OPEN-AIR · EXECUTIVE DESIGN REVIEW

Atomrc Dolphin V1 1

Verified delivered configuration · interactive mesh available in report.html

135 km/h

DASH SPEED

not claimed

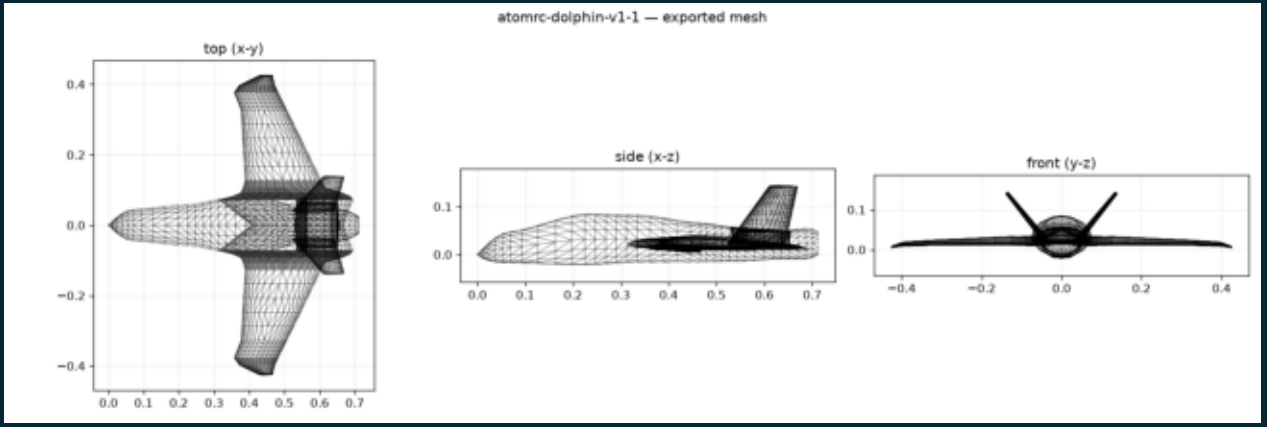
ENDURANCE

0.0 kg

PAYLOAD

0.9 kg

MTOW



Flight-worthiness gate review

Schema

source=yes; optimized=yes; engine requirement=yes; payload requirement=yes; re

Geometry truth

read-back=yes; bbox=yes; mesh checks=22; reference model body p95 12.5 mm (who

Packing

fuel-volume margin 0.003 m³; engine/payload clear

Balance

independently measured SM full 0.043; reserve 0.043 MAC

Pitch trim

elevon deflection (TE up +) 9.640° vs spec 9.640° within travel [-30.0, 30.0]°

Stall

Vstall 9.239 m/s ≤ 12.0 m/s at CLmax 1.00

Directional authority

source Vv 0.0191; same-run Cnβ 0.0434, Cnr -0.0228 (source-locked reproduction

Structures

+4g failure index -0.955; CL 0.792/0.792; lift closed=yes; mass closed=yes; ti

Endurance & thrust

endurance not claimed for electric reproduction; cruise/dash thrust ≥ buildup

Reproduction closure honesty

feasible=yes; driver=yes; post-delivery verify=yes; calibration=yes; frozen=ye

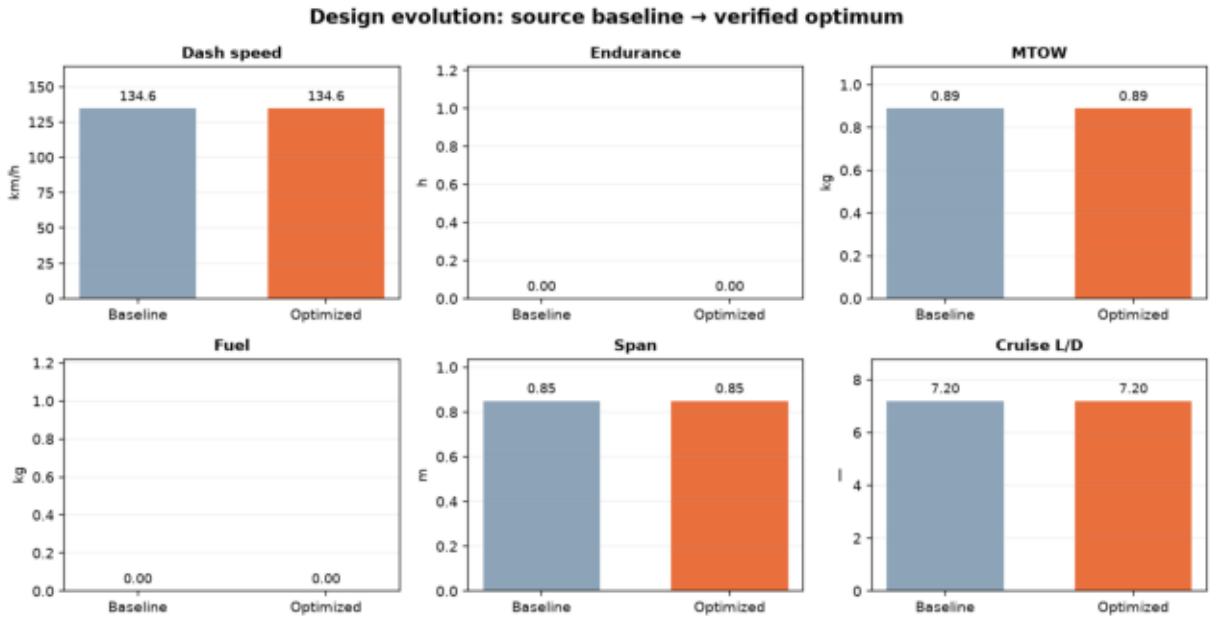
Shape fidelity

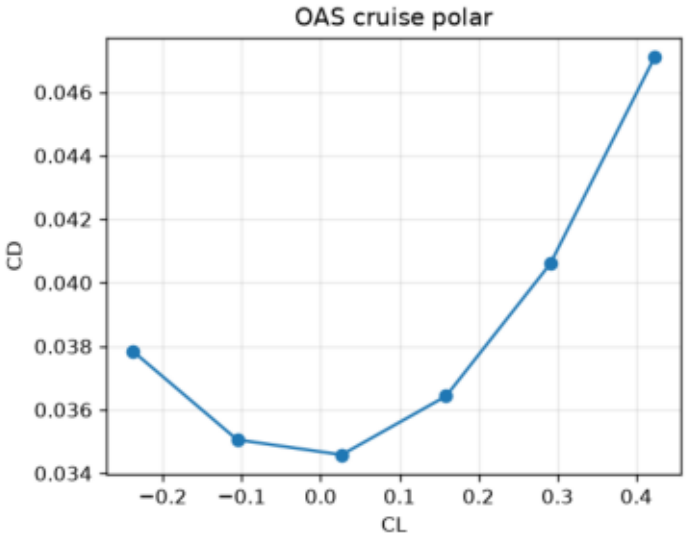
span/L 1.19; root/L 0.37; sweep -12.1°; 0 scored shape departures; 0 total aud

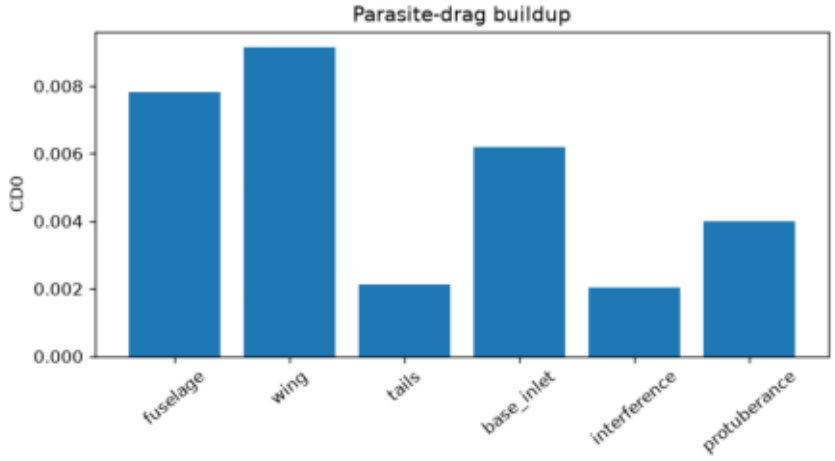
Cross-checks & traceability

core 13/13; VSPAERO/OAS CLα ratio 1.016; NP method spread 0.007 MAC (diagnosti

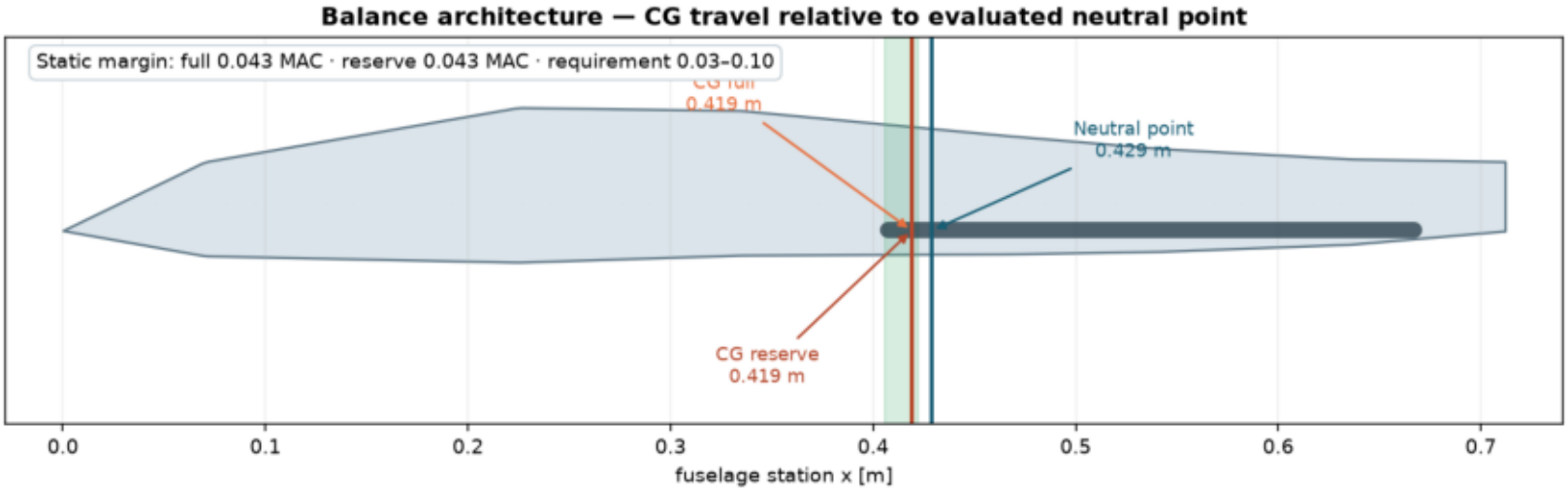
Performance and aerodynamic evidence

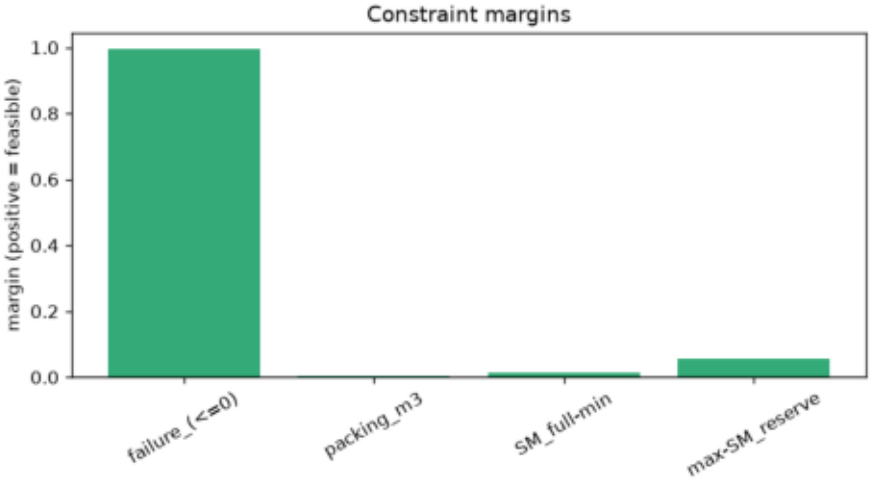


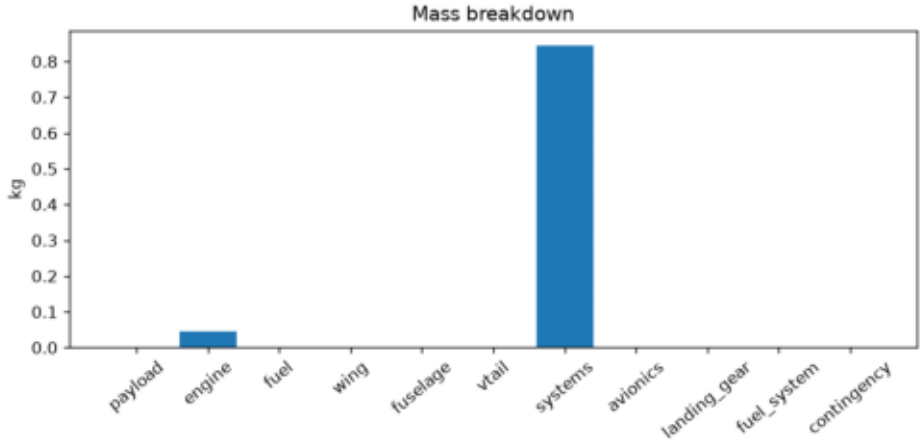




Balance and structural margins







Verification summary and engineering limits

Validation core: 13/13 · all recorded checks: 15/15

- ✓ k450 tsfc kg per kgf hr
- ✓ breguet round trip
- ✓ isa T sl
- ✓ isa rho sl
- ✓ oas induced drag vs elliptic
- ✓ cantilever deflection identity
- ✓ thin airfoil cm ac
- ✓ fin volume coefficient
- ✓ fin te within body
- ✓ neutral point model vs oas
- ✓ wing mass buildup vs oas
- ✓ vspaero vs oas CL
- ✓ elevon cm delta vspaero vs oas

Documented limitations

• Engine thrust-lapse and part-throttle TSFC are assumptions anchored by one static vendor point.

• Stall uses an assumed CLmax=1.00; no high-lift or nonlinear separation model is present.

• OAS/VSPAERO are lifting-surface models; fins are gated separately by Vv and exported-mesh truth.

• SU2 is a coarse 2-D Euler calibration and must report convergence separately from successful execution.

• TACS and OAS use different wingbox idealizations; their mass/stress ratio is calibration evidence only.

Full interactive evidence, exact stage values, and configuration: report.html