TYPE-CERTIFICATE

DATA SHEET

EASA.A.640

SEASTAR

Type Certificate Holder

Dornier Seawings GmbH

Sonderflughafen Oberpfaffenhofen
82230 Wessling
Germany

For models: CD 2

SECTION A: CD 2

A.I. General

1.	a) Type: b) Model: c) Variant:	Seastar CD 2 N/A
2.	Airworthiness Category:	FAR-23, Commuter Category
3.	Type Certificate Holder:	Dornier Seawings GmbH Sonderflughafen Oberpfaffenhofen 82230 Wessling Germany
4.	Manufacturer:	Dornier Seawings GmbH Sonderflughafen Oberpfaffenhofen 82230 Wessling Germany
5.	Certification Application Date:	13-March-1985
6.	National Certifying Authority:	Luftfahrtbundesamt Deutschland
7.	National Authority Type Certificate Date:	30-Oct-1990 LBA TC No. 2065

A.II. EASA Certification Basis

1.	Reference Date for determining the applicable requirements:	30-Oct-1987
2.	Airworthiness Requirements:	FAR 23-0 issued 01-Feb-1965, including Amendments 23-1 through 23-34 issued 17-Feb-1987.
3.	Special Conditions:	in accordance to LBA Letters, dated 13-Mar-1989 and 23-Oct-1990, covering 1) Fatigue / Damage Tolerance 2) Protection of Systems from Lightning and High Energy Radio Frequency (RF) Fields

	3)	Propeller Ice and Exhaust Gas Impingement Protection
	4)	Propeller Marking
	5)	Hull Compartment – Water Detectors
	6)	Engine Inoperative Warning
	7)	Emergency Flotation Equipment
	8)	Birdstrike
	9)	Reinforcement near Propellers

3. Exemptions: None
4. Deviations: Ausnahme von der Erfüllung der Forderungen FAR 23.807 (d)(1) und 23.807 (d)(1)(i) in accordance with LBA-Letter dated 23-Oct-1990
5. Equivalent Safety Findings: None
6. Requirements elected to comply: None
7. Environmental Standards: Lärmschutzforderungen für Luftfahrzeuge (LSL):
   - LSL Chapter VI (dated 01-Jan-1989)
   - LSL Chapter X (dated 01-Jan-1989)
8. (Reserved) N/A
9. (Reserved) N/A

A.III. Technical Characteristics and Operational Limitations

1. Type Design Definition: TN 00 CD2 011 010/C-05 – Technical Specification
   MZ 00 CD2 000 009/A-00 – List of Compl. Documents
   MZ 00 CD2 000 010/A-00 – List of Drawings
2. Description: Twin engine (tandem), up to 12-seated high wing amphibian airplane, full composite construction
3. Equipment: Equipment list, AFM, Section 6
4. Dimensions:

Span	17.74 m	(58 ft 20 in)
Length	12.70 m	(41 ft 67 in)
Height	4.83 m	(15 ft 67 in)
Wing Area	30.60 m²	(329.38 sqft)

5. Engine:
   5.1.1 Model: 2 Pratt and Whitney PT6A-135A

5.1.2 Type Certificate: EASA Engine Type Certificate: EASA.IM.E.094

5.1.3 Limitations:

Max take-off rotational speed (5 min.)	1900 rpm (100%)
Max continuous rotational speed	1900 rpm (100%)
Max T/O Power (5min)/Max. cont. Power	478 KW (650 SHP)
Max. Cruise/Max. Climb Power	368 KW (500 SHP)

For power-plants limits refer to AFM, Section 2

5.1.4 Firmware: N/A

5.1.5 Mapping: N/A

6. Load factors:

At Minimum Operational Weight (m=2900 kg, η=0°)

	at v_A	at v_C	at v_D
Downward:	+4.4	+4.36	+3.3
Upward:	-2.4	-2.36	-1.1

Flaps in Take-Off or Landing Position

	η=20°	η=30°	η=40°
Downward:	+2.45	+2.42	+2.37
Upward:	-0.45	-0.42	-0.37

At Maximum Take-off Weight (m=4600 kg, η=0°)

	at v_A	at v_C	at v_D
Downward:	+3.3	+3.3	+3.3
Upward:	-1.32	-1.32	-0.39

Flaps in Take-Off or Landing Position

	η=20°	η=30°	η=40°
Downward:	+1.97	+1.95	+1.93
Upward:	+0.03	+0.05	+0.08

Max Inertia Load Factor n=+4.96 (Water Landing)

7. Propeller:

7.1.1 Model: Front Propeller, Mc Cauley 4HFR34C760/95DA

7.1.2 Type Certificate: EASA Prop. Type Certificate: EASA.IM.P.192

7.1.3 Number of blades: 4

7.1.4 Diameter: 2400 mm

7.1.5	Sense of Rotation:	CW (view in flight direction)	
7.1.6	Settings:	Low pitch setting 15.5° ± 0.2° Feather position: 85°42´ ± 0.2° Reverse Pitch: -9° ± 0.2°	
7.2.1	Model:	Aft Propeller, Mc Cauley 4HFR34C761/L95DZ	
7.2.2	Type Certificate:	EASA Prop. Type Certificate: EASA.IM.P.192	
7.2.3	Number of blades:	4	
7.2.4	Diameter:	2350 mm	
7.2.5	Sense of Rotation:	ACW (view in flight direction)	
7.2.6	Settings:	Low pitch setting Feather position: Reverse Pitch:	16.0° ± 0.2° 83°48´ ± 0.2° -9° ± 0.2°

8. Fluids:

8.1	Fuel:		See POH, Section 2 Page 2-6
8.2	Oil:	Engine:	see Pratt & Whitney Service Bulletin SB 1001
		Gearbox:	see Engine Oil (common circuit)
8.3	Coolant:		N/A
8.4	Ice Protection Fluids:		See POH, Section 2 Page 2-6

9. Fluid capacities:

9.1 Fuel:

Location	Liters	US Gal	kg	lbs
Total Fuel L/H Tank	870	230	696	1535
Total Fuel R/H Tank	900	238	720	1589
Usable Fuel L/H Tank	851	225	681	1501
Usable Fuel L/H Tank	882	233	706	1555
Total Fuel	1770	468	1416	3124
Total Usable Fuel	1733	458	1387	3056

9.2	Oil: each engine	Maximum:	13.25 liters	
		Minimum:	11.36 liters	(Cold Oil)
			10.41 liters	(Hot Oil)
9.3	Coolant system capacity:	Integrated Part of the Engine Oil System (Oil Cooler Capacity incl. Hoses aprox. 5 Liters)		

10. Air Speeds:

Max. Manoeuvring Speed v_o		
up to 4600 kg		140 KEAS
Maximum Landing Gear Operation Speed v_{LO}		150 KEAS
Maximum Landing Gear Extended Speed v_{LE}		150 KEAS
Flap Extended Speed v_{FE}		
Flap Setting	η=20°	140 KEAS
	η=30°	130 KEAS
	η=40°	120 KEAS
Stalling Speeds (4600 kg) v_{S0}/v_{S1}		
Flap Setting	η=0°	78 KEAS
	η=40°	65 KEAS
Design Cruising Speed v_C		180 KEAS
Max. Speed in Level Flight v_H		179 KEAS
Max. Diving Speed v_D		225 KEAS
Design Speed for Max. Gust Intensity v_B		138 KEAS
Max. Operating Speed v_{MO}		179 KEAS

11. Maximum Operating Altitude: 4500 m (15000 ft)

12. All Weather Operations Capability: Day/Night-VFR,
Flights into known or forecast icing conditions are prohibited.
Flight in bad weather and in the vicinity of Thunderstorm are prohibited.

13. Maximum Weights:

Maximum Ramp	4650 kg (10251 lbs)
Maximum Take-off	4600 kg (10141 lbs)
Minimum Design	2900 kg (6393 lbs)
Maximum Landing (Land)	4500 kg (9920 lbs)
Maximum Landing (Water)	4600 kg (10141 lbs)

14. Centre of Gravity Range:	Forward limit:	
	Up to 4600 kg	5152 mm aft of Datum Line (18% MAC)
	Rear limit:	
	Up to 4600 kg	5407 mm aft of Datum Line (32% MAC)
	Mean Aerodynamic Chord (MAC):	
		The leading edge of the MAC is 4823 mm aft of the reference datum.
		The MAC length is 1825 mm
	Vertical Limit:	
	at 4600 kg	HE2212
	at 2900 kg	HE2752
		Varying linearly with mass in between
15. Datum:	95 mm forward of front face of nose section	

16. Control surface deflections:

Aileron	trailing edge up	23.5º± 30´
	trailing edge down	9.5º ± 30´
Elevator	trailing edge up	30° ± 30´
	trailing edge down	20° ± 30´
Horizontal Stabilizer Trim	leading edge nose up	4.1º ± 12´
	leading edge nose down	4.2º ± 12´
Rudder	trailing edge left	30º ± 30´
	trailing edge right	30º ± 30´
Rudder Trim Tab	trailing edge left	10º ± 20´
	trailing edge right	10° ± 20´
Flaps	Cruise flap setting	0° ± 30´
	Take-off land operation flap setting	20º ± 30´
	Take-off water operation flap setting	30º ± 30´
	Landing (land/water operation) flap setting	40º ± 30´

17. Levelling Means:	Reference of water level at water line HE1750. Four marked inserts of fuselage (two LH, two RH) at station QE2000 and station QE7800.
18. Minimum Flight Crew:	1 (Pilot)
19. Maximum Passenger Seating Capacity:	12

20. Baggage/Cargo Compartments:	Location		max. allowable Load
	Rear Baggage Compartment		180 kg (396.5 lb)
	For detail see POH Section 2.9		
21. Wheels and Tyres:	Nose Wheel Tyre Size	17.5 x 6.25-6	10 ply tube
	Main Wheel Tyre Size	17.5 x 6.25-6	10 ply tube

A.IV. Operating and Service Instructions

1.	Flight Manual:	Pilot Operating Handbook Document No. FM 00 CD2 012 000
2.	Technical Manual:	Airplane Maintenance Manual (AMM) Document No. MM 00 CD2 025 000 (incl. Airworthiness Limitations), Service Information and Service Bulletins
3.	Spare Parts Catalogue (IPC):	Document No. PC 00 CD2 011 150
4.	Instruments and aggregates:	Pilot Operating Handbook Section 6A Document No. FM 00 CD2 012 000
5.	Master Minimum Equipment List:	SL 00 CD2 048 023

A.V. Notes

1. All surface exposed to sun radiation has to be varnished with white paint in accordance with the colour code RAL 9010.
2. Aircraft Manufacturer Serial Numbers (MSN) that are eligible to be produced in conformity with EASA Type Design Definition: NONE (due to open post TC items to be closed prior first CofA)

ADMINISTRATIVE SECTION

I. Acronyms & Abbreviations

AFM	Airplane Flight Manual
Amdt.	Amendment
AMM	Airplane Maintenance Manual
CG	Centre of Gravity
DWN	down
EASA	European Aviation Safety Agency
IAS	Indicated Airspeed
ICAO	International Civil Aviation Organization
kg	kilograms
km/h	kilometres per hour
MAC	Mean Aerodynamic Chord
N.A.	Not applicable
SC	Special Condition
TCDSN	Type Certificate Datasheet Noise
VFR	Visual Flight Rules

II. Type Certificate Holder Record

Name	Adress	From	To
Dornier Composite Aircraft GmbH & Co. KG	Sonderflughafen Oberpfaffenhofen 82230 Weßling Germany	30-Oct-1990	18-Apr-2017
Dornier Seawings GmbH	Sonderflughafen Oberpfaffenhofen 82230 Weßling Germany	18-Apr-2017	

III. Change Record

Issue	Date	Changes	TC Issue No & Date
1	18-Apr-2017	Initial Issue	18-Apr-2017