50 mm iris diaphragm

This strong, robust, and versatile 50 mm iris diaphragm is easily 3D printed and assembled. It has an aperture range of 2 mm to 28 mm, with an outside diameter of 50 mm.

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Specifications

Aperture: 2 - 28 mm
Blades: 12
Handle size: 5 x 12 mm
Outside Diameter: 50mm
Height: 8.5 mm
Handle operation: 87°

Printing notes (FDM printers)

Print 12 blades flat (pin side up)with a layer height of 0.05 mm.
It is suggested printing them with maximum cooling, and print a couple of spares.

Print housing open side up. Layer height: 0.2 mm

Print clip flat-side down. Layer height: 0.2 mm

Print actuator ring flattest-side down. Layer height: 0.2 mm

Print 12 pins as a group (with some extra spares) with maximum cooling (additional external cooling recommended). Layer height: 0.2 mm

Assembly

Pins are super-glued into location holes on the blades. Use an engineers clamp (or similar) to ensure the pins adhere squarely and securely).

Fill the actuator ring by overlapping the blades in a counter-clockwise direction.

With the blades in their parked position (max. aperture), place the housing upside, on top, with the handle slot aligned with the handle. Then very carefully, turn the assembly over and wiggle the handle to encourage the pins to align and drop into the slots.

Whilst holding the assembly together, very carefully operate it to ensure the iris opens and closes correctly, without any restrictions.

Finally, install the clip by sliding one side in the groove, then applying pressure to the other side. There should be a satisfactory ‘snap’ once it’s located correctly.

Troubleshooting

The aperture is not circular
Try to ensure the pins are glued precisely in their location holes. Re-print some blades/pins and try swapping them out for the one(s) that are causing the issue.

The pins keep falling out of the slots
Make sure the clip is fitted correctly, and isn’t popping out. You may want to glue it in place.

The mechanism is tight or not smooth
Try rubbing a pencil on all the surfaces that rub. This includes the slots, inside surfaces of the housing, the blade side of the actuator ring, and the inside of the clip.

Need help?

Contact support@iris-calculator.com

Iris Calculator
iris-calculator.com