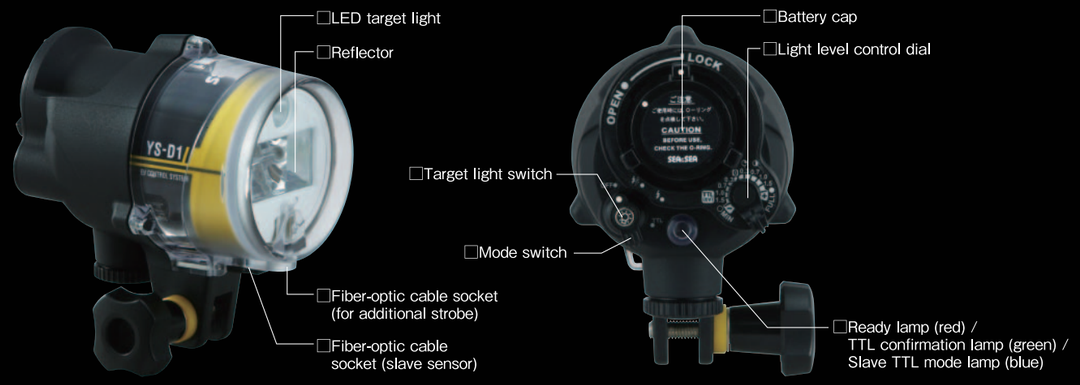
TIP: Difference between strobes and lights

Underwater strobes and underwater lights are quite different in intended purposes and advantages. Strobes require some additional knowledge compared to underwater lights. Once you have learned some basics of underwater photography, the quality of your underwater images will greatly improve.
A strobes' light emittance time is several thousandths per sec. Therefore, the strobe will stop fast moving fish in still images. If you would like enhanced color reproduction or vividness in your still images, you should use external strobe(s).

Shutter speed: 1 / 125, Aperture: F16 | Shutter speed: 1 / 125, Aperture: F13 | Shutter speed: 1 / 125, Aperture: F11

Shutter speed: 1/80, Aperture: F14 | Shutter speed: 1/60, Aperture: F8 | Shutter speed: 1/60, Aperture: F5

Equipment used: The MDX-7D housing for Canon EOS 7D + the YS-D1 strobe x 2 / LED light (high-light intensity type) x 2. Location: Papua New Guinea



Specifications

Guide Number	32, 24 (with Diffuser 100 attached), 20 (with Diffuser 120 attached)
Beam Angle	80 x 80 degrees (without diffuser), 100 x 100 degrees (with Diffuser 100 attached), 120 x 120 degrees (with Diffuser 120 attached)
Batteries	4xAA A: 6V Ni-MH: 4.8V
Number of Flashes *1	●A: 150 ●Ni-MH: 200
Recycle time (full) *2	●A: 2.8 sec ●Ni-MH: 1.9 sec
Color temperature	5600K
Color temperature w/diffuser	5250K
Depth rating	100m / 330ft

Dimensions (WxHxD)	(Excluding protruding part(s) and the arm holder) 87x135x111mm / 3.5 x 5.4 x 4.4 inches
Weight	650g / 22.9oz (w/o batteries) * Attached a YS Mount Strobe Adaptor and a fixing bolt to the strobe.
Underwater weight	0.5g / 0.02oz(w/ batteries)

Others
□Exposure control: DS-TTL Ⅱ, Slave TTL, Light level control dial (GN): 1 / 1.4 / 2 / 2.8 /4 / 5.6 /8 / 11 / 16 / 22 / 32 (11 steps)
□Pre-flash control: Equipped with pre-flash cancel mode
□Slave function □Auto power OFF function
□Sync cord: 5-pin Sync cord/N, Fiber-Optic Cable (L-type)
□Over-pressure valve □LED target light

*1 Number of flashes and recycle time depend on the battery brand, temperature and frequency of use. *2 Number of flashes and recycle time of Ni-MH batteries were tested on 2400 mAh batteries.

For compatible cameras, please refer to "Compatibility List" for the strobe and digital cameras on the SEA&SEA website.
http://www.seaandsea.jp/products/strobe/compatibilitychart/a.html

Safety precaution	
For safe handling of the product, please read the instruction manual before use.	●Use only designated power source, voltage, power code and AC adapter. Failure to heed the above could result in fire and/or electrification. ●Immediately stop use of this product if the product malfunctions. ●Should you notice smoke, an unusual smell or water leakage/flooding, discontinue use and turn the product off immediately.

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* Specifications, external design of this product and product features in this brochure may change without notice to improve the product.

Visit SEA&SEA website to find official distributor near you. **http://www.seaandsea.jp/**

Distributor / Dealer

SEA&SEA
THE UNDERWATER IMAGING COMPANY

YS-D1

Ultimate all-in-one strobe.

YS-D1 (Black)

The maximum guide number of 32 and newly developed TTL system.

■The strobe boasts a guide number of 32 using just four AA batteries

Despite its size, the YS-D1 delivers impressive power with a guide number of 32. The most powerful strobe in its class. Compared with the previous model, the YS-110α, the YS-D1 is more powerful by 1EV, is 50g (1.8oz.) lighter and 10% smaller in size. Not only is the YS-D1 powerful enough for wide-angle photography, but is also ideally suited for macro photography with a minimum guide number of 1.

■The latest automatic exposure system called DS-TTL Ⅱ

The YS-D1 employs a completely new slave TTL system, improving upon the previous DS-TTL system algorithms. The strobe can adjust the interval between the pre flash and the primary flash in order to be compatible with a variety of cameras. Equipped with DS-TTL Ⅱ mode, the strobe is more responsive, more precise and more reliable.

■The world's first underwater strobe which features a TTL system equipped with EV control using Fiber-optics

Subtle exposure compensation is possible by directly controlling actual light level. Regardless of a compact or a SLR camera, you can achieve the desired exposure compensation (+/- 4 steps).

■Comes with two accessory diffusers

With the Diffuser 100 mounted, the YS-D1 will emit an even 100 x 100 degree circular light. When a wide-angle lens is used, the beam angle can be widened to 120 degrees using the Diffuser 120. You can choose between beam angles of 80, 100 and 120 degrees.

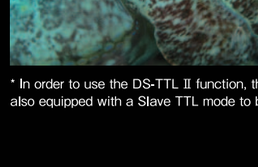
The most powerful underwater strobe in its class

Photo provided by Kyu Furumi. Equipment used : MDX-5D Mark Ⅱ for Canon EOS 5D Mark Ⅱ and the YS-D1 strobe x 2. Location: New Caledonia.

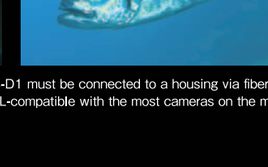
The YS-D1 is 1EV more powerful than its predecessor, the YS-110α. Because the strobe's maximum guide number is 32, it is very versatile in both manual and TTL photography. Light reaches further distance reproducing better natural colors.

The whole image is illuminated with two YS-D1 strobes at full power. The diffuser 100 is mounted on the both strobes. Because of its power, the YS-D1 brilliantly illuminates subjects and produces three-dimensional images.

* When the Diffuser 100 is mounted, the beam angle becomes a circular 100 degrees and the guide number becomes 24. When the Diffuser 120 is mounted, the beam angle widens to a circular 120 degrees and the guide number becomes 20.



Guide Number 32



Guide Number 22

Difference between GN32 and GN22

The same subject was shot with the YS-D1 strobe and the previous YS-110α model (the both strobes at full power). The image on the left is clear and reproduces colors more vividly. Light from the strobe is more powerful and illuminates subjects at further distances .

What is Guide Number ? Abbreviated as GN, expressing strobe output.

Upgraded accuracy with the DS-TTL Ⅱ

DS-TTL Ⅱ, which the YS-D1 has employed is much more accurate and faster when compared with the previous DS-TTL system. Beautiful images can easily be captured by switching to TTL mode for automatic exposure adjustment. The YS-D1 will always fire right amount of light. With the DS-TTL system, you can just concentrate on composing the image.

What is TTL ? Automatic exposure control. A TTL camera reads the brightness of the photo subject then the relays that information to the camera which will adjust strobe output in order to emit right amount of light. Even when subject is moving, the subject will be correctly illuminated with the TTL system.

Taken with the YS-D1 (in DS-TTL Ⅱ mode)

No strobe was used

Comparison images shot with an external strobe and without an external strobe. As you can see, the image taken without an external strobe does not reproduce colors. The camera's built-in flash is not powerful enough to illuminate the background and the images become two-dimensional. In order to photograph subjects with their natural colors an external strobe(s) should be used.

Photo provided by Hideki Abe.
Equipment used : MDX-X10 for Fuji Film X10 and YS-D1 x 2.
Location: Kushimoto, Japan

The images on the left were taken with the YS-D1 in DS-TTL Ⅱ mode. By setting the strobe to TTL, moving subjects and reflective subjects can be vividly depicted with the correct exposure.

* In order to use the DS-TTL Ⅱ function, the YS-D1 must be connected to a housing via fiber optic cable. Some cameras may not be compatible with the DS-TTL Ⅱ. In this instance, the YS-D1 is also equipped with a Slave TTL mode to be TTL-compatible with the most cameras on the market today. *Exposure compensation is not possible in Slave TTL mode.

Unlimited expressions are possible with the newly developed EV control function

Light output can be subtly adjusted with the dial. When the camera's exposure compensation function is used, entire images including the sea may be over or under exposed. When the YS-D1's exposure compensation function is used, you can adjust exposure only for desired photo subject without affecting color of the sea.

- 1.5 EV exposure compensation.
(Cardinal fish are depicted as if they were semi-transparent.)

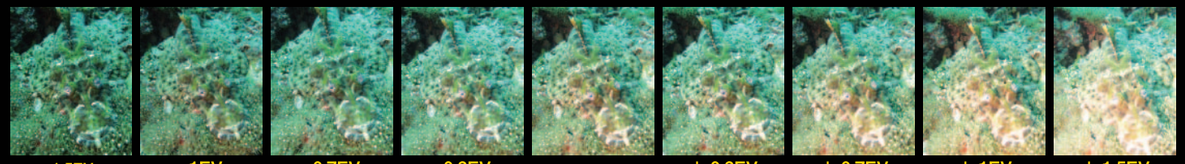
- 0.3 EV exposure compensation.

+ 0.7 EV exposure compensation.

+ 1.5 EV exposure compensation.
(Reflection from cardinal fish is exaggerated.)

Photo provided by Umima-ru. Equipment used : MDX-7D housing for Canon EOS 7D and YS-D1 x 2. Location, Zamami, Okinawa, Japan

What is EV compensation? The YS-D1's DS-TTL Ⅱ controls compensation by EV value from - 1.5EV to +1.5EV.
EV stands for Exposure Value. Exposure is expressed in numbers.



- 1.5EV exposure compensation | - 1EV exposure compensation | - 0.7EV exposure compensation | - 0.3EV exposure compensation | No exposure compensation | + 0.3EV exposure compensation | + 0.7EV exposure compensation | + 1EV exposure compensation | + 1.5EV exposure compensation

Taken with the WP-DC38 for the Canon PowerShot S95 camera + the YS-D1 strobe x 1. Location: Papua New Guinea

In manual mode, the YS-D1 emit lights as low as GN1

In some cases, the TTL system may not be desired when the subject is located in extremely close proximity to the photographer or when there are a lot of particles underwater. TTL may not function either depending upon camera's setting.
The YS-D1 also performs very well in manual mode. With the Light Level Control Dial, light intensity can be adjusted in 11 steps (GN1/1.4/2/2.8/4/5.6/8/11/16/22/32). The YS-D1 strobe can emit a minimum of GN1. (The previous model, the YS-110Alpha's minimum GN was 1.4.)

The images on the right demonstrate the differences between an image taken with one external strobe and two strobes. When TTL photography is difficult or not desired, you can avoid overexposure by switching the mode from TTL to manual.

Taken with the RDX-600D housing for Canon EOS 600D / Rebel T3i + the YS-D1 x 1 and x 2

The YS-D1 x 1

The YS-D1 x 2