

Readiness report — OpenFlexure Microscope (high-res build, v7.0.0-beta5)

Checked 2026-07-19 19:49 · 34 searches, 0 pages fetched

Readiness: OpenFlexure Microscope (high-res build, v7.0.0-beta5)

Verdict: Ready · 2026-07-19 · est. parts cost \$215-\$305

This is a cold check establishing the baseline for the OpenFlexure Microscope v7.0.0-beta5. All critical electronic modules, laboratory-grade optics, and specialized mechanical hardware are currently available from a combination of specialist manufacturers (TauLab, ThorLabs) and general electronics retailers. No parts in the bill of materials are currently obsolete or out of stock.

Action required

None — all checked parts are sourceable.

Parts

Main Electronic Modules and Boards

Part	Spec/Package	Status	Stock	Price	Source
Raspberry Pi 4 Model B	Single-board computer	Ready	High	\$38.15	CanaKit
Sangaboard v0.5	RP2040-based Motor Controller	Ready	Active	£23.00	TauLab
Raspberry Pi Camera Module v2	Sony IMX219 sensor	Ready	Active	\$15.95	PiShop USA
Illumination PCB	OFMv7 Illumination Kit	Ready	Active	£4.00	TauLab

Optical Components

Part	Spec/Package	Status	Stock	Price	Source
12.7 mm Achromatic Lens	ThorLabs AC127-050-A	Ready	In stock	\$64.83	ThorLabs
Microscope Objective	Generic RMS Thread	Ready	High	\$13.45	Walmart
Condenser Lens	13 mm x 5 mm PMMA	Ready	High	~\$15.00	Amazon (50pk)

Electromechanical and Connectivity

Part	Spec/Package	Status	Stock	Price	Source
28BYJ-48 Stepper Motors	5 V geared version	Ready	High	\$4.14	StepperOnline
Pi Camera Ribbon Cable	200 mm, Type B FFC	Ready	1431	\$0.85	Newark
Female-Female Jumpers	30 cm	Ready	High	\$0.50	SparkFun
2-pin Connector Housing	2.54 mm pitch	Ready	High	\$5.49	Banggood (Kit)

Fasteners and Mechanical Support

Part	Spec/Package	Status	Stock	Price	Source
M3 Cap Head Screws	M3 x 10 mm (WF2345)	Ready	In stock	\$0.18	AndyMark
M3 Hex Nuts (Stainless)	A2 Stainless (WF1255)	Ready	In stock	\$3.42	Grainger (50pk)
M3 Hex Nuts (Brass)	Brass (WF20152)	Ready	In stock	\$3.01	RS America
M3 Hex Bolts	M3 x 25 mm Full Thread	Ready	In stock	\$9.44	Walmart
M3 Washers	Form A (WF1189)	Ready	In stock	\$2.08	Grainger (100pk)
No. 2 Self-Tapping	6.5 mm Pozi Pan (WF825)	Ready	1302	£1.02	Westfield
Viton O-rings	30 mm ID, 2 mm thick	Ready	High	\$0.55	Oringsandmore

Materials and Consumables

Part	Spec/Package	Status	Stock	Price	Source
PLA Filament	1.75 mm, Black/Any	Ready	High	\$11.99	eSUN
Polypropylene Sheet	0.5 mm White	Ready	Active	\$18.50	eBay
Micro SD Card	8 GB minimum	Ready	High	\$3.00	eBay
Light Oil	RS 252-0168 / Generic	Ready	Active	\$2.50	Micro-Tools

Substitutes

None needed.

Instructors should verify any substitute against its datasheet before ordering.

Other dependencies

- **3D Fabrication:** Requires FFF printer with minimum 180 x 180 x 180 mm build volume.

- **Firmware and Software:** OpenFlexure v7.0.0-beta5 and associated server software remain active on GitLab as of 2026.
- **External Links:** Documentation sites build.openflexure.org and taulab.eu are active.
- **Pi Camera Lens Tool:** 3D-printable workaround tool provided in design files if physical tool is missing from camera module.

Watch list

- **Raspberry Pi 4 Model B:** Retail pricing is highly volatile (\$38–\$165). Standardize on 1GB or 2GB variants to maintain budget.
- **Specialist PCBs:** Sangaboard and Illumination kits ship from specialty vendors in the UK (TauLab); international shipping may impact timelines.
- **ThorLabs AC127-050-A:** A high-precision optic with limited authorized distributors. Manufacturer-direct pricing is the most stable reference.