Civil Aviation Authority
United Kingdom

TYPE APPROVAL DATA SHEET

BG 04

for

Calidus

AutoGyro Certification Ltd

(formerly 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:	10
Date of issue:	13 May 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
- Issue 2 Addendum 5 (Add5) (MC-486) — Rotax 915iS and 916iS engines and Night VFR equipment

A list of approved minor modifications is available from the RotorSport/Autogyro website, rotorsport.org or auto-gyro.co.uk.

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

1.3.1. Powerplants

The following Powerplants are approved:

Designation	Calidus	Calidus	Calidus	Calidus
Engine Type	912 ULS	914 UL	915iS	916iS
Reduction Gear	2.43:1	2.43:1	2.54:1	2.54:1
Exhaust System	Stainless steel with after muffler	Rotax stainless steel with after muffler	Rotax stainless steel	Rotax stainless steel with Rotax aftermuffler
Intake System	Dual intake filter	Single intake filter, balance box	Single intake filter, fuel injected	Single intake filter, fuel injected
Propeller Type	Autogyro HTC 3 blade Or Ivoprop DL3-68	Autogyro HTC 3 blade Or Ivoprop DL3-68 Or Woodcomp KW31	Autogyro HTC 4 blade or Woodcomp KW-30	Woodcomp KW-30

Propeller Dia x Pitch	Autogyro HTC: 1.72m x 19.5º at 12" inwards from end of blade, with inclinometer against rear tail of aerofoil. Ivoprop DL3-68 (Ad2): 68inch dia, pitch variance 13deg to 20deg nom	Autogyro HTC: 1.72m x 20.5 º at 12" inwards from end of blade, with inclinometer against rear tail of aerofoil. Ivoprop DL3-68 (Ad2): 68inch dia, pitch variance 14deg to 21deg nom Woodcomp KW31 1.72m x in-flight adjustable	Autogyro HTC: 1.72m x 20 º at 12" inwards from end of blade, with inclinometer against rear tail of aerofoil. Woodcomp KW30 1.72m x in-flight adjustable	Woodcomp KW30 1.72m x in-flight adjustable
Noise Type Cert No.	N/A	N/A	N/A	N/A
AAN approving configuration	AAN29266	AAN29266	AAN29266	AAN29266
Addendum	Add2 (Ivoprop DL3-68)	Add2 (Ivoprop DL3-68) Add4 (Woodcomp KW31)	Add5	Add5

1.3.2. Rotor System

The following Rotor Systems are approved:

Rotor system description:	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	Rotorsystem II – TOPP rotor blades and hub assembly. 8.6m diameter Grey end caps
AAN approving rotor system:	AAN29266	AAN29266	AAN29266	AAN29266
Addendum:	(N/A)	Add1	Add3	Add5

1.4. Required Instruments

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

- Airspeed Indicator (ASI): mph or KIAS
- Altimeter: feet (mb subscale)
- Rotor RPM: RPM
- Engine RPM: RPM
- Compass: N/A
- Vertical Speed Indicator (VSI) (optional): Ft/min
- CHT/EGT: ºC
- Manifold Pressure Gauge (if VP prop fitted(NR for 915 or 916 engines)): inches Hg

1.4.1. Required Equipment for Night VMC

For flying under night VFR, Modification MC-485 (Add5) is applied, requiring the aircraft to be equipped with:

Instrument / Cockpit and panel lighting
Position/navigation/strobe lights
Nose-mounted taxi lights
Underbody-mounted landing light
Gyroscopic bank and pitch indicator (e.g. Garmin G5 certified)
Gyroscopic direction indicator (e.g. Garmin G5 certified)
Vertical speed indicator
Secondary pressure altitude indicator (e.g. Garmin G5 certified)
Clock (optional fitment)
Low voltage warning system
First-aid kit (pilot carry-on)

2. Certification Basis

The original Certification Basis for this aircraft was BCAR CAP 643 Section T Issue 3. Subsequent AAN addenda have been raised to BCAR section T Issue 5 and CRI-E01 as detailed within the respective addenda.

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:	100 litres	75 litres	39 litres
Unusable:	3 litres	1.2 litres	0.6 litres
Useable:	97 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	915 iS	916 iS
Max RPM (5 Minutes)	5,800	5,800	5,800	5,800
Max RPM (Continuous)	5,500	5,500	5,500	5,500
Max CHT	135ºC Applicable for engine S/N without Suffix -01 ONLY	135ºC Applicable for engine S/N without Suffix -01 ONLY	Gauge Not Fitted	Gauge Not Fitted
Max Coolant Temperature	120ºC	120ºC	120ºC	120ºC
Max EGT	N/A	N/A	N/A	N/A
Max Manifold Pressure (VP prop only)	N/A for Analogue Gauge Placarded for digital gauge	Take Off: 39.9in Hg Continuous: 35.4inHg Placarded for digital gauge	N/A	N/A

Engine	912 ULS	914 UL	915 iS	916 iS
Oil Pressure	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	Max: 7 bar Min: 0.8 bar (0-3500 rpm) 1.5 bar (above 3500 rpm) Nominal: 2-5bar	Max: 7 bar Min: 0.8 bar (0-3500 rpm) 1.5 bar (above 3500 rpm) Nominal: 2-5bar
Oil Temperature	Max: 130ºC Min: 50ºC	Max: 130ºC Min: 50ºC	Max: 130ºC Min: 50ºC	Max: 120ºC Min: 50ºC
Fuel Pressure	N/A	N/A	N/A	N/A

3.2.4. Air Speed Limitations

Maximum airspeed (V_{NE}): 90 mph IAS

120 mph IAS (Add1)

140 mph IAS (Add5)

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) (915iS, 916iS – Add5)

Maximum Empty Weight: 309 kg (912ULS)

311 kg (914UL)

371 kg (914UL – Add3)

366 kg (915iS 916iS – Add5)

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: 225mm forward of the datum (912ULS and 914UL)

200mm forward of the datum (915iS, 916iS – Add5)

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)(Add5)

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.

OR

The Aircraft shall be flown by day or night in Visual Meteorological Conditions only (Add5).

4. Pilots Notes, Maintenance Manuals References

4.1. Approved Manuals

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

(a) Pilots handbook (POH) approved for use with this aircraft is RSUK0060 (912ULS and 914UL models) or RSUK0464 (915iS and 916iS models)
(b) Maintenance manual approved for use with this aircraft is RSUK0061 (912ULS and 914UL models) or RSUK0465 (915iS and 916iS models)
(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
06-009d Calidus Periodic 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:

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 moved in changelog above moved)
10	13 May 2025	Rotax 915iS and 916iS engines/ Night VFR equipment/ Vne increase

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
NR	Not Required
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_B	Maximum design speed for strong gusty conditions
V_{NE}	Never Exceed Speed