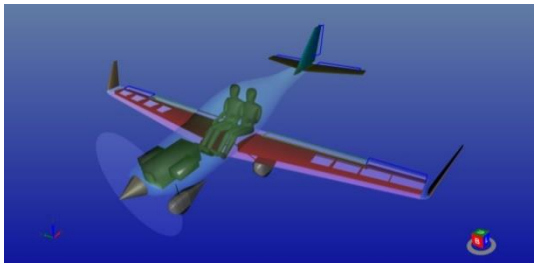
Introduction

This document presents the information that are displayed at the end of the processing Design/Level 2



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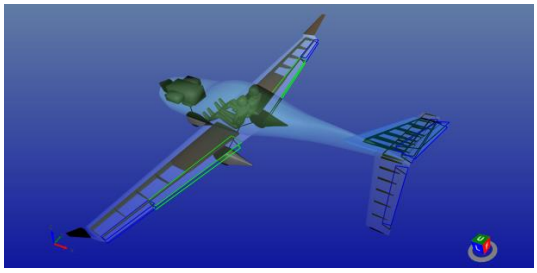
Summary

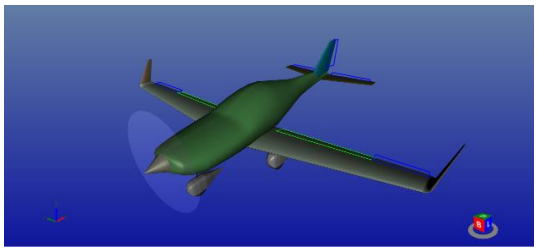
DIMENSIONS, EXTERNAL:	
Model	Dsgn02-01-01
Type:	Light Airplane
Structure	Light Alloy
Power plant:	1 Rotax-Bombardier Rotax 912-ULS
Length overall	7.831 m
Height overall	2.493 m
Wing span	9.216 m
Wing aspect ratio	8.4 -
Fuselage length	6.000 m
Fuselage Max diameter	1.046 m
Tailplane span	2.995 m
Wheel track	1.549 m
Wheel base	1.970 m
AREAS	
Airplane wetted area	38.644 m²
Wings, true	10.101 m²
Wings, projected	10.063 m²
Wings, reference [0]	10.063 m²
Ailerons (total)	0.478 m²
Trailing-edge flaps (total)	1.460 m²
Horizontal tail, projected	2.152 m²
Vertical tail, projected	1.192 m²
Elevator (total)	0.602 m²
Rudder (total)	0.334 m²
WEIGHTS AND LOADINGS	
Maximum takeoff weight	559 kg
Empty weight	332 kg
Max landing weight	559 kg
Max wing loading	55.3 kg/m²
Max power loading	8.101 kg/kW
PERFORMANCE	
Cruising speed	243 km/h
Cruising altitude	2 400 m
Takeoff field length	154 m
Landing field length	113 m
Design range	1 187 km
MASS, COMPUTED:	
Structures Group	
Wing	68 kg
Horizontal tail	8 kg
Vertical tail	5 kg
Fuselage	48 kg
Gear, Main	42 kg
Gear, Auxiliary	10 kg
Propulsion Group	
Engine	78.1 kg
Propeller(s)	3.9 kg
Equipment Group	
Fuel system	8.9 kg
Control system	6.2 kg
Electrical system	26.0 kg
Instruments	8.4 kg
Furnishings	19.4 kg



Wing

General	
Area	10.101 m²
Span	9.216 m
Root chord	1.494 m
Tip chord	0.690 m
Trapezoidal sections	
Number of trapezoidal sections	1 -
TS1 - Airfoil at root	NASA-NLF(1)0416
TS1 - Airfoil at tip	NASA-NLF(1)0416
TS1 - Length	4.625 m
TS1 - Root chord	1.494 m
TS1 - Tip chord	0.690 m
TS1 - Incidence at root position	-1.1 °
TS1 - Incidence at tip position	-1.1 °
TS1 - Leading edge sweep angle	0.0 °
TS1 - Dihedral	5.0 °
TS1 - Twist	0.0 °
TS1 - Taper ratio	0.46 -
TS1 - Area	5.051 m²
TS1 - Sweep angle at 25% of wing chord	1.8 °
TS1 - Sweep angle at 50% of wing chord	-0.7 °
TS1 - Sweep angle at maximum relative thickness position	1.1 °
Geometry	
Taper ratio	0.46 -
Aspect ratio (geometric)	8.41 -
Aspect ratio (aerodynamic)	8.41 -
Sweep angle	4.3 °
Sweep angle at 25% of wing chord	1.8 °
Sweep angle at maximum relative thickness position	1.1 °
Sweep angle at 50% of wing chord	-0.7 °
Sweep angle at trailing edge	-5.7 °
Dihedral	5.0 °
Incidence at root position	-1.1 °
Twist angle	0.0 °
Areas	
Area	10.101 m²
Position	
Longitudinal position on the fuselage	1.569 m
Lateral position on the fuselage	0.000 m
Vertical position on the fuselage	-0.278 m
Longitudinal location on the fuselage	26.2 %
Vertical location on the fuselage	10.8 %
Mean Aerodynamic Chord	
Chord	1.141 m
X Position	0.151 m
Z Position	2.021 m
Y Position	0.177 m
Airfoil characteristics	
Airfoil	NASA-NLF(1)0416
Maximum relative thickness	16.0 %
Maximum relative thickness - Location	32.0 %
Leading edge radius	1.5 %
Zero lift angle	-3.9 °
Lift slope - Wing airfoil	0.104 /°
Aerodynamic Center / Center of Gravity	
Aerodynamic center position	1.989 m
Center of gravity position	2.177 m
Ailerons	
Area	0.478 m²
Relative span (both)	25.0 %
Root chord	0.233 m
Tip chord	0.182 m
Standard mean chord	0.209 m
Relative chord	25.0 %
Position along the wing span	3.225 m

Volume coefficient	0.017 -
Maximum down deflection	20.0 °
Maximum up deflection	-20.0 °
Ratio - Aileron span vs Wing span	25.0 %
Ratio - Aileron area vs Wing area	4.7 %
Wing trailing edge device	
Type	Plain Flap
Area (both)	1.460 m²
Span (each)	2.534 m
Relative span (both)	55.0 %
Root chord	0.343 m
Tip chord	0.233 m
Standard mean chord	0.292 m
Relative chord	25.0 %
Position along the wing span	0.691 m
Maximum down deflection	45.0 °
Maximum up deflection	0.0 °
Efficiency	100.0 %
Ratio - Trailing edge device span vs Wing span	55.0 %



Horizontal Tail

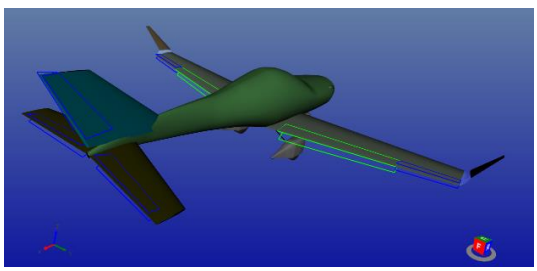
General	
Area	2.152 m²
Span	2.995 m
Root chord	0.919 m
Tip chord	0.517 m
Trapezoidal sections	
Number of trapezoidal sections	1 -
TS1 - Airfoil at root	NACA-0009
TS1 - Airfoil at tip	NACA-0009
TS1 - Length	1.498 m
TS1 - Root chord	0.919 m
TS1 - Tip chord	0.517 m
TS1 - Incidence at root	0.4 °
TS1 - Incidence at tip	0.4 °
TS1 - Leading edge sweep angle	0.0 °
TS1 - Dihedral	0.0 °
TS1 - Twist	0.0 °
TS1 - Taper ratio	0.56 -
TS1 - Area	1.076 m²
TS1 - Sweep angle at 25% of the tail chord	11.4 °
TS1 - Sweep angle at 50% of the tail chord	7.6 °
TS1 - Sweep angle at the point of maximum relative thickness	10.6 °
Geometry	
Taper ratio	0.56 -
Aspect ratio	4.17 -
Aspect ratio (aerodynamic)	4.17 -
Sweep angle at leading edge	15.0 °
Sweep angle at 25% of the tail chord	11.4 °
Sweep angle at 50% of the tail chord	7.6 °
Sweep angle at the point of maximum relative thickness	10.6 °
Dihedral	0.0 °
Incidence	0.4 °
Relative incidence	1.5 °
Twist angle	0.0 °
Volume coefficient	0.83 -

Areas	
Area	2.152 m²
Tail wetted area	4.400 m²
Position	
Longitudinal position on the fuselage	6.386 m
Lateral position on the fuselage	0.000 m
Vertical position on the fuselage	0.185 m
Longitudinal location on the fuselage	86.9 %
Vertical location on the fuselage	0.0 %
Mean Aerodynamic Chord	
Mean aerodynamic chord - Chord	0.737 m
Mean aerodynamic chord - X Relative Position	0.182 m
Mean aerodynamic chord - Y Relative Position	0.679 m
Mean aerodynamic chord - Z Relative Position	0.000 m
Mean aerodynamic chord - X position	6.569 m
Mean aerodynamic chord - Y Position	0.679 m
Mean aerodynamic chord - Z Position	0.185 m
Airfoil characteristics	
Airfoil	NACA-0009
Maximum relative thickness	9.0 %
Location of maximum relative thickness	30.0 %
Leading edge radius	0.9 %
Airfoil - zero lift angle	0.0 °
Lift slope - airfoil	0.054 /°
Aerodynamic Center / Center of Gravity	
Aerodynamic center position	6.757 m
Center of gravity position	6.864 m
Ratios	
Tail area vs Wing area	0.214 -
Elevator	
Area	0.602 m²
Span	2.396 m
Relative span	80.0 %
Root chord	0.308 m
Tip chord	0.195 m
Standard mean chord (SMC)	0.251 m
Relative chord	35.0 %
Position along the span	0.150 m
Maximum down deflection	30.0 °
Maximum up deflection	-20.0 °
Ratio - Elevator span vs Horizontal tail span	80.0 %
Ratio - Elevator area vs Horizontal tail area	28.0 %

Vertical Tail

General	
Area	1.192 m²
Span	1.152 m
Root chord	1.494 m
Tip chord	0.575 m
Trapezoidal sections	
Number of trapezoidal sections	1 -
TS1 - Airfoil at root	NACA-0009
TS1 - Airfoil at tip	NACA-0009
TS1 - Length	1.152 m
TS1 - Root chord	1.494 m
TS1 - Tip chord	0.575 m
TS1 - Leading edge sweep angle	0.0 °
TS1 - Taper ratio	0.38 -
TS1 - Area	1.192 m²
TS1 - Sweep angle at 25% of the tail chord	44.9 °
TS1 - Sweep angle at 50% of the tail chord	38.6 °
TS1 - Sweep angle at the point of maximum relative thickness	43.8 °
Geometry	
Taper ratio	0.38 -
Aspect ratio (geometric)	1.11 -
Sweep angle at leading edge	50.1 °

Sweep angle at 25% of the tail chord	44.9 °
Sweep angle at 50% of the tail chord	38.6 °
Sweep angle at the point of maximum relative thickness	43.8 °
Twist angle	0.0 °
Volume coefficient	0.056 -
Areas	
Area	1.192 m²
Tail wetted area	2.437 m²
Position	
Longitudinal position on the fuselage	5.829 m
Lateral position on the fuselage	0.000 m
Vertical position on the fuselage	0.244 m
Longitudinal location on the fuselage	79.2 %
Vertical location on the fuselage	0.0 %
Mean Aerodynamic Chord	
Mean aerodynamic chord - Chord	1.103 m
Mean aerodynamic chord - X Relative Position	0.587 m
Mean aerodynamic chord - Y Relative Position	0.000 m
Mean aerodynamic chord - Z Relative Position	0.491 m
Mean aerodynamic chord - X position	6.416 m
Mean aerodynamic chord - Y Position	0.000 m
Mean aerodynamic chord - Z Position	0.734 m
Airfoil characteristics	
Airfoil	NACA-0009
Maximum relative thickness	9.0 %
Location of maximum relative thickness	30.0 %
Leading edge radius	0.9 %
Airfoil - zero lift angle	0.0 °
Lift slope - airfoil	0.054 /°
Aerodynamic Center / Center of Gravity	
Aerodynamic center position	6.693 m
Center of gravity position	6.857 m
Ratios	
Tail area vs Wing area	0.118 -
Rudder	
Area	0.334 m²
Span	0.922 m
Relative span	80.0 %
Root chord	0.459 m
Tip chord	0.201 m
Standard mean chord (SMC)	0.362 m
Relative chord	35.0 %
Position along the span	0.000 m
Maximum right deflection	25.0 °
Maximum left deflection	-25.0 °
Ratio - Rudder span vs Vertical tail span	80.0 %
Ratio - Rudder area vs Vertical tail area	28.0 %



Fuselage

General

Accommodation	2 in Side by Side
Length	6.000 m
Maximum height	1.100 m
Maximum Width	1.000 m
Fuselage aft part length	2.937 m
Mean diameter	1.046 m

Geometry

Fuselage frontal form coefficient	0.781 -
Fuselage lateral form coefficient	1.984 -
Angle of incidence	0.0 °

Areas

Fuselage frontal area	0.860 m²
Fuselage side area	4.157 m²
Fuselage top area	3.654 m²
Wetted area	12.456 m²
Wetted area in propeller wake	12.456 m²

Volumes

Volume (total)	2.393 m³

Center of gravity position

Center of gravity position	2.400 m

Base

Base maximum height	0.090 m
Base maximum width	0.090 m
Base frontal form coefficient	0.781 -
Base frontal area	0.006 m²

Crew Members

Pilot

Position

- Longitudinal	1.400 m
- Lateral	-0.500 m
- Vertical	-0.120 m

Angular Position (from horizontal line)

- Back	50.0 °
- Head	85.0 °
- Thighs	20.0 °
- Legs	30.0 °

Clearance

- Head	155 mm
- Torso	173 mm
- Belly	202 mm
- Arms	87 mm
- Forearms	88 mm
- Hands	85 mm
- Thighs	176 mm
- Legs	55 mm
- Feet	42 mm

Passenger #1

Position

- Longitudinal	2.200 m
- Lateral	0.500 m
- Vertical	0.000 m

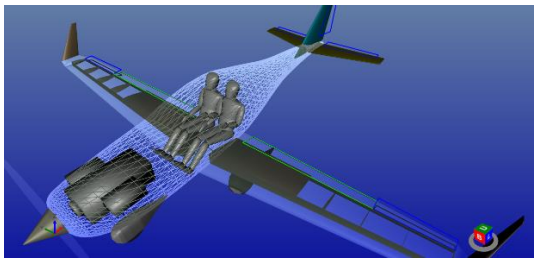
Angular Position (from horizontal line)

- Back	75.0 °
- Head	95.0 °
- Thighs	15.0 °
- Legs	55.0 °

Clearance

- Head	79 mm
- Torso	155 mm
- Belly	206 mm
- Arms	82 mm
- Forearms	94 mm

- Hands	105 mm
- Thighs	168 mm
- Legs	63 mm
- Feet	59 mm



Engine

General	
Engine model	Rotax 912-ULS
Engine dimension - Height	396 mm
Engine dimension - Width	576 mm
Engine dimension - Length	553 mm
Performance	
Maximum engine power	69.000 kW
Maximum engine rpm	5 800 rpm
Specific fuel consumption	0.238 kg/kW.h
Position	
X (longitudinal position)	0.000 m
Y (lateral position)	0.000 m
Z (vertical position)	0.120 m

Propeller

General	
Number of blades	2 -
Propeller diameter	1.910 m
Disc area	2.867 m²
Design constraints	
Maximum Mach number at propeller tip	0.750 -
Geometry	
Blade solidity	90 -
Propeller solidity	180 -
Propeller pitch angle	21.0 °
Position	
X (longitudinal position)	-0.048 m
Z (vertical position)	0.120 m
Spinner	
Spinner - Diameter	0.287 m
Spinner - Length	0.215 m
Propeller shaft	
Propeller shaft - Length	0.000 m
Propeller Hub	
Hub - Diameter	0.120 m
Hub - Length	0.060 m

Landing Gear

Base	1.970 m	(25.2%)
Track	1.549 m	(16.8%)
Tail down ground clearance	0.100 m	
Minimum tail down angle	15.0 °	
LANDING GEAR - MAIN		
Tires		
Tire	Type III-6.00-6 PR 06	
Tire diameter	436 mm	
Tire width	155 mm	
Struts		
Strut length	913 mm	
Position		
X (longitudinal position)	2.572 m	(32.8%)
Y (lateral position)	-0.774 m	(-8.4%)
Z (vertical position)	-0.853 m	
LANDING GEAR - AUXILIARY		
Tires		
Tire	Type III-5.00-5 PR 04	
Tire diameter	354 mm	
Tire width	122 mm	
Struts		
Strut length	585 mm	
Position		
X (longitudinal position)	0.600 m	(7.7%)
Y (lateral position)	0.000 m	(0.0%)
Z (vertical position)	-0.894 m	

Systems

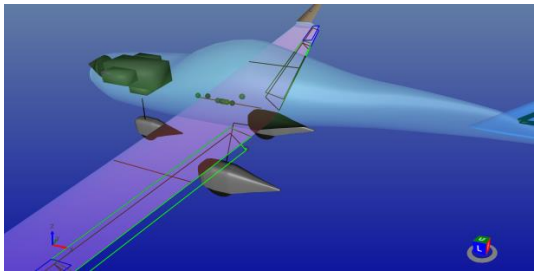
Air-conditioning	-
Anti-ice	-
APU	-
Avionics	-
Brake	x
Control	x
Electric	x
Engine Control	-
Fuel	x
Furnishing	x
Hydraulic	-
Instruments	x
FUEL SYSTEM	
Fuel Type	AVGAS-100LL
Density	0.721 kg/m³
Specific Energy	12 222 W.h/Kg
Volume (Mx Standard)	435.8 l
Fuel Distribution	
- Wing #1 (Required)	51.4 l
- Wing #1 (Mx)	360.8 l
- Fuselage #1 (Required)	0.0 l
- Fuselage #1 (Mx)	75.0 l
CONTROL SYSTEM	
Ailerons	x
Elevator	x
Canardvator	-
Rudder	x
Spoiler	-
Airbrakes	-

Mass

General		
Maximum Takeoff weight	559.0 kg	
Empty weight	331.9 kg	
Useful weight	227.1 kg	
Payload	190.0 kg	
Fuel	37.1 kg	
Structures Group		
Wing	68.2 kg	(20.5%)
Horizontal tail	7.7 kg	(2.3%)
Vertical tail	5.2 kg	(1.6%)
Fuselage	48.0 kg	(14.5%)
Main landing gear	41.8 kg	(12.6%)
Auxiliary landing gear	10.4 kg	(3.1%)
Propulsion Group		
Engine	78.1 kg	(23.5%)
Propeller	3.9 kg	(1.2%)
Equipment Group		
Fuel system	8.9 kg	(2.7%)
Control system	6.2 kg	(1.9%)
Electrical system	26.0 kg	(7.8%)
Instruments	8.4 kg	(2.5%)
Furnishings	19.4 kg	(5.8%)
Moment of Inertia (estimated) for Empty Plane		
Moment of inertia (MOI) about the longitudinal axis.	342.5 kg.m²	
Moment of inertia (MOI) about the lateral axis.	788.1 kg.m²	
Moment of inertia (MOI) about the vertical axis.	1 047.5 kg.m²	
FUDGE FACTOR		
General		
General	1.000 -	
Structure	Light Alloy	
MASS RATIO		
Vs Maximum Takeoff Weight		
Empty weight vs Maximum Takeoff weight	0.594 -	
Glider weight vs Maximum Takeoff weight	0.485 -	
Useful weight vs Maximum Takeoff weight	0.406 -	

Center of gravity

General	
Payload	2.400 m
Fuel	2.177 m
Structures Group	
Wing	2.177 m
Horizontal tail	6.864 m
Vertical tail	6.857 m
Fuselage	2.400 m
Main landing gear	2.572 m
Auxiliary landing gear	0.600 m
Propulsion Group	
Engine #1	0.221 m
Propeller #1	-0.048 m
Propeller shaft #1	0.000 m
Equipment Group	
Fuel system	2.177 m
Control system	2.177 m
Electrical system	2.400 m
Instruments	2.400 m
Furnishings	2.400 m



Static Stability

Aerodynamic Center

X (longitudinal position on MAC)	0.643 m	(56.3%)
X (longitudinal position)	2.363 m	

Center of gravity Limits (on MAC)

Maximum forward position - Limit of maneuverability	0.526 m	(46.1%)
Maximum aft position - Limit of stability	0.643 m	(56.3%)
Maximum displacement	0.117 m	(10.3%)

Center of gravity Limits (on Airplane)

Maximum forward position - Limit of maneuverability	2.246 m	
Maximum aft position - Limit of stability	2.363 m	

Center of gravity position (Flight) - Default position (Mid)

Mass	559 kg	
X (longitudinal position on MAC)	0.584 m	(51.2%)
X (longitudinal position)	2.305 m	
Y (lateral position)	0.000 m	
Z (vertical position)	-0.075 m	

Center of gravity position (Empty) - Computed position

Mass	332 kg	
X (longitudinal position on MAC)	0.221 m	(19.4%)
X (longitudinal position)	1.942 m	
Y (lateral position)	0.000 m	
Z (vertical position)	-0.115 m	

Center of gravity position (Maximum Takeoff) - Computed position

Mass	559 kg	
X (longitudinal position on MAC)	0.393 m	(34.4%)
X (longitudinal position)	2.113 m	
Y (lateral position)	0.000 m	
Z (vertical position)	-0.075 m	

Center of gravity position (Minimum Takeoff) - Computed position

Mass	387 kg	
X (longitudinal position on MAC)	0.286 m	(25.1%)
X (longitudinal position)	2.007 m	
Y (lateral position)	0.000 m	
Z (vertical position)	-0.099 m	

Stability Derivatives

Symbols

aoa : angle of attack (alpha)
aos : angle of sideslip (beta)

STABILITY DERIVATIVES (CRUISE)

Flight Condition

Altitude	2 400 m	
Speed	243 km/h	
Weight	559.0 kg	

Steady State Coefficients

Lift (-) [CL1]	0.247	-
Drag (> 0) [CD1]	0.027	-
Thrust [CTx1]	0.027	-
Pitching moment (-) [Cm1]	0.008	-
Thrust Moment [CmT1]	0.005	-

LONGITUDINAL DERIVATIVES

Derivative of the Lift Coefficient [CL] due to:

Angle of attack (> 0) [CLaoa]	5.471 /rad
Rate of Angle of attack (> 0) [CLraoa]	2.003 /rad
Stabilizer Incidence (> 0) [CLih]	0.766 /rad
Pitch Rate (> 0) [CLq]	6.229 /rad
Elevator Deflection [CLde]	0.325 /rad
Flight speed (-) [CLu]	0.0107 -
Derivative of the Pitching Moment Coefficient [Cm] due to:	
Angle of attack (< 0) [Cmaoa]	-0.281 /rad
Rate of Angle of attack (< 0) [Cmraoa]	-7.814 /rad
Stabilizer Incidence (< 0) [Cmih]	-2.988 /rad
Pitch Rate (< 0) [Cmq]	-24.749 /rad
Elevator Deflection [Cmde]	-1.266 /rad
Flight Speed (-) [Cmu]	0.0648 -
Derivative of the Drag Coefficient [CD] due to:	
Angle of attack (> 0) [CDaoa]	0.120 /rad
Rate of Angle of attack (0) [CDraoa]	0.000 /rad
Stabilizer Incidence (> 0) [CDih]	0.016 /rad
Pitch Rate (0) [CDq]	0.000 /rad
Elevator Deflection [CDde]	0.007 /rad
Flight Speed (-) [CDu]	-0.0059 -
Derivative of the Thrust Coefficient [CT] due to:	
Flight Speed [CTu]	-0.0807 -
Derivative of the Thrust Pitching Moment Coefficient [CmT] due to:	
Flight Speed [CmTu]	0.0138 -
LATERAL AND DIRECTIONAL DERIVATIVES	
Derivative of the Side Force Coefficient [Cy] due to:	
Sideslip Angle (< 0) [Cyaos]	-0.343 /rad
Rate of Angle of Sideslip [Cyraos]	0.008 /rad
Vertical Tail Incidence [Cyiv]	-0.244 /rad
Roll Rate (0) [Cyp]	-0.126 /rad
Yaw Rate (> 0) [Cyr]	0.230 /rad
Rudder Deflection (> 0) [Cydr]	0.107 /rad
Aileron Deflection (0) [Cya]	0.000 /rad
Derivative of the Rolling Moment Coefficient [Cl] due to:	
Sideslip Angle (< 0) [Claos]	-0.075 /rad
Rate of Angle of Sideslip [Clraos]	0.001 /rad
Vertical Tail Incidence [Cliv]	-0.021 /rad
Roll Rate (< 0) [Clp]	-0.486 /rad
Yaw Rate (> 0) [Clr]	0.084 /rad
Rudder Deflection (> 0) [Cldr]	0.011 /rad
Aileron Deflection (> 0) [Cla]	0.114 /rad
Derivative of the Yawing Moment Coefficient [Cn] due to:	
Sideslip Angle (> 0) [Cnaos]	0.068 /rad
Rate of Angle of Sideslip [Cnraos]	0.004 /rad
Vertical Tail Incidence [Cniv]	0.116 /rad
Roll Rate (-) [Cnp]	-0.028 /rad
Yaw Rate (< 0) [Cnr]	-0.112 /rad
Rudder Deflection (< 0) [Cndr]	-0.057 /rad
Aileron Deflection (< 0) [Cna]	-0.004 /rad
Derivative of the Thrust Side Force Coefficient [CyT] due to:	
Sideslip Angle [CyTaos]	-0.027 /rad
Derivative of the Thrust Yawing Moment Coefficient [CnT] due to:	
Sideslip Angle [CnTaos]	-0.007 /rad
HINGE MOMENT COEFFICIENT DERIVATIVES ...	
Hinge Moment Coefficient Derivatives of the Ailerons due to: (/rad)	
Zero-Angle-of-attack of the wing [Ch0]	0.000 /rad
Angle-of-attack of the wing [Chaoa]	-0.291 /rad
Aileron deflection [Chda]	-0.737 /rad
Aileron tab deflection [Chdta]	0.000 /rad
Hinge Moment Coefficient Derivatives of the Elevator due to: (/rad)	
Zero-Angle-of-attack of the Horizontal Tail [Ch0]	0.000 /rad
Angle-of-attack of the Horizontal Tail [Chaoa]	-0.188 /rad
Elevator deflection [Chde]	-0.619 /rad
Elevator tab deflection [Chdte]	0.000 /rad
Hinge Moment Coefficient Derivatives of the Rudder due to: (/rad)	
Zero-Angle-of-attack of the Vertical Tail [Ch0]	0.000 /rad
Angle-of-attack of the Vertical Tail [Chaoa]	0.022 /rad

Rudder deflection [Chdr]	-0.225 /rad
Rudder tab deflection [Chdtr]	0.000 /rad

STABILITY DERIVATIVES (BEST RANGE)

Flight Condition	
Altitude	2 400 m
Speed	136 km/h
Weight	559.0 kg
Steady State Coefficients	
Lift (-) [CL1]	0.788 -
Drag (> 0) [CD1]	0.056 -
Thrust [CTx1]	0.054 -
Pitching moment (-) [Cm1]	0.033 -
Thrust Moment [CmT1]	0.009 -
LONGITUDINAL DERIVATIVES	
Derivative of the Lift Coefficient [CL] due to:	
Angle of attack (> 0) [CLaoa]	5.381 /rad
Rate of Angle of attack (> 0) [CLraoa]	2.027 /rad
Stabilizer Incidence (> 0) [CLih]	0.760 /rad
Pitch Rate (> 0) [CLq]	6.395 /rad
Elevator Deflection [CLde]	0.311 /rad
Flight speed (-) [CLu]	0.0104 -
Derivative of the Pitching Moment Coefficient [Cm] due to:	
Angle of attack (< 0) [Cmaoa]	-0.387 /rad
Rate of Angle of attack (< 0) [Cmraoa]	-7.913 /rad
Stabilizer Incidence (< 0) [Cmih]	-2.966 /rad
Pitch Rate (< 0) [Cmq]	-25.305 /rad
Elevator Deflection [Cmde]	-1.214 /rad
Flight Speed (-) [Cmu]	0.2946 -
Derivative of the Drag Coefficient [CD] due to:	
Angle of attack (> 0) [CDaoa]	0.380 /rad
Rate of Angle of attack (0) [CDraoa]	0.000 /rad
Stabilizer Incidence (> 0) [CDih]	0.016 /rad
Pitch Rate (0) [CDq]	0.000 /rad
Elevator Deflection [CDde]	0.006 /rad
Flight Speed (-) [CDu]	0.0441 -
Derivative of the Thrust Coefficient [CT] due to:	
Flight Speed [CTu]	-0.1607 -
Derivative of the Thrust Pitching Moment Coefficient [CmT] due to:	
Flight Speed [CmTu]	0.0169 -
LATERAL AND DIRECTIONAL DERIVATIVES	
Derivative of the Side Force Coefficient [Cy] due to:	
Sideslip Angle (< 0) [Cyaos]	-0.354 /rad
Rate of Angle of Sideslip [Cyraos]	0.010 /rad
Vertical Tail Incidence [Cyiv]	-0.255 /rad
Roll Rate (0) [Cyp]	-0.098 /rad
Yaw Rate (> 0) [Cyr]	0.243 /rad
Rudder Deflection (> 0) [Cydr]	0.109 /rad
Aileron Deflection (0) [Cya]	0.000 /rad
Derivative of the Rolling Moment Coefficient [Cl] due to:	
Sideslip Angle (< 0) [Claos]	-0.065 /rad
Rate of Angle of Sideslip [Clraos]	0.000 /rad
Vertical Tail Incidence [Cliv]	-0.008 /rad
Roll Rate (< 0) [Clp]	-0.478 /rad
Yaw Rate (> 0) [Clr]	0.191 /rad
Rudder Deflection (> 0) [Cldr]	0.004 /rad
Aileron Deflection (> 0) [Cla]	0.109 /rad
Derivative of the Yawing Moment Coefficient [Cn] due to:	
Sideslip Angle (> 0) [Cnaos]	0.078 /rad
Rate of Angle of Sideslip [Cnraos]	0.005 /rad
Vertical Tail Incidence [Cniv]	0.123 /rad
Roll Rate (-) [Cnp]	-0.096 /rad
Yaw Rate (< 0) [Cnr]	-0.124 /rad
Rudder Deflection (< 0) [Cndr]	-0.059 /rad
Aileron Deflection (< 0) [Cna]	-0.011 /rad
Derivative of the Thrust Side Force Coefficient [CyT] due to:	
Sideslip Angle [CyTaos]	-0.027 /rad

Derivative of the Thrust Yawing Moment Coefficient [CnT] due to:

Sideslip Angle [CnTaos]	-0.007 /rad

HINGE MOMENT COEFFICIENT DERIVATIVES ...

Hinge Moment Coefficient Derivatives of the Ailerons due to: (/rad)

Zero-Angle-of-attack of the wing [Ch0]	0.000 /rad
Angle-of-attack of the wing [Chaoa]	-0.282 /rad
Aileron deflection [Chda]	-0.737 /rad
Aileron tab deflection [Chdta]	0.000 /rad

Hinge Moment Coefficient Derivatives of the Elevator due to: (/rad)

Zero-Angle-of-attack of the Horizontal Tail [Ch0]	0.000 /rad
Angle-of-attack of the Horizontal Tail [Chaoa]	-0.157 /rad
Elevator deflection [Chde]	-0.597 /rad
Elevator tab deflection [Chdte]	0.000 /rad

Hinge Moment Coefficient Derivatives of the Rudder due to: (/rad)

Zero-Angle-of-attack of the Vertical Tail [Ch0]	0.000 /rad
Angle-of-attack of the Vertical Tail [Chaoa]	0.011 /rad
Rudder deflection [Chdr]	-0.221 /rad
Rudder tab deflection [Chdtr]	0.000 /rad

STABILITY DERIVATIVES (BEST ENDURANCE)

Flight Condition

Altitude	2 400 m
Speed	90 km/h
Weight	559.0 kg

Steady State Coefficients

Lift (-) [CL1]	1.743 -
Drag (> 0) [CD1]	0.200 -
Thrust [CTx1]	0.192 -
Pitching moment (-) [Cm1]	0.161 -
Thrust Moment [CmT1]	0.034 -

LONGITUDINAL DERIVATIVES

Derivative of the Lift Coefficient [CL] due to:

Angle of attack (> 0) [CLaoa]	5.458 /rad
Rate of Angle of attack (> 0) [CLraoa]	2.367 /rad
Stabilizer Incidence (> 0) [CLih]	0.778 /rad
Pitch Rate (> 0) [CLq]	7.486 /rad
Elevator Deflection [CLde]	0.311 /rad
Flight speed (-) [CLu]	0.0100 -

Derivative of the Pitching Moment Coefficient [Cm] due to:

Angle of attack (< 0) [Cmaoa]	-0.769 /rad
Rate of Angle of attack (< 0) [Cmraoa]	-9.230 /rad
Stabilizer Incidence (< 0) [Cmih]	-3.032 /rad
Pitch Rate (< 0) [Cmq]	-29.461 /rad
Elevator Deflection [Cmde]	-1.213 /rad
Flight Speed (-) [Cmu]	1.1178 -

Derivative of the Drag Coefficient [CD] due to:

Angle of attack (> 0) [CDaoa]	0.852 /rad
Rate of Angle of attack (0) [CDraoa]	0.000 /rad
Stabilizer Incidence (> 0) [CDih]	0.015 /rad
Pitch Rate (0) [CDq]	0.000 /rad
Elevator Deflection [CDde]	0.006 /rad
Flight Speed (-) [CDu]	0.2521 -

Derivative of the Thrust Coefficient [CT] due to:

Flight Speed [CTu]	-0.5772 -

Derivative of the Thrust Pitching Moment Coefficient [CmT] due to:

Flight Speed [CmTu]	0.0608 -

LATERAL AND DIRECTIONAL DERIVATIVES

Derivative of the Side Force Coefficient [Cy] due to:

Sideslip Angle (< 0) [Cyaos]	-0.416 /rad
Rate of Angle of Sideslip [Cyraos]	-0.006 /rad
Vertical Tail Incidence [Cyiv]	-0.318 /rad
Roll Rate (0) [Cyp]	-0.036 /rad
Yaw Rate (> 0) [Cyr]	0.301 /rad
Rudder Deflection (> 0) [Cydr]	0.133 /rad
Aileron Deflection (0) [Cya]	0.000 /rad

Derivative of the Rolling Moment Coefficient [Cl] due to:

Sideslip Angle (< 0) [Claos]	-0.048 /rad

Rate of Angle of Sideslip [Clraos]	0.000 /rad
Vertical Tail Incidence [Cliv]	0.018 /rad
Roll Rate (< 0) [Clp]	-0.489 /rad
Yaw Rate (> 0) [Clr]	0.382 /rad
Rudder Deflection (> 0) [Cldr]	-0.008 /rad
Aileron Deflection (> 0) [Cla]	0.106 /rad
Derivative of the Yawing Moment Coefficient [Cn] due to:	
Sideslip Angle (> 0) [Cnaos]	0.109 /rad
Rate of Angle of Sideslip [Cnraos]	-0.003 /rad
Vertical Tail Incidence [Cniv]	0.153 /rad
Roll Rate (-) [Cnp]	-0.223 /rad
Yaw Rate (< 0) [Cnr]	-0.171 /rad
Rudder Deflection (< 0) [Cndr]	-0.072 /rad
Aileron Deflection (< 0) [Cna]	-0.023 /rad
Derivative of the Thrust Side Force Coefficient [CyT] due to:	
Sideslip Angle [CyTaos]	-0.027 /rad
Derivative of the Thrust Yawing Moment Coefficient [CnT] due to:	
Sideslip Angle [CnTaos]	-0.007 /rad
HINGE MOMENT COEFFICIENT DERIVATIVES ...	
Hinge Moment Coefficient Derivatives of the Ailerons due to: (/rad)	
Zero-Angle-of-attack of the wing [Ch0]	0.000 /rad
Angle-of-attack of the wing [Chaoa]	-0.277 /rad
Aileron deflection [Chda]	-0.745 /rad
Aileron tab deflection [Chdta]	0.000 /rad
Hinge Moment Coefficient Derivatives of the Elevator due to: (/rad)	
Zero-Angle-of-attack of the Horizontal Tail [Ch0]	0.000 /rad
Angle-of-attack of the Horizontal Tail [Chaoa]	-0.133 /rad
Elevator deflection [Chde]	-0.586 /rad
Elevator tab deflection [Chdte]	0.000 /rad
Hinge Moment Coefficient Derivatives of the Rudder due to: (/rad)	
Zero-Angle-of-attack of the Vertical Tail [Ch0]	0.000 /rad
Angle-of-attack of the Vertical Tail [Chaoa]	0.003 /rad
Rudder deflection [Chdr]	-0.220 /rad
Rudder tab deflection [Chdtr]	0.000 /rad

Market Price

Year of reference	2020
Aircraft	116 813 $
- Glider	94 233 $
- Engine	20 865 $
- Propeller	1 715 $
RATIO	
Market price vs Maximum takeoff weight	224 $/kg
Market price vs Empty weight	352 $/kg
Market price vs Glider weight	430 $/kg
Market price vs Total wetted area	3 023 $/m²

Cruise

General		
Flight speed @75% power	243	km/h
Mach Number	0.20	-
- Ground speed (GS)	243	km/h
- True Air Speed (TAS)	243	km/h
- Indicated Air Speed (IAS)	216	km/h
Airplane CG (%CMA)	51.2	%
Wing loading	56.8	kg/m²
Flight weight	559.0	kg
Flight altitude	2 400	m
Range	800	km
Endurance	3h 25min	
Performance		
Speed @ 75% power	237	km/h
Speed @ 65% power	224	km/h
Speed @ 55% power	209	km/h
Fuel Consumption / CO2 Emission		
Fuel (l/100km)	6.4	-
Fuel (l/100km/100kg)	3.4	-
Fuel (kg/100km)	4.6	-
Fuel (kg/100km/100kg)	2.4	-
CO2 (kg/100km)	13.9	-
CO2 (kg/100km/100kg)	7.3	-
Airplane Attitude		
Angle of Attack	0.0	°
Flight Path Angle	0.0	°
Angle of Pitch	0.0	°
High Lift Devices		
Wing trailing edge deflection angle	0.0	°
Power Plant		
Power, maximum	69.000	kW
Power, available	51.881	kW
Power, shaft	51.881	kW
Power, required	40.342	kW
Overall powerchain efficiency (w/o propeller)	75.9	%
Engine relative power	75.2	%
Specific fuel consumption	0.238	kg/kW.h
Propeller		
Propeller - rpm	2 387	rpm
Propeller - Pitch angle	21.0	°
Propeller - Mach number at propeller tip	0.750	-
Propeller - Efficiency (free)	85.5	%
Propeller - Efficiency (installed)	77.8	%
Propeller - Speed coefficient (J)	0.89	-
Propeller - Power coefficient (Cp)	0.033	-
Propeller - Torque coefficient (Ct)	0.032	-
Propeller - Thrust (gross)	657	N
Propeller - Installation efficiency	91.0	%
Propeller - Thrust (net)	597	N
Propeller - Thrust-to-Power ratio	14.809	N/Kw
Reynolds number		
Reynolds Number - Wing	4 164 492	-
Reynolds Number - Horizontal tail	2 729 369	-
Reynolds Number - Vertical tail	3 930 292	-
Reynolds Number - Fuselage	22 796 708	-
Reynolds Number - Airplane	9 991 833	-
Lift		
Lift - Total	5 481	N
Lift - Wing	5 627	N (102.7%)
Lift - Horizontal tail	-146	N (-2.7%)
Lift coefficient - Total	0.25	-
Lift coefficient - Wing	0.25	-
Lift coefficient - Horizontal tail	-0.04	-
Elevator deflection angle	0.0	°
Drag		

Drag - Total	597 N	
Drag - Zero lift drag	537 N	
Drag - Induced drag	60 N	
Drag - Trim drag	0 N	
Drag coefficient - Total	0.02686 -	
Drag coefficient - cd0 (subsonic)	0.02417 -	(90.0%)
Drag coefficient - cdL (subsonic)	0.00269 -	(10.0%)
Drag coefficient - cdT (subsonic)	0.00000 -	(0.0%)
Oswald efficiency factor (wing alone)	0.916 -	
Oswald efficiency factor (airplane)	0.849 -	
Glide ratio	9.13 -	
Friction coefficients		
Friction coefficient (Cf)	0.00629 -	
Cf (laminar flow - Flat plate)	0.00042 -	
Cf (turbulent flow - Flat plate)	0.00300 -	
Cf (turbulent flow - Streamlined body)	0.00381 -	
Laminarity	0.0 %	
Drag Coefficient Breakdown		
Wing	0.00661 -	(27.4%)
Horizontal tail	0.00119 -	(4.9%)
Vertical tail	0.00089 -	(3.7%)
Fuselage	0.00408 -	(16.9%)
Fuselage base	0.00001 -	(0.0%)
Main Landing gear	0.00483 -	(20.0%)
Auxiliary landing gear	0.00154 -	(6.4%)
Engine	0.00140 -	(5.8%)
Interference	0.00362 -	(15.0%)
Total	0.02417 -	(100.0%)
Drag Breakdown		
Wing	147 N	
Horizontal tail	26 N	
Vertical tail	20 N	
Fuselage	91 N	
Main Landing gear	107 N	
Auxiliary landing gear	34 N	
Engine	31 N	
Interference	81 N	
Total	537 N	

Best Range

General		
Flight speed	136 km/h	
Mach Number	0.11 -	
- Ground speed (GS)	136 km/h	
- True Air Speed (TAS)	136 km/h	
- Indicated Air Speed (IAS)	120 km/h	
Airplane CG (%CMA)	51.2 %	
Wing loading	53.2 kg/m²	
Wing loading (optimal)	53.2 kg/m²	
Flight speed (optimal)	136 km/h	
Flight weight	559.0 kg	
Flight altitude	2 400 m	
Range	1 187 km	
Endurance	8h 47min	
Endurance (Reserve)	0h 0min	
Fuel Consumption / CO2 Emission		
Fuel (l/100km)	4.3 -	
Fuel (l/100km/100kg)	2.3 -	
Fuel (kg/100km)	3.1 -	
Fuel (kg/100km/100kg)	1.6 -	
CO2 (kg/100km)	9.4 -	
CO2 (kg/100km/100kg)	4.9 -	
Airplane Attitude		
Angle of Attack	5.9 °	
Flight Path Angle	0.0 °	
Angle of Pitch	5.9 °	

High Lift Devices			
Wing trailing edge deflection angle	0.0	°	
Power Plant			
Power, maximum	69.000	kW	
Power, available	51.881	kW	
Power, shaft	16.689	kW	
Power, required	14.013	kW	
Overall powerchain efficiency (w/o propeller)	75.9	%	
Engine relative power	24.2	%	
Specific fuel consumption	0.238	kg/kW.h	
Propeller			
Propeller - rpm	1 488	rpm	
Propeller - Pitch angle	21.0	°	
Propeller - Mach number at propeller tip	0.464	-	
Propeller - Efficiency (free)	84.0	%	
Propeller - Efficiency (installed)	76.0	%	
Propeller - Speed coefficient (J)	0.80	-	
Propeller - Power coefficient (Cp)	0.044	-	
Propeller - Torque coefficient (Ct)	0.047	-	
Propeller - Thrust (gross)	411	N	
Propeller - Installation efficiency	90.5	%	
Propeller - Thrust (net)	372	N	
Propeller - Thrust-to-Power ratio	26.540	N/Kw	
Reynolds number			
Reynolds Number - Wing	2 321 491	-	
Reynolds Number - Horizontal tail	1 521 484	-	
Reynolds Number - Vertical tail	2 190 937	-	
Reynolds Number - Fuselage	12 707 998	-	
Reynolds Number - Airplane	5 569 936	-	
Lift			
Lift	5 481	N	
Lift - Wing	5 244	N	(95.7%)
Lift - Horizontal tail	237	N	(4.3%)
Lift coefficient	0.79	-	
Lift coefficient - Wing	0.76	-	
Lift coefficient - Horizontal tail	0.20	-	
Elevator deflection angle	-1.0	°	
Drag			
Drag - Total	388	N	
Drag - Zero lift drag	180	N	
Drag - Induced drag	204	N	
Drag - Trim drag	4	N	
Drag coefficient - Total	0.05599	-	
Drag coefficient - cd0	0.02591	-	(46.3%)
Drag coefficient - cdL	0.02944	-	(52.6%)
Drag coefficient - cdT	0.00064	-	(1.1%)
Oswald efficiency factor (wing alone)	0.912	-	
Oswald efficiency factor (airplane)	0.846	-	
Glide ratio	14.11	-	
Friction coefficients			
Friction coefficient (Cf)	0.00675	-	
Cf (laminar flow - Flat plate)	0.00056	-	
Cf (turbulent flow - Flat plate)	0.00330	-	
Cf (turbulent flow - Streamlined body)	0.00421	-	
Laminarity	0.0	%	
Drag Coefficient Breakdown			
Wing	0.00803	-	(31.0%)
Horizontal tail	0.00134	-	(5.2%)
Vertical tail	0.00093	-	(3.6%)
Fuselage	0.00455	-	(17.6%)
Fuselage base	0.00001	-	(0.0%)
Main Landing gear	0.00483	-	(18.6%)
Auxiliary landing gear	0.00154	-	(5.9%)
Engine	0.00080	-	(3.1%)
Interference	0.00389	-	(15.0%)
Total	0.02591	-	(100.0%)
Drag Breakdown			

Wing	56 N
Horizontal tail	9 N
Vertical tail	6 N
Fuselage	32 N
Main Landing gear	33 N
Auxiliary landing gear	11 N
Engine	6 N
Interference	27 N
Total	180 N

Best Endurance

General	
Flight speed	90 km/h
Mach Number	0.08 -
- Ground speed (GS)	90 km/h
- True Air Speed (TAS)	90 km/h
- Indicated Air Speed (IAS)	80 km/h
Airplane CG (%CMA)	51.2 %
Wing loading	52.5 kg/m²
Wing loading (Optimal)	52.5 kg/m²
Flight weight	559.0 kg
Flight altitude	2 400 m
Range	663 km
Endurance	7h 10min
Fuel Consumption / CO2 Emission	
Fuel (l/100km)	7.8 -
Fuel (l/100km/100kg)	4.1 -
Fuel (kg/100km)	5.6 -
Fuel (kg/100km/100kg)	2.9 -
CO2 (kg/100km)	16.8 -
CO2 (kg/100km/100kg)	8.8 -
Airplane Attitude	
Angle of Attack	16.2 °
Flight Path Angle	0.0 °
Angle of Pitch	16.2 °
High Lift Devices	
Wing trailing edge deflection angle	0.5 °
Power Plant	
Power, maximum	69.000 kW
Power, available	51.881 kW
Power, shaft	21.410 kW
Power, required	15.284 kW
Overall powerchain efficiency (w/o propeller)	75.9 %
Engine relative power	31.0 %
Specific fuel consumption	0.238 kg/kW.h
Propeller	
Propeller - rpm	1 450 rpm
Propeller - Pitch angle	21.0 °
Propeller - Mach number at propeller tip	0.445 -
Propeller - Efficiency (free)	71.4 %
Propeller - Efficiency (installed)	64.5 %
Propeller - Speed coefficient (J)	0.54 -
Propeller - Power coefficient (Cp)	0.062 -
Propeller - Torque coefficient (Ct)	0.081 -
Propeller - Thrust (gross)	676 N
Propeller - Installation efficiency	90.3 %
Propeller - Thrust (net)	611 N
Propeller - Thrust-to-Power ratio	39.950 N/Kw
Reynolds number	
Reynolds Number - Wing	1 542 247 -
Reynolds Number - Horizontal tail	1 010 774 -
Reynolds Number - Vertical tail	1 455 515 -
Reynolds Number - Fuselage	8 442 363 -
Reynolds Number - Airplane	3 700 301 -
Lift	
Lift	5 481 N

Lift - Wing	5 208 N	(95.0%)
Lift - Horizontal tail	274 N	(5.0%)
Lift coefficient	1.80 -	
Lift coefficient - Wing	1.71 -	
Lift coefficient - Horizontal tail	0.52 -	
Elevator deflection angle	-7.0 °	
Drag		
Drag - Total	614 N	
Drag - Zero lift drag	132 N	
Drag - Induced drag	469 N	
Drag - Trim drag	13 N	
Drag coefficient - Total	0.20026 -	
Drag coefficient - cd0	0.04319 -	(21.6%)
Drag coefficient - cdL	0.15295 -	(76.4%)
Drag coefficient - cdT	0.00412 -	(2.1%)
Oswald efficiency factor (wing alone)	0.911 -	
Oswald efficiency factor (airplane)	0.845 -	
Glide ratio	8.93 -	
Friction coefficients		
Friction coefficient (Cf)	0.01125 -	
Cf (laminar flow - Flat plate)	0.00069 -	
Cf (turbulent flow - Flat plate)	0.00354 -	
Cf (turbulent flow - Streamlined body)	0.00452 -	
Laminarity	0.0 %	
Drag Coefficient Breakdown		
Wing	0.01620 -	(37.5%)
Flaps	0.00426 -	(9.9%)
Horizontal tail	0.00226 -	(5.2%)
Vertical tail	0.00129 -	(3.0%)
Fuselage	0.00488 -	(11.3%)
Fuselage base	0.00001 -	(0.0%)
Main Landing gear	0.00483 -	(11.2%)
Auxiliary landing gear	0.00154 -	(3.6%)
Engine	0.00146 -	(3.4%)
Interference	0.00648 -	(15.0%)
Total	0.04319 -	(100.0%)
Drag Breakdown		
Wing	50 N	
Flaps	0 N	
Horizontal tail	7 N	
Vertical tail	4 N	
Fuselage	15 N	
Main Landing gear	15 N	
Auxiliary landing gear	5 N	
Engine	4 N	
Interference	20 N	
Total	132 N	

Maximum Rate of Climb

General		
Rate of climb	4.122 m/s	
Flight speed	149 km/h	
- True Air Speed (TAS)	149 km/h	
Airplane CG (%CMA)	51.2 %	
Wing loading	55.5 kg/m²	
Flight weight	559.0 kg	
Flight altitude	0 m	
Airplane Attitude		
Angle of Attack	2.9 °	
Flight Path Angle	5.7 °	
Angle of Pitch	8.6 °	
High Lift Devices		
Wing trailing edge deflection angle	0.0 °	
Power Plant		
Power, maximum	69.000 kW	
Power, available	69.000 kW	

Propeller		
Propeller - rpm	1 915 rpm	
Propeller - Pitch angle	21.0 °	
Propeller - Mach number at propeller tip	0.576 -	
Propeller - Efficiency (free)	79.5 %	
Propeller - Efficiency (installed)	71.2 %	
Propeller - Speed coefficient (J)	0.68 -	
Propeller - Power coefficient (Cp)	0.055 -	
Propeller - Torque coefficient (Ct)	0.064 -	
Propeller - Thrust (gross)	1 063 N	
Propeller - Installation efficiency	89.6 %	
Propeller - Thrust (net)	952 N	
Lift		
Lift	5 454 N	
Lift - Wing	5 288 N	
Lift - Horizontal tail	167 N	
Lift coefficient	0.52 -	
Lift coefficient - Wing	0.50 -	
Lift coefficient - Horizontal tail	0.07 -	
Elevator deflection angle	-1.0 °	
Drag		
Drag - Total	406 N	
Drag - Zero lift drag	273 N	
Drag - Induced drag	130 N	
Drag - Trim drag	3 N	
Drag coefficient - Total	0.03845 -	
Drag coefficient - cd0	0.02582 -	(67.2%)
Drag coefficient - cdL	0.01233 -	(32.1%)
Drag coefficient - cdT	0.00031 -	(0.8%)
Oswald efficiency factor (wing alone)	0.912 -	
Oswald efficiency factor (airplane)	0.847 -	
Glide ratio	13.43 -	
Friction coefficients		
Friction coefficient (Cf)	0.00672 -	
Drag Coefficient Breakdown		
Wing	0.00688 -	
Horizontal tail	0.00132 -	
Vertical tail	0.00104 -	
Fuselage	0.00433 -	
Fuselage base	0.00001 -	
Main Landing gear	0.00483 -	
Auxiliary landing gear	0.00154 -	
Engine	0.00200 -	
Interference	0.00387 -	
Total	0.02582 -	
Drag Breakdown		
Wing	73 N	
Horizontal tail	14 N	
Vertical tail	11 N	
Fuselage	46 N	
Main Landing gear	51 N	
Auxiliary landing gear	16 N	
Engine	21 N	
Interference	41 N	
Total	273 N	
MAXIMUM RATE OF CLIMB @ 431.9KG		
General		
Rate of climb	5.910 m/s	
Airplane CG (%CMA)	51.2 %	
Wing loading	42.9 kg/m²	
Flight weight	431.9 kg	
Flight altitude	0 m	

Takeoff

General	
Airplane CG (%CMA)	51.2 %
Takeoff run	154 m
Takeoff distance to 15m	336 m
Takeoff weight	559.0 kg
Flight altitude	0 m
High Lift Devices	
Wing trailing edge deflection angle	15.0 °
Stall speed	76 km/h
Takeoff speed	86 km/h
Distance to clear the obstacle (15m)	336 m
- Ground roll	154 m
- Transition	33 m
- Rotation	42 m
- Climb	107 m
Time to clear the obstacle (15m)	19 s
- Ground roll	12 s
- Transition	2 s
- Rotation	2 s
- Climb	4 s

Landing

General	
Airplane CG (%CMA)	51.2 %
Landing weight	559.0 kg
Flight altitude	0 m
High Lift Devices	
Wing trailing edge deflection angle	45.0 °
Landing speeds	
Speed - Approach	92 km/h
Speed - Flare out	87 km/h
Speed - Touch down	81 km/h
Landing, brakes OFF	
Distance from the obstacle (15m)	543 m
- Approach	153 m
- Flare out	27 m
- Touch down	45 m
- Ground roll	318 m
Time from the obstacle (15m)	37 s
- Approach	6 s
- Flare out	1 s
- Touch down	2 s
- Ground roll	28 s
Mean deceleration	0.800 m/s²
Landing, brakes ON	
Distance from the obstacle (15m)	338 m
- Approach	153 m
- Flare out	27 m
- Touch down	45 m
- Ground roll	113 m
Time from the obstacle (15m)	19 s
- Approach	6 s
- Flare out	1 s
- Touch down	2 s
- Ground roll	10 s
Mean deceleration	2.259 m/s²

Stall (full flaps)

General		
Stall speed	72	km/h
Airplane CG (%CMA)	51.2	%
Flight weight	557.6	kg
Flight Altitude	0	m
Lift coefficient	2.35	-
Lift		
Lift	5 468	N
Lift - Wing	5 162	N
Lift - Horizontal tail	306	N
Lift coefficient	2.35	-
Lift coefficient - Wing	2.22	-
Lift coefficient - Horizontal tail	0.76	-
Maximum lift coefficient (clean) - Wing	1.58	-
Maximum lift coefficient (clean) - Horizontal Tail	1.04	-
Wing flaps deflection angle	37.0	°
Elevator deflection angle	0.5	°
Reynolds number		
Reynolds Number - Wing	1 497 707	-
Reynolds Number - Horizontal tail	981 583	-
Reynolds Number - Vertical tail	1 413 480	-
Reynolds Number - Fuselage	8 198 550	-
Reynolds Number - Airplane	3 593 438	-

Stall (no flaps)

General		
Stall speed	80	km/h
Airplane CG (%CMA)	51.2	%
Flight weight	557.6	kg
Flight Altitude	0	m
Lift coefficient	1.68	-
Lift		
Lift - Wing	5 162	N
Lift coefficient	1.68	-
Lift coefficient - Wing	1.58	-
Lift coefficient - Horizontal tail	0.73	-
Maximum lift coefficient (clean) - Wing	1.58	-
Maximum lift coefficient (clean) - Horizontal Tail	1.04	-
Wing flaps deflection angle	0.0	°
Elevator deflection angle	0.0	°
Reynolds number		
Reynolds Number - Wing	1 674 486	-
Reynolds Number - Horizontal tail	1 097 443	-
Reynolds Number - Vertical tail	1 580 317	-
Reynolds Number - Fuselage	9 166 249	-
Reynolds Number - Airplane	4 017 582	-