**UP MERU 2 L** 

Inflation/take-off

Type designation UP Meru 2 L

Type test reference no DHV GS-01-2852-24

Holder of certification UP International GmbH

Manufacturer UP International GmbH

**Classification** D

Winch towing Yes

Number of seats min / max 1/1

**Accelerator** Yes

Trimmers No

BEHAVIOUR AT MIN WEIGHT IN BEHAVIOUR AT MAX FLIGHT (108KG)



**WEIGHT IN FLIGHT (125KG)** 



No release



Mario Eder No release

Rising behaviour Overshoots, shall be slowed down to

avoid a front collance

Overshoots, shall be slowed down to avoid a front collapse

No

	avoia a front conapsc
Special take off technique require	d No

В

Yes

Yes

Landing	A	Α
Special	landing technique required No	No

Speeds in straight flight

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

km/h

Minimum speed Less than 25 km/h

25 km/h to 30 km/h

the contract of the contract o	9.2	!=
Control movement	iA	C

Symmetric control pressure Increasing Increasing Symmetric control travel Greater than 65 cm 50 cm to 65 cm

Pitch stability exiting accelerated flight

Dive forward angle on exit Dive forward less than 30° Collapse occurs No

Dive forward less than 30°

Nο

Pitch stability operating controls during accelerated flight

Collapse occurs No Nο

Roll stability and damping **Oscillations** Reducing Reducing

Stability in gentle spirals

Tendency to return to straight flight Spontaneous exit Spontaneous exit

Behaviour exiting a fully developed spiral dive A

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)

Immediate reduction of rate of turn Spontaneous exit (g force decreasing, rate of turn decreasing)

i urn angle to recover normal flight	Less than 720°, spontaneous recovery	Less than 720°, spontaneous recovery
Symmetric front collapse	c	c
Entry	Rocking back less than 45°	Rocking back less than 45°
	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit	•	Dive forward 0° to 30°
Change of course		Keeping course
Cascade occurs		No
	***	
Folding lines used	yes	yes
Unaccelerated collapse (at least 50 % chord)	c	D
Entry	Rocking back less than 45°	Rocking back less than 45°
Recovery	Spontaneous in less than 3 s	Recovery through pilot action in le
		than a further 3 s
Dive forward angle on exit	Dive forward 0° to 30°	Dive forward 0° to 30°
Change of course	Keeping course	Entering a turn of 90° to 180°
Cascade occurs		No
Folding lines used		yes
-		
	i <sup></sup>	D
Entry	Rocking back less than 45°	Rocking back less than 45°
Recovery	Recovery through pilot action in less than a further 3 $\mathrm{s}$	Recovery through pilot action in lethan a further 3 s
Dive forward angle on exit	Dive forward 30° to 60°	Dive forward 30° to 60°
_	Entering a turn of less than 90°	Entering a turn of less than 90°
Cascade occurs	•	No
Folding lines used		
Folding lines used	yes	yes
Exiting deep stall (parachutal stall)	В	В
Deep stall achieved	Yes	Yes
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit	Dive forward 30° to 60°	Dive forward 30° to 60°
Change of course	Changing course less than 45°	Changing course less than 45°
Cascade occurs	No	No
High angle of attack recovery	A	A
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Cascade occurs	•	No No
Recovery from a developed full stall	В	В
Recovery from a developed full stall  Dive forward angle on exit	4	B Dive forward 30° to 60°
Dive forward angle on exit	4	±
Dive forward angle on exit Collapse	Dive forward 30° to 60° No collapse	Dive forward 30° to 60°
Dive forward angle on exit Collapse Cascade occurs (other than collapses)	Dive forward 30° to 60° No collapse No	Dive forward 30° to 60° No collapse No
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back	Dive forward 30° to 60° No collapse No Less than 45°	Dive forward 30° to 60° No collapse No Less than 45°
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back	Dive forward 30° to 60° No collapse No	Dive forward 30° to 60° No collapse No
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension	Dive forward 30° to 60° No collapse No Less than 45° Most lines tight	Dive forward 30° to 60° No collapse No Less than 45°
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension Small asymmetric collapse Change of course until re-inflation	Dive forward 30° to 60° No collapse No Less than 45° Most lines tight  c  90° to 180°	Dive forward 30° to 60° No collapse No Less than 45° Most lines tight  c  90° to 180°
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension Small asymmetric collapse	Dive forward 30° to 60° No collapse No Less than 45° Most lines tight  c  90° to 180°	Dive forward 30° to 60° No collapse No Less than 45° Most lines tight
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension Small asymmetric collapse Change of course until re-inflation Maximum dive forward or roll angle	Dive forward 30° to 60° No collapse No Less than 45° Most lines tight  c  90° to 180°	Dive forward 30° to 60° No collapse No Less than 45° Most lines tight  c  90° to 180° Dive or roll angle 15° to 45°
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension Small asymmetric collapse Change of course until re-inflation Maximum dive forward or roll angle	Dive forward 30° to 60°  No collapse  No Less than 45°  Most lines tight  c  90° to 180°  Dive or roll angle 15° to 45°  Inflates in less than 3 s from start of pilot action	Dive forward 30° to 60° No collapse No Less than 45° Most lines tight  c  90° to 180° Dive or roll angle 15° to 45° Inflates in less than 3 s from star
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension Small asymmetric collapse Change of course until re-inflation Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs	Dive forward 30° to 60°  No collapse  No Less than 45°  Most lines tight  c  90° to 180°  Dive or roll angle 15° to 45°  Inflates in less than 3 s from start of pilot action Less than 360°	Dive forward 30° to 60°  No collapse  No Less than 45°  Most lines tight  c  90° to 180°  Dive or roll angle 15° to 45°  Inflates in less than 3 s from star of pilot action Less than 360°  No (or only a small number of collapsed cells with a spontaneou
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension Small asymmetric collapse Change of course until re-inflation Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs	Dive forward 30° to 60°  No collapse  No Less than 45° Most lines tight  c  90° to 180° Dive or roll angle 15° to 45° Inflates in less than 3 s from start of pilot action Less than 360°  No (or only a small number of collapsed cells with a spontaneous re inflation)	Dive forward 30° to 60° No collapse No Less than 45° Most lines tight  c  90° to 180° Dive or roll angle 15° to 45° Inflates in less than 3 s from star of pilot action Less than 360° No (or only a small number of collapsed cells with a spontaneou re inflation)
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension Small asymmetric collapse Change of course until re-inflation Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs	Dive forward 30° to 60°  No collapse  No Less than 45°  Most lines tight  c  90° to 180°  Dive or roll angle 15° to 45°  Inflates in less than 3 s from start of pilot action Less than 360°  No (or only a small number of collapsed cells with a spontaneous re inflation)  No	Dive forward 30° to 60°  No collapse  No Less than 45° Most lines tight  ic  90° to 180° Dive or roll angle 15° to 45° Inflates in less than 3 s from star of pilot action Less than 360°  No (or only a small number of collapsed cells with a spontaneou re inflation)  No
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension Small asymmetric collapse Change of course until re-inflation Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs Twist occurs	Dive forward 30° to 60°  No collapse  No Less than 45°  Most lines tight  C  90° to 180°  Dive or roll angle 15° to 45°  Inflates in less than 3 s from start of pilot action Less than 360°  No (or only a small number of collapsed cells with a spontaneous re inflation)  No No	Dive forward 30° to 60° No collapse No Less than 45° Most lines tight  c  90° to 180° Dive or roll angle 15° to 45° Inflates in less than 3 s from star of pilot action Less than 360° No (or only a small number of collapsed cells with a spontaneou re inflation)
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension Small asymmetric collapse Change of course until re-inflation Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs	Dive forward 30° to 60°  No collapse  No Less than 45°  Most lines tight  C  90° to 180°  Dive or roll angle 15° to 45°  Inflates in less than 3 s from start of pilot action Less than 360°  No (or only a small number of collapsed cells with a spontaneous re inflation)  No No	Dive forward 30° to 60°  No collapse  No Less than 45° Most lines tight  ic  90° to 180° Dive or roll angle 15° to 45° Inflates in less than 3 s from star of pilot action Less than 360°  No (or only a small number of collapsed cells with a spontaneoure inflation)  No
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension Small asymmetric collapse Change of course until re-inflation Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs Twist occurs Cascade occurs Folding lines used	Dive forward 30° to 60°  No collapse  No Less than 45°  Most lines tight  c  90° to 180°  Dive or roll angle 15° to 45°  Inflates in less than 3 s from start of pilot action Less than 360°  No (or only a small number of collapsed cells with a spontaneous re inflation)  No No No yes	Dive forward 30° to 60°  No collapse  No Less than 45° Most lines tight  C  90° to 180° Dive or roll angle 15° to 45° Inflates in less than 3 s from star of pilot action Less than 360°  No (or only a small number of collapsed cells with a spontaneou re inflation)  No No
Dive forward angle on exit Collapse Cascade occurs (other than collapses) Rocking back Line tension Small asymmetric collapse Change of course until re-inflation Maximum dive forward or roll angle Re-inflation behaviour Total change of course Collapse on the opposite side occurs Twist occurs Cascade occurs Folding lines used	Dive forward 30° to 60°  No collapse  No Less than 45° Most lines tight  c  90° to 180° Dive or roll angle 15° to 45° Inflates in less than 3 s from start of pilot action Less than 360°  No (or only a small number of collapsed cells with a spontaneous re inflation)  No No yes	Dive forward 30° to 60°  No collapse  No Less than 45°  Most lines tight  c  90° to 180°  Dive or roll angle 15° to 45°  Inflates in less than 3 s from star of pilot action Less than 360°  No (or only a small number of collapsed cells with a spontaneou re inflation)  No No yes

		6
	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course		Less than 360°
Collapse on the opposite side occurs	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)
Twist a cours	. N.a	,
Twist occurs		No
Cascade occurs		No
Folding lines used	l yes	yes
Small asymmetric collapse accelerated	D	c
Change of course until re-inflation	90° to 180°	90° to 180°
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	Dive or roll angle 15° to 45°
	Inflates in less than 3 s from start of	Inflates in less than 3 s from start
Ne illiation behaviour	pilot action	of pilot action
Total change of course	Less than 360°	Less than 360°
Collapse on the opposite side occurs	s Yes, causing turn reversal	No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs	s No	No
Cascade occurs	s No	No
Folding lines used		yes
. oranig inico abou	. 703	, 65
Large asymmetric collapse accelerated	c	c
Change of course until re-inflation	180° to 360°	180° to 360°
Maximum dive forward or roll angle		Dive or roll angle 45° to 60°
	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	•	Less than 360°
_		
Collapse on the opposite side occurs	s 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)
Twist occurs	s No	No
Cascade occurs	s No	No
Folding lines used	l yes	yes
Directional control with a maintained asymmetric collapse	с	с
Able to keep course	Yes	Yes
180° turn away from the collapsed side	Yes	Yes
possible in 10 s		
Amount of control range between turn and stall or spin		25 % to 50 % of the symmetric control travel
Trim speed spin tendency	A	A
Spin occurs		No
Low speed spin tendency	i <sub>A</sub>	A
Spin occurs	<u> </u>	No
Spin occurs	5 140	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
B-line stall		
Not carried out because the manoeuvre is excluded		
Big ears	A	A
L <del></del>	<del></del>	
	Standard technique	Standard technique
Behaviour during big ears		Stable flight
-	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°
Discours in appalausts defined	i.	la.
Big ears in accelerated flight	iA	iA
Entry procedure	Standard technique	Standard technique
Rehaviour during hig ears	0. 11 0. 1.	Stable flight

Stable flight

Behaviour during big ears Stable flight

**Recovery** Spontaneous in less than 3 s **Dive forward angle on exit** Dive forward 0° to 30°

**Behaviour immediately after releasing the** Stable flight accelerator while maintaining big ears

Spontaneous in less than 3 s Dive forward 0° to 30° Stable flight

Alternative means of directional control A

180° turn achievable in 20 s 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

**UP MERU 2 M** 

Inflation/take-off

Type designation UP Meru 2 M

Type test reference no DHV GS-01-2851-24

Holder of certification UP International GmbH

Manufacturer UP International GmbH

Classification D

Winch towing Yes

Number of seats min / max 1/1

**Accelerator** Yes

Trimmers No

BEHAVIOUR AT MIN WEIGHT IN BEHAVIOUR AT MAX FLIGHT (97KG) **WEIGHT IN FLIGHT (112KG)** 

Mario Eder

Easy rising, some pilot correction is

No release

required

No

Nο





No release

Rising behaviour Easy rising, some pilot correction is

required

Special take off technique required No

Landing

Special landing technique required No

Speeds in straight flight В Trim speed more than 30 km/h Yes Yes

Speed range using the controls larger than 10 Yes Yes

> Minimum speed 25 km/h to 30 km/h 25 km/h to 30 km/h

Control movement

Symmetric control pressure Increasing Increasing Symmetric control travel Greater than 60 cm 50 cm to 65 cm

Pitch stability exiting accelerated flight

**Dive forward angle on exit** Dive forward less than 30° Dive forward less than 30°

> Collapse occurs No Nο

Pitch stability operating controls during accelerated flight

Collapse occurs No

Roll stability and damping **Oscillations** Reducing Reducing

Stability in gentle spirals A

Tendency to return to straight flight Spontaneous exit Spontaneous exit

Behaviour exiting a fully developed spiral dive B

Initial response of glider (first 180°) en : keine unmittelbare Reaktion Tendency to return to straight flight Spontaneous exit (g force decreasing, rate of turn decreasing)

en : keine unmittelbare Reaktion Spontaneous exit (g force decreasing, rate of turn decreasing)

Turn angle to recover normal flight	720° to 1 080°, spontaneous recovery	720° to 1 080°, spontaneous recovery
Symmetric front collapse	c	c
Entry	Rocking back less than 45°	Rocking back less than 45°
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°
Change of course	Keeping course	Keeping course
Cascade occurs		No
Folding lines used	yes	yes
Unaccelerated collapse (at least 50 % chord)	ic	c
	Rocking back less than 45°	Rocking back less than 45°
	Spontaneous in 3 s to 5 s	Spontaneous in 3 s to 5 s
Dive forward angle on exit		Dive forward 0° to 30°
Change of course		Keeping course
Cascade occurs		No
Folding lines used	yes	yes
Accelerated collapse (at least 50 % chord)	D	c
Entry	Rocking back less than 45°	Rocking back less than 45°
	Recovery through pilot action in less than a further 3 s	
Dive forward angle on exit	Dive forward 30° to 60°	Dive forward 30° to 60°
Change of course		Keeping course
Cascade occurs		No
Folding lines used		yes
Exiting deep stall (parachutal stall)	la.	A
Deep stall achieved	<u> </u>	No
High angle of attack recovery	A	A
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Cascade occurs	•	No
Recovery from a developed full stall	В	В
Dive forward angle on exit		Dive forward 30° to 60°
Collapse	No collapse	No collapse
Cascade occurs (other than collapses)	No	No
Rocking back	Less than 45°	Less than 45°
Line tension	Most lines tight	Most lines tight
Small asymmetric collapse	lc	c
	±	±
Change of course until re-inflation		180° to 360°
Maximum dive forward or roll angle		Dive or roll angle 45° to 60°
	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course		Less than 360°
Collapse on the opposite side occurs	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 spontaneou re inflation)
Twist occurs	: No	No No
Cascade occurs		No
Folding lines used		yes
rolaing inics used	.,	,
Large asymmetric collapse	<u> </u> c	c
Change of course until re-inflation		90° to 180°
Maximum dive forward or roll angle	Dive or roll angle 45° to 60°	Dive or roll angle 45° to 60°
Re-inflation behaviour	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	Less than 360°	Less than 360°
Collanse on the ennesite side essure	No (or only a small number of collapsed	No (or only a small number of

**Collapse on the opposite side occurs** No (or only a small number of collapsed cells with a spontaneous re inflation)

Twist occurs No

No (or only a small number of collapsed cells with a spontaneous

re inflation)

No

Cascade occurs		No
Folding lines used	yes	yes
ionali anno della colla contact	10	le
Small asymmetric collapse accelerated	¦C	c
Change of course until re-inflation		180° to 360°
Maximum dive forward or roll angle	•	Dive or roll angle 45° to 60°
	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course		Less than 360°
Collapse on the opposite side occurs	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)
Twist occurs	No	No
Cascade occurs	No	No
Folding lines used	yes	yes
Large asymmetric collapse accelerated	c	ic
Change of course until re-inflation	Less than 90°	Less than 90°
Maximum dive forward or roll angle	Dive or roll angle 45° to 60°	Dive or roll angle 45° to 60°
_	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	•	Less than 360°
Collapse on the opposite side occurs	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)
Twist occurs	No	No
Cascade occurs	No	No
Folding lines used	yes	yes
Directional control with a maintained asymmetric collapse	с	c
Able to keep course		Yes
180° turn away from the collapsed side		Yes
possible in 10 s Amount of control range between turn and stall or spin	25 % to 50 % of the symmetric control	25 % to 50 % of the symmetric control travel
Trim speed spin tendency	A	A
Spin occurs	No	No
Low speed spin tendency	A	Α
Spin occurs	No	No
Recovery from a developed spin	A	A
Spin rotation angle after release Cascade occurs		Stops spinning in less than 90°
B-line stall		
Not carried out because the manoeuvre is excluded	in the user's manual	
Big ears	A	A
L	<u> </u>	±
	Standard technique	Standard technique
Behaviour during big ears		Stable flight
Recovery Dive forward angle on exit	Spontaneous in less than 3 s Dive forward 0° to 30°	Spontaneous in less than 3 s  Dive forward 0° to 30°
Big ears in accelerated flight	A	A
L	Standard technique	Standard technique
	·	Stable flight
Behaviour during big ears		•
-	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit Behaviour immediately after releasing the accelerator while maintaining big ears	Stable flight	Dive forward 0° to 30° Stable flight
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

**UP MERU 2 SM** 

Inflation/take-off

Landing

Type designation UP Meru 2 SM

Type test reference no DHV GS-01-2850-24

Holder of certification UP International GmbH

Manufacturer UP International GmbH

**Classification** D

Winch towing Yes

Number of seats min / max 1/1

**Accelerator** Yes

Trimmers No



BEHAVIOUR AT MIN WEIGHT IN BEHAVIOUR AT MAX

FLIGHT (88KG)



Mario Eder

No release

No

Test pilots

Josef Bauer

No release

Rising behaviour Overshoots, shall be slowed down to avoid a front collapse

Overshoots, shall be slowed down to avoid a front collapse

Special take off technique required No

Special landing technique required No

Speeds in straight flight В

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

> Minimum speed Less than 25 km/h 25 km/h to 30 km/h

Control movement

Symmetric control pressure Increasing Increasing Symmetric control travel 45 cm to 60 cm 50 cm to 65 cm

Pitch stability exiting accelerated flight

**Dive forward angle on exit** Dive forward less than 30° Dive forward less than 30°

> Collapse occurs No Nο

Pitch stability operating controls during accelerated flight

Collapse occurs No Nο

Roll stability and damping

**Oscillations** Reducing Reducing

Stability in gentle spirals A

Tendency to return to straight flight Spontaneous exit Spontaneous exit

Behaviour exiting a fully developed spiral dive A

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)

en : keine unmittelbare Reaktion Spontaneous exit (g force decreasing, rate of turn decreasing) **Turn angle to recover normal flight** Less than 720°, spontaneous recovery

en : 1080° bis 1440°, selbstständige Rückkehr in den

Normalflug

Symmetric front collapse	c	c
Entry	Rocking back less than 45°	Rocking back less than 45°
	Spontaneous in less than 3 s	Spontaneous in 3 s to 5 s
Dive forward angle on exi	•	Dive forward 0° to 30°
Change of course		Entering a turn of less than 90°
Cascade occurs		No
Folding lines used		yes
_	,	,
Unaccelerated collapse (at least 50 % chord)	c	D
Entry	Rocking back less than 45°	Rocking back less than 45°
Recovery	Spontaneous in less than 3 s	Recovery through pilot action in less than a further 3 s
Dive forward angle on exit	Dive forward 0° to 30°	Dive forward 0° to 30°
Change of course	Keeping course	Entering a turn of 90° to 180°
Cascade occurs	s No	No
Folding lines used	l yes	yes
Accelerated collapse (at least 50 % chord)	c	c
Entry	Rocking back less than 45°	Rocking back less than 45°
	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exi	•	Dive forward 30° to 60°
_	Entering a turn of less than 90°	Entering a turn of less than 90°
Cascade occurs		No
Folding lines used		yes
	. ,	, 55
Exiting deep stall (parachutal stall)	В	В
Deep stall achieved	l Yes	Yes
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exi	Dive forward 30° to 60°	Dive forward 30° to 60°
Change of course	Changing course less than 45°	Changing course less than 45°
Cascade occurs	s No	No
High angle of attack recovery	A	A
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Cascade occurs	'	No
Recovery from a developed full stall	¦B	В
i	±	±
Dive forward angle on exit	No collapse	Dive forward 30° to 60°
•	•	No collapse
Cascade occurs (other than collapses)		No Less than 45°
_	t Less than 45° I Most lines tight	Most lines tight
Line tension	Most lines tight	Most lifles tight
Small asymmetric collapse	С	c
Change of course until re-inflation	90° to 180°	90° to 180°
Maximum dive forward or roll angle		Dive or roll angle 15° to 45°
	Inflates in less than 3 s from start of pilot action	Inflates in less than 3 s from start of pilot action
Total change of course	•	•
	Less than 360°	Less than 360°
Collapse on the opposite side occurs	Less than 360° No (or only a small number of collapsed cells with a spontaneous re inflation)	Less than 360°  No (or only a small number of collapsed cells with a spontaneous re inflation)
Collapse on the opposite side occurs  Twist occurs	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
	No (or only a small number of collapsed cells with a spontaneous re inflation)  No	No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs	No (or only a small number of collapsed cells with a spontaneous re inflation)  No No	No (or only a small number of collapsed cells with a spontaneous re inflation)
Twist occurs Cascade occurs Folding lines used	No (or only a small number of collapsed cells with a spontaneous re inflation)  No No yes	No (or only a small number of collapsed cells with a spontaneous re inflation)  No  No  yes
Twist occurs Cascade occurs	No (or only a small number of collapsed cells with a spontaneous re inflation)  No No I yes	No (or only a small number of collapsed cells with a spontaneous re inflation) No No

	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course		Less than 360°
Collapse on the opposite side occurs	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)
Twist occurs	s No	No
Cascade occurs	. No	No
Folding lines used		yes
Small asymmetric collapse accelerated	C	C
Change of course until re-inflation		90° to 180°
Maximum dive forward or roll angle	_	Dive or roll angle 45° to 60°
	Inflates in less than 3 s from start of pilot action	Inflates in less than 3 s from start of pilot action
Total change of course		Less than 360°
Collapse on the opposite side occurs	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)
Twist occurs	s No	No
Cascade occurs	s No	No
Folding lines used	l yes	yes
Large asymmetric collapse accelerated	¦c	c
L	i	<b></b>
Change of course until re-inflation		180° to 360°
Maximum dive forward or roll angle		Dive or roll angle 45° to 60°
	Inflates in less than 3 s from start of pilot action	Inflates in less than 3 s from start of pilot action
Total change of course		Less than 360°
Collapse on the opposite side occurs	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)
Twist occurs	s No	No
Cascade occurs	s No	No
Folding lines used	l yes	yes
		1
Directional control with a maintained asymmetric collapse	c	С
Able to keep course	Yes	Yes
180° turn away from the collapsed side		Yes
Amount of control range between turn and stall or spin	25 % to 50 % of the symmetric control	25 % to 50 % of the symmetric control travel
Trim speed spin tendency	A	A
Spin occurs		No
Low speed spin tendency	A	A
Spin occurs	s No	No
Recovery from a developed spin	A	A
Spin rotation angle after release		Stops spinning in less than 90°
Cascade occurs		No
B-line stall		
Not carried out because the manoeuvre is excluded		
Big ears	A	A
	Standard technique	Standard technique
Behaviour during big ears		Stable flight
		Spontaneous in less than 3 s
11300701,	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit	Spontaneous in less than 3 s Dive forward 0° to 30°	Dive forward 0° to 30°
Dive forward angle on exit		•
Dive forward angle on exit		•

# Behaviour during big ears Stable flight

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

**Recovery** Spontaneous in less than 3 s

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

# Behaviour immediately after releasing the Stable flight accelerator while maintaining big ears

Dive forward 0° to 30°

Spontaneous in less than 3 s

Stable flight

Stable flight

Alternative means of directional control	A	Α
180° turn achievable in 20 s	Yes	Yes
Stall or spin occurs	No	No

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

**UP MERU 2 S** 

Inflation/take-off

Type designation UP Meru 2 S

Type test reference no DHV GS-01-2849-24

Holder of certification UP International GmbH

Manufacturer UP International GmbH

**Classification** D

Winch towing Yes

Number of seats min / max 1/1

**Accelerator** Yes

**Trimmers** No



No release

Nο





Josef Bauer

No release

Rising behaviour Overshoots, shall be slowed down to

Special take off technique required No

avoid a front collapse

No

¦Landing	A	¦A
L		

Special landing technique required No

Speeds in straight flight Trim speed more than 30 km/h Yes Yes

Speed range using the controls larger than 10 Yes Yes

> Minimum speed Less than 25 km/h Less than 25 km/h

Control movement

Symmetric control pressure Increasing Increasing Symmetric control travel 40 cm to 55 cm Greater than 60 cm

Pitch stability exiting accelerated flight

**Dive forward angle on exit** Dive forward less than 30° Dive forward less than 30°

Collapse occurs No

Pitch stability operating controls during accelerated flight

Collapse occurs No Nο

Roll stability and damping

**Oscillations** Reducing Reducing

Stability in gentle spirals A

Tendency to return to straight flight Spontaneous exit Spontaneous exit

Behaviour exiting a fully developed spiral dive A

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)

Immediate reduction of rate of turn Spontaneous exit (g force decreasing, rate of turn decreasing)



Overshoots, shall be slowed down

to avoid a front collapse

rum angle to recover normal mgne	. Less than 720 , spontaneous recover,	recovery
Symmetric front collapse	c	c
Entry	Rocking back less than 45°	Rocking back less than 45°
-	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit	•	Dive forward 0° to 30°
Change of course		Keeping course
Cascade occurs		No
Folding lines used		yes
Totaling lines used	, yes	ycs
Unaccelerated collapse (at least 50 % chord)	c	c
Entry	Rocking back less than 45°	Rocking back less than 45°
Recovery	Spontaneous in less than 3 s	Spontaneous in 3 s to 5 s
Dive forward angle on exit	Dive forward 0° to 30°	Dive forward 0° to 30°
Change of course	Keeping course	Keeping course
Cascade occurs	s No	No
Folding lines used	yes	yes
Accelerated collapse (at least 50 % chord)	ic .	D
	<u> </u>	
-	Rocking back less than 45° Spontaneous in less than 3 s	Rocking back less than 45° Recovery through pilot action in lethan a further 3 s
Dive forward angle on exit	: Dive forward 30° to 60°	Dive forward 30° to 60°
_	Entering a turn of less than 90°	Entering a turn of less than 90°
Cascade occurs		No
Folding lines used		yes
Exiting deep stall (parachutal stall)	В	В
	<u> </u>	
Deep stall achieved		Yes
	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Dive forward angle on exit		Dive forward 30° to 60°
	Changing course less than 45°	Changing course less than 45°
Cascade occurs	SINO	No
High angle of attack recovery	A	A
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Cascade occurs	s No	No
Recovery from a developed full stall	В	В
Dive forward angle on exit	: Dive forward 30° to 60°	Dive forward 30° to 60°
Collapse	No collapse	No collapse
Cascade occurs (other than collapses)	No	No
Rocking back	Less than 45°	Less than 45°
Line tension	Most lines tight	Most lines tight
Small asymmetric collapse	c	С
Change of course until re-inflation	90° to 180°	90° to 180°
Maximum dive forward or roll angle		Dive or roll angle 15° to 45°
	Inflates in less than 3 s from start of pilot action	Inflates in less than 3 s from star of pilot action
Total change of course	Less than 360°	Less than 360°
Collapse on the opposite side occurs	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)
Twist occurs	s No	No
Cascade occurs	s No	No
Folding lines used	yes	yes
Large asymmetric collapse	c	c
Change of course until re-inflation	90° to 180°	90° to 180°
Maximum dive forward or roll angle		Dive or roll angle 15° to 45°
_	Spontaneous re-inflation	Spontaneous re-inflation

**Re-inflation behaviour** Spontaneous re-inflation

**Turn angle to recover normal flight** Less than 720°, spontaneous recovery

Less than 720°, spontaneous

Spontaneous re-inflation

Total change of course	Less than 360°	Less than 360°
Collapse on the opposite side occurs	No (or only a small number of collapsed	No (or only a small number of
	cells with a spontaneous re inflation)	collapsed cells with a spontaneous
Twist a serve	. No	re inflation)
Twist occurs Cascade occurs		No No
Folding lines used		
rolding lines used	i yes	yes
Small asymmetric collapse accelerated	c	D
Change of course until re-inflation	90° to 180°	90° to 180°
Maximum dive forward or roll angle		Dive or roll angle 15° to 45°
Re-inflation behavious	Inflates in less than 3 s from start of	Inflates in less than 3 s from start
	pilot action	of pilot action
Total change of course	Less than 360°	Less than 360°
Collapse on the opposite side occurs	No (or only a small number of collapsed	Yes, causing turn reversal
Twist cours	cells with a spontaneous re inflation)	No
Twist occurs Cascade occurs		No No
Folding lines used		yes
rotating times asset	1,763	yes
Large asymmetric collapse accelerated	c	c
Change of course until re-inflation	180° to 360°	180° to 360°
Maximum dive forward or roll angle		Dive or roll angle 45° to 60°
Re-inflation behavious	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	Less than 360°	Less than 360°
Collapse on the opposite side occurs	No (or only a small number of collapsed	No (or only a small number of
	cells with a spontaneous re inflation)	collapsed cells with a spontaneous re inflation)
Twist occurs	: No	No
Cascade occurs		No
Folding lines used		yes
Directional control with a maintained	c	c
asymmetric collapse	Γ	<u> </u>
Able to keep course		Yes
180° turn away from the collapsed side possible in 10 s		Yes
Amount of control range between turn and		25 % to 50 % of the symmetric
stall or spir		control travel
Trim speed spin tendency	Α	A
Spin occurs	s No	No
Low speed spin tendency	A	A
L	±	<u> </u>
Spin occurs	5 NO	No
Recovery from a developed spin	A	A
Spin rotation angle after release	<b></b>	Stops spinning in less than 90°
Cascade occurs		No
B-line stall		
Not carried out because the manoeuvre is excluded		·
Big ears	A	A
	Standard technique	Standard technique
Behaviour during big ears		Stable flight
-	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°
Rig care in accelerated flight	ia.	i.a.
Big ears in accelerated flight	iA	iA
Entry procedure	and the second second second second	Standard technique
Behaviour during big ears	Stable flight	Stable flight
	s Stable flight v Spontaneous in less than 3 s	

# Alternative means of directional control A 180° turn achievable in 20 s Yes Stall or spin occurs No No

Stable flight

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

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

Behaviour immediately after releasing the Stable flight