

HAWK EYE



Portable Digital Slit Lamp

**CAPTURE
YOUR PATIENT'S EYES**

**OPERATING
MANUAL**

HAWK EYE

Portable Digital Slit Lamp



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MAIN SYMBOLS

	Playback button
	Delete button
	Infrared Icon connecting the slit lamp shutter release to the camera
	Program Mode
	Landscape Mode
	Nine-image display
	Magnify
	Flash Off

For further information about symbols, please use the Pentax S60 operating manual, page 141. If you have lost this manual, you can download it at:

http://www.pentaximaging.com/files/manual/Optio%20S60%20Manual_web.pdf

Turning HAWK EYE ON and OFF

1. To activate Hawk Eye, press on the ON / OFF button or insert a charger into charging connector. The ON/OFF LED will be switched ON. Press the PLUS button to switch the light on.



2. To deactivate Hawk Eye, press and hold the button ON / OFF.

- Please note that you have to turn ON and OFF HAWK EYE and the camera independently. The batteries of the slit lamp and of the camera have to be charged separately.

Automatic shut down

- If no instrument buttons have been pressed for 5 minutes, the instrument will be shut down automatically. This event will be signaled with 5 long beeps.
- Press the button PLUS or MINUS to stop the automatic power down.

Adjusting the illumination intensity

1. By pressing the buttons PLUS or MINUS, the light intensity can be linearly increased or decreased.
2. When the minimum or maximum light intensity is reached a sound beep is emitted.

Taking pictures

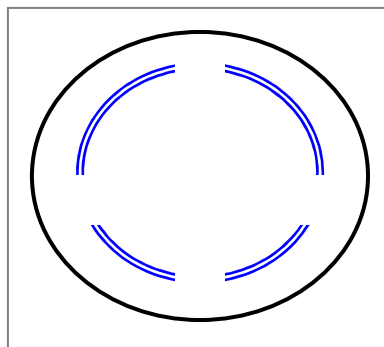
1. Activate HAWK EYE. Take off the black protection cap located at the base of the slit revolving axis.



2. Insert the refraction adjustment stick into the dedicated location.



3. With the bottom toothed switch, select "Spot" position, maximal intensity.
4. Set your own refraction thanks to the adjustment stick as follows :
 - For the right eye : turn the eye-piece shade towards the right side for farsighted people or towards the left side for the short-sighted people to get the two circles into clear sight as follows :




- For the left eye : adjust your refraction with the stick to get a perfect relief using the eye-piece shade towards the left side for the farsighted people or towards the right side for short-sighted people.


- Your refraction is now adjusted. Take off the adjustment stick.

5. Press the power switch button ON/OFF. The camera turns on.



6. Set the mode dial to **P**. Press 5 times the upper button of the four-way controller (▲) to choose and see the  mode on the LCD monitor.





7. You should see the  mode on the LCD monitor (presetting). If not, press 3 times the right button of the same four-way controller. You will keep this mode after shutdown.

8. Press the Hawk Eye shutter release button. A light beep will be emitted. The image appears on the LCD monitor for 1 second (Instant Review) and is recorded on the SD Memory Card.





9. Press the camera power switch ON / OFF (the camera turns off). To deactivate Hawk Eye, press and hold the ON / OFF button.



Playing back images

1. Press the  Playback button.
2. Use the four-way controller (◀ ▶) to make the previous or next images appears on the LCD monitor.
3. Pres the  Playback button to return to the Capture mode.

Deleting individual image

1. Press the  Playback button. Use the four-way controller (◀ ▶) to choose the image to delete.
2. Press the  Delete button. The Delete screen appears.
3. Use the four-way controller (▲) to select [**Delete**].
4. Press the OK button. The image is deleted.





Deleting all images

1. Press the  Playback button. Then press the  Delete button twice.
2. Use the four-way controller (▲) to select [**Delete all**].
3. Press the OK button. All the images are deleted.










Download images

1. Use the supplied USB camera connection cable, connect it to the PC/AV terminal of the camera as well as to your PC.
2. Turn the camera ON.
3. With your PC explorer, save the pictures from the removable disk.
4. Then, delete the images from the removable disk. All the images on the memory card are now deleted.
5. Turn the camera OFF.






Taking movies

1. Set the mode dial to .
2. Press 4 times the upper button of the four-way controller () to choose the  mode.
3. You can change the captured area, with the digital zoom, by pressing the  Zoom button.
4. Press the Hawk Eye shutter release button. Recording starts and recordable time appears on the LCD monitor.
5. Press once again the Hawk Eye shutter release button. Recording stops.

Playing back movies

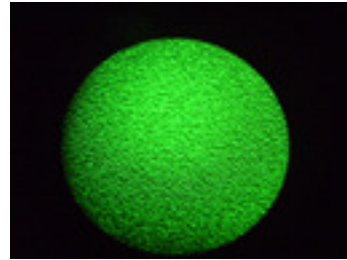
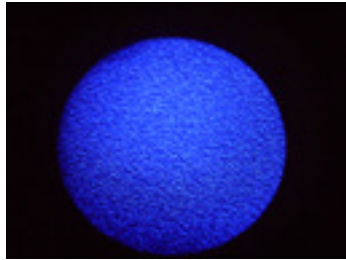
1. Press the  Playback button. Use the four-way controller ( ) to choose the movie to play back.
2. Press the four-way controller (). Playback starts.
3. Press the four-way controller (). Playback stops.
4. Press the  Playback button. Set the mode dial to .
5. Press 4 times the upper button of the four-way controller () to choose the  mode. The camera returns to the Movie Recording mode.

Deleting movies

5. Press the  Playback button. Use the four-way controller ( ) to choose the movie to delete.
6. Press the  Delete button. The Delete screen appears.
7. Use the four-way controller () to select **[Delete]**.
8. Press the OK button. The movie is deleted.

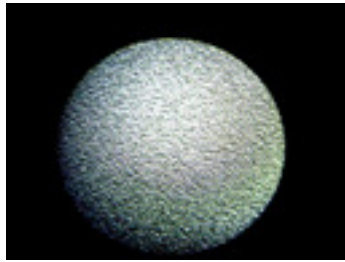
Using the toothed wheel in the turret

1. Turn the upper toothed wheel to select built-in blue or green filter.



2. Turn the bottom toothed wheel to select the slit you wish.

Spot (position ●)



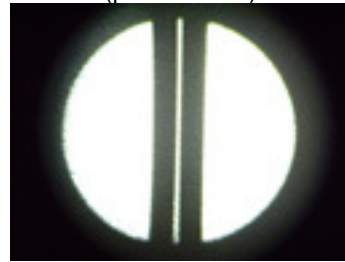
1 mm square point (position 0.8)



100 μ Slit (position 0.1)



100 μ light background Slit
(position 0.2)



*Same light intensity
on the centre as on both sides.
DIOPTRIX Patent*

Charging instructions

A – The HAWK EYE slit lamp projection unit

- When the battery is almost empty, the RED LED starts to blink.
- When the battery is empty, 5 sounds beeps will be emitted before automatic shut down.



1. To charge the Hawk Eye battery, connect the charger into the power outlet and into Hawk Eye charging connector (a sound beep will be emitted).
 2. The RED LED is switched ON which indicates: charging in progress.
 3. When charging is completed the RED LED will be switched OFF and the GREEN LED will be switched ON. Also a sound beep will be emitted every 7.5 seconds to indicate that battery charging is completed.
 4. Disconnect the charger from the charging connector (a sound beep will be emitted).
 5. Press the ON / OFF button to switch HAWK EYE off or wait for 5 minutes before automatic shut down.
- ☛ You can charge the HAWK EYE digital portable slit lamp with the supplied car power set charger while you are travelling.

B – The camera

- ☛ If the 4 NiMH rechargeable batteries are empty, insert them at the same time into the battery charger with correct polarity and positions.
- ☛ You can charge 2 NiMH batteries. Insert them into the middle of the charger or this way : one battery on the right side, the other on the left side.

Maintenance

- Clean the HAWK EYE body and the LCD monitor with « monitor cleaner ».
- You can clean carefully the optics (prism, oculars, main objective) using an alcohol wet cotton cloth.
- Never use dry cloth. In that case you can damage the antireflective coatings on optics or on the LCD monitor.

Technical specifications

MICROSCOPE

Type :	Binocular direct vision type
Magnification:	Selectable: 8X; 12,5X; 20X
Range of interpupillary distance adjustments :	50 mm to 73 mm
Range of examiner's dioptic projection adjustment :	-5 to +5D
Microscope objective focus :	115 mm
Working distance :	105 mm

SLIT PROJECTION UNIT

Slit selection :	Turret
Slit length :	15mm
Vertical slit width :	0,2mm; 1,0mm; photo slit = 0,2mm
Horizontal slit width :	1,0mm
Spot :	15mm round spot; 1,0X1,0 mm square spot
Light intensity :	Electronically adjusted
Slit projection angle :	Vertical
Filter :	Built-in blue, green filter, no filter
Light source :	White LED 5 W

VIDEO DOCUMENTATION

Camera :	Pentax S60, Built on
Camera magnification :	Min 11X; 3X OPTICAL ZOOM
Effective resolution :	6,0M Pixel; SXGA 2816 X 2112
Video streaming :	Image size 360X240 Pixel; 30fps
LCD monitor :	2,5 inch; TFT color 115.000 pixel
Interface :	USB 2.0 connector; AV output terminal
Image format :	JPEG, AVI
Memory :	Optional SD 256MB memory card
Camera battery :	Two standard alkaline AA battery, optional 4 pcs. NiMH AA 2300mAh batteries with fast charger
Compatibility	Windows 98/ME/2000/XP
DivX®	Guaranteed DivX® video playback on all DivX® Certified devices from DVD players to portable media players

ELECTRIC RATINGS

Electric rating :	12V DC
Battery :	Build in 7,2V / 2000mAh; Lithium Ion
Duration of illumination:	Up to 2 hours
Battery charger :	Built in fast charger, 12VDC input
Duration of charging :	Up to 1,5 hours
External power supply :	Input 90-260VAC, 40-60Hz; 30W; Output 12VDC
Car power supply :	Standard car jack with control LED and fuse
Footswitch trigger connector :	Built in

MECHANICS

Dimensions, weight :	115 (W) X 318 (D) X 266 (H); estimated 1,5kg
Head rest :	Optional; thread on the microscope body
Contact lens with holder :	Optional

BASIC SET

ITEM DESCRIPTION	PCS
HAWK EYE Slit Lamp	1
Pentax S60 camera with mechanical adapter	1
Camera Windows software CD	1
USB camera connection cable	1
AV I-AVC7 camera connection cable for screens	1
External power supply with EU power cord	1
Car power set	1
Fast NiMH charger	4
2300mAh NiMH battery	1
Adjustment stick	1
Metal case	1

OPTIONAL ACCESSORIES

ITEM DESCRIPTION	PCS
Fundus lens 55 D or 78 D	1
Holder for non-contact lens	1
SD 256MB memory card	1
Footswitch	1
US, UK ... power cord	1