

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION TYPE CERTIFICATE DATA SHEET E00081EN	TCDS NUMBER: E00081EN REVISION: Original DATE: July 29, 2009 MODELS: E4
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Engines of models described herein conforming with this data sheet (which is part of Type Certificate Number E00081EN and other approved data on file with the Federal Aviation Administration, meet the minimum standards for use in certificated aircraft in accordance with pertinent aircraft data sheets and applicable portions of the Federal Aviation Regulations, provided they are installed, operated, and maintained as prescribed by the approved manufacturer's manuals and other approved instructions.

TYPE CERTIFICATE (TC) HOLDER Diamond Aircraft Industries GmbH
 N.A.-Otto-Straße 5
 A-2700 Wiener Neustadt
 Austria

I. MODEL	E4
TYPE	The E4 engine is a 4-cylinder, four stroke Diesel piston engine with an displacement of 1991 cm ³ , equipped with common rail high pressure direct injection, turbocharger, gearbox with reduction ratio of 1.69:1 and an Electronic Engine Control Unit (EECU)
RATINGS (Note 1) (minimum values defined under the conditions of ICAO or ARDC standard atmosphere)	
Takeoff (5 minutes)	123.5 kW at 3880 rpm (or at 2300 prop rpm)
Max Continuous	114 kW at 3550 rpm (or at 2100 prop rpm)
Maximum Recommended Cruising	
FUEL (See NOTE 4)	JET-A and JET-A1 (ASTM-D1655).
OIL	See Operation Manual E4.01.01 for approved oils
OIL SUMP CAPACITY	
Max. Level, liters	7
Min. Level, liters	5
PRINCIPAL DIMENSIONS	
Length, mm	738
Width, mm	574
Height, mm	855
CENTER OF GRAVITY	Refer to Installation Manual E4.02.01
DRY WEIGHT, kg	185

PAGE	1	2	3	4
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LEGEND: "- ." INDICATES "SAME AS PRECEDING MODEL"
 "----" NOT APPLICABLE

NOTICE: ALL PAGES ARE REFORMATTED. SIGNIFICANT
 CHANGES, IF ANY ARE BLACK.LINED IN THE LEFT

MARGIN

I. MODEL (Continued)	E4
DISPLACEMENT TOTAL	1,991 cm ³ (121.5 in ³)
BORE	83.00 mm (3.268 in)
STROKE	92.00 mm (3.622 in)
COMPRESSION RATIO	17.5 : 1
PROPELLER ROTATION	CCW
GEAR REDUCTION (crankshaft to propeller)	1.69:1
CONTROL SYSTEM (See NOTES 7-10)	Electrical Engine Control Unit (EECU): P/N E4A-92-100-00-010 or later approved standard Software : VC33_0_01_01 or later approved standard
FLUIDS (FUEL/OIL/ADDITIVES):	See Operation Manual, E.01.01 for approved fluids

CERTIFICATION BASIS

FAR 21.29 and FAR 33 effective February 1, 1965, and Amendments 33-1 through Amendment 33-24.

Model	Date of Application	Date Type Certificate Issued
E4	June 2, 2008	July 29, 2009

IMPORT REQUIREMENTS

To be considered eligible for installation on U.S. registered aircraft, each new engine to be exported to the United States shall be accompanied by a Certificate of Airworthiness for export with EASA Form 1, Authorized Release Certificate. The EASA Form 1 should state that the engine conforms to the type design approved under the U.S. Type Certificate E00081EN, is in a condition for safe operation and has undergone a final operational check.

Additional guidance is contained in FAA Advisory Circular 21-23, "Airworthiness Certification of Civil Aircraft, Engines, Propellers, and Related Products Imported into the United States."

II. ENGINE LIMITS:**1. Temperature limits:**

	Temperature in °C/ °F
Minimum opening up Oil Temperature	50 °C / 122 °F
Oil Temperature (normal operation)	50 °C - 125 °C / 122 °F - 257 °F
Max. Oil Temperature:	140 °C / 284 °F
Minimum Ambient Temperature for Starting	-22 °C / -8 °F, Normal
	-30 °C / -22 °F Special procedure required, see Operation Manual
Minimum Fuel Temperature during operation	-30 °C / -22 °F
Minimum opening up Cooling Fluid Temperature	60 °C / 140 °F
Max. Cooling Fluid Temperature	105 °C / 221 °F
Max. Gearbox Temperature	120 °C / 248 °F

2. Speed Limits:

Maximum Engine Over-speed (Crankshaft Speed)	4220 rpm (2500 prop rpm)
Take-off speed, maximum 5 minutes	3880 rpm (2300 prop rpm)
Max. continuous speed	3550 rpm (2100 prop rpm)

3. Pressure Limits:

Minimum Fuel Pressure (at inlet of HP engine pump)	4 bar (58 psi)
Maximum Fuel Pressure (at inlet of HP engine pump)	7 bar (101.5 psi)
Minimum Oil Pressure	1.5 bar (21.8 psi)
Oil Pressure (normal operation)	2.5 - 6.5 bar (36.3 - 94.3 psi)
Maximum Oil Pressure	6.5 bar (94.3 psi)

4. Operating Altitude:

Maximum altitude	5490 m (18 000 ft)
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NOTES

NOTE 1:	Engine model numbers may include suffixes to define minor engine changes related to installation specific configurations. Refer to Installation Manual E4.02.01 for appropriate installation
NOTE 2:	Manuals required by FAR 33.4 and 33.5: Installation Manual : E4.02.01 Operating Manual: E4.01.01 Maintenance Manual: E4.08.04 Overhaul Manual None (See Note 5)
NOTE 3:	The engine is approved for installation in Part 23 Normal and Utility aircraft categories only.
NOTE 4:	The E4 engine has been certified to use Jet A and JetA1 fuel with cetane number 37 or above. Jet fuel with cetane number below 37 is not recommended. See Operation Manual E4.01.01
NOTE 5:	Overhaul of the engine and components is not authorized unless the appropriate overhaul manual is available; otherwise, rebuilt engines utilizing new engine tolerances may be provided by the manufacturer.
NOTE 6:	Any repair other than those covered by the Instructions for Continued Airworthiness or DER approved repairs in accordance with FAR Part 183 must be approved by the Engine Certification Office.
NOTE 7:	The electronic control unit must not be installed in a dedicated fire zone. The installation conditions are defined in the Installation Manual.
NOTE 8:	Engine Electronic Control Unit (EECU) must a backup power source which are independent and isolated from the primary power supply when install on an aircraft.
NOTE 9:	Dispatch Limitations: No Time Limited Dispatch has been approved. : All engine systems and equipment must be functional prior to aircraft take-off. Any detected engine system or equipment failure must be corrected before next flight. Refers to OM E4.01.01 for special instructions.

NOTE 10:	The software of the ECU has been validated according to DO 178 B, level C.
NOTE 11:	EMI/Lightning: The engine control system has been tested according to DO 160 D for lightning protection and magnetic interference. The demonstrated levels are provided in the Installation Manual.
NOTE 12:	<p>Service Information:</p> <p>Each of the documents listed below must state that it is approved by the European Aviation Safety Agency (EASA). Any such documents including those approved under a delegated authority, are accepted by the FAA and are considered FAA approved.</p> <ul style="list-style-type: none"> • Service bulletins, • Structural repair manuals, • Vendor manuals, • Aircraft flight manuals, and • Overhaul and maintenance manuals. <p>These approvals pertain to the type design only.</p>
NOTE 13:	Sales name of the E4 variant: AE300
---THE END---	