

**Method 1: Weight & Balance Calculation**

<b>Aircraft Serial Number:</b>		VSW128F0106	
Scale data			
	Scale model/type:	Scale serial number:	Scale calibration valid till:
#1	WWSC2G4-1.5T	0723030057	15.12.2024
#2	WWSC2G4-1.5T	0723030062	15.12.2024
#3	WWSC2G4-1.5T	0723030064	15.12.2024

Weight & Balance (aircraft leveled)			
		Weighing procedure (aircraft leveled - tail cone angle 0°):	
		1) Check: doors closed, flaps 0°, brake fluid, coolant level, tire pressure. 2) Turn on the scales and tare. 3) Position the aircraft on the scales and level it - tail tool at 0°. (aircraft must be leveled before any measurements are taken) 4) Measure: - distance between Nose wheel and Leading edge = a - distance between Left wheel and Leading edge = b <sub>L</sub> - distance between Right wheel and Leading edge = b <sub>R</sub>	
a =	1022 mm	Leading edge - Nose wheel	
b <sub>L</sub> =	485 mm	Leading edge - Left wheel	
b <sub>R</sub> =	481 mm	Leading edge - Right wheel	
b =	483 mm	b = (b <sub>L</sub> + b <sub>R</sub> ) / 2	
		5) Compute average main undercarriage distance b.	
		6) Remove the tail tool and read the scales.	
NOTE: for more details about leveling and weighing procedures see AMM-128-00-60-001 - latest revision.			

G <sub>L</sub> =	183.8 kg	Left wheel	<b>Total Aircraft Empty Weight [kg]</b>  (G <sub>1</sub> + G <sub>2</sub> ) = G <sub>EAW</sub> = 421.6 kg
G <sub>R</sub> =	177.3 kg	Right wheel	
G <sub>1</sub> =	361.1 kg	Main gear (G <sub>L</sub> + G <sub>R</sub> )	Includes the weight of the airframe, propulsion system, required equipment, optional or special equipment if listed, hydraulic fluid, coolant.
G <sub>2</sub> =	60.5 kg	Front wheel	

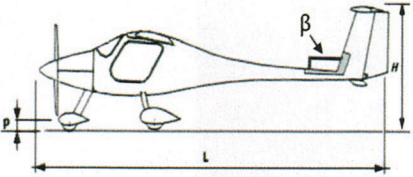
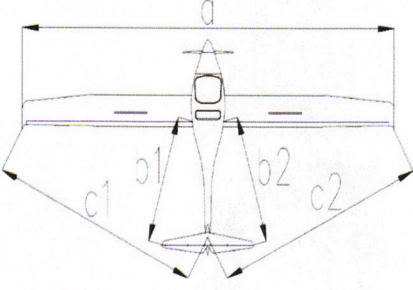
Summary (Weights)			
Max Takeoff Weight (MTOW)	=	600 kg	
Aircraft Empty Weight (G <sub>EAW</sub> )	=	421.6 kg	(To conform with CS-LSA the max G <sub>EAW</sub> must be 427.6 kg)
Max payload (G <sub>PL</sub> )	=	178.4 kg	G <sub>PL</sub> = MTOW - G <sub>EAW</sub>

Aircraft Configuration (see page 8 for details)			
SAEL doc number:	SALE-206200106	SAEL doc date:	10. May 2024

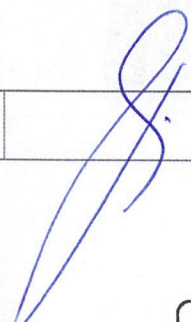
Balance			
$CG_{mm} = \frac{G_1 * b - G_2 * a}{G_{EAW}} = \frac{(.361.1) * (.483) - (.60.5) * (.1022)}{(.421.6)} = 267 \text{ mm}$			
$CG_{\%MAC} = \frac{CG_{mm} - R_{mm}}{MAC_{mm}} = \frac{267 - 43}{898} * 100 = 24.9 \% MAC$			

Where: MAC = Mean Aerodynamic Chord = 898 mm R = Wing root leading edge to MAC leading edge distance = 43 mm



Aircraft Measurements (aircraft with three wheels on the ground)			
	Measured	Design	
Ground attitude angle $\beta$	1.7 °	1.2 ± 0.5 °	NOTE: $\beta$ angle is positive with nose up ground attitude. 
Length of aircraft L	646 cm	646 - 648 cm	
Height of aircraft H	210 cm	206 ± 5 cm	
Propeller clearance P	23.7 cm	20.0 - 26.0 cm	
Main landing gear track	158 cm	156 - 162 cm	
Wheel base (MLG - nose gear)	150.4 cm	150 ± 1 cm	
Wingtip to ground clearance R	152.5 cm	150 ± 5 cm	
Wingtip to ground clearance L	152.5 cm	150 ± 5 cm	
Measuring procedure (NOTE: all three wheels on the ground): 1) Measure: - ground attitude angle $\beta$ , and all the dimensions listed in the table above, - distance between L wingtip and R wingtip = a - distance between stab. tip and L wing root trailing edge = $b_1$ - distance between stab. tip and R wing root trailing edge = $b_2$ 2) Compute the difference $b_1 - b_2$ 3) Measure: - distance between L wingtip and stabilizer ref. point $c_1$ - distance between R wingtip and stabilizer ref. point $c_2$ 4) Compute the difference $c_1 - c_2$			
	Measured	Design	
Wingspan a	1071 cm	1070 ± 2 cm	
Difference ( $b_1 - b_2$ )	0.6 cm	Max 3 cm	
Difference ( $c_1 - c_2$ )	1.0 cm	Max 3 cm	

Control Surface Deflections [ ° ] (+ is down, - is up, from chord ref. line)						
	Measured	Design	Measured	Design	Measured	Design
	NEUTRAL		UP		DOWN	
Flaperon left (flaps 0)	0	0°	-12.5	-13° ± 1°	9.5	+10° ± 1°
Flaperon right (flaps 0)	0	0°	-12.4	-13° ± 1°	10.3	+10° ± 1°
Flaperon left (flaps +1)	10.2	+9.5° ± 1°	-2.7	-3° ± 1°	20.3	+21° ± 1.5°
Flaperon right (flaps +1)	10.0	+9.5° ± 1°	-2.5	-3° ± 1°	21.0	+21° ± 1.5°
Flaperon left (flaps +2)	20.1	+20° ± 1.5°	6.4	+6.2° ± 1°	31.2	+31° ± 2°
Flaperon right (flaps +2)	19.7	+20° ± 1.5°	6.7	+6.2° ± 1°	31.8	+31° ± 2°
Elevator	0	0°	-25	-25° ± 2°	15	+15° ± 1.5°
	NEUTRAL		LEFT		RIGHT	
Rudder	0	0°	25	25° ± 1°	25	25° ± 1°

Presiding manager:	Dušan Likar	Date:	10. May 2024	Signature:	
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