User Guide « add-ons »

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1) Introduction

This document is an add-on to the original Lhires III manual. It does contains FAQ (Frequently Asked Questions) and some user reference to modified parts of the Lhires III.

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2) Neon calibration power supply

Neon calibration lamp should be powered with 12V.

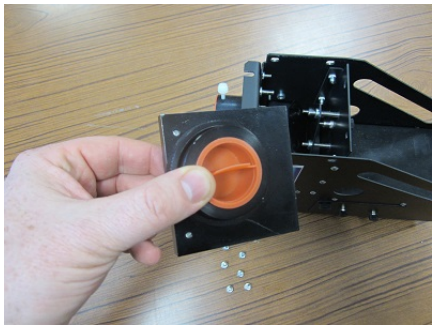
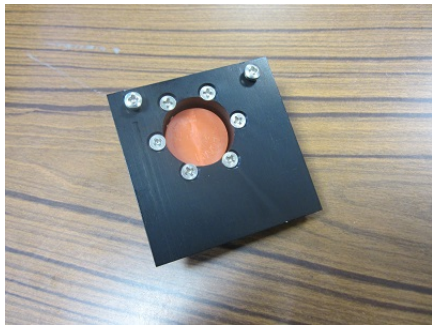
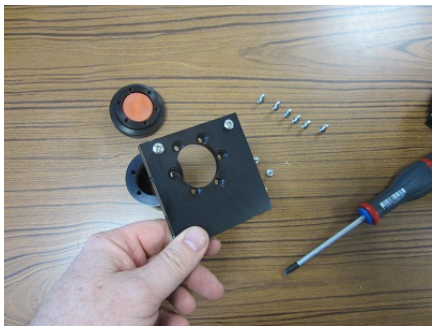
Connector is european size 2.5*5.5mm, center positive. A spare connector should be provided with all new Lhires III spectrograph.

Power consumption is very low and a 200mA power supply is enough for the Lhires III neon lamp and electronic.

3) Changing the telescope adapter

Lhires III comes in standard with a SCT (Schmidt-Cassegrain Telescope) adapter. Shelyak Instruments provides an optional 2inch (50.8mm) telescope adapter.

To change from one adapter to another one, you need a phillips screwdriver .

First, remove the 8 screws than hold the Lhires III front plate (6 need to be completely removed, 2 can be left on the plate).

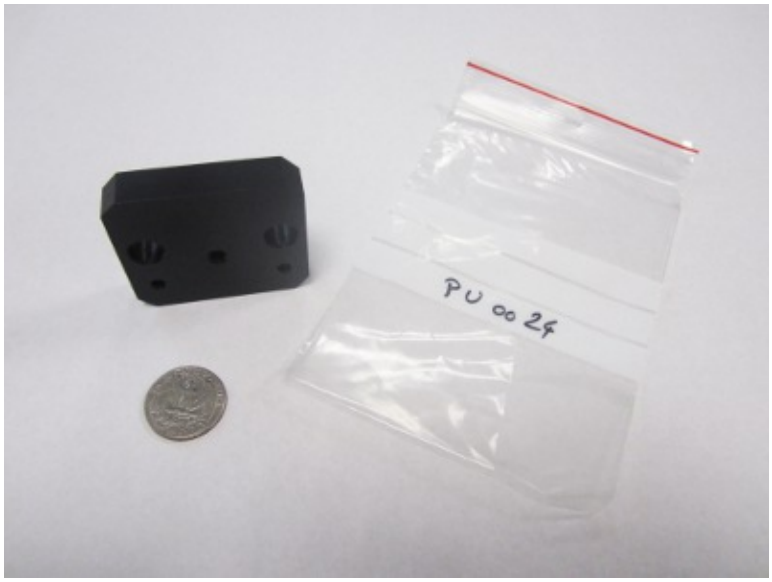
Remove the front plate and the 6 screws the hold the telescope adapter and replace with the adapter you need. Then put the 6 screws back to hold the telescope adapter.

Last step is to put the 8 screws back to hold the front plate on your Lhires III.

Make sure all the screws are firmly secured.

4) Photographic tripod adapter (PU0024)

Here is the photographic tripod adapter (with an 25 US cents coin for size comparison) :



This accessory attach at the bottom of the Lhires III . It does allow to mount a Lhires III on a photographic tripod for easier solar spectrum watching :

Once the Lhires III on the photographic tripod, use the micrometer as a sundial's gnomon and minimize its shadow to point the spectrograph entrance toward the Sun.

5) 4-positions slit(s)

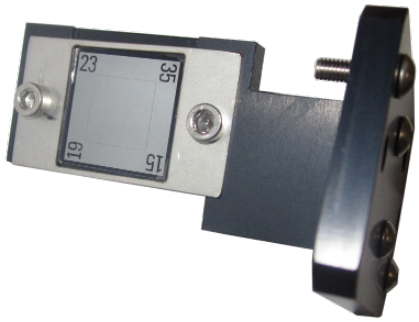
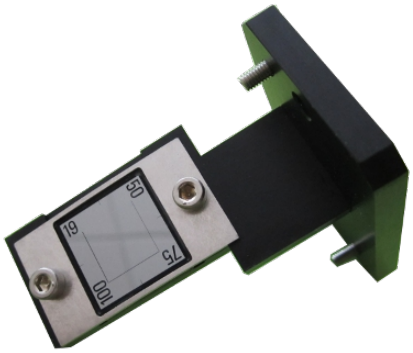
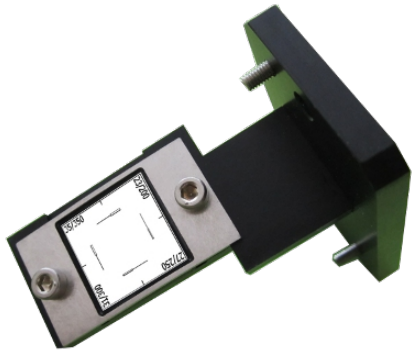
Lhires III are now delivered with 4-positions slit which is made of a glass with chromium slits : 15µm, 19µ, 23µm and 35µm. Slit size are accurate within +/-1µm. Slits are around 9mm long.

Shelyak Instruments also provides an optional 4-position slit with a 19µm hole and 50µm, 75µm and 100µm slits. Slit size are accurate within +/-1µm. Slits are around 9mm long.

For spectro-photometric use, Shelyak Instruments also provides an optional 4-position photometric slit with dual slits : 23/200µm, 27/250µm, 31/300µm and 35/350µm. Check out the following web sites for exemple of those photometric slits :

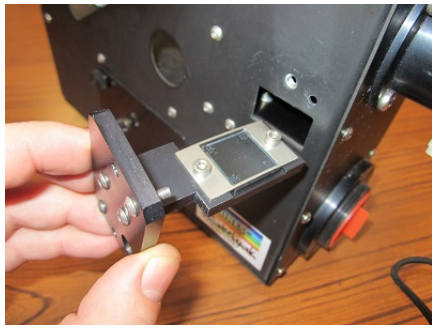
- http://www.astrosurf.com/buil/calibration2/method.htm
- http://www.astrosurf.com/buil/calibration2/absolute_calibration.htm
- http://www.astrosurf.com/buil/alpy600/photometric_slit.htm

Mirror slit are very convenient to use but they are very fragile and should be handled with care.

		
Lhires III standard 4-pos. slit	*Lhires III optional slit*	*Lhires III photometric slit*

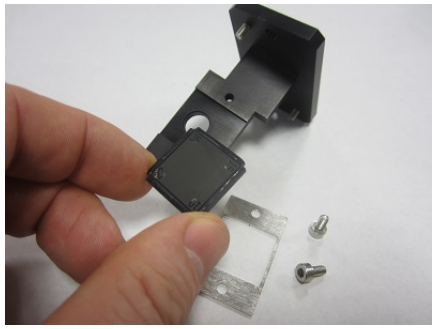
5.1 - Changing the slit

Remove the two large screws the lock the Lhires III slit holder, then remove carefully the slit holder:

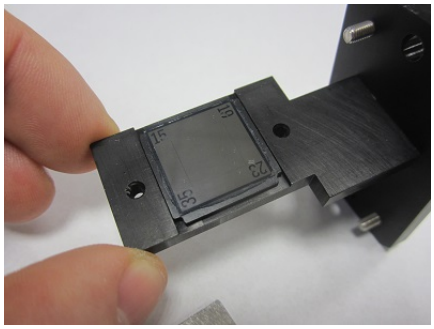
		

To change the slit position, you need a 6-pans 2.5mm screwdriver. Remove the two screws that hold the metal plate which acts like a spring on the slit plate (the slit glass is glued on a metalic square holder) :

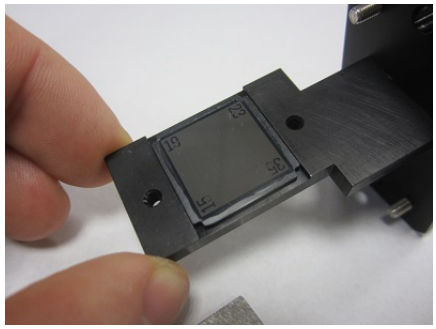




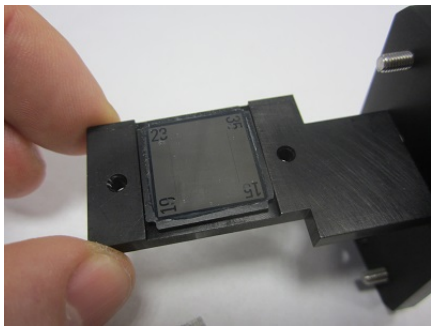
Then select the slit position you want (the slit size is written on the left when you hold the holder as below ; the slit is in front of the holder hole) :



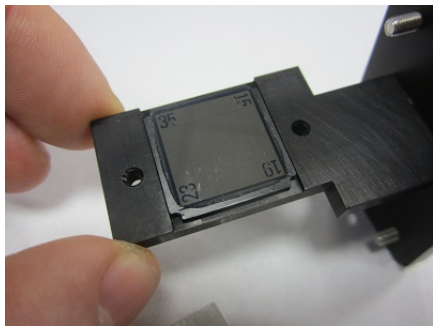
15µm slit



19µm slit

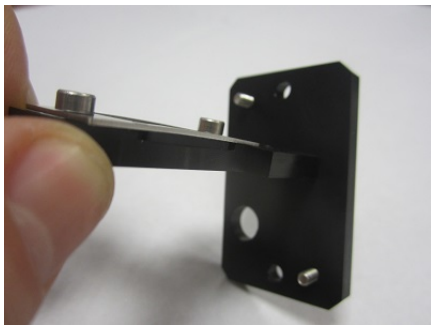
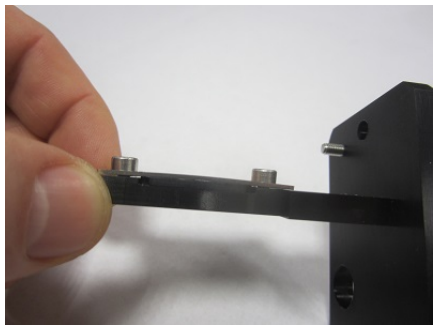


23µm slit



35µm slit

Put back the metal spring and the two screws while ensuring the slit is aligned with the slit holder. Do not tighten too firmly the screws. The metal spring will be slightly bended to hold the mirror glass in position :

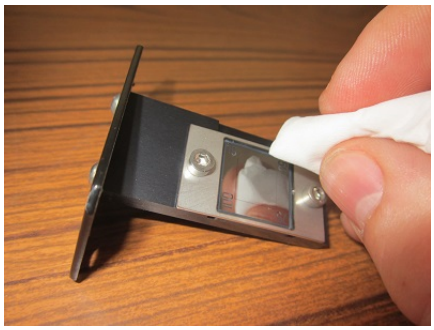



5.2 - Cleaning the slit

The miror slit are based on a reflective surface sticked on a glass, with the slit beeing the missing part of that reflective material. The front of the slit that you see on your Lhires III slit assembly is plain glass, the reflective surface is at the back. It is then easy to clean it up as any other optical component, with of course extreme care.

Start if possible with an airblow to clean dust :

If the dust sticks on the glass, use a dry optical tissue:



If it doesn't work, you can use a coton with some alcool on it (it dries faster than water):