DIGITAL SINGLE－LENS CORRESPONDENCE SHUTTER TESTER

MODEL: 7FR－80D

- **Shutter tester for digital single lens reflex camera**
- **It features that measurement for focal plane of camera by Laser light reflection system.**
- **High－speed 1／8000 correspondence**

【OVERVIEW】

This instrument is a shutter tester for measuring exposure time, a laser beam is applied to the CCD surface of a camera, and the reflected laser beam is measured.
Focal plane speed and delay time of a high speed focal plane shutter.
The data measured shall be indicated in 5－channel LED counter.
This is specialized model for measuring vertical type of focal plane shutters, and you can easily change measuring item simply by pressing a switch located on upper part of the light receptor or remote switch.
You can also make judgment, OK or NG, on irregularity of exposure by the limit switch for exposure irregularity（You may set up the limit at your option）.
You can carry out measuring operations efficiently as you can confirm speed of focal planes and exposure time simultaneously by looking at 5－channel LED indicator and by operating on the press button.
This instrument equipped is for high speed shutters, and its accuracy control is easy as an automatic calibration circuit is built in.
You can measure such high speed shutter as 1／8000 second accurately.
Also, there is a data output with operation of the average／maximum／minimum value to 2 to 10 times in the tester.
Data management can be easily performed by connection with a personal computer.
※ A printer（Based on CENTRONICS）is also connectable. （Option）

【SPECIFICATIONS】

Objects to be Measured	Focal plane shutter（Vertical type） ※ It corresponds also to one focal plane type.
Measuring Item	5－channel indication

※ Specification continues to the back.

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【FUNCTION TABLE】

	EXP	X	RUN
1C	**1 C** 1st plane running time	**1 C** 1st plane running time	**1 C** 1st plane running time
2C	**2 C** 2nd plane running time	**2 C** 2nd plane running time	**2 C** 2nd plane running time
A	**TOP** Front edge exposure time	**+ X** X delay time	**1st HALF** 1st plane first half time
B	**CENT** Central exposure time	**X +** X allowance time	**2nd HALF** 2nd plane first half time
C	**BOTT** Rear edge exposure time	**FULL** Full open time	**CENT** Central exposure time

【SPECIFICATIONS】

Measuring Accuracy
［Crystal Accuracy］ within ±0.05%
［Counter Accuracy］ ±1 count
［Measurement Accuracy］ below ±5μs.
※ However, the measurement position of a shutter is set to less than 5mm from the tip of the camera photo acceptance unit filter surface（Reflective surface）at the time of proofreading.

Measuring Spot: 0.1mmΦ

Measuring Distance: 7.5mm Interval（3 points）

Measuring Indication Range: 0.001ms～16.0sec, 4－digit indication

Light Source: Laser spot light（λ＝780 nm）
Out put：Below 1mW Class Ⅱ×3 Beams

Measuring System: Project laser beam at the reflection CCD surface in a camera to be measured and compare 1／2 point of output wave of then combine each signal with contact point signal to take measurements.
If you push the CAL switch and release the shutter（at the speed of less than 1／30 sec. ）at the start of your business hour or at any time you want, this instrument shall automatically calibrate each measuring point as CPU is built in.

Judgment Function
① **Exposure Irregularity**
OK ／ NG Judgment（Indication by lamp）
Ratio between the maximum and the minimum irregularity at 3 points of A, B and C shall be controlled in the unit of △ EV.
Limit Switch（△EV）＝ Log^2（MAX／MIN）
② **BOUND Lamp（B）**
This lamp goes on only when the 1st or 2nd plane has bounced.
③ **HASTY Lamp（H）**
This lamp goes on in the following cases：
- When the 2nd plane has started to move before the 1st plane has not fully open.
- When there is no time of full － open.
- When the shutter speed is faster than the normal X － contact shutter speed（1/60 ～ 1/250 sec.）.

DATA OUT: RS－232C（9600bps）

Measuring Environment
［Operating Temperature］ 0℃～40℃
［Humidity］ Less than 90%
［Accuracy Assurance Temperature］ 5℃～40℃
［Humidity］ Less than 85%

Power Requirement: AC100～120, 200～240V. 50／60Hz

Power Consumption: Approx. 14.5VA

Weight＆Dimensions: 160（W）×410（H）×400（D）mm, Approx. 10kg