

## DESIGN REPORT

### Input Parameters

- Payload Weight : 0.5 kg
- Endurance : 60.0 minutes
- Cruise Altitude : 300.0 meters
- Cruise Speed : 15.0 m/s
- Wing Loading : 3 kg/m<sup>2</sup>
- Aspect Ratio : 7
- Taper Ratio : 0.5
- Fuselage Width Ratio : 0.14
- LE Sweep Angle : 25 degrees
- Twist Angle : -2 degrees

### Calculated Parameters

- MTOW/Payload Ratio : 4.8792
- MTOW : 2.4396114064 kg
- Wing Area : 0.8132038021333333 meters
- Full Span : 2.385880679106424 meters
- Fuselage Width : 0.3340232950748994 meters
- Wing-Only Semispan : 1.0259286920157624 meters
- Root Chord : 0.4341912063887943 meters
- Tip Chord : 0.21709560319439716 meters
- MAC : 0.3377042716357289 meters
- MAC LE X-Position : 0.212621513692396 meters

### Freestream Conditions

- Air Density : 1.1911 kg/m<sup>3</sup>
- Dynamic Viscosity : 1.7797e-05 Ns/m<sup>2</sup>
- Reynolds Number : 339023.0583345368
- Mach Number : 0.04424511383444999
- AoA : 1 degrees

### Q3D Analysis Results

- Lift Coefficient : 0.39388
- Drag Coefficient : 0.017155595222749644