European Aviation Safety Agency

EASA

TYPE-CERTIFICATE DATA SHEET

Eclipse Model EA500

Type Certificate Holder:

ECLIPSE AEROSPACE, Inc.
2503 Clark Carr Loop SE
Albuquerque, New Mexico 87106
USA

Manufacturer:

ECLIPSE AVIATION CORPORATION
2503 Clark Carr Loop SE
Albuquerque, New Mexico 87106
USA

ECLIPSE AEROSPACE, Inc.
2503 Clark Carr Loop SE
Albuquerque, New Mexico 87106
USA

For Model: EA500

Issue 1: 21 November 2008
Issue 2: 28 October 2009
Issue 3: 21 May 2010

List of effective Pages:

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CHANGE RECORD

Issue 1: Initial Issue Model EA500, 21 November 2008
Issue 2: Added and changed company names

SECTION 1: GENERAL Model EA500 Type Design

I. General

Data Sheet No.: EASA IM.A.171	Issue 2
1. a) Model: b) Variant:	EA500 N/A
2. Airworthiness Category:	14 CFR 23 Normal Category
3. Type Certificate Holder:	ECLIPSE AEROSPACE, Inc. 2503 Clark Carr Loop SE Albuquerque, New Mexico 87106 USA
4. Manufacturer:	ECLIPSE AVIATION CORPORATION 2503 Clark Carr Loop SE Albuquerque, New Mexico 87106 USA ECLIPSE AEROSPACE, Inc. 2503 Clark Carr Loop SE Albuquerque, New Mexico 87106 USA
5. EASA Certification Application Date:	21 February 2003 for 00001 and on
6. FAA Type Certification Date:	29 September 2006 for 00001 and on
7. EASA Type Certification Date:	21 November 2008

II. Certification Basis

1. Reference Date for determining the applicable requirements:	12 October 2003 for 00001 and on
2. (reserved)	
3. (reserved)	
4. Certification Basis:	FAR 23 Certification Basis in TCDS A00002AC, *PLUS:*

5. Special Conditions:

CRI A-07	Special Conditions for High Performance Aircraft	CS 23 Generic Item List
CRI B-05	Braking Performance	CS 23
CRI B-07	Low Speed Protection and Indication	CS 23
CRI C-01	Bird Strike	CS 23.775(h)
CRI C-02	Speed Margins	CS 23.335(b)
CRI C-03	Windshields & Windows	CS 23.775
CRI C-04	Vibration & Buffeting	CS 23.251
CRI C-06	Sonic Fatigue	CS 23.571
CRI C-08	Pressurisation into Non-pressurised Areas	CS 23.365(e)
CRI C-09	Interaction of Systems and Structures	CS 23.1309
CRI C-10	Fuel Tank Crashworthiness	CS 23.561, .721, .967
CRI C-12	Fire Protection of Engine Mounts	CS 23.865
CRI C-14	Yawing Manoeuvre	CS 23.441(b)
CRI C-16	Round-the-Clock Gust	CS 23.427
CRI E-04	Engine Firex System	CS 23.1195
CRI E-05	FADEC Integration	CS 23.1309
CRI E-10	Fuel Tank Ignition Prevention	CS 23.981, .1309
CRI F-01	HIRF	JAA INT/POL 23-1
CRI F-05	Flap System Interconnection	CS 23.701
CRI F-06	Side-stick Forces	CS 23.397
CRI F-07	Landing Gear Secondary Locking	CS 23.729
CRI F-08	Main Door	CS 23.783
CRI F-09	Battery Endurance Requirement	CS 23.1353
CRI F-13	Electronic Circuit Breakers	CS 23.1357
CRI F-14	Aircraft Systems Wiring	CS 23.1309
CRI F-15	Brake System	CS 23.735
CRI F-17	Human Factors	CS 21.101

6. Exemptions: N/A

7. Equivalent Level of Safety Findings:

CRI B-01	Artificial Stall Barrier Systems	CS 23.103, .201-.207
CRI E-03	Engine Shut-off Means	CS 23.777, .781

FAA ELOS memo ACE-05-35 FAR 23.1353(h), Storage Battery Design and Installation, as modified by EASA CRI's F-09 and B-02.

8. EASA Environmental Requirements

CRI A-03 Additional National Requirements for Environmental Standards

CS 34, Aircraft Engine Emissions and Fuel Venting
CS 36, Aircraft Noise
Chapter 4, ICAO Annex 16, Volume I, 3rd Edition, Amendment 7
Part II, Chapter 2, ICAO Annex 16, Volume II, 2nd Edition, Amendment 4

III. Technical Characteristics and Operational Limitations

1. Type Design Definition: Specified in EASA CRI A-06; Eclipse Configuration Specification, EASA Type Certified Aircraft Configuration, No. E420-CS-0022, latest revision.

2. Description: Low wing aircraft with retractable tricycle landing gear, T-tail, pressurized cabin, and two turbofan engines pylon mounted on the rear fuselage.

3. Equipment: Equipment List according to AFM, 06-122204, Rev 2 or later approved revision (See Note XX)

4. Dimensions:

Span	11.56 m (37 ft.11 in.)
Length	10.19 m (33 ft. 5 in.)
Height	3.35 m (11 ft.)

5. Engines: Two Pratt & Whitney Canada PW610F-A,
Type Certificate Data Sheet (TCDS) E00074EN

Engine Limits:

	N1(%)	N2(%)	MAX ITT (°C)	Time Limit
Maximum Take-off	102	100	795	5 minutes
Max. Continuous	102	100	795	Continuous
APR	102	100	795	10 minutes
Transient	103	102	850	20 seconds

6. (reserved)

7. (reserved)

8. Fluids:

8.1 Fuel: JET A and Jet A-1 per ASTM D 1655; JP-8 per MIL-T-83133

Fuels not containing icing inhibitors must have MIL-I-27686, MIL-I-85470, or Phillips PFA-55MB fuel system icing inhibitors blended into the aircraft fuel at concentrations not less than 0.10% but no more than 0.15% by volume. The minimum fuel icing inhibitor content during refueling is 0.10% by volume.

8.2 Oil

Only oils conforming to the specifications of MIL-L-23699 Type II Aviation Turbine Engine Oil are approved for use. The following oils conform to this specification:

- Aero Shell Turbine Oil 500 (Type II Standard)
- Aero Shell Turbine Oil 560 (Type II HTS)
- BP Turbo Oil 2380 (Type II Standard)
- BP Turbo Oil 2197 (Type II HTS)
- Castrol 5000
- Mobil Jet Oil Type II (Type II Standard)
- Mobil Jet Oil 254 (Type II HTS)
- Royco Turbine Oil 500 (Type II Standard)
- Royco Turbine Oil 560 (Type II HTS)
- TurboNycoil TN 600

8.3 Coolant: Not applicable.

9. Fluid Capacities:

9.1 Fuel: 254.4 gallons (USG) total; 250.9 gallons (USG) usable;
3.5 gallons (USG) unusable
Moment arm 198 inches aft of datum

9.2 Oil: 6.088 quarts (USQ) total per engine; 0.832 quarts (USQ) usable per engine

10. Airplane Limit Speeds

Maximum Operating	V_{MO} M_{MO}	285 KEAS .64 KEAS
Maneuvering	V_O	180 KEAS
Flaps Extended	V_{FE} (Flap T/O)	200 KEAS
Flaps Extended	V_{FE} (Flap LDG)	140 KEAS
Landing Gear Operating	V_{LO}	200 KEAS
Max Tire Ground Speed		139 KNOTS
Min Airspeed in Icing Conditions		165 KEAS

11. Maximum Operating Altitude: Takeoff 10,000 ft MSL
Operating 41,000 MSL

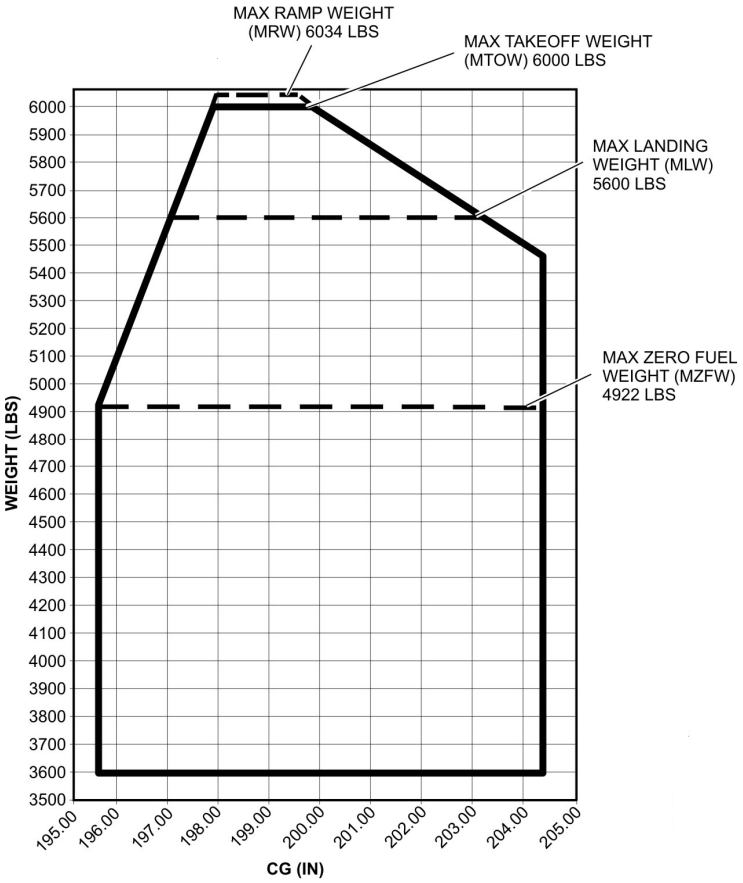
12. Operational Capacity

VFR Day and Night
IFR Day and Night
RVSM (See Note 5)
Flight into Known Icing (See Limitations Section of EASA Approved Airplane Flight Manual)

13. Maximum Certified Weights in kg (lbs)

Max. Ramp	2,737 kg	(6,034 lbs)
Max. Takeoff	2,722 kg	(6,000 lbs)
Max. Landing	2,540 kg	(5,600 lbs)
Max. Zero Fuel	2,233 kg	(4,922 lbs)

14. Center of Gravity Range



Forward limits: 195.65 inches aft of datum up to 4,922 lbs with a straight line taper to 197.91 inches at 6,000 lbs.

Aft Limits: 203.35 inches aft of datum up to 5,580 lbs with a straight line taper to 199.70 inches at 6,000 lbs.

15. Datum	Is located 23.25 inches forward of the nose radome.
16. (Reserved)	
17. Leveling Means	Laterally: Forward edge of the baggage compartment floor Longitudinally: Left hand out board seat track in front of the main cabin door.
18. Minimum Flight Crew	1 Pilot plus required equipment as specified in the EASA Approved Airplane Flight Manual (AFM)
19. Maximum Seating Capacity	6 Max (Includes pilot and crew); Refer to the Airplane Flight Manual (AFM),Document No. 06-122204, latest EASA approved revision, Section 6 for seat configurations and moment arms
20. (Reserved)	
21. Baggage / Cargo Compartment	Baggage Compartment floor loading is 100 lb/ft

IV. Operation and Service Instructions

Airplane Flight Manual (AFM)	Airplanes must be operated according to the EASA Approved AFM, part number 06-122204, Rev 2 (or later EASA approved revision), and EASA AFM Supplement for EASA, part number 06-122953-EASA01 (latest approved revision). Airplanes must be operated commercially according to EASA approved AFM Supplement, part number 06-122953-EUOPS 01, Original Issue (or later EASA approved revision).
Airplane Maintenance Manual (AMM)	EA500 Aircraft Maintenance Manual, part number 06-117751, Rev 16 (or later approved revision) and EASA AMM Supplement, part number 06-122713 (latest approved revision). See EASA AMM Supplement for Airworthiness Limitations for inspections, mandatory retirement life information and other requirements for continued airworthiness. Airworthiness Limitations may not be changed without the approval of the EASA.

V. Notes

Note 1. Current weight and balance information, including list of equipment included in certificated empty weight, and loading instructions are provided for each airplane at the time of original certification. (See Limitations Section of EASA Approved Airplane Flight Manual for Kinds of Operation List.)

Note 2. Prior to export to and registration in EASA Member States, the following Eclipse Aviation Service Bulletin must be incorporated in an EA500 aircraft, serial no. 00001 and after, either during the production build prior to original certification or as a modification in a fielded aircraft:

- Eclipse Aviation Service Bulletin, "EASA Configuration Definition for Aircraft to be exported to and registered in EASA Member States", SB 500-04-001, latest revision.

Note 3. Prior to export to and registration in EASA Member States, the following FAA Airworthiness Directives (AD's) must be complied with:

2007-24-12	11/27/07	Inspect the fuel filter adaptors for primer and/or paint in the surround. Aircraft effectivity: Serial nos. 39-62
2008-02-04	2/26/08	Pitot system. Aircraft effectivity: Serial nos. 1-64
2008-16-15	8/7/08	Throttle lever. Aircraft effectivity: All serial nos.
2008-19-01	9/29/08	Airplane Flight Manual (AFM). Aircraft effectivity: Serial nos. 1-189 with affected Harco Labs, Inc pitot/angle of attack (AOA) probe P/Ns 100435-39, 100435-39-001, 100435-40, and 100435-40-001.

Note 4. FAA Memorandum ACE-05-35 is modified by and superceded by EASA CRI F-09, Battery Endurance Requirements, and CRI B-02, Engine Control (at switched off electrical power).

Note 5. The Eclipse EA500 must be operated according to the EASA approved Airplane Flight Manual (AFM), Document No. 06-122204, Rev. 2 or latest EASA approved revision, including EASA AFM Supplement, Document No. 06-122953, latest approved revision.

Note 6. EASA approved Airworthiness Limitations for inspection time limits and maintenance checks are included in the EASA Aircraft Maintenance Manual (AMM) Supplement, part number 06-122713 (latest approved revision).

Note 7. The Eclipse EA500 is Aircraft Group approved for Reduced Vertical Separation Minimum (RVSM). All airplanes are equipped with RVSM capable dual air data system, pilot and co-pilot Primary Flight Displays, and Autopilot.

Each operator must obtain RVSM operating approval.

Note 8. The Eclipse EA500 incorporates integrated avionics systems using software-based line replaceable units (LRU's) which share a digital signal transmission bus. The avionics configuration of the Eclipse EA500 as delivered from production is critical to the proper operation of the cockpit instrumentation system. Modification to the LRU software supplied with the Eclipse EA500, replacement of an LRU with a different LRU, addition of new LRU, or alteration of an LRU interface could adversely affect the airworthiness of the certified product. Accordingly, no changes to the integrated avionics system may be made without coordination with the EASA.

Note 9. The Eclipse EA500 shall be maintained according to:

Aircraft Maintenance Manual (AMM), No. 06-117751, latest revision
Structural Repair Manual (SRM), No. 06-117755, latest revision
Wiring Diagram Manual (WDM), No. 06-117753, latest revision
Fault Isolation Manual, No. 06-117754, latest revision

Note 10. Any modification or changes in cockpit configuration which may affect aircrew workload, cockpit noise level or day/night operational capabilities must be approved by EASA.

Note 11. All pilots operating an Eclipse Aviation EA500 that is registered in an EASA Member State must be trained and qualified in accordance with the Eclipse Aviation training program or equivalent training program that is Accepted/Approved by the Joint Operations Evaluation Board (JOEB) or Civil Aviation Authority having jurisdiction.

Change Record

Issue 1 - Initial Release
Issue 2 - Added and changed company names
Issue 3 – AFM Supplement for commercial operations added