

# Deutscher Hängegleiterverband e.V. Akkreditierte Musterprüfstelle für Hängegleiter und Gleitsegel nach DIN EN ISO/IEC 17020:2012-07

# GS TESTFLUG EN926-2:2021 UP MERU 2 L

Test No 035656-GSTFEN21-1694-Mario Eder

**Test date** 05.10.2023

Location Gardasee / Mt Baldo

Type UP Meru 2 L

Test type GS Testflug EN926-2:2021

Test order Auftrag GS Musterprüfung UP Meru 2 L (UP International GmbH)

Customer UP International GmbH
Test standard EN 926-2:2013+A1:2021

Test standard 2 LTF NFL HG/GS 2-565-20

Expert Eder Result positive Billing to: 100%

**Technical peculiarities** 

Mario Feler

Datum / Unterschrift (Mario Eder)

# RESULTS

PG test flight (general)

Take off weight [kg] 125

Weight limit for certification [kg] 125

Number of pilots 1

test pilot Mario Eder

Harness type Advance Success 4 M

Harness category GH

Minimum speed [km/h] 26

Trim speed [km/h] 39

Accelerated speed [km/h] 50

Accelerator used? Yes

Trimms -

Classification

**Classification** D

# DETAILS ACCORDING TO EN 926-2:2013+A1:2021

1 Inflation/take-off

.....

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

Special take off technique required No

2 Landing

Α

Special landing technique required No

3 Speeds in straight flight

В

Trim speed more than 30 km/h Yes

Speed range using the controls larger Yes

than 10 km/h

Minimum speed 25 km/h to 30 km/h

4 Control movement

....

Symmetric control pressure Increasing

**Symmetric control travel** 50 cm to 65 cm

5 Pitch stability exiting accelerated flight	Α
Dive forward angle on exit Dive forward less than 30°	
Collapse occurs No	
6 Pitch stability operating controls during accelerated flight	A
Collapse occurs No	
7 Roll stability and damping	A
Oscillations Reducing	
8 Stability in gentle spirals	Α
Tendency to return to straight flight Spontaneous exit	
9 Behaviour exiting a fully developed spiral dive	Α
Initial response of glider (first 180°) Immediate reduction of rate of turn	
Tendency to return to straight flight Spontaneous exit (g force decreasing, re Turn angle to recover normal flight Less than 720°, spontaneous recovery	ate of turn decreasing)
10.1 Symmetric front collapse	С
<b>Entry</b> Rocking back less than 45°	
<b>Recovery</b> Spontaneous in less than 3 s	
<b>Dive forward angle on exit</b> Dive forward 0° to 30°	
Change of course Keeping course	
Cascade occurs No Folding lines used yes	
rolanig inies asea yes	
10.2 Unaccelerated collapse (at least 50 % chord)	D
Entry Rocking back less than 45°	
Recovery Recovery through pilot action in less that	ın a further 3 s
Dive forward angle on exit Dive forward 0° to 30°	
Change of course Entering a turn of 90° to 180°	
Cascade occurs No	
Folding lines used yes	
10.3 Accelerated collapse (at least 50 % chord)	D
Entry Rocking back less than 45°	
Recovery Recovery through pilot action in less that	ın a further 3 s
<b>Dive forward angle on exit</b> Dive forward 30° to 60°	
Change of course Entering a turn of less than 90°	
Cascade occurs No	
Folding lines used yes	
11 Exiting deep stall (parachutal stall)	В
Deep stall achieved Yes	
Recovery Spontaneous in less than 3 s	
Dive forward angle on exit Dive forward 30° to 60°	
Change of course Changing course less than 45°	
Cascade occurs No	
12 High angle of attack recovery	А
Recovery Spontaneous in less than 3 s	
Cascade occurs No	
13 Recovery from a developed full stall	В
Dive forward angle on exit Dive forward 30° to 60°	
Collapse No collapse	
Cascade occurs (other than collapses) No	

Rocking back Less than 45°
Line tension Most lines tight

14.1 Small asymmetric collapse		С
Change of course until re-inflation		
Maximum dive forward or roll angle		
	Inflates in less than 3 s from start of pilot action	
Total change of course	·	
	No (or only a small number of collapsed cells with a spontaneous re inflation)	
Twist occurs	,	
Cascade occurs		
Folding lines used		
	,	
14.2 Large asymmetric collapse		С
Change of course until re-inflation	90° to 180°	
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	
Re-inflation behaviour	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) $ \\$	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
14.3 Small asymmetric collapse acceler	rated	C
Change of course until re-inflation	90° to 180°	
Maximum dive forward or roll angle		
	Inflates in less than 3 s from start of pilot action	
Total change of course	·	
_	No (or only a small number of collapsed cells with a spontaneous re	
Twist occurs	inflation)	
Cascade occurs		
Folding lines used	yes	
14.4 Large asymmetric collapse accelei	rated	С
Change of course until re-inflation	180° to 360°	
Maximum dive forward or roll angle		
Re-inflation behaviour	_	
Total change of course	•	
	No (or only a small number of collapsed cells with a spontaneous re inflation)	
Twist occurs	,	
Cascade occurs	No	
Folding lines used	yes	
15 Directional control with a maintaine	d asymmetric collapse	С
Able to keep course		
180° turn away from the collapsed side possible in 10 s		
Amount of control range between turn and stall or spin	25 % to 50 % of the symmetric control travel	
16 Trim speed spin tendency		A
Spin occurs		
17 Low speed spin tendency		Α
Spin occurs	No	
5p 000a13		
19 Pacayary from a dayalanad spin		^

user's manual

**Spin rotation angle after release** Stops spinning in less than 90° **Cascade occurs** No

23 Any other flight procedure and/or configuration described in the

19 B-line stall Not carried out because the manoeuvre is excluded in the user's 20 Big ears **Entry procedure** Standard technique Behaviour during big ears Stable flight **Recovery** Spontaneous in less than 3 s Dive forward angle on exit Dive forward 0° to 30° 21 Big ears in accelerated flight Entry procedure Standard technique 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 22 Alternative means of directional control 180° turn achievable in 20 s Yes Stall or spin occurs No

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



# Deutscher Hängegleiterverband e.V. Akkreditierte Musterprüfstelle für Hängegleiter und Gleitsegel nach DIN EN ISO/IEC 17020:2012-07

# GS TESTFLUG EN926-2:2021 UP MERU 2 L

**Test No** 035604-GSTFEN21-1688-Harry

**Test date** 05.10.2023

Location Gardasee / Mt Baldo

Type UP Meru 2 L

Test type GS Testflug EN926-2:2021

Test order Auftrag GS Musterprüfung UP Meru 2 L (UP International GmbH)

Customer UP International GmbH
Test standard EN 926-2:2013+A1:2021
Test standard 2 LTF NFL HG/GS 2-565-20

Expert Buntz

**Result** positive **Billing to:** 100%

**Technical peculiarities** 

H.B.Z

Datum / Unterschrift (Harald Buntz)

#### RESULTS

PG test flight (general)

Take off weight [kg] 108

Weight limit for certification [kg] 108

Number of pilots 1

test pilot Harald Buntz

Harness type Advance Success 4 M

Harness category GH

Minimum speed [km/h] 23

Trim speed [km/h] 35

Accelerated speed [km/h] 46

Accelerator used? Yes

Trimms -

Classification

**Classification** D

# DETAILS ACCORDING TO EN 926-2:2013+A1:2021

1 Inflation /take\_off

C

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

Special take off technique required No

2 Landing

Α

Special landing technique required  $\mbox{No}$ 

3 Speeds in straight flight

Trim speed more than 30 km/h Yes

Speed range using the controls larger Yes

than 10 km/h

Minimum speed Less than 25 km/h

4 Control movement		Α
Symmetric control pressure	Increasing	
Symmetric control travel	_	
1		
5 Pitch stability exiting accelerated flig	jht	Α
Dive forward angle on exit	Dive forward less than 30°	
Collapse occurs	No	
C Ditab at a bility and a standard and	in a section and display	
6 Pitch stability operating controls dur		A
Collapse occurs	No	
7 Roll stability and damping		Α
Oscillations	Reducina	
Oscillations	Reducing	
8 Stability in gentle spirals		Α
Tendency to return to straight flight		
9 Behaviour exiting a fully developed s	piral dive	Α
Initial response of glider (first 180°)		
	Spontaneous exit (g force decreasing, rate of turn decreasing)	
Turn angle to recover normal flight		
10.1 Symmetric front collapse		С
Entry	Rocking back less than 45°	
Recovery	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	
10.2 Unaccelerated collapse (at least 5	0 % chord)	С
Entry	Rocking back less than 45°	
Recovery	Spontaneous in less than 3 s	
Dive forward angle on exit	Dive forward 0° to 30°	
Change of course	Keeping course	
Cascade occurs		
Folding lines used	yes	
10.3 Accelerated collapse (at least 50	% chord)	D
Entry	Rocking back less than 45°	
-	Recovery through pilot action in less than a further 3 s	
Dive forward angle on exit		
_	Entering a turn of less than 90°	
Cascade occurs		
Folding lines used		
_		
11 Exiting deep stall (parachutal stall)		В
Deep stall achieved		
Recovery	Spontaneous in less than 3 s	
Dive forward angle on exit		
Change of course	Changing course less than 45°	
Cascade occurs	No	
landa and a second		
12 High angle of attack recovery		Α
Recovery	Spontaneous in less than 3 s	
Cascade occurs	No	
lan processing and the second		_
13 Recovery from a developed full stall		В

Dive forward angle on exit Dive forward 30° to 60°

Collapse No collapse

Cascade occurs (other than collapses) No

Rocking back Less than 45°

Line tension Most lines tight

Line tension	Most lines tight	
14.1 Small asymmetric collapse		С
Change of course until re-inflation		
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	
Re-inflation behaviour	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)	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
14.2 Large asymmetric collapse		С
Change of course until re-inflation	90° to 180°	
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	
Re-inflation behaviour	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)	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
14.3 Small asymmetric collapse acceler	ated	D
Change of course until re-inflation		
Maximum dive forward or roll angle		
	Inflates in less than 3 s from start of pilot action	
Total change of course	•	
Collapse on the opposite side occurs		
Twist occurs		
Cascade occurs	No	
Folding lines used	yes	
-	•	
14.4 Large asymmetric collapse acceler	rated	С
Change of course until re-inflation	180° to 360°	
Maximum dive forward or roll angle	Dive or roll angle 45° to 60°	
Re-inflation behaviour	Spontaneous re-inflation	
Total change of course	Less than 360°	
	No (or only a small number of collapsed cells with a spontaneous re inflation)	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
15 Directional control with a maintaine	d asymmetric collapse	C
Able to keep course		
180° turn away from the collapsed side possible in 10 s	Yes	
Amount of control range between turn and stall or spin	25 % to 50 % of the symmetric control travel	

Spin occurs No

Spin occurs No

16 Trim speed spin tendency

17 Low speed spin tendency

18 Recovery from a developed spin Spin rotation angle after release Stops spinning in less than 90° Cascade occurs No 19 B-line stall Not carried out because the manoeuvre is excluded in the user's 20 Big ears ..... **Entry procedure** Standard technique Behaviour during big ears Stable flight **Recovery** Spontaneous in less than 3 s Dive forward angle on exit Dive forward 0° to 30° 21 Big ears in accelerated flight \_\_\_\_\_ Entry procedure Standard technique 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 22 Alternative means of directional control ..... 180° turn achievable in 20 s Yes Stall or spin occurs No 23 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



# Deutscher Hängegleiterverband e.V. Akkreditierte Musterprüfstelle für Hängegleiter und Gleitsegel nach DIN EN ISO/IEC 17020:2012-07

# GS TESTFLUG EN926-2:2021 UP MERU 2 M

Test No 035565-GSTFEN21-1674-MarioEder

**Test date** 05.08.2023

**Location** Achensee / Rofan

Type UP Meru 2 M

Test type GS Testflug EN926-2:2021

Test order Auftrag GS Musterprüfung UP Meru 2 M (UP International GmbH)

**Customer** UP International GmbH **Test standard** EN 926-2:2013+A1:2021

Test standard 2 LTF NFL HG/GS 2-565-20

**Expert** Eder **Result** positive

Billing to: 100%

**Technical peculiarities** 

Mario Feler

Datum / Unterschrift (Mario Eder)

# RESULTS

PG test flight (general)

Take off weight [kg] 112

Weight limit for certification [kg] 112

Number of pilots 1

test pilot Mario Eder

Harness type Advance Success 4 M

Harness category GH

Minimum speed [km/h] 26

Trim speed [km/h] 39

Accelerated speed [km/h] 59

Accelerator used? Yes

Trimms -

Classification

**Classification** C

# DETAILS ACCORDING TO EN 926-2:2013+A1:2021

1 Inflation/take-off

В

Rising behaviour Easy rising, some pilot correction is required

Special take off technique required No

2 Landing

Α

Special landing technique required  $\,\mathrm{No}$ 

3 Speeds in straight flight

В

Trim speed more than 30 km/h Yes

Speed range using the controls larger Yes

than 10 km/h

Minimum speed 25 km/h to 30 km/h

4 Control movement

....

Symmetric control pressure Increasing

**Symmetric control travel** 50 cm to 65 cm

5 Pitch stability exiting accelerated flig	ht	Α
Dive forward angle on exit		
Collapse occurs	No	
6 Pitch stability operating controls duri	ng accelerated flight	Α
Collapse occurs	No	
7 Roll stability and damping		A
Oscillations		
8 Stability in gentle spirals		A
Tendency to return to straight flight		
9 Behaviour exiting a fully developed sp	piral dive	В
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)	
Turn angle to recover normal flight	720° to 1 080°, spontaneous recovery	
10.1 Symmetric front collapse		С
Entry	Rocking back less than 45°	
Recovery	Spontaneous in less than 3 s	
Dive forward angle on exit	Dive forward 0° to 30°	
Change of course	Keeping course	
Cascade occurs		
Folding lines used	yes	
10.2 Unaccelerated collapse (at least 50	0 % chord)	С
Entry	Rocking back less than 45°	
Recovery	Spontaneous in 3 s to 5 s	
Dive forward angle on exit		
Change of course	. 5	
Cascade occurs		
Folding lines used	yes	
10.3 Accelerated collapse (at least 50 %	% chord)	С
Entry	Rocking back less than 45°	
Recovery	Spontaneous in 3 s to 5 s	
Dive forward angle on exit		
Change of course		
Cascade occurs		
Folding lines used	yes	
11 Exiting deep stall (parachutal stall)		Α
Deep stall achieved	No	
12 High angle of attack recovery		Α
Recovery	Spontaneous in less than 3 s	
Cascade occurs	No	
13 Recovery from a developed full stall		В
Dive forward angle on exit		
Collapse	No collapse	
Cascade occurs (other than collapses)	No	
Rocking back		
Line tension	Most lines tight	
14.1 Small asymmetric collapse		С

inflation) Twist occurs No Cascade occurs No

Folding lines used yes

Total change of course Less than 360°

#### 14.2 Large asymmetric collapse

23.10.23, 15:00

Change of course until re-inflation 90° to 180°

Maximum dive forward or roll angle Dive or roll angle 45° to 60°

Re-inflation behaviour 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)

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

Twist occurs No

Cascade occurs No

Folding lines used yes

# 14.3 Small asymmetric collapse accelerated

Change of course until re-inflation 180° to 360°

Maximum dive forward or roll angle Dive or roll angle 45° to 60°

Re-inflation behaviour 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)

Twist occurs No.

Cascade occurs No

Folding lines used yes

#### 14.4 Large asymmetric collapse accelerated

Change of course until re-inflation Less than 90°

Maximum dive forward or roll angle Dive or roll angle 45° to 60°

Re-inflation behaviour 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)

Twist occurs No

Cascade occurs No.

Folding lines used yes

# 15 Directional control with a maintained asymmetric collapse

Able to keep course Yes

180° turn away from the collapsed side Yes

possible in 10 s

Amount of control range between turn 25 % to 50 % of the symmetric control travel and stall or spin

# 16 Trim speed spin tendency

Spin occurs No

# 17 Low speed spin tendency

Spin occurs No

#### 18 Recovery from a developed spin

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

Cascade occurs No

# 19 B-line stall

Not carried out because the manoeuvre is excluded in the user's  $\ensuremath{\mathsf{manual}}$ 

20 Big ears		A
Entry procedure	Standard technique	
Behaviour during big ears	s Stable flight	
Recovery	Spontaneous in less than 3 s	
Dive forward angle on exit	t Dive forward 0° to 30°	
21 Big ears in accelerated flight		Α
Entry procedure	Standard technique	
Behaviour during big ears	s Stable flight	
Recovery	Spontaneous in less than 3 s	
Dive forward angle on exit	t Dive forward 0° to 30°	
Behaviour immediately after releasing the accelerator while maintaining big ears		
22 Alternative means of directional co	ntrol	A
180° turn achievable in 20 s	s Yes	
Stall or spin occurs	s No	
23 Any other flight procedure and/or ouser's manual	configuration described in the	
	No other flight procedure or configuration described in the user's manual	



# Deutscher Hängegleiterverband e.V. Akkreditierte Musterprüfstelle für Hängegleiter und Gleitsegel nach DIN EN ISO/IEC 17020:2012-07

# GS TESTFLUG EN926-2:2021 UP MERU 2 M

**Test No** 035657-GSTFEN21-1696-Harry

**Test date** 01.08.2023

Location gardasee

Type UP Meru 2 M

Test type GS Testflug EN926-2:2021

Test order Auftrag GS Musterprüfung UP Meru 2 M (UP International GmbH)

Customer UP International GmbH
Test standard EN 926-2:2013+A1:2021

Test standard 2 LTF NFL HG/GS 2-565-20

lest standard 2 LIF NFL HG/GS 2-565-

**Expert** Buntz

**Result** positive

**Billing to: 100%** 

**Technical peculiarities** 

H.B.Z

Datum / Unterschrift (Harald Buntz)

#### RESULTS

PG test flight (general)

Take off weight [kg] 97

Weight limit for certification [kg] 97

Number of pilots  $\boldsymbol{1}$ 

test pilot Harald Buntz

Harness type Advance Success 4 M

Harness category GH

Minimum speed [km/h] 26

Trim speed [km/h] 39

Accelerated speed [km/h] 59

Accelerator used? Yes

Trimms -

Classification

**Classification** D

# DETAILS ACCORDING TO EN 926-2:2013+A1:2021

1 Inflation/take-off

В

Rising behaviour Easy rising, some pilot correction is required

Special take off technique required No

2 Landing

Α

Special landing technique required No

3 Speeds in straight flight

В

Trim speed more than 30 km/h Yes

Speed range using the controls larger Yes

than 10 km/h

Minimum speed 25 km/h to 30 km/h

4 Control movement		Α
Symmetric control pressure	Increasing	
Symmetric control travel	Greater than 60 cm	
5 Pitch stability exiting accelerated flig	ht	Α
Dive forward angle on exit	Dive forward less than 30°	
Collapse occurs	No	
6 Pitch stability operating controls duri	ing accelerated flight	A
Collapse occurs	No	
7 Roll stability and damping		A
Oscillations		
8 Stability in gentle spirals		A
Tendency to return to straight flight	Spontaneous exit	
9 Behaviour exiting a fully developed s	niral dive	В
Initial response of glider (first 180°)		
	Spontaneous exit (g force decreasing, rate of turn decreasing)	
Turn angle to recover normal flight		
10.1 Symmetric front collapse		С
L	Rocking back less than 45°	
	Spontaneous in less than 3 s	
Dive forward angle on exit	·	
Change of course		
Cascade occurs		
Folding lines used		
1		6
10.2 Unaccelerated collapse (at least 5		
	Rocking back less than 45°	
	Spontaneous in 3 s to 5 s	
Dive forward angle on exit		
Change of course		
Cascade occurs		
Folding lines used	yes	
10.3 Accelerated collapse (at least 50 %		D
	Rocking back less than 45°	
	Recovery through pilot action in less than a further 3 s	
Dive forward angle on exit		
Change of course		
Cascade occurs Folding lines used		
11 Exiting deep stall (parachutal stall)	N	Α
Deep stall achieved	No	
12 High angle of attack recovery		Α
-	Spontaneous in less than 3 s	
Cascade occurs	No	
13 Recovery from a developed full stall		В
Dive forward angle on exit		
Collapse	No collapse	
Cascade occurs (other than collapses)	No	
Rocking back	Less than 45°	

**Line tension** Most lines tight

14.1 Small asymmetric collapse		С
Change of course until re-inflation		
Maximum dive forward or roll angle	Dive or roll angle 45° to 60°	
Re-inflation behaviour	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)	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
14.2 Large asymmetric collapse		С
Change of course until re-inflation	90° to 180°	
Maximum dive forward or roll angle		
	Spontaneous re-inflation	
Total change of course		
Collapse on the opposite side occurs	No (or only a small number of collapsed cells with a spontaneous re inflation)	
Twist occurs		
Cascade occurs		
Folding lines used	yes	
14.3 Small asymmetric collapse accele	rated	С
Change of course until re-inflation	180° to 360°	
Maximum dive forward or roll angle		
	Spontaneous re-inflation	
Total change of course		
Collapse on the opposite side occurs	No (or only a small number of collapsed cells with a spontaneous re inflation)	
Twist occurs		
Cascade occurs		
Folding lines used	yes	
14.4 Large asymmetric collapse accele	rated	С
Change of course until re-inflation		
Maximum dive forward or roll angle	Dive or roll angle 45° to 60°	
Re-inflation behaviour	Spontaneous re-inflation	
Total change of course		
Collapse on the opposite side occurs	No (or only a small number of collapsed cells with a spontaneous re inflation)	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
15 Directional control with a maintaine	ed asymmetric collapse	С
Able to keep course		
180° turn away from the collapsed side possible in 10 s		
Amount of control range between turn and stall or spin	25 % to 50 % of the symmetric control travel	
16 Trim speed spin tendency		A
Spin occurs		
17 Low speed spin tendency		A
Spin occurs		
18 Recovery from a developed spin		A
Spin rotation angle after release		

# Cascade occurs No

19 B-line stall	
	lot carried out because the manoeuvre is excluded in the user's nanual
20 Big ears	A
Entry procedure St	
Behaviour during big ears St	table flight
Recovery S	pontaneous in less than 3 s
Dive forward angle on exit Di	live forward 0° to 30°
21 Big ears in accelerated flight	A
Entry procedure St	tandard technique
Behaviour during big ears St	table flight
Recovery S	pontaneous in less than 3 s
Dive forward angle on exit Di	vive forward 0° to 30°
Behaviour immediately after releasing the Staccelerator while maintaining big ears	table flight
22 Alternative means of directional contr	rol A
180° turn achievable in 20 s Ye	
Stall or spin occurs No	0
23 Any other flight procedure and/or conuser's manual	nfiguration described in the
N <sub>1</sub>	o other flight procedure or configuration described in the user's

No other flight procedure or configuration described in the user manual



# Deutscher Hängegleiterverband e.V. Akkreditierte Musterprüfstelle für Hängegleiter und Gleitsegel nach DIN EN ISO/IEC 17020:2012-07

# GS TESTFLUG EN926-2:2021 UP MERU 2 S

**Test No** 035603-GSTFEN21-1686-Harry

**Test date** 06.10.2023

Location Gardasee / Mt Baldo

Type UP Meru 2 S

Test type GS Testflug EN926-2:2021

Test order Auftrag GS Musterprüfung UP Meru 2 S (UP International GmbH)

Customer UP International GmbH
Test standard EN 926-2:2013+A1:2021
Test standard 2 LTF NFL HG/GS 2-565-20

Expert Buntz
Result positive

Billing to: 100%

**Technical peculiarities** 

H.B.Z

Datum / Unterschrift (Harald Buntz)

#### RESULTS

PG test flight (general)

Take off weight [kg] 90

Weight limit for certification [kg] 90

Number of pilots 1

test pilot Harald Buntz

Harness type Nova Itus

Harness category GH

Minimum speed [km/h] 23

Trim speed [km/h] 35

Accelerated speed [km/h] 46

Accelerator used? Yes

Trimms -

Classification

**Classification** D

# DETAILS ACCORDING TO EN 926-2:2013+A1:2021

1 Inflation /take\_off

С

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

Special take off technique required No

2 Landing

Special landing technique required No

3 Speeds in straight flight

Trim speed more than 30 km/h Yes

Speed range using the controls larger Yes

than 10 km/h

Minimum speed Less than 25 km/h

4 Control movement		Α
Symmetric control pressure		
Symmetric control travel	Greater than 60 cm	
1		_
5 Pitch stability exiting accelerated flig		Α
Dive forward angle on exit		
Collapse occurs	No	
6 Pitch stability operating controls dur	ing accelerated flight	Α
Collapse occurs		
1		
		Α
Oscillations	Reducing	
8 Stability in gentle spirals		Α
Tendency to return to straight flight	Spontaneous evit	
rendency to return to straight mgnt	Spontaneous exit	
9 Behaviour exiting a fully developed s	piral dive	Α
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	
10.1 Symmetric front collapse		C
L	Rocking back less than 45°	
-	Spontaneous in less than 3 s	
Dive forward angle on exit		
Change of course		
Cascade occurs		
Folding lines used		
	,	
10.2 Unaccelerated collapse (at least 5	0 % chord)	С
Entry	Rocking back less than 45°	
Recovery	Spontaneous in 3 s to 5 s	
Dive forward angle on exit	Dive forward 0° to 30°	
Change of course	Keeping course	
Cascade occurs		
Folding lines used	yes	
10.3 Accelerated collapse (at least 50 °	% chard)	D
<u> </u>		
-	Rocking back less than 45°	
Dive forward angle on exit	Recovery through pilot action in less than a further 3 s	
_	Entering a turn of less than 90°	
Cascade occurs	-	
Folding lines used		
. olding illes used	, 60	
11 Exiting deep stall (parachutal stall)		В
Deep stall achieved		
Recovery	Spontaneous in less than 3 s	
Dive forward angle on exit	Dive forward 30° to 60°	
Change of course	Changing course less than 45°	
Cascade occurs	No	
12 High angle of attack recovery		Α
iiiiiii	Constant of the Constant of th	A
	Spontaneous in less than 3 s	
Cascade occurs	INU	
13 Recovery from a developed full stall		В
L		

Dive forward angle on exit Dive forward 30° to 60°

Collapse No collapse

Cascade occurs (other than collapses) No

Rocking back Less than 45°

Line tension	Most lines tight	
14.1 Small asymmetric collapse		C
Change of course until re-inflation	90° to 180°	
Maximum dive forward or roll angle		
_	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)	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
14.2 Large asymmetric collapse		C
Change of course until re-inflation		
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	
Re-inflation behaviour	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) $ \\$	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
14.3 Small asymmetric collapse acceler	ated	D
Change of course until re-inflation		
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	
Re-inflation behaviour	Inflates in less than 3 s from start of pilot action	
Total change of course	Less than 360°	
Collapse on the opposite side occurs	Yes, causing turn reversal	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
14.4 Large asymmetric collapse acceler	rated	С
Change of course until re-inflation		
Maximum dive forward or roll angle	Dive or roll angle 45° to 60°	
Re-inflation behaviour	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) $ \\$	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
15 Directional control with a maintaine	d asymmetric collapse	С
Able to keep course	Yes	
180° turn away from the collapsed side possible in 10 s	Yes	
Amount of control range between turn and stall or spin	25 % to 50 % of the symmetric control travel	
16 Trim speed spin tendency		A

Spin occurs No

Spin occurs No

17 Low speed spin tendency

18 Recovery from a developed spin		A
Spin rotation angle after release	Stops spinning in less than 90°	
Cascade occurs	s No	
19 B-line stall		
	Not carried out because the manoeuvre is excluded in the user's manual	
20 Big ears		A
Entry procedure	Standard technique	
Behaviour during big ears	Stable flight	
Recovery	Spontaneous in less than 3 s	
Dive forward angle on exit	Dive forward 0° to 30°	
21 Big ears in accelerated flight		A
Entry procedure	Standard technique	
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 accelerator while maintaining big ears		
22 Alternative means of directional co	ntrol	A
180° turn achievable in 20 s		
Stall or spin occurs	s No	
23 Any other flight procedure and/or cuser's manual	onfiguration described in the	
	No other flight procedure or configuration described in the user's	

manual



# Deutscher Hängegleiterverband e.V. Akkreditierte Musterprüfstelle für Hängegleiter und Gleitsegel nach DIN EN ISO/IEC 17020:2012-07

# GS TESTFLUG EN926-2:2021 UP MERU 2 S

Test No 035596-GSTFEN21-1683-BauerSepp

**Test date** 05.10.2023

Location Gardasee / Mt Baldo

Type UP Meru 2 S

Test type GS Testflug EN926-2:2021

Test order Auftrag GS Musterprüfung UP Meru 2 S (UP International GmbH)

Customer UP International GmbH
Test standard EN 926-2:2013+A1:2021

Test standard 2 LTF NFL HG/GS 2-565-20

**Expert** Bauer **Result** positive **Billing to:** 100%

**Technical peculiarities** 

Sauc

Datum / Unterschrift (Josef Bauer)

#### RESULTS

PG test flight (general)

Take off weight [kg] 78

Weight limit for certification [kg] 78

Number of pilots  $\boldsymbol{1}$ 

test pilot Josef Bauer

Harness type Supair Acro 4 M

Harness category GH

Minimum speed [km/h] 23

Trim speed [km/h] 35

Accelerated speed [km/h] 46

Accelerator used? Yes

Trimms -

Classification

**Classification** C

# **DETAILS ACCORDING TO EN 926-2:2013+A1:2021**

1 Inflation/take-off

C

 $\textbf{Rising behaviour} \ \ \text{Overshoots, shall be slowed down to avoid a front collapse}$ 

Special take off technique required No

2 Landing

Α

Special landing technique required No

3 Speeds in straight flight

Α

Trim speed more than 30 km/h Yes

Speed range using the controls larger Yes

than 10 km/h

Minimum speed Less than 25 km/h

4 Control movement

C

Symmetric control pressure Increasing

**Symmetric control travel** 40 cm to 55 cm

5 Pitch stability exiting accelerated flight	Α
<b>Dive forward angle on exit</b> Dive forward less than 30°	
Collapse occurs No	
6 Pitch stability operating controls during accelerated flight	Α
Collapse occurs No	
7 Roll stability and damping	Α
Oscillations Reducing	
Oscillations Reducing	
8 Stability in gentle spirals	Α
Tendency to return to straight flight Spontaneous exit	
rendency to return to straight hight Spontaneous exit	
9 Behaviour exiting a fully developed spiral dive	Α
£	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)	
Turn angle to recover normal flight Less than 720°, spontaneous recovery	
10.1 Symmetric front collanse	_
10.1 Symmetric front collapse	С
Entry Rocking back less than 45°	
Recovery 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	
roluing intes used yes	
10.2 Unaccelerated collapse (at least 50 % chord)	C
k	
Entry Rocking back less than 45°  Recovery 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	
. Claiming innex about 700	
10.3 Accelerated collapse (at least 50 % chord)	С
Entry Rocking back less than 45°	
Recovery Spontaneous in less than 3 s	
Dive forward angle on exit Dive forward 30° to 60°	
Change of course Entering a turn of less than 90°	
Cascade occurs No	
Folding lines used yes	
- · · ·	
11 Exiting deep stall (parachutal stall)	В
Deep stall achieved Yes	
Recovery Spontaneous in less than 3 s	
Dive forward angle on exit Dive forward 30° to 60°	
Change of course Changing course less than 45°	
Cascade occurs No	
12 High angle of attack recovery	Α
Recovery Spontaneous in less than 3 s	
Cascade occurs No	
13 Recovery from a developed full stall	В
Dive forward angle on exit Dive forward 30° to 60°	
Collapse No collapse	
the state of the s	

Cascade occurs (other than collapses) No

Rocking back Less than 45°
Line tension Most lines tight

14.1 Small asymmetric collapse		С
Change of course until re-inflation		
Maximum dive forward or roll angle		
	Inflates in less than 3 s from start of pilot action	
Total change of course	•	
	No (or only a small number of collapsed cells with a spontaneous re inflation)	
Twist occurs	•	
Cascade occurs		
Folding lines used		
	7-2	
14.2 Large asymmetric collapse		С
Change of course until re-inflation	90° to 180°	
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	
Re-inflation behaviour	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) $ \\$	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
14.3 Small asymmetric collapse acceler	ated	C
Change of course until re-inflation		
Maximum dive forward or roll angle		
	Inflates in less than 3 s from start of pilot action	
Total change of course	•	
Collapse on the opposite side occurs	No (or only a small number of collapsed cells with a spontaneous re inflation)	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
14.4 Large asymmetric collapse acceler	rated	C
Change of course until re-inflation	180° to 360°	
Maximum dive forward or roll angle		
Re-inflation behaviour	-	
Total change of course	•	
	No (or only a small number of collapsed cells with a spontaneous re inflation)	
Twist occurs	,	
Cascade occurs	No	
Folding lines used	yes	
15 Directional control with a maintaine	d asymmetric collapse	С
Able to keep course		
180° turn away from the collapsed side possible in 10 s	Yes	
Amount of control range between turn and stall or spin	25 % to 50 % of the symmetric control travel	
16 Trim speed spin tendency		A
Spin occurs		
-		
17 Low speed spin tendency		Α
Spin occurs	No	
5p 000013		
19 Pacayary from a dayalanad spin		^

user's manual

**Spin rotation angle after release** Stops spinning in less than 90° **Cascade occurs** No

# 19 B-line stall Not carried out because the manoeuvre is excluded in the user's 20 Big ears **Entry procedure** Standard technique Behaviour during big ears Stable flight **Recovery** Spontaneous in less than 3 s Dive forward angle on exit Dive forward 0° to 30° 21 Big ears in accelerated flight Entry procedure Standard technique 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 22 Alternative means of directional control 180° turn achievable in 20 s Yes Stall or spin occurs No 23 Any other flight procedure and/or configuration described in the

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



# Deutscher Hängegleiterverband e.V. Akkreditierte Musterprüfstelle für Hängegleiter und Gleitsegel nach DIN EN ISO/IEC 17020:2012-07

# GS TESTFLUG EN926-2:2021 UP MERU 2 SM

Test No 035655-GSTFEN21-1692-Mario Eder

**Test date** 06.10.2023

Location Gardasee / Mt Baldo

Type UP Meru 2 SM

Test type GS Testflug EN926-2:2021

Test order Auftrag GS Musterprüfung UP Meru 2 SM (UP International GmbH)

Customer UP International GmbH
Test standard EN 926-2:2013+A1:2021

Test standard 2 LTF NFL HG/GS 2-565-20

**Expert** Eder **Result** positive

**Billing to: 100%** 

**Technical peculiarities** 

Vario Eden

Datum / Unterschrift (Mario Eder)

# RESULTS

PG test flight (general)

Take off weight [kg] 101

Weight limit for certification [kg] 101

Number of pilots 1

test pilot Mario Eder

Harness type Nova Itus

**Harness category** GH

Minimum speed [km/h] 27

Trim speed [km/h] 39

Accelerated speed [km/h] 52

Accelerator used? Yes

Trimms -

Classification

**Classification** D

# **DETAILS ACCORDING TO EN 926-2:2013+A1:2021**

1 Inflation/take-off

С

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

Special take off technique required No

2 Landing

Α

Special landing technique required  $\,\mathrm{No}$ 

3 Speeds in straight flight

В

Trim speed more than 30 km/h Yes

Speed range using the controls larger Yes

than 10 km/h

Minimum speed 25 km/h to 30 km/h

4 Control movement

....

Symmetric control pressure Increasing

**Symmetric control travel** 50 cm to 65 cm

5 Pitch stability exiting accelerated flig	ht	Α
Dive forward angle on exit		
Collapse occurs	No	
•		
6 Pitch stability operating controls duri	ng accelerated flight	Α
Collapse occurs		
Conapse occurs	NO	
7 Roll stability and damping		
iiiiiiii		Α
Oscillations	Reducing	
1		
8 Stability in gentle spirals		Α
Tendency to return to straight flight	Spontaneous exit	
9 Behaviour exiting a fully developed sp	piral dive	C
Initial response of glider (first 180°)		
	Spontaneous exit (g force decreasing, rate of turn decreasing)	
	en : 1080° bis 1440°, selbstständige Rückkehr in den Normalflug	
3		
10.1 Symmetric front collapse		C
i	Packing back loss than 450	
	Rocking back less than 45°	
-	Spontaneous in 3 s to 5 s	
Dive forward angle on exit		
Cascade occurs	Entering a turn of less than 90°	
Folding lines used	yes	
10.2 Uppersolarists of colleges (at least 5)	0.0/ _b)	_
10.2 Unaccelerated collapse (at least 5		D
-	Rocking back less than 45°	
	Recovery through pilot action in less than a further 3 s	
Dive forward angle on exit		
	Entering a turn of 90° to 180°	
Cascade occurs		
Folding lines used	yes	
10.3 Accelerated collapse (at least 50 %		С
Entry	Rocking back less than 45°	
Recovery	Spontaneous in less than 3 s	
Dive forward angle on exit		
Change of course	Entering a turn of less than 90°	
Cascade occurs	No	
Folding lines used	yes	
1		
11 Exiting deep stall (parachutal stall)		В
Deep stall achieved		
Recovery	Spontaneous in less than 3 s	
Dive forward angle on exit	Dive forward 30° to 60°	
Change of course	Changing course less than 45°	
Cascade occurs	No	
12 High angle of attack recovery		Α
ii	Spontaneous in less than 3 s	
Cascade occurs	•	
2		
13 Recovery from a developed full stall		R
i	Divo forward 200 to 600	
Dive forward angle on exit		
Collapse	No collapse	

Cascade occurs (other than collapses) No

Rocking back Less than 45°
Line tension Most lines tight

14.1 Small asymmetric collapse		C
Change of course until re-inflation	90° to 180°	
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	
Re-inflation behaviour	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)	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
14.2 Large asymmetric collapse		С
Change of course until re-inflation		
Maximum dive forward or roll angle		
Re-inflation behaviour	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)	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
14.3 Small asymmetric collapse acceler	rated	C
Change of course until re-inflation		
Maximum dive forward or roll angle	Dive or roll angle 45° to 60°	
Re-inflation behaviour	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)	
Twist occurs	No	
Twist occurs Cascade occurs		
	No	
Cascade occurs	No	
Cascade occurs	No yes	С
Cascade occurs Folding lines used	No yes rated	С
Cascade occurs Folding lines used 14.4 Large asymmetric collapse acceler	No yes rated 180° to 360°	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler  Change of course until re-inflation  Maximum dive forward or roll angle	No yes rated 180° to 360°	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler  Change of course until re-inflation  Maximum dive forward or roll angle	No yes  rated  180° to 360°  Dive or roll angle 45° to 60°  Inflates in less than 3 s from start of pilot action	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler  Change of course until re-inflation  Maximum dive forward or roll angle  Re-inflation behaviour  Total change of course	No yes  rated  180° to 360°  Dive or roll angle 45° to 60°  Inflates in less than 3 s from start of pilot action	C
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler  Change of course until re-inflation  Maximum dive forward or roll angle  Re-inflation behaviour  Total change of course	No yes  rated  180° to 360°  Dive or roll angle 45° to 60°  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)	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler  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	No yes  rated  180° to 360°  Dive or roll angle 45° to 60°  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	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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	No yes  rated  180° to 360°  Dive or roll angle 45° to 60°  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	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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	rated  180° to 360° Dive or roll angle 45° to 60° 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	
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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	No yes  rated  180° to 360° Dive or roll angle 45° to 60° 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  ad asymmetric collapse	C
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes	
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes	
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel	
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel	
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel	
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel	C
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin  16 Trim speed spin tendency Spin occurs	No yes  rated  180° to 360° Dive or roll angle 45° to 60° 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  rd asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel  No	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin	No yes  rated  180° to 360° Dive or roll angle 45° to 60° 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  rd asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel  No	C

user's manual

**Spin rotation angle after release** Stops spinning in less than 90° **Cascade occurs** No

23 Any other flight procedure and/or configuration described in the

19 B-line stall Not carried out because the manoeuvre is excluded in the user's 20 Big ears **Entry procedure** Standard technique Behaviour during big ears Stable flight **Recovery** Spontaneous in less than 3 s Dive forward angle on exit Dive forward 0° to 30° 21 Big ears in accelerated flight Entry procedure Standard technique 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 22 Alternative means of directional control 180° turn achievable in 20 s Yes Stall or spin occurs No

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



# Deutscher Hängegleiterverband e.V. Akkreditierte Musterprüfstelle für Hängegleiter und Gleitsegel nach DIN EN ISO/IEC 17020:2012-07

# GS TESTFLUG EN926-2:2021 UP MERU 2 SM

Test No 035594-GSTFEN21-1682-BauerSepp

**Test date** 05.10.2023

Location Gardasee / Mt Baldo

Type UP Meru 2 SM

Test type GS Testflug EN926-2:2021

Test order Auftrag GS Musterprüfung UP Meru 2 SM (UP International GmbH)

**Customer** UP International GmbH **Test standard** EN 926-2:2013+A1:2021

Test standard 2 LTF NFL HG/GS 2-565-20

**Expert** Bauer **Result** positive

Billing to: 100%

**Technical peculiarities** 

Sauce

# Datum / Unterschrift (Josef Bauer)

#### RESULTS

PG test flight (general)

Take off weight [kg] 88

Weight limit for certification [kg] 88

Number of pilots  $\boldsymbol{1}$ 

test pilot Josef Bauer

Harness type Supair Acro 4 M

Harness category GH

Minimum speed [km/h] 23

Trim speed [km/h] 35

Accelerated speed [km/h] 46

Accelerator used? Yes

Trimms -

Classification

**Classification** C

# **DETAILS ACCORDING TO EN 926-2:2013+A1:2021**

1 Inflation/take-off

C

 $\textbf{Rising behaviour} \ \ \text{Overshoots, shall be slowed down to avoid a front collapse}$ 

Special take off technique required  $\,\mathrm{No}$ 

Landing

Α

Special landing technique required No

3 Speeds in straight flight

Δ

Trim speed more than 30 km/h Yes

Speed range using the controls larger Yes

than 10 km/h

Minimum speed Less than 25 km/h

4 Control movement

C

Symmetric control pressure Increasing

**Symmetric control travel** 45 cm to 60 cm

5 Pitch stability exiting accelerated flight	Α
<b>Dive forward angle on exit</b> Dive forward less than 30°	
Collapse occurs No	
6 Pitch stability operating controls during accelerated flight	Α
Collapse occurs No	
7 Roll stability and damping	Α
Oscillations Reducing	
Oscillations Reducing	
8 Stability in gentle spirals	Α
Tendency to return to straight flight Spontaneous exit	
rendency to return to straight hight Spontaneous exit	
9 Behaviour exiting a fully developed spiral dive	Α
£	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)	
Turn angle to recover normal flight Less than 720°, spontaneous recovery	
10.1 Symmetric front collanse	_
10.1 Symmetric front collapse	С
Entry Rocking back less than 45°	
Recovery 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	
roluing intes used yes	
10.2 Unaccelerated collapse (at least 50 % chord)	C
k	
Entry Rocking back less than 45°  Recovery 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	
. Claiming innex about 700	
10.3 Accelerated collapse (at least 50 % chord)	С
Entry Rocking back less than 45°	
Recovery Spontaneous in less than 3 s	
Dive forward angle on exit Dive forward 30° to 60°	
Change of course Entering a turn of less than 90°	
Cascade occurs No	
Folding lines used yes	
- · · ·	
11 Exiting deep stall (parachutal stall)	В
Deep stall achieved Yes	
Recovery Spontaneous in less than 3 s	
Dive forward angle on exit Dive forward 30° to 60°	
Change of course Changing course less than 45°	
Cascade occurs No	
12 High angle of attack recovery	Α
Recovery Spontaneous in less than 3 s	
Cascade occurs No	
13 Recovery from a developed full stall	В
Dive forward angle on exit Dive forward 30° to 60°	
Collapse No collapse	
the state of the s	

Cascade occurs (other than collapses) No

Rocking back Less than 45°
Line tension Most lines tight

14.1 Small asymmetric collapse		C
Change of course until re-inflation	90° to 180°	
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	
Re-inflation behaviour	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)	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
14.2 Large asymmetric collapse		С
Change of course until re-inflation		
Maximum dive forward or roll angle		
Re-inflation behaviour	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)	
Twist occurs	No	
Cascade occurs	No	
Folding lines used	yes	
14.3 Small asymmetric collapse acceler	rated	C
Change of course until re-inflation		
Maximum dive forward or roll angle	Dive or roll angle 45° to 60°	
Re-inflation behaviour	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)	
Twist occurs	No	
Twist occurs Cascade occurs		
	No	
Cascade occurs	No	
Cascade occurs	No yes	С
Cascade occurs Folding lines used	No yes rated	С
Cascade occurs Folding lines used 14.4 Large asymmetric collapse acceler	No yes rated 180° to 360°	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler  Change of course until re-inflation  Maximum dive forward or roll angle	No yes rated 180° to 360°	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler  Change of course until re-inflation  Maximum dive forward or roll angle	No yes  rated  180° to 360°  Dive or roll angle 45° to 60°  Inflates in less than 3 s from start of pilot action	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler  Change of course until re-inflation  Maximum dive forward or roll angle  Re-inflation behaviour  Total change of course	No yes  rated  180° to 360°  Dive or roll angle 45° to 60°  Inflates in less than 3 s from start of pilot action	C
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler  Change of course until re-inflation  Maximum dive forward or roll angle  Re-inflation behaviour  Total change of course	No yes  rated  180° to 360°  Dive or roll angle 45° to 60°  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)	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler  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	No yes  rated  180° to 360°  Dive or roll angle 45° to 60°  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	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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	No yes  rated  180° to 360°  Dive or roll angle 45° to 60°  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	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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	rated  180° to 360° Dive or roll angle 45° to 60° 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	
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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	No yes  rated  180° to 360° Dive or roll angle 45° to 60° 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  ad asymmetric collapse	C
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes	
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes	
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel	
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel	
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel	
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin	rated  180° to 360° Dive or roll angle 45° to 60° 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  d asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel	C
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin  16 Trim speed spin tendency Spin occurs	No yes  rated  180° to 360° Dive or roll angle 45° to 60° 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  rd asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel  No	С
Cascade occurs Folding lines used  14.4 Large asymmetric collapse acceler 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  15 Directional control with a maintaine Able to keep course 180° turn away from the collapsed side possible in 10 s Amount of control range between turn and stall or spin	No yes  rated  180° to 360° Dive or roll angle 45° to 60° 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  rd asymmetric collapse Yes Yes 25 % to 50 % of the symmetric control travel  No	C

user's manual

**Spin rotation angle after release** Stops spinning in less than 90° **Cascade occurs** No

23 Any other flight procedure and/or configuration described in the

# 19 B-line stall Not carried out because the manoeuvre is excluded in the user's 20 Big ears **Entry procedure** Standard technique Behaviour during big ears Stable flight **Recovery** Spontaneous in less than 3 s Dive forward angle on exit Dive forward 0° to 30° 21 Big ears in accelerated flight Entry procedure Standard technique 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 22 Alternative means of directional control 180° turn achievable in 20 s Yes Stall or spin occurs No

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