BACKSCATTER MINI FLASH 3

UNDERWATER STROBE + LIGHT
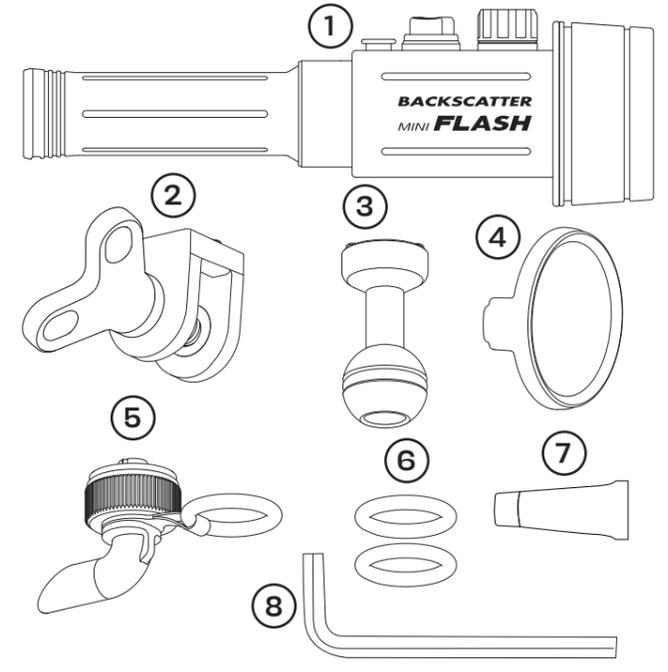

THE ULTIMATE COMPACT STROBE
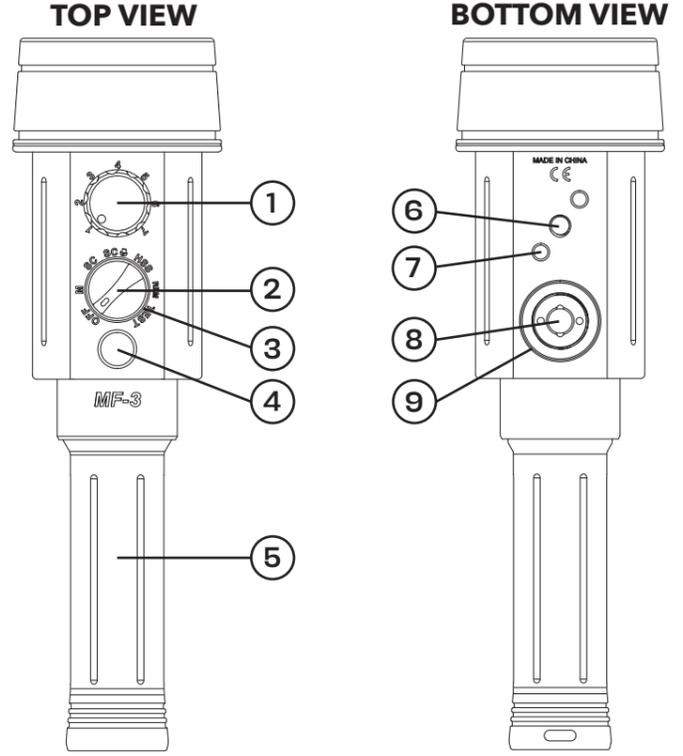
DOWNLOAD
INSTRUCTIONAL
VIDEO

INCLUDED ITEMS

1. Backscatter Mini Flash 3 Strobe
2. YS Style Mount with Fixing Bolt & Knob
3. 1-inch Ball Mount with Bolt & Washers
4. Wide Angle Diffuser (-2.0 f-stop)*
5. Light Pipe (for remote operation)
6. Spare O-rings (2)
7. O-ring Grease
8. $^3/_{16}$-inch Hex Wrench

BATTERY AND CHARGER SOLD SEPERATELY

*Installed on Strobe

NAME OF PARTS

TOP VIEW

BOTTOM VIEW

1. Power Intensity Knob
2. Mode Dial
3. LED Indicator Light
4. Focus Light Button
5. Battery Compartment
6. $^1/_4$-20 Inch Mounting Point
7. Mounting Alignment Points
8. Fiber Optic Port
9. Threaded Light Pipe Mount

MOUNTING OPTIONS

Choose the ball mount for standard 1-inch aluminum arms and install with the included hex wrench. Choose the YS mount for Backscatter Flex Arms and install with a flat head screwdriver. Third party ball adapters are also compatible with the YS mount.

YS Mount

1-inch Ball Mount
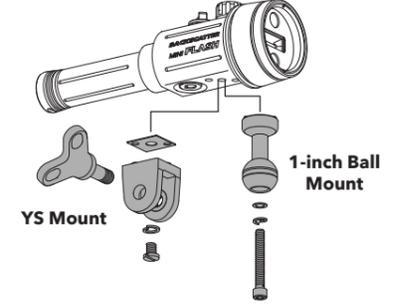
REQUIRED BATTERY & CHARGER

The Mini Flash 3 was designed and tested with these approved batteries. Batteries other than these listed below are not approved for use in the Mini Flash 3.

Approved 21700 Batteries:
- Xtar 21700 10A 5000mAh
- Xtar 21700 25A 5000mAh
- Nitecore NL2150HP 10A 5000mAh
- Nitecore NL2153HP 20A 5300mAh

See www.backscatter.com/MF-3-Support for approved batteries and chargers.

OPTIONAL ACCESSORIES

All accessories that work with the Backscatter Mini Flash 1, Mini Flash 2, and Macro Wide 4300 Video Light also work with the Backscatter Mini Flash 3.

- Backscatter Optical Snoot OS-1
- Backscatter Color Filter System
- Backscatter Remote Lighting Muck Stick

BATTERY INSTALLATION

The Mini Flash 3 is designed to only use premium quality lithium ion 21700 batteries with a minimum of 8A high output batteries and safety circuit.

**WARNING! NEVER USE AN UNAPPROVED 21700 BATTERY!**

Prior to installing a battery, twist off the battery compartment, remove the double O-rings and clean the O-rings and the grooves on the battery compartment. Lightly grease the O-rings with the provided O-ring grease and re-install the O-rings on the battery compartment.

Slide your approved 21700 battery into the battery compartment with the positive (+) button facing up. Inspect and clean the strobe body threads and slowly twist the battery compartment into place, careful not to cross thread the strobe body.
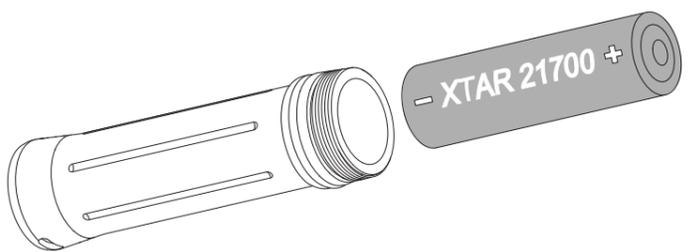
BATTERY INSTALLATION
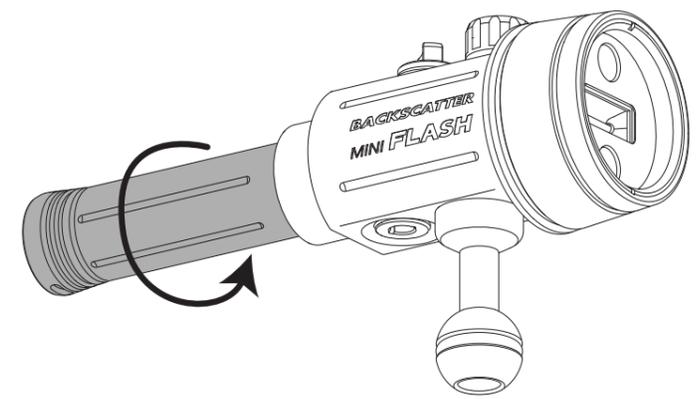
Verify you have fully twisted the battery compartment until it stops.

PRO TIP: Lightly grease the battery compartment threads with the included o-ring grease to help prevent wear and corrosion during heavy use.

WARNING! IF YOU SEE WATER INTRUSION OR CORROSION IN THE BATTERY COMPARTMENT OR THE STROBE BODY, STOP USE IMMEDIATELY AND CONTACT US.

ONLY USE APPROVED BATTERIES: We recommend Nitecore NL2150HP, NL2153HP, Xtar 10A 21700 5000mAh, and 20A 21700 5000mAh batteries. Batteries are available from Backscatter or Backscatter Authorized Dealers.

NEVER CHARGE BATTERIES UNATTENDED: Never go to sleep or leave charging batteries unattended. Lithium battery charging could be deadly.
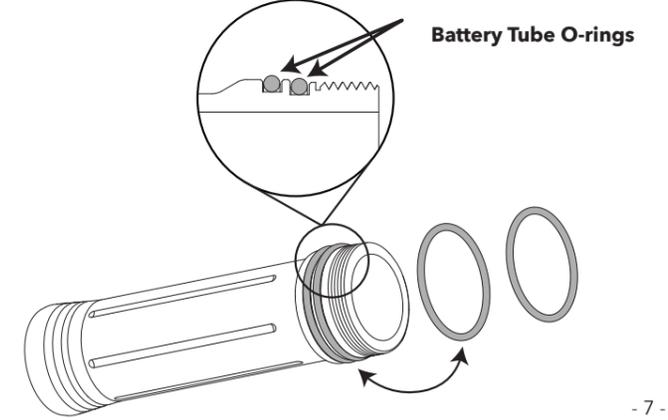
O-RING MAINTENANCE

O-ring maintenance is the responsibility of the user. Carefully follow these instructions on how to performance proper O-ring maintenance.

To install a battery, twist off the battery cap and remove the grey double O-rings. Clean the O-rings, the O-ring grooves on the battery compartment, and the sealing surfaces of the battery compartment and battery cap with a lint free paper towel (like a shop towel) or cloth. Follow these important steps for proper O-ring maintenance.

- Make sure to inspect the O-rings every time the battery cap is removed to make sure it is free from any dirt, sand, hair, or any other foreign materials and to inspect the O-rings for any damage, like cuts, nicks, tears, indentations, or deformations.
- Replace any damaged O-rings immediately. A spare set is provided for your convenience.
- After cleaned and inspected, lightly grease the O-rings with the provided O-ring grease and re-install the O-rings on the battery compartment. The O-ring should have just enough grease to slide easily through your fingers and be evenly distributed without having globs of excess grease on the O-ring.

Battery Tube O-rings

O-RING MAINTENANCE

Note: Only use the provided grease for the O-rings. Using other types of grease could cause massive swelling, material deterioration and deformation, stress cracking and failure of the O-rings which can lead to battery compartment leakage and is not covered by the warranty.

NEVER USE PETROLEUM BASED LUBRICANTS (for example, WD-40) ON ANY UNDERWATER IMAGING EQUIPMENT!

Note: The O-ring needs to be lubricated so it can slide when the battery cap is being rotated into position. Without any grease or an inadequate amount of grease (commonly referred to as a "dry" O-ring) the O-ring will grip instead of slide, which will cause the O-ring to deform and extrude from its groove and cause water intrusion into the battery compartment.

Note: Make sure to inspect the battery compartment each time when changing batteries to ensure no water has entered the battery compartment. If any residual water is found in the battery compartment, immediately dry the compartment completely. If there is corrosion on the battery terminals or battery cap, contact Backscatter. It is the responsibility of the user to maintain the user serviceable battery cap O-rings and prevent water intrusion into the battery compartment as water intrusion into the battery compartment is not covered under the warranty.

Pro Tip: Make sure to dry the flash before opening the battery compartment. When opening the battery compartment, open it with the battery cap facing downward. This minimizes any residual water that can drip into the battery compartment and cause damage to the flash that would not be covered under warranty.

If you have any questions about how to perform the required user maintenance for the O-rings or are unsure of these instructions, contact Backscatter or your authorized dealer for assistance.

FIBER OPTIC CABLE

The Mini Flash 3 is compatible with any Sea & Sea style fiber optic cable. Plug one end of the cable into the Mini Flash 3 and the other end into the fiber optic adapter of the camera housing.
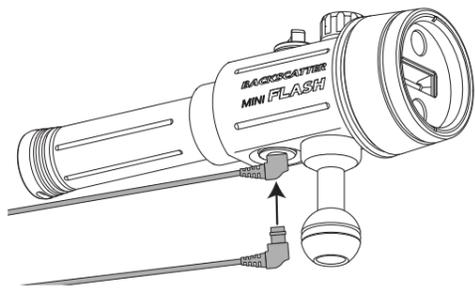
AUTO STAND-BY (15 MINUTES)

When the LED Focus Light is off and the Mini Flash 3 has not fired for more than 15 minutes, it will enter stand-by mode to conserve battery power. To exit Stand-by mode and resume normal operation, activate any control or fire a flash with the camera.

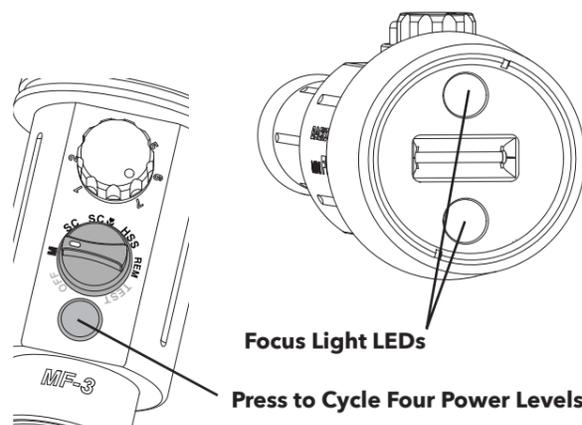# AUTO-OFF SAFETY (2 HOURS)

The Mini Flash 3 will automatically power off when inactive for more than 2 hours. Wake-up the Mini Flash by cycling the mode dial off and on.

1000 LUMEN FOCUS LIGHT

Press the silver button to toggle brightness levels of the focus light. With a full battery, the Mini Flash 3 focus light has (4) brightness levels and a maximum output of 1000 lumens. As the battery is depleted brightness level options will decrease from 4, 3, 2, and finally a low safety power level. Battery levels are managed to allow for over 90 minutes of burntime even with hundreds of strobe flashes.

The Brightest Snoot Light - What You See is What You Get
The Mini Flash 3 packs even more punch than the original Mini Flash 1. Now with 1000 lumens, aiming the Backscatter Optical Snoot has never been easier. We recommend power level (2) or (3) for most situations, but power level (4) will help your aim even in the brightest shallow water conditions.

Focus Light LEDs

Press to Cycle Four Power Levels

MODE MANUAL (MOST POPULAR)

This is the recommended primary mode for most shooters.

Learning Mode for Pre-Flash Cancellation
The Mini Flash 3 will learn the camera's pre-flash or manual flash pattern on the first flash that is fired after turning on the Mini Flash 3 to the M position.

1. Starting from the OFF position, turn the black mode dial to "M" for Manual mode.
2. Take a photo with the camera. The Mini Flash 3 will automatically learn whether the camera is set to single flash or preflash and learn the camera's or flash trigger's preflash pattern. **Do not use continuous shooting when taking this shot,** as this could cause the Mini Flash 3 to take a false reading, resulting in shots that are not synchronized between the flash and the shutter.
3. Repeat this process anytime the flash has been turned off.

Adjusting the Power Level Dial
The red power dial controls the flash output, 7 is maximum power and 1 is the lowest.
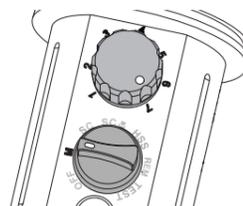
How to Turn Off Learning Mode for Manual Trigger/Flash Users
For shooters who use manual flash triggers or an internal camera flash in manual mode that only emit 1 flash, learning mode can be disabled so the default when powering on the strobe is to fire on the first flash that occurs rather than having to teach the Mini Flash 3 each time it is powered on.

Note: If using a manual flash trigger or internal flash, especially with continuous shooting, it is highly recommended to turn off learning mode.

MODE MANUAL
(continued)

To Turn Off Learning Mode
1. Make sure the flash is off and batteries are installed.
2. Press and hold the Silver button.
3. While keeping the Silver button held down, turn the power dial to M and keep holding the Silver button down until the Main indicator light blinks, approximately 5 seconds, then release. The default blinking color is blue, which is Learning Mode ON.
4. Press the Silver button to toggle between Learning Mode ON and Learning Mode OFF. Learning Mode OFF will be indicated by a green blinking light.
5. After the selection is made, turn the Mode dial to any other position and then back to M. The strobe will then exit the Learning Mode menu and is ready to fire.
6. This setting will stay in the memory of the Mini Flash 3 until it is changed again in the Learning Mode menu.

Note: With preflash cancellation learning mode set to OFF, the flash will fire on the first flash it sees, which is the typical setting for manual flash triggers and manual internal flash settings.

Pro Tip: If your camera allows, set the internal flash to manual with a low power level. This will enable the camera to fire faster and use less camera battery than in fill-in flash mode.

Menu Settings for Sony with the Backscatter Sony TTL Flash Trigger For Manual Flash Operation in M mode
1. Go to Camera Menu → Flash → Wireless Flash ON.

Note: The Mini Flash 3 must be set in M mode to fire manually. It will not fire in either SC mode when the flash trigger is set to manual operation (Wireless Flash ON).

Pro Tip: Assign the Wireless Flash menu setting to a custom button to toggle between Wireless Flash OFF and ON to quickly switch the TTL and manual operation of the flash trigger.

MODE SMART CONTROL (SC & SC ❁)
AUTOMATIC FLASH (TTL) FOR OM & SONY

Smart Control modes (SC and SC ❁) provide very accurate automatic TTL exposures with Olympus/OM cameras even when using the Backscatter Optical Snoot. Follow the instructions below to select the best SC mode and to properly configure your Olympus/OM camera menu settings.

SC Mode
Select SC Mode for automatic TTL exposure of larger subjects such as fish portraits, turtles, and reef scenes.

SC ❁ Mode
Select SC ❁ Mode for more accurate automatic TTL exposures of small macro subjects close to the camera. For Olympus/OM TG cameras, use SC❁ mode when in Microscope mode or AF Super Macro. For mirrorless cameras, use this mode when shooting close-up macro (such as subjects smaller than a golf ball), especially with wider apertures.

Note: TTL flash compensation is controlled by the camera in the camera's flash compensation menu.

LISTEN FOR MINIMUM AND MAXIMUM EXPOSURE WARNING BEEP:
The strobe will sound a warning beep to alert you that the flash has fired at maximum output or if the minimum power is too bright for the scene. If the resulting image is too dark, get closer, increase ISO, open the aperture, or combine all three to get the strobe back into a usable range. If the image is too bright, decrease ISO or close the aperture to get the strobe back into a usable range.

Note: The factory default setting for the SC Mode camera brand is for Olympus/OM System. If you are using an Olympus/OM System camera, no setting change is required out of the box.

MODE SMART CONTROL (SC & SC ❁)
(continued)

Selecting the Camera Brand for SC Mode
1. Make sure the flash is off and the battery is installed.
2. Press and hold the silver button.
3. While keeping the Silver button held down, turn the power dial to SC and keep holding the Silver button down until the Main indicator blinks, approximately 5 seconds, then release. Follow the specific instructions below for your particular camera brand.
4. **To select Olympus/OM,** short press the Silver button until the indicator light is blue.
5. **To select Sony,** short press the Silver button until the indicator light is green.
6. After the selection is made, turn the Mode dial to any other position and then back to either SC mode. The strobe will then exit the Camera Brand menu and is ready to fire.

Note: The camera selection settings only need to be done one time and will stay in the memory of the Mini Flash 3 until it is changed again.

Required Camera Menu Settings for Olympus/OM in SC & SC ❁ Modes
SC and SC ❁ modes on the Mini Flash 3 requires the camera be set to RC mode. Most cameras do not have RC mode turned on by default. Select your camera from the setting guides below.

Required Camera Settings for Olympus TG-1 to TG-4 Cameras:
1. Go to Camera Menu → Accessory Settings → Remote Flash → RC, then exit menu.
2. Then, press the flash icon button on the 4-way control and set the flash to RC.

Required Camera Settings for Olympus/OM TG-5 to TG-7 Cameras:
1. Press the flash icon button on the 4-way control and set the flash to RC.

MODE SMART CONTROL (SC & SC ❁)
(continued)

Required Camera Settings for Olympus/OM Mirrorless Cameras:
1. Go to Camera Menu → RC Mode ON, then exit Menu.
2. Press the OK button. If the RC menu does not initially pop up, press the INFO button to toggle the view to the RC menu.
3. The Mini Flash 3 operates on Group A, Channel 1. Set the camera RC menu to TTL in group A.

Note: On some Olympus/OM mirrorless camera models, the flash sync speed is reduced to 1/160 in RC mode.

Note: For TTL to work, Olympus/OM mirrorless cameras must use the internal popup flash or a compatible RC flash trigger. TTL with the Mini Flash 3 is only compatible with Olympus or OM Systems cameras and lenses.

Using the Backscatter Sony TTL Flash Trigger for TTL Operation
To use SC and SC ❁ with Sony cameras to achieve TTL, the Backscatter Sony TTL Flash Trigger is required. There is a proprietary communication between the Backscatter Sony TTL Trigger and the Mini Flash 3 for TTL and HSS commands. Other 3rd party TTL flash triggers are not compatible with the TTL protocol of the Mini Flash 3. The Backscatter Sony TTL Flash Trigger can also be used for manual flash application as well with the Mini Flash 3 and other strobes.

Menu Settings for Sony with the Backscatter Sony TTL Flash Trigger for TTL and HSS Operation in SC Mode
1. Go to Camera Menu → Flash → Wireless Flash OFF.

Note: This is the default factory setting for Sony cameras. The Mini Flash 3 must be set in SC or SC ❁ mode to fire TTL. It will not fire in any other mode when the flash trigger is set to TTL operation (Wireless Flash OFF). See the section "Mode--Manual" (page 11) to learn about Manual operation with the Backscatter Sony TTL Flash trigger.

MODE SMART CONTROL (SC & SC ❁)
(continued)

Mini Flash 3 SC and SC ❁ modes also allow Olympus/OM and Sony mirrorless cameras to use Super FP (Olympus/OM) and HSS (Sony). Super FP and HSS mean the same thing, which is High Speed Sync. Super FP/HSS allows for flash photographs at shutter speeds faster than the camera's normal maximum sync speed, up to 1/8000. This allows for a wider open aperture while still maintaining a darker background. Super FP/HSS is not available on compact cameras, as compact cameras do not have mechanical shutters.

Note: Super FP/HSS reduces flash output compared to regular shooting. Only use it for close-up shooting. The flash will diminish the faster the shutter speed is set. Best practice is to set the Mini Flash 3 to maximum output and change the shutter speed to dial in the flash exposure.

Camera Settings for Super FP for OM Mirrorless Cameras in SC mode:
1. Make sure the camera is in RC mode and access the RC flash menu (see TTL for Olympus/OM mirrorless shooters for setup)
2. In the RC flash menu, change the flash icon to FP
3. Set the Group A flash mode to either TTL or M.
4. The Red dial on the Mini Flash 3 will control the flash output. Only power levels 7, 6, and 5, are available, 4 and lower will output the same as level 5.

Camera Settings for HSS with Sony Mirrorless Cameras in SC Mode with the Backscatter Sony TTL Flash Trigger
1. Turn the mode dial on the Mini Flash 3 to SC or SC ❁
2. Go to Camera Menu → Flash → set Wireless Flash to OFF.
3. Go to Camera Menu → Shutter/Silent → Shutter Type → set to Mechanical Shutter.
4. When using HSS with Sony in SC mode only 1 power level is availalbe. It is recommeded to use the Mini Flash 3 in HSS mode to access more levels of power control. See page 19 for instructions on how to set up manual HSS mode for use with Sony cameras.

BACKSCATTER MINI FLASH 3

Instructions Sheet 2

MODE SMART CONTROL (SC & SC ✿)
(continued)

Additionally for Cameras with e-Front Curtain Shutter:
5. Go to Camera Menu → Shutter/Silent → e-Front Curtain Shut. → set to Off

Note: For HSS use, Sony cameras must have the Shutter type be mechanical and e-front curtain shutter (if offered as an option) must be off. If these menu settings are not made banding may appear in the image, which will worsen with faster shutter speeds. This setting is not specific to the Mini Flash 3, this is for any Sony camera being used with a HSS compatible flash. Please see your Sony camera instruction manual for more details.

Note: On the camera, the switch from normal operation to HSS is automatically handled by the flash trigger when the camera's shutter speed is set faster than the flash sync speed limit. The camera will indicate it is in HSS mode when the flash icon changes from a single lighting bolt flash icon to having HSS displayed next to the flash icon.

Note: The Mini Flash 3 must be set in SC mode to fire when Wireless Flash is set to OFF. It will not fire in either M or HSS modes when the flash trigger is set to TTL operation (Wireless Flash OFF).

Pro Tip: If you primarily shoot in TTL flash mode it is recommended to use the SC mode (rather than HSS mode) on the Mini Flash 3 to do HSS as there are no changes needed to switch from normal TTL operation to HSS operation.

For shooters who primarily shoot Manual flash, please see the section titled "Camera Settings for HSS with Sony Mirrorless Cameras in HSS Mode with the Backscatter Sony TTL Flash Trigger." (page 19)

MODE HIGH SPEED SYNC (HSS)

HSS allows the camera to shoot a flash at shutter speeds faster than the camera's max sync speed. This only applies to mirrorless and SLR cameras. Compact cameras do not have mechanical shutters and thus don't have an upper limit on flash sync speed. In HSS, the flash can sync with shutter speeds up to 1/8000, allowing for a wider open aperture while maintaining a darker background. A compatible flash trigger is required for HSS operation. Contact Backscatter or a Backscatter Authorized Dealer for information on the latest 3rd party compatible triggers. The Backscatter Sony TTL Flash trigger set to manual flash mode is compatible with the HSS mode of the Mini Flash 3.

Note: The HSS mode is only intended for use with 3rd party flash triggers that support HSS firing for non-Olympus/OM cameras or with the Backscatter Sony TTL Flash trigger set to manual flash mode. To use HSS with Olympus/OM cameras, please follow the instructions for using Super FP in SC mode. (page 16)

Note: HSS reduces flash output compared to regular shooting. Only use it for close-up shooting. The flash will diminish the faster the shutter speed is set. Best practice is to set the Mini Flash 3 to maximum output and change the shutter speed to dial in the flash exposure.

Settings for HSS on Non-Olympus/OM Mirrorless and SLR Cameras:
1. Turn the mode dial on the Mini Flash 3 to HSS.
2. Set the flash trigger to the appropriate HSS setting for use with the Mini Flash 3. Follow the flash trigger manufacturer's instructions for HSS compatibility and proper setup.
3. The Mini Flash 3 has three output power levels in HSS mode. Only power levels 7, 6, and 5, are available. 4 and lower will output the same as level 5.

MODE HIGH SPEED SYNC (HSS)
(continued)

Camera Settings for HSS with Sony Mirrorless Cameras in HSS Mode with the Backscatter Sony TTL Flash Trigger
1. Turn the mode dial on the Mini Flash 3 to HSS.
2. Go to Camera Menu → Flash → set Wireless Flash to ON.
3. Go to Camera Menu → Shutter/Silent → Shutter Type → set to Mechanical Shutter.

Additionally for Cameras with e-Front Curtain Shutter:
4. Go to Camera Menu → Shutter/Silent → e-Front Curtain Shut. → set to Off (if available).

Note: For HSS use, Sony cameras must have the Shutter type be mechanical and e-front curtain shutter (if offered as an option) must be off. If these menu settings are not made banding may appear in the image, which will worsen with faster shutter speeds. This setting is not specific to the Mini Flash 3, this is for any Sony camera being used with a HSS compatible flash. Please see your Sony camera instruction manual for more details.

Note: On the camera, the switch from normal operation to HSS is automatically handled by the flash trigger when the camera's shutter speed is set faster than the flash sync speed limit. The camera will indicate it is in HSS mode when the flash icon changes from a single lighting bolt flash icon to having HSS displayed next to the flash icon.

Note: The Mini Flash 3 must be set in HSS mode to fire when Wireless Flash is set to ON. It will not fire in SC mode when the flash trigger is set to manual operation (Wireless Flash ON).

Pro Tip: If you primarily shoot in Manual flash mode (rather than TTL in SC mode) it is recommended to use the HSS mode (rather than SC mode) on the Mini Flash 3 to do HSS as the only required change to shoot in HSS is to move the Mini Flash 3 mode dial to HSS. This makes it faster to switch between normal shooting and HSS shooting.

For using HSS while in SC mode (TTL), please see the section titled "Camera Settings for HSS with Sony Mirrorless Cameras in SC Mode with the Backscatter Sony TTL Flash Trigger." (page 16)

MODE REMOTE LIGHTING CONTROL (REM)

The Remote Lighting System of the Mini Flash 3 allows you to use a camera mounted Mini Flash 3 strobe to wirelessly trigger and change the brightness of a remotely placed Mini Flash 3. This is a great way to achieve side lighting, backlighting, or remote snooting on a tripod or Backscatter Remote Lighting Muck Stick without having to reach the remote flash to change power levels and provides the freedom to frame shots completely untethered.
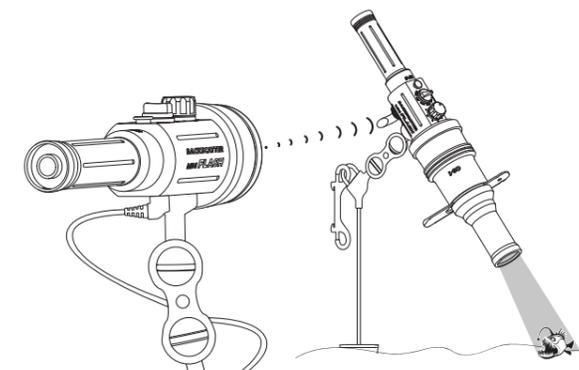
A minimum of two Mini Flash 3, Mini Flash 2, or Hybrid Flash strobes are required for remote operation. The camera mounted flash is the "main" flash connected to the camera by fiber optic cable that will send the power level control signal and trigger the "remote" flash or flashes. The remote flash requires the installation of the included Light Pipe for wireless operation.

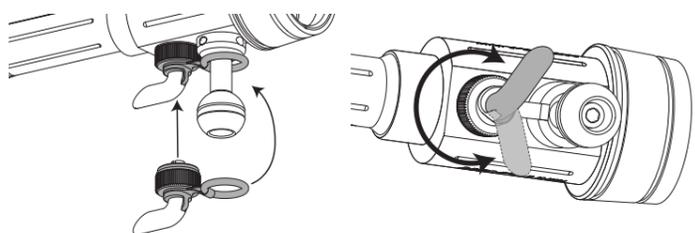### MODE REMOTE LIGHTING CONTROL (REM)
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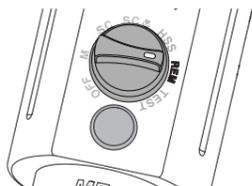
Note: While in REM mode the Red dial on the Mini Flash 3 has no function, only the main flash will change the power level.

Note: The Light Pipe rubber lanyard is only compatible with the 1 inch ball mount, it is not compatible with the YS mount.

Set Up and Install the Light Pipe on the Remote Flash
1. Stretch the rubber lanyard of the Light Pipe over the 1 inch ball mount
2. Press and thread the Light Pipe into the remote Mini Flash 3 fiber optic socket.
3. Set mode dial to Remote (REM).
4. Attach Mini Flash 3 to the Backscatter Remote Lighting Muck Stick or tripod and aim at the subject.
5. Rotate the Light Pipe to aim directly at the main flash.

MODE REMOTE LIGHTING CONTROL (REM)
(continued)

Set Up the Main Flash On Camera
1. Connect the main Mini Flash 3 with a fiber optic cable to your camera system.
2. Set Mode Dial to Manual (M).
3. Aim the main strobe toward the remote Light Pipe of remote strobe.

Use the Silver Button to Send Power Level Changes Wirelessly
1. Make sure the main flash and the Light Pipe of the remote flash are facing each other and are within line of sight.
2. To send a flash power level setting from the main flash to the remote flash, set the desired power level to be sent to the remote flash on the main flash Red dial, then press and hold the silver button. You will see a series of light signals from the main flash and the remote flash will fire immediately. A confirmation flash from the remote flash about a second later will indicate the remote flash has received the power level signal.
3. Once the main power level signal has been set the remote flash will stay at that power level until a new power level signal has been sent.
4. When taking a picture the main flash will trigger the remote flash. The remote flash will stay at the same power level until a new power level change signal is sent by the main flash. This allows the freedom to use the main flash for front lighting at any power level desired, while maintaining a different power level setting for the remote flash

CONTROL YOUR SECOND STROBE WIRELESSLY:
Press the silver button to beam a new power level to your off camera wireless second Mini Flash 3. Rotate the light pipe to make any position work.

MODE TEST

TEST mode allows for the Mini Flash 3 to be fired at any desired power output with the press of the silver button. This is a great way to do light painting with long exposures instead of a video light. Another photo use is to do a long exposure and fire the flash multiple times on a subject for a "stroboscopic" effect.

TEST mode can also be used as an emergency signaling device topside and underwater.
1. Turn the mode dial to TEST.
2. Select a flash output level with the Red dial.
3. Press and release the silver button.

The LED lights can be used with TEST mode. Turn on the LED lights in another mode then switch to TEST. The LED lights will keep the same setting from the other mode. To turn off the LED lights or set another power level, turn the mode dial to another mode, then adjust the output of the LED lights with the silver button.

EMERGENCY BEACON

TURN MODE DIAL TO TEST. PRESS AND HOLD SILVER BUTTON FOR 2 SECONDS.

The Mini Flash 3 has an emergency beacon feature that will flash the LED lights once every 2 seconds. A full battery will last up to 12 hours in beacon mode.
1. Turn the mode dial to TEST.
2. Press and hold the silver button to activate beacon mode.
3. Beacon mode will continue to flash the LED until the mode dial is changed or the silver button is pressed.

INDICATOR LIGHT CHART

Please review the chart below for the indicator lights and description.

Indicator Color	Signal Pattern	Description
Blue	Quick flashing	Flash recharging
Green	Solid On	Flash ready with battery level 100~50%
Yellow	Solid On	Flash ready with battery level 49~25%
Red	Solid On	Flash ready with battery level 24~10%
Green/Yellow/Red	Flashing	Standby with battery level indication
Purple	Continually flashing	Circuit error (contact Backscatter for support)
Purple	Quick flashing with 3 rapid beeping sounds	TTL shooting distance too far
Red	Quick flashing for 2 seconds and power cut	Battery extremely low and auto-shutoff

When the Mini Flash 3 is recharging after firing a shot, the Battery/Ready Indicator will blink blue. When the charge recycle process is completed and the Mini Flash 3 is ready to trigger the next flash, the Battery/Ready Indicator color will show on green, yellow, red or blinking red depending on the battery level.

SPECIFICATIONS

Depth Rating: 100m/330ft
Guide Number: ƒ18
Maximum LED Output: 1000 Lumens
Power: Single 21700 Circut-Protected Battery
Recycle time (full): 1.0 seconds
Number of Flashes (full): over 2000
LED Run Time: Minimum of 90 minutes with managed power decline curve
Emergency Ping Run Time: 12 hours with full battery
Weight in Air: 14.8oz/420g (with battery)
Weight in Water: 5.29oz/150g (with battery)
Sync Cord: Fiber Optic
Seal: Dual O-Rings
Exposure Control:
    Flash: 7-step Power Level
    LED: 4-step Power Level
Dimensions With Ball (LxWxD):
    7.95 x 2.48 x 2.32in
    202 x 63 x 59mm
Material: Anodized Machined Aluminium

LIMITED WARRANTY

Backscatter warrants this product to be free from defects in materials and workmanship under normal use for a period of one (1) year from the original date of retail purchase. During the warranty period, Backscatter will, at its sole discretion, repair or replace any defective unit without charge for parts or labor. The determination of whether a product is defective shall be made solely by Backscatter.

WARRANTY COVERAGE
This warranty covers:
• Manufacturing defects in materials or assembly.
• Electrical or mechanical failures that occur under normal, recommended operating conditions.

WARRANTY EXCLUSIONS
This warranty does not cover:
• Damage caused by improper use, accident, misuse, abuse, or neglect.
• Damage caused by improper maintenance, service, or modifications not authorized by Backscatter.
• Water damage resulting from the users failure to properly seal or maintain user serviceable O-rings.
• Water damage from any water entry into the battery cap or battery compartment that is not a direct result of a manufacturing defect.
• Normal wear and tear, including but not limited to scratches, cosmetic blemishes, and consumables (e.g., O-rings, batteries).
• Damage due to use with non-recommended accessories or attachments.

WARRANTY SERVICE
To obtain warranty service:
1. Retain your original proof of purchase.
2. Contact Backscatter or your authorized dealer for instructions.

LIMITED WARRANTY
(*continued*)

LIMITATIONS
• This warranty is valid only for the original purchaser and is non-transferable.
• The liability of Backscatter is limited solely to the repair or replacement of the defective product.
• Backscatter is not responsible for incidental or consequential damages of any kind, including loss of data, images, or other equipment, except where such limitation is prohibited by law.
• Some jurisdictions do not allow limitations on implied warranties, or the exclusion or limitation of incidental or consequential damages. In such cases, these limitations may not apply.

YOUR LEGAL RIGHTS
This warranty gives you specific legal rights. You may also have other rights which vary by state, province, or country.

For customers in the European Union, United Kingdom, Australia, and other regions with statutory consumer protection laws: this warranty is provided in addition to, and does not affect, your statutory rights under applicable national laws relating to the sale of consumer goods.

BATTERY FAQ FOR LITHIUM ION (LI-ION) BATTERIES TO USE WITH THE MINI FLASH 3

A catastrophic battery accident can result in fire, explosion, injury, and death, even when all precautions have been taken. Please read the following FAQ about battery usage and safety precautions to minimize that risk.

What battery should I use for the Backscatter Mini Flash 3?
These are the current approved batteries for the Mini Flash 3.

• Xtar 21700 10A 5000mAh
• Xtar 21700 25A 5000mAh
• Nitecore NL2150HP 10A 5000mAh
• Nitecore NL2153HP 20A 5300mAh

Where can I purchase an approved Li-Ion battery?
Since it is a standard battery type, these above listed batteries are available at Backscatter, Backscatter Authorized Dealers, and many other retailers worldwide. As time goes on some batteries may become discontinued. Contact Backscatter or your local Backscatter dealer for the latest approved battery recommendations.

I see other 21700 batteries all over the internet selling for super cheap that are like $5, why can't I use those? Are you guys trying to rip me off?
Those cheap batteries are unprotected and not designed for end use by consumers and do not have important safety protections built in. They can sometimes be identified by having no branding on the label, or by a plain single-color battery jacket with dot matrix printing. Some will even say they are only for use in battery packs or are for prototyping purposes only. Unprotected batteries meant without safety protections are much cheaper to produce than batteries with protection circuitry.

What is the difference between a "protected" battery and an "unprotected" battery, and why should I always use a protected battery?
Protected Lithium-Ion batteries have an electronic circuit built into the battery cell packaging. This circuit protects the battery against overcharge, over-discharge, short circuit, over-current, and extreme temperature fluctuations. Protected batteries are safer to use than unprotected batteries that do not have these safety features built in. Unprotected batteries have no built-in safety protections which can result in fire, explosion, injury, or death in the case of failure due to overcharge, over-discharge, short circuit, over-current, or temperature, even when every precaution has been taken. Unprotected 21700 batteries are not designed for consumer use, so do not use it. Only use protected batteries designed for consumer use.

Why are unprotected batteries sold if there are greater safety risks versus a protected battery?
21700 batteries are a very common and popular Li-Ion battery not only made for end-use consumers but also used by manufacturers to combine multiple units into a larger battery pack for anything from flashlights to electric cars. Did you know Tesla electric cars are running on battery packs made up of thousands of 21700 batteries? It is up to those manufacturers to build in their own safety precautions for their custom-designed battery packs.

Why should I always charge the battery in a common area when people are around?
Although battery failures are rare, it can be catastrophic. The charging process is a critical operation. Most Li-Ion battery failures that occur happen during charging. Never charge in sleeping quarters, below boat decks, or in other unmonitored or unoccupied areas. In case of emergency, you want someone around to be able to take action. While it is rare for a battery to fail when all proper safety precautions have been taken, the consequences are too great to ignore.

How do I store batteries when not in use?
Batteries should be stored in a battery storage box designed specifically for 21700 batteries. A proper box will provide impact protection and keep batteries isolated so the battery contacts cannot be bridged and cause a short.

What do I do if the battery has physical damage or water damage?
Immediately stop using the battery, as it is now a safety hazard. Immediate action needs to be taken to safely dispose of the battery. If at home, take it immediately to an authorized battery recycling center or hazardous materials disposal site. If at a resort or a live aboard boat, notify resort management or boat captain immediately so that they may safely dispose of the battery. If on land and unable to take it to an authorized battery recycling center, place it in a fireproof box and store it outside in an open area away from any sources of fuel or ignition until a time when the damaged battery can be taken to an authorized battery recycling center. Never dispose of batteries in the garbage or trash.

I suspect water has intruded the battery compartment and/or strobe. What should I do?
Immediately discontinue use of the Mini Flash 3 and remove the battery as soon as practically possible. Even though the Mini Flash 3 has an over-pressure relief valve in case of overpressure, take extra precaution when opening the battery compartment, as it may be over-pressurized. Use a damp towel to cover the Mini Flash 3 before opening to protect yourself and others.

If I have water intrusion into the battery compartment, can I dry it out and use a new battery?
Maybe. The battery compartment is sealed from the rest of the flash for safety. After water intrusion, rinse the battery cap and battery compartment of the Mini Flash with fresh water. When the battery cap and contacts are completely dried and cleaned free of corrosion then a new battery may be installed and the Mini Flash 3 tested for operation. However, if there is any unusual operation of the Mini Flash 3 with the new battery, immediately discontinue use, remove the battery, and contact the Backscatter service department or your local Backscatter dealer.

Can I leave the battery installed in the Mini Flash 3 for travel?
NEVER travel with the battery installed in the Mini Flash 3.

Can I travel with the batteries in my checked luggage?
Absolutely not. It is illegal to travel with Li-Ion batteries in the cargo hold on passenger aircraft. All Li-Ion batteries must be carried on aircraft in cabin luggage in an appropriate battery box that does not allow the battery contracts to be bridged.

Never fly with damaged batteries.
Damaged batteries are banned from ALL aircraft by law for good reason. **Do not take chances. Your life and the lives of others are not worth a cheap battery!! Dispose of damaged batteries immediately!!**

All this battery safety talk has me concerned.
You should be. Following these procedures and precautions can help minimize risk greatly, but there is no way to completely eliminate it. While battery failures that cause catastrophic damage, injury, and death are very rare, it is your responsibility to use the best care possible to minimize that risk to yourself and others.

SAFETY PRECAUTIONS NEED TO BE TAKEN WITH LI-ION BATTERIES.

Never do the following:
• Never charge batteries in unattended areas.
• Never charge while sleeping.
• Never charge below decks of a boat.
• Never store batteries below decks of a boat.
• Never store batteries in the Mini Flash below decks of a boat.
• Never use batteries without protection circuitry.
• Never dispose of batteries in the garbage or trash.
• Never put batteries in checked baggage when traveling.
• Never walk around with bare batteries in your pocket, especially with other metal objects that can easily bridge battery contacts.

Always do the following:
• Only charge batteries in common areas where and when others are around.
• Always remove the battery from the Mini Flash 3 when not in use.
• Only use batteries designed for end use by consumers with safety protection circuitry.
• Only store batteries in a battery box designed for 21700 batteries.
• Always travel with batteries in cabin baggage.

ALWAYS OBEY ALL INSTRUCTIONS
FROM THE BATTERY MANUFACTURER

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For any support or service questions on your Mini Flash 3, please give us a call or send us an email!

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