

CIVIL AVIATION AUTHORITY

GYROPLANE TYPE CERTIFICATE DATA SHEET (TCDS)

NO: BG07 ISSUE: 2

	TYPE:	RotorSport UK Cavalon Pro
(1)	MANUFACTURER:	RotorSport UK Ltd Poplar Farm Prolley Moor Wentnor Bishops Castle SY9 5EJ
(2)	UK MPORTER:	N/A
(3)	CERTIFICATION:	BCAR CAP 643 Section T Issue 5 plus CRI E-01
(4)	DEFINITION OF BASIC STANDARD:	RotorSport UK Ltd Product Definition Document PDD-007.
(5)	COMPLIANCE WITH THE GYROPLANE DEFINITION	
	(a) MTOW	560 kg
	(b) No. Seats	2
	(c) Permitted range of pilot weights	
	Right seat	65 – 110 kg.
	Left seat	110 kg max
	Permitted total occupant weight:	200 kg max (subject to fuel loading)
	(d) Typical Empty Weight (ZFW)	
	Rotax 914 aircraft (night equipped)	320 kg
	(e) ZFW + 172 kg crew + 1 hr fuel	
	Rotax 914 – 23 litres / 17kg	509 kg
	(f) ZFW + 86 kg pilot + full fuel	
	(100ltrs, 72Kg)	
	Rotax 914 aircraft	478 kg
	(g) Max ZFW at initial permit issue	
	Rotax 914 aircraft	371 kg

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(6) POWER PLANTS

Designation	Cavalon Pro
Engine Type	914 F
Reduction Gear	2.43:1
Exhaust System	Rotax stainless steel with after muffler
Intake System	Single intake filter, balance box
Propeller Type	Woodcomp KW31 in-flight adjustable
Propeller Dia x Pitch	1.72m x in-flight adjustable
Noise Type Cert No.	None required
AAN approving configuration	AAN29428

(7) ROTOR SYSTEM

Rotor system description:	Autogyro Rotorsystem II RAO, 8.4m diameter, AOI reduced (black clamp profiles) <u>Red end-caps</u>	Autogyro Rotorsystem II TOPP, 8.4m diameter, <u>(mod MC-328)</u> (silver clamp profiles) <u>Blue end-caps</u>
AAN approving rotor system	AAN29428	AAN29428 Addendum 01

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(8) MANDATORY LIMITATIONS:

(A) Max Take-Off Weight	560 kg
(B) CG Limits	
Horizontal c.g.	Fwd: 540mm <u>forward</u> of the datum Aft: 345mm <u>forward</u> of the datum
Vertical c.g. <u>(standard RAO rotors)</u>	<u>Lower</u> : 750mm above the datum <u>Upper</u> : 925mm above the datum
<u>Vertical c.g.</u> <u>(TOPP rotors)</u>	<u>Lower: 750mm above the datum</u> <u>Upper: 940mm above the datum</u>
(C) CG datum: horizontal and vertical cg:	Mainwheel axis
(D) Cockpit Loadings	
Right seat:	Min 65 kg Max 110 kg
Left seat:	Min 0 kg Max 110 kg
Total:	Min 65 kg Max 200 kg (subject to fuel loading)
(E) Never Exceed Speed, V_{NE}	87 KIAS (100 mph) <u>75 KIAS whilst MC-338 is embodied</u> <u>(AAN29428, addendum 2)</u>
(F) Minimum Speed	0 KIAS
(G) Prohibited Manoeuvres:	Aerobatic manoeuvres are 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 40KIAS (45mph) is prohibited. (not placarded)
(H) Other limitations:	Day or night VMC only.
(I) Fuel Contents:	103 litres. Unusable fuel, 3 ltr (100 ltr usable)

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(J) Power Plant

Engine	914F Turbo
Max RPM	5,800
Max Continuous RPM	5,500
MAX CHT (where <u>CHT gauge</u> fitted)	135°C
MAX Coolant temp. <u>CT</u> <u>(where CT gauge fitted)</u> (subject to Rotax deletion of CHT sensor)	120°C
MAX EGT	N/A
MAX Manifold Pressure	<u>Red radial at 39.9 inHg (Take off)</u> <u>35.4 inHg (continuous)</u>
Fuel Spec	<u>As specified by BRP Rotax service instructions or Pilots Operating Handbook</u>
Engine Oil Spec	<u>As specified by BRP Rotax service instructions</u>
Gearbox oil spec	Integral with engine
Fuel/Oil Mix	N/A
Coolant Temperature	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
Oil Temperature	Max: 130°C Min: 50°C
Fuel Pressure	0.15 to 1bar

(9) INSTRUMENTS REQUIRED:

ASI: Fitted	Altimeter: Fitted	Rotor RPM: Fitted	Engine RPM: Fitted	Compass: Fitted	VSI: Optional (fitted for night VFR)	CHT/ <u>CT</u> /EGT: CHT fitted (or replaced by a coolant temp <u>CT</u> gauge following Rotax sensor position change)
kts	feet mb subscale				ft/min	°C

For night VFR flight the aircraft is additionally equipped with;

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- Additional under-nose mounted landing light
- Cabin light
- Instrument panel illumination
- Heated pitot tube
- Alternative static port
- Anti-collision beacons
- Navigation and strobe lights
- Aspen EFD1000 PFD, providing a slip indicator, ASI, altimeter, attitude indicator and gyro compass.
- Additional auxiliary generator
- 13 Ahr battery

(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 630mm to right side fin 530mm
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(11) PILOT'S NOTES, MAINTENANCE MANUALS REFERENCES:

11.1 Manuals approved for use with this aircraft.

(a) Pilots handbook (POH) approved for use with this aircraft is RSUK0334.

(b) Maintenance manual approved for use with this aircraft is RSUK0335.

~~(b)~~(c) RSUK0335, addendum 1 if moving camera mount is fitted to aircraft.
(MC-338, AAN29428 addendum 2)

~~(c)~~(d) Woodcomp KW-31 prop manual, UM-05 EN.

11.2 Placards. The placards required to be fitted to this aircraft are shown in the Pilots handbook RSUK0334

(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: 600fpm at 70mph

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Issue History

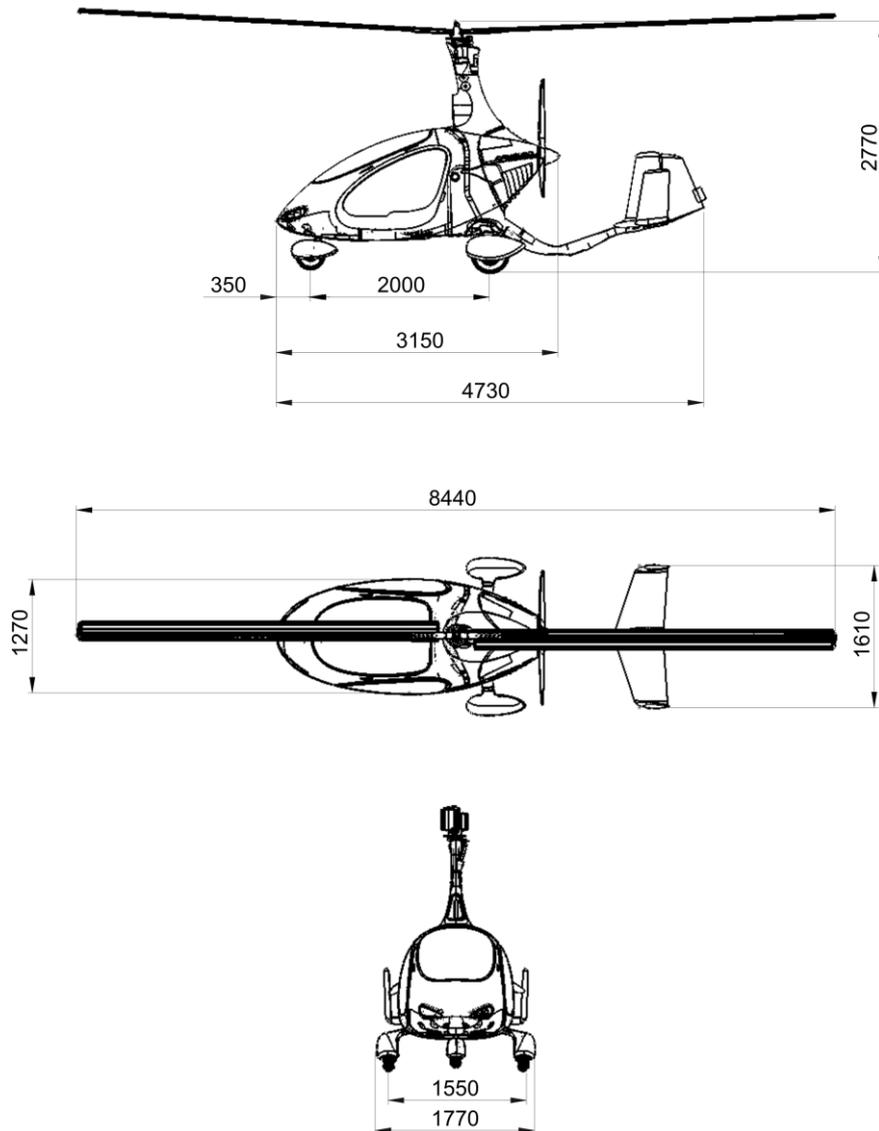
<u>Issue No.</u>	<u>Date.</u>	<u>Reason and signatory</u>
1		Initial issue

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Illustration of Aircraft



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ANNEX A – MANDATORY MODIFICATIONS

None at this time.

ANNEX B - APPROVED OPTIONAL MODIFICATIONS

1. A list of approved minor modifications is available from 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-CAVP/xxx.

2. Major Modification MC-338, AAN29428, Addendum 2, Moving Camera Mount

a) TOPP rotors must be fitted

b) Vne is reduced to 75 KIAS

c) CG limits:

horizontal cg limits: 345mm to 590mm forward of the datum

vertical cg limits: 750mm to 940mm above the datum

ANNEX C - WEIGHING INFORMATION

N/A. Aircraft to be weighed by manufacturer.

Refer to the specific aircraft weight and balance certificate, AWC-CAVP/xxx.