

# ***European Aviation Safety Agency***

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## **EASA TYPE-CERTIFICATE DATA SHEET EASA.A.110**

**AIRBUS A380**

**Manufacturer:  
AIRBUS**

1 Rond-point Maurice Bellonte  
31707 BLAGNAC  
FRANCE

**For Models:**

A380-841/ -842  
A380-861

Issue 1: 12 December 2006  
Issue 2: 12 October 2007  
Issue 3: 14 December 2007  
Issue 4: 20 February 2009  
Issue 5: 01 December 2009

## Change Record

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**SECTION 1: GENERAL (ALL MODELS)**

1. **Data Sheet No:** TCDS A 110
2. **Airworthiness Category:** Large Aeroplanes
3. **Performance Category:** A
4. **Certifying Authority:** **EASA**
5. **Type Certificate Holder:** **AIRBUS**  
1 Rond-point Maurice Bellonte  
31707 BLAGNAC  
FRANCE

## **SECTION 2: A380-800 SERIES**

### **I. General**

1. **Aeroplane:** A380-800

### **II. Certification Basis**

1. **Reference Application Date for EASA Certification:**

A380-841/-842: 20 December 2001  
A380-861: 30 April 2003

2. **EASA Certification Date:**

A380-841/ -842: 12 December 2006  
A380-861: 14 December 2007

3. **EASA Certification Basis:**

The following EASA/JAA airworthiness standards effective on the reference date are:

- JAR 1 at change 5 plus orange papers 1/97/1 and 1/99/1
- JAR 25 at change 15
- JAR AWO at change 2 (post TC for autoland)

4. **Special Conditions:**

4.1 **Special Conditions issued because the product has novel or unusual design features relative to the design practices on which the applicable JAR 25 are based (JAR 21.16(a)(1)):**

SC B-1 Stalling and scheduled operating speeds  
SC B-2 Motion and effects of cockpit control  
SC B-4 Static directional, lateral and longitudinal stability and low energy awareness  
SC B-5 Flight envelope protection  
SC B-6 Normal load factor limiting system  
SC B-10 Human factors evaluation of novel features in the flight deck  
  
SC C-1 Crashworthiness of Large Aircraft Structures  
SC C-2 Discrete gust  
SC C-3 Loading conditions for multi leg landing gear  
SC C-4 Undercarriage lateral turning loads  
SC C-5 Jacking by landing gear  
SC C-6 Dynamic braking  
SC C-11 Interaction of systems and structures  
SC C-13 Design manoeuvre requirements  
SC C-15 Design dive speed Vd  
SC C-16 Limit pilot forces  
  
SC D-3 Emergency exit arrangement-outside viewing  
SC D-4 Crew rest compartments (Post TC)  
SC D-6 Use of stairs between decks  
SC D-7 Fire detection and protection in passenger cabin

- SC D-12 Design for security
- SC D-28 Harmonised 671/672
- SC D-33 Extendable length escape slide
- SC D-39 Inertia Locking Device in Dynamic Seats (optional)
- SC D-41 Installation of Suite Type Seating (optional)
- SC D-42 Type C Passenger Exits (optional)
- SC D-45 Trolley Stowage/ Lift Systems with Proximity to Upper Deck Staircase
  
- SC F-1 JAR 25.1301 and 1309 compliance: Design assurance and safety assessment process
- SC F-2 Slide/ Raft portability
- SC F-12 HIRF Protection
- SC F-26 Flight recorders, data link recording
- SC F-52 Lithium – Ion battery installation

**4.2 Special Conditions issued because the intended use of the product is unconventional (JAR 21.16(a)(2)):**

- SC D-20 Towbarless towing
- SC D-31 High altitude operation
  
- SC G-6 Ferrying one engine unserviceable (optional)

**4.3 Special Conditions issued because experience from other products has shown that unsafe conditions may develop (JAR 21.16(a)(3)):**

- SC D-13 Fire protection of thermal and acoustic insulation material
- SC D-15 Brakes and braking system – NPA 25D291
- SC D-43 Heat Release and Smoke Density to Seat Materials
- SC D-46 PED Charging Stowage
  
- SC E-2 Fuel tank safety
- SC E-4 Thrust reverser system requirements
- SC E-5 Sustained engine imbalance

**5. Equivalent Safety Findings (JAR 21.21(c)(2)):**

- ESF C-12 Vibration, buffet and aeroelastic stability requirements
- ESF C-14 Proof of structure
- ESF C-19 Checked Pitching manoeuvre loads
- ESF C-20 Engine failure loads
- ESF C-21 Continuous turbulence loads
  
- ESF D-17 Fuselage doors
- ESF D-19 Casting factors
- ESF D-21 Allowable carbon dioxide concentration in aeroplane cabins and cabin ozone concentration
- ESF D-24 Packs off operation
  
- ESF E-6 Falling and blowing snow
- ESF E-9 Fuel tank crashworthiness
- ESF E-10 Fuel tank access covers
- ESF E-11 Rolls-Royce Trent turbine overheat detection (for A380-841/-842 models only)
- ESF E-12 GP 7200 Fan zone as a non fire zone (for A380-861 model only)
- ESF E-15 Warning means for engine fuel filters (for A380-841/-842 models only)
- ESF E-16 Thrust reverser testing

- ESF E-17 Oil temperature indication
- ESF E-19: Engine fuel filter location (for A380-861 model only)
  
- ESF F-11 Pneumatic systems
- ESF F-15 Hydraulic systems
- ESF F-23 Landing light switch
- ESF F-29 New Harmonised JAR 25.1329
- ESF F-38 Overpressure relief valves and outflow valves
- ESF F-48 Use of computer simulation and similarity approach for high energy rotor containment demonstration
- ESF F-53 Supplemental Cooling System – Impeller Pump Containment Test
  
- ESF J-2 APU installation requirements
  
- ESF K-6 Localizer excessive deviation alerts
- ESF K-7 Limit Risk (NPA AWO 14)

## 6. Environmental requirements:

### 6.1 Fuel venting and emissions:

ICAO annex 16 second edition volume 2 amdt. 4 part II and Part III chapter 2.

### 6.2 Noise:

ICAO Noise Standard (Annex 16, Volume 1, Part II, Chapter 4, amendment 7)

## 7. Elect to Comply

The following paragraphs of JAR 25 at amendment 16 issued May 1<sup>st</sup>, 2003 and which includes **NPA 25B-G-311, 25C-312, 25D-F-313, 25C-D-F-314, 25E-315** (better plan for harmonisation) and **NPA 25G-321** (Omnibus NPA for subpart G) that are elected to comply by Airbus per their letter AI/LE-A 828.0005/99 iss.3 dated 20 July 2001:

JAR25.21(d)	JAR25.791	JAR25.954	JAR25.1321	JAR25.1521(d)
JAR25.25	JAR25.803	JAR25.961	JAR25.1325 title	JAR25X1524
JAR25.149(e)	JAR25.807	JAR25.967	JAR25.1415	JAR25.1527
JAR25.251	JAR25.812	JAR25.975(a)(5)	JAR25.1441	JAR25.1545
JAR25X261	JAR25.815	JAR25.981	JAR25.1443	JAR25.1547
JAR25.337	JAR25.853	JAR25.993	JAR25.1445(a)	JAR25.1549
JAR25.493	JAR25.857	JAR25.994	JAR25.1447	JAR25.1581
JAR25.562(b)	JAR25.863(b)(4)	JAR25.997	JAR25.1449	JAR25.1583
JAR25.605	JAR25.904	JAR25.1013	JAR25.1450	JAR25.1585
JAR25.607	JAR25.907	JAR25.1015	JAR25.1457	JAR25.1587
JAR25.701	JAR25.933	JAR25.1019	JAR25.1513	
JAR25.733	JAR25.939	JAR25.1145	JAR25X1516	
JAR25.777	JAR25.951	JAR25.1303	JAR25.1517	
JAR25.781	JAR25.952	JAR25.1305	JAR25.1519	

Appendix D paragraph (b)  
Appendix H subparagraph H25.3(e)

Appendix I

Note: JAR 25.1517, as in amendment 16 of JAR 25, is amended by Equivalent Safety Finding ESF C-21.

The following paragraphs of **JAR AWO as modified per NPA AWO 8 and 10**, adopted by the JAAC on February 7<sup>th</sup>, 2003, that are elected to comply by Airbus per their letter AI/LE-A 828.0005/99 iss.3 dated 20 July 2001:

Introduction to JAR AWO Subpart 3, section B, 3<sup>rd</sup> paragraph, Introduction to JAR AWO Subpart 3, section C, 2<sup>nd</sup> paragraph, Introduction to JAR AWO Subpart 3, section D, 1<sup>st</sup> paragraph, Introduction to JAR AWO Subpart 4, 2<sup>nd</sup> paragraph  
JAR AWO 131(c)(2)    JAR AWO 313            JAR AWO 316(a)            JAR AWO 381  
JAR AWO 304(b)    JAR AWO 314            JAR AWO 321(c)(4)        JAR AWO 481(a)  
JAR AWO 305            JAR AWO 316 title    JAR AWO 321(d)(4)



### III. Technical Characteristics and Operational Limitations

Four turbo-fan, long range, twin-aisle, large category airplane.

#### 1. **A380-841/-842 Powered by RR Engines**

##### 1.1 Type Design Definition:

Type Design:

A380-841: 00L000H0841/COS, Issue 3, October 2007

A380-842: 00L000H0842/COS, Issue 1, December 2006

##### 1.2 Engines:

A380-841: Four (4) RB211 Trent 970-84 or RB211 Trent 970B-84 turbofan engines

A380-842: Four (4) RB211 Trent 972-84 or RB211 Trent 972B-84 turbofan engines

##### 1.2.1 **Engine Limits:**

<b>ENGINE LIMITS DATA SHEET EASA E-012</b>	<b>A380-841</b> RB211 Trent 970B-84	<b>A380-842</b> RB211 Trent 972B-84
Static thrust at sea level: - Take-off (5mn)* (flat rated 30°C)	348.31 kN	356.81 kN
Approved Oil	Refer to the Engine Operating Instructions for information on approved oil specifications for the Trent 900	

\* 10 minutes at take-off thrust allowed only in case of engine failure (at take-off or during go-around) in accordance with EASA TCDS paragraph VI-1.

**Other engine limitations:** See the relevant Engine Type Certificate Data Sheet.

##### 1.3 Fuel

<b>Nomenclature</b>	<b>Specification</b>				
	<b>FRANCE</b>	<b>U.S.A.</b>	<b>U.K.</b>	<b>RUSSIA</b>	<b>CHINA</b>
KEROSENE	DCSEA 134/B (JET A1 ) Kerosene	ASTM D-1655-07(a) (Jet A), (Jet A1)	DEF STAN 91-91/5 AVTUR	RJFS0 GOST 10227 – 86, (RT) (TS-1)	PRC MPIS GB 6537-2006 (No3 Jet Fuel)
		USA Air Force MIL-DTL- 83133 E (JP8)	DEF STAN 91-87/5 AVTUR FSII	FAoTR&M GOST R 52050-2006 (JET A1)	
	DCSEA 144/B (JP 5 ) Kerosene	US Navy MIL- DTL-5624 U (JP5)	DEF STAN 91-86/5 AVTUR FSII		

Additives See Rolls Royce "RB211 Specific Operating Instructions for Trent 900", installation manual. The above-mentioned fuels and additives are also suitable for the APU.

1.4 Limit Speeds

Refer to approved Airplane Flight Manual.

1.5 Centre of Gravity Range

Refer to approved Airplane Flight Manual.

1.6 Maximum Certified Weights

<b>VARIANT (Modification Number)</b>	<b>000 Basic</b>	<b>001 (64636)</b>	<b>002 (64605)</b>	<b>003 (66611)</b>	<b>004 (69436)</b>	<b>005 (69879)</b>
MTW (T)	562	512	571	512	562	562
MTOW (T)	560	510	569	510	560	560
MLW (T)	386	394	391	395	391	386
MZFW (T)	361	372	366	373	366	366

1.7 Notes

## 2. **A380-861 Powered by GP Engines**

### 2.1 Type Design Definition:

Type Design:  
A380-861: 00L 000H0861/C01, Issue 2, June 2008

### 2.2 Engines:

A380-861: Four (4) Engine Alliance GP7270 P/N GP7270GP01 turbofan engines

#### 2.2.1 **Engine Limits:**

<b>ENGINE LIMITS DATA SHEET FAA E00072EN</b>	<b>A380-861</b> Engine Alliance GP7270	<b>A380-861</b> Engine Alliance GP7270E <sup>(1)</sup>
Static thrust at sea level: - Take-off (5mn)* (flat rated 30°C)	332.44 kN	332.44 kN
Approved Oil	Refer to the Engine Alliance Service Bulletin EAGP7-79-1 for the listing of approved oils for use in the GP7200 series turbofan engine	Refer to the Engine Alliance Service Bulletin EAGP7-79-1 for the listing of approved oils for use in the GP7200 series turbofan engine

\* The normal 5 minute takeoff rating may be extended to 10 minutes for engine out contingency in accordance with the FAA TCDS Note 2

**Other engine limitations:** See the relevant Engine Type Certificate Data Sheet.

### 2.3 Fuel

<b>Nomenclature</b>	<b>Specification</b>				
	<b>FRANCE</b>	<b>U.S.A.</b>	<b>U.K.</b>	<b>RUSSIA</b>	<b>CHINA</b>
KEROSENE	DCSEA 134/B (JET A1 ) Kerosene	ASTM D-1655-07(a) (Jet A), (Jet A1)	DEF STAN 91-91/5 AVTUR	RJFS0 GOST 10227 – 86, (RT) (TS-1)	PRC MPIS GB 6537-2006 (No3 Jet Fuel)
		USA Air Force MIL-DTL-83133 E (JP8)	DEF STAN 91-87/5 AVTUR FSII	FAoTR&M GOST R 52050- 2006 (JET A1)	
	DCSEA 144/B (JP 5 ) Kerosene	US Navy MIL- DTL-5624 U (JP5)	DEF STAN 91-86/5 AVTUR FSII		

**Additives:**—Refer to the Engine Alliance Service Bulletin EAGP7-73-1 for the listing of approved fuels and derivatives for use in the GP7200 series turbofan engine. The above-mentioned fuels and additives are also suitable for the APU.

### 2.4 Limit Speeds

Refer to approved Airplane Flight Manual.

### 2.5 Centre of Gravity Range

Refer to approved Airplane Flight Manual.

## 2.6 Maximum Certified Weights

<b>VARIANT (Modification Number)</b>	<b>000 Basic</b>	<b>001 (64636)</b>	<b>002 (64605)</b>	<b>003 (66611)</b>	<b>004 (69436)</b>	<b>005 (69879)</b>
MTW (T)	562	512	571	512	562	562
MTOW (T)	560	510	569	510	560	560
MLW (T)	386	394	391	395	391	386
MZFW (T)	361	372	366	373	366	366

## 2.7 Notes

- (1). If modification 62947 (Thrust Enhancement Kit – TEK) is embodied on A380-861 aircraft models, the aircraft have an increased thrust in hot days condition. The engine denomination changes from GP7270 to GP7270E.

### 3. Data Pertinent to all A380-800 Series

#### 3.1 Fuel Quantity (0.8 kg/litre):

Tanks		Usable Fuel Litres (Kg)	Unusable Fuel Litres (Kg)
Wing	Outer Left	10 340 (8 272)	38 (30)
	Feed 1	27 632 (22 106)	82 (66)
	Mid Left	36 461 (29 169)	50 (40)
	Inner Left	46 142 (36 914)	70 (56)
	Feed 2	29 349 (23 479)	88 (70)
	Feed 3	29 349 (23 479)	88 (70)
	Inner Right	46 142 (36 914)	70 (56)
	Mid Right	36 461 (29 169)	50 (40)
	Feed 4	27 632 (22 106)	82 (66)
	Outer Right	10 340 (8 272)	38 (30)
Trim		23 698 (18 958)	49 (39)
Systems		793 (634)	382 (305)
<b>Total</b>		<b>324339</b> (259471)	<b>1086</b> (869)

#### 3.2 Minimum Flight Crew:

Two (2): Pilot and Co-pilot

#### 3.3 Maximum Seating Capacity

The maximum number of passengers approved for emergency evacuation is: **853**

- Upper deck: 315 pax
- Main deck: 538 pax

See interior layout drawing for the maximum passenger capacities approved for each aeroplane when delivered.

#### 3.4 Cargo Compartment Loading

Cargo compartment	Maximum load (kg)
Forward	28577 Kg or 63000 lb
Aft	20310 Kg or 44775 lb
Rear (bulk)	2515 Kg or 5540lb

For the positions and the loading conditions authorized in each position (references of containers, pallets and associated weights), see Weight and Balance Manual Chapter 1.10 ref.:

- 00L080H0001/COS

### 3.5 Environmental Flight Envelope

Refer to approved Airplane Flight Manual.

### 3.6 Other Limitations

Refer to approved Airplane Flight Manual.

### 3.7 Auxiliary Power Unit (APU)

One Pratt & Whitney Canada PW980A  
Oils: refer to applicable approved Manuals

### 3.8 Equipment

The equipment required by the applicable requirements shall be installed.

Cabin furnishings, equipment and arrangement shall conform to the following specification:

- 00L252C0028/C01 for cabin seats,
- 00L252C0027/C01 for galley,
- 00L252C0032/C01 for cabin attendant seats.

### 3.9 All Weather Capabilities

The aircraft is qualified to Cat 3 precision approach and autoland.

### 3.10 Wheels and Tyres

Tyres mixability: See Service Bulletin A380-32-8021 (Landing Gear – Tires – General Procedures) for allowable combinations.

### 3.11 Hydraulics

Fluid specifications: TYPE IV LD (Low Density) and TYPE V LD as per NSA 307-110.

### 3.12 Operational, Maintenance Instructions and Airworthiness Limitations

- Approved Aircraft Flight Manual: STL 38000
- Limitations applicable to **Safe Life Airworthiness Limitation Items** are provided in the A380 Airworthiness Limitations Section Part 1, Revision 05 (approved by EASA Document 00L050H0007/C01, issue 7, October 2009<sup>[1]</sup>).
- Limitations applicable to **Damage-Tolerant Airworthiness Limitation Items** are provided in the A380 Airworthiness Limitations Section Part 2, Revision 01 (approved by EASA Document 00L050H0005/C01, issue 4, October 2009<sup>[1]</sup>).
- Limitations applicable to **Certification Maintenance Requirements** are provided in the A380 Airworthiness Limitations Section Part 3, Revision 1 (approved by EASA Document 00L050H0002/C01, Issue 7, November 2007<sup>[1]</sup>).
- Limitations applicable to **Ageing System Maintenance** are provided in the A380 Airworthiness Limitations Section Part 4, Revision 7 (approved by EASA Document 00L050H0010/C01, Issue 11, October 2009<sup>[1]</sup>).
- Limitations applicable to **Fuel Airworthiness Limitations** are provided in the A380 Airworthiness Limitations Section Part 5, Revision 04 (approved by EASA

Document 00L050H0009/C01, Issue 4, July 2009<sup>[1]</sup>).

- Limitations applicable to **Aircraft Information System Security** are provided in the A380 Airworthiness Limitations Section Part 6, Revision 2 (approved by EASA Document 00L050HLS06/C01, Issue 3, June 2008<sup>[1]</sup>).
- **Maintenance Review Board Report** 00L050H0001/C01

Notes

- [1] Or later EASA approved revisions.