TYPE-CERTIFICATE

DATA SHEET

No. EASA.A.030

for
HPH Glasflügel 304

Type Certificate Holder
HPH, spol.s r.o.

Čáslavská 234,
284 01 Kutná Hora
CZECH REPUBLIC

For models:

Glasflügel 304 CZ
Glasflügel 304 CZ-17
Glasflügel 304 C
Glasflügel 304 S
Glasflügel 304 MS
Glasflügel 304 eS
Glasflügel 304 S Jet

CONTENT

SECTION F: GLASFLÜGEL 304 eS

SECTION G: GLASFLÜGEL 304 S JET

ADMINISTRATIVE SECTION

SECTION A: Glasflügel 304 CZ

A.I. General

1.	a) Type: b) Model:	HPH Glasflügel 304 Glasflügel 304 CZ
2.	Airworthiness Category:	Utility
3.	Manufacturer:	HPH, spol.s r.o. Čáslavská 234, 284 01 Kutná Hora CZECH REPUBLIC
4.	Certification Application Date:	March 20, 1996
5.	CAA CZ certification date:	April 2, 1998
6.	The EASA Type Certificate replaces the Czech Republic Certificate No. 98-03	

A.II. Certification Basis

1.	Reference Date for determining the applicable requirements:	March 20, 1996
2.	Certification Basis:	As defined by the CAA CZ letter 1941/720-TI/96/Př dated. March 20, 1996
3.	Airworthiness Requirements:	Airworthiness Requirements for Sailplanes and powered Sailplanes (LFSM), Edition October 23, 1975
4.	Requirements elected to comply:	None
5.	EASA Special Conditions:	- Directions for the stress analysis of components for sailplanes constructed from glass fiber reinforced plastic, Edition March 1965 - Subpart F and G of Joint Aviation Requirements (JAR 22), change 5, October 28, 1995 - JAR 22.375 (change 5)
6.	EASA Exemptions:	None
7.	EASA Equivalent Safety Findings:	None

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: - List of Drawings for Sailplane "Glasflügel 304 B"
-Amendment of List for "Glasflügel 304 CZ", dated March 1998.

2. Description: Single seat mid-wing cantilever sailplane fiber construction, 2-piece wing, trailing edge airbrakes combined with flaps, wing water ballast - polyethylene water ballast tanks, retractable wheel, wheel-brake, tail wheel, T-tail (fixed stabilizer with elevator, fin and rudder), winglets.

3. Equipment:
Airspeed indicator up to 270 km/h
Altimeter
4-piece safety harness
Parachute or cushion (thickness approx. 10 cm when compressed)

4. Dimensions:

Span	15.0 m
Length	6.45 m
Height	1.15 m
Wing Area	9.88 m²
Aspect Ratio:	22,78

5. Launching Hooks:
Nose tow hook "E72", LBA approved - No.:60.230/1 or
Nose tow hook " E75", LBA approved - No.:60.230/1or
Nose tow hook " E85", LBA approved - No.:60.230/1
Safety C.G. tow hook "SH 72", LBA approved - No.:60.230/3 or
Safety C.G. tow hook " Europa G 88", LBA approved - No.:60.230/2.

6. Weak links:
Ultimate strength:
- for winch launching max. 6500 N
- for aerotow max. 6500 N

7. Air Speeds:

Manoeuvering Speed V_A	200 km/h IAS
Never Exceed Speed V_{NE} , flaps 0,-1,-2	
up to 4000 m MSL	250 km/h IAS
from 4000 to 5000 m MSL	240 km/h IAS
from 5000 to 6000 m MSL	226 km/h IAS
from 6000 to 7000 m MSL	214 km/h IAS
from 7000 to 8000 m MSL	202 km/h IAS
from 8000 to 9000 m MSL	191 km/h IAS
from 9000 to 10000 m MSL	179 km/h IAS
from 10000 to 12000 m MSL	159 km/h IAS
Max. permitted v_{FE} , flaps +1, +2	200 km/h IAS
Rough Air Speed V_{RA}	200 km/h IAS
Max. Aerotow Speed V_T	150 km/h IAS
Max. Winch-launch Speed V_W	150 km/h IAS

8. Operational Capability: VFR Day

9. Maximum Weights:
   Maximum weight: 450 kg
   Maximum weight of non-lifting parts: 240 kg

10. Centre of Gravity Range: Max. forward c/g position aft of datum: 7.87 in (200 mm)
    Max. rearward c/g position aft of datum: 14.17 in.(325 mm)
    [MAC is 682 mm]

11. Datum: Wing leading edge y = 425 mm from the centreline

12. Levelling Means: Wedge 100:5,2 on slope of rear top fuselage to be horizontal

13. Minimum Flight Crew: 1 (Pilot)

14. Maximum Passenger Seating Capacity: ---

15. Lifetime limitations: Refer to Maintenance Manual

16. Deflection angles of control surfaces:

Elevator:	up and down	17° ± 2°
Rudder:	right and left:	25° ± 2°
Aileron:	up	23° ± 2°
	down	10° ± 2°
Flap:	up	08° ± 1,5°
	down	12° ± 1,5°

A.IV. Operating and Service Instructions

Flight Manual (FM): CAA CZ approved Flight Manual "Glasfügel 304 CZ", Issue of January 1998

Maintenance Manual (AMM including Airworthiness Limitations): Service manual "Glasfügel 304 CZ" (Maintenance), Issue of January 1998

Operation instruction for the TOST nose tow release mechanism:
"E72" and "E75", Issue of May 1975, LBA approved.
"E72" and "E75", Issue of March 1988, LBA approved - for overhauled tow hook only.
"E85", Issue of March 1989, LBA approved

Operation instruction for the TOST safety tow release mechanism:
"S72" and "SH72, Issue of May 1975, LBA approved.
"S72" and "SH72, Issue of July 1989, LBA approved – for overhauled tow hook only.

Tost Manual for the launching hook “Europa G 88”, Issue of February 1989, LBA approved.

A.V. Notes

1. Serial numbers affected.: 4,8,10 and all serial numbers formated XX-15

2. Type Certification in Czech Republic: Type Certified on April 2nd 1998 by validation of 7th Revision of Type Certificate No.: 318, approved by LBA on November 28th 1990, and by Additional Certification.

3. Only industrial production permitted.

4. All external portions exposed to sunlight must be painted white, except of the areas for the registration and anti-collision markings.

SECTION B: Glasflügel 304 CZ-17

B.I. General

1. a) Type:	HPH Glasflügel 304
b) Model:	Glasflügel 304 CZ-17
2. Airworthiness Category:	Utility
3. Manufacturer:	HPH, spol.s r.o. Čáslavská 234, 284 01 Kutná Hora CZECH REPUBLIC
4. Certification Application Date:	October 9, 2000
5. CAA CZ Certification Date:	October 23, 2000

6. The EASA Type Certificate replaces Czech Republic Type Certificate No. 98-03

B.II. Certification Basis

1. Reference Date for determining the applicable requirements:	March 20, 1996
2. Certification Basis:	As defined by the CAA CZ letter 1941/720-TI/96/Př dated. March 20, 1996
3. Airworthiness Requirements:	Airworthiness Requirements for Sailplanes and powered Sailplanes (LFSM), Edition October 23, 1975
4. Requirements elected to comply:	None
5. EASA Special Conditions:	- Directions for the stress analysis of components for sailplanes constructed from glass fiber reinforced plastic, Edition March 1965 - Subpart F and G of Joint Aviation Requirements (JAR 22), change 5, October 28, 1995 - JAR 22.375 (change 5)
6. EASA Exemptions:	None
7. EASA Equivalent Safety Findings:	None

B.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:	-List of Drawings for Sailplane " Glasfügel 304 B" -Amendment of List for " Glasfügel 304 CZ", dated March 1998. -Amendment of Drawings for Wing Extentions.

2. Description: Single seat mid-wing cantilever sailplane fiber construction,2-piece wing, trailing edge airbrakes combined with flaps, wing water ballast - polyethylene water ballast tanks, retractable wheel, wheel-brake, tail wheel, T-tail (fixed stabilizer with elevator, fin and rudder), interchangeable winglets and wing extentions for wing span 17,43 m.

3. Equipment:
Airspeed indicator up to 270 km/h
Altimeter
4-piece safety harness
Parachute or cushion (thickness approx. 10 cm when compressed)

4. Dimensions:

Span	15.0 m	optionally	17,43 m
Length	6.45 m		
Height	1.15 m		
Wing Area	9.88 m²	optionally	10,68 m²
Aspect Ratio:	22,78	or	28,44

5. Launching Hooks:
Nose tow hook "E72", LBA approved - No.:60.230/1 or
Nose tow hook " E75", LBA approved - No.:60.230/1or
Nose tow hook " E85", LBA approved - No.:60.230/1
Safety C.G. tow hook "SH 72", LBA approved - No.:60.230/3 or
Safety C.G. tow hook " Europa G 88", LBA approved - No.:60.230/2.

6. Weak links: Ultimate strength for winch launching and aerotow max. 6500 N

7. Air Speeds:

Manoeuvering Speed V_A	180 km/h IAS
Never Exceed Speed V_{NE} , flaps 0,-1,-2	
up to 4000 m MSL	250 km/h IAS
from 4000 to 5000 m MSL	240 km/h IAS
from 5000 to 6000 m MSL	226 km/h IAS
from 6000 to 7000 m MSL	214 km/h IAS
from 7000 to 8000 m MSL	202 km/h IAS
from 8000 to 9000 m MSL	191 km/h IAS
from 9000 to 10000 m MSL	179 km/h IAS
from 10000 to 12000 m MSL	159 km/h IAS
Max. permitted v_{FE} , flaps +1, +2	180 km/h IAS
Rough Air Speed V_{RA}	180 km/h IAS
Max. Aerotow Speed V_T	150 km/h IAS
Max. Winch-launch Speed V_W	150 km/h IAS

8. Operational Capability: VFR Day

9. Maximum Weights:

Maximum weight	450 kg
Maximum weight of non lifting parts	240 kg

10. Centre of Gravity Range:	Max. forward c/g position aft of datum: 200 mm Max. rearward c/g position aft of datum: 318 mm [MAC is 682 mm or 625 mm]		
11. Datum:	Wing leading edge y = 425 mm from the centreline		
12. Levelling Means:	Wedge 100:5,2 on slope of rear top fuselage to be horizontal		
13. Minimum Flight Crew:	1 (Pilot)		
14. Maximum Passenger Seating Capacity:	---		
15. Lifetime limitations:	Refer to Maintenance Manual		
16. Deflection angles of control surfaces:	Elevator:	up and down	17° ± 2°
	Rudder:	right and left:	25° ± 2°
	Aileron:	up	23° ± 2°
		down	10° ± 2°
	Flap:	up	08° ± 1,5°
		down	12° ± 1,5°

B.IV. Operating and Service Instructions

Flight Manual (FM): CAA CZ approved Flight Manual "Glasfügel 304 CZ-17", Issue of March 2000

Maintenance Manual (AMM) (Including Airworthiness Limitations): Service manual "Glasfügel 304 CZ-17" (Maintenance), Issue of March 2000

Operation instruction for the TOST nose tow release mechanism:
"E72" and "E75", Issue of May 1975, LBA approved.
"E72" and "E75", Issue of March 1988, LBA approved - for overhauled tow hook only.
"E85", Issue of March 1989, LBA approved

Operation instruction for the TOST safety tow release mechanism:
"S72" and "SH72, Issue of May 1975, LBA approved.
"S72" and "SH72, Issue of July 1989, LBA approved – for overhauled tow hook only.

Tost Manual for the launching hook “Europa G 88”, Issue of February 1989, LBA approved.

B.V. Notes

1. Serial numbers affected 1,2,3,5,6,7,9,11,12,14,15,16,17 and all serial numbers formated XX-17

2. Sailplane has been approved in compliance with Subpart B of Joint Aviation Requirements (JAR 22), change 5, October 28th 1995 for 17.43 m configuration

3. Only industrial production permitted.

4. All external portions exposed to sunlight must be painted white, except of the areas for the registration and anti-collision markings.

SECTION C: Glasflügel 304 C

C.I. General

1. a) Type:	HPH Glasflügel 304
b) Variant:	Glasflügel 304 C
2. Airworthiness Category:	Utility
3. Manufacturer:	HPH, spol.s r.o. Čáslavská 234, 284 01 Kutná Hora CZECH REPUBLIC
4. Certification Application Date:	November 15, 2000
5. CAA CZ Certification Date:	July 25, 2001

6. The EASA Type Certificate replaces Czech Republic Type Certificate No. 98-03

C.II. Certification Basis

1. Reference Date for determining the applicable requirements:	March 20, 1996
2. Certification Basis:	As defined by the CAA CZ letter 15511/4081-TI/00/Sh dated 1. March 2000
3. Airworthiness Requirements:	Airworthiness Requirements for Sailplanes and powered Sailplanes (LFSM), Edition October 23, 1975
4. Requirements elected to comply:	None
5. EASA Special Conditions:	- Directions for the stress analysis of components for sailplanes constructed from glass fiber reinforced plastic, Edition March 1965 - Subpart F and G of Joint Aviation Requirements (JAR 22), change 5, October 28, 1995 - JAR 22.375 (change 5)
6. EASA Exemptions:	None
7. EASA Equivalent Safety Findings:	None

C.III. Technical Characteristics and Operational Limitations

1. Type Design Definition:	-List of Drawings for Sailplane " Glasfügel 304 B" -Amendment of List for " Glasfügel 304 CZ", dated March 1998. -Amendment of List for “Glasfügel 304 C”
2. Description:	Single seat mid-wing cantilever sailplane fiber construction,2-piece wing, S-H airbrakes, wing water ballast - polyethylene water ballast tanks, retractable wheel, wheel-brake, tail wheel, T-tail (fixed stabilizer with elevator, fin and rudder) , interchangeable winglets.
3. Equipment:	Airspeed indicator up to 270 km/h Altimeter 4-piece safety harness Parachute or cushion (thickness approx. 10 cm when compressed)
4. Dimensions:	
Span	15.0 m
Length	6.45 m
Height	1.15 m
Wing Area	9.88 m²
Aspect Ratio:	22,78
5. Launching Hooks:	Nose tow hook "E72", LBA approved - No.:60.230/1 or Nose tow hook " E75", LBA approved - No.:60.230/1or Nose tow hook " E85", LBA approved - No.:60.230/1 Safety C.G. tow hook "SH 72", LBA approved - No.:60.230/3 or Safety C.G. tow hook " Europa G 88", LBA approved - No.:60.230/2.
6. Weak links:	Ultimate strength for winch launching and aerotow max. 6500 N
7. Air Speeds:	
Manoeuvring Speed V_A,	200 km/h IAS
Never Exceed Speed V_{NE} ,	
up to 4000 m MSL	250 km/h IAS
from 4000 to 5000 m MSL	240 km/h IAS
from 5000 to 6000 m MSL	226 km/h IAS
from 6000 to 7000 m MSL	214 km/h IAS
from 7000 to 8000 m MSL	202 km/h IAS
from 8000 to 9000 m MSL	191 km/h IAS
from 9000 to 10000 m MSL	179 km/h IAS
from 10000 to 12000 m MSL	159 km/h IAS
Rough Air Speed V_{RA}	200 km/h IAS
Max. Aerotow Speed V_T	150 km/h IAS
Max. Winch-launch Speed V_W	150 km/h IAS

8. Operational Capability: VFR Day

9. Maximum Weights:
   Maximum weight 450 kg
   Maximum weight of non-lifting parts 240 kg

10. Centre of Gravity Range: Max. forward c/g position aft of datum: 200mm
    Max. rearward c/g position aft of datum: 325 mm
    [MAC is 682 mm]

11. Datum: Wing leading edge y = 425 mm from the centreline

12. Levelling Means: Wedge 100:5,2 on slope of rear top fuselage to be horizontal

13. Minimum Flight Crew: 1 (Pilot)

14. Maximum Passenger Seating Capacity: ---

15. Lifetime limitations: Refer to Maintenance Manual

16. Deflection angles of control surfaces:

Elevator:	up and down	17° ± 2°
Rudder:	right and left:	25° ± 2°
Aileron:	up	23° ± 2°
	down	10° ± 2°

C.IV. Operating and Service Instructions

Flight Manual (FM): CAA CZ approved Flight Manual "Glasflügel 304 C", Issue of April 2001

Maintenance Manual (AMM)
(Including Airworthiness Limitations): Service manual "Glasflügel 304 C" (Maintenance), Issue of April 2001

Operation instruction for the TOST nose tow release mechanism:
"E72" and "E75", Issue of May 1975, LBA approved.
"E72" and "E75", Issue of March 1988, LBA approved - for overhauled tow hook only.
"E85", Issue of March 1989, LBA approved

Operation instruction for the TOST safety tow release mechanism:
"S72" and "SH72, Issue of May 1975, LBA approved.
"S72" and "SH72, Issue of July 1989, LBA approved – for overhauled tow hook only.

Tost Manual for the launching hook “Europa G 88”, Issue of February 1989, LBA approved.

C.V. Notes

1. Serial numbers affected are formatted XX-C.

2. Sailplane has been approved in compliance with Subpart B of Joint Aviation Requirements (JAR 22), change 5, October 28th 1995 .

3. Only industrial production permitted.

4. All external portions exposed to sunlight must be painted white, except of the areas for the registration and anti-collision markings.

SECTION D: GLASFLÜGEL 304 S

D.I. GENERAL

1.	a) Type: b) Model:	HPH Glasflügel 304 Glasflügel 304 S
1.	Airworthiness Category:	Sailplane, JAR 22 – Utility
3.	Manufacturer:	HPH, spol.s r.o. Čáslavská 234, 284 01 Kutná Hora CZECH REPUBLIC
4.	Certification Date	08 December 2014

D.II. CERTIFICATION BASIS

1.	Certification Basis:	CRI A01, 8.1.2004
2.	Airworthiness Requirements:	JAR 22, Amendment 7, 1st September 2003
3.	Requirements elected to comply:	- Standards for Structural Substantiation of Sailplane and Powered Sailplane Components Consisting of Glass or Carbon Fiber Reinforced Plastics - issued July 1991
4.	Environmental Standards:	-
5.	Special Conditions:	-
6.	Exemptions:	-
7.	Equivalent Safety Findings:	-

D.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1.	Type Design Definition:	304S-09-001 - Drawing list of 304S (issued 23.9.2014 or later) 304S-09-001/B - Drawing list of 304S - altered drawings (issued 23.9.2014 or later)
2.	Description:	Single-seat, mid-wing sailplane, CFRP/GFRP/AFRP fiber construction, 2-piece wing (with removable wing extensions), camber changing flaps, triple-section SH-type airbrakes on upper wing surface, integral water ballast tanks in the wing and in the fin (option), retractable undercarriage with wheel brake, fixed tailwheel,T-tail with fixed horiz.stabilizer with elevator, fin and rudder, fuselage engine compartment as preparation for later conversion to powered variant, optional flexible water ballast tank in fuselage.
3.	Equipment:	Minimum equipment: - Airspeed indicator up to 270 km/h - Altimeter - 4-piece safety harness - Parachute or cushion (thickness approx. 10 cm when compressed) Additional Equipment refer to Flight and Maintenance Manual
4.	Dimensions:	Span 18 m Wing area 11.8 m^2 Length 6.794 m
5.	Launching Hooks:	1) Safety hook „Europa G 88“, LBA Datasheet No. 60.230/2 2) Nose tow hook “E 22”, LBA Datasheet No.11.402/9NTS Remark: Tow hook 1 and 2 optional
6.	Weak links:	Max. Ultimate Strength: - for winch and auto tow launching max. 780 daN - for aero-tow Max. 780 daN

				serial no: XX-S *) [km/h]	serial no: XX-MS *) [km/h]
7.	Air Speeds:	Manoeuvring Speed	V_A	180	200
		Never Exceed Speed	V_{NE}	260	260
		Maximum permitted speeds			
		- with flaps at	+1, +2	200	200
		- with flaps at	L	150	160
		- with flaps at	-2;-1, 0	260	260
		- in rough air	V_{RA}	180	200
		- in aero-tow	V_T	150	150
		- in winch-launch	V_W	130	130
		- for gear operating	V_{LO}	180	180
		*) REMARK for designation see Notes 3 and 4 at D.V.			
8.	Maximum Masses:	Max. Mass		600 kg	600 kg
		Max. Mass of Non-Lifting Parts		278.5 kg	373 kg
9.	Operational Capability	Approved for VFR-flying in daytime.			
10.	Centre of Gravity Range:	Datum: Wing leading edge y = 425 mm from the centreline Leveling means: Wedge 100:8,77 on slope of rear top fuselage to be horizontal			
		Forward Limit	251 mm aft of datum		
		Rearward Limit	387 aft of datum		
11.	Minimum Flight Crew:	1 (Pilot)			
12.	Maximum Seating Capacity:	1			
13.	Lifetime limitations:	Refer to Maintenance Manual			
14.	Deflection of control surfaces:	Refer to Maintenance Manual			

D.IV. OPERATING AND SERVICE INSTRUCTIONS

1. Flight Manual
   Flight Manual for the Sailplane Glasflügel 304 S; doc. no.:G304S/AFM; issued 08/14; EASA approved
2. Flight Manual Supplement for sailplanes serial no.: XX-S
   304S Flight Manual Supplement; doc. no.: 304SFM_Supp_XS; issued 08/14; EASA approved; see D.V.4.
3. Technical Manual
   Technical Description, Operating, Maintenance and Repair Manual for the Sailplane Glasflügel 304S, doc. no.: 304S/MM; issued 08/14
4. Manual for Operation:
   a. Operation and Maintenance Manual for Tost tow hook Type Tost E 22, latest approved version
   b. Operation and Maintenance Manual for Tost tow hook Type Tost G 88, latest approved version

D.V. NOTES

1. Manufacturing is confined to industrial production.
2. All parts exposed to sun radiation – except the areas for markings and registration – must have a white colour surface.
3. Serial numbers affected are formatted XX-MS only if wing serial number formatted YY-MS is installed.
4. Serial numbers affected are formatted XX-S only if wing serial number formatted YY-S is installed.

SECTION E: GLASFLÜGEL 304 MS

E.I. GENERAL

1.	a) Type: b) Model:	HPH Glasflügel 304 Glasflügel 304 MS
2.	Airworthiness Category:	Powered Sailplane, JAR 22 - Utility capable for self-launching
3.	Manufacturer:	HPH, spol.s r.o. Čáslavská 234, 284 01 Kutná Hora CZECH REPUBLIC
4.	Certification Date	08 December 2014

E.II. CERTIFICATION BASIS

1.	Certification Basis:	EASA Acceptance Letter doc. no.: 60032537, 21.6.2013
2.	Airworthiness Requirements:	JAR 22, Amendment 7, 1st September 2003
3.	Requirements elected to comply:	Standards for Structural Substantiation of Sailplane and Powered Sailplane Components Consisting of Glass or Carbon Fiber Reinforced Plastics - issued July 1991
4.	Environmental Standards:	ICAO Annex 16
5.	Special Conditions:	-
6.	Exemptions:	-
7.	Equivalent Safety Findings:	-

E.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1.	Type Design Definition:	304S-09-001 - Drawing list of 304S (issued 23.9.2014 or later) 304S-09-001/B - Drawing list of 304S - altered drawings (issued 23.9.2014 or later)
2.	Description:	Single-seat, mid-wing sailplane, CFRP/GFRP/AFRP fiber construction, 2-piece wing (with removable wing extensions), camber changing flaps, triple-section SH-type airbrakes on upper wing surface, integral water ballast tanks in the wing and in the fin (option), retractable undercarriage with wheel brake, fixed or steerable tailwheel (option), T-tail with fixed horiz. stabilizer with elevator, fin and rudder, retractable powerplant.
3.	Equipment:	Minimum equipment: - Airspeed indicator up to 270 km/h - Altimeter - Magnetic compass - Engine control unit indicating RPMs Coolant liquid temperature Fuel quantity Engine time - Rear-view mirror - 4-piece safety harness - Parachute or cushion (thickness approx. 10 cm when compressed) Additional Equipment refer to Flight and Maintenance Manual
4.	Dimensions:	Span 18 m Wing area 11.8 m^2 Length 6.794 m
5.	Engine Designation:	Solo Type 2625 01 EASA-Datasheet No: TCDS E.218
6.	Engine Limits:	Maximum continuous Power 39 kW at 6250 rpm Maximum RPM 6700 RPM
7.	Propeller:	KS-1G-152-R 122 LBA-Datasheet No. 32.110/18 Propeller diameter 1580 mm ± 5
8.	Fuel Quantity:	Fixed fuselage tank 13.5 l Tank in stbd. Wing (Option) 11 l Tank in port wing (Option) 11 l Non-usable amount of fuel 1.5 l

9.	Launching Hooks:	1) Safety hook „Europa G 88“, LBA Datasheet No. 60.230/2 2) Nose tow hook “E 22”, LBA Datasheet No.11.402/9NTS Remark: Tow hook 1 and 2 optional		
10.	Weak links:	Max. Ultimate Strength: - for winch and auto tow launching max. 780 daN - for aero-tow Max. 780 daN		
11.	Air Speeds:	Manoeuvring Speed	V_A	200 km/h
		Never Exceed Speed	V_{NE}	260 km/h
		Maximum permitted speeds		
		- with flaps at	+1, +2	200 km/h
		- with flaps at	L	160 km/h
		- with flaps at	-1, 0	260 km/h
		- in rough air	V_{RA}	200 km/h
		- in aero-tow	V_T	150 km/h
		- in winch-launch	V_W	130 km/h
		- for gear operating	V_{LO}	180 km/h
12.	Maximum Masses:	Max. Mass		600 kg
		Max. Mass of Non-Lifting Parts		373 kg
13.	Operational Capability	Approved for VFR-flying in daytime.		
14.	Centre of Gravity Range:	Datum: Wing leading edge y = 425 mm from the centreline Levelling means: Wedge 100:8,77 on slope of rear top fuselage to be horizontal		
		Forward Limit	251 mm aft of datum	
		Rearward Limit	387 aft of datum	
15.	Minimum Flight Crew:	1 (Pilot)		
16.	Maximum Seating Capacity:	1		
17.	Lifetime limitations:	Refer to Maintenance Manual		
18.	Deflection of control surfaces:	Refer to Maintenance Manual		

E.IV. OPERATING AND SERVICE INSTRUCTIONS

1. Flight Manual
   Flight Manual for Powered Sailplane Glasflügel 304 MS; doc. no.:G304MS/AFM; issued 07/14; EASA approved
2. Technical Manual
   Technical Description, Operating, Maintenance and Repair Manual for the Sailplane Glasflügel 304S, doc. no.: 304S/MM; issued 08/14
3. Maintenance Manual Supplement for the Sailplane
   Glasflügel 304MS, doc. no.: 304MS/MM SUP; issued 08/14
4. Manual for Operation:
   a. Operation and Maintenance Manual for Tost tow hook TypeTost E 22, latest approved version
   b. Operation and Maintenance Manual for Tost tow hook TypeTost G 88, latest approved version
   c. Manual for SOLO engine type 2625 01, latest approved version
   d. Operation and Installation Manual P3 for Technoflug propeller KS 1 G () () (), latest approved version

E.V. NOTES

1. Manufacturing is confined to industrial production.
2. All parts exposed to sun radiation – except the areas for markings and registration – must have a white color surface.
3. Serial numbers affected are formatted XX-MS only if wing serial number formatted YY-MS is installed.
4. Approved for operations with the power plant temporarily removed or inoperative in accordance with the instructions given in the MM Sup.

SECTION F: GLASFLÜGEL 304 eS

F.I. GENERAL

1.	a) Type: b) Model:	HPH Glasflügel 304 Glasflügel 304 eS
2.	Airworthiness Category:	Powered Sailplane, JAR 22 - Utility capable for self-sustaining
3.	Manufacturer:	HPH, spol.s r.o. Čáslavská 234, 284 01 Kutná Hora CZECH REPUBLIC
4.	Certification Date	21 November 2016

F.II. CERTIFICATION BASIS

1.	Reference Date for determining the applicable requirements:	20 March 2015
2.	Airworthiness Requirements:	JAR 22, Amendment 7, 1st September 2003 CS 22, Amendment 2, 5th March 2009: Subpart H and J
3.	Requirements elected to comply:	Standards for Structural Substantiation of Sailplane and Powered Sailplane Components Consisting of Glass or Carbon Fiber Reinforced Plastics - issued July 1991
4.	Environmental Standards:	-
5.	Special Conditions:	- SC.22-2014-01; Installation of Electric Propulsion in Sailplanes - SC E-01; Electrical Engine for powered sailplanes
6.	Exemptions:	-
7.	Equivalent Safety Findings:	-

F.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1.	Type Design Definition:	304S-09-001 304S-09-001/B 304eS-09-003	Drawing list of 304S (issued 23.9.2014 or later) Drawing list of 304S - altered drawings (issued 23.9.2014 or later) Amendment of List for " Glasflügel 304 eS" (issued 21.11.2016 or later)
2.	Description:	Single-seat, mid-wing sailplane, CFRP/GFRP/AFRP fibre construction, 2-piece wing (with removable wing extensions), camber changing flaps, triple-section SH-type airbrakes on upper wing surface, integral water ballast tanks in the wing and in the fin (option), retractable undercarriage with wheel brake, fixed tailwheel, T-tail with fixed horiz. stabiliser with elevator, fin and rudder, electric motor and foldable propeller in nose.	
3.	Equipment:	Minimum equipment: - Airspeed indicator up to 270 km/h - Altimeter - Magnetic compass - Engine control unit indicating RPMs Battery level (V meter, A meter) Motor temperature Engine time - 4-piece safety harness - Parachute or cushion (thickness approx. 10 cm when compressed) Additional Equipment refer to Flight and Maintenance Manual	
4.	Dimensions:	Span Wing area Length	18 m 11.8 m^2 6.794 m
5.	Engine [electrical propulsion]:	5.1 Model 5.2 Type Certificate 5.3 Max. revs 5.4 Max. continuous revs 5.5 Max. over speed revs 5.6 Max. motor temperature 5.7 Max. power electronics temp.	FES-HPH-M100 Accepted as part of the aircraft. 5300 RPM 4500 RPM 5300 RPM 90°C 90°C
6.	Propeller:	6.1 Model 6.2 Type Certificate 6.3 Number of blades 6.4 Diameter 6.5 Max. revs 6.6 Sense of Rotation	FES-HPH-P1-102 Accepted as part of the aircraft. 2 1000 mm +20 -0 4500 RPM Clockwise looking at direction of flight
7.	Fluids and Fluid capacities:	N//A	

8.	Battery (Option A) **) [electrical propulsion]:	8.1	Model	2xFES GEN2 14S 41Ah
		8.2	Battery capacity	2x2.1kWh
		8.3	Non-usable battery capacity	~10%
		8.4	Max battery discharge temperature	55°C
		8.5	Min battery discharge temperature	-10°C
		8.6	Max battery charge temperature	55°C
		8.7	Min battery charge temperature	0°C
		8.8	Range of permissible cell voltage	2.8V ÷ 4.18V
	Battery (Option B) **) [electrical propulsion]:	8.9	Model	2xFES GEN4 14S 56Ah
		8.10	Battery capacity	2x2.8kWh
		8.11	Non-usable battery capacity	~10%
		8.12	Max battery discharge temperature	55°C
		8.13	Min battery discharge temperature	-10°C
	**) REMARK for operation see Note 8 at F.V.	8.14	Max battery charge temperature	55°C
		8.15	Min battery charge temperature	0°C
		8.16	Range of permissible cell voltage	2.8V ÷ 4.18V

9. Launching Hooks:
1) Safety hook „Europa G 88“, LBA Datasheet No. 60.230/2
2) Nose tow hook „Europa G 88“, LBA Datasheet No. 60.230/2
Remark:
Tow hook 1 and 2 optional

10. Weak links:
Max. Ultimate Strength:
- for winch and auto tow launching max. 780 daN
- for aero-tow Max. 780 daN

11. Air Speeds:

		serial no: XX-S *) [km/h]	serial no: XX-MS *) [km/h]
Manoeuvring Speed	V_A	180	200
Never Exceed Speed	V_{NE}	260	260
Maximum permitted speeds			
- with flaps at	+1, +2	200	200
- with flaps at	L	150	160
- with flaps at	-2;-1, 0	260	260
- in rough air	V_{RA}	180	200
- in aero-tow	V_T	150	150
- in winch-launch	V_W	130	130
- for gear operating	V_{LO}	180	180

*) REMARK
for designation see Notes 3 and 4 at F.V.

12. Maximum Masses:

Max. Mass	571 kg	600 kg
Max. Mass of Non-Lifting Parts	305 kg	373 kg

13. Operational Capability
Approved for VFR-flying in daytime.

14. Centre of Gravity Range:
Datum: Wing leading edge y = 425 mm from the centreline
Levelling means: Wedge 100:8,77 on slope of rear top fuselage to be horizontal

Forward Limit	251 mm aft of datum
Rearward Limit	387 aft of datum

15. Minimum Flight Crew:
1 (Pilot)

16. Maximum Seating Capacity: 1

17. Lifetime limitations: Refer to Maintenance Manual

18. Deflection of control surfaces: Refer to Maintenance Manual

F.IV. OPERATING AND SERVICE INSTRUCTIONS

1. Flight Manual:

   - Flight Manual for the Sailplane Glasflügel 304 S;
   doc. No. G304S/AFM; revision 0, issued 08/14; EASA approved, including
   - Flight Manual Supplement for the Sailplane Glasflügel 304 eS;
   doc. No. G304eS/AFMSupp; issued 10/16; EASA approved
   - 304S Flight Manual Supplement; doc. no.: 304SFM_Supp_XS, issued 08/14;
   with revision R01, 10/16; EASA approved; see F.V.4.

2. Technical Manual:

   - Technical Description, Operating, Maintenance and Repair Manual for the Sailplane Glasflügel 304S, doc. No. 304S/MM; issued 08/14 or later approved revision, including
   - Maintenance Manual Supplement for the Sailplane Glasflügel 304 eS,
   doc. No. 304eS/MMSupp; issued 10/16 or later approved revision

3. Manuals for Operation:

   a. Operation and Maintenance Manual for Tost tow hook Type Tost G 88, latest approved revision
   b. FES Motor Manual FES-HPH-M100, v1.21 or later approved revision
   c. FES Propeller Manual FES-HPH-P1-102, v1.11 or later approved revision
   d. FES Battery pack GEN2 manual, v1.17 or later approved revision
   e. FES FCU instrument manual v1.70 or later approved revision

4. In order to comply with the **EASA AD No. AD-2017-0167-E** the sailplane must be equipped by following additional documents which complements or substitute the original listed in 1, 2 and 3 of this section:

   - Flight Manual Supplement for the Sailplane Glasflügel 304 eS;
   doc. No. G304eS/AFMSupp; revision 1, issued 11/17 or later approved revision
   - Maintenance Manual Supplement for the Sailplane Glasflügel 304 eS,
   doc. No. 304eS/MMSupp; revision 1, issued 11/17 or later approved revision
   - Maintenance Manual Supplement for the sailplane Glasflügel 304eS – “Repair of battery compartment”, doc. No. 304eS/MMSup2, revision 0, dated 11/17 or later approved revision
   - FES Battery pack GEN2 manual v1.19, dated 10/2017 or later approved revision
   - FES FCU instrument manual v1.80, dated 10/2017 or later approved revision

F.V. NOTES

1. Manufacturing is confined to industrial production.
2. All parts exposed to sun radiation – except the areas for markings and registration – must have a white colour surface.
3. Serial numbers affected are formatted XX-MS only if wing serial number formatted YY-MS is installed.
4. Serial numbers affected are formatted XX-S only if wing serial number formatted YY-S is installed.
5. Approved for operations with the power plant temporarily removed or inoperative in accordance with the instructions given in the doc. No. 304eS/MMSupp; issued 10/16.
6. Engine and propeller are accepted as part of the aircraft according to Part 21.A.23(b)(2).
7. As of 20 February 2025, the model (all serials) is eligible for a standard Certificate of Airworthiness (CofA). Restricted CofA issued before that date remain valid.
8. The sailplane engine must be always operated with two battery packs of the same model.

SECTION G: GLASFLÜGEL 304 S JET

G.I. GENERAL

1.	a) Type: b) Model:	HPH Glasflügel 304 Glasflügel 304 S Jet
2.	Airworthiness Category:	Powered Sailplane, JAR 22 - Utility capable for self-sustaining
3.	Manufacturer:	HPH, spol.s r.o. Čáslavská 234, 284 01 Kutná Hora CZECH REPUBLIC
4.	Certification Date	16 December 2022

G.II. CERTIFICATION BASIS

1.	Reference Date for determining the applicable requirements:	20 April 2010
2.	Airworthiness Requirements:	JAR 22, Amendment 7, 1st September 2003 CS 22, Amendment 2, 5th March 2009: for Subpart H
3.	Requirements elected to comply:	Standards for Structural Substantiation of Sailplane and Powered Sailplane Components Consisting of Glass or Carbon Fiber Reinforced Plastics - issued July 1991
4.	Environmental Standards:	CS-34.1 Amdt. 4, Fuel Venting CS-34.2 Amdt. 4, Smoke Number
5.	Special Conditions:	SC01 to SC19, Airworthiness Standard for CS22H Turbine Engine to be operated in Sailplanes
6.	Exemptions:	-
7.	Equivalent Safety Findings:	-

G.III. TECHNICAL CHARACTERISTICS AND OPERATIONAL LIMITATIONS

1.	Type Design Definition:	304S-09-001 304S-09-001/B	Drawing list of 304S (issued 23.9.2014 or later) Drawing list of 304S - altered drawings (issued 23.9.2014 or later)
2.	Description:	Single-seat, mid-wing sailplane, CFRP/GFRP/AFRP fibre construction, 2-piece wing (with removable wing extensions), camber changing flaps, triple-section SH-type airbrakes on upper wing surface, integral water ballast tanks in the wing and in the fin (option), retractable undercarriage with wheel brake, fixed tailwheel, T-tail with fixed horiz. stabiliser with elevator, fin and rudder, retractable turbojet engine.	
3.	Equipment:	Minimum equipment: - Airspeed indicator up to 270 km/h - Altimeter - Magnetic compass - Engine control unit indicating Fuel level Power rating EGT Engine time and cycles - 4-piece safety harness - Parachute or cushion (thickness approx. 10 cm when compressed) Additional Equipment refer to Flight and Maintenance Manual	
4.	Dimensions:	Span Wing area Length	18 m 11.8 m^2 6.794 m
5.	Engine Designation:	TJ 42	Single shaft turbojet engine featuring a single stage centrifugal compressor, an annular combustion chamber, a single stage axial turbine and exhaust nozzle. The engine is controlled by a digital electronic control unit. Accepted as part of the aircraft.
6.	Engine Limits:	Maximum RPM (limited to 5 min) Maximum continuous RPM Maximum Exhaust temperature Maximum Exhaust temperature (start, max 3s) *NOTE: The performance value specified above corresponds to minimum values defined under the conditions of ICAO*	96 000, nominal thrust 365 N 92 000, nominal thrust 340 N 850°C 1000°C
7.	Propeller:	-	-
8.	Fuel Quantity:	33 l	

9. Launching Hooks:

1) Safety hook „Europa G 88“, LBA Datasheet No. 60.230/2
2) Nose tow hook “E 22”, LBA Datasheet No.11.402/9NTS
Remark:
Tow hook 1 and 2 optional

10. Weak links:

Max. Ultimate Strength:
- for winch and auto tow launching max. 780 daN

- for aero-tow
Max. 780 daN

11. Air Speeds:

		serial no: XX-S *) [km/h]	serial no: XX-MS *) [km/h]
Manoeuvring Speed	V_A	180	200
Never Exceed Speed	V_{NE}	260	260
Maximum permitted speeds			
- with flaps at	+1, +2	200	200
- with flaps at	L	150	160
- with flaps at	-2;-1, 0	260	260
- in rough air	V_{RA}	180	200
- in aero-tow	V_T	150	150
- in winch-launch	V_W	130	130
- for gear operating	V_{LO}	180	180
- for powerplant extension and retraction	V_{POmax}	140	140
- for powerplant extended operation	V_{POmax}	230	230

*) REMARK
for designation see Notes 3 and 4 at G.V.

12. Maximum Masses:

	serial no: XX-S *)	serial no: XX-MS *)
Max. Mass	571 kg	600 kg
Max. Mass of Non-Lifting Parts	305 kg	373 kg

13. Operational Capability

Approved for VFR-flying in daytime.
Cloud flying and Aerobatic manoeuvres permitted with engine inoperative and retracted.

14. Launch methods

Aero tow
Winch launch and auto launch
Self-launch not permitted

15. Centre of Gravity Range:

Datum: Wing leading edge y = 425 mm from the centreline
Levelling means: Wedge 100:8,77 on slope of rear top fuselage to be horizontal

Forward Limit	251 mm aft of datum
Rearward Limit	387 aft of datum

16. Minimum Flight Crew:

1 (Pilot)

17. Maximum Seating Capacity: 1

18. Lifetime limitations: Refer to Maintenance Manual

19. Deflection of control surfaces: Refer to Maintenance Manual

G.IV. OPERATING AND SERVICE INSTRUCTIONS

1. Flight Manual:

   - Flight Manual for the Sailplane Glasflügel 304 S;
     doc. No. G304S/AFM; revision 2, issue 05/22, or later EASA approved revisions;
   - Flight Manual Supplement for the Sailplane Glasflügel 304 S Jet;
     doc. No. G304SJet/AFMSupp, Rev. 0, issue 03/20, or later EASA approved revisions;
   - Glasflügel 304S Flight Manual Supplement; doc. no.: 304SFM_Supp_XS, issued 08/14;
     with revision R01, 10/16; EASA approved; see G.V.4. or later EASA approved revisions;

2. Technical Manual:

   - Technical Description, Operating, Maintenance and Repair Manual for the Sailplane Glasflügel 304S, doc. No. 304S/MM; issue 08/14 or later EASA accepted revisions, including
   - Technical Description, Operating, Maintenance and Repair Manual for the Sailplane Glasflügel 304S Jet, doc. No. 304SJet/MMSupp; Rev. 0, issue 03/20 or later EASA accepted revisions;

3. Manuals for Operation:

   a) Operation and Maintenance Manual for Tost tow hook Type Tost G 88, latest EASA accepted revision
   b) Operation and Maintenance Manual for Tost tow hook Type Tost E 22, latest approved version
   c) Turbine Operation Manual TJ 42 Jet Engine, doc. no.: TJ42/OPRM, issue 01/18 or later EASA accepted revisions
   d) Control unit manuals:

      Operation Manual for DIGITAL ENGINE CONTROL UNIT (DECU) Mk1 and ENGINE DATA DISPLAY (EDD) Hardware Standard A, doc.no.: ABC 1.006, issue March 2020 or later EASA accepted revisions; or
      Operation Manual for DIGITAL ENGINE CONTROL UNIT (DECU) Mk1 and ENGINE DATA DISPLAY (EDD), doc.no.: ABC 1.009, issue March 2020 or later EASA accepted revisions.

G.V. NOTES

1. Manufacturing is confined to industrial production.
2. All parts exposed to sun radiation – except the areas for markings and registration – must have a white colour surface.
3. Serial numbers affected are formatted XX-MS only if wing serial number formatted YY-MS is installed.
4. Serial numbers affected are formatted XX-S only if wing serial number formatted YY-S is installed.
5. Approved for operations with the power plant temporarily removed or inoperative in accordance with the instructions given in the doc. No. 304SJet/AFMSupp, Rev 0, issued 03/20, or later EASA approved revision.
6. The Model Glasflügel 304 S Jet engine is approved as part of this sailplane model in accordance with Part 21.A.21 (a) 3. (B).
7. Overhaul and Repair of the turbine engine is prohibited until HPH has established the respective manuals.

ADMINISTRATIVE SECTION

I. Acronyms

AD	Airworthiness Directive
AFM	Aircraft Flight Manual
C.G.	Centre of Gravity
CAA CZ	Civil Aviation Authority Czech Republic
Supp	Supplement

II. Type Certificate Holder Record

TC Holder	Period
HPH, spol.s r.o. Čáslavská 234 284 01 Kutná Hora CZECH REPUBLIC	

III. Change Record

Issue	Date	Changes	TC Issue & Date
01	03 February 2005	Initial issue	03 February 2005
02	08 December 2014	Introduction of models 304 S and 304 MS	08 December 2014
03	21 November 2016	Introduction of model 304 eS	21 November 2016
04	10 May 2017	F.I.3. Airworthiness category “Restricted” highlighted	21 November 2016
05	15 December 2017	F.IV. Implementation of new manual related to corrective action in order to comply with EASA AD No. AD-2017-0167-E + miscellaneous corrections	21 November 2016
06	16 December 2022	Introduction of model 304 S Jet	16 December 2022
07	20 February 2025	F.III.5, 6, 7 and 8 modified (battery type GEN4 introduced for model 304 eS) F.V.6, 7 and 8 (correction/complementing of Notes) G.III.9 and G.IV.3.b) correction of nose tow hook of model 304 S Jet	16 December 2022

