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test laboratory for paragliders, paraglider harnesses and paraglider reserve parachutes



Flight test report: EN 926-2:2013+A1:2021* and NfL 2-565-20

Manufacturer	anufacturer Advance Thun AG		Certification num	bei	PG_2431.2024	
Address	Uttigenstrasse 87		Flight test		11.07.2024	
	3600 Thun					
	Switzerland					
Glider model	SIGMA 12 DLS 28		Classification		C	
Serial number	105052		Representative		None	
Trimmer	no		Place of test		Villeneuve	
Folding lines used	no					
Test pilot		Alexandre Jofresa		Anselm Rauh		
Hamasa		Ad The AC 4.M		Mandy Valley or Mani Light O.		
Harness	iotonoo [om]		Advance Thun AG Success 4 M		Woody Valley srl Wani Light 2 L	
Harness to risers d			43		43	
Distance between r	isers [cm]	48			48	
Total weight in fligh	nt [kg]	105		128		
1. Inflation/Take-off		В				
Rising behaviour		Easy rising, some pilo	ot correction is required	В	Easy rising, some pilot correction is required	В
Special take off technique	e required	No		Α	No	Α
	·					
2. Landing	a required	A No		Α	No	Α
Special landing technique	erequired	NO		A	NO	A
3. Speed in straight flight	ht	В				
Trim speed more than 30	km/h	Yes		Α	Yes	Α
Speed range using the co	ontrols larger than 10 km/h	Yes A		Α	Yes	Α
Minimum speed		Less than 25 km/h		Α	25 km/h to 30 km/h	В
4. Control movement		Α				
Max. weight in flight up						
Symmetric control pressure / travel		not available		0	not available	0
Max. weight in flight 80	kg to 100 kg					
Symmetric control pressu	ire / travel	not available		0	not available	0
May waight in flight are	octor than 100 km					
Max. weight in flight gre	_	Increasing / greater th	nan 65 cm	Α	Increasing / greater than 65 cm	Α
Symmetric control pressure / travel		morodomig / grodior ii	101 00 0111	,,	morecomy greater than so on	,,
5. Pitch stability exiting	accelerated flight	Α				
Dive forward angle on exi	it	Dive forward less than	n 30°	Α	Dive forward less than 30°	Α
Collapse occurs		No		Α	No	Α
	ng controls during	Α				
Pitch stability operating controls during accelerated flight Collapse occurs		No		Α	No	Α
Collapse occurs						·
7. Roll stability and damping		A				
Oscillations		Reducing		Α	Reducing	Α
8. Stability in gentle spirals		Α				
8. Stability in gentle spirals Tendency to return to straight flight		Spontaneous exit		Α	Spontaneous exit	Α

O Behavious suiting a fully developed spiral dive	В			
9. Behaviour exiting a fully developed spiral dive Initial response of glider (first 180°)	Immediate reduction of rate of turn	Α	No immediate reaction	В
Tendency to return to straight flight	Spontaneous exit (g force decreasing, rate of turn decreasing)	Α	Spontaneous exit (g force decreasing, rate of turn decreasing)	Α
Turn angle to recover normal flight	Less than 720°, spontaneous recovery	Α	Less than 720°, spontaneous recovery	Α
10. Symmetric front collapse Approximately 30 % chord	A			
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
Folding lines used	No	Α	No	Α
At least 50% chord	Dealing heat less than 450	^	Dealting heads less than 450	•
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
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
Folding lines used	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
Folding lines used	No	Α	No	Α
11. Exiting deep stall (parachutal stall)	A Yes	٨	Yes	Α
Deep stall achieved	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Recovery				
Dive forward angle on exit	Dive forward 0° to 30°		Dive forward 0° to 30°	A
Change of course	Changing course less than 45°		Changing course less than 45°	Α .
Cascade occurs	No	Α	No	Α
12. High angle of attack recovery Recovery	C Spontaneous in 3 s to 5 s	С	Spontaneous in 3 s to 5 s	С
Cascade occurs	No	Α	No	Α
13. Recovery from a developed full stall	A			
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	A			
Small asymmetric collapse				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 15° to 45°	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 (or only a small number of collapsed cells with a spontaneous reinflation)	Α	No (or only a small number of collapsed cells with a spontaneous reinflation)	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
Folding lines used	No	Α	No	Α
Large asymmetric collapse				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 15° to 45°	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 (or only a small number of collapsed cells with a spontaneous reinflation)	Α	No (or only a small number of collapsed cells with a spontaneous reinflation)	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
Folding lines used	No	Α	No	Α
Small asymmetric collapse with fully activated accelerator				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 15° to 45°	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 (or only a small number of collapsed cells with a spontaneous reinflation)	Α	No (or only a small number of collapsed cells with a spontaneous reinflation)	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
Folding lines used	No	Α	No	Α
Large asymmetric collapse with fully activated accelerator				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 15° to 45°	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 (or only a small number of collapsed cells with a spontaneous reinflation)	Α	No (or only a small number of collapsed cells with a spontaneous reinflation)	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α

A Parameter	Folding lines used	No	Α	No	Α
Able to keep course Yes A Yes A Yes A Yes A Now the collapsed side possible in 10 a Amount of control range between turn and stall or spin More then 50 % of the symmetric control travel A Now then 50 % of the symmetric control travel A Cascade occurs A Carraging course lices than 45° A Changing course lices than 40° A Spontaneous in less than 24° A Spontaneous in less than 24° A Spontaneous in less than 24° A Spontaneous in less than 34° A Spontaneo		A			
Amount of control range between turn and stall or spin 16. Trim speed spin tendency		Yes	Α	Yes	Α
16. Trim speed spin tendency Spin occurs No No A	180° turn away from the collapsed side possible in 10 s	Yes	Α	Yes	А
Spin occurs No A No	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
The Content of Conte	16. Trim speed spin tendency	A			
Spin occurs No A No A No A 18. Recovery from a developed spin Spin rotation angle after release Stops spinning in 90° to 180° B Stops spinning in 80° to 180° A No A 19. B-line stall A Change of course before release Changing course less than 45° A Changing course less than 3 s A Changing course less than 4° Deductor course and Changing course course than 4° Deductor course and Changing course cour	Spin occurs	No	Α	No	Α
Spin rotation angle after release No A No A 19. B-line stall Change of course before release Change of course before release Remains stable with staight span A Recovery Spontaneous in less than 3s A Dive forward on 30s No A 20. Big ears Entry procedure Dedicated controls A Recovery Spontaneous in less than 3s A Dive forward on 30s A Entry procedure Dedicated controls A Recovery Spontaneous in less than 3s A Dive forward on 30s A Entry procedure Dedicated controls A Recovery Spontaneous in less than 3s A Dive forward on 30s A Entry procedure Dedicated controls A Recovery Spontaneous in less than 3s A Dive forward on 30s A Entry procedure Dedicated controls A Recovery Spontaneous in less than 3s A Dive forward on 30s A Behaviour during big ears Stable flight A Entry procedure Dedicated controls A 21. Big ears in accelerated flight Entry procedure Dedicated controls A Entry procedure Dedicated controls A Entry procedure Dedicated controls A Stable flight A No A			Α	No	А
Spin rotation angle after release No A No A 19. B-line stall Change of course before release Change of course before release Remains stable with staight span A Recovery Spontaneous in less than 3s A Dive forward on 30s No A 20. Big ears Entry procedure Dedicated controls A Recovery Spontaneous in less than 3s A Dive forward on 30s A Entry procedure Dedicated controls A Recovery Spontaneous in less than 3s A Dive forward on 30s A Entry procedure Dedicated controls A Recovery Spontaneous in less than 3s A Dive forward on 30s A Entry procedure Dedicated controls A Recovery Spontaneous in less than 3s A Dive forward on 30s A Entry procedure Dedicated controls A Recovery Spontaneous in less than 3s A Dive forward on 30s A Behaviour during big ears Stable flight A Entry procedure Dedicated controls A 21. Big ears in accelerated flight Entry procedure Dedicated controls A Entry procedure Dedicated controls A Entry procedure Dedicated controls A Stable flight A No A	18 Pacayary from a dayaloned spin	В			
Pis. B-line stall Change of course before release Changing course less than 45° A Remains stable with straight span A Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward on the straight span A Cascade occurs No A No A No A No A No A No A Dedicated controls A Dedicated controls A Dedicated controls A Stable flight A Stable flight A Stable flight A Dive forward on to 30° A Stable flight A Stable flight A Dive forward on to 30° A Stable flight A Stab			В	Stops spinning in less than 90°	Α
Change of course before release Remains stable with straight span Recovery Spontaneous in less than 3 s Recovery Spontaneous in less than 3 s Recovery Remains stable with straight span A Recovery Spontaneous in less than 3 s A Dive forward angle on exit Dive forward 0° to 30° A No A No A No A No A Recovery Remains stable with straight span A Recovery A Recovery A Recovery No A Recovery R	Cascade occurs	No	Α	No	Α
Behaviour before release Remains stable with straight span A Remains stable with straight span A Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward on the straight span A Dive f	19. B-line stall				
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Dive forward angle on exit Dive forward 0° to 30° A Dive forward 0° to 30° A No Cascade occurs A Dedicated controls A Stable flight A Stable flight A Dive forward 0° to 30° A Dedicated controls A Dive forward 0° to 30° A Dedicated controls A Dive forward 0° to 30° A Dedicated controls A Dedicated controls	Behaviour before release	Remains stable with straight span	Α	Remains stable with straight span	Α
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20. Big ears Entry procedure Dedicated controls A Dedicated controls A Stable flight A Stable flight A Stable flight A Stable flight A Dive forward uning big ears A Dive forward angle on exit Dive forward 0° to 30° A Dive forward 0° to 30° A Dive forward 0° to 30° A Dedicated controls A Dive forward 0° to 30° A Dive forward 0° to 30° A Dive forward 0° to 30° A Dedicated controls A Dedicated controls A Stable flight A Stable fl	Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
Entry procedure Dedicated controls A Dedicated controls A Stable flight A Dive forward or to 30° A Dive forward or to 30° A Dive forward or to 30° A Dedicated controls A Stable flight A Stable flight A Stable flight A Stable flight A Dive forward or to 30° A D	Cascade occurs	No	Α	No	Α
Behaviour during big ears Stable flight A Stable flight A Stable flight Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward 0° to 30° A Dedicated controls A Dedicated controls A Dedicated controls A Stable flight A Stable f	20. Big ears	Α			
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Dive forward angle on exit Dive forward 0° to 30° A Dedicated controls A Dedicated controls A Dedicated controls A Dedicated controls A Stable flight A Stable flight A Stable flight A Stable flight A Dive forward angle on exit 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 Behaviour during big ears Stable flight A Recovery Spontaneous in less than 3 s A Dive forward angle on exit Dive forward 0° to 30° A Behaviour immediately after releasing the accelerator while maintaining big ears 22. Alternative means of directional control A Stable flight A Pres A Tes A Stall or spin occurs No A No A No A Dive forward 0° to 30° A The stable flight A Stable flight A The stable flight A T	Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Entry procedure Dedicated controls A Dedicated controls A Dedicated controls A Dedicated controls A Stable flight A Dive forward angle on exit Dive forward 0° to 30° A Stable flight A S	Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
Behaviour during big ears Stable flight A Stable flight A Stable flight A Spontaneous in less than 3 s A Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward on to 30 on the forward on to 30 on the forward on to 30 on the flight of the fli	21. Big ears in accelerated flight	A			
Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward on the stream of the stream	Entry procedure	Dedicated controls	Α	Dedicated controls	Α
Dive forward angle on exit Dive forward 0° to 30° A Dive forward 0° to 30° A Dive forward 0° to 30° A Behaviour immediately after releasing the accelerator while maintaining big ears 22. Alternative means of directional control 180° turn achievable in 20 s Yes A Yes A Stable flight A Stable flight A Stable flight A Stable flight A Pres A Pres A Pres A Pres Procedure flight procedure and/or configuration described in the user's manual Procedure works as described Not available O not available O not available O not available O	Behaviour during big ears	Stable flight	Α	Stable flight	Α
Behaviour immediately after releasing the accelerator while maintaining big ears 22. Alternative means of directional control 180° turn achievable in 20 s Stall or spin occurs No A Stall or spin occurs No A No A 23. Any other flight procedure and/or configuration described in the user's manual Procedure works as described not available not available 0 not available 0 not available 0 not available 0	Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
while maintaining big ears 22. Alternative means of directional control 180° turn achievable in 20 s Yes A Yes A Stall or spin occurs No No A No A No A 23. Any other flight procedure and/or configuration described in the user's manual Procedure works as described not available o not available	Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
180° turn achievable in 20 s Yes A Yes A Stall or spin occurs No No A No A No A 23. Any other flight procedure and/or configuration described in the user's manual Procedure works as described not available 0		Stable flight	Α	Stable flight	Α
Stall or spin occurs No A No A 23. Any other flight procedure and/or configuration described in the user's manual Procedure works as described not available 0 not available 0 not available 0 not available 0				V	_
23. Any other flight procedure and/or configuration described in the user's manual Procedure works as described not available 0 not available 0 not available 0 not available 0 on tot available 0	180° turn achievable in 20 s	Yes	Α	Yes	Α
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	Stall or spin occurs	No	Α	No	Α
Procedure suitable for novice pilots not available 0 not available 0	23. Any other flight procedure and/or configuration described in the user's manual	0			
	Procedure works as described	not available	0	not available	0
Cascade occurs 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