

User guide

Profoto B1X

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 **Profoto**

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 passes an extensive and strict testing program. Unless it complies with the specified performance, quality and safety, it is a no-go.

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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. Make sure that Profoto Safety Instructions is always accompanied the equipment! Profoto products are intended for professional use! Generator, lamp heads and accessories are only intended for indoor photographic use. 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 hasty 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 shall be changed if it has become visibly damaged to such an extent that their effectiveness is impaired, for example by cracks or deep scratches. Lamps shall 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 live.



WARNING - Electrical Shock - High Voltage!

Mains powered generator shall always be connected to a mains socket outlet with a protective earthing connection! Only use Profoto extension cables! Do not open or disassemble generator or lamp head! Equipment operates with high voltage. Generator capacitors are electrically charged for a considerable time after being turned off. Do not touch modeling lamp or flash tube when mounting umbrella metal shaft in its reflector hole. Disconnect lamp head cable between generator and lamp head when changing 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 sunshine, 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 persons. All lamps may on rare occasions explode and throw out hot particles! Make sure that rated voltage for modeling lamp corresponds with technical data of user guide regarding 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 cover, modeling lamp or flash tube!

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 can not 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!

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Nomenclature



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

11. Sync connector

12. IR-Slave eye



13. LCD display

14. MODEL button

15. TEST button

16. ENERGY/SETTINGS dial

17. READY button

18. SYNC button



- | | |
|-----------------------------|--|
| 19. Modeling light setting | 23. Light output setting |
| 20. Ready signal setting | 24. Freeze mode indicator |
| 21. Sync/Air setting | 25. Temperature limit indicator |
| 22. Battery level indicator | 26. Automatic flash exposure (TTL) indicator |



27. Battery charger
28. Case (Bag XS)

Operation

Quickguide

For detailed operating instructions, see subsequent sections.

1. Charge the battery (see page 17).
2. Mount the battery (see page 17).
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 18).
5. Adjust the tilt position of the flash by loosening the Tilt-lock knob [2] (see page 18).
6. Switch on the unit by pressing and holding the TEST button [15] (see page 11).
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. Select flash light output with ENERGY/SETTINGS dial [16] (see page 12).
9. Release a test flash by pressing the TEST button [15].
10. Select Sync setting [21] with the SYNC button [18] (see page 13).
11. Select Modeling light setting [19] with the MODEL button [14] (see page 15).
12. Select Ready signal setting [20] with the READY button [17] (see page 15).
13. Mount Light Shaping Tools (see page 18).

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.

When the B1X is switched off, the current settings are stored and will apply when the flash is switched back on again.

Note:

The B1X automatically turns into sleep after 30 minutes and shuts off completely after 60 minutes of inactivity to save battery life. The auto power off after 60 minutes can be deactivated from any of the optional Air Remote controls by pressing "HEAD" on remote. This will set the B1X into a deep sleep mode that will continue until the battery is drained or until the B1X is reactivated by pressing "HEAD" on remote or by pressing any button on the B1X.

The option to deactivate auto power off can be very useful if the lights need to be set up prior to a shoot in a place where they later cannot be reached. Note that a fully charged battery will drain in approximately 50 hours in deep sleep mode (measured in room temperature).

Normal vs. Freeze

The B1X 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 Normal/Freeze 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 Normal vs. Freeze mode.

Energy (scale)	Energy (Ws)	Flash duration Normal mode		Flash duration Freeze mode	
		t0.1(s)	t0.5(s)	t0.1(s)	t0.5(s)
10.0	500	1/400	1/1,000	1/400	1/1,000
9.0	250	1/600	1/1,500	1/1,200	1/2,000
8.0	125	1/800	1/2,000	1/2,100	1/3,000
7.0	62.5	1/1,300	1/2,500	1/3,100	1/4,500
6.0	31.8	1/1,800	1/3,000	1/4,000	1/6,000
5.0	15.9	1/2,400	1/4,000	1/5,000	1/8,000
4.0	8	1/3,300	1/6,000	1/5,900	1/12,000
3.0	4	1/4,200	1/8,500	1/6,700	1/16,000
2.0	2	1/6,000	1/11,000	1/8,000	1/19,000

Change 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 1f-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 B1X 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 B1X 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 B1X is set to be triggered and/or controlled from any of the optional Profoto Air transceivers offered by Profoto. The B1X 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 B1X (For detailed operation instructions refer to user guide of respective accessory).

Optional Profoto Air accessories	Usable features in combination with B1X 500 Air TTL			
	Flash sync	Remote control	TTL (Automatic flash setting)	HSS (High Speed Sync)
Air Remote TTL*	X	X	X	X
Air Remote*	X	X		
Air Sync*	X			
Air USB**		X		

*Optional Camera mounted transmitters. Check Profoto.com for TTL supported cameras.

** Dongle for using Profoto Air Studio Software

Slave Sync operation

When 'Slave' is shown in the Sync/Air setting section [21] on the Display [13], the B1X 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 B1X 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.

Note:

When dimmed the LED modeling light is pulsing and this may trigger some lightmeters. The recommendation is to turn the modeling light to full power or to turn it off when a lightmeter is used.

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.
- 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 B1X 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 B1X 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 B1X 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 B1X 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 B1X 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 B1X unit. Press the Battery release button [9] and pull out the battery pack.

Note!

To prevent damage to battery and/or the B1X housing it is recommended to always remove the battery during transport. Transport damages are not covered by Profoto warranty.

Battery charging and maintenance

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 is to be stored for a longer period it should be charged half-full before storing. Never store an empty battery for a longer period as it may go into a deep discharge state that can damage the cells. After storing a battery for more than 6 months without using, it is highly recommended to check the charge level on the battery. If less than 2 of the built-in battery level indicators lights up, the battery should again be charged to half full before further storage. Always use Profoto Battery Chargers 2.8A or 4.5A to charge an empty battery that hasn't been used for a longer period. The 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 B1X 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 B1X's built-in reflector creates a wide and even light spread with a high output. In addition, the B1X 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 B1X. 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 easily mounted by sliding the umbrella shaft into the Umbrella holder [7]. The umbrella shaft diameter 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 an optional front glass or a glass dome. The optional dome enhances the “zoom effect” slightly when using any of the classic Profoto “zoomable” reflectors. The dome is however not recommended for any of the Profoto OCF light shaping tools including the OCF Zoom and OCF Magnum reflectors.

1. Switch off the B1X 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 TTL

Profoto B1X supports TTL when used with any of the optional Air Remote TTL. With a TTL remote mounted in the camera hotshoe, you may select to let the camera control the flash output fully automatically without manual metering. Note that TTL is selected/activated on the remote, not on the flash.

If the camera requires a flash output outside the range of the B1X, the B1X will blink the energy setting on the LCD Display [13] and produce a long beep to indicate this (it will only beep if the ready signal is turned on).

The automatic flash exposure indicator [26] 'AUTO' is lit every time the flash output is set automatically by the camera. The indicator is lit for 10-15 seconds after receiving a TTL flash command from the remote.

Important:

Profoto is continuously releasing firmware upgrades to improve and expand TTL compatibility with more camera brands and the latest camera models. Register your profoto products on profoto.com/myprofoto to get access to the latest upgrades and to get noticed when new upgrades are available. Find more info on the optional TTL remotes and a list of compatible cameras on Profoto.com.

HSS

Profoto B1X supports HSS (High-Speed Sync) if used with any of the optional Air Remote TTL tranceivers. HSS enables shooting with flash at a faster shutter speed than the fastest external flash sync speed (x-sync) of the camera. This option can be extremely useful to limit the influence of ambient light when shooting in bright conditions.

Depending on your camera brand, HSS is either selected on the remote or in the camera menu, not on the flash. In the LCD Display [13] of the B1X a “[]” symbol will be visible a couple of seconds after every flash when HSS mode is used.

Note:

* When HSS is activated, the flash will provide a constant light output during the time when the camera shutter is open. This means that at a constant HSS flash light output, the flash exposure will change if the camera shutter speed is changed. It also means that the flash duration will be the same as the camera shutter speed, regardless if Freeze or Normal mode has been selected on the flash.

* Frequent use of HSS will have an impact on the life-time of the B1X flash tube.

Temperature limit indicator

The temperature limit indicator [25] is lit if the B1X 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 B1X.
2. Press and hold the ENERGY/SETTINGS dial [16] and then press and hold the TEST button [15] until the B1X switches on.
3. The current firmware version is shown on the Display [13] (for example: A7).

Upgrade Firmware

We highly recommend that you look for firmware upgrades before you start using your new B1X.

To access the latest free upgrades you create your personal account on profoto.com/myprofoto. Once you have an account we highly recommend you to register your products. By registering your product you are making sure that you will get noticed when a new upgrade for your product is available.

Upgrade of firmware is made via the USB port [10], following the instructions provided in the upgrade application downloaded from profoto.com/myprofoto. You can always contact your local dealer or distributor for professional service with each upgrade.

Technical data

General specifications

Max energy	500 Ws
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
Modeling light type	LED
Modeling light max output	2500 lumens (equivalent to a 130W halogen lamp)
Modeling light color temperature	3000K (Warm white/Tungsten balanced)
Modelling light CRI (Color rendering)	>90
Modeling light control	Off, Proportional, Free (5-100%)
Flash mode control	Freeze (shortest flash duration) or Normal (color balanced) mode.
Flash duration Normal mode:	t0.1: 1/6,000 s - 1/400 s t0.5: 1/11,000 s - 1/1,000 s
Flash duration Freeze mode:	t0.1: 1/8,000 s - 1/400 s t0.5: 1/19,000 s - 1/1,000 s
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; + - 50K flash to flash

Color stability Freeze mode:	+ - 800K over range; + -100K flash to flash
Light spread with built-in reflector	77 deg beam angle
Guide number @ 2 m, 100 ISO with Magnum reflector	45 2/10

Battery

Battery type	Exchangeable Lithium-Ion Battery 14.4V / 4.7Ah	
Max battery flash capacity	Set Energy	No of flashes
	10	<325
	9.0	<650
	8.0	<1300
	7.0	<2600
	... 2.0	<83200
For every f-stop the flash output is reduced the max number of flashes with double.		
Max battery model light capacity	<120 minutes with model light on max	
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	2.5 hours (1.5 hours with optional Battery Charger 4.5A)	

Battery operating temperature range	-10 °C to +50 °C (-4 °F to +120 °F)
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Battery storage temperature range	-20 °C to +60 °C (-20 °F to +140 °F)
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Synchronization and Control

Sync socket(s):	1
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Wire sync voltage:	Compliant to ISO 10330 standard
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Wire sync connector:	3.5mm Mini-Phono
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Photocell/IR-slave and switch:	Yes
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Radio sync & control:	Yes, Built in AirTTL supporting wireless sync control, TTL and HSS. (Requires Air Remote TTL. Sold separately.)
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Radio sync range:	Up to 300m (1000ft) flash sync; Up to 100m (330ft) remote control, TTL and HSS.
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MAC / PC control:	Yes, via optional Profoto Air USB transceiver and Profoto Studio software.
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Miscellaneous

Function display:	Multifunction LCD display
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Fan cooling:	Yes, thermally controlled fan speed for low noise level.
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Ready signaling:	Yes, ready lamp, dim and/or switchable beep sound.
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Auto dumping:	Yes
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USB interface:	Yes, USB Mini port for FW upgrading
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Quick burst:	Quick burst capability of up to 20 flashes per second.
Auto power saving:	Yes, Sleep mode is activated after 30 minutes of inactivity. The unit turns off completely after 1 hour of inactivity (This can be avoided by setting the B1 to deep sleep from any of the optional Air remote controls).

Measurements

Diameter:	14cm (5.5")
Length:	31cm (12.2")
Height:	21cm (8.3")
Weight:	3kg(6lbs) including batteries

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

Profoto AB
Sweden

+46 (0) 8 447 53 00
info@profoto.com
www.profoto.com

 **Profoto**

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

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