

Zeiss Automated Microscopes and the Light Manager

Abstract

This tech note presents a solution for Zeiss Automated Microscopes with the Light Manager, which turn the halogen lamp on after a fluorescence filter cube has been selected.

Solution

Automated Microscopes from Zeiss may include a feature called the “Light Manager”. The purpose of the Light Manager is to automatically turn on or off the appropriate transmitted or fluorescence light source, depending on the mode of observation as selected by the filter cube turret.

While the Light Manager is a useful tool when using the microscope in a manual fashion, it can become an impediment to operating the microscope from Meta Imaging Series applications. This is because the Light Manager might turn a lamp off after MetaMorph has turned it on, or vice versa. The Light Manager will cause the shutter status to become out of sync with what is reported by MetaMorph.

The most common symptom of this error is that MetaMorph will change the filter cube to a fluorescence filter (e.g. DAPI), and the microscope will switch on the Halogen Lamp. Since MetaMorph does not know that the Light Manager just turned on the Halogen Lamp, the image will be acquired with both fluorescence and transmitted illumination present, ruining the fluorescence image.

To correct for this error, care must be taken to program the microscope so that the Light Manager does not cause the wrong lamp to turn on. This can be done by using the “Set Mode” of the Light Manager, as follows:

[This example assumes a Zeiss Axiovert 200M microscope. We suggest you first consult with your Zeiss Microscope representative before following this procedure]

- Put the Light Manager into Set Mode by pressing and holding the "Set LM" button on the rear of the scope for more than 2 seconds.
- Set the reflector (filter cube) turret equipment by:
 - Pressing one of the 2 REFLECTOR keys. The upper line of the scope's LCD display should read, "SET Reflector."
 - Use the toggle switch to scroll to the filter set corresponding to the current reflector turret position.
 - Press one of the REFLECTOR keys to leave the current position and accept its settings.
 - Press the "Hal on/off" key to the appropriate state (On for no filters and brightfield illumination and Off when a filter cube is present).
 - Repeat b. and c. for all reflector positions.
- Exit the Set Mode by briefly pressing the Set LM button. A single beep should indicate the settings have been accepted.

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PRODUCTS
MetaMorph®
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Note that the Light Manager can be turned off temporarily by pressing and holding the microscope's "FL on/off" key when the microscope is powered on, until a double beep is heard. The LCD display (if present) will display "LM Off." The Light Manager will remain off until the microscope is turned off.

References

For more information, please refer to the Carl Zeiss publication "B 40-080 e" dated 09/2000, titled "OPERATION: Axiovert 200", pages 3-14 through 3-27. This document must be obtained through your Zeiss representative.