

Backscatter Mini Flash 2

by Phil Rudin

A pleasant surprise at the 2022 DEMA show for me was the debut the new Backscatter Mini Flash 2.

The first Backscatter Mini Flash 1 had its debut at the 2019 DEMA show and it became an enormous success among those seeking a lighter and less expensive quality flash.

Fast forward to the post Covid 2022 DEMA show and the new Backscatter flash called the Backscatter Mini Flash 2 or MF-2 and Optical Snoot 1 or OS-1. The MF-2 strobe still retails for \$399.00, the OS-1 snoot is still \$149.00 So pricing is the same as the 2019 MF-1 release but with a far more full featured flash.

Backscatter designed the MF-2 as the ultimate compact flash for small cameras shooting both macro and close focus wide angle scenes. The MF-2 has a beam angle which is narrower than many wide angle flash units and is particularly well suited to fish portraits, macro and super macro with any DSLR or mirrorless housing system.

While the MF-2 is marketed for compact cameras shooting small subjects I have found that a pair of these flashes can also be excellent for wide angle subjects as well.

The first thing you notice about the MF-2 is how small and compact it is measuring just 65 mm in diameter (2.56 inches) this is the same size as MF-1 so the original snoot and lighting accessories can transfer over to MF-2.

The MF-2 is about 194 mm (7.64 inches) in length 10mm longer than MF-1 to accommodate the addition control dial on the top of the flash.

The battery compartment is also a bit larger to accommodate the larger and more powerful battery. The flash is machined from anodized aluminum and weights around 275 grams (9.70 ounce) in air without battery. The MF-2 ships with a one inch ball head, a Sea & Sea type ball mounting clamp, an Allen wrench to install the mounts, two extra O-rings with lube, a clip on white plastic flash defuser with a retention lanyard plus more that will be described later.

The recommended battery and battery charger are not included in the price of the MF-2 flash. The flash is depth rated to 100m/330ft and the single straight flash tube is in the center of the strobe face with two LED aiming lights located directly above and below the flash tube.

The MF-2 has several excellent



new upgrades starting with the LED lights which can be left off or set to four increasing levels of light intensity starting at 1000 lumens with a fully charged battery which is twice as bright as the 500 lumen MF-1.

As the battery level is depleted brightness levels will depress from 4 to 3, 2 and finally a low safety power level. Battery levels are managed to

allow a 90 minute burn time even with hundreds of flashes. Power levels two and three are recommended but for bright day light situations or when using the snoot a power level of four may work best.

My experience was that I was able to do three macro dives without a battery change and still had plenty of battery left. On night and blackwater

dives of over 90 minutes using only the LED's at mid power I still had plenty of battery power to spare.

The new MF-2 has a larger battery compartment that threads into the rear of the flash and has an excellent double O-ring seal design.

If the battery compartment should flood the rear of the compartment has a pressure relief valve to release any gas buildup. The front half of the flash with the electronics also appears to be sealed from the battery compartment so that repair costs should be minimal.

The only battery recommended by Backscatter for the new MF-2 strobe is the XTAR 21700, 5000mAh (up from 3500), 3.6v 18Wh (up from 12.6Wh) 500 Cycles Li-Ion battery. The old 3500 batteries from the MF-1 can also be used with an optional battery sleeve. With the new battery the MF-2 flash has a faster recycle time and a longer run time than with the older MF-1 battery.

My two MF-2 test flashes came with two of the new batteries, a Nitecore dual battery charger and a waterproof plastic battery box. I was cautioned by Backscatter staff to be extremely careful when charging the batteries in light of recent fires associated with battery charging. A warning on the battery compartment also advises not to travel with a battery installed in the flash and to

only use approved batteries.

Battery life is excellent well exceeding the 1400 flashes from the older MF-1. The bottom of the MF-2 flash has a threaded mounting point for a standard ball head attachment or a Sea & Sea ball mount which are both included. The new standard fiber optic cord socket has a threaded area around the outside to accept the included "Light Pipe" for control of remote off camera operation. I used the flash with a S&S fiber optic cord which has 90 degree port socket with a small retention O-rings.

During my many test dives the cord never dislodged from the port socket and I never had a misfire. The top of the the MF-2 now has three rather than two controls, a round red power intensity knob now with seven power level settings. Behind the power intensity knob is a new mode dial and below that is a round focus light button. All three controls can easily be used while wearing heavy gloves.

The mode dial has an array of new features that sets the MF-2 head and shoulders above the original MF-1. The first setting on the mode dial



is off which shuts the flash down. Next to that is the "M" manual flash setting that when turned on emits a green light under the dial after two quick blue flashes. In manual you increase or decrease power using the seven levels on the power intensity knob. Next to that are the SC and the SC with a Flower setting which work in TTL with Olympus/OM-Systems branded cameras like the TG-6. SC is for larger subjects like fish and reef scenes while the SC Flower setting is for Microscope mode or macro mode subjects. With these settings the red intensity knob has no function.

Mirrorless ILC cameras need to use a popup flash or a compatible RC flash trigger with TTL, this may limit flash sync to 1/60th in some cameras. Check with your authorized dealer for further information regarding different camera models.

Next is the High Speed Sync (HSS) setting which allows you to

shoot at flash speeds faster than your cameras max flash sync. In my case I have the Sony A7R V which syncs at a high of 1/250th and the Sony A1 which syncs at 1/400th in full frame and 1/500th in APS-C mode. Being able to shoot full frame at 1/320th to 1/800th and more is a big advantage for both macro and wide angle in bright overhead light. To use this feature you need a compatible flash trigger and my choice has been to equipment both of my Marelux housings with UWTechnics flash triggers set for HSS. The HSS setting does not interfere with normal sync speeds for my cameras. I try to stay in the 1/320th to 1/640th sec range because above that

power from any HSS flash begins to fall off quickly. The HSS setting is for manual flash only with non-Olympus DSLR and mirrorless cameras.

Next is the Remote Lighting Control (REM) for Mini Flash 2 which allows remote wireless triggering and remote changes to power intensity. This can be done while the flash is mounted on the housing or off camera using the new Remote Lighting Muck Stick to anchor the flash securely in the sand.

For remote triggering you need two MF-2 flash in a two Mini Flash 2 configuration with one flash being the trigger via fiber optic cord and the second being operated remotely. The remote off camera flash needs to be setup with the included “Light Pipe” threaded onto the optical core port and then pointed where it has line of sight with the main controlling MF-2 flash.

When both flashes are set in REM the main flash can control the power level on the remote flash by moving the intensity knob higher or lower. Once the remote flash is set to say level 4 the main flash can be set back to manual “M” and the power intensity can be changed without changing the power level on the remote MF-2 flash.

The huge upside to this is that it allows you to place the remote flash anywhere around your subject, side, front, rear, top and more while triggering the flash remotely even from a distance. You can also have multiple off camera flashes triggering from different directions. The possibilities for remote lighting are endless and very exciting.

Last is the Test control which flashes when you push the round focus light button. In all settings except Off and Test the round focus light button allows you to turn on the focusing lights at the highest power and then scroll among the four



Spotted Moray Eel, Sony A7R V, Marelux MX-A7RV housing, Sony 90mm macro, two MF-2 flash's, ISO-400, F/10, 1/400th sec. Using the MF-2's in HSS with UWTechnics flash trigger

power levels. When the battery is depleted the green light will change to red letting you know the flash is not working at full potential. Other features include holding down the focus light button to emit a flashing light of short duration for signaling and more. The ability to add a snoot and/or color gels excites the imagination even more. The HSS and REM are both outstanding additions to the underwater photographers creative tool box.

Backscatter Optical Snoot OS-1

The OS-1 optical snoot was designed in conjunction with the MF-1 to be a powerful macro strobe and snoot combination now it can also be used with the MF-2 Flash. I reviewed this in UwP112 for those who want to know more.



Cave Diver, Devil's Eye Run, Sony A7R V, Marelux MX-A7RV housing, Sony FE 20 to 70mm F/4, two MF-2 flash's, ISO-400, F/9, 1/125th sec. Using two MF-2's without defusers

Field Testing the MF-2 Flash

I had an opportunity to test the Backscatter MF-2 flash with and without the snoot using Nauticam 5 and 8 inch arm combos. I also mounted the MF-2 on the Remote Lighting Muck Stick off camera using an on-camera MF-2 for triggering the second MF-2 remotely. With flash defusers attached you loose about one stop of light but have plenty of power for close focus and close focus wide angle shots with lenses as wide as a fisheye. Now of the included wide or macro shots were taken with a defuser.

For my field test I used two MF-2 flashes with Marelux housings and ports using a variety of lenses from macro to wide angle. At times I was only using one MF-2 with the OS-1 snoot mounted off the housing. Because of the compact size of the MF-2's moving through the water with the system was as easy as it gets when using a full frame mirrorless

camera housing. I was shooting macro with the Sony A7R V and Sony A1 cameras using the very quick focusing Sony FE 90mm F/2.8 macro lens. These two Sony cameras have elevated quick auto focus to a new level not seen in prior cameras.

For my MF-1 review I dedicated all my dives to night and blackwater macro outings with the Sony 90mm macro lens. For this review I decided to go with a much wider range of subjects and lens options to demonstrate how useful these little flashes can be for general photography.

By now many reviews have been posted using MF-2's including some excellent ones on the backscatter.com web site. All of these reviews however have focused on macro capabilities and little more. The narrower beam angle of the MF-2 does not prevent it from being a very capable all-around flash.

Since receiving the MF-2's they are all I have used for several months of diving and several images using the MF-2's have already been published in UwP. These powerful little flashes allow you to get great separation of the subject from the background making the colors pop while maintaining both a light or dark background.

For blue water and blackwater backgrounds the narrow beam reduces backscatter in the



Diver entering Ginnie Springs Ballroom, Sony A7R V, Marelux MX-A7RV housing, Sony, Sigma 17mm F/4, two MF-2 flash's with green color filter on the left and white light on the right to demonstrate the difference using color filters, ISO-640, F/11, 1/160th sec

ambient light areas. The MF-2 is extremely easy to move around the macro port and smaller dome ports on the housing allowing a wide verity of multiple lighting combinations like overhead lighting, extreme side lighting, back lighting, inward lighting and much more.

Placing the light on the Muck Stick off camera increases the possibilities with both a single light or combination of lights. With the 90mm macro I shoot most of the time at ISO 50 to 100 using apertures from F/10 to F/22 and shutter speeds form 1/250th sec to as high as 1/1000th of a second using the MF-2 HSS feature.

I was able to get proper exposures at ISO-50 at up to F/22 using power levels 4 or 5. With the 90mm macro at F/2.8 for shallow DOF at ISO-50 I was getting proper exposures at power level 1. This is shooting with a lens to subject range from around



Large Bigeye, Shot with front IR filter MF-2 and rear lighting with red filter using off camera flash trigger with second MF-2. Sony A1, Sony 90mm macro, ISI-50, F/2.8, 1/400th sec. 6cm X 9cm target. A much different look when triggering the rear flash with IR light rather than white light

8 to 24 inches.

With closeup lenses like SMC-1 the camera settings remain about the same but the lens to subject distance is reduced by about 50% because of the SMC-1 C/U lens.

For wide angle to mid-range shots I used the excellent and versatile Sony FE 20 to 70mm F/4 zoom which allows a wide range of subject matter from Whalesharks and divers down to diner plate size fish with a 180mm dome port. For super-wide rectilinear shots I used the Sigma 17mm F/4 reviewed in this issue and shot exclusively with the MF-2's. With these lenses is was able to shoot HSS up to 1/800th and F/ numbers up to F/16 covering the entire subject without needing to use the supplied diffusers. For wide angle I used the same shorter arms as the ones I used for macro and the same Felxibuoy's. One of the big takeaways for me

with the MF-2's was that they make a great backup for high power, high priced wide angle strobes.

Doing two 2 1/2 hour macro dives shooting stills with the focus lights on mid power I never reached the RED low power level. Recycle times remain excellent at any given power level through the entire dive as well.

Shooting a single MF-2 on a Muck Stick off camera using the remote function was so much easier than using an extra long fiber optic cord or remote flash trigger. The MF-2 flash fired consistently as long as the "Light Pipe" was properly directed at the triggering flash. This allowed me to place the MF-2 anywhere it would not damaging to the surrounding sea life.

The Muck Stick is designed for MF-2 and has a ball head for use with a mounting clamp and an Anti-Rotation Sand Anchor that allows the MF-2 too be precisely positioned anywhere around the subject and remain very stable. The downside to the Muck Stick is that in some areas it can not be pushed far enough into the sand bottom to give stable support to the MF-2. I found this to be the case in some areas around the shallow sites at Blue Heron Bridge in Florida. When I was able to push the Stick 8 or 10 inches into the sand it was excellent at supporting the MF-2 and even larger flash heads. After each days diving

I rinsed the flash and snoot before removing the batteries and then dried for storage.

For this review the Backscatter MF-2 strobes were full production models complete with an instruction manual and they were on loan from Backscatter. While the MF-2's work in TTL with Olympus cameras I was not able to test this feature because I did not have an Olympus system in house.

I would once again like to thank the staff at backscatter.com for loaning me these superb little MF-2 flashes for this review. The MF-2's have landed at the top of my wish list going into mid-2023 and are a product which should be considered if a budget flash is in your future. Head over to the backscatter.com web site for more related reviews and information.

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