

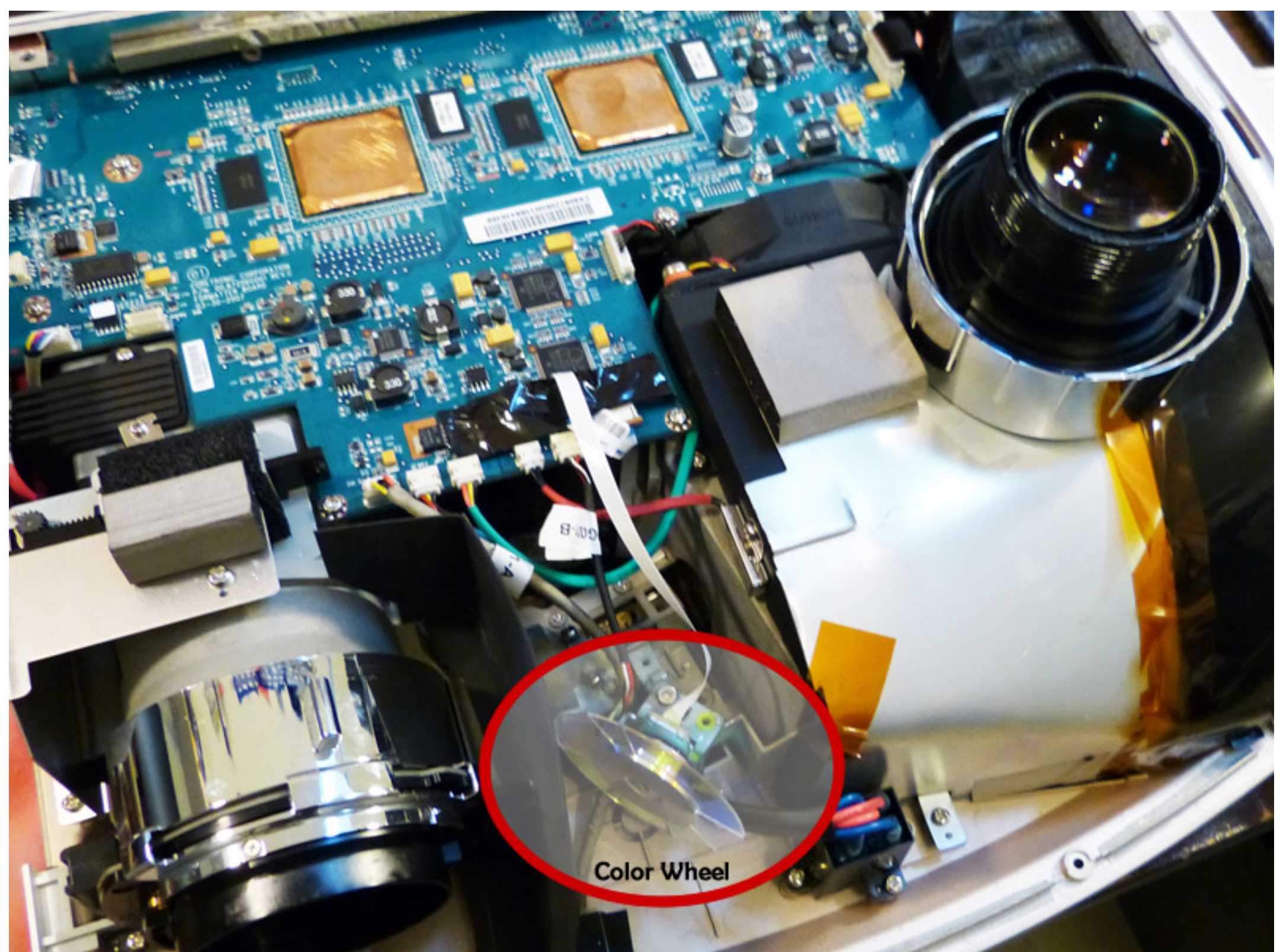
11 - Projector Modifications

These instructions should give you a rough idea on what has to be modified on a DLP projector, to achieve 3D printing and curing of the Photo-reactive resin available in the shop. Although most projectors shall have similar if not identical characteristics and these instructions should be quite self explanatory, have in mind that if you encounter different characteristics in your projector, you shall have to figure out the modifications by your self since there are many projector manufacturers and even more projector models currently available.

Note: Since you are modifying your own projector, you haven't purchased it through the [OSRC Shop](#) (since all projectors in the OSRC Shop have been already modified to work with the Ilios HD Kit and have been tested). This means that the responsibility of failure or damage to the projector or faulty results of the Ilios HD Kit are your own. Before doing these modifications or trying to acquire a projector outside the OSRC Shop, think twice and consider the risk and expenses that you are taking upon you. It is also a good thing to remember that by doing any modifications, especially on a brand new projector, you are voiding all warranty and there shall be no turning back.

Color Wheel

One of the first things to modify is the color wheel on your projector. The color wheel in some cases has filters of its own as well as reflective surfaces, which shall prevent a fast and reliable cure of the resin.



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In cases where there is enough space within the projector, you can simply place it within the enclosure, removing it from the light path. In other cases you shall have to brake off the glass from the wheel motor. Unfortunately you cannot just unplug the motor from the projector since it shall most likely cause an Error within the projector software and not make it function at all.

UV Filters

Although this might not be true for all projector brands, in most cases you shall find the filters within the Lamp assembly of the projector. Lamps can be replaced on a projector and this gives you easy access to the filters that need to be removed.

Important: For the Brands like Optoma HD20 and BenQ w1070 (or w1080ST) you do NOT need to remove the filter from the lamp assembly since the lamp is strong enough to provide the required UV light. By removing it, you are most likely to burn out the light tunnel due to too much heat.



One of the filters shall be located in most cases within the lamp assembly itself, a second filter shall be located directly in front of it on the projector enclosure. You need to remove both filters to get the full light power.

Note: Know that by removing the filters you are exposing the DLP module to not only UV but also IR (Infrared) light, which causes

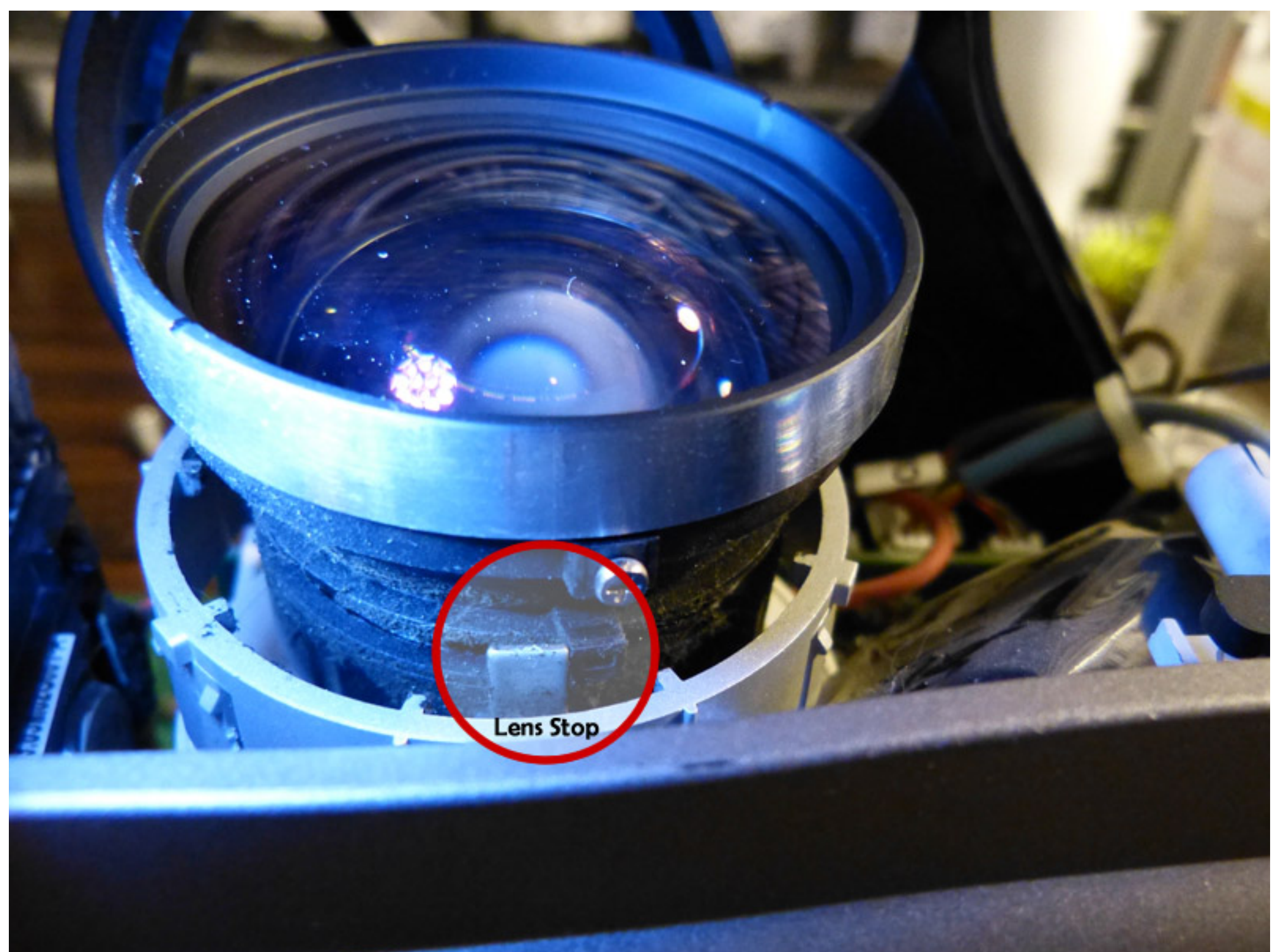
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additional heat and potential reduction in life of the projector. A good solution for this can be an IR filter which would let the necessary UV rays to pass as well as adding additional cooling.

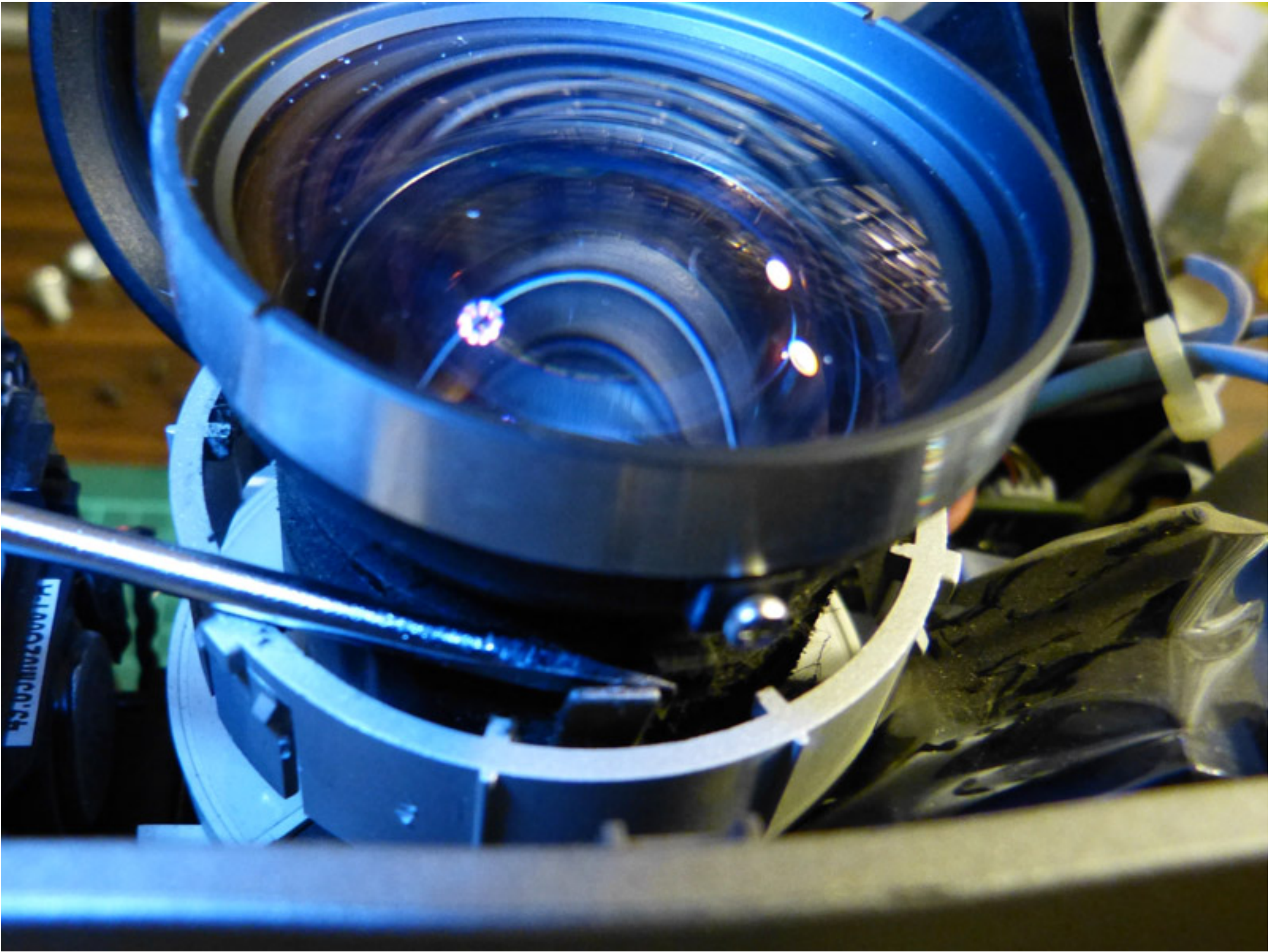
Lens & Focus

This modification is not so critical for projectors with a short throw lens but can become important for projectors that simply cannot focus when placed too close to the build area.

Important: The brand BenQ w1080ST has a VERY short throw lens. The Focus assembly is quite difficult to modify to achieve good focus so it is not recommended as an optimal projector. The BenQ w1070 however is a good option and should require minimal modifications to work.



Almost all projectors have a stop mechanism which doesn't let the lens to be unscrewed or removed from the assembly. In most cases, disabling or removing this stopper shall give you the additional turns to focus. In some projectors this stopper is just a metallic piece which can be easily bent, in other cases it is a physical screw which needs to be removed.



Note: Please know that if your projector has a relatively long throw and the lens simply cannot focus within the Ilios HD Kit, simply placing the projector farther away in most cases will not help since you are also moving the light source farther away from the resin, resulting in poor curing times or even unstable results.

These are the most common modifications, needed to achieve a good 3D Print, however, these modifications will mean nothing if the specifications of your projector do not meet the absolute minimum requirements for a good cure of the resin and sharp results. Since you are doing these modifications at your own risk, you are taking upon you the responsibility of finding the appropriate projector and be responsible for any damage, fault or unsuccessful end result of the Ilios HD Kit.