



DHV TESTREPORT LTF

UP K2 4 ML

**Type designation** UP K2 4 ML  
**Type test reference no** DHV GS-01-2590-20  
**Holder of certification** [UP International GmbH](#)  
**Manufacturer** [UP International GmbH](#)  
**Classification** B  
**Winch towing** Yes  
**Number of seats min / max** 2 / 2  
**Accelerator** No  
**Trimmers** Yes



**BEHAVIOUR AT MIN WEIGHT IN FLIGHT (130KG)**

**BEHAVIOUR AT MAX WEIGHT IN FLIGHT (230KG)**

**Test pilots**



**Josef Bauer**

No release



**Harald Buntz**

No release

Inflation/take-off

A

A

**Rising behaviour** Smooth, easy and constant rising  
**Special take off technique required** No

Smooth, easy and constant rising  
 No

Landing

A

A

**Special landing technique required** No

No

Speeds in straight flight

A

A

**Trim speed more than 30 km/h** Yes  
**Speed range using the controls larger than 10 km/h** Yes  
**Minimum speed** Less than 25 km/h

Yes  
 Yes  
 Less than 25 km/h

Control movement

A

A

**Symmetric control pressure** Increasing  
**Symmetric control travel** Greater than 65 cm

Increasing  
 Greater than 65 cm

Pitch stability exiting accelerated flight

Not carried out because the glider is not equipped with an accelerator

Pitch stability operating controls during accelerated flight

Not carried out because the glider is not equipped with an accelerator

Roll stability and damping

A

A

**Oscillations** Reducing

Reducing

Stability in gentle spirals

A

A

**Tendency to return to straight flight** Spontaneous exit

Spontaneous exit

Behaviour exiting a fully developed spiral dive

A

B

**Initial response of glider (first 180°)** Immediate reduction of rate of turn  
**Tendency to return to straight flight** Spontaneous exit (g force decreasing, rate of turn decreasing)  
**Turn angle to recover normal flight** Less than 720°, spontaneous recovery

Immediate reduction of rate of turn  
 Spontaneous exit (g force decreasing, rate of turn decreasing)  
 720° to 1 080°, spontaneous recovery

Symmetric front collapse

A

A

**Entry** Rocking back less than 45°  
**Recovery** Spontaneous in less than 3 s

Rocking back less than 45°  
 Spontaneous in less than 3 s

<b>Dive forward angle on exit</b>	Dive forward 0° to 30°	Dive forward 0° to 30°
<b>Change of course</b>	Keeping course	Keeping course
<b>Cascade occurs</b>	No	No
<b>Folding lines used</b>	no	no

**Unaccelerated collapse (at least 50 % chord)** A

B

<b>Entry</b>	Rocking back less than 45°	Rocking back less than 45°
<b>Recovery</b>	Spontaneous in less than 3 s	Spontaneous in less than 3 s
<b>Dive forward angle on exit</b>	Dive forward 0° to 30°	Dive forward 30° to 60°
<b>Change of course</b>	Keeping course	Keeping course
<b>Cascade occurs</b>	No	No
<b>Folding lines used</b>	no	no

**Accelerated collapse (at least 50 % chord)**

Not carried out because the glider is not equipped with an accelerator

**Exiting deep stall (parachutal stall)** A

A

<b>Deep stall achieved</b>	Yes	Yes
<b>Recovery</b>	Spontaneous in less than 3 s	Spontaneous in less than 3 s
<b>Dive forward angle on exit</b>	Dive forward 0° to 30°	Dive forward 0° to 30°
<b>Change of course</b>	Changing course less than 45°	Changing course less than 45°
<b>Cascade occurs</b>	No	No

**High angle of attack recovery** A

A

<b>Recovery</b>	Spontaneous in less than 3 s	Spontaneous in less than 3 s
<b>Cascade occurs</b>	No	No

**Recovery from a developed full stall** A

B

<b>Dive forward angle on exit</b>	Dive forward 0° to 30°	Dive forward 30° to 60°
<b>Collapse</b>	No collapse	No collapse
<b>Cascade occurs (other than collapses)</b>	No	No
<b>Rocking back</b>	Less than 45°	Less than 45°
<b>Line tension</b>	Most lines tight	Most lines tight

**Small asymmetric collapse** A

A

<b>Change of course until re-inflation</b>	Less than 90°	Less than 90°
<b>Maximum dive forward or roll angle</b>	Dive or roll angle 15° to 45°	Dive or roll angle 0° to 15°
<b>Re-inflation behaviour</b>	Spontaneous re-inflation	Spontaneous re-inflation
<b>Total change of course</b>	Less than 360°	Less than 360°
<b>Collapse on the opposite side occurs</b>	No (or only a small number of collapsed cells with a spontaneous re inflation)	No (or only a small number of collapsed cells with a spontaneous re inflation)
<b>Twist occurs</b>	No	No
<b>Cascade occurs</b>	No	No
<b>Folding lines used</b>	no	no

**Large asymmetric collapse** B

B

<b>Change of course until re-inflation</b>	90° to 180°	90° to 180°
<b>Maximum dive forward or roll angle</b>	Dive or roll angle 15° to 45°	Dive or roll angle 15° to 45°
<b>Re-inflation behaviour</b>	Spontaneous re-inflation	Spontaneous re-inflation
<b>Total change of course</b>	Less than 360°	Less than 360°
<b>Collapse on the opposite side occurs</b>	No (or only a small number of collapsed cells with a spontaneous re inflation)	No (or only a small number of collapsed cells with a spontaneous re inflation)
<b>Twist occurs</b>	No	No
<b>Cascade occurs</b>	No	No
<b>Folding lines used</b>	no	no

**Small asymmetric collapse accelerated**

Not carried out because the glider is not equipped with an accelerator

**Large asymmetric collapse accelerated**

Not carried out because the glider is not equipped with an accelerator

**Directional control with a maintained asymmetric collapse** A

A

<b>Able to keep course</b>	Yes	Yes
<b>180° turn away from the collapsed side possible in 10 s</b>	Yes	Yes
<b>Amount of control range between turn and stall or spin</b>	More than 50 % of the symmetric control travel	More than 50 % of the symmetric control travel

**Trim speed spin tendency** A

A

<b>Spin occurs</b>	No	No
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**Low speed spin tendency** A

A

**Spin occurs** No

No

**Recovery from a developed spin**

**A**

**A**

**Spin rotation angle after release** Stops spinning in less than 90°

Stops spinning in less than 90°

**Cascade occurs** No

No

**B-line stall**

**A**

**A**

**Change of course before release** Changing course less than 45°

Changing course less than 45°

**Behaviour before release** Remains stable with straight span

Remains stable with straight span

**Recovery** Spontaneous in less than 3 s

Spontaneous in less than 3 s

**Dive forward angle on exit** Dive forward 0° to 30°

Dive forward 0° to 30°

**Cascade occurs** No

No

**Big ears**

**A**

**A**

**Entry procedure** Standard technique

Dedicated controls

**Behaviour during big ears** Stable flight

Stable flight

**Recovery** Spontaneous in less than 3 s

Spontaneous in less than 3 s

**Dive forward angle on exit** Dive forward 0° to 30°

Dive forward 0° to 30°

**Big ears in accelerated flight**

Not carried out because the glider is not equipped with an accelerator

**Alternative means of directional control**

**A**

**A**

**180° turn achievable in 20 s** Yes

Yes

**Stall or spin occurs** No

No

**Any other flight procedure and/or configuration described in the user's manual**

No other flight procedure or configuration described in the user's manual