



The digital display is easy to read. A high accuracy of $\pm 0.01\%$ is guaranteed by crystal controlled oscillator circuits. The whole range from 100 rpm up to the maximum speed can be selected only by turning a knob. A compact, long life, high performance xenon flash lamp is used. Applicable not only as rotation meter, but also to observe other moving bodies.

- * Application in the manufacturing and test process of motors as rotation meter.
- * Measurement for design, research, test and maintenance of rotating and vibrating machinery.
- * Observation of flowing liquids, foams and powderlike materials.
- * Research and experiment at educational institutions and laboratories.

STANDARD TYPE

Model	HD-100	HD-150	HD-300
Revolution range (rpm)	100~10,000	100~15,000	100~30,000
Max. Indicate	9999 (4 digits)	99999 (5 digits)	99999 (5 digits)
Ext. input synchro	strobe 0~170Hz	strobe 0~250Hz	strobe 0~500Hz
Frequency count	0~10kHz	0~100kHz	0~100kHz

- Accuracy: 0.01% + 1 rpm.
- Gate time: 1 sec.
- 7 segment LED display.
- Lamp: Xenon flash lamp SX-5
- Lamp life: 1000h at 3000rpm.
- Lumination time: Pulse width approx. 8 μ sec.
- Lamp input power: max. 12W continuously
- External input signal: TTL falling flank
- External dimension: W100×H100×D170mm
- Weight: 1.2kg
- Power supply: AC 100, 110, 117, 220, 240V according to order. 30 VA

POWER UP TYPE

Model	Light value ratio compared w. HD-100	Revolution range (rpm)	Ext. input synchro (Hz)
HD-100-2	Double value	50~5,000	0~100
HD-100-3	Triple value	30~3,300	0~60
HD-100-4	Quadruple value	25~2,500	0~40

■ The luminance power per flash is increased as compared with that of HD-100 Standard Type. Increased luminance power is especially useful for applications with low flash frequencies.

GRADE UP TYPE

Model	Revolution range (rpm)	Auto power range (rpm)	Lightvalue ratio compared w. HD-100
HD-100A	100~10,000	100~3,300	3
		3,300~5,000	2
		5,000~10,000	1
HD-150A	100~15,000	100~5,000	2.5
		5,000~9,000	1.5
		9,000~15,000	1

■ According to the flash frequency the luminance power per flash changes automatically to three levels. The luminance power at low and medium flash frequencies is 1.5 to 3 times as strong as that at high flash frequencies.

OPTION ACCESSORIES



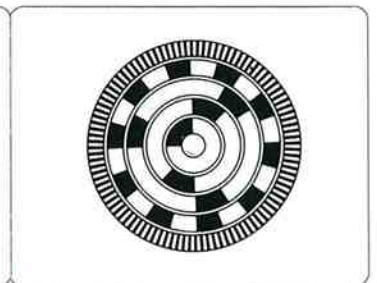
■ **Separate Lamp House LH-10**
The flash lamp unit can be separated from the control and display unit.



■ **Mounting Arm SA-2**
Suitable to hold the separated flash lamp house unit.



■ **Pod SP-3**
The flash angle can be freely adjusted. Also usable as a desk stand.



■ **Strobo Disk E-100**
Rotation speeds as slow as 10 to 300rpm can be easily measured.

BATTERY TYPE STROBOSCOPE, PORTABLE, HIGH SPEED CHARGEABLE Ni-Cad BATTERY BUILT-IN, EXTREMELY COMPACT, LIGHT & CORDLESS



The electric power can be supplied from three kinds of sources. The built-in battery, chargeable within 1 hour, allows continuous operation for 1 to 5 hours. The Carry Strobe also operates on AC and on external battery power. The digital LED display is controlled by a crystal oscillator. Speed adjustments are made with a 10 rotation potentiometer covering the whole range of the stroboscope. The Carry Strobe is so compact, light and suitable for various applications as to be never found in conventional stroboscopes.

- * Suitable for check and maintenance of mechanical equipments on aeroplanes or ships.
- * Measurement of high speed machinery, such as in weaving factory etc.
- * Allround stroboscope for various maintenance and field services.

STANDARD TYPE

Model	CS-100	CS-150	CS-300
Main features	Standard type	Grade up type Light value: 3steps autochange	High speed type Light value: 3steps autochange
Revolution range	100~10,000rpm	100~15,000rpm	100~30,000rpm
Max indicate	9999 (4 digits)	99999 (5 digits)	99999 (5 digits)
Ext. input synchro	0~170Hz	0~250Hz	0~500Hz
Frequency count	0~10kHz	0~100kHz	0~100kHz

Accuracy: $\pm 0.01\% + 1 \text{ rpm}$ **Gate time:** 1 sec
 • 7 segment LED display. **Lamp:** Xenon flash lamp SX-5
 • **Lamp life:** 1000h at 3000 rpm. • **Lumination time:** Pulse width approx. 8 μsec .
 • **Lamp input power:** Max. 12W continuously • **External input signal:** TTL level, falling flank.
 • **External dimension:** W100×H100×D230mm
Weight: 1.5kg **Power supply:** a) **Internal power:** Ni-Cad battery 1800mAh, 1h continuous operation at max. flash frequency. b) **External power supply:** DC 12V, 1.5A max.
Accessory: AC charger CH-10, able to charge internal battery within 10h.

POWER UP TYPE

Model	Light value ratio compared w. CS-100	Revolution range	Ext. input synchro	frequency count
CS-50	Double value	50~5,000rpm	0~100Hz	0~10kHz
CS-30	Triple value	30~3,300rpm	0~60Hz	0~10kHz

This type has an increased luminance power of CS-100. It is useful to measure at low flash frequencies.

OPTION ACCESSORIES



Quick charger & AC driver CA-1

The exhausted internal battery can be fully charged within 1 hour, automatically terminated when fully charged. It allows operating of the Carry Strobe from AC power.



Ext. battery BP-2

After the internal battery is exhausted, the Carry Strobe can be powered externally from the BP-2.



Carring case CC-2

Suitable for one unit of Carry Strobe and charger CH-10.



Charger CH-10 & AC adapter

CH-10: 10h charger for AC 100V
 AD-110/117: AC adapter for AC 110/117V
 AD-220/240: AC adapter for AC 220/240V



HIGH POWER STROBOSCOPE SS-SERIES

CONTINUOUS 100 WATT LAMP INPUT POWER FOR HIGH LUMINANCE & ACCURACY



Single Lamp type SS-1000 SS-1500

The digital seven segment display gives direct readings in rpm with an accuracy of ± 1 rpm. Adjustment is carried out by one knob covering the whole range with a 10 rotation potentiometer. Fine adjustments can be made by the other knob with a revolution of 1 rpm. The luminance power changes automatically to four levels according to the revolution value selected.

HIGH POWER SINGLE LAMP TYPE

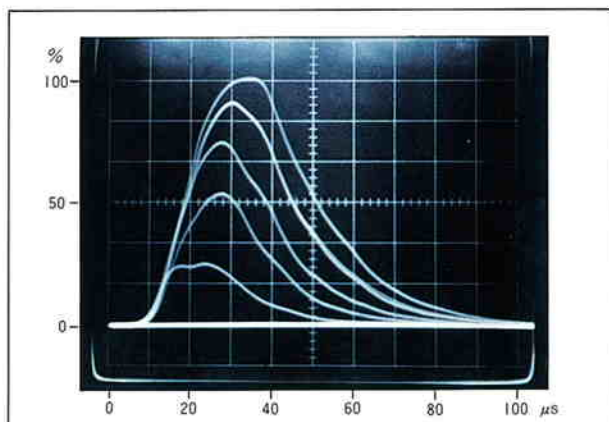
MODEL	SS-1000	SS-1500
Revolution range (rpm)	100~12,000	100~30,000
Exto. synchro signal frequency (Hz)	0~200	0~500
Max. lamp input power	100W continuous	100W continuous

■ Power supply unit: Ext. dimension W265×H160×D310mm Weight 7.5kg
 ■ Flash unit: Ext. dimension W130×H120×D175mm Weight 1.5kg

Common specifications ■ Display: LED 5 digit, min. reading 1 rpm ● Measurement accuracy: 0.01%+1 rpm. ● Gate time: 1 sec. ● Ext. synchro signal: a) TTL level signal with either + or - edge. b) Mechanical contact—break or make. ■ Lamp: Xenon flash lamp SX-100 ● Life: over 2×10^8 flashes. ■ Flash pulse: 15 to 25 μ s ● Color temperature: 6500°K ● Output voltage: 3V negative pulse wave ● High voltage power supply: Switching type with constant voltage ■ Power supply: AC 100,110,117,220,240V according to order. max.300VA (W type max. 600VA)

Automatic luminance control (controlled by internal oscillator)

SS-1000		SS-1000W		SS-1500W	
Revolution range rpm approx.	Lamp input power per flash	Revolution range rpm approx.	Lamp input power per flash	Revolution range rpm approx.	Lamp input power per flash
100~4000	1.5 J/F	100~1500	4 J/F	100~4200	1.45J/F
4000~6000	1.0 J/F	1500~3000	2 J/F	4200~6300	0.95J/F
6000~8000	0.75J/F	3000~6000	1 J/F	6300~13000	0.45J/F
8000~12000	0.5 J/F	6000~12000	0.5J/F	13000~30000	0.2 J/F



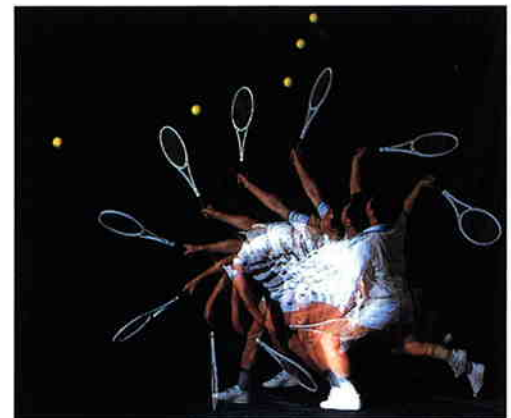
Double Lamp type SS-1000W SS-1500W

- * Observation and photographing of objects moving at a high speed.
- * Long distance observation thanks to high power luminance.
- * Inspection of scratches on rolled steel plates where high luminance is required.
- * Positioning of register mark and inspection on printing machines.
- * With the double lamp type shadows can be eliminated.

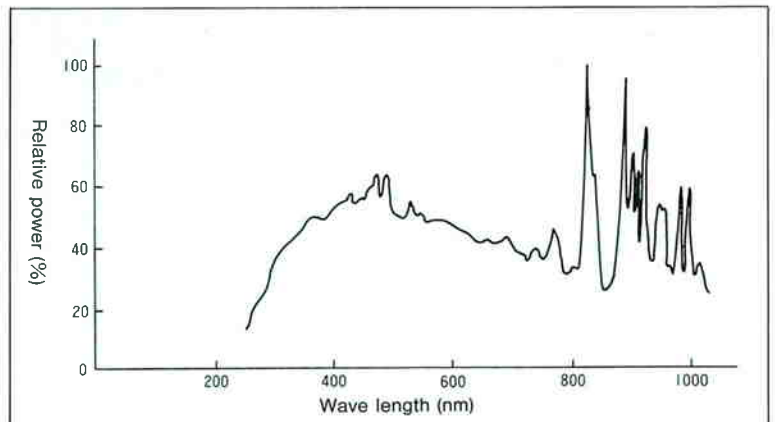
HIGH POWER DOUBLE LAMP TYPE

MODEL	SS-1000W	SS-1500W
Revolution range (rpm)	100~12,000	100~30,000
Exto. synchro signal frequency (Hz)	0~200	0~500
Max. lamp input power	100W×2	100W×2

■ Power supply unit: Ext. dimension W430×H150×D400mm Weight 15kg
 ■ Flash unit: Ext. dimension W190×H190×D230mm Weight 3kg×2



Multistrobe exposure



Flash waveform and spectrum of xenon lamp SX-100