# Civil Aviation Authority
# United Kingdom

# TYPE-CERTIFICATE DATA SHEET

**UK.TC.A.00036**

for

Virus SW 121

Type Certificate Holder

**Pipistrel Vertical Solutions d.o.o.**

Vipavska cesta 2,

5270 Ajdovščina

Slovenia

| | |
|---|---|
| Model(s): | Virus SW 121<br>Virus SW 128 (Commercial Designation: Velis Electro)<br>Virus SW 121C (Commercial Designation: Velis Club)<br>Virus SW 121A (Commercial Designation: Explorer) |
| Issue: | 1 |
| Date of issue: | 08 June 2022 |

**TABLE OF CONTENTS**

## Section 1 Virus SW 121

### I. General

**1. Type / Model / Variant**

**1.1 Type**

Virus SW 121

**1.2 Model**

Virus SW 121

**1.3 Variant**

–

**2. Airworthiness Category**

Normal Category

**3. Type Certificate Holder**

Pipistrel Vertical Solutions d.o.o.
Vipavska cesta 2,
5270 Ajdovščina
Slovenia

**4. Manufacturer**

Pipistrel d.o.o.
Goriška cesta 50a
5270 Ajdovščina
Slovenia

**5. State of Design Authority**

European Union Aviation Safety Agency (EASA)

**6. State of Design Type Certification Application Date**

16 July 2010

**7. State of Design Authority Type Certification Date**

18 April 2016

**8. State of Design Authority Type Certificate Number**

EASA.A.573

### II. Certification Basis

**1. Reference date for determining the applicable requirements**

29 July 2013

**2. Airworthiness Requirements**

- EASA CS-LSA Amendment 1 dated 29 July 2013

**3. Special Conditions**

- EASA CRI F-101 – Lithium battery installations (SC-ELA.2015-01)
- EASA CRI N-01 – Noise requirements
- EASA CRI O-18 – Operation in night-VFR with LSA aeroplane (SC-OLSA-div-01) (see Section 1.VI Note 3)

**4. Exemptions**

None.

**5. Deviations**

None.

**6. Equivalent Safety Findings**

None.

**7. Requirements elected to comply**

None.

**8. Environmental Standards**

**8.1 Noise**

See Type Certificate Data Sheet for Noise (TCDSN) UK.TC.A.00036.

**III. Technical Characteristic and Operating Limitations**

**1. Type Design Definition (TDD)**

Master document list No. MDL-121-01-00-001 revision A00 or later approved revision.

**2. Description**

Single engine, two-seat, high wing cantilever composite construction aircraft with T-tail empennage configuration and fixed tricycle landing gear.

**3. Equipment**

Minimum equipment see Pilot Operating Handbook (POH) POH121-00-40-001, Section 6.4.

**4. Dimensions**

| | |
|---|---|
| Length | 6.40 m (20.99 ft) |
| Span | 10.70 m (35.10 ft) |
| Height | 1.69 m (6.23 ft) |
| Wing Area | 9.51 $m^2$ (102.4 $ft^2$) |

**5. Engine**

**5.1 Model**

Rotax 912 S3-01

**5.2 Type Certificate**

CAA Type Certificate No. EASA.E.121

**5.3 Limitations**

| | |
|---|---|
| Maximum Power Rating: | 73.5 kW / 5,800 rpm max 5 min |
| Maximum Continuous Power: | 69 kW / 5,500 rpm |

**5.4 Muffler Model**

Akrapovic iS, drawing number 121-78-00-000.

## 6. Load Factors

+4 G / -2 G

## 7. Propellers

### 7.1 Model

MTV-33-1-A/170-200

#### 7.1.1 Type Certificate

CAA Type Certificate No. EASA.P.048

#### 7.1.2 Number of blades

2

#### 7.1.3 Diameter

1,700 mm

#### 7.1.4 Sense of Rotation

Clockwise

## 8. Fluids

### 8.1 Fuel

Refer to Pilot Operating Handbook POH-121-00-40-001, Section 2.8.

### 8.2 Oil

Refer to Pilot Operating Handbook POH-121-00-40-001, Section 2.9.

### 8.3 Coolant

Refer to Pilot Operating Handbook POH-121-00-40-001, Section 2.9.

## 9. Fluid capacities

### 9.1 Fuel

Total: 100 litres

Usable: 99 litres

### 9.2 Oil

Maximum oil capacity: 3.5 litres

Minimum oil required: marked on dipstick

### 9.3 Coolant System

2.3 litres (approximately)

## 10. Air Speeds

| | |
|---|---|
| Never exceed speed $V_{NE}$ | 163 KTAS (see Section 1.V Note 1) |
| Maximum structural cruising Speed $V_{NO}$ | 120 KIAS (see Section 1.V Note 2) |
| Design manoeuvring speed $V_A$ | 100 KIAS |
| Maximum airbrakes extended speed $V_{AE}$ | 100 KIAS |
| Maximum flaps extended speed $V_{FE}$ | 81 KIAS |

## 11. Maximum Operating Altitude

18,000 ft Mean Sea Level (MSL)

## 12. Approved Operations Capability

Day VFR; Night VFR (see Section 1.V Note 3).

Flight into known or forecast icing conditions is prohibited.

**13. Maximum Masses**

| | |
|---|---|
| Max Take-Off Mass: | 600 kg (1323 lb) |
| Max Landing Mass: | 600 kg (1323 lb) |
| Maximum Zero Fuel Mass: | 555 kg (1221 lb) |

**14. Centre of Gravity Range**

| | |
|---|---|
| Forward Limit: | 267 mm (25 % MAC) behind datum |
| Aft Limit: | 356 mm (35 % MAC) behind datum |

Mean Aerodynamic Chord (MAC) is 898 mm.

**15. Datum**

The wing's leading edge at the root of the wing.

**16. Control surface deflections**

Refer to AMM-121-01-00-001_A00 or later approved issue.

**17. Levelling Means**

Refer to section 6.2 of the POH-121-00-40-001_A02 or later approved issue.

**18. Minimum Flight Crew**

One (1) pilot

**19. Maximum Passenger Seating Capacity**

One (1) passenger

**20. Baggage/Cargo Compartments**

| | |
|---|---|
| Max Allowable Loads: | 25 kg (55 lb) |
| Location: | Port side, aft of the door |

**21. Wheels and Tyres**

Nose Wheel Tyre Size 4.00" x 4".

Main Wheel Tyre Size 4.00" x 6".

For approved wheel and tyre types refer to the IPC-121-00-50-001_A00 or later approved issue.

**22. Lifetime Limitations**

Refer to AMM-121-01-00-001_A00 or later approved issue.

**IV. Operating and Service Instructions**

**1. Aircraft Flight Manual (AFM)**

POH-121-00-40-001_A02 or later approved issue.

**2. Aircraft Maintenance Manual (AMM)**

AMM-121-01-00-001_A00 or later approved issue.

**3. Structural Repair Manual**

Refer to AMM-121-01-00-001_A00 or later approved issue.

**4. Weight and Balance Manual**

Refer to POH-121-00-40-001_A02 or later approved issue.

**5. Illustrated Parts Catalogue**

IPC-121-00-50-001_A00 or later approved issue.

**V. Notes**

1. $V_{NE}$ is reduced from 163 KIAS at sea level by 2.2 KIAS for every 1000 ft.
2. $V_{NO}$ decreases by 0.5 KIAS for every 1000 ft above FL100.
3. When Night VFR kit PN 1159663 or 1159679 or 1159680 is installed (Pipistrel Major Change CHN000002 Night VFR; EASA approval No. 10044660).

## Section 2 Virus SW 128 (Commercial Designation: Velis Electro)

### I. General

**1. Type / Model / Variant**

**1.1 Type**

Virus SW 121

**1.2 Model**

Virus SW 128 (Commercial Designation: Velis Electro)

**1.3 Variant**

–

**2. Airworthiness Category**

Normal Category

**3. Type Certificate Holder**

Pipistrel Vertical Solutions d.o.o.
Vipavska cesta 2,
5270 Ajdovščina
Slovenia

**4. Manufacturer**

Pipistrel d.o.o.
Goriška cesta 50a
5270 Ajdovščina
Slovenia

**5. State of Design Authority**

European Union Aviation Safety Agency (EASA)

**6. State of Design Authority Type Certification Application Date**

24 October 2017

**7. State of Design Authority Type Certification Date**

10 June 2020

**8. State of Design Authority Type Certificate Number**

EASA.A.573

### II. Certification Basis

**1. Reference date for determining the applicable requirements**

24 October 2017

**2. Airworthiness Requirements**

- EASA CS-LSA Amendment 1 dated 29 July 2013
- EASA CS-ACNS Issue 2 dated 26 April 2019 (Subparts A, B, D)

See Section 2.V Note 1.

### 3. Special Conditions

- EASA CRI F-101 – Lithium battery installations (SC-ELA.2015-01)
- EASA CRI E-54 – Electric Propulsion Powerplant for CS LSA aeroplanes (SC-LSA-15-01)
- EASA CRI F-56 – LSA Propulsion Lithium Batteries (SC-LSA-F2480-01)

### 4. Exemptions

None.

### 5. Deviations

None.

### 6. Equivalent Safety Findings

None.

### 7. Requirements elected to comply

None.

### 8. Environmental Standards

### 8.1 Noise

See Type Certificate Data Sheet for Noise (TCDSN) UK.TC.A.00036.

## III. Technical Characteristic and Operating Limitations

### 1. Type Design Definition (TDD)

Master Drawing List No. DWG-128-02-40-001 latest approved revision.

### 2. Description

Electric engine, two-seat, high wing cantilever composite construction aircraft with T-tail empennage configuration, fixed tricycle landing gear and three-bladed composite fixed pitch propeller.

### 3. Equipment

For equipment list refer to POH-128-00-40-001 Pilot's Operating Handbook, Section 2.

### 4. Dimensions

| | |
|---|---|
| Length | 6.47 m (21.22 ft) |
| Span | 10.71 m (35.13 ft) |
| Height | 1.90 m (6.82 ft) |
| Wing Area | 9.51 $m^2$ (102.4 $ft^2$) |

### 5. Load Factors

+4 G / -2 G

### 6. Engine

### 6.1 Model

Pipistrel electric engine E-811 / 268MVLC

### 6.2 Type Certificate

CAA Type Certificate No. EASA.E.234

### 6.3 Limitations

| | |
|---|---|
| Maximum Take-Off Power (MTOP) Rating: | 57.6 kW / 2,500 rpm max 90 s |
| Maximum Continuous Power: | 49.2 kW / 2,350 rpm |

## 7. Propeller

### 7.1 Model

Pipistrel P-812 / 164-F3A

#### 7.1.1 Type Certificate

See Section 2.V Note 2.

#### 7.1.2 Number of blades

3

#### 7.1.3 Diameter

1,640 mm

#### 7.1.4 Sense of Rotation

Clockwise

#### 7.1.5 Pitch

18° @ 615 mm from axis

#### 7.1.6 Weight

4.88 kg

#### 7.1.7 Control system

N/A (fixed pitch)

#### 7.1.8 Max speed

2,500 rpm

#### 7.1.9 Max driving power

57.6 kW

#### 7.1.10 Max driving torque

220 Nm

#### 7.1.11 Designation system

| | |
|---|---|
| Type:` | P-812 |
| Diameter in cm: | 164 |
| Pitch: | F: fixed, G: ground adjustable, V: variable, C: Constant speed |
| Number of blades: | 3 |
| Blade type: | A |

## 8. Energy Storage System (ESS)

Two (2) propulsion Lithium batteries connected in parallel.

### 8.1 Type 1

| | |
|---|---|
| Type: | Pipistrel PB345V124E-L |
| Rated capacity at 23 °C: | 11.0 kWh (each) |
| Nominal voltage: | 345 VDC |
| Cooling system: | Liquid |
| Battery Management System (BMS): | Integral |

### 8.2 Type 2

| | |
|---|---|
| Type: | Pipistrel PB345V119E-L |
| Rated capacity at 23 °C: | 10.0 kWh (each) |
| Nominal voltage: | 345 VDC |

| | |
|---|---|
| Cooling system: | Liquid |
| Battery Management System (BMS): | Integral |

## 9. Fluids

### 9.1 Coolant

Refer to POH-128-00-40-001 Pilot's Operating Handbook, Section 2.

## 10. Fluid capacities

### 10.1 Coolant System

For engine cooling system: 0.9 liters (approximately).

For battery cooling system: 5.4 liters (approximately).

## 11. Air Speeds

| | |
|---|---|
| Never exceed speed $V_{NE}$ | 108 KIAS |
| Maximum structural cruising Speed $V_{NO}$ | 98 KIAS |
| Design manoeuvring speed $V_A$ | 100 KIAS |
| Maximum flaps extended speed $V_{FE}$ | 81 KIAS |

## 12. Maximum Operating Altitude

12,000 ft MSL

## 13. Approved Operations Capability

Day VFR.

Flight into known or forecast icing conditions is prohibited.

## 14. Maximum Masses

| | |
|---|---|
| Max Take-Off Mass: | 600 kg (1323 lb) |
| Max Landing Mass: | 600 kg (1323 lb) |

## 15. Centre of Gravity Range

| | |
|---|---|
| Forward Limit: | 269 mm (25.2 % MAC) behind datum |
| Aft Limit: | 336 mm (32.6 % MAC) behind datum |

Mean Aerodynamic Chord (MAC) is 898 mm.

## 16. Datum

The wing’s leading edge at the root of the wing.

## 17. Control surface deflections

Refer to AMM-128-00-60-001 Aircraft Maintenance Manual latest approved issue.

## 18. Levelling Means

Refer to section 6.2 of the POH-128-00-40-001 Pilot's Operating Handbook latest approved issue.

## 19. Minimum Flight Crew

One (1) pilot

## 20. Maximum Passenger Seating Capacity

One (1) passenger

**21. Wheels and Tyres**

Nose Wheel Tyre Size 4.00” x 4”

Main Wheel Tyre Size 4.00” x 6”

For approved wheel and tyre types refer to the IPC-128-00-50- 001 Illustrated Part Catalogue latest approved issue.

**22. Lifetime Limitations**

For the airframe: refer to section 4 of the AMM-128-00-60-001 Aircraft Maintenance Manual (AMM).

For the propeller: refer to section 4 of the PIM-812-61-00-001 Propeller Instruction Manual.

## IV. Operating and Service Instructions

**1. Aircraft Flight Manual (AFM)**

POH-128-00-40-001 Pilot's Operating Handbook latest approved issue.

**2. Aircraft Maintenance Manual (AMM)**

AMM-128-00-60-001 Aircraft Maintenance Manual latest approved issue.

**3. Structural Repair Manual**

Refer to AMM-128-00-60-001 Aircraft Maintenance Manual.

**4. Weight and Balance Manual**

Refer to POH-128-00-40-001 Pilot's Operating Handbook.

**5. Propeller Instructions Manual**

Refer to PIM-812-61-00-001 Propeller Instruction Manual.

**6. Illustrated Parts Catalogue (IPC)**

IPC-128-00-50-001 Illustrated Part Catalogue latest approved issue.

## V. Notes

1. Requirements 4, 5, 6.1, 6.2, 6.4, 6.7, 6.10, 6.11, 7.1, 7.3, 7.4 of ASTM F2840-11, as far as the engine and its parts are concerned, are covered through the corresponding certification basis in the engine CAA TCDS EASA.E.234.
2. The propeller is certified as part of the aircraft and therefore is only certified for installation on SW 128. For propeller Operating and Service Instructions see: PIM-812-61-00-001 Propeller Instruction Manual.

## Section 3 Virus SW 121C (Commercial Designation: Velis Club)

### I. General

#### 1. Type / Model / Variant

**1.1 Type**

Virus SW 121

**1.2 Model**

Virus SW 121C (Commercial Designation: Velis Club)

**1.3 Variant**

–

#### 2. Airworthiness Category

Normal Category

#### 3. Type Certificate Holder

Pipistrel Vertical Solutions d.o.o.
Vipavska cesta 2,
5270 Ajdovščina
Slovenia

#### 4. Manufacturer

Pipistrel d.o.o.
Goriška cesta 50a
5270 Ajdovščina
Slovenia

#### 5. State of Design Authority

European Union Aviation Safety Agency (EASA)

#### 6. State of Design Authority Type Certification Application Date

17 December 2020

#### 7. State of Design Authority Type Certification Date

25 January 2021

#### 8. State of Design Authority Type Certificate Number

EASA.A.573

### II. Certification Basis

#### 1. Reference date for determining the applicable requirements

29 July 2013

#### 2. Airworthiness Requirements

- EASA CS-LSA Amendment 1 dated 29 July 2013

#### 3. Special Conditions

EASA CRI F-101 – Lithium battery installations (SC-ELA.2015-01)

**4. Exemptions**

None.

**5. Deviations**

None.

**6. Equivalent Safety Findings**

None.

**7. Requirements elected to comply**

None.

**8. Environmental Standards**

**8.1 Noise**

See Type Certificate Data Sheet for Noise (TCDSN) UK.TC.A.00036.

## III. Technical Characteristic and Operating Limitations

**1. Type Design Definition (TDD)**

Master document list No. MDL-121-01-00-001 revision B01 or later approved revision.

**2. Description**

Single engine, two-seat, high wing cantilever composite construction aircraft with T-tail empennage configuration and fixed tricycle landing gear.

**3. Equipment**

Minimum equipment see Pilot Operating Handbook POH-121C-00-40-100, Section 2.15.1.

**4. Dimensions**

| | |
|---|---|
| Length | 6.40 m (20.99 ft) |
| Span | 10.70 m (35.10 ft) |
| Height | 1.90 m (6.23 ft) |
| Wing Area | 9.51 $m^2$ (102.4 $ft^2$) |

**5. Engine**

**5.1 Model**

Rotax 912 S3-01

**5.2 Type Certificate**

CAA Type Certificate No. EASA.E.121

**5.3 Limitations**

| | |
|---|---|
| Maximum Power Rating: | 73.5 kW / 5800 rpm max 5 min |
| Maximum Continuous Power: | 69 kW / 5500 rpm |

**5.4 Muffler Model**

Akrapovic iS, drawing number 121-78-00-000.

**6. Load Factors**

+4 G / -2 G

## 7. Propellers

### 7.1 Model

MTV-33-1-A/170-200

#### 7.1.1 Type Certificate

CAA Type Certificate No. EASA.P.048

#### 7.1.2 Number of blades

2

#### 7.1.3 Diameter

1,700 mm

#### 7.1.4 Sense of Rotation

Clockwise

## 8. Fluids

### 8.1 Fuel

Refer to Pilot Operating Handbook POH-121C-00-40-100, Section 2.8.

### 8.2 Oil

Refer to Pilot Operating Handbook POH-121C-00-40-100, Section 2.9.

### 8.3 Coolant

Refer to Pilot Operating Handbook POH-121C-00-40-100, Section 2.9.

## 9. Fluid capacities

### 9.1 Fuel

Total: 100 litres

Usable: 99 litres

### 9.2 Oil

Maximum oil capacity: 3.5 litres

Minimum oil required: marked on dipstick

### 9.3 Coolant System

2.3 litres (approximately)

## 10. Air Speeds

| | |
|---|---|
| Never exceed speed $V_{NE}$ | 163 KTAS (see Section 1.VI Note 1) |
| Maximum structural cruising Speed $V_{NO}$ | 120 KIAS (see Section 1.VI Note 2) |
| Design manoeuvring speed $V_A$ | 100 KIAS |
| Maximum airbrakes extended speed $V_{AE}$ | 100 KIAS |
| Maximum flaps extended speed $V_{FE}$ | 81 KIAS |

## 11. Maximum Operating Altitude

18,000 ft MSL

## 12. Approved Operations Capability

Day VFR.

Flight into known or forecast icing conditions is prohibited.

**13. Maximum Masses**

| | |
|---|---|
| Max Take-Off Mass: | 600 kg (1,323 lb) |
| Max Landing Mass: | 600 kg (1,323 lb) |
| Maximum Zero Fuel Mass: | 555 kg (1,221 lb) |

**14. Centre of Gravity Range**

| | |
|---|---|
| Forward Limit: | 267 mm (25 % MAC) behind datum |
| Aft Limit: | 356 mm (35 % MAC) behind datum |

Mean Aerodynamic Chord (MAC) is 898 mm.

**15. Datum**

The wing's leading edge at the root of the wing.

**16. Control surface deflections**

Refer to SAMM-121C-00-60-100_A00 or later approved issue.

**17. Levelling Means**

Refer to section 6.2 of the POH-121C-00-40-100_A00 or later approved issue.

**18. Minimum Flight Crew**

One (1) pilot

**19. Maximum Passenger Seating Capacity**

One (1) passenger

**20. Baggage/Cargo Compartments**

| | |
|---|---|
| Max Allowable Loads: | 25 kg (55 lb) |
| Location: | Port side, aft of the door (see Section 3.V Note 3) |

**21. Wheels and Tyres**

Nose Wheel Tyre Size 4.00" x 4"

Main Wheel Tyre Size 4.00" x 6"

For approved wheel and tyre types refer to the IPC-121-00-50-001 revision D00 or later approved issue.

**22. Lifetime Limitations**

Refer to AMM-121-01-00-001_B00 or later approved issue and SAMM-121C-00-60-100_A00 or later approved issue.

**IV. Operating and Service Instructions**

**1. Aircraft Flight Manual (AFM)**

POH-121C-00-40-100_A00 or later approved issue.

**2. Aircraft Maintenance Manual (AMM)**

AMM-121-01-00-001_B00 and SAMM-121C-00-60-100_A00 or later approved issues.

**3. Structural Repair Manual**

AMM-121-01-00-001_B00 and SAMM-121C-00-60-100_A00 or later approved issues.

**4. Weight and Balance Manual**

Refer to POH-121C-00-40-100_A00 or later approved issue.

**5. Illustrated Parts Catalogue**

IPC-121-00-50-001_C00 or later approved issue

**V. Notes**

1. $V_{NE}$ is reduced from 163 KIAS at sea level by 2.2 KIAS for every 1,000 ft.
2. $V_{NO}$ decreases by 0.5 KIAS for every 1,000 ft above FL100.
3. When baggage compartment (optional equipment) is installed.

## Section 4 Virus SW 121A (Commercial Designation: Explorer)

### I. General

**1. Type / Model / Variant**

**1.1 Type**

Virus SW 121

**1.2 Model**

Virus SW 121A (Commercial Designation: Explorer)

**1.3 Variant**

–

**2. Airworthiness Category**

Normal Category

**3. Type Certificate Holder**

Pipistrel Vertical Solutions d.o.o.
Vipavska cesta 2,
5270 Ajdovščina
Slovenia

**4. Manufacturer**

Pipistrel d.o.o.
Goriška cesta 50a
5270 Ajdovščina
Slovenia

**5. State of Design Authority**

European Union Aviation Safety Agency (EASA)

**6. State of Design Authority Type Certification Application Date**

28 January 2021

**7. State of Design Authority Type Certification Date**

17 December 2021

**8. State of Design Authority Type Certificate Number**

EASA.A.573

### II. Certification Basis

**1. Reference date for determining the applicable requirements**

29 July 2013

**2. Airworthiness Requirements**

- EASA CS-LSA Amendment 1 dated 29 July 2013

### 3. Special Conditions

- EASA CRI F-101 – Lithium battery installations (SC-ELA.2015-01)
- EASA CRI N-01 – Noise requirements
- EASA CRI O-18 – Operation in night-VFR with LSA aeroplane (SC-OLSA-div-01)

### 4. Exemptions

None.

### 5. Deviations

None.

### 6. Equivalent Safety Findings

None.

### 7. Requirements elected to comply

None.

### 8. Environmental Standards

### 8.1 Noise

See Type Certificate Data Sheet for Noise (TCDSN) UK.TC.A.00036.

## III. Technical Characteristic and Operating Limitations

### 1. Type Design Definition (TDD)

Master document list No. MDL-121-01-00-001 revision C03 or later approved revision.

### 2. Description

Single engine, two-seat, high wing cantilever composite construction aircraft with T-tail empennage configuration and fixed tricycle landing gear.

### 3. Equipment

Minimum equipment see Pilot Operating Handbook POH-121A-00-40-050_B00, Section 2.15.1.

### 4. Dimensions

| | |
|---|---|
| Length | 6.42 m (21.06 ft) |
| Span | 10.70 m (35.10 ft) |
| Height | 1.90 m (6.23 ft) |
| Wing Area | 9.51 $m^2$ (102.4 $ft^2$) |

### 5. Engine

### 5.1 Model

Rotax 912 S3-01

### 5.2 Type Certificate

CAA Type Certificate No. EASA.E.121

### 5.3 Limitations

| | |
|---|---|
| Maximum Power Rating: | 73.5 kW / 5,800 rpm max 5 min |
| Maximum Continuous Power: | 69 kW / 5,500 rpm |

### 5.4 Muffler Model

Akrapovic iS, drawing number 121-78-00-000.

## 6. Load Factors

+4 G / -2 G

## 7. Propellers

### 7.1 Model

MTV-33-1-A/170-200

#### 7.1.1 Type Certificate

CAA Type Certificate No. EASA.P.048

#### 7.1.2 Number of blades

2

#### 7.1.3 Diameter

1,700 mm

#### 7.1.4 Sense of Rotation

Clockwise

## 8. Fluids

### 8.1 Fuel

Refer to Pilot Operating Handbook POH-121A-00-40-050_B00, Section 2.8.

### 8.2 Oil

Refer to Pilot Operating Handbook POH-121-00-40-050_B00, Section 2.9.

### 8.3 Coolant

Refer to Pilot Operating Handbook POH-121-00-40-050_B00, Section 2.9.

## 9. Fluid capacities

### 9.1 Fuel

Total: 100 litres

Usable: 99 litres

### 9.2 Oil

Maximum oil capacity: 3.2 litres

Minimum oil required: marked on dipstick

### 9.3 Coolant System

2.3 litres (approximately)

## 10. Air Speeds

| | |
|---|---|
| Never exceed speed $V_{NE}$ | 163 KTAS (see Section 1.V Note 1) |
| Maximum structural cruising Speed $V_{NO}$ | 120 KIAS (see Section 1.V Note 2) |
| Design manoeuvring speed $V_A$ | 100 KIAS |
| Maximum airbrakes extended speed $V_{AE}$ | 100 KIAS |
| Maximum flaps extended speed $V_{FE}$ | 81 KIAS |

## 11. Maximum Operating Altitude

18,000 ft MSL

## 12. Approved Operations Capability

Day VFR; Night VFR.

Flight into known or forecast icing conditions is prohibited.

**13. Maximum Masses**

| | |
|---|---|
| Max Take-Off Mass: | 600 kg (1323 lb) |
| Max Landing Mass: | 600 kg (1323 lb) |
| Maximum Zero Fuel Mass: | 555 kg (1221 lb) |

**14. Centre of Gravity Range**

| | |
|---|---|
| Forward Limit: | 267 mm (25 % MAC) behind datum |
| Aft Limit: | 356 mm (35 % MAC) behind datum |

Mean Aerodynamic Chord (MAC) is 898 mm.

**15. Datum**

The wing's leading edge at the root of the wing.

**16. Control surface deflections**

Refer to SAMM-121A-00-60-050_A01 or later approved issue.

**17. Levelling Means**

Refer to section 6.2 of the POH-121A-00-40-050_B00 or later approved issue.

**18. Minimum Flight Crew**

One (1) pilot

**19. Maximum Passenger Seating Capacity**

One (1) passenger

**20. Baggage/Cargo Compartments**

| | |
|---|---|
| Max Allowable Loads: | 25 kg (55 lb) |
| Location: | Port side, aft of the door (see Note 3) |

**21. Wheels and Tyres**

Nose Wheel Tyre Size 4.00" x 4"

Main Wheel Tyre Size 4.00" x 6"

For approved wheel and tyre types refer to the IPC-121-00-50- 001 revision D01 or later approved issue.

**22. Lifetime Limitations**

Refer to AMM-121-01-00-001_B03 or later approved issue and SAMM-121A-00-60-050_A01 or later approved issue.

**IV. Operating and Service Instructions**

**1. Aircraft Flight Manual (AFM)**

POH-121A-00-40-050_B00 or later approved issue.

**2. Aircraft Maintenance Manual (AMM)**

AMM-121-01-00-001_B03 or later approved issue.

SAMM-121A-00-60-050_A01 or later approved issue.

**3. Structural Repair Manual**

Refer to AMM-121-01-00-001_B03 or later approved issue.

SAMM-121A-00-60-050_A01 or later approved issue.

**4. Weight and Balance Manual**

Refer to POH-121A-00-40-050_B00 or later approved issue.

**5. Illustrated Parts Catalogue**

IPC-121-00-50-001_D01 or later approved issue.

**V. Notes**

1. $V_{NE}$ is reduced from 163 KIAS at sea level by 2.2 KIAS for every 1,000 ft.
2. $V_{NO}$ decreases by 0.5 KIAS for every 1,000 ft above FL100.

## Section 5 Administration

### I. Acronyms and Abbreviations

| Acronym / Abbreviation | Definition |
|---|---|
| AFM | Aircraft Flight Manual |
| AMM | Aircraft Maintenance Manual |
| ASTM | American Society for Testing and Materials |
| CAA | Civil Aviation Authority |
| cm | Centimetre(s) |
| CRI | Certification Review Item |
| CS | Certification Specification |
| EASA | European Union Aviation Safety Agency |
| ESS | Energy Storage System |
| ft | Feet |
| ICAO | International Civil Aviation Organization |
| IFR | Instrument Flight Rules |
| IPC | Illustrated Part Catalogue |
| KIAS | Knots Indicated Air Speed |
| KTAS | Knots True Air Speed |
| kg | Kilogram(s) |
| lb | Pound(s) |
| LSA | Light Sport Aeroplanes |
| m | Metre(s) |
| mm | Millimetre(s) |
| MAC | Mean Aerodynamic Chord |
| MSL | Mean Sea Level |
| MTOM | Maximum Take-Off Mass |
| MTOP | Maximum Take-Off Power |
| Nm | Newton per metre |
| rpm | Revolutions per minute |
| s | Second(s) |
| SAMM | Supplement to the Aircraft Maintenance Manual |
| TC | Type Certificate |
| TCDS | Type Certificate Data Sheet |
| TCDSN | Type Certificate Data Sheet for Noise |
| TCH | Type Certificate Holder |
| UK | United Kingdom |
| VFR | Visual Flight Rules |

## I. Type Certificate Holder Record

| TCH Record | Period |
|---|---|
| Pipistrel Vertical Solutions d.o.o.<br>Vipavska cesta 2,<br>5270 Ajdovščina<br>Slovenia | Present. No changes. |

## II. Amendment Record

| TCDS Issue No. | TCDS Issue Date | Changes | TC Issue and Date |
|---|---|---|---|
| 1 | 08 Jun 2022 | The content of the initial issue of UK CAA TCDS was taken from EASA TCDS No. EASA.A.573 Issue 07 dated 15 June 2020 which was the current EASA version at 31 December 2020 and therefore the version of the TCDS for the Virus SW 121 accepted by the UK under Article 15 of Annex 30 of the UK-EU Trade and Cooperation Agreement.<br>The following changes have been made:<br>▪ Section 1.I.3: added reference to the TCH.<br>▪ Section 1.I.4: updated reference to the manufacturer.<br>▪ Section 1.III.4: revised dimensions.<br>▪ Section 1.III.5.1: revised engine model reference.<br>▪ Section 1.III.8: revised POH references.<br>▪ Section 1.III.16: revised AMM reference.<br>▪ Section 1.III.17: revised AMM reference.<br>▪ Section 1.III.21: added IPC reference for approved tyre types.<br>▪ Section 1.III.22: revised AMM reference.<br>▪ Section 1.IV.3: revised AMM reference.<br>▪ Section 1.IV.4: revised AMM reference.<br>▪ Section 2.I.3: added reference to the TCH.<br>▪ Section 2.I.4: updated reference to the manufacturer.<br>▪ Section 2.III.4: revised dimensions.<br>▪ Section 2.III.7.1.1: added propeller type certificate section.<br>▪ Section 2.III.8.2: added ESS battery type 2.<br>▪ Section 2.III.18: revised POH references.<br>▪ Section 2.III.21: changed to IPC reference for approved tyre types.<br>▪ Section 3: added new section for model Virus SW 121C (Commercial Designation: Velis Club)<br>▪ Section 4: added new section for model Virus SW 121A (Commercial Designation: Explorer) | Issue 1<br>08 Jun 2022 |

– END –