

CIVIL AVIATION AUTHORITY

GYROPLANE TYPE APPROVAL DATA SHEET (TADS)

NO: BG04 issue: 8

TYPE: **RotorSport UK Calidus**

- (1) MANUFACTURER: RotorSport UK Ltd
Poplar Farm
Prolley Moor
Wentnor
Bishops Castle
SY9 5EJ
- (2) UK IMPORTER: N/A
- (3) CERTIFICATION: BCAR CAP 643 Section T Issue 3
(See AAN 29266 for Special Conditions)
Changes incorporated under TADS issue 5 also refer to issue 5 of Section T
- (4) DEFINITION OF BASIC STANDARD: RotorSport UK Ltd Product Definition Document
PDD-005 Issue 1
- (5) COMPLIANCE WITH THE GYROPLANE DEFINITION
- (a) MTOW 500 kg
560 kg (914UL engine only, where MC-402 (Addendum 4) is embodied)
- (b) No. Seats 2
- (c) Permitted range of pilot weights
- Front seat 65 – 125 kg.
Rear seat 120 kg max
Permitted total occupant weight:
- Rotax 912 aircraft : 230 kg max
(subject to fuel loading)
- Rotax 914 aircraft: 220 kg max
(subject to fuel loading)
- 245 kg
(where MC-402 (Addendum 4) is embodied)
- (d) Typical Empty Weight (ZFW)
- Rotax 912 aircraft 270 kg
Rotax 914 aircraft 280 kg
- (e) ZFW + 180 kg crew + 1 hr fuel
Rotax 912 – 27 litres / 19 kg 469 kg

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Rotax 914 – 23 litres / 17kg	477 kg
(f) ZFW + 90 kg pilot + full fuel (70ltrs, 55kg)	
Rotax 912 aircraft	415 kg
Rotax 914 aircraft	425 kg
(g) Max ZFW at initial permit issue	
Rotax 912 aircraft	309 kg (increased to 309 kg at TADS iss 5 see Addendum 02, 5.1.2)
Rotax 914 aircraft	311 kg (increased to 311 kg at TADS iss 5 see Addendum 02, 5.1.2) 371 kg (where MC-402 (AAN Addendum 4) is embodied)

(6) POWER PLANTS

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	HTC 3 blade ground adjustable, composite or Ivoprop DL3-68 in-flight pitch adjustable (Modification MC-276 Service Bulletin SB-083)	HTC 3 blade ground adjustable, composite or Ivoprop DL3-68 in-flight pitch adjustable (Modification MC-276 Service Bulletin SB-083)
Propeller Dia x Pitch	HTC:1.72m x 20.5° at 12" inwards from end of blade, with inclinometer against rear tail of aerofoil.	HTC:1.72m x 22 ° at 12" inwards from end of blade, with inclinometer against rear tail of aerofoil.
	Ivoprop 68inch dia, pitch variance 13deg to 20deg nom	Ivoprop 68inch dia, pitch variance 14deg to 21deg nom

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Noise Type Cert No.	None required	None required
AAN approving configuration	AAN29266	AAN29266
Addendums	Addendum 2: IVO prop	Addendum 2: IVO prop

(7) ROTOR SYSTEM

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 (Modification MC-175 Service Bulletin SB-039)	Rotorsystem II –TOPP rotor blades and hub assembly. 8.4m diameter Blue end caps (Modification MC-328) Service Bulletin SB-039
AAN approving rotor system	AAN29266	AAN 29266 Addendum 1	AAN 29266 Addendum 3
Rotor blade life limit	700 hours	2500 hours	2500 hours

(8) MANDATORY LIMITATIONS:

(A) Max Take-Off Weight 500 kg or

560 kg (914UL engine only, where MC-402 (AAN29266 Addendum 4) is embodied)

(B) CG Limits (HTC and IVO DL3-68 propeller variants)
 (RSII standard rotors and TOPP rotors)

Horizontal c.g. Fwd: 485mm forward of the datum
Aft: 255mm forward of the datum

Vertical c.g. Upper: 895mm above the datum
Lower: 795mm above the datum

(C) CG datum:
horizontal and vertical cg: Mainwheel axis

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(D) Cockpit Loadings

Front seat:

Min 65kg
Max 125kg

Rear seat:

Min 0 kg
Max 120kg

Total:

Min 65kg
Max Rotax 912: 230kg max
(subject to fuel loading)
Rotax 914: 220kg max
(subject to fuel loading)
Rotax 914: 245 kg
(where MC-402 (Addendum 4) is embodied)
(subject to fuel loading)

(E) Never Exceed Speed, V_{NE}

90 mph or
120 mph if Addendum 1 or 3 applies,
(RSII fitted under mod MC-175 or MC-328;
SB039 installed)

(F) Minimum Speed

0 mph

(G) Prohibited Manoeuvres:

Aerobatic manoeuvres are prohibited.
Intentional spinning is prohibited.
Manoeuvres involving a deliberate reduction
in normal 'g' shall be avoided.
Flight in icing conditions is prohibited (not
placarded).
Flight in strong gusty winds or wind velocities
of more than 45mph (40 kts) is prohibited.
(not placarded)

(H) Other limitations:

Day VMC only.

This Gyroplane is hereby granted a permission to fly for the purposes of aerial work which consists of the giving of instruction in flying or the conducting of flying tests subject to the installation of any required instructional modifications and the Gyroplane being owned or operated under arrangements entered into by a flying club of which the person giving the instruction or conducting the test and the person receiving the instruction or undergoing the test are both members.

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- (I) Fuel Contents: 39 litres (single tank) – 38.4 litres usable
75 litres (twin tanks) – 73.8 litres usable
- (J) Power Plant

Engine	912ULS	914 UL Turbo
Max RPM	5,800	5,800
Max Continuous RPM	5,500	5,500
MAX CHT (where CHT gauge fitted)	135°C	135°C
MAX CT (where CT gauge fitted under MC-321)	120°C	120°C
MAX EGT	N/A	N/A
MAX Manifold Pressure (if fitted for VP prop installation) Analogue	Limits marked - red radial at 31.0 in Hg	Red radial at 39.9 in Hg (Take off) 35.4 in Hg (continuous)
MAX Manifold pressure (if fitted for VP prop installation) Digital	Not marked on gauge See placards	Not marked on gauge See placards
Fuel Spec	As specified by BRP Rotax service instructions or Pilots Operating Handbook	As specified by BRP Rotax service instructions or Pilots Operating Handbook
Engine Oil Spec	As specified by BRP Rotax service instructions	As specified by BRP Rotax service instructions
Gearbox oil spec	Integral with engine	Integral with engine
Fuel/Oil Mix	N/A	N/A
Oil Pressure	Max: 7 bar Min: 0.8 bar (0-3500 rpm) 1.5 bar (above 3500 rpm) Normal range: 2-5 bar	Max: 7 bar Min: 0.8 bar (0-3500 rpm) 1.5 bar (above 3500 rpm) Normal range: 2-5 bar
Oil Temperature	Max: 130°C Min: 50°C	Max: 130°C Min: 50°C
Fuel Pressure	N/A	N/A

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(9) INSTRUMENTS REQUIRED:

ASI: Fitted mph	Altimeter: Fitted Feet mb subscale	Rotor RPM: Fitted	Engine RPM: Fitted	Compass: Fitted	VSI: Optional Ft/min	CHT/EGT: CHT or CT fitted °C	Manifold pressure gauge (if VP prop fitted) in Hg
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(10) CONTROL DEFLECTIONS:

Rotor Head: Roll 16° total	Rotor Head: Pitch 24° total	Rudder deflection: Defined by maximum horizontal distance between rudder lower tip and side fin: to left side fin 700mm to right side fin 620mm
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(11) PILOT'S NOTES, MAINTENANCE MANUALS REFERENCES:

11.1 Manuals approved for use with this aircraft.

(refer to Owners page at www.rotorsport.org for current manuals issue)

- (a) Pilots handbook (POH) approved for use with this aircraft is RSUK0060
- (b) Maintenance manual approved for use with this aircraft is RSUK0061
- (c) IVO prop manual approved for use with this aircraft is RSUK0325
- (d) Maintenance schedules approved for use with this aircraft are:

- F114 – 25 hour inspection
- F115 – annual/100 hour inspection
- F156 – Short Term Storage Arrangements
- F157 – Long Term Storage Arrangements
- F189 – IVO prop 25/100hr service worksheet

Issue levels as provided on the RotorSport website.

11.2 The following placards are to be fitted:-

The following are to be placarded:

- a) Engine RPM limits (markings on instrument face)
- b) Engine MAP limits (914UL engine fitted with Ivoprop DL3-68 only)
- c) Rotor rpm (markings on instrument face)
- d) Loading conditions (placard on nacelle)
- e) Fuel quantity & type (placards on fuel tanks)
- 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)

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- l) Permanent & fireproof attachment of aircraft registration no & aircraft serial no. (plate affixed inside near/on instrument panel)

See Annex D for placards fitted as standard.

- (12) MANDATORY MODIFICATIONS / SERVICE BULLETINS / AIRWORTHINESS DIRECTIVES ETC:

See Annex A for required modifications.

- (13) MINIMUM PERFORMANCE AT MAX TAKE-OFF WEIGHT

Minimum performance at max take-off weight: 500fpm at 70mph

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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

Pilots handbook (POH) approved for use with these aircraft is AGUSA0001, and subsequent approved revisions.

Maintenance manual approved for use with these aircraft is AGUSA0002, and subsequent approved revisions.

These aircraft carry placards appropriate for conformance to the American language and Airworthiness requirements.

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Issue History

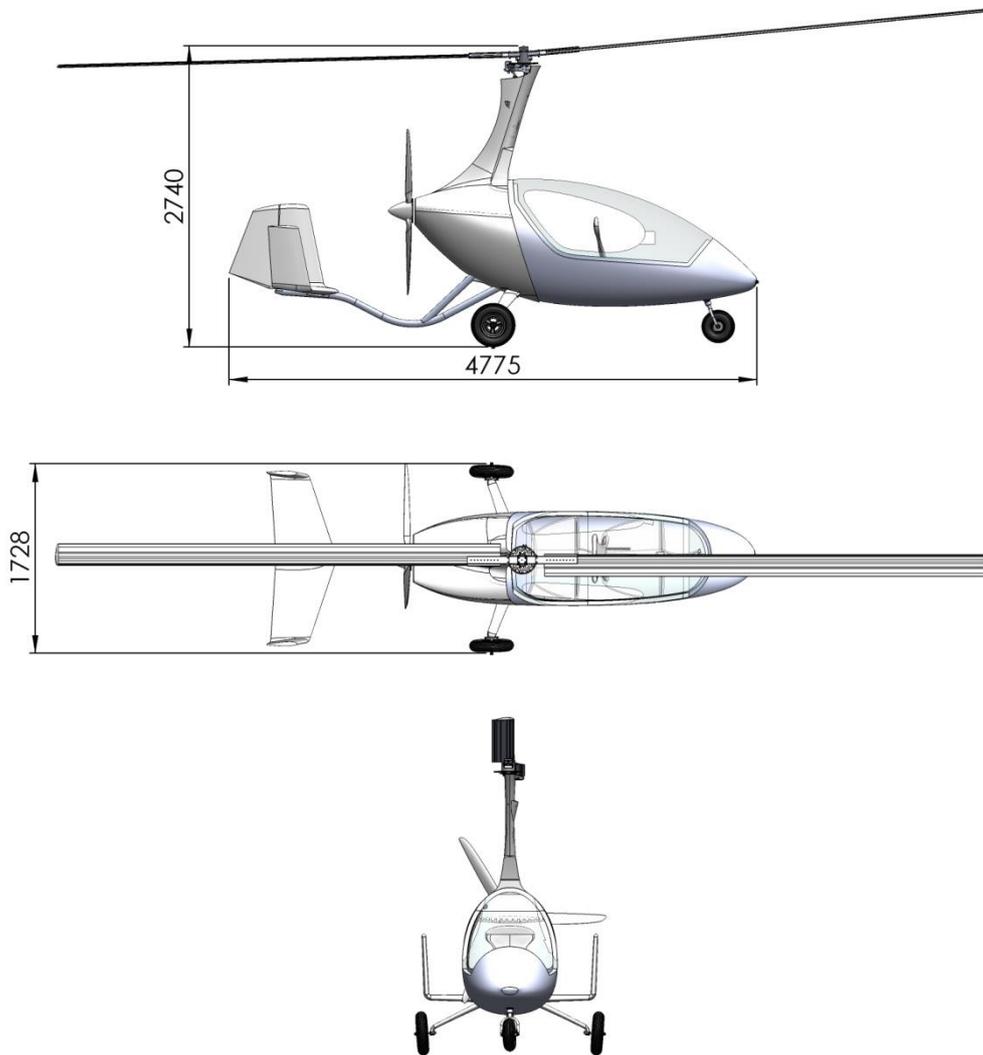
<u>Issue No.</u>	<u>Date.</u>	<u>Reason and signatory</u>
1	20/01/2011	Initial issue J Barratt
2	03/06/2011	Addition of limitation for gyroplane training under section 8H. Mods listing included under Annex B. J Barratt
3	12/07/2011	Update to section 11.1b) Maintenance Manual and section 11.1c) 100 hour / Annual Inspection schedule approved for use with this aircraft. J Barratt
4	15/09/2011	Addition of Rotorsystem II option under section 7, new V _{NE} 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. J Barratt
5		Addition of IVOprop DL3-68 in-flight adjustable under AAN29266, addendum 2, modification MC-276. Increase in Max ZFW. J Ruff
6		Addition of Rotorsystem II TOPP rotor assembly under AAN29266, addendum 3, modification MC-328. A Bines
7		560 kg MTOW and 12,000 ft operational ceiling increase A Bines
8	09/12/2019	USA Calidus added page 8 E Weston

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Illustration of Aircraft



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ANNEX A – MANDATORY MODIFICATIONS

Refer to the CAA Airworthiness Approval Notes (AAN)

ANNEX B – APPROVED MINOR MODIFICATIONS

Refer to list of approved minor modifications published on the RotorSport website, 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.

ANNEX C - WEIGHING INFORMATION

N/A. Aircraft to be weighed by manufacturer.

Refer to the specific aircraft weight and balance data, AWC-CALS/xxx.

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ANNEX D – STANDARD PLACARDS

(copied from Pilots Handbook)

GENERAL PLACARDS AND MARKINGS:

In conformity with BCAR Section T the following placards and markings are installed:

- All emergency controls are coloured red.
- All cockpit controls are clearly marked as to their function and method of operation.
- Fuel and oil filler openings are clearly marked, together with the grade or type required.
- Fuel tank capacity is clearly marked.
- Loading conditions are clearly marked as follows:
- Standard placards

Loading conditions

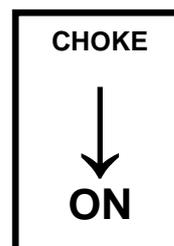
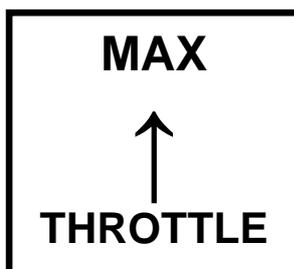
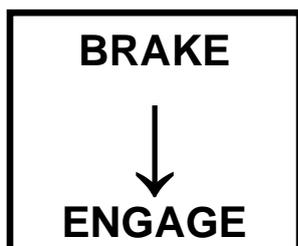
Aircraft Payload Specification
Front seat pilot: 125 kg max,
65 kg min
Pilot must carry ballast to
meet 65 kg min.
Rear seat passenger 120 kg
max
Empty weight (as measured)

MTOW 500 kg

Aircraft must only be flown
solo from the front seat.

Note: MTOW is
shown as 560 kg
where MC-402 is
embodied (914UL
engine only)

Primary control marking



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Limitations

OPERATING LIMITATIONS

Aerobic Limitations

Intentional spinning is prohibited.
Aerobic manoeuvres are prohibited.
Manoeuvres involving a deliberate reduction in normal 'g' shall be avoided.
CG Range Limits (Gyroplane) – refer to Pilots Handbook data.

Airspeed Limitations

Maximum Indicated Airspeed (Vne): 90 mph

Other Limitations

This aircraft shall be flown by day and under Visual Flight Rules only.
Smoking in the aircraft is prohibited

Limitations (if MC175/SB039 installed):

OPERATING LIMITATIONS

Aerobic Limitations

Intentional spinning is prohibited.
Aerobic manoeuvres are prohibited.
Manoeuvres involving a deliberate reduction in normal 'g' shall be avoided.
CG Range Limits (Gyroplane) – refer to Pilots Handbook data.

Airspeed Limitations

Maximum Indicated Airspeed (Vne): 120 mph

Other Limitations

This aircraft shall be flown by day and under Visual Flight Rules only.
Smoking in the aircraft is prohibited

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Occupant warning (in front of front and rear occupants)

OCCUPANT WARNING
This aircraft has not been certificated to an
International Requirement

Roll trim indicator (where fitted)

L R
Roll Trim

Coolant header tank

Coolant Header Tank
Filled with 50/50
water/antifreeze

Engine oil tank

Oil tank
Capacity 3 ltrs.
Use Shell VSX or
equivalent
Motorcycle oil SF or
SG

Superceded by:

OIL TANK CAPACITY
3 LTRS.
USE AEROSHELL OIL SPORT
PLUS 4 OR EQUIVALENT IN
ACCORDANCE WITH BRP ROTAX
SERVICE INSTRUCTIONS

Fuel tank, below the filler neck (shows 39ltrs if one tank only installed).

Fuel capacity: 75 ltrs
Preferred fuel:
EN228 MOGAS super or super plus
(AVGAS 100LL permissible)

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Baggage placard for under seat lockers

**Removable map bag
(where fitted) 1kg max**

Baggage Load:
2 kg MAX

Baggage load
1 kg MAX

Auxiliary socket (where fitted,
marked '12V 5A on the panel)

Warning lamp placards

Continuously lit Low Volt lamp indicates electrical demand exceeds supply, and the battery is being drained. If lit in flight, reduce demand until unlit. If not possible, expedite landing.

Canopy
unlocked
when lit

FIRE WARNING
When flashing
RED

Beside front seat and on back of front seat back

Front seat
back straps
limit stops
must be fitted
if rear stick is

Fuel cut-off valve

Interlock placard (unless engraved on panel)

←
Off
↓
On
Fuel cut-off
valve

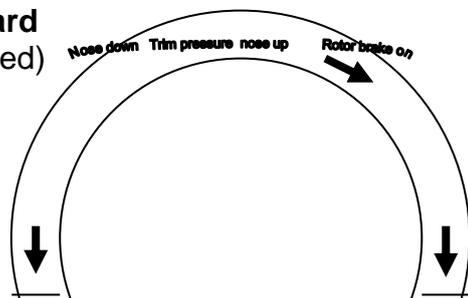
Pre-rotator & rotor
brake interlock
release

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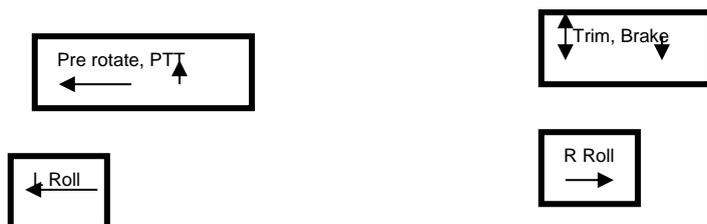
Pressure gauge placard
(unless panel annotated)



Static ports – ring around saying ‘Static Port – do not obstruct!’

Canopy handle ‘Ensure locked down before flight!’

On top of control stick



Instructor pack (where fitted). Brake placard only where brake is fitted.

Ignition cut off switches.

To switch off, lift safety flaps and pull toggles backwards.

MAX
↑
THROTTLE

BRAKE
↓
ENGAGE

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GPS placard (where a GPS is fitted)

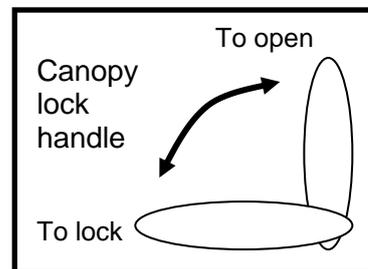
'GPS unit not for navigational use. The unit, software & charts are not approved or certified to any national standard. Warning! Charts or software may not be up to date.

Canopy placards for the operating lever

Inside

Outside

Lift handle to unlock canopy. Ensure locked down before flight!



Other

If the compass deviation is more than 5° on all headings, then a deviation placard must be present.

COMPASS DEVIATION			
For	N	30	60
Set			
For	E	120	150
Set			
For	S	210	240
Set			
For	W	300	330
Set			
Calibration by:		date:	

Instrument placards as section 2.5

The aircraft is fitted with a permanently attached fireproof plate with the aircraft registration number and serial no. marked on it, on the keel or on front of the instrument panel.

The registration letters are placed high on the tail fin, and are 60cm long, 30cm high. This has been accepted to CAP523, the CAA standard for aircraft registration. Alternative markings and position of markings is acceptable provided they comply with this standard.

Note that all placards must have the same units of measure as the instruments.