

"S-TTL": promise accurate exposure every shot

Newly developed "S-TTL" is TTL-AUTO. D-2000 is controlled by camera to obtain accurate exposure in which CCD measures D-2000 strobe light coming through camera lens. So S-TTL is free from influence of conversion lens or filters which affects angle of view or f-number of lens.

Only the difference from genuine strobe of camera manufactures is that S-TTL employs optical signal instead of electrical signal. The optical synchronous signal is Infrared ray(IR) created by Clear Photo System by cutting visible light from built-in strobe light. IR enables to catch optical synchronous signal "outside" of ↗

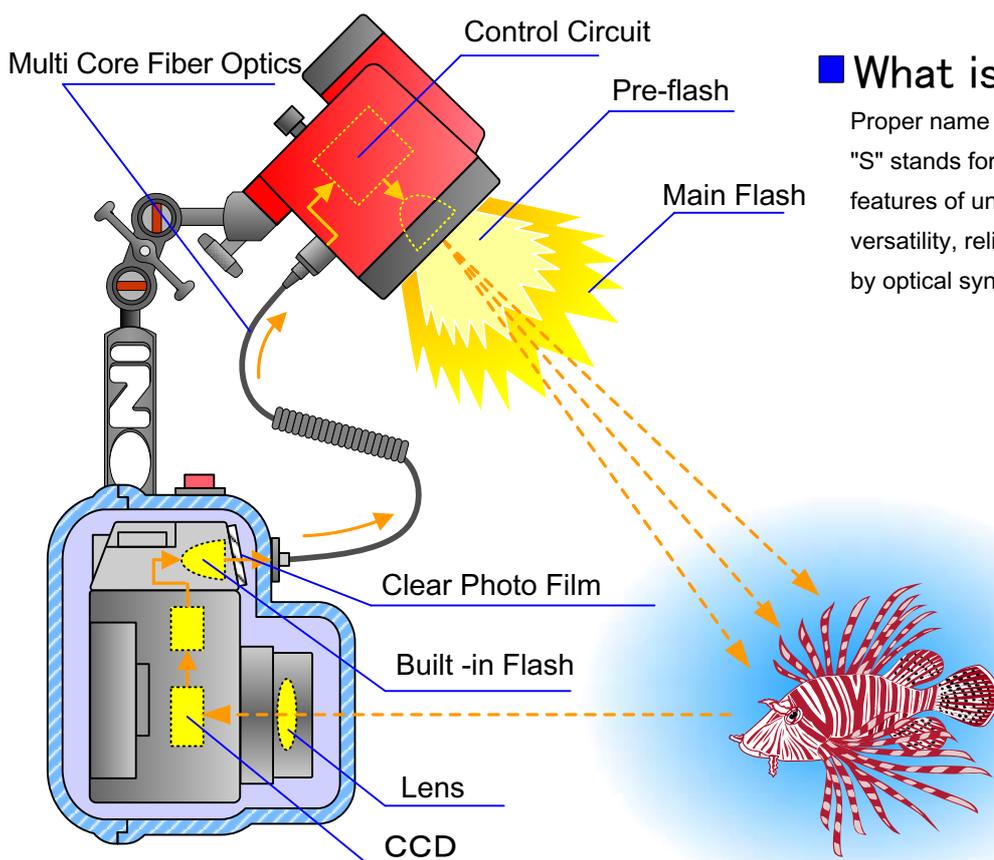
transparent housing so water-tight synch connector is not necessary like a strobe which requires electrical TTL signal. S-TTL transmit optical signal to D-2000 through durable multi-core fiber optics. All pre-flash type digital camera is compatible with D-2000 when using in transparent housing.

Since S-TTL employs optical signal, in theory, it is possible to have numbers of strobes connecting via fiber optics in TTL-AUTO. S-TTL is ideal strobe system under severe condition since it can freely disinstalled underwater, has wide compatibility and has accurate exposure even in multi strobe configuration.

■ D-2000 also pre-flash in S-TTL

S-TTL is compatible with pre-flash type digital camera. * Pre-flash is faint flash measuring exposure value before main flash. In S-TTL system, D-2000 emits pre-flash and main flash sama as genuine electrical signal based TTL auto-strobe, which acquires accurate exposure. ↗

*In principle, S-TTL is compatible with a non pre-flash type camera. However strobe light may be blocked before reaching to strobe light-sensor on a camera depending on housing shape or conversion lens and unable to calculate correct exposure.



■ What is "S" for S-TTL

Proper name of S-TTL is Optical Synch. TTL. "S" stands for Synchronization. The advantageous features of underwater TTL-AUTO photography; versatility, reliability and operability is exerted by optical synch. signal. Thus we named S-TTL.

■ S-TTL compatible camera

Existing other External Auto Strobe is hard to use with Olympus μ 10/15/30, Canon IXY400/450/500, Nikon CP4100/4200/5200 which categorized consumable auto digital camera without settable aperture function.

(*1 See back side for detail)

Since S-TTL is TTL-Auto, accurate exposure image can be easily and surely taken by just only pressing shutter release ↗

button. Any digital camera which can emit pre-flash underwater can receive benefit of S-TTL regardless of manufacture, model or shooting mode. S-TTL offers wide variety for selecting your digital camera.

All Digital Camera System (*2) which has available INON AD Mount System or M67 Mount System, is compatible with S-TTL. (*2: except Fujifilm F710)

*1 Why External Auto Strobe is hard to use for Auto Digicam

Auto-mode specialized digicam like μ 10/15/30, IXY400/450/500, CP4100/4200/5200 doesn't display aperture setting on it.

The hard part is to synchronize aperture value of external strobe with "guessed" aperture value of a camera which is variable at the time of shooting. Moreover μ 10/15/30 and CP4100/4200/5200 can not fix ISO sensitivity which makes external strobe setting extremely difficult. ↗

External Auto Strobe having multistep aperture setting could be little bit easier for aperture setting range at the strobe. But it would be rather difficult with single/few aperture setting on external strobe since it needs to adjust exposure by zooming or using diffuser. In that case it will be obvious that Auto shooting getting much harder.

■ External Auto

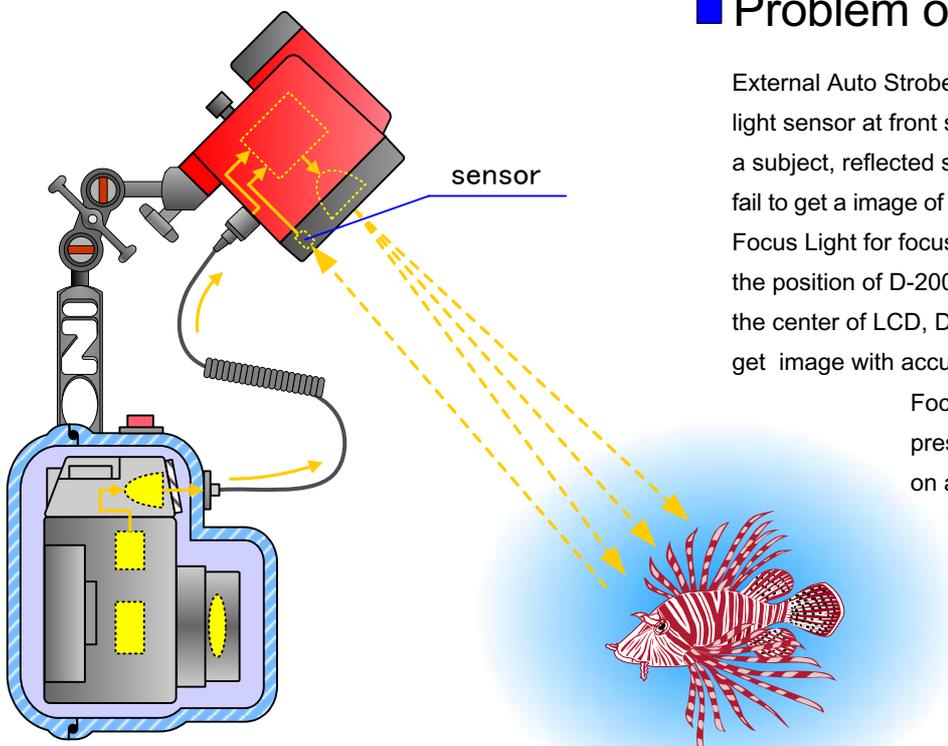
External auto strobe has a sensor to measure reflected light on its front side. So it needs to synchronize aperture value on the strobe with aperture value on a camera before pressing shutter since the external auto strobe doesn't measure strobe light through CCD like S-TTL. ↗

D-2000 is equipped with 24 steps aperture setting function which enables to control shadow for sophisticated lighting requires delicate aperture setting.

■ Problem of External Auto Strobe

External Auto Strobe needs to "face" to a subject since it has light sensor at front side. If a strobe does not properly face to a subject, reflected strobe light can not reach to the sensor and fail to get a image of accurate exposure. D-2000 is equipped with Focus Light for focusing and strobe positioning. Once adjusting the position of D-2000 so that spot light from Focus light place in the center of LCD, D-2000 should face to a subject and you will get image with accurate exposure.

Focus Light will automatically turn off when pressing shutter release button. So flat spot on a image will not happen.



■ Slave Strobe

Slave Strobe employs a sensor measuring built-in flash light amount and emits light synchronized with built-in flash. So slave strobe works as fill in light while built-in flash works as primary light source. Built-in flash light shines on a subject and will eliminate modeling effect of external strobe. In case of poor visibility, suspended particles may be exposed on a image and clear image could be hard to get.

