

# Civil Aviation Authority United Kingdom



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## TYPE APPROVAL DATA SHEET

**BG 04**

for  
**Calidus**

**AutoGyro Certification Ltd**

(formally RotorSport UK Ltd)

Poplar Farm

Prolley Moor

Wentnor

Bishops Castle

SY9 5EJ

Applicant's Design Organisation Approval Number: DAI/9917/06

Model(s): Calidus  
Revision: 9  
Date of issue: 09 April 2025

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## 1. General

The Calidus is a two seat (tandem configuration) gyroplane.

### 1.1. Manufacturer

Autogyro Certification Ltd (formerly RotorSport UK Ltd)  
Poplar Farm  
Prolley Moor  
Wentnor  
Bishops Castle  
SY9 5EJ

### 1.2. UK Importer

N/A

### 1.3. Approved Configurations

The basic standard for this aircraft is defined in RotorSport UK Ltd Product Definition Document PDD-005 as approved by AAN 29266, plus approved modifications as described below:

- Addendum 1 (Add1): (MC-175) Rotorsystem II Main Rotor System
- Issue 2 Addendum 2 (Add2): (MC-276) Ivoprop DL3-68 VP Propeller
- Addendum 3 (Add3): (MC-402) 560kg MTOW increase & 12000ft operational ceiling
- Issue 2 Addendum 4 (Add4): (MC-475) Woodcomp KW-31 VP Propeller

A list of approved minor modifications is available from the RotorSport website, [www.rotorsport.org](http://www.rotorsport.org) under support/aircraft compliance.

Minor modifications applicable at release-to-service are listed on the aircraft Statement of Aircraft Conformity, SAC-CALS/xxx.

#### 1.3.1. Powerplants

The following Powerplants are approved:

Designation	Calidus	Calidus
Engine Type	912 ULS	914 UL
Reduction Gear	2.43:1	2.43:1
Exhaust System	Stainless steel with after muffler	Rotax stainless steel with after muffler
Intake System	Dual intake filter	Single intake filter, balance box
Propeller Type	Autogyro HTC 3 blade Or Ivoprop DL3-68	Autogyro HTC 3 blade Or Ivoprop DL3-68 Or Woodcomp KW31

<b>Propeller Dia x Pitch</b>	<p>Autogyro HTC: 1.72m x 19.5° at 12" inwards from end of blade, with inclinometer against rear tail of aerofoil.</p> <p>Ivoprop DL3-68 (Ad2): 68inch dia, pitch variance 13deg to 20deg nom</p>	<p>Autogyro HTC: 1.72m x 20.5 ° at 12" inwards from end of blade, with inclinometer against rear tail of aerofoil.</p> <p>Ivoprop DL3-68 (Ad2): 68inch dia, pitch variance 14deg to 21deg nom</p> <p>Woodcomp KW31 1.72m x in-flight adjustable</p>
<b>Noise Type Cert No.</b>	N/A	N/A
<b>AAN approving configuration</b>	AAN29266	AAN29266
<b>Addendum</b>	Add2 (Ivoprop DL3-68)	Add2 (Ivoprop DL3-68) Add4 (Woodcomp KW31)

### 1.3.2. Rotor System

The following Rotor Systems are approved:

<b>Rotor system description:</b>	Calidus Autogyro rotor blades and hub assembly 8.4m diameter. Orange end caps	Rotorsystem II –standard rotor blades and hub assembly. 8.4m diameter Red end caps	Rotorsystem II –TOPP rotor blades and hub assembly. 8.4m diameter Blue end caps
<b>AAN approving rotor system:</b>	AAN29266	AAN29266	AAN29266
<b>Addendum:</b>	(N/A)	Add1	Add3

### 1.4. Required Instruments

The following instruments are required to be installed with the applicable units stated.

- Airspeed Indicator (ASI): mph
- Altimeter: feet (mb subscale)
- Rotor RPM: RPM
- Engine RPM: RPM
- Compass: N/A
- Vertical Speed Indicator (VSI) (optional): Ft/min
- CHT/EGT: °C
- Manifold Pressure Guage (if VP prop fitted): inches Hg

## 2. Certification Basis

The original Certification Basis for this aircraft was BCAR CAP 643 Section T Issue 3.

### 2.1. Equivalent Level of Safety Items

The following Equivalent Level of Safety (ELOS) Items have been reviewed and accepted by the CAA:

- BCAR Section T issue 3:
  - T23 – Load Distribution Limits  
CG/Thrust offset varies between 2.52 and 5.16 inches. Equivalent Level of Safety and acceptable handling demonstrated by Flight test.
  - T659 – Mass Balance  
Alternative method used for mass balance of Calidus blades.
  - T659 – Mass Balance  
Alternative method used for mass balance of Rotorsystem II blades (Add1).
  - AMC T 143a) – Flight testing to 1.1VNE rather than 1.15VNE was accepted. (This requirement was updated with the issue of BCAR Section T Issue 4
- BCAR Section T Issue 5:
  - T25b – Weights  
BCAR Section T issue 5 contains an error regarding the reduction of standard occupant weight to 86kg. (90kg at issue 3, reduced to 86kg at issue 4, error 90kg at issue 5) Rotorsport applied 86kg occupant weight to reflect max empty weights calculated. (Add2 & Add4).
  - T1935 – Blade Retention  
AMC T1935 test loads not met, but significant margin demonstrated over normal flight loads. (Add2).
  - T1322 – Warning, Caution and Advisory Lights  
Indication for normal operation of propeller at pitch limits is steady amber. (Add2 & Add4)

### 2.2. Special Conditions

Special Condition AAN 29266 SC1 (Fuel Tank Installation)

### 3. Technical Characteristics and Operating Limitations

#### 3.1. Technical Characteristics

3.1.1. Fuel Capacity	100 Litre Tank	Twin Tanks	Single Tank
Total:	103 litres	75 litres	39 litres
Unusable:	3 litres	1.2 litres	0.6 litres
Useable:	100 litres	73.8 litres	38.4 litres

Fuel specification as specified by BRP Rotax service instructions or Pilots Operating Handbook.

#### 3.1.2. Permitted Fuels and Lubricants

Engine Oil Spec:	As specified by BRP Rotax service instructions
Gearbox oil spec:	N/A - Integral with engine
Fuel/Oil Mix:	N/A

#### 3.1.3. Dimensions

Span:	1.728m (Not including Rotor)
Length:	4.775m (nose to tail, not including Rotor)
Height:	2.740m
Wing Area:	N/A

### 3.2. Operating Limitations

The aircraft must be operated in compliance with the following operating limitations

#### 3.2.1. Maximum Number of Occupants

Maximum number of occupants authorised to be carried (including crew):	Two
The minimum flight crew is:	One pilot

#### 3.2.2. Aerobatic Limitations

Aerobatic manoeuvres are prohibited.

Manoeuvres involving a deliberate reduction in normal 'g' shall be avoided.

Maximum bank angle 60 degrees.

#### 3.2.3. Engine Limitations

Engine	912 ULS	914 UL
<b>Max RPM (5 Minutes)</b>	5,800	5,800
<b>Max RPM (Continuous)</b>	5,500	5,500
<b>Max CHT</b>	135°C Applicable for engine S/N without Suffix -01 ONLY	135°C Applicable for engine S/N without Suffix -01 ONLY
<b>Max Coolant Temperature</b>	120°C	120°C
<b>Max EGT</b>	N/A	N/A
<b>Max Manifold Pressure (VP prop only)</b>	N/A for Analogue Gauge  Placarded for digital gauge	Take Off: 39.9in Hg Continuous: 35.4inHg  Placarded for digital gauge

Engine	912 ULS	914 UL
<b>Oil Pressure</b>	Max: 7 bar Min: 0.8 bar (0-3500 rpm) 1.5 bar (above 3500 rpm)  Normal range: 2-5bar	Max: 7 bar Min: 0.8 bar (0-3500 rpm) 1.5 bar (above 3500 rpm)  Normal range: 2-5bar
<b>Oil Temperature</b>	Max: 130°C Min: 50°C	Max: 130°C Min: 50°C
<b>Fuel Pressure</b>	N/A	N/A

**3.2.4. Air Speed Limitations**

Maximum airspeed ( $V_{NE}$ ):	90 mph IAS 120 mph IAS (Add1)
Maximum airspeed in severe turbulence ( $V_B$ ):	70 mph IAS

**3.2.5. Loading Limitations**

Maximum Total Weight Authorised:	500 kg (912ULS, 914UL) 560 kg (914UL – Add3)
Maximum Empty Weight:	309 kg (912ULS) 311 kg (914UL) 371 kg (914UL – Add3)
Maximum Pilot Weight front seat:	125 kg
Minimum Pilot Weight front seat:	65 kg
Maximum Occupant Weight rear seat:	120 kg
Minimum Occupant Weight rear seat:	0 kg

Pilots in the front seat weighing less than 65 kg must carry suitable ballast.

CG limits:

FWD:	485mm forward of the datum
AFT:	255mm forward of the datum

Vertical CG:

Upper:	895mm above the datum
Lower:	795mm above the datum

Note: The CG datum is defined as the mainwheel axle.

**3.2.6. Other Limitations**

Smoking in the aircraft is prohibited.

Altitude Limit:	10,000ft 12,000ft (Add3)
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Flight in icing conditions is prohibited.

Flight in strong gusty winds or wind velocities of more than 45 mph (40kts) is prohibited.

The Aircraft shall be flown by day in Visual Meteorological Conditions only.

## **4. Pilots Notes, Maintenance Manuals References**

### **4.1. Approved Manuals**

The following Manuals are approved for use with this aircraft (see [www.rotorsport.org](http://www.rotorsport.org)):

- (a) Pilots handbook (POH) approved for use with this aircraft is RSUK0060
- (b) Maintenance manual approved for use with this aircraft is RSUK0061
- (c) IVOprop manual approved for use with this aircraft is RSUK0325 (Add2).
- (d) Maintenance schedules approved for use with this aircraft are:
  - F175 - 25hr inspection
  - F176 - annual/100hr inspection
  - F178 - short term storage and return to service
  - F179 - long term storage and return to service
  - F189 – IVO prop 25/100hr service worksheet

### **4.2. Placards**

The following placards are to be fitted:

- a) Engine RPM limits (markings on instrument face)
- b) Engine MAP limits (914UL engine fitted with Ivoprop or KW-31 propellers only – (Add2 or Add4)
- c) Rotor rpm (markings on instrument face)
- d) Loading conditions (placard between seats)
- e) Fuel quantity & type (placards adjacent fuel tank filler)
- f) All switches (engraved on instrument panel or placards)
- g) Occupant warning (placard on instrument. panel)
- h) Limitations as per Permit to Fly (placard in cockpit)
- i) Engine CHT or CT limits (markings on instrument face)
- j) Compass deviation (placard adjacent to compass)
- k) Secondary control functions (placards/engraving)
- l) Permanent & fireproof attachment of aircraft registration no & aircraft serial no. (plate affixed to instrument panel)

Placards to be installed as detailed in the applicable POH:

- RSUK0060



## 5. Notes

1. Incorporation of Calidus aircraft released in the US market under TC# R00006RD.

The following Calidus aircraft, manufactured under AGUSA004, and in service in the USA, are considered compliant with this TADS.

At point of release to service these aircraft complied with the requirements of AAN29266 and AAN29266 Addendum 1.

Serial No

US-C00428	US-C00483	US-C00497
US-C00429	US-C00491	US-C00510
US-C00482	US-C00496	US-C00538

## 6. Document Administration

### 6.1. Document History

Issue No.	Date.	Changes
1	20.01.2011	Initial issue
2	03.06.2011	Addition of limitation for gyroplane training under section 8H. Mods listing included under Annex B.
3	12.07.2011	Update to section 11.1b) Maintenance Manual and section 11.1c) 100 hour / Annual Inspection schedule approved for use with this aircraft
4	15.09.2011	Addition of Rotorsystem II option under section 7, new VNE limit included under section 8E, update to section 11.1 manuals approved for use with this aircraft, update to Appendix B Optional Modifications and update to placards under Appendix D
5	-	Addition of IVOProp DL3-68 in-flight adjustable under AAN29266, addendum 2, modification MC-276. Increase in Max ZFW
6	-	Addition of Rotorsystem II TOPP rotor assembly under AAN29266, addendum 3, modification MC-328.
7	-	560Kg MTOW upgrade
8	-	USA Calidus added
9	09 April 2025	Addition of Woodcomp KW31 in-flight adjustable propeller Document format update (Some sections addressed in changelog above moved)

### 6.2. Acronyms, Definitions

Term	Definition
AAN	Airworthiness Approval Note
Add	Addendum [to AAN]
CG	Centre of Gravity
CHT	Cylinder Head Temperature
CT	Coolant Temperature
EGT	Exhaust Gas Temperature
MAP	Manifold Air Pressure
MC	Major or Minor Change [MC-XXX]
N/A	Not Applicable
RPM	Revolutions Per Minute
Severe Turbulence	Large, abrupt changes in altitude or attitude. Aircraft may be temporarily out of control.
TC	Type Certificate
VP	Variable Pitch
V <sub>B</sub>	Maximum design speed for strong gusty conditions
V <sub>NE</sub>	Never Exceed Speed