

Flight test report



Manufacturer Certification number PG_0183.2008 **Apco Aviation Ltd.** Address 7, Chalamish St., Industrial park Date of flight test 07. 10. 2008

38900 Caesarea

Israel

Representative none Place of test Villeneuve

Glider model **Karma Sport S** Classification В

Trimmer no

> Test pilot Dupont Philippe Thurnheer Claude Harness Advance - Light Gin - Genie III

Total weight in flight (kg)	60		90	
1. Inflation/Take-off	A			
Rising behaviour	Smooth, easy and constant rising	Α	Smooth, easy and constant rising	Α
Special take off technique required	No	Α	No	Α
2. Landing	Α			
Special landing technique required	No	Α	No	Α
3. Speed in straight flight	Α			
Trim speed more than 30 km/h	Yes	Α	Yes	Α
Speed range using the controls larger than 10 km/h	Yes	Α	Yes	Α
Minimum speed	Less than 25 km/h	Α	Less than 25 km/h	Α
4. Control movement	Α			
Max. weight in flight up to 80 kg				
Symmetric control pressure / travel	Increasing / greater than 55 cm	Α	not available	0
Max. weight in flight 80 kg to 100 kg				
Symmetric control pressure / travel	not available	0	Increasing / greater than 60 cm	Α
Max. weight in flight greater than 100 kg				
Symmetric control pressure / travel	not available	0	not available	0
5. Pitch stability exiting accelerated flight	Α			
Dive forward angle on exit	Dive forward less than 30°	Α	Dive forward less than 30°	Α
Collapse occurs	No	Α	No	Α
6. Pitch stability operating controls during accelerated flight	Α			
Collapse occurs	No	Α	No	Α
7. Roll stability and damping	Α			
Oscillations	Reducing	Α	Reducing	Α
8. Stability in gentle spirals	Α			
Tendency to return to straight flight	Spontaneous exit	Α	Spontaneous exit	Α
9. Behaviour in a steeply banked turn	В			
Sink rate after two turns	Up to 12 m/s	Α	More than 14 m/s	В
10. Symmetric front collapse	Α			
Entry	Rocking back less than 45°	Α	Rocking back less than 45°	Α
Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Keeping course	Α	Dive forward 0° to 30° / Keeping course	Α
Cascade occurs	No	Α	No	Α
With accelerator				
Entry	Rocking back less than 45°	Α	Rocking back less than 45°	Α
Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α

Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Keeping course	Α	Dive forward 0° to 30° / Keeping course	Α
Cascade occurs	No	Α	No	Α
11. Exiting deep stall (parachutal stall)	Α			
Deep stall achieved	Yes	Α	Yes	Α
Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
Change of course	Changing course less than 45°	Α	Changing course less than 45°	Α
Cascade occurs	No	Α	No	Α
12. High angle of attack recovery	Α			
Recovery	not available	0	Spontaneous in less than 3 s	Α
Cascade occurs	not available	0	No	Α
13. Recovery from a developed full stall	Α			
Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
Collapse	No collapse	Α	No collapse	Α
Cascade occurs (other than collapses)	No	Α	No	Α
Rocking back	Less than 45°	Α	Less than 45°	Α
Line tension	Most lines tight	Α	Most lines tight	Α
14. Asymmetric collapse	Α			
With 50% collapse				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 0° to 15°	Α	Less than 90° / Dive or roll angle 0° to 15°	Α
Re-inflation behaviour	Spontaneous re-inflation	Α	Spontaneous re-inflation	Α
Total change of course	Less than 360°	Α	Less than 360°	Α
Collapse on the opposite side occurs	No	Α	No	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
With 75% collapse				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 0° to 15°	Α	Less than 90° / Dive or roll angle 15° to 45°	Α
Re-inflation behaviour	Spontaneous re-inflation	Α	Spontaneous re-inflation	Α
Total change of course	Less than 360°	Α	Less than 360°	Α
Collapse on the opposite side occurs	No	Α	No	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
With 50% collapse and accelerator				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 0° to 15°	Α	Less than 90° / Dive or roll angle 15° to 45°	Α
Re-inflation behaviour	Spontaneous re-inflation	Α	Spontaneous re-inflation	Α
Total change of course	Less than 360°	Α	Less than 360°	Α
Collapse on the opposite side occurs	No	Α	No	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
With 75% collapse and accelerator				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 0° to 15°	Α	Less than 90° / Dive or roll angle 15° to 45°	Α
Re-inflation behaviour	Spontaneous re-inflation	Α	Spontaneous re-inflation	Α
Total change of course	Less than 360°	Α	Less than 360°	Α
Collapse on the opposite side occurs	No	Α	No	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
15. Directional control with a maintained asymmetric collapse	A			
Able to keep course	Yes	Α	Yes	Α
180° turn away from the collapsed side possible in 10 s	Yes	Α	Yes	Α
Amount of control range between turn and stall or spin	More than 50 % of the symmetric control travel	Α	More than 50 % of the symmetric control travel	Α
16. Trim speed spin tendency	A			
Spin occurs	No	Α	No	Α

ASpin rotation angle after release Stops spinning in less than 90° A Stops spinning in less than 90° A No A N	17. Low speed spin tendency	Α			
Spin rotation angle after release Stops spinning in less than 90° A A No A A No A A No A A A No A A A No A A A A A A A A A	Spin occurs	No	Α	No	Α
A No A No A No A A STABLE INSTITUTE OF THE STATE OF THE	18. Recovery from a developed spin	Α			
A Change of course before release not available not available or course before release not available or Spontaneous in less than 3 s A Dive forward angle on exit not available or available or Dive forward 0° to 30° A Cascade occurs or available or available or Dive forward 0° to 30° A Cascade occurs or available or	Spin rotation angle after release	Stops spinning in less than 90°	Α	Stops spinning in less than 90°	Α
Change of course before release not available 0 Changing course less than 45° A Behaviour before release not available 0 Remains stable with straight span A Recovery not available 0 Spontaneous in less than 3 s A Dive forward angle on exit not available 0 No No A Cascade occurs not available 0 No No A Dive forward 0° to 30° A Cascade occurs No No A Dedicated controls No No A Dedicated controls A Behaviour during big ears B Sentry procedure Dedicated controls A Stable flight A Stable flight A Stable flight A Stable flight A Dive forward 0° to 30° A Dive forward o° t	Cascade occurs	No	Α	No	Α
Behaviour before release not available 0 Remains stable with straight span A Recovery not available 0 Spontaneous in less than 3 s A Dive forward angle on exit 0 Dive forward angle on exit 0 Dive forward of to 30° A A 20. Big ears BEINTy procedure Dedicated controls A Stable flight A Stable flight A Stable flight A Stable flight A Dive forward of to 30° A A Dive forward of to 30° A A Dive forward angle on exit Dive forward of to 30° A Dive forward of to 30° A Dive forward of to 30° A Dive forward angle on exit Dive forward of to 30° A Dive	19. B-line stall	Α			
Recovery not available 0 Spontaneous in less than 3 s A Dive forward angle on exit not available 0 Dive forward 0° to 30° A Cascade occurs not available 0 No	Change of course before release	not available	0	Changing course less than 45°	Α
Dive forward angle on exit not available not available 0 Dive forward 0° to 30° A Cascade occurs not available 0 No A 20. Big ears B Entry procedure Dedicated controls Stable flight A Stable flight A Stable flight A Dive forward on to 30° A Dive forward angle on exit Dive forward on to 30° A Behaviour during big ears Stable flight A	Behaviour before release	not available	0	Remains stable with straight span	Α
Cascade occurs not available 0 No No A 20. Big ears B Entry procedure Dedicated controls A Dedicated controls A Stable flight A Stable flight A Recovery Spontaneous in 3 s to 5 s B Spontaneous in 1 ses than 3 s A Dive forward angle on exit Dive forward 0" to 30" A Stable flight A Dive forward 0" to 30" A	Recovery	not available	0	Spontaneous in less than 3 s	Α
Entry procedure Entry procedure Dedicated controls A Dedicated controls A Stable flight A Stable flight A Stable flight A Dive forward or to 30° A Dive forward 0° to 30° A Dedicated controls A Stable flight A Stable fli	Dive forward angle on exit	not available	0	Dive forward 0° to 30°	Α
Entry procedure Behaviour during big ears Stable flight A Dive forward or to 30° A Dive forward or	Cascade occurs	not available	0	No	Α
Behaviour during big ears 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° A Dive forward 0° to 30° A Dedicated controls B BEntry procedure Dedicated controls A Stable flight A Stab	20. Big ears	В			
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° A Dedicated controls A Dedicated controls A Stable flight A Stable flight A Stable flight A Spontaneous in less than 3 s A Dive forward or to 30° A Stable flight	Entry procedure	Dedicated controls	Α	Dedicated controls	Α
Dive forward angle on exit Dive forward 0° to 30° A Dedicated controls A Stable flight A Recovery Recovery through pilot action in less than a further 3 s Dive forward 0° to 30° A Dive forward 0°	Behaviour during big ears	Stable flight	Α	Stable flight	Α
21. Big ears in accelerated flight Entry procedure Dedicated controls A Dedicated controls A Stable flight A Stable flight A Stable flight A Stable flight A Spontaneous in less than 3 s A Behaviour during big ears Dive forward angle on exit Dive forward 0° to 30° Dive forward 0° to 30° A Dive forward 0° to 30° A Behaviour immediately after releasing the accelerator while maintaining big ears 22. Behaviour exiting a steep spiral A Stable flight A Stable flig	Recovery	Spontaneous in 3 s to 5 s	В	Spontaneous in less than 3 s	Α
Entry procedure Dedicated controls A Dedicated controls A Stable flight A Sta	Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
Behaviour during big ears Stable flight A Dive forward angle on exit Behaviour immediately after releasing the accelerator while maintaining big ears 22. Behaviour exiting a steep spiral A Stable flight A	21. Big ears in accelerated flight	В			
Recovery through pilot action in less than 3 s	Entry procedure	Dedicated controls	Α	Dedicated controls	Α
less than a further 3 s Dive forward angle on exit Dive forward 0° to 30° A Dive forward 0° to 30° A Dive forward 0° to 30° A Stable flight A Stable flight A Stable flight A Tendency to return to straight flight Cascade occurs Dive forward 0° to 30° A Dive forward 1° to 40° A Dive forward 1°	Behaviour during big ears	Stable flight	Α	Stable flight	Α
Behaviour immediately after releasing the accelerator while maintaining big ears 22. Behaviour exiting a steep spiral A Tendency to return to straight flight Spontaneous exit A Spontaneous exit A Less than 720°, spontaneous e	Recovery		В	Spontaneous in less than 3 s	Α
22. Behaviour exiting a steep spiral A Tendency to return to straight flight Spontaneous exit A Spontaneous exit A Spontaneous exit A Less than 720°, spontaneous recovery A Less than 720°, spontaneous recovery Sink rate when evaluating spiral stability [m/s] 14 17 23. Alternative means of directional control A 180° turn achievable in 20 s Stall or spin occurs No A No A No A 24. Any other flight procedure and/or configuration described in the user's manual Procedure works as described not available not available not available o not available	Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
Tendency to return to straight flight Spontaneous exit A Spontaneous exit A Less than 720°, spontaneous exit A Less than 720°, spontaneous exit A Less than 720°, spontaneous exit A Spontaneous exit A Spontaneous exit A Less than 720°, spontaneous	Behaviour immediately after releasing the accelerator while maintaining big ears	Stable flight	Α	Stable flight	Α
Turn angle to recover normal flight Less than 720°, spontaneous recovery A Less than 720°, spontaneous recovery 17 23. Alternative means of directional control A 180° turn achievable in 20 s 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 not available not available not available 0 not available	22. Behaviour exiting a steep spiral	Α			
recovery recovery Sink rate when evaluating spiral stability [m/s] 14 17 23. Alternative means of directional control A 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 not available 0 Cascade occurs not available 0 not available 0	Tendency to return to straight flight	Spontaneous exit	Α	Spontaneous exit	Α
23. Alternative means of directional control 180° turn achievable in 20 s Yes A Yes A Yes A No A No A 24. Any other flight procedure and/or configuration described in the user's manual Procedure works as described not available not available not available 0 not available 0 Cascade occurs not available 0 not available 0 not available 0 0 not available 0	Turn angle to recover normal flight		Α		Α
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Stall or spin occurs No A No A No A 24. Any other flight procedure and/or configuration described in the user's manual Procedure works as described not available not available not available o not available	23. Alternative means of directional control	Α			
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 25. Comments of test pilot	180° turn achievable in 20 s	Yes	Α	Yes	Α
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 25. Comments of test pilot	Stall or spin occurs	No	Α	No	Α
Procedure suitable for novice pilots not available 0 not available 0 cascade occurs not available 0 not available 0 not available 0 25. Comments of test pilot	24. Any other flight procedure and/or configuration described in the user's manual	0			
Cascade occurs not available 0 not available 0 25. Comments of test pilot	Procedure works as described	not available	0	not available	0
25. Comments of test pilot	Procedure suitable for novice pilots	not available	0	not available	0
	Cascade occurs	not available	0	not available	0
Comments Impossible to make a B-line stall.	25. Comments of test pilot				
	Comments	Impossible to make a B-line stall.			