

Profoto B1 500 AirTTL

User's Guide



Congratulations on your new Profoto product!

Regardless if you chose a new flash or a new light-shaping tool, know that almost half a century's worth of experience was put into its making.

If the years have taught us one thing, it is to never neglect a single detail. We only put our name on a product in which we have the fullest confidence. Before shipping, every one of our products pass an extensive and strict testing program. Unless it complies with the specified performance, quality and safety, it is a no-go.

As a result, we are confident that your new Profoto product will stay with you for years and help you grow as a photographer.

But getting the product is only the beginning of that journey. Using it for light shaping is the real adventure. That is why we take pride in providing you with such a wide assortment of light-shaping tools, allowing you to shape the light in any way you can imagine.

The almost infinite possibilities might seem bewildering at first, but we're certain you will soon get the hang of it.

Still, I encourage you to sign up for our newsletter at www.profoto.com/newsletter or visit our blog at www.profoto.com/blog so that we can share our experience from almost 50 years of light shaping and hopefully inspire you to grow even further.

Enjoy your Profoto product!

Conny Dufgran, founder

General safety instructions



SAFETY PRECAUTIONS!

Do not operate the equipment before studying the instruction manual and the accompanying safety information. Make sure that Profoto Safety Instructions always accompany the equipment! Profoto products are intended for professional use! Generators, lamp heads and accessories are intended for indoor photographic use only. Do not place or use the equipment where it can be exposed to moisture, extreme electromagnetic fields, or in areas with flammable gases or dust! Do not expose the equipment to dripping or splashing. Do not place any objects filled with liquids, such as vases, on or near the equipment. Do not expose the equipment to rapid temperature changes in humid conditions as this could lead to condensation water in the unit. Do not connect this equipment to flash equipment from other brands. Do not use flash heads without supplied protective glass covers or protective grids. Glass covers must be changed if they have become visibly damaged to such an extent that their effectiveness is impaired, for example by cracks or deep scratches. Lamps must be changed if they are damaged or thermally deformed. When placing a lamp into the holder ensure not to touch the bulb with bare hands. Equipment must only be serviced, modified or repaired by authorized and competent service personnel! Warning - The terminals marked with the flash symbol are hazardous when live.



WARNING – Electrical Shock – High Voltage!

Mains powered generators shall always be connected to a mains socket outlet with a protective earthing connection! Only use Profoto extension cables! Do not open or disassemble generators or lamp heads! Equipment operates with high voltage. Generator capacitors are electrically charged for a considerable length of time after being turned off. Do not touch modeling lamps or flash tubes when mounting an umbrella metal shaft in its reflector hole. Disconnect the lamp head cable between the generator and lamp head when changing the modeling lamp or flash tube! The mains plug or appliance coupler is used as disconnect device. The disconnect device shall remain readily operable. Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as direct sunlight, fire, or the like.



Caution – Burn Hazard – Hot Parts!

Do not touch hot parts with bare fingers! Modeling lamps, flash tubes and certain metal parts emit strong heat when used! Do not point modeling lamps or flash tubes too close to people. All lamps may on rare occasions explode and throw out hot particles! Make sure that the rated voltage for the modeling lamp corresponds with the technical data in the user guide regarding the power supply!

NOTICE

NOTICE – Equipment Overheating Risk

Remove transport cap from lamp head before use! Do not obstruct ventilation by placing filters, diffusing materials, etc. over inlets and outlets of the equipment ventilation or directly over glass covers, modeling lamps or flash tubes!

Note about RF!

This equipment makes use of the radio spectrum and emits radio frequency energy. Proper care should be taken when the device is integrated in systems. Make sure that all specifications within this document are followed, especially those concerning operating temperature and supply voltage range. Make sure the device is operated according to local regulations. The frequency spectrum this device is using is shared with other users. Interference cannot be ruled out.



Final Disposal

Equipment contains electrical and electronic components that could be harmful to the environment. Equipment may be returned to Profoto distributors free of charge for recycling according to WEEE. Follow local legal requirements for separate disposal of waste, for instance WEEE directive for electrical and electronic equipment on the European market, when product life has ended!

Table of Contents

Congratulations on your new Profoto product!.....	3
General safety instructions.....	4
Nomenclature	6
Operation.....	9
Quick guide	9
Power on/off.....	9
Select Freeze/Normal mode.....	10
Set light output (Energy)	10
Select Sync setting	11
Modeling light settings.....	12
Ready signal settings.....	12
Handling.....	14
Battery mounting.....	14
Battery charging	14
Stand mounting	14
Mounting Profoto Light Shaping Tools	14
Replacing the Reflector/Front glass.....	15
Changing flash tube and Model Light LED.....	15
Other	16
Automatic flash exposure (TTL) indicator	16
Temperature limit indicator.....	16
Check Firmware	16
Upgrade Firmware	16

Nomenclature

6



1. Handle
2. Tilt-lock knob
3. Stand adapter
4. Clamp screw
5. Reflector and Front glass
6. Zoom scale
7. Umbrella holder
8. Battery
9. Battery release button



10. USB port

12. IR-Slave eye

11. Sync connector



13. LCD display

16. ENERGY/SETTINGS dial

14. MODEL button

17. READY button

15. TEST button

18. SYNC button



19. Modeling light setting

20. Ready signal setting

21. Sync/Air setting

22. Battery level indicator

23. Light output setting

24. Freeze mode indicator

25. Temperature limit indicator

26. Automatic flash exposure (TTL) indicator



27. Battery charger

28. Case (Bag XS)



Operation

Quick guide

For detailed operating instructions, see subsequent sections.

1. Charge the battery (see page 14).
2. Mount the battery (see page 14).
3. Remove the transport cap from the Reflector/Front glass [5].
4. Fit the Stand adapter [3] to a light stand and secure it with the Clamp screw [4] (see page 14).
5. Adjust the tilt position of the flash by loosening the Tilt-lock knob [2] (see page 14).
6. Switch on the unit by pressing and holding the TEST button [15] (see page 10).
7. Select Freeze/Normal mode by pressing and holding the ENERGY/SETTINGS dial [16] and then shortly pressing the TEST button [15] (see page 11).
8. Set the briefly flash light output with ENERGY/SETTINGS dial [16] (see page 11).
9. Release a test flash by pressing the TEST button [15] (see page 11).
10. Select Sync setting [21] with the SYNC button [18] (see page 12).
11. Select Modeling light setting [19] with the MODEL button [14] (see page 13).
12. Select Ready signal setting [20] with the READY button [17] (see page 13).
13. Mount Light Shaping Tools (see page 15).

Power on/off

1. To switch on the unit, press and hold down the TEST button [15] until the Display [13] shows the settings information.
2. To switch off the unit, press and hold down the TEST button [15] until the Display [13] is all black.

The B1 unit automatically goes into sleep after 30 minutes and shuts off completely after one hour of inactivity to save battery life.

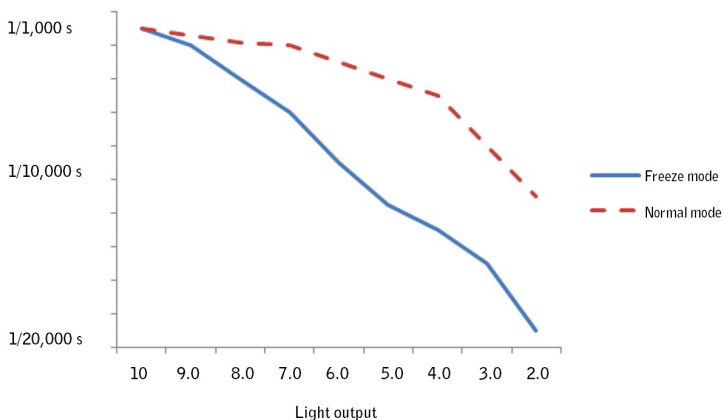
Select Freeze/Normal mode

The B1 unit can operate in two modes to maximize the versatility in different shooting situations.

- Normal mode: Optimized color temperature stability over the entire energy range. Best option for most types of shots.
- Freeze mode: Optimized for shortest flash duration. Best option for shots where the flash is used to freeze fast action.

Switch between Freeze/Normal mode by pressing and holding the ENERGY/SETTINGS dial [16] and then shortly pressing the TEST button [15]. When Freeze mode is selected, the Freeze mode indicator [24] is shown on the Display [13].

See below overview of flash duration in Freeze vs. Normal mode.



Set light output (Energy)

The light output of the flash light is shown on the Display [13] in a relative f-stop scale. The maximum energy (500Ws) is shown as 10.

Use the ENERGY/SETTINGS dial [16] to change the energy level of the flash light:

- Turn the ENERGY/SETTINGS dial [16] to change the energy level in 1/10 f-stop increments.
- Press and turn the ENERGY/SETTINGS dial [16] to change the energy level in 1 f-stop increments.

The TEST button [15] is illuminated when the unit is fully charged and ready to flash.

Press the TEST button [15] to release a test flash.

Select Sync setting

The current sync setting is shown in the Sync/Air setting section [21] on the Display [13]:

Wireless sync settings:

- **AIR:** The built-in Profoto Air receiver is activated. The B1 is set to be triggered and/or controlled from any of the optional Profoto Air transceivers offered by Profoto.
- **SLAVE:** The built-in IR-Slave eye [12] is activated. The flash will slave sync if another flash is fired or an IR signal is detected.

Cable sync only:

- **Blank:** When the Sync setting shows blank, the B1 can only be synced with cable.

Activate/deactivate the wireless sync settings by briefly pressing the SYNC button [18]. To toggle between the wireless sync options, press and hold the SYNC button [18].

Air (and TTL) operation

When 'AIR' is selected in the Sync/Air setting section [21] on the Display [13], the B1 is set to be triggered and/or controlled from any of the optional Profoto Air transceivers offered by Profoto. The B1 supports all available Air accessories offered by Profoto including those listed in the table below.

1. Activate Air by following the instructions to Select Sync Setting.
2. When Air is activated, press and hold down the SYNC button [18] until the channel and group setting in the Sync/Air setting section [21] is blinking and then release the button.
3. Press and turn the ENERGY/SETTINGS dial [16] to change the channel.
4. Turn the ENERGY/SETTINGS dial [16] to change the group.

Note:

There are eight different channels (1-8) that can be set, and each channel has 6 groups (A-F). All lights set to the same channel will be synced together. Groups are used to remotely control individual lights or groups of lights on the same channel when a set-up is made with more than one light.

Air Accessories compatible with B1 (For operation instruction refer to user guide of respective accessory).

Optional Profoto Air accessories	Usable features in combination with B1 500 AirTTL		
	Flash sync	Remote control	TTL (Automatic flash setting)
Air TTL -C/N*	X	X	X
Air Remote TTL -C/N*	X	X	
Air Sync*	X		
Air USB**		X	

*Optional Camera mounted transmitters

** Dongle for using Profoto Air Software

Slave Sync operation

When 'Slave' is shown in the Sync/Air setting section [21] on the Display [13], the B1 unit senses the flash release, as well as IR signals from most IR sync transmitters.

1. If the Sync/Air setting section [21] is blank, press the SYNC button [18] once to activate wireless sync. 'AIR' or 'Slave' is now displayed.
2. Ensure that 'Slave' is displayed. If not, press and hold the SYNC button [18] until 'Slave' is displayed.

Cable Sync operation

Sync via cable is possible in all sync modes. Connect a sync cable from the camera or flash meter to the Sync Connector [11] on the B1 unit.

Modeling light settings

The current setting is shown in the Modeling light setting section [19] on the Display [13].

1. Press the MODEL button [14] to turn the modeling light on or off.
2. With the modeling light on, press and hold down the MODEL button [14] to toggle between 'PROP' and 'FREE':
 - PROP: The modeling light intensity is automatically adjusted to be proportional to the selected energy level of the flash light.
 - FREE: The modeling light intensity is manually set, independent from the energy level of the flash light.
3. If 'FREE' is selected: With the modeling light on, press and hold down the MODEL button [14] until the percentage value is blinking. Turn the ENERGY/SETTINGS dial [16] to change the percentage value. After a few seconds, the display will stop blinking and the new value will be set.

Ready signal settings

The current setting is shown in the Ready signal setting section [20] on the Display [13]:

- BEEP: The unit beeps when it is ready to flash again after recharging.
- DIM: The modeling light is turned off after flashing, and is turned on when it is ready to flash again.
- DIM BEEP: The modeling light is turned off after flashing. The unit beeps and the modeling light is turned on when it is ready to flash again.
- Blank: No ready signal.

Use the READY button [17] to select the Ready signal setting:

- Press the READY button [17] to turn 'BEEP' on or off.
- Press and hold down the READY button [17] to turn 'DIM' on or off.

Wrong exposure alarm

When a flash is released before the unit is ready, there will be a long beep and the display will blink. These signals indicate that the flash light does not fully correspond to the set value. The B1 will always continue to flash even if the set light output cannot be met as the image may still be usable if the catch of the moment was perfect.

The sound alarm is partially deactivated when BEEP is deactivated. If BEEP is deactivated the sound alarm will only go off if B1 is used in TTL operation and cannot keep up with the camera in sequence shooting.

Quick burst

Quick burst is an automatically activated function that allows a series (burst) of flashes to be fired at a faster pace than the B1 can recharge, without losing light output. The function is only active when the light output is set to less than full. The length of the burst, in number of flashes, depends on the repetition rate and the set light output. The lower the light output is set, the longer bursts can be triggered. Thanks to this feature, the B1 can trigger up to 20 flashes per second on lower power output without triggering the “Wrong exposure alarm”. Note that the accuracy of the light output is slightly less precise when Quick burst is active.

Handling

Battery mounting

1. To mount the battery, fit the battery pack into the B1 unit and push firmly until the battery pack locks in place. Make sure there is a “click” sound, indicating that the battery pack is properly secured.
2. To dismount the battery, first switch off the B1 unit. Press the Battery release button [9] and pull out the battery pack.

Battery charging

For optimal performance, the battery should be fully charged prior to usage. The battery can be charged from any charge level. Only use the Profoto Battery Charger 2.8A, Profoto Battery Charger 4.5A, or Profoto Car Charger 1.8A.

If the battery has not been used for a long time, the Profoto Battery Charger 2.8A should preferably be used. The Profoto Battery Charger 4.5A could be used, but puts more wear on a deeply discharged battery. The Profoto Car Charger 1.8A should not be used in this case.

1. Dismount the battery.
2. Connect the battery charger to the battery pack.
3. Check that the battery charger indicates that charging is in progress.
4. When the battery charger indicates that the charging is completed, it is recommended to disconnect the battery charger and remove the battery from the charger.

Stand mounting

1. Fit the Stand adapter [3] to a light stand and secure it with the Clamp screw [4].
2. The B1 unit can be directed upwards/downwards when the Tilt-lock knob [2] is loosened. Fasten the Tilt-lock knob [2] when the unit is correctly directed.

Mounting Profoto Light Shaping Tools

The B1's built-in reflector creates a wide and even light spread with a high output. In addition, the B1 is compatible with more than 120 light shaping tools, which can be used to shape its already beautiful light into almost any light you can imagine.

All tools with standard reflector mount (rubber collar with clasp)

Most reflectors are equipped with Profoto's unique clamp mechanism, which makes them easy to mount and allows you to shape the light by simply sliding the reflector back and forth along the zoom scale [6].

1. Unlock the clasp on the reflector.
2. Slide the reflector onto the B1. Use the zoom scale [6] to place the reflector in the desired position.
3. Secure by locking the clasp on the reflector.

Umbrella mounting

Umbrellas are simply mounted by sliding the umbrella shaft into the Umbrella holder [7]. The diameter of the umbrella shaft must be between 7 mm and 8 mm in order to fit. When an umbrella is used, it is not possible to mount an external reflector at the same time.

1. Slide the umbrella shaft into the Umbrella holder [7].
2. After a few centimeters, there will be more friction, then continue to slide the umbrella shaft a few more centimeters into the Umbrella holder [7].

Replacing the Front glass

The Front glass [5] can be replaced with optional front glass or glass domes. Domes can be used to enhance the “zoom effect” if using any of Profoto’s “zoomable” reflectors.

1. Switch off the B1 and remove the battery.
2. Wait five minutes to allow the unit to be fully discharged and cooled down.
3. Gently remove the Front glass [5] by pushing the springs holding the glass gently to the sides.
4. Carefully fit the front glass/glass dome in place. Make sure that all springs holding the glass are back in position and securely holding the front glass/glass dome.

Changing flash tube and Model Light LED

For replacement of the modeling light LED or Model Light LED, contact your local dealer or distributor for professional service.

Other

Automatic flash exposure (TTL) indicator

The automatic flash exposure (TTL) indicator [26] is lit every time the flash output is set automatically by the camera. This will only happen when the B1 is operated together with any of the optional Air Remote TTL-C/N in TTL mode. The indicator is lit for a few seconds after receiving a TTL flash command from the remote.

Temperature limit indicator

The temperature limit indicator [25] is lit if the B1 has reached a temperature level that has activated the built-in over-temperature protection. When this occurs the performance is limited until the temperature level is back to an acceptable level.

Check Firmware

1. Switch off the B1 unit.
2. Press and hold the ENERGY/SETTINGS dial [16] and then press and hold the TEST button [15] until the B1 switches on.
3. The current firmware version is shown on the Display [13] (for example: A7).

Upgrade Firmware

We recommend that you regularly look for firmware upgrades on Profoto.com.

Upgrade of firmware is made via the USB port [10], following the instructions provided on Profoto.com. You can always contact your local dealer or distributor for professional service.

Technical data

Max energy	500Ws
Energy range f-stop	9 f-stop (2.0-10.0 ; 1/256-1/1)
Energy range Ws	2.0-500 Ws
Energy control increments	1/10 or full f-stops
Recycling time	0.1-1.9 s (Quick burst up to 20 flashes/second)
Modeling light	LED 20 W (Equivalent of 70 W Halogen)
Modeling light control	Off, Proportional, Free (5-100%)
Mode control	Freeze (shortest flash duration) or Normal (color balanced) mode.
Flash duration Normal mode (t0.5):	1/11,000 s (2Ws) - 1/1,000 s (500Ws)
Flash duration Freeze mode (t0.5):	1/19,000 s (2Ws) - 1/1,000 s (500Ws)
Energy stability Normal mode:	+ -1/20 f-stop flash to flash
Energy stability Freeze mode:	+ -1/20 f-stop flash to flash
Color stability Normal mode:	+ - 150K over range; + -20K flash to flash
Color stability Freeze mode:	+ - 800K over range; + -50K flash to flash
Light spread with built-in reflector	77 degrees
Guide number @ 2 m, 100 ISO with Magnum reflector	45 2/10
Battery type	Exchangeable Lithium-Ion Battery 14.8V/3Ah
Battery capacity	Up to 220 full power flashes
Battery life	300 charge cycles (to 80% capacity left)
Battery status indicator	Approx. battery level in percentage of the total capacity is indicated on the Display: 3 sections: 100-70% 2 sections: 70-40% 1 section: 40-10% 1 section blinking: <10%
Battery charging time	2 h (1h with Battery Charger 4.5A)
Auto power off	Yes after 60 minutes. Sleep activated after 30 minutes.

Battery operating temperature range	-10 °C to +50 °C (-4 °F to +120 °F)
Battery storage temperature range	-20 °C to +60°C (-20 °F to +140 °F)
Wireless sync	Yes, via all Air camera transmitters or IR (Slave)

All figures are to be considered as nominal and Profoto reserves the right make changes without further notice.

Technical data and product information are subject to change without notice.

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Profoto[®]
The Light Shaping Company™