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BILL OF MATERIALS

ITEM	PART No	DESCRIPTION	SPECIFICATION	QTY	kg
1	AST-100	Primary mirror, 200 mm f/4 parabolic	GSO AD048, BK-7	1	1.79
2	AST-101	Secondary mirror, 80 mm minor axis	GSO AD093, $\lambda/10$	1	0.33
3	AST-200	Optical tube, $\varnothing 250 \times 1.5$ wall $\times 720$	Alu 6061-T6	1	2.25
4	AST-201	Primary mirror cell	Alu 6061-T6, machined	1	1.20
5	AST-202	Spider, 4-vane, offset hub	Alu 6061-T6	1	0.11
6	AST-203	Secondary holder	PA-CF, printed H2C	1	0.15
7	AST-204	Focuser board	Alu 6061-T6, machined	1	0.22
8	AST-300	Focuser, 2" low-profile dual-speed	Bought-in	1	0.75
9	AST-301	Coma corrector, 2", f/4	Bought-in, BF 55 mm	1	0.30
10	AST-302	Tube rings + Losmandy dovetail	Bought-in	1	1.30
11	AST-400	Cooling fan, 120 mm 12 V	Bought-in	1	0.18
12	AST-401	Secondary dew heater, 3–5 W	Bought-in	1	0.04

ASSEMBLY SEQUENCE

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1	Bond cork pads to cell. Verify pad coplanarity 0.05.
2	Seat primary on 3 pads. Set radial clearance 0.5–1.0 at 6 points.
3	Fit axial clips at 0.30 PROUD. Confirm glass rattles faintly.
4	Mount cell in tube on adjustment slots. Leave slots mid-travel.
5	Fit spider. Confirm hub offset 5.0 toward primary.
6	Fit secondary in holder at 45°. Do not preload the glass.
7	Bolt focuser board. Verify squareness 0.1° with dial indicator.
8	Fit focuser, corrector, filter drawer, OAG, camera.
9	Cheshire → laser → star test. Iterate.
10	Set corrector spacing by corner HFR. Shim in 0.5 steps.
11	Null sensor tilt to ≤20 μm across the diagonal.
12	Balance on dovetail. Record RA/DEC balance positions.

QUALITY GATES — NONE MAY BE SKIPPED

GATE	CHECK	CRITERION	METHOD
G1	Pad coplanarity	0.05 mm	Surface plate + DTI
G2	Mirror radial clearance	0.5–1.0 mm	Feeler, 6 positions
G3	Axial clip standoff	0.30 +0.2/–0.0 proud	Shim stock, tap test
G4	Secondary offset	5.0 ±0.3 mm	Depth gauge from hub
G5	Focuser squareness	≤0.1°	DTI sweep on drawtube
G6	Collimation	focal point ≤1.41 mm off axis	Cheshire + laser
G7	Corrector spacing	corner HFR within 10 % of centre	Star field, measure
G8	Sensor tilt	≤20 μm across diagonal	Corner HFR comparison
G9	First light	round stars to the corners	Eta Carinae / Omega Cen

REVISION HISTORY

REV	DESCRIPTION	DATE
A	First issue for manufacture	2026-08-16

FLOWMATIC · ASTROGRAPH PROGRAMME

200 mm f/4 NEWTONIAN ASTROGRAPH · CANBERRA ACT 35.28°S

BILL OF MATERIALS, ASSEMBLY AND QA GATES

DRAWING NUMBER FM-AST-006	REVISION A	SHEET 6 OF 6
SCALE NTS	MATERIAL —	MASS 9.94 kg
PROJECTION FIRST ANGLE (ISO 128)	FINISH —	UNITS MILLIMETRES
GENERAL TOL ISO 2768-mK UNLESS STATED · DO NOT SCALE DRAWN NaXief's Claude · CHECKED SELF-CHECK + VISUAL JUDGE, SEE SHEET 6 QA GATES DATE 2026-08-16 · STATUS ISSUED FOR MANUFACTURE		

