## para-test.com

Dudek Paragliders S.J.

PG\_0519.2012

## AIR TURQUOISE SA certified by



## Flight test report: EN

Manufacturer

Address	ul. Centralna 2U 86-031 Osielsko Poland	Date of flight test		13. 03. 2012	
Representative	None	Place of test		Villeneuve	
Glider model	Optic 24	Classification		В	
Trimmer	no				
	10				
	•	Fukuoka Seiko Sup air - Altiplume S 60		Thurnheer Claude Sup' Air - Access M 85	
1. Inflation/Take-off		Α			
Rising behaviour		Smooth, easy and constant rising	А	Smooth, easy and constant rising	А
Special take off technique	required	No	А	No	А
2. Landing		Α			
Special landing technique	required	No	А	No	А
3. Speed in straight fligh	t	В			
Trim speed more than 30	km/h	Yes	А	Yes	А
Speed range using the con	ntrols larger than 10 km/h	Yes	А	Yes	А
Minimum speed		25 km/h to 30 km/h	В	Less than 25 km/h	А
4. Control movement		Α			
Max. weight in flight up to	80 kg				
Symmetric control pressure / travel		Increasing / greater than 55 cm	А	not available	0
Max. weight in flight 80 kg	to 100 kg				
Symmetric control pressur	re / travel	not available	0	Increasing / greater than 60 cm	А
Max. weight in flight greate	er than 100 kg				
Symmetric control pressur	re / travel	not available	0	not available	0
5. Pitch stability exiting a	accelerated flight	Α			
Dive forward angle on exit		Dive forward less than 30°	А	Dive forward less than 30°	А
Collapse occurs		No	А	No	А
6. Pitch stability operatir flight	ng controls during accelerated	Α			
Collapse occurs		No	А	No	А
7. Roll stability and dam	ping	Α			
Oscillations		Reducing	Α	Reducing	A
8. Stability in gentle spir		Α			
Tendency to return to strain		Spontaneous exit	Α	Spontaneous exit	A
9. Behaviour in a steeply	/ banked turn	В			
Sink rate after two turns		12 m/s to 14 m/s	Α	More than 14 m/s	В
10. Symmetric front colla	apse	В			
Entry		Rocking back less than 45°	А	Rocking back less than 45°	A
Recovery		Spontaneous in less than 3 s	А	Spontaneous in 3 s to 5 s	В
Dive forward angle on exit	/ Change of course	Dive forward 0° to 30° / Keeping course	A	Dive forward 0° to 30° / Keeping course	A
Cascade occurs		No	A	No	A
With accelerator					
Entry		Rocking back less than 45°	A	Rocking back less than 45°	A
Recovery		Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A

Certification number

attmm of less than 80°coursecour	Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Entering	А	Dive forward 0° to 30° / Keeping	А
Fit. Exiting deep stall (parachutal stall)  B    Deep stall chineved  Yes  A  Yes  A    Recovery  Spontaneous in less than 35  A  Spontaneous in less than 35  A    Dive forward on less than 45  A  One forward 30 to 60 <sup>+</sup> B    Clanage of course  Changing ourse less than 45 <sup>+</sup> A  Changing ourse less than 45 <sup>+</sup> A    Clanage of course  No  A  No  A    2.1 High angle of attack recovery  Spontaneous in less than 3 s  A  Spontaneous in less than 3 s  A    Classade occurs  No  No  A  No  A    Classade occurs (other than collapses)  No  A  No collapse  A    Classade occurs (other than collapses)  No  A  No  A    A1.4 Asymmetric Collapse  B			Λ	course	Α
Deep stall achievedYesAYesAYesARecoveryDive forward 0' to 30'ADive forward 30' to 60'BChange of ocurseChanging course less than 45"AChanging course less than 45"ACacadad occursNoANoA12. High angle of attack recoveryAASportnaneous in less than 3 sACacadad occursNoANoACacadad occursNoASportnaneous in less than 3 sACacadad occursNoANoACacadad occursNoANoACacadad occursNoANoACacadad occursNoANoACacadad occursNoANoACacadad occursNoANoACacadad occursNoANoACacadad occursNoANoACacadad occursNoANoACacadad occursNoANoARocking backLass than 45"ALass than 45"AChange of course ontil re-inflation / Maximum dive forward of '10 bor or roll angle '15' to 45"ACacadad occursNoANoACacadad occursNoANoACacadad occursNoANoACacadad occursNoANoACacadad occursNoANoA<			А	No	А
RecoverySpontaneous in less than 3 is ASpontaneous i		В			
Dive forward ongle on exitDive forward 0° 10 30°ADive forward 0° 10 60°BChanging course less than 43 inAChanging course less than 43 inAChanging of attack recoveryAXXRecoverySportaneous in less than 3 inASportaneous in less than 3 inACascade occursNoANoACascade occursDive forward 0° to 30°ANoACallapseDive forward 0° to 30°ANoACollapseNo collapseANo collapseACollapseCascade occursANo collapseACollapseLess than 45°ALess than 45°ACollapseCascade occursALess than 45°AChange of courseLess than 45°ALess than 50° / Dive or roll angleACascade occursNoALess than 50° / Dive or roll angleALess than 50° / Dive or roll angleACallapse occursNoALess than 360°ALess than 360°ACallapse occursNoALess than 360°ALess than 360°A<	Deep stall achieved	Yes	А	Yes	А
Change of courseChanging course less than 45"AChanging course less than 45"ACascade occurs21. High angle of stack recoveryARecoverySpontaneous in less than 3 sARecovery from a developed full stallADive forward of to 30"ANoNoNoCalciageNo collapseARocovery from a developed full stallADive forward of to 30"ANoNo collapseACalciageNo collapseARocking backLess than 45"ALess than 65"ALess than 65"A terre functionMost lines tightAA function for	Recovery	Spontaneous in less than 3 s	А	Spontaneous in less than 3 s	А
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12. High angle of attack recovery  A    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 deviceped full stall  A  A    Dive forward 0 for a soft  Dive forward 0 for 30°  A  No    Cascade occurs (other than collapse)  No  No  No  No    Cascade occurs (other than collapse)  No  No  No  No    Cascade occurs (other than collapse)  No  No  No  No    Rocking back  Less than 45°  A  Less than 45°  No    Line tension  Most lines tight  A  Most lines tight  A    14. Asymmetric collapse  B  Tot 15°  Spontaneous re-inflation  A    Collapse on the opposite side occurs  No  No  A  No  A    Collapse on the opposite side occurs  No  No  No  A    Collapse on the opposite side occurs  No  No  No  A    Collapse on the opposite side occurs  No  No  No  A    Collapse on the opposite side occurs  No  No  No  A    Collapse on the opposite side occurs	Change of course	Changing course less than 45°	А	Changing course less than 45°	А
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13. Recovery from a developed full statil    A      Dive forward angle on exit    Dive forward 0° to 30°    A    Dive forward 0° to 30°    A      Collapse    No <collapse< td="">    A    No<collapse< td="">    A      Cascade occurs (other than collapses)    No    Less than 45°    A    Less than 45°    A    Less than 45°    A    Less than 45°    A    Most lines tight    A      14. Asymmetric collapse    B    F</collapse<></collapse<>	Recovery	Spontaneous in less than 3 s	А	Spontaneous in less than 3 s	Α
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14. Asymmetric collapse  B    With 50% collapse  Change of course until re-inflation / Maximum dive forward or of la rapie  Less than 90° / Dive or roll angle 0° to 15°  A  Less than 90° / Dive or roll angle 15° to 45°  A    Re-inflation behaviour  Spontaneous re-inflation  A  Spontaneous re-inflation  A    Collapse on the opposite side occurs  No  A  No  A    Collapse on the opposite side occurs  No  A  No  A    Collapse on the opposite side occurs  No  A  No  A    Collapse or the opposite side occurs  No  A  No  A    Chascade occurs  No  A  No  A    Change of course until re-inflation / Maximum dive forward or ital rapie  15° to 45°  B  90° to 180° / Dive or roll angle 15° to 45°  B    Collapse on the opposite side occurs  No  A  No  A    Collapse on the opposite side occurs  No  A  No  A    Collapse on the opposite side occurs  No  A  No  A    Collapse on the opposite side occurs  No  A  No  A    Collapse on the opposite side occurs  No  A  No  A    Collapse on the opposite side occurs  No <t< td=""><td>-</td><td>Most lines tight</td><td>А</td><td>Most lines tight</td><td>А</td></t<>	-	Most lines tight	А	Most lines tight	А
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Cascade occursNoANoAWith 75% collapse90° to 180° / Dive or oll angle0° to 180° / Dive or oll angleB0° to 180° / Dive or oll angle 15°BRe-inflation behaviourSpontaneous re-inflationASpontaneous re-inflationATotal change of courseLess than 360°ALess than 360°ACollapse on the opposite side occursNoANoAColascade occursNoANoACascade occursNoANoACascade occursNoANoACascade occursNoANoAChange of course until re-inflation / Maximum dive forward or langleLess than 90° / Dive or roll angle 15° to 45°AChange of course until re-inflation / Maximum dive forward or langleLess than 90° / Dive or roll angle 15° to 45°ASpontaneous re-inflationCollapse and acceleratorLess than 90° / Dive or roll angle 15° to 45°ASpontaneous re-inflationACollapse on the opposite side occursNoANoACollapse on the opposite side occursSpontaneous re-inflationANoACollapse on the opposite side occursSpontaneous re-inflationANoACollapse on the opposite side o		No	А	No	А
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	180° turn away from the collapsed side possible in 10 s	Yes	А	Yes	А
symmetric control travel control travel	Amount of control range between turn and stall or spin		А		А
		symmetric control travel		control travel	

16. Trim speed spin tendency	Α			
Spin occurs	No	А	No	А
17. Low speed spin tendency	Α			
Spin occurs	No	А	No	А
18. Recovery from a developed spin	Α			
Spin rotation angle after release	Stops spinning in less than 90 $^\circ$	Α	Stops spinning in less than 90°	А
Cascade occurs	No	Α	No	А
19. B-line stall	Α			
Change of course before release	Changing course less than 45°	Α	Changing course less than 45°	А
Behaviour before release	Remains stable with straight span	A	Remains stable with straight span	А
Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	А
Dive forward angle on exit	Dive forward 0° to 30°	А	Dive forward 0° to 30°	А
Cascade occurs	No	А	No	А
20. Big ears	Α			
Entry procedure	Dedicated controls	А	Dedicated controls	А
Behaviour during big ears	Stable flight	Α	Stable flight	Α
Recovery	Spontaneous in less than 3 s	А	Spontaneous in less than 3 s	А
Dive forward angle on exit	Dive forward 0° to 30°	А	Dive forward 0° to 30°	А
21. Big ears in accelerated flight	А			
Entry procedure	Dedicated controls	А	Dedicated controls	А
Behaviour during big ears	Stable flight	Α	Stable flight	А
Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	А
Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	А
Behaviour immediately after releasing the accelerator while maintaining big ears	Stable flight	A	Stable flight	А
22. Behaviour exiting a steep spiral	Α			
Tendency to return to straight flight	Spontaneous exit	Α	Spontaneous exit	Α
Turn angle to recover normal flight	Less than 720°, spontaneous recovery	A	Less than 720°, spontaneous recovery	А
Sink rate when evaluating spiral stability [m/s]	17		17	
23. Alternative means of directional control	А			
180° turn achievable in 20 s	Yes	Α	Yes	А
Stall or spin occurs	No	А	No	А
24. Any other flight procedure and/or configuration described in the user's manual	0			
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
25. Comments of test pilot				
Comments				