Manufacturer	MACPARA	**Type testing No.**	**EAPR-GS-7224/09**
		Date of testing	**22.05. - 23.06.2009**
Model	**Envy 2- 23**	**Location**	**Schnifis**

European Para Academy
LBA Musterprüfstelle

European Academy of Parachute Rigging e.V - Luitpoldstr. 30 - D87700 Memmingen - Germany
Under approval of **EPTA** **E**uropean **P**araglider **T**estlaboratory **A**licane

	Minimum take off weight		Maximum take off weight	
Testpilot	**Wibke Becker**		**Hannes Tschofen**	
Harness	**Academy light**		**Academy Testgurt**	
Pilot's take off weight	**60 kg**		**83 kg**	

Classification	**C**

Test-criteria		**Minimum take off weight**		**Evaluation**	**Maximum take off weight**		**Evaluation**
1. Inflation / take-off - 4.4.1							
Rising behavior		Delayed		B	Delayed		B
Special take off technique required		No		A	No		A
2. Landing - 4.4.2							
Special landing technique required		No		A	No		A
3. Speeds in straight flight - 4.4.3							
Trim speed more than 30km/h		Yes		A	Yes		A
Speed range using the controls larger than 10km/h		Yes		A	Yes		A
Minimum speed		Less than 25 km/h		A	Less than 25 km/h		A
4. Control movement - 4.4.4							
Max. weight in flight up to 80kg				-			-
Max. weight in flight 80 to 100kg		Increasing	45cm - 60cm	C	Increasing	45cm - 60cm	C
Max. weight in flight greater than 100kg				-	Increasing	>65 cm	A
5. Pitch stability exiting accelerated flight - 4.4.5							
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 - 4.4.6							
Collapse occurs		No		A	No		A
7. Roll stability and damping - 4.4.7							
Oscillations		Reducing		A	Reducing		A
8. Stability in gentle spirals - 4.4.8							
Tendency to return to straight flight		Spontaneous exit		A	Spontaneous exit		A
9. Behaviour in a steeply banked turn - 4.4.9							
Sink rate after two turns		More than 14m/s		B	More than 14m/s		B
10. Symmetric front collapse - 4.4.10							
Entry	trim speed	Rocking back less than 45°		A	Rocking back less than 45°		A
Recovery	trim speed	Spontaneous in less than 3 sec		A	Spontaneous in less than 3 sec		A
Dive forward angle on exit	trim speed	0° - 30°	Keeping course	A	30° - 60°	Keeping course	B
Cascade occurs	trim speed	No		A	No		A
Entry	accelerated	Rocking back less than 45°		A	Rocking back less than 45°		A
Recovery	accelerated	Spontaneous in 3 to 5 sec		B	Spontaneous in less than 3 sec		A
Dive forward angle on exit	accelerated	0° - 30°	Entering a turn of less than 90°	A	30° - 60°	Keeping course	B
Cascade occurs	accelerated	No		A	No		A

11. Exiting deep stall (parachutal stall) - 4.4.11									
Deep stall achieved		Yes				Yes			
Recovery		Spontaneous in less than 3 sec			A	Spontaneous in less than 3 sec			A
Dive forward angle on exit		0° - 30°			A	30° - 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 - 4.4.12									
Recovery		Spontaneous in less than 3 sec			A	Spontaneous in less than 3 sec			A
Cascade occurs		No			A	No			A
13. Recovery from a developed full stall - 4.4.13									
Dive forward angle on exit		0° - 30°			A	30° - 60°			B
Collapse		No collapse			A	No collapse			A
Cascade occurs (other than collapse)		No			A	No			A
Rocking backward		Less than 45°			A	Less than 45°			A
Line tension		Most lines tight			A	Most lines tight			A
14. Asymmetric collapse (trim speed) - 4.4.14									
Change of course until re-inflation	trim speed, max 50% collapse	< 90°	Dive or roll angle	15° - 45°	A	< 90°	Dive or roll angle	15° - 45°	A
Re-inflation behavior		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
Change of course until re-inflation	trim speed, max 75% collapse	90° - 180°	Dive or roll angle	15° - 45°	B	90° - 180°	Dive or roll angle	45° - 60°	C
Re-inflation behavior		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
Change of course until re-inflation	accelerated, max 50% collapse	< 90°	Dive or roll angle	15° - 45°	A	< 90°	Dive or roll angle	15° - 45°	A
Re-inflation behavior		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
Change of course until re-inflation	accelerated, max 75% collapse	90° - 180°	Dive or roll angle	15° - 45°	B	90° - 180°	Dive or roll angle	45° - 60°	C
Re-inflation behavior		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
15. Directional control with a maintained asymmetric collapse - 4.4.15									
Able to keep course straight		Yes			A	Yes			A
180° turn away from the collapsed side possible in 10 sec		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 - 4.4.16									
Spin occurs		No			A	No			A
17. Low speed spin tendency - 4.4.17									
Spin occurs		No			A	No			A
18. Recovery from a developed spin - 4.4.18									
Spin rotation angle after release		Stops spinning in 90° to 180°			C	Stops spinning in less than 90°			A
Cascade occurs		No			A	No			A
19. B-line-stall - 4.4.19									
Change of course before release		Changing course less than 45°			A	Changing course less than 45°			A
Behaviour before release		Remains stable with straight span			A	Remains stable with straight span			A
Recovery		Spontaneous in less than 3 sec			A	Spontaneous in less than 3 sec			A
Dive forward angle on exit		0° - 30°			A	30° - 60°			A
Cascade occurs		No			A	No			A
20. Big ears - 4.4.20									
Entry procedure		Special device required			A	Special device required			A
Behaviour during big ears		Stable flight			A	Stable flight			A
Recovery		Spontaneous in 3 to 5 sec			B	Spontaneous in less than 3 sec			A
Dive forward angle on exit		0° - 30°			A	0° bis 30°			A
21. Big Ears in accelerated flight - 4.4.21									
Entry procedure		Special device required			A	Special device required			A
Behaviour during big ears		Stable flight			A	Stable flight			A
Recovery		Spontaneous in 3 to 5 sec			A	Spontaneous in less than 3 sec			A
Dive forward angle on exit		0° - 30°			A	0° bis 30°			A
Behaviour immediately after releasing the accelarator while maintaining big ears		Stable flight			A	Stable flight			A

22. Behaviour exiting a steep spiral - 4.4.22				
Tendency to return to straight flight	Spontaneous exit	A	Spontaneous exit	A
Turn angle to recover normal flight	Less than 720°, spontaneous recovery	A	No	C
23. Alternative means of directional control - 4.4.23				
180° turn achievable in 20 sec	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 - 4.4.24				
Procedure works as descibed		NA		NA
Procedure suitable for novice pilots		NA		NA
Cascade occurs		NA		NA
25. Remarks of testpilot:				

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