

Backscatter Mini Flash MF-1 and Optical Snoot OS-1

By Phil Rudin

Every year dive industry professionals from around the world make their way to the US for DEMA, the Diving Equipment and Marketing Association business to business trade show.

DEMA is the largest trade-only dive industry show in the world and since 1977 underwater photography has been a feature of the DEMA show.

Every November DEMA draws a large media core to cover all the equipment and events related to the water sports industry. When I attended my first DEMA show in the early 80s the underwater photography community was a somewhat regionalized group of individuals who were mainly acquainted through dive businesses and photography clubs like SFUPS.org my local south Florida club. With the explosion of the internet sharing U/W photo information and training has given rise to a truly international community of like minded underwater photography professionals & enthusiasts.

Underwater Photography magazine uwpmag.com has helped unite the international UWPhoto

community since its first issue in August 2001 and attending DEMA is a given for the UWPMAG staff.

As Senior Reviewer for UWP I spend a lot of my time on the DEMA show floor networking with professionals from the underwater photography industry and seeking out the latest new photography products. I always leave the show with at least one new product which has grabbed my interest and that I am keen to review. The November 2019 DEMA show was no exception and for me this was the year of the strobe. Nearly every established strobe manufacturer had a new or revamped strobe model and several new manufacturers have entered into the strobe market.

The biggest surprise this year for me was Backscatter's debut as a manufacturer in the strobe market. Backscatter Underwater Video & Photo is a Monterey, California based USA company with a second showroom in Derry, Hampshire USA. For over twenty years Backscatter has been providing excellent retail sales and service to underwater photography community. Backscatter



sells and services a large selection of UW Photography equipment for compact, mirrorless, DSLR, GoPro, pro video, lighting, hardware, and more, also providing photography trips and training classes.

Backscatter Mini Flash MF-1

The new Backscatter strobe which premiered at DEMA is called the Backscatter Mini Flash 1 or MF-1 and Optical Snoot 1 or OS-1. The MF-1 strobe retails for \$399.00 and the OS-1 snoot retails for \$149.00 or a combo package is available with strobe and snoot retailing for \$499.00 saving \$50.00 over buying separately.

Backscatter designed the MF-1



as the ultimate compact strobe for compact cameras shooting both macro and close focus wide angle scenes. The MF-1 has a narrow beam angle which is particularly well suited to fish portraits and macro with any housing system.

The first thing I noticed about the MF-1 is how small and compact the strobe is measuring just 65 mm in diameter (2.56 inches) by 184 mm (7.24 inches). The strobe is machined from anodized aluminum and weighs just 275 grams (9.70 once) in air.

The MF-1 ships with a one inch ball head, a Sea & Sea type ball mounting clamp, an Allen wrench to install the ball mounts, two extra O-rings with lube and a clip on white



Shrimp, Aquatica A7rIV Pro Housing, Sony A7R IV, Two Backscatter MF-1 strobes, Sony FE 90mm F/2.8 Macro with ACU+10 Closeup Lens, with Aquatica Macro Port, ISO100, F/18, 1/160th sec



of the strobe 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. Just unscrew the battery compartment, drop in a charged battery with the positive end facing up and reinstall.

The only battery recommended by Backscatter for the MF-1 strobe is the Nitecore NL1835HP 3500 mAh 8A 3.5v 12.6 Wh Li-Ion battery. My two test strobes came with four of these batteries, two Nitecore dual battery chargers and two water proof plastic battery boxes. 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 with up to 1400 flashes or one hour of continuous LED run time. The bottom of the MF-1 strobe has a threaded mounting

point for the ball head attachment and a standard fiber optic cord socket. I used the strobe with a fiber optic cord which has 90 degree port sockets with a small retention O-rings. During my several test dives the cord never dislodged from the port socket.

The top of the flash has a round red power level dial and behind the dial is a round stainless power on switch, both can easily be used while wearing heavy drysuit gloves. The power dial has a standby setting and six levels of power with number six being the brightest.



To turn the strobe on chose one of the six power settings and then rapidly press down the power on switch five times. A blue light under the on switch will indicate that the power is on. To check the power level just turn the power dial to the standby setting and the light will blink green, yellow or red to indicate the level of remaining power. When you return the power dial to any of the six settings the blue light will return.

With the power dial set at any of the six levels you can press and hold the power switch to activate a continuous flashing light for a duration of about three-seconds. This can be used to locate a subject which may shy away from the continuous LED lights.

To activate the twin LED's just press the power button and the LED's turn on at the lowest power level. Press again to increase the power level and on the fourth press the LED's will turn off.

Turn the MF-1 off by setting the power dial to

plastic strobe defuser with a retention lanyard. The recommended battery and battery charger are not included in the price of the MF-1 strobe.

The strobe is depth rated to 100m/330ft and is built and assembled in China. The single straight flash tube is in the center of the strobe face and has a polished chrome reflector. The strobe has two LED aiming lights which are located directly above and below the flash tube. The LED lights can be left off or set to three increasing levels of light intensity depending on the users needs.

The battery compartment threads into the rear

standby and then rapidly depress the power button five times.

The MF-1 is compatible with a wide variety of cameras from compact to DSLR using onboard camera flash or LED flash triggers. To pair the MF-1 with your camera simply connect the fiber cord and trigger the camera flash while the strobe is turned on. This will program the MF-1 with the camera's pre-flash cycle and allow proper manual flash triggering within your camera's flash sync range.

While Backscatter is calling MF-1 the ultimate strobe for compact cameras I would say it is the ultimate strobe for macro photographers because of its size and flexibility. The strobe has a narrower beam angle to keep light from straying over onto dark backgrounds making it ideal for macro work.

The small strobes can be placed extremely close to the macro port for reaching into tight spaces. The dual LED's eliminate the need for a focusing light and are exactly the same angle of coverage as the strobe beam making it easy to properly aim the strobes. The strobes are also very powerful for their size and when properly positioned allow excellent exposures with any macro lens in a range as high as ISO-50 at F/32.

Backscatter Optical Snoot OS-1

The OS-1 optical snoot was designed in conjunction with the MF-1 to be the most powerful macro strobe and snoot combination in today's market.

The snoot is 18cm X 6.5cm (7.09 X 2.56 inches) and weighs about 300 grams (10.58 oz) with an aperture card inserted.

Inside the snoot is a frosted filter to soften the light and at the front end of the snoot is an optical



light shaping element. The OS-1 snoot has a rubber collar that slides over the front of the strobe to hold it securely in place. It can easily be installed or removed underwater. I keep the snoot in my wetsuit pocket when I enter the water and then mount it when I find an appropriate sized subject to photograph.

The snoot can be rotated to adjust the shape of the light beam when using an oval aperture card. The snoot ships with two aperture cards one with four circular shaped holes and one with four oval shaped holes. The holes produce a beam as small as 6 mm to as large as a dinner plate covering a wide range of macro, super macro and closeup subjects.

The aperture cards slide through the center of the snoot and have spring loaded stops to hold the cards in place at any of the four hole sizes. With the oval aperture card rotating the snoot can adjust the beam angle from round too elongated covering a wide variety of macro subject shapes and sizes.

With the LCD lights turned on, the beam angle of the light from the snoot is the same as the beam coverage from the MF-1 so what you see is what



Scorpionfish Eye, Aquatica A7rIV Pro Housing, Sony A7R IV, Two Backscatter MF-1 strobes with OS-1 snoot, Sony FE 90mm F/2.8 Macro, with Aquatica Macro Port, ISO100, F/16, 1/125th sec

you will get. When the strobe is fired the LED lights turn off during exposure and then turn back on so that you won't lose sight of the subject.

Backscatter claims that the MF-1 strobe and OS-1 snoot combination have the most powerful light of any strobe/snoot combination currently on the market. The snoot can also be used with optional color filters for additional creative lighting opportunities.

Field testing the MF-1 Strobe and OS-1 Snoot

I had an opportunity to test the strobe with and without the snoot using strobe arms from Aquatica and Nauticam. I also mounted the strobe on a small tripod and used it off camera with the snoot.

With the strobe defuser attached you lose 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.

For my field test I used two MF-1 strobes with Aquatica and Nauticam housings. At times I was only using one MF-1 with the OS-1 snoot mounted on and off the housing.

Because of the compact size of the MF-1s moving through the water with the system was as easy as it gets with a full frame camera housing. I was shooting macro with the Sony A7R IV and Sony FE 90mm F/2.8 macro lens using the Aquatica ACU10 and Nauticam SMC-1 closeup lenses for super macro.

All of the Nauticam images are from night dives where the focus lights were all the lighting I used for the entire dive. Even at night on 2 1/2 to 3 hour dives in shallow water all I needed were the focus lights on the lowest or mid power.

The narrow beam angle of the MF-1 with and without snoots allows you to separate the subject from the background making the colors pop while maintaining a dark background. For blue water backgrounds the narrow beam reduces backscatter in the ambient light areas. The MF-1 is extremely easy to move around the macro port on the housing allowing a wide variety of multiple lighting combinations like overhead lighting, extreme side lighting, back lighting, inward lighting and much more.

Placing the light on a tripod off



Common Octopus Eye Detail, Nauticam NA-A7RIV housing, Sony A7R IV, Sony FE 90mm Macro, two Backscatter MF-1 Strobes, Night Dive, ISO100, F/18, 1/250th sec

camera increases the possibilities with both a single light or combination of lights. I use a small stainless RGBBlue tripod for extreme side and back lighting.

I noticed that at the highest power levels the MF-1s are a bit slower recycling than my Inon Z-330s. This is not an issue for me when shooting macro because I try to take my time with critical focus and



Bandtail Puffer, Aquatica A7rIV Pro Housing, Sony A7R IV, Backscatter MF-1 strobe with OS-1 snoot, Sony FE 90mm F/2.8 Macro, with Aquatica Macro Port, ISO100, F/16, 1/125th sec

composition especially when shooting full frame cameras.

With the 90mm macro I shoot most of the time at ISO-100, F/13 to F/22 at 1/250th sec. With both housings I used eight inch arms without any flotation. I was able to get proper exposures at ISO50 at F/18-F/22 using power levels 4 or 5. At F/2.8 for shallow DOF at ISO-50 I was getting proper exposures at power level 1. This is shooting in a range from about 10 to 18 inches from lens to subject with the strobes about flush with the front of the port.

With the +10 closeup lenses the settings remain about the same but the lens to subject distance is reduced by about 50% because of the C/U lens. With the white plastic strobe defusers light is a bit softer at the expense of about one stop, so one power level higher for the same exposure range.

After diving I rinse the strobes and snoots before removing the batteries then dry for storage.

Doing 2 1/2 hour macro dives shooting stills with the focus lights on low power I never reached the RED low power level. Recycle times



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Juvenile Scorpionfish Nauticam NA-A7RIV housing, Sony A7R IV, Sony FE 90mm Macro, Two Backscatter MF-1 Strobes, Night Dive, ISO100, F/18, 1/250th sec

remain the same at any given power level through the entire dive as well.

Shooting the strobe on a small tripod off camera is best done with an extra long fiber optic cord or remote flash trigger. This allows you to place the strobe behind or side lighting a subject. The strobes could also be used for wide angle shots like wreck interiors where you want to back light a feature of the wreck or a person.

The possibilities with the small Backscatter MF-1 strobes does not end with macro and I am sure we will be seeing some killer examples with these little strobes when they get out into consumers hands. I would also mention that color filters are coming for the MF-1 so backlighting with colors or creating colorful bokeh balls will be much easier with these strobes.

Like most of the equipment I review the Backscatter MF-1 strobes and snoot were pre production models that did not include instruction manuals. As I have stated in past reviews I consider having no instruction manual to be a good

thing because if I can't figure out how to use the equipment without the manual it will likely be complicated underwater.

The MF-1 is extremely simple to setup and use for anyone familiar with shooting strobes using manual power settings. While I have tried to warm up to shooting macro with TTL strobes I still find the simplicity of selecting lighting ratios in manual to be easier for my workflow.

I would once again like to thank the staff at backscatter.com for loaning me these superb little MF-1 strobes for this review, they have landed at the top of my wish list going into 2020.

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