



Asia Pacific AERONET Calibration and Training Center

Steps to check Cimel Sunphotometer

1. Physical inspection

- a. Check for robot and sensor-head cable winded around the robot. Also, take some pictures from different angles and report them.
- b. Check if there are any unwanted substances from insects like spider, or snail, or birds on any part like sensor-head, robot or wet sensor. Please take a picture if anything unwanted is observed.
- c. Check if the movement of the robot is restricted by the cable.
- d. Check if the sensor head cable is tied to the sensor robot properly. Check if the sensor head cable can move freely. Check if the cable is too long or too short. The length of the cable from the connector to the point where it is tied on the robot should be around the length of the collimator. Take the following picture for reference.





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2. Remove the instrument from auto mode.

Got to Settings.

The first option is Auto. Press Edit (Green button) to change it. Use + or – to change it to “off” .



Then press “Return” twice to go back. An option will show up asking you if you want to save.

Select Yes.

3. Check the date/time

The date and time are shown on the top of the home screen. The time is in GMT. Check if the date and time shown on the screen is correct. Remember to convert the time on your phone to GMT to check it.





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4. Check the GPS location

- Go to Cimel > GPS info

Check if the GPS location shown on the instrument is same as that shown in your phone.



5. Check the voltages

- In the control box, go to Measures option. There, make sure that the battery voltage and solar voltage are above 12V.



6. Check the wet sensor



Go to Measures and go down until you see "Wetting".



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When the wet sensor is dry, the screen should show dry if there is wet sensor is dry.
If the screen still shows dry or wet, change the wet sensor and try again.

Now, put some drops of water on the wet sensor. Now the screen should show wet. If the screen still shows dry or absent, change the wet sensor and try again. If there is any discrepancy, report it.



7. Check robot levels

Check if the level of the robot is centered. If it is not levelled, please adjust it.



If you do not have a leveler, use the level indicator on the top of the robot. Center the bubble on the robot by rotating the levelling screw on the base of the robot.

Take a picture of the level indicators and report it.

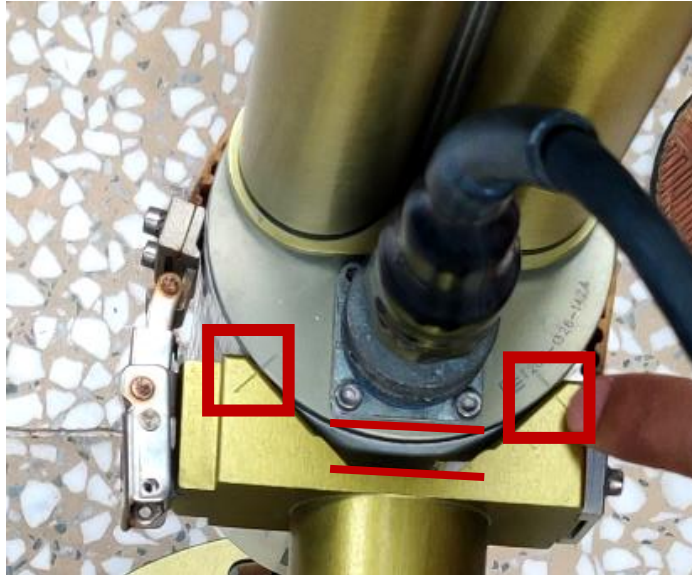




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8. Check mounting of the sensor head on the robot arm

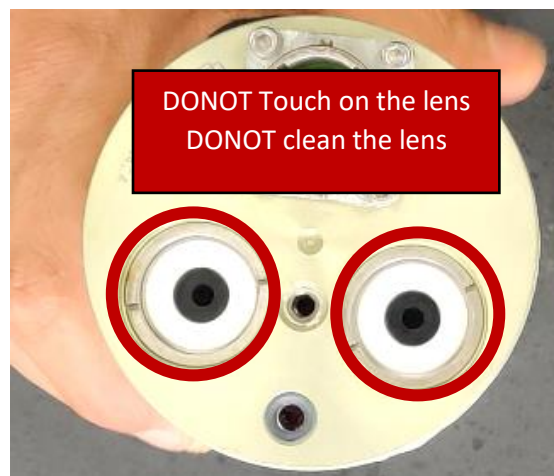
- a. Check if the lines on the sensor head are in line with the robot arm.



- b. Make sure that the sensor head and the robot arm are at same level. Take a picture at the position shown in the picture.

9. Check collimator

- a. Unmount the collimator. **DONOT TOUCH LENS** with anything. Also, **DONOT CLEAN THE LENS**.





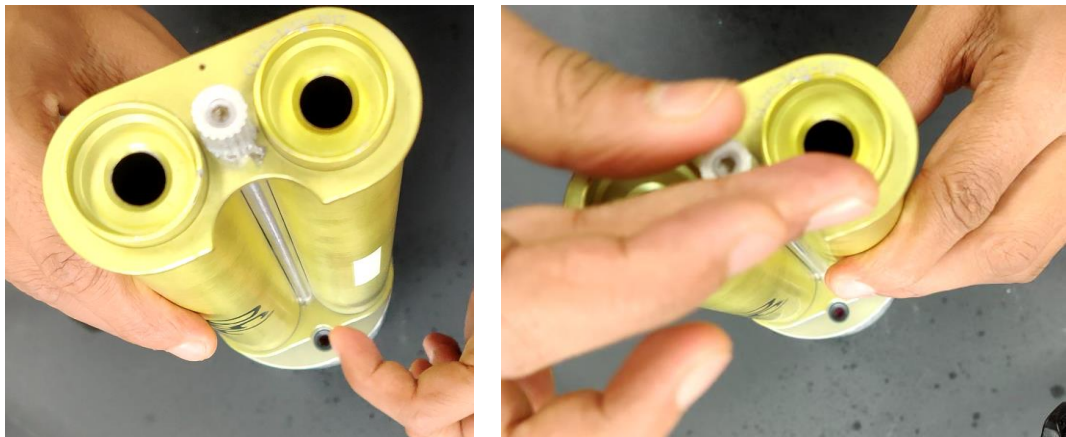
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- b. Check if there are any spider web or dust inside the collimator by pointing it towards the sun or any bright light. If there is any, clean it with a brush.



- c. After checking the collimator, mount the collimator back. To do that, follow following steps:
Point the semi-circular notch on the collimator towards the four-quadrant sensor on the sensor head.

Place the collimator on the sensor-head as perfectly perpendicular as possible.
Hand-tight the screw on the collimator.



After hand-tightening, use a plier to tighten the screw for 1/4th of a turn.



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Make sure that the collimator is tightly mounted and does not shake.



10. Check sun pointing and tracking

- a. This should be done when the sun is not covered with cloud.
Go to Scenarios>Park

Go to Scenarios> Go Sun

Now check if the bright spot falls around the hole as shown on the picture. A little deviation is acceptable. Please take a picture similar to the one shown in the picture below.



Now go to Scenarios> Track Sun



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Now the bright spot should fall exactly on the hole. Please take a picture similar to the one shown in the picture above. If there is any discrepancy, please report it.



11. Check robot sar/sae value

- Go to scenarios>Park.
- Once the instrument parks, the screen shows AZ sar/sae: XX/XX, and Zn sar/sae: XX/XX. Please note and report these values and take the picture of the screen.





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12. Set the instrument back to auto mode.

Got to Settings then change the option from “OFF” to “ON”. Then go back. An option will show up asking you if you want to save. Select Yes.

If the step is successful, the screen should show (auto) together with the date/time.

Please take a picture of the screen and the instrument and report this picture.



If you are using a PC for data transmission, check if the data is transmitted to PC properly.

After you set the instrument to Auto mode, check the data in the [AERONET website](https://aeronet.gsfc.nasa.gov/new_web/Data_Transfer_Logs/K8/last_1440_minutes.html) ([https://aeronet.gsfc.nasa.gov/new_web/Data Transfer Logs/K8/last 1440 minutes.html](https://aeronet.gsfc.nasa.gov/new_web/Data_Transfer_Logs/K8/last_1440_minutes.html)) or report to the APAC.

Take few pictures, some with close-up of the instrument, instrument box and some with surrounding.





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