

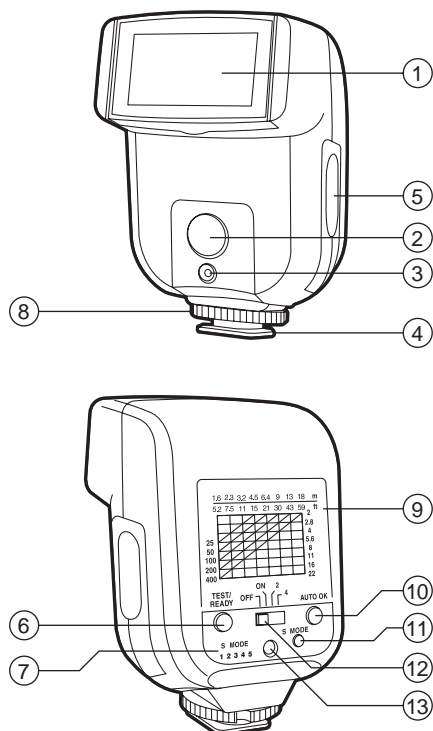
Thank you for purchasing Tumax DSA20 digital flash unit.

DSA20 is a new designed electronic flash use for both digital cameras and film cameras. The flash has two auto aperture settings. In auto mode the correct amount of light output is controlled by IGBT. Please kindly take few minutes to read the following instruction before using.

Accessories

If the camera does not have hot shoe socket, the bracket will fit most cameras and DSA20 mount together. Or the stand can be used if the flash at a distance from the camera. The bracket or stand will be provided in different packaging.

1. Tilted Reflector
2. Delay / Slave Sensor
3. Auto Sensor
4. Hot Shoe
5. Battery Cover
6. Ready / Test Button
7. Slave Mode Indicator
8. Lock Ring
9. Exposure Table
10. Auto OK
11. Slave Mode Selector
12. On / Off / Auto Switch
13. Synchro Socket



Technical specifications

Guide number (ISO 100)	18 (m)
Power sources	2 x AA (1.5V) batteries
Angle of illumination	40° x 60° (V x H)
Flash duration	1/2000 to 1/40000 sec
Auto range	1 - 4.5m (3 - 15ft) at f4.0 1 - 9m (3 - 30ft) at f2.0
Recycle time	0.3 - 10 sec with fresh batteries
Number of flashes	Over 100 with fresh batteries
Color temperature	Daylight
Slave function	Built-in
Dimensions	65 x 54 x 98mm (W x D x H)
Weight w/o batteries	approx. 127g
Accessory	synchro cord

Specifications are subject to change without further notice.

Loading the batteries

Make sure the On / Off Switch is in Off position. Open the Battery Cover by sliding then insert 2 x AA batteries as indicated by the symbols in the battery compartment. Close the Battery Cover. Turn the On / Off Switch to On, the flash Ready Indicator will light within a few seconds if the batteries are properly loaded.

Full power output (Manual mode)

Set the On / Off Switch to On position. Refer to Exposure Table, estimate the camera to subject distance and note to the film speed in order to get correct camera lens aperture setting.

Example: If the film speed is ISO 100, the flash to subject distance is 4.5m, the correct aperture should be f4.0 The aperture can be calculated as follow:
Aperture (f) = guide number (GN) / flash to subject distance (m)

Auto mode

DSA20 has two auto aperture settings 4 (f4.0) and 2 (f2.0) as shown on the Exposure Table. When the camera is set to ISO 100 the f4.0 auto setting automatically adjusts the exposure for subjects up to 4.5m and f2.0 setting works at distances up to 9m. The Auto OK Indicator will light when the pictures have exposed correctly. The Auto mode and Manual mode could adapt with all Slave Mode settings.

Auto slave and delay time function (Slave mode)

Digital camera often fires a pre-flash to assist focusing or help reduce red-eye. A normal slave flash may not synchronize correctly. DSA20 provides five settings for slave function to enhance synchronization. Relevant indicator lights when pressing the S Mode Selector.

S1 Instant synchronization. Camera built-in flash fires will instant trigger the flash.

S2 Start from the camera built-in flash's first fires, the slave flash under this mode would not be affected within 50μs. In fact, after 50μs the slave flash will be triggered by camera's flash.

S3 Start from the camera built-in flash's first fires, the slave flash under this mode would not be affected within 100μs. In fact, after 100μs the slave flash will be triggered by camera's flash.

S4 The flash will fire after sensed the second fires from camera built-in flash.

S5 The flash will fire after sensed the third fires from camera built-in flash.

Follow with S5 slave mode, the flash performs normal flash photography and will not operate auto slave and delay time function.

Power saving

When the flash is not in use around two minutes, the flash will shut off and stay at power saving mode. All indicators will go out. To activate the flash, simply press the S Mode Selector. This function could extend the power sources for long lasting.

Tilted reflector

DSA20 has five positions Tilted Reflector to choose, 0°, 45°, 60°, 75° and 90°. To avoid direct flashing on subject and harsh light, the flash head must be directed towards a reflecting surface such as ceiling or wall, which should be neutrally white to create softer lighting effects.

Important notes

Do not attempt to repair or open the flash. It contains high voltage circuitry, which should be serviced only by properly trained personnel.

Do not cover the auto sensor or delay sensor when taking photographs.

If the hot shoe socket contact of camera does not match with flash, do not mount the flash onto the camera. Incorrect connection may damage the camera or flash.

When not in use, switch off the flash to conserve battery life.

Remove the batteries from the flash when not in use for an extended period.