be found at your local electronics store, and 12v cigarette lighter cables can be purchased through Orion. The tip of the plug will receive the positive charge (tip positive) from the Dynamo Pro, so make sure that the device to be powered is also tip positive. If the device is tip negative, then an adapter is needed. (Some cigarette lighter-type plug adapters allow you to switch between tip positive and tip negative). If all three of the 12V sockets are being used simultaneously, the total amperage of the 12v devices together must not exceed 15 Amps.

### Powering USB devices

The Dynamo Pro has three USB ports that can be used to power or charge USB devices such as smartphones and tablets, with a max output of 2.1A each. To use, plug the USB device into the port, and then press the “Batt Check” button (**figure 1**) in order to send power through the port to the device. (Note this difference – the 12v output sockets are powered as soon as you plug the device in. The USB sockets are only powered after a device is plugged in AND the Battery Check button is pressed). If no device is detected on the USB ports, then the USB outputs will power down soon after in order to conserve power.

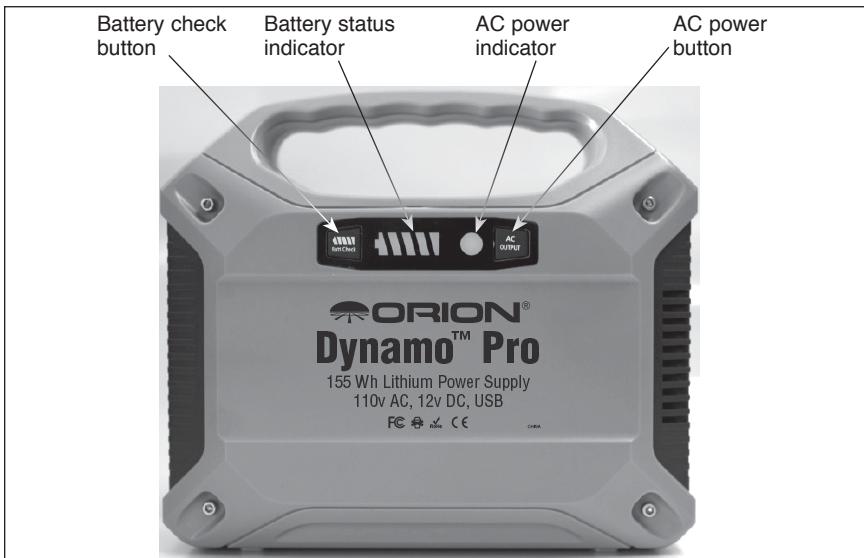
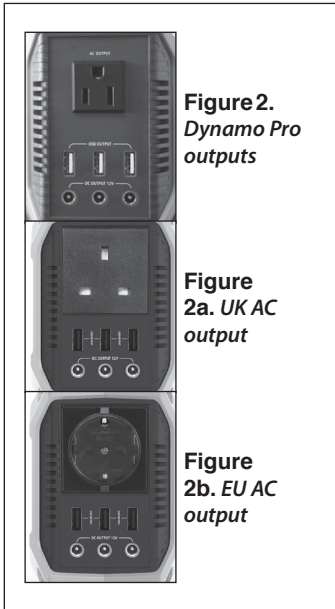


Figure 1. The Dynamo Pro 155 Lithium Power Supply



**Figure 2.**  
*Dynamo Pro outputs*

**Figure 2a.**  
*UK AC output*

**Figure 2b.**  
*EU AC output*

## Powering AC devices

The Dynamo Pro also has a single AC output (**figure 2, 2a, 2b** - plug style and voltage depend on the version purchased - US/EU/UK) port (100w max) for powering small electronic devices such as lamps, televisions and laptop computers. Please note laptops can draw 65w (or more), so keep in mind that a computer can quickly deplete the capacity of the Dynamo Pro. To use, plug in your AC device, then press the AC output button (**figure 1**), and the red indicator light will turn on, indicating power is being supplied to the outlet.

Also note that the AC output waveform is a modified sine wave, not a pure sine wave. If you are plugging in an AC device with a direct AC motor (such as a fan, laser printer, or output voltage control device such as a dimmer, they may not work properly. Please check with the manufacturer for your AC device if it will work with modified sine wave AC.

## Operating the Red LED Flashlight

The flashlight located on the front end of the Dynamo Pro (**figure 3**) is a variable-mode light that can be used to provide light to a small area. It consists of a red LED to preserve night vision under dark skies.

To operate the flashlight, simply press the flashlight On/Off button (**figure 3**). The brightness of the light is varied by pressing the On/Off button multiple times. The LED cycles through a brightness range of: 5%/10%/50%/100%. In any LED brightness level, hold the button down for 3 seconds to turn the flashlight off, without having to cycle through the brightness range.

## 2. Recharging the Dynamo Pro

The battery charge percentage is displayed as a series of red lights next to the Battery Check button (**figure 1**). As the battery capacity is depleted, fewer of the red lights will be lit. The battery can be recharged from an AC outlet or from a DC source, such as a car cigarette lighter, using the included accessory adapters.

### Recharging the Dynamo Pro with AC Current

Recharging the Dynamo Pro with an AC wall outlet requires the included AC adapter. Do not use substitute AC adapters. The included adapter has an input range of 100-240v 50/60Hz 0.8A, and outputs 15v at 2A.

Simply plug the AC adapter into a wall outlet, and plug the other end into the DC Input Jack of the Dynamo Pro (**figure 3**). As the Dynamo Pro charges, the red battery indicator lights will flash in series. When all indicator lights are solid, the Dynamo Pro is fully charged. Remove the AC charger when the battery is fully charged; do not store the Dynamo Pro with the AC adapter plugged in for a prolonged period of time.

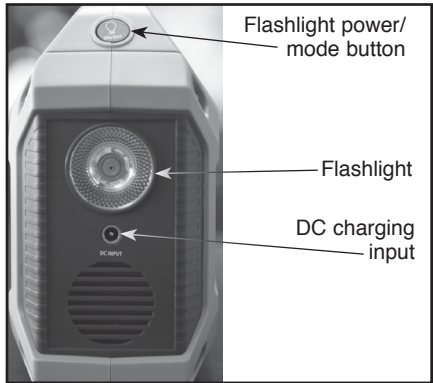
Charging can take up to 7-8 hours depending on how depleted the battery was when charging commenced.

### Recharging the Dynamo Pro with DC Current

Recharging the Dynamo Pro with DC current should be done with the cigarette lighter outlet in an automobile. The car's engine must be operating during charging.

Insert the cigarette lighter cable into the car's 12v cigarette lighter jack, and insert the other end into the 5.5mm DC input jack on the Dynamo Pro (**figure 3**). As the Dynamo Pro charges, the red battery indicator lights will flash in series. When all indicator lights are solid, the Dynamo Pro is fully charged. Do not attempt to charge the Dynamo Pro unless the engine is on. The Dynamo can drain the power of a car battery that isn't being charged if the car is not running.

Charging can take up to 7-8 hours depending on how depleted the battery was when charging commenced.



**Figure 3.** *Dynamo Pro Flashlight and DC input*

### **3. Protection Mode**

The Dynamo Pro will go into protection mode if it senses too much power being drawn through the outputs. If more than 100W is pulled through the AC output, protection mode will activate, shutting the unit down. Remove the device, and press the AC output button to reset the unit. If the problem occurs over the DC outputs (either a short circuit or power greater than 180 watts), remove the devices and recharge the unit to recover from protection mode. Please do not overload the Dynamo Pro with devices that pull more power than the Dynamo is capable of handling.

### **4. Storage and Maintenance**

To optimize the life of the Dynamo Pro, several steps should be taken for its proper storage and maintenance. Keep the Dynamo Pro stored in a dry, cool area when not in use. Fully charge the Dynamo Pro before putting it into storage. If you are going to store the Dynamo Pro for long periods of time, you should occasionally recharge it – once every three months for optimal storage and lifespan, and at LEAST once every 6 months.

The Dynamo Pro has a useful lifespan of at least 500 full charge cycles. At some point, as with all rechargeable batteries, the lithium ion cells inside will no longer be able to hold a full charge, and the capacity will decrease. After its useful life, please recycle this battery at a facility that can take used batteries. Please do not dispose of in the trash to avoid waste pollution. Most city and counties have recycling programs that can handle Lithium Ion batteries.

### **5. Safety**

1. Do not use or charge the unit if the housing is cracked.
2. Do not ship the unit if the housing is cracked.
3. Do not attempt to short circuit the battery.
4. Do not heat the unit, or dispose of in fire, water or other liquids. Keep away from high temperatures (normal operating range: 14°F–104°F (-10°C-40°C).
5. Do not attempt to disassemble the unit.
6. Do not drop the unit or place heavy objects on top.

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7. Children should be supervised when in proximity to the unit.
  8. The unit may become warm when charging, this is normal.
  9. Do not leave the charger plugged into the unit for prolonged periods of time after charging is complete.
  10. Do not throw the unit away if it no longer works, recycle at an appropriate disposal facility.

## 6. Specifications

|                        |   |
|------------------------|---|
| Capacity:              | 42000mAh@3.7V/155Wh   |
| Dimensions:            | 7.7" x 3.5" x 6.7"  |
| Weight:                | 3.5 lbs.  |
| Internal Batteries:    | Lithium Ion   |
| Recharging:            | DC15v/2A  |
| Full Charge Time:      | 7-8 hours at DC15v/2A   |
| Output:                | 3x USB 5v/2.1A(max), 3x DC9-12.6v/10A (max), 1x 110v AC 60Hz (US version), 1x AC 230v 50Hz(EU/UK version) |
| AC output power:       | Continuous 100W output, Modified Sine Wave  |
| Bulb type:             | Ultra bright LED  |
| Power indicator bulbs: | LED indicators  |
| Operating temp:        | 14°F–104°F (-10°C-40°C)   |
| Recharge lifespan:     | >500 full cycles  |
| Package includes:      | Dynamo Pro, AC power adapter, Cigarette lighter adapter, Car charger adapter, User manual                 |

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## One-Year Limited Warranty

This Orion product is warranted against defects in materials or workmanship for a period of one year from the date of purchase. This warranty is for the benefit of the original retail purchaser only. During this warranty period Orion Telescopes & Binoculars will repair or replace, at Orion's option, any warranted instrument that proves to be defective, provided it is returned postage paid. Proof of purchase (such as a copy of the original receipt) is required. This warranty is only valid in the country of purchase.

This warranty does not apply if, in Orion's judgment, the instrument has been abused, mishandled, or modified, nor does it apply to normal wear and tear.

This warranty gives you specific legal rights. It is not intended to remove or restrict your other legal rights under applicable local consumer law; your state or national statutory consumer rights governing the sale of consumer goods remain fully applicable.

For further warranty information, please visit [www.OrionTelescopes.com/warranty](http://www.OrionTelescopes.com/warranty).



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