MAC PARA ELAN 3 30

Type designation	Mac Para Elan 3 30
Type test reference no	DHV GS-01-2651-21
Holder of certification	MAC Para Technology
Manufacturer	MAC Para Technology
Classification	C
Winch towing	Yes
Number of seats min / max	1 / 1
Accelerator	Yes
Trimmers	No

	BEHAVIOUR AT MIN WEIGHT IN FLIGHT (105KG)	**BEHAVIOUR AT MAX WEIGHT IN FLIGHT (130KG)**
Test pilots	**Harald Buntz**	**Sebastian Mackrodt**
	No release	No release
Inflation/take-off	B	B
Rising behaviour	en : einfaches Aufziehen, etwas Korrektur des Piloten erforderlich	en : einfaches Aufziehen, etwas Korrektur des Piloten erforderlich
Special take off technique required	No	No
Landing	A	A
Special landing technique required	No	No
Speeds in straight flight	A	A
Trim speed more than 30 km/h	Yes	Yes
Speed range using the controls larger than 10 km/h	Yes	Yes
Minimum speed	Less than 25 km/h	Less than 25 km/h
Control movement	A	A
Symmetric control pressure	Increasing	Increasing
Symmetric control travel	Greater than 65 cm	Greater than 65 cm
Pitch stability exiting accelerated flight	A	A
Dive forward angle on exit	Dive forward less than 30°	Dive forward less than 30°
Collapse occurs	No	No
Pitch stability operating controls during accelerated flight	A	A
Collapse occurs	No	No
Roll stability and damping	A	A
Oscillations	Reducing	Reducing
Stability in gentle spirals	A	A
Tendency to return to straight flight	Spontaneous exit	Spontaneous exit
en : Verhalten beim Verlassen einer vollständigen Steilspirale	B	B
en : Erstes Ansprechen des Gleitschirms (die ersten 180°)	en : keine unmittelbare Reaktion	en : keine unmittelbare Reaktion
Tendency to return to straight flight	en : selbstständiges Ausleiten (G-Kraft abnehmend, Drehgeschwindigkeit abnehmend)	en : selbstständiges Ausleiten (G-Kraft abnehmend, Drehgeschwindigkeit abnehmend)
Turn angle to recover normal flight	720° to 1 080°, spontaneous recovery	720° to 1 080°, spontaneous recovery
Symmetric front collapse	A	A
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	Entering a turn of less than 90°	Entering a turn of less than 90°
Cascade occurs	No	No
en : Faltleinen wurden benutzt	no	no
en : Symmetrischer Frontklapper mindestens 50% Flügeltiefe	B	B
Entry	Rocking back less than 45°	Rocking back less than 45°
Recovery	Spontaneous in 3 s to 5 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	Entering a turn of less than 90°	Entering a turn of less than 90°
Cascade occurs	No	No
en : Faltleinen wurden benutzt	no	no
en : Symmetrischer Frontklapper im beschleunigten Flug mindestens 50% Flügeltiefe	B	B
Entry	Rocking back less than 45°	Rocking back less than 45°
Recovery	Spontaneous in 3 s to 5 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	Entering a turn of less than 90°	Entering a turn of less than 90°
Cascade occurs	No	No
en : Faltleinen wurden benutzt	no	no
Exiting deep stall (parachutal stall)	C	C
Deep stall achieved	Yes	Yes
Recovery	Spontaneous in 3 s to 5 s	Spontaneous in 3 s to 5 s
Dive forward angle on exit	Dive forward 30° to 60°	Dive forward 30° to 60°
Change of course	Changing course 45° or more	Changing course 45° or more
Cascade occurs	No	No
High angle of attack recovery	C	C
Recovery	Spontaneous in 3 s to 5 s	Spontaneous in 3 s to 5 s
Cascade occurs	No	No
Recovery from a developed full stall	B	B
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
en : Kleiner einseitiger Klapper	A	A
Change of course until re-inflation	Less than 90°	Less than 90°
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	Dive or roll angle 15° to 45°
Re-inflation behaviour	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	Less than 360°	Less than 360°
Collapse on the opposite side occurs	en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)	en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)
Twist occurs	No	No
Cascade occurs	No	No
en : Faltleinen wurden benutzt	no	no
en : Großer einseitiger Klapper	B	B
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°
Re-inflation behaviour	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	Less than 360°	Less than 360°
Collapse on the opposite side occurs	en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)	en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)
Twist occurs	No	No
Cascade occurs	No	No
en : Faltleinen wurden benutzt	no	no
en : Kleiner einseitiger Klapper im beschleunigten Flug	A	A
Change of course until re-inflation	Less than 90°	Less than 90°
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	Dive or roll angle 15° to 45°

Re-inflation behaviour	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	Less than 360°	Less than 360°
Collapse on the opposite side occurs	en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)	en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)
Twist occurs	No	No
Cascade occurs	No	No
en : Faltleinen wurden benutzt	no	no
en : Großer einseitiger Klapper im beschleunigten Flug	C	C
Change of course until re-inflation	90° to 180°	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°
Collapse on the opposite side occurs	en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)	en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)
Twist occurs	No	No
Cascade occurs	No	No
en : Faltleinen wurden benutzt	no	no
Directional control with a maintained asymmetric collapse	A	A
Able to keep course	Yes	Yes
180° turn away from the collapsed side possible in 10 s	Yes	Yes
Amount of control range between turn and stall or spin	More than 50 % of the symmetric control travel	More than 50 % of the symmetric control travel
Trim speed spin tendency	A	A
Spin occurs	No	No
Low speed spin tendency	A	A
Spin occurs	No	No
Recovery from a developed spin	A	A
Spin rotation angle after release	Stops spinning in less than 90°	Stops spinning in less than 90°
Cascade occurs	No	No
B-line stall	C	C
Change of course before release	Changing course more than 45°	Changing course more than 45°
Behaviour before release	Remains stable with straight span	Remains stable with straight span
Recovery	Spontaneous in 3 s to 5 s	Spontaneous in 3 s to 5 s
Dive forward angle on exit	Dive forward 0° to 30°	Dive forward 0° to 30°
Cascade occurs	No	No
Big ears	B	B
Entry procedure	Dedicated controls	Dedicated controls
Behaviour during big ears	Stable flight	Stable flight
Recovery	Spontaneous in 3 s to 5 s	Spontaneous in 3 s to 5 s
Dive forward angle on exit	Dive forward 0° to 30°	Dive forward 0° to 30°
Big ears in accelerated flight	B	B
Entry procedure	Dedicated controls	Dedicated controls
Behaviour during big ears	Stable flight	Stable flight
Recovery	Recovery through pilot action in less than a further 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°
Behaviour immediately after releasing the accelerator while maintaining big ears	Stable flight	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