

Flight test report

Manufacturer Windtech Paragliders
Address Francisco Rodríguez, 7
 33201 GIJON - Asturias
 Spain, PO Box 269 33280
Representative None
Type of glider Combat SC 23
Trimmer not available

Certification number PG 109.2007
Date of flight test 26/10/2007
Place of test Villeneuve



Classification D

Test Pilot Claude Thurnheer	Alain Zoller
Harness Sky Axel II M 42cm	Sky Paragliders - Axel 2 M
Total weight in flight 80 kg	90 kg

	Min weight		Max weight	
1. Inflation/Take-off				
Rising behaviour	Overshoots, shall be slowed down to avoid front collapse	C	Hangs back	D
Special take off technique required	No	A	No	A
2. Landing				
Special landing technique required	No	A	No	A
3. Speed in straight flight				
Trim speed more than 30 km/h	Yes	A	Yes	A
Speed range using the controls larger than 10 km/h	Yes	A	Yes	A
Minimum speed	25 km/h to 30 km/h	B	25 km/h to 30 km/h	B
4. Control movement				
<i>Max. weight in flight up to 80 kg</i> Symmetric control pressure/travel	Approximately constant, 40 cm to 55 cm	C	not available	0
<i>Max. weight in flight 80 kg to 100 kg</i> Symmetric control pressure/travel	not available	0	Approximately constant, 45 cm to 60 cm	C
<i>Max. weight in flight greater than 100 kg</i> Symmetric control pressure/travel	not available	0	not available	0
5. Pitch stability exiting accelerated flight				
Dive forward angle on exit	Dive forward less than 30°	A	Dive forward less than 30°	A
Collapse occurs	No	A	No	A
6. Pitch stability operating controls during accelerated flight				
Collapse occurs	No	A	No	A
7. Roll stability and damping				
Oscillations	Reducing	A	Reducing	A
8. Stability in gentle spirals				
Tendency to return to straight flight	Spontaneous exit	A	Spontaneous exit	A
9. Behaviour in a steeply banked turn				
Sink rate after two turns	More than 14 m/s	B	More than 14 m/s	B
10. Symmetric front collapse				
Entry	Rocking back greater than 45°	C	Rocking back less than 45°	A
Recovery	Recovery through pilot action in less than a further 3 s	D	Spontaneous in less than 3 s	A
Dive forward angle on exit	Dive forward 0° to 30°, Keeping course	A	Dive forward 0° to 30°, Keeping course	A
Cascade occurs	No	A	No	A
<i>With accelerator</i>				
Entry	Rocking back greater than 45°	C	Rocking back less than 45°	A
Recovery	Spontaneous in 3 s to 5 s	B	Spontaneous in less than 3 s	A
Dive forward angle on exit	Dive forward 0° to 30°, Keeping course	A	Dive forward 30° to 60°, Keeping course	B
Cascade occurs	No	A	No	A
11. Exiting deep stall (parachutal stall)				
Deep stall achieved	Yes	A	Yes	A
Recovery	Spontaneous in less than 3 s	A	Spontaneous in 3 s to 5 s	C
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 30° to 60°	B
Change of course	Changing course less than 45°	A	Changing course less than 45°	A
Cascade occurs	No	A	No	A
12. High angle of attack recovery				
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Cascade occurs	No	A	No	A
13. Recovery from a developed full stall				
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 30° to 60°	B
Collapse	No collapse	A	No collapse	A
Cascade occurs (other than collapse)	No	A	No	A
Rocking back	Less than 45°	A	Greater than 45°	C
Line tension	Most line tight	A	Most line tight	A
14. Asymmetric collapse				
<i>With 50% collapse-Maximum dive forward or roll angle</i>				
Change of course until re-inflation	Less than 90°, Dive or roll angle 15° to 45°	A	Less than 90°, Dive or roll angle 15° to 45°	A
Re-inflation behaviour	Spontaneous re-inflation	A	Spontaneous re-inflation	A
Total change of course	Less than 360°	A	Less than 360°	A
Collapse on the opposite side occurs	No	A	No	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
<i>With 75% collapse-Maximum dive forward or roll angle</i>				
Change of course until re-inflation	90° to 180°, Dive or roll angle 60° to 90°	C	90° to 180°, Dive or roll angle 45° to 60°	C
Re-inflation behaviour	Spontaneous re-inflation	A	Spontaneous re-inflation	A
Total change of course	Less than 360°	A	Less than 360°	A
Collapse on the opposite side occurs	No	A	Yes, causing turn reversal	D
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
<i>With 50% collapse and accelerator-Maximum dive forward or roll angle</i>				
Change of course until re-inflation	Less than 90°, Dive or roll angle 15° to 45°	A	90° to 180°, Dive or roll angle 15° to 45°	B
Re-inflation behaviour	Spontaneous re-inflation	A	Spontaneous re-inflation	A

Total change of course	Less than 360°	A	Less than 360°	A
Collapse on the opposite side occurs	No	A	No	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
<i>With 75% collapse and accelerator-Maximum dive forward or roll angle</i>				
Change of course until re-inflation	90° to 180°, Dive or roll angle greater than 90°	D	90° to 180°, Dive or roll angle 45° to 60°	C
Re-inflation behaviour	Spontaneous re-inflation	A	Spontaneous re-inflation	A
Total change of course	Less than 360°	A	Less than 360°	A
Collapse on the opposite side occurs	Yes, no turn reversal	C	Yes, no turn reversal	C
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
15. Directional control with a maintained asymmetric collapse				
Able to keep course	Yes	A	Yes	A
180° turn away from the collapsed side possible in 10 s	Yes	A	Yes	A
Amount of control range between turn and stall or spin	More than 50 % of the symmetric control travel	A	More than 50 % of the symmetric control travel	A
16. Trim speed spin tendency				
Spin occurs	No	A	No	A
17. Low speed spin tendency				
Spin occurs	Yes	D	No	A
18. Recovery from a developed spin				
Spin rotation angle after release	Stops spinning in less than 90°	A	Stops spinning in less than 90°	A
Cascade occurs	No	A	No	A
19. B-line stall				
Change of course before release	Change of course less than 45°	A	Change of course less than 45°	A
Behaviour before release	Remains stable with straight span	A	Remains stable with straight span	A
Recovery	Spontaneous in 3 s to 5 s	B	Spontaneous in 3 s to 5 s	B
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 30° to 60°	A
Cascade occurs	No	A	No	A
20. Big ears				
Entry procedure	Standard technique	A	Dedicated controls	A
Behaviour during big ears	Stable flight	A	Stable flight	A
Recovery	Recovery through pilot action in less than a further 3 s	B	Spontaneous in less than 3 s	A
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 0° to 30°	A
21. Big ears in accelerated flight				
Entry procedure	Dedicated controls	A	Dedicated controls	A
Behaviour during big ears	Stable flight	A	Stable flight	A
Recovery	Recovery through pilot action in less than a further 3 s	B	Recovery through pilot action in less than a further 3 s	B
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 0° to 30°	A
Behaviour immediately after releasing the accelerator while	Stable flight	A	Stable flight	A
22. Behaviour exiting a steep spiral				
Tendency to return to straight flight	Spontaneous exit	A	Spontaneous exit	A
Turn angle to recover normal flight	Less than 720°,spontaneous recovery	A	Less than 720°,spontaneous recovery	A
Sink rate when evaluating spiral stability [m/s]	17 m/s		22 m/s	
23. Alternative means of directional control				
180° turn achievable in 20 s	Yes	A	Yes	A
Stall or spin occurs	No	A	No	A
24. Any other flight procedure and/or configuration described in the user's manual				
Procedure works as described	not available	0	not available	0
Procedure suitable for novice pilots	not available	0	not available	0
Cascade occurs	not available	0	not available	0
Comments of test pilot				
Comments	no		The glider are a tendenc to stay in the back and	



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