

Openair X8 Capstone

Verified delivered configuration · interactive mesh available in report.html

228 km/h

DASH SPEED

not claimed

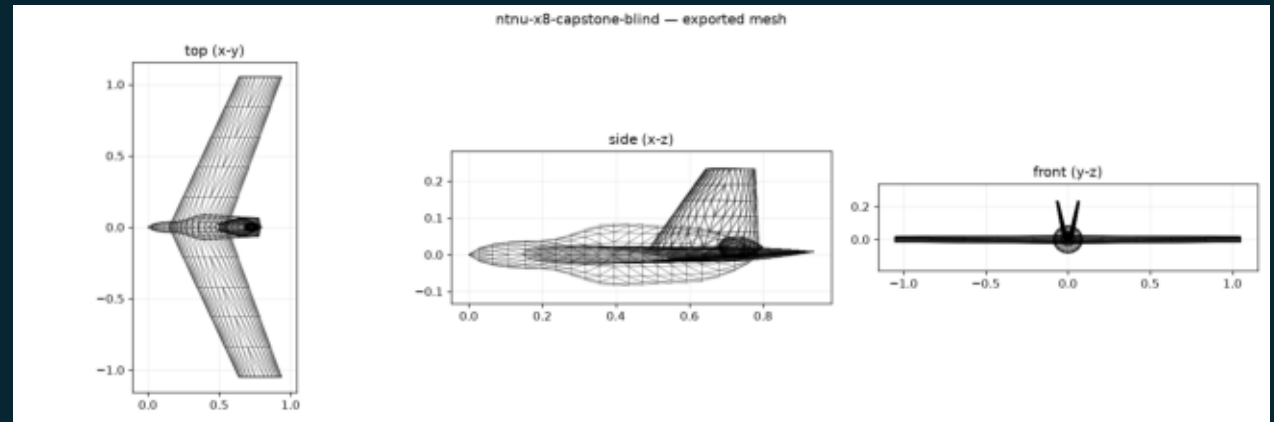
ENDURANCE

0.0 kg

PAYLOAD

3.4 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=24

● Packing

fuel-volume margin 0.011 m³; engine/payload clear

● Balance

independently measured SM full 0.080; reserve 0.080 MAC

● Pitch trim

washout 4.000° vs spec 4.000°; CM residual -0.0010

● Stall

V_{stall} 8.474 m/s ≤ 18.0 m/s at CL_{max} 1.00

● Directional authority

source V_v 0.0107; same-run Cn_β 0.0113, Cn_r -0.0069 (source-locked reproduction

● Structures

+4g failure index -0.958; 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

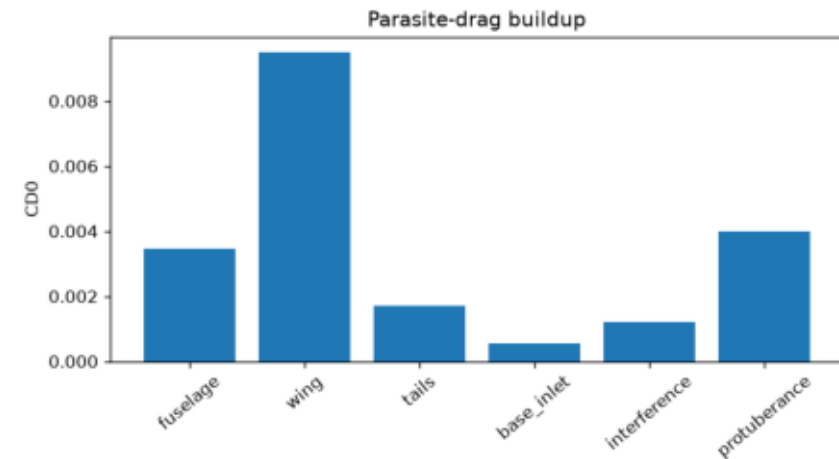
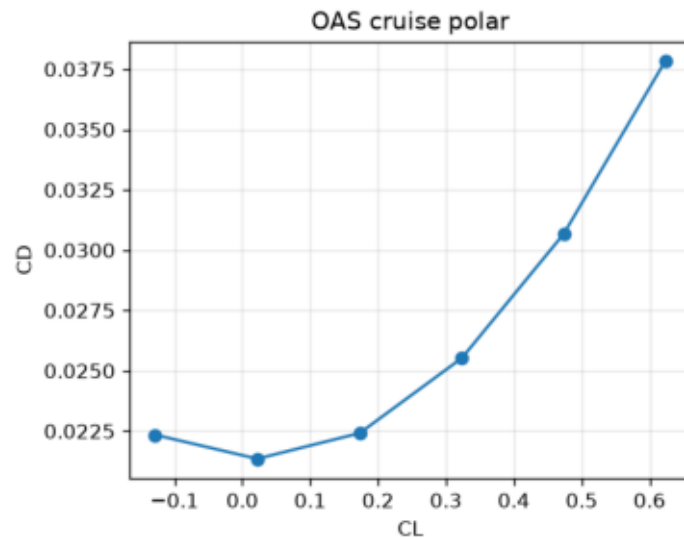
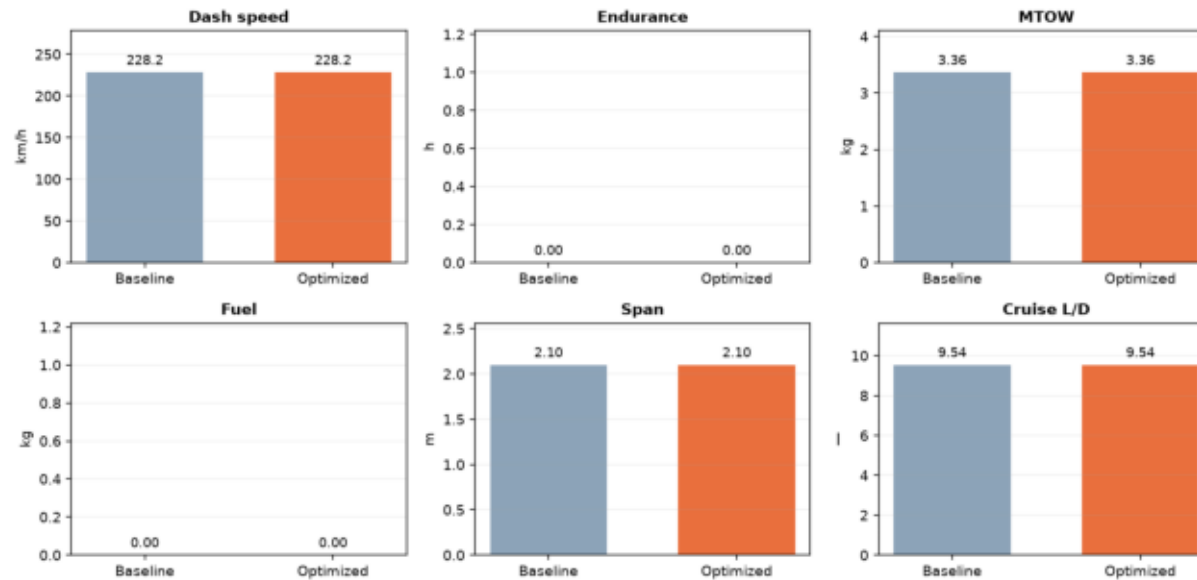
span/L 2.66; root/L 0.52; sweep 25.0°; 0 scored shape departures; 0 total audi

● Cross-checks & traceability

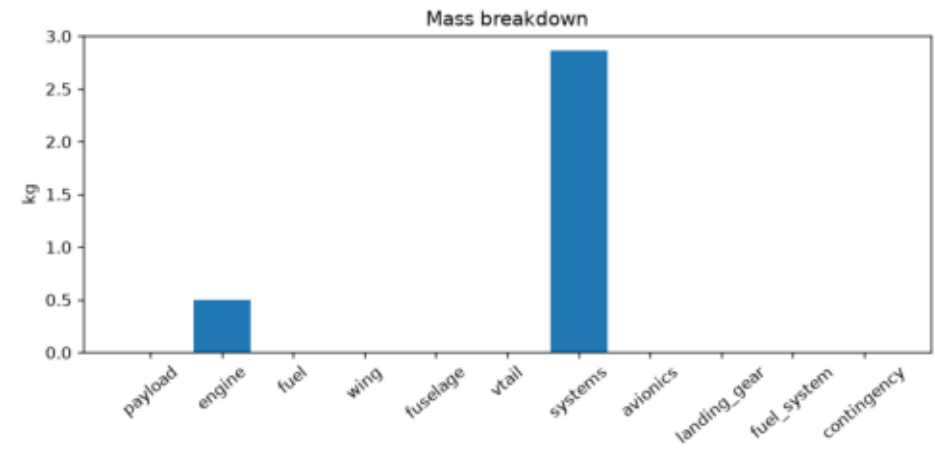
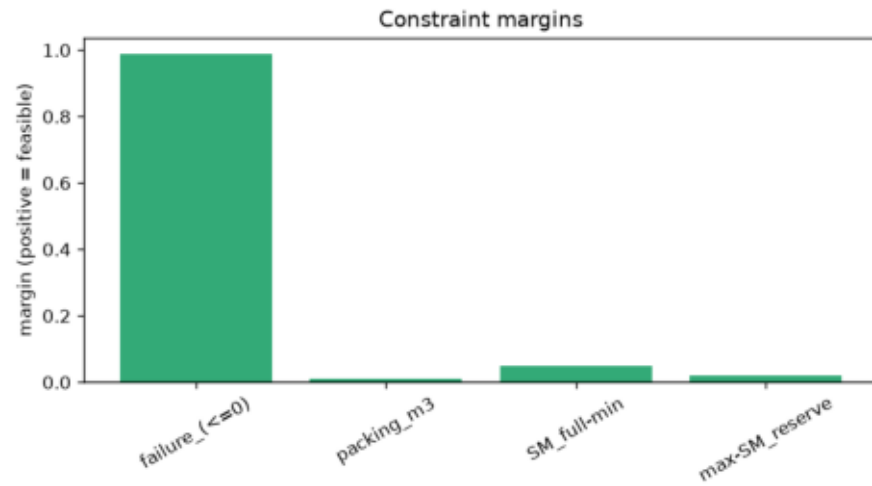
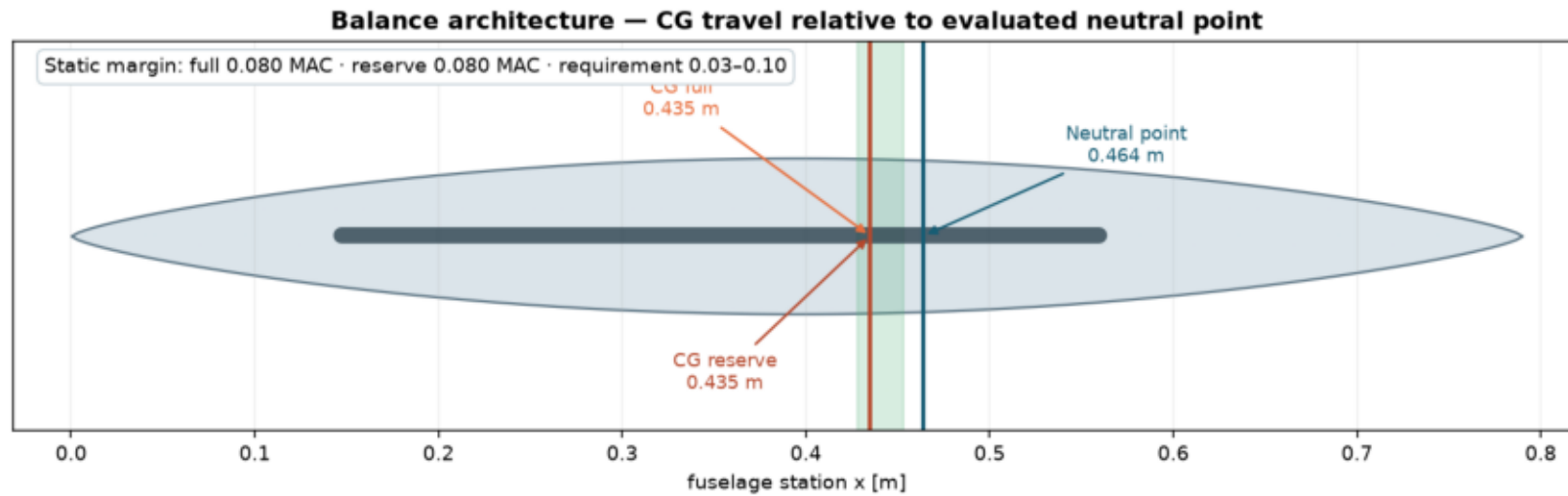
core 12/12; VSPAERO/OAS CL_α ratio 0.998; NP method spread 0.018 MAC (diagnosti

Performance and aerodynamic evidence

Design evolution: source baseline → verified optimum



Balance and structural margins



Verification summary and engineering limits

Validation core: 12/12 · all recorded checks: 14/14

- ✓ 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
- ✓ tacs artifact schema

Documented limitations

- Engine thrust-lapse and part-throttle TSFC are assumptions anchored by one static vendor point.
- Stall uses an assumed $CL_{max}=1.00$; no high-lift or nonlinear separation model is present.
- OAS/VSPAERO are lifting-surface models; fins are gated separately by V_v 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](#)