Manual of the OGMA Filter Wheel (OFW)

Manual of the OGMA Filter Wheels (OFW)

This manual is a work in progress. Please send your questions and suggestions, and we will add them.

Connecting the OFW to a camera

The recommended method for connecting the OFW to a cooled camera is to bolt it to the front plate of the camera. If you have replaced the camera's default front plate with the OGMA O'Tilter, you can use the same method, as the O'Tilter has holes identical to those on the camera's default front plate.

Most cooled cameras have six tapped holes on the front plate around the opening of the imaging sensor. The six holes are distributed around a circumference of 62mm in diameter.

In the case of **OGMA, ZWO, and PlayerOne**, the screws needed have an **M2.5 thread**. We provide the screws. As you can see in the photo, they have a silver color.

In the case of **QHY** cameras, you will need to purchase four similar screws with an **M3 thread**.

Steps to bolt the OFW to a camera

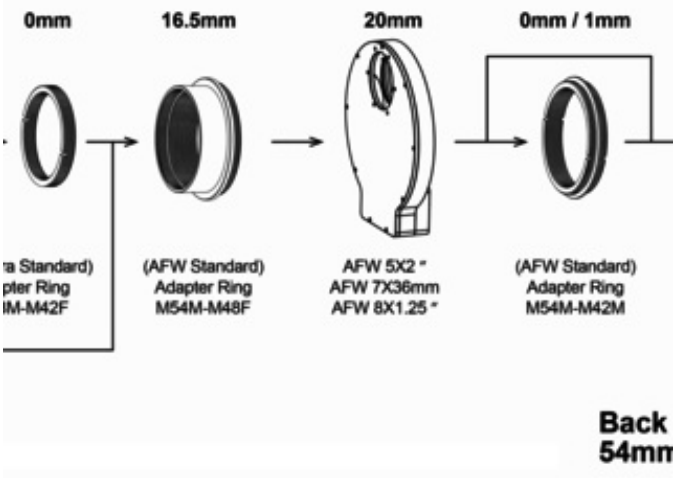
Before you can bolt the filter wheel to a camera, you have to open the filter wheel and remove the carrousel to gain access to the holes used by the screws that will secure the filter wheel to the camera.

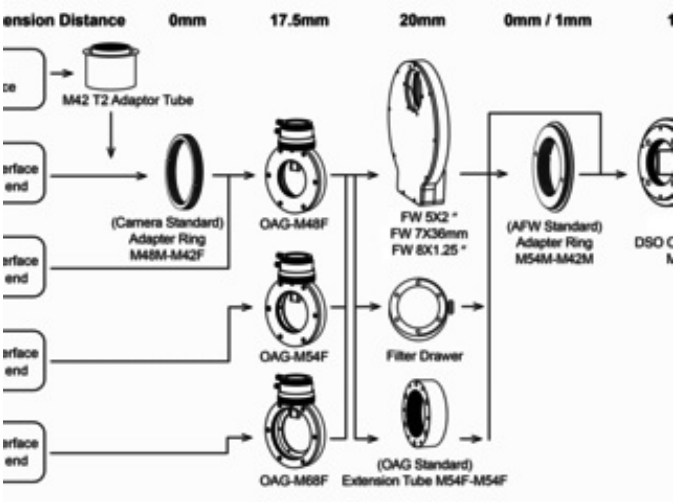
Follow these steps:

1. Unscrew the nine screws that hold the cover of the carousel in place.
2. Remove the cover of the carousel.
3. Unscrew the four little screws that hold the carousel to the brass center
4. Use the provided four silver screws M2.5 to attach the filter wheel to the camera. You may have to rotate the camera until the holes align.
5. Place the carousel back on the brass center and use the four tiny screws from step #3 to secure it. Don't apply too much pressure when screwing because the thread is thin and can be damaged very easily.
6. Place your filters on the carousel and take note of their position. You will need this information to configure the software.
7. Place the cover of the carousel and attach using the nine screws that you removed in step #1.

At this point, your filter wheel is connected to the camera, and the filters are placed on the carousel.

Installation Images


0mm
16.5mm
20mm
0mm / 1mm
(AFW Standard)
Adapter Ring
M54M-M48F
AFW 5X2 "
AFW 7X36mm
AFW 8X1.25 "
(AFW Standard)
Adapter Ring
M54M-M42M
Back
54mm



Video of Installation

Note: If you remove the four tiny screws near the brass center of the carousel, you will have better access to the holes that connect the filter wheel to the camera. However, the method described here is perfectly valid.

Filter Wheel Firmware Update

Introduction

All OGMA filter wheels, including models OFW736, OFW72i, and OFW52i, will require this update.

The firmware files can be downloaded below.

Warning

Never upgrade the firmware of a device connected through a USB Hub, including the Hub on the back of OGMA cooled cameras, because it could damage the firmware of the Hub device.

Always connect the device you want to update directly to the computer before running a firmware update.

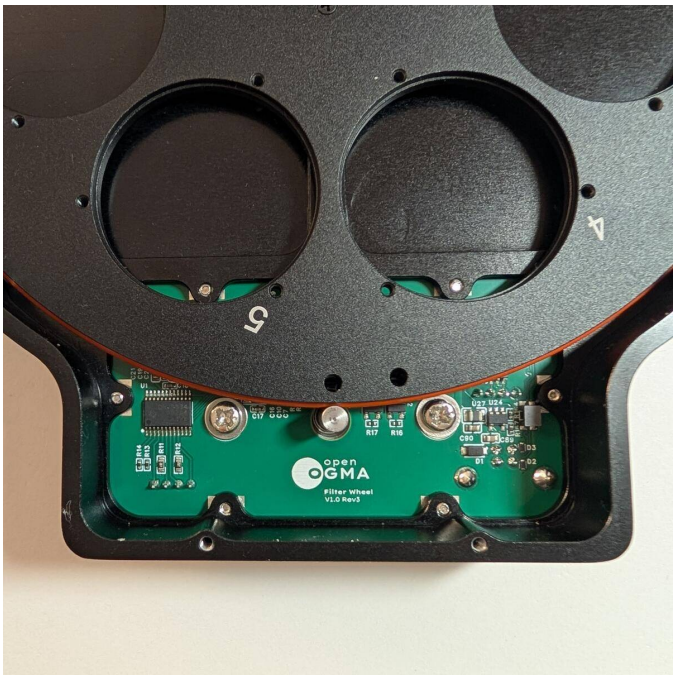
For added safety, consider removing all other USB devices from your computer while applying a firmware update.

Firmware Files

Identify Your Filter Wheel and Download

There are three circuit versions of the filter wheel. To ensure proper operation, select the correct firmware that matches your circuit version before flashing it. Refer to the following images when checking your filter wheel's internal layout.

Flashing the wrong firmware may cause incorrect positioning or failure to detect filters.



OpenOGMA (2026 Model)

This is the green circuit with the OpenOGMA logo.

FW_OpenOGMA_V1.2.0.zip

Reflective Sensor

The infrared sensor and emitter are mounted on the same side of the circuit board, using a reflective detection method.

FW_Reflective_V1.3.3.20231017.zip

Transmissive Sensor

The infrared emitter and sensor are mounted on opposite sides of the carousel, using a transmissive (through-beam) detection method.

FW_Transmissive_V2.0.2.20250414.zip

The files above are compressed archives. You have to extract their content before flashing the

firmware.

The Zip files for the reflective and transmissive versions contain:

1. A video tutorial in MP4 format to guide you through the steps to update the firmware.
2. A flashing tool named ***updatefw.exe***.
3. A dynamic library named ***ogmacam.dll*** is necessary to communicate with your device.
4. The actual firmware file that will be flashed has a file extension ***.icc***.

The Zip file for the OpenOGMA version contain:

1. A flashing executable tool
2. The actual firmware file with the extension .uf2

After applying a firmware update, it is a good practice to disconnect the USB cable and wait 30 seconds before reconnecting it.

Addressed Issues

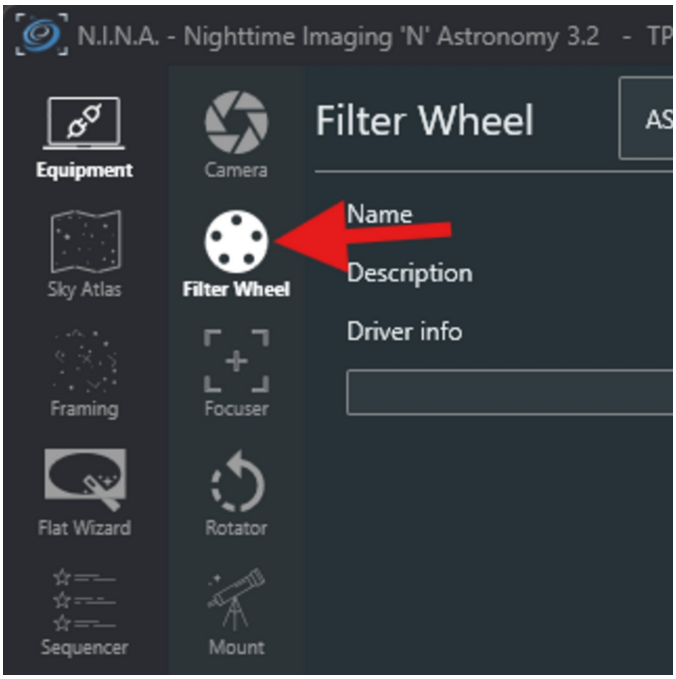
Without this update, in some rare instances, the filter wheel may lose track of its position.

Setup in N.I.N.A.

Generally, filter wheels are used through ASCOM.

After installing the ASCOM platform and the ASCOM Driver:

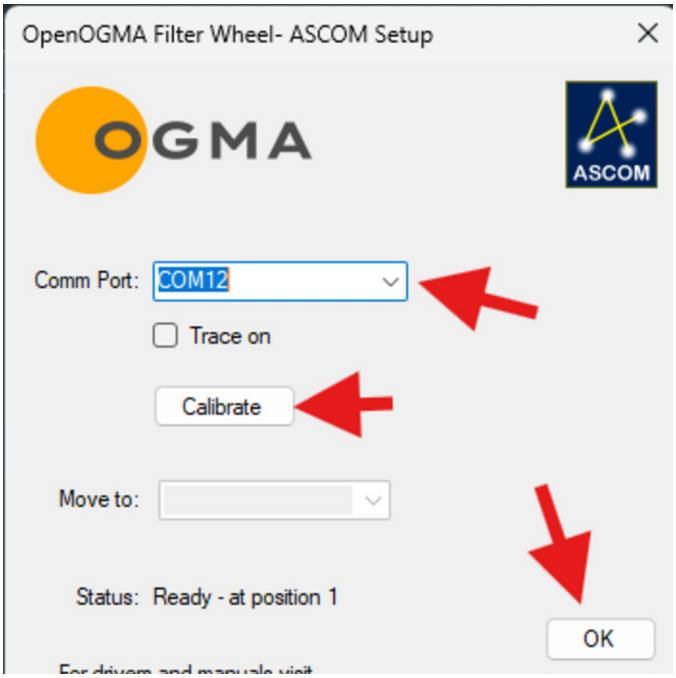
1. Open N.I.N.A.
2. Select Equipment > Filter Wheel
3. Select the correct ASCOM driver



Please note that OGMA offers the ASCOM OGMAVision driver for filter wheels of models sold before 2026, and the OpenOGMA driver for filter wheels sold in 2026 and later.

Once you have selected the correct ASCOM driver:

Click the cogwheels to open the ASCOM configuration window.

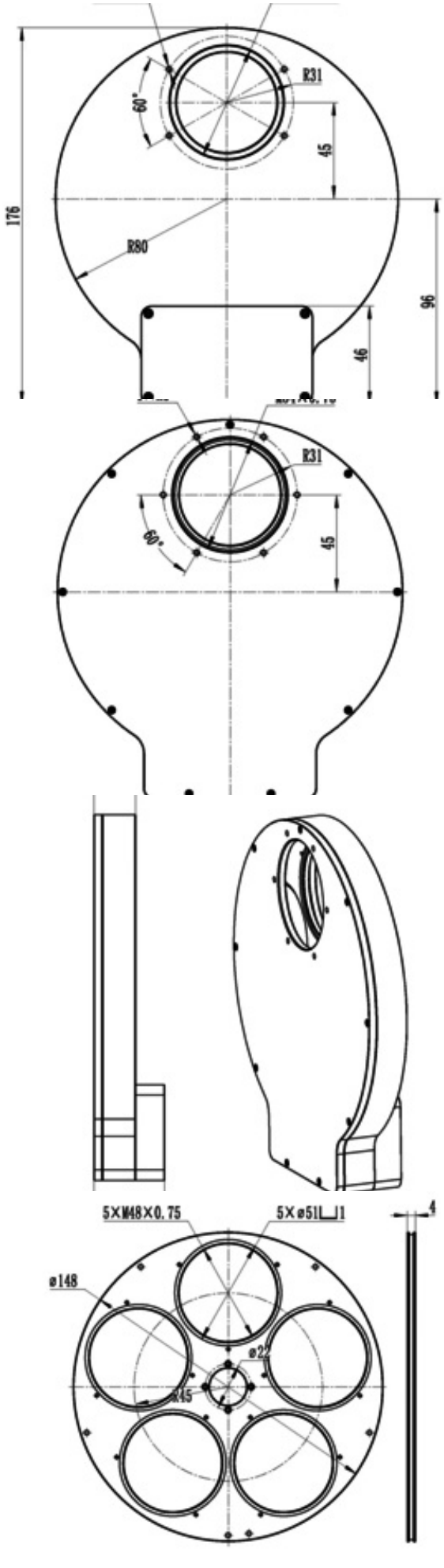


At this point, you have to set up the ASCOM driver:

1. Select the COM port (usually, the only one listed in the drop-down)
2. Click Calibrate and wait for the filter wheel to do the calibration.
3. Click OK, to close the ASCOM window.

At this point you are ready to connect to the filter wheel in N.I.N.A.

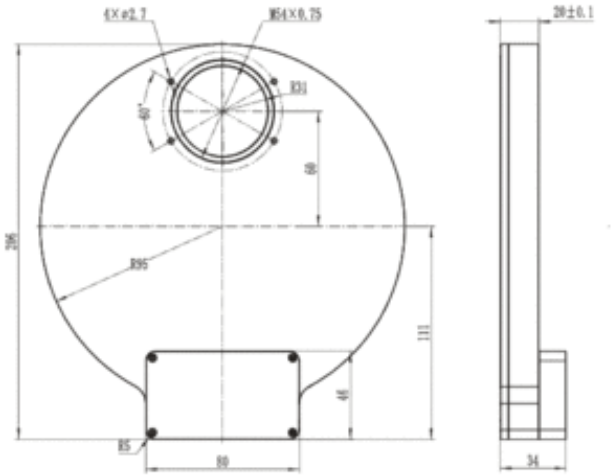
Mechanical Drawings OFW52i

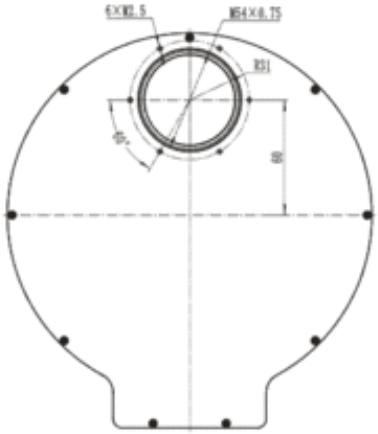

R31
60°
45
176
R80
96
46
R31
60°
45
5×M48×0.75
5×ø51
4
ø148
ø22
45

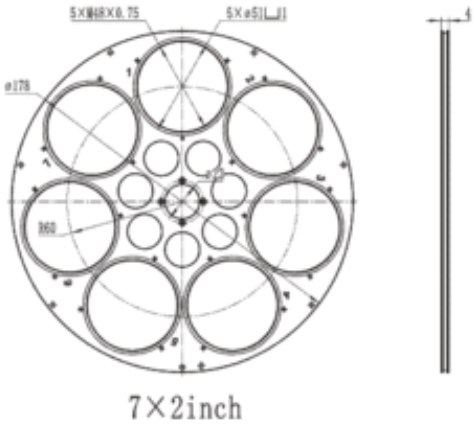
Mechanical Drawings OFW72i

Please note that the body of this filter wheel is larger than that of the other two models by OGMA.

Click the images to enlarge.

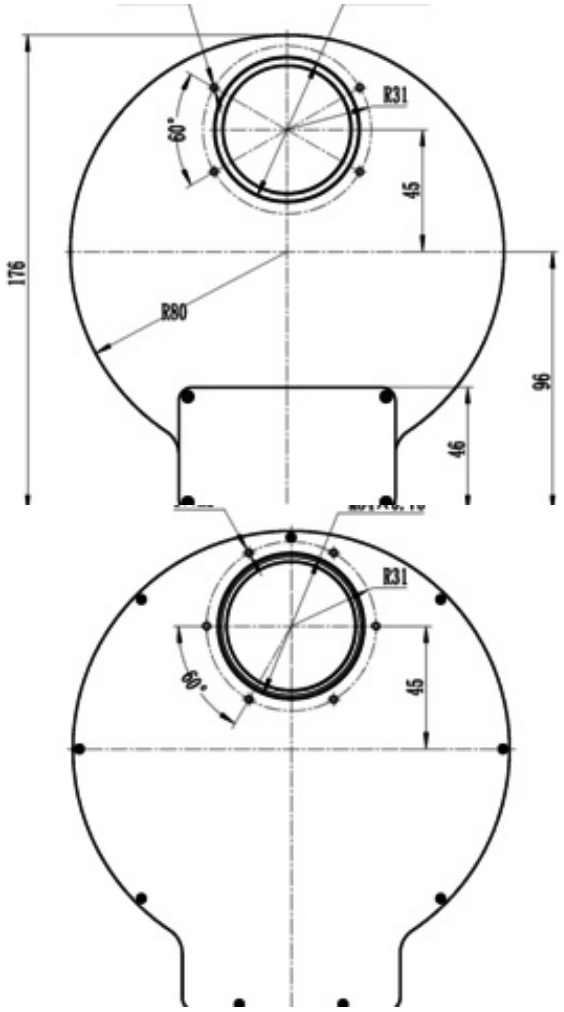


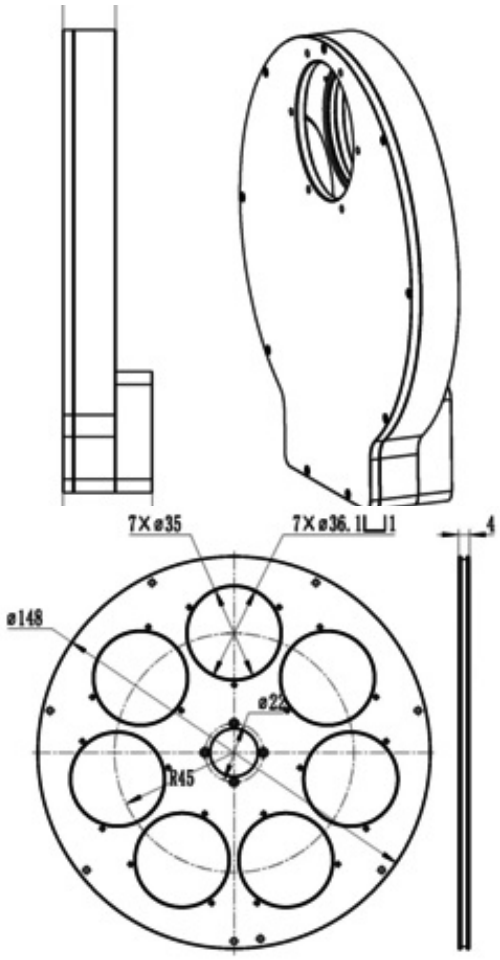




7×2inch

Mechanical Drawings OFW736




7×ø35
7×ø36.1⌴1
4
ø148
ø22
R45