

HANDHELD SLIT LAMP
MANUAL



Hand-held slit lamp.....	1 set
Eyepiece 16X.....	1 set
Li-ion Battery.....	2 pcs
Diopter adjustment bar.....	1 pc
Forehead rest.....	1 pc
User manual.....	1 pc
Battery charger.....	1 pc
Examination certificate、 Maintenance card.....	1 pc

★ THE CONTENTS OF THIS USER MANUAL MAY BE CHANGED WITHOUT PRIOR NOTICE.

- 1) After the completion of charge should remove a battery from a battery charger promptly. Keep in mind the charge state of 2 hours or more that there is risk of overcharge.
- 2) About 300 charge or more is possible for a battery. The number of recharges is changed due to the remaining battery level. A battery life can be extended by charging, after remaining battery level has decreased if possible.

9. TECHNICAL SPECIFICATIONS

Pupil-distance: 48~70mm;

Eye piece: 10X, 16X;

Objective: 1X;

Total magnifications: 10X, 16X(Optional);

Slit width: 0~10mm continuously adjustable;

Slit length: 1mm, 3mm, 5mm, 10mm;

Diameter of light spot: 1 mm, 3 mm, 5 mm, 10 mm;

Filter: Heat-absorption, Cobalt blue, Red-free;

Illumination rotation angle: Horizontal \pm 30°C;

Working distance: 80mm;

Input power: 13-18VA;

Power supply: Charger: AC: 100~240V, 50Hz/60Hz

Li-ion battery: 680mAh; DC: 7.4V;

Model of the battery: Nikon EN-EL1;

Illumination bulb: White LED;

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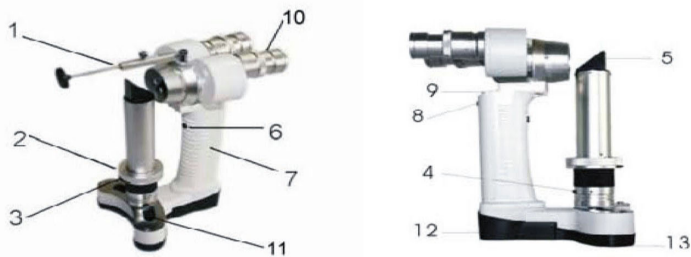
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1. INTRODUCTION

SL-1 hand-held slit lamp is the first binocular portable slit lamp made in China. We use high light white LED as the illumination bulb and the instrument can be used both in the dark room and the common room. We add another tree light spot based on the original one light spot, making it more functional.

Thank you and congratulations on your purchase of this Hand-held Slit Lamp. This user's manual provides a description of the operating procedure of this unit along with the important precautions to be observed during its use. Please read this manual carefully to assure that this instrument can demonstrate its full capabilities and used effectively. Please keep this manual in an easily accessible location near the instrument for future reference.

2. COMPONENTS OF THE PRODUCT



- | | |
|-----------------------------------|----------------------------------------------------|
| 1. Forehead rest | 8. Illumination control |
| 2. Slit opening and shutting ring | 9. Indicator |
| 3. light spot rotation | 10. Eyepeice |
| 4. Filter rotation | 11. Slit rotation trough |
| 5. mirror | 12. Battery accommodation part (704V 680mA Li-ion) |
| 6. Illumination ON/OFF switch | 13. Base |
| 7. Grip | |

5.9. Charge of battery

- 1) Battery
- 2) Type of adapter for charge: MH-53
- 3) The first use and when you do not use it for a long time, please be sure to charge before using. About two hours charge at empty level. (charge time is changed due to remaining power level)
- 4) The adapter for charge can be supplied from AC100 -240V power supply.
- 5) The CHARGE lamp will start to link during charge. Charging is complete when the CHARGE lamp continues go glow.

6. AFTER USE

- 1) After use should clean a main body and should keep it cleanly.
- 2) Please remove a battery, when you do not use it for a long period of time, and keep a product in the carrying case of exclusive use carefully.
- 3) When the display lamp of remaining battery level blinks, please remove a battery from main body and charge a battery.

7. DAILY MAINTENANCE

- 1) An eyepiece and objective lens cover glass
When clean off the surface of an eyepiece and/or objective lens cover glass, please use lens paper or soft cloth, if it has fingerprint or fatty oil, mist lens paper or soft cloth with alcohol to clean off.
- 2) Mirror
By viewing, the mirror for illumination of the illumination output section checks the existence of a crack.
Cleaning of dart, please use lens paper or soft cloth. If it has fingerprint or fatty oil, mist lens paper or soft cloth with alcohol to clean off.
- 3) Please check that the operation like each part is smooth. Please consult with a dealer, when fault is discovered in an operation.

8. FOR SAFETY OPERATION



◆ Since the forehead rest is executed with a spring, even if the slit lamp itself drawn forward, it will not leave the forehead of the patient easily.

5.5. Slit opening and closing ring

Turn the slit opening and closing ring to adjust the slit width. When turn this ring clockwise, slit open, and turn it counterclockwise, slit will be closed.

5.6. Illumination angle

Hold the slide ring with fingers and move it right or left, illumination angle ± 30 degrees available.



5.7. Filter

By rotating a filter, G(Green), B(Cobalt blue), O(conversion filter for color temperature), and those without a Non filter can be chosen as an illumination system. Please use properly according to the use of observation. A color temperature change filter serves as illumination near daylight color.

5.8. Magnifications

Two magnifications available for this hand-held slit lamp by exchanging the eyepiece. Standard eyepiece 10X and 16X packed together with this instrument.



16X eyepiece



Diopter adjustment lever



Charger and battery

3. PRIOR PREPARATION

Please take out a main part, a diopter adjustment bar, a forehead rest, a battery, etc. from a carrying case. Next, please insert a battery in the main part battery accommodation section firmly.



When first recharging, the battery should be recharged for no less than 10 hours.

4. PREPARATION BEFORE USE

4.1 To check of an eyepiece

- 1) Please check the eyepieces to make sure they are not loose and no dust in them.
- 2) Please check that there is no dirt, such as a fingerprint, on the eyepiece surface.
- 3) In case of 16X eyepiece are used, please take out the 10X eyepiece from binocular before

attaching the 16X eyepieces.



4.2 To check of the illumination light

- 1) Please instal the diopter adjustment lever on the correct position.
- 2) Please open the slit to the maximum with the slit rotation ring by the clockwise.



- 3) Please push a lighting ON/OFF switch. A round illumination light is seen.
If there is not light spot, please check if the slit rotation ring is open.
If the slit rotation ring is open but there is still no light, maybe the power is not enough.
- 4) Take out the diopter adjustment lever, and put on the head-rest to fix the working distance.
- 5) Check the filter: Red-free, Cobalt blue, Heat absorption.

5. HOW TO USE

5.1. Check the eyepiece

1) Diopter Adjustment

- 1) Please loose the fix screw of the diopter adjustment lever to instal the diopter adjustment lever.
- 2) When you attach a diopter adjustment bar and you adjust a diopter, please adjust in the following procedures:
 - ① Please loosen and remove the attachment screw of a forehead support and attach a diopter adjustment bar.

- ② Please turn ON illumination, and perform diopter adjustment of both of right and left so that you observe a diopter adjustment bar from an ocular and a focus matches.(The working distance is designed by about 80mm)



5.2. Pupil-distance adjustment

Please rotate the lens-barrel of the binocular section, and when you see an eyepiece part with both eyes, adjust the PD to become one image.

When not visible to one image, it is possible that the diopter adjustment can not be performed appropriately. In this case, please perform a diopter adjustment once again.

5.3. Illumination control

Switch on the illumination and adjust it from the minimum to the maximum.



5.4. Focusing

Apply the forehead rest to the patient's forehead, then loosen the clamping control while observing the eye with the eyepiece and move the slit lamp itself forward or backward to focus on the subject part.