

Lunt LS152THa/DSII Module Manual

Congratulations and thank you for purchasing a Lunt Solar Systems DSII Module for your LS152THa Telescope! Before you begin setting up your telescope and observing the Sun for the first time, please review the safety statements below. If you have any questions about the safe use of any Lunt Solar Systems product, please contact our Customer Service Department before operating the equipment.

SAFETY STATEMENTS

Never look at the Sun with your naked eye or with a telescope that is not specifically designed to do so. Permanent and irreversible eye damage may result.

Check that all filters are installed correctly and are free of any surface contamination that may compromise performance and/or potentially damage the surfaces of the optics when exposed to the Sun, i.e. fingerprints. Perform a routine safety check before each viewing session!

Never leave the solar telescope unsupervised while pointed at the Sun. People who are not familiar with the correct operating procedures of the system may inadvertently replace the diagonal or remove the filter itself, because they are not aware of the integrated safety features of each.

Always be aware that you are viewing in direct sunlight. Take necessary precautions to protect yourself from sunburn and heat exposure.

Never attempt to disassemble the system. Doing so will void your warranty and compromise its safety. Do not use your system if it is compromised in any way due to mishandling or damage.

The Blocking Filter diagonal must always be in place when the telescope is in use. Lunt Solar Filters and Telescopes are NOT interchangeable with competitor's products. Protect your instrument from shock due to drops. The Lunt Solar Telescope can withstand normal use, however a major shock may cause the etalon to de-contact, or cause other damage, which will require a trip to the factory for a non-warranty repair. Store the instrument in its original carton or case when not in use. With proper handling & care, your Lunt Solar equipment should last a lifetime.

The DSII Module can **ONLY** be used as a secondary filter for the LS152THa Pressure Tuned Scope.

The DSII Module contains no filtering for dangerous IR or UV wavelengths, and relies on the safety features incorporated in the main LS152THa Telescope for IR and UV protection. **NEVER** attempt to use this DSII Module in any other telescope!

UNPACK YOUR NEW PURCHASE!

In the Shipping Box you will find:

- ☐ Lunt DSII Pressure-Tunable Module
- ☐ Nine aluminum thumbscrews for easy installation and removal
- ☐ 2 White Caps on DSII Module and 1 smaller white cap for Cone assembly
- ☐ Shipping Box with die cut foam inserts
- ☐ Warranty Card

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SETTING UP FOR THE FIRST TIME

1. Note where the LS152THa/PT was correctly tuned on its brass cylinder. You can count the remaining threads on the cylinder, or measure the remaining gap.
 2. The installation of the DSII module is accomplished by first removing the focuser and extension tube from the back of the OTA. This can be done by removing the 3 Allen head screws that are recessed in the red PT assembly. Use the Allen wrench provided with the LS152THa. Make sure you have a firm grip on the focuser when loosening the screws. These screws can be replaced with the 3 thumbscrews provided with the DSII.
 3. Insert the DSII module into the rear of the LS152THa/PT OTA. The user may rotate the DSII into any position. Snug the aluminum thumbscrews onto the module and fasten it in place.
 4. If the user does not have an additional focuser for the DSII, the focuser that was removed from the LS152THa/PT can be used. Be sure to **remove** the black extension piece from the focuser, prior to installation.
 5. Re-install the blocking filter and the eyepiece onto the telescope.
 6. Re-focus the system. The user may need to pull the blocking filter out of the focuser approximately 50 mm to achieve good focus.
 7. Tuning of the DSII Module is accomplished by first re-setting the PT cylinder as described in the telescope Manual or to the previous gap setting. The user will note that the image will appear very dim when the DSII Module is not "on band." Turn the PT cylinder on the DSII Module in, while viewing the Sun through the scope. The user should see the image brighten as the system is adjusted so that both PT etalon stages are tuned to the same wavelength band. Adjust the DSII pressure tuner for the best view of solar surface details.
 8. The user may now adjust the pressure tuner on the LS80THa/PT to achieve the maximum contrast.
 9. The DSII Module is designed to provide an enhanced, narrowband, higher contrast view of the Sun's surface. The user will note a dimming of the edge detail while using the scope in the Double Stacked mode. This is a normal effect.
 10. The DSII Module utilizes a unique optical design that works to narrow the band pass while also removing the back-ghosting that would normally occur with 2 highly reflective etalons sitting in such close proximity to one another. This ghost removal would typically be done by tilting one of the etalons with respect to the other. The Lunt optical design moves the "ghost" images to an area outside the normal field of view. However, when using low magnification eyepieces (~25 mm), or eyepieces with a wide field of view, you may notice this "halo." Increasing the magnification or using an eyepiece with a narrower field of view will reduce this effect.
- While we strive to provide perfect anti-reflection coatings at the Hydrogen-alpha line, the residual reflections are reduced to 0.1%. Therefore, not all back scatter can be totally eliminated. Less-than-perfect seeing conditions will also increase the background haze of the system when in Double Stacked mode.

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Visit the Lunt Solar Systems blog at <http://luntsolarsystems.com/blog/>. Search the archives for your favorite topics.