

### A350 XWB

#### General Information

- The A350 XWB is Airbus' all-new mid-size long-range aircraft family and the newest member of Airbus' leading widebody family. The clean-sheet design A350 XWB is the world's most modern and efficient aircraft family, offering true long-range capability, unrivalled operational efficiency and the most exclusive passenger experience.
- The A350 XWB's all-new efficient design includes the latest and unique technologies improving performance in operation. The A350 XWB offers a 25% step change in fuel efficiency and a 25% lower seat-mile cost compared to previous generation competitor aircraft. It also generates 25% lower CO<sub>2</sub> emissions, making it the most eco-efficient aircraft.
- The A350 XWB competes with both the 787 and 777, and is better positioned than any recent models proposed by the competition.
- As the founding member of "Airspace by Airbus" cabin brand, the A350 XWB cabin provides passengers and crews the best in comfort, well-being and technology.
- The A350 XWB cross-section of 221 inches in width has been designed inside out to perfectly match all airlines' expectations. In a typical three class configuration, the A350 XWB cabin offers as standard a comfortable 18" seat width at 9-abreast in Comfort Economy complemented with Premium Economy (8-abreast, wider seats and large armrests) and Business (4-abreast).
- Its intelligent airframe uses the right material in the right places for weight savings and up to 40% less maintenance. 70% of the airframe is made out of advanced materials combining composites (53%), titanium and modern aluminium alloys. Being corrosion and fatigue free, composite materials significantly reduce maintenance requirements; titanium is a lightweight and corrosion-resistant substitute for steel.
- The A350 XWB's state-of-the-art aerodynamics, inspired by nature, include unique morphing wing features that continuously optimise the wing loading, reduce drag and lower the fuel burn.
- The A350 XWB is powered by new Rolls-Royce Trent XWB engines, the world most efficient large aero engine flying today.
- The A350 XWB offers a quieter cabin compared to the B787 with up to 4 times less noise.
- The A350 XWB is the quietest of all twin-aisle airplanes. Exterior noise level of the A350-900 is certified at 21 EPNdB (Effective Perceived Noise Decibel) below ICAO Chapter 4 requirements.
- The A350 XWB has been awarded Common Type Rating with the A330 (over 1,000 in service). Both Airbus widebody product lines are complementary. The A350 XWB also

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enjoys Cross Crew Qualification with the A320 Family (more in-service aircraft than any other jetliner).

- Airbus forecasts a demand over the next 20 years for 8,100 (all manufacturers) new twin-aisle passenger and freighter aircraft.

### A350 XWB commercial and in-service status

- Orders: 890 total A350 XWB orders from 46 customers.
- Deliveries: a total of 188 A350s have been delivered to 19 operators.

### A350 XWB Technical Data

	A350-900	A350-1000
Seats (3-class conf.)	325	366
Engine Thrust (lbfx1000)	Trent XWB-84 84 (374 kN)	Trent XWB-97 97 (431kN)
MTOW (tonnes)	280	316
Range (nm)	8,100	8,400
Length (m)	66.80	73.78
Wing span (m)	64.75	
Fuselage width (m)	5.96	
Height (m)	17.05	17.08
Max Fuel Capacity (l)	141,000	156,000

### A350 XWB Production and Assembly

- Stable production target: 10 aircraft/month by the end of 2018. All stations in the A350 XWB FAL are designed to be used for both the A350-900 and A350-1000 models.
- Major structural sub-assemblies:
  - Front & Centre fuselage (Saint Nazaire)
  - Aft, Forward fuselage and Vertical Tail plane (Hamburg)
  - Wing build in Broughton (equipped in Bremen)
  - Horizontal Tail plane (from Getafe/Illescas)
  - Pylon and Nacelle (from Toulouse)
- Final Assembly stations:
  - **St. 59:** Section preparation + loading of the large cabin monuments. Sections arrive equipped and tested.
  - **St. 50:** Fuselage junction (orbital join) + nose landing gear + crew rest area and rear galley finalised.
  - **St. 40:** Wing to fuselage join-up + horizontal tail plane + vertical tail plane + tail cone + main landing gear + engine pylons installation. Cabin furnishing is started inside the fuselage along with some ground testing. First fuselage electrical power-on.
  - **St. 30:** Aircraft systems ground tests (except cabin pressurisation, communications and fuel) + cabin installation continued. First aircraft electrical power-on.
  - **St. 18:** Outdoor Ground Tests. Cabin pressurisation + fuel system + radio communication systems (Gramont 2 building).
  - **St. 20:** Cabin and cockpit furnishing completed + engines + APU installation (Gramont 2 building).
  - **Paint:** Paints comply with the latest environmental regulations. Low polyurethane paints and low VOC (Volatile Organic Compound) solvents. Electrostatic pulverisation

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(less paint being used = less weight). Paint process between 7 and 18 days depending on livery complexity.

### The Roger Béteille A350 XWB Final Assembly Line (FAL)

- The A350 XWB FAL comprises two buildings dedicated to the assembly process and includes taxiways, roads and networks.
- Total area of the facilities (Louis Bréguet site): 11 hectares → 7.2 ha main building / 3.8 ha second building & annexes.
- On the main building, 22,000 m<sup>2</sup> of solar panels produce electrical power equal to 55% of the FAL's requirement.
- 6,000 m<sup>2</sup> of translucent panels, glass arched roofs and the use of white paintwork inside buildings give better working comfort and significant energy savings.
- More than 40,000 m<sup>3</sup> of materials from the original site were recycled into its construction.

### A350-900: Flight Test Campaign, Certification and Entry-into-service

- The A350-900 Flight Test programme (from mid-June 2013 to end-August 2014) was accomplished on time with type certification achieved after only 14.5 months. Over this period, the five A350 XWB test aircraft accumulated more than 2,600 flight test hours.
- The first flight took place on 14<sup>th</sup> June 2013, with MSN001. The A350-900 received type certification by European Aviation Safety Agency (EASA) on 30<sup>th</sup> September 2014, followed by FAA Type Certification on 12<sup>th</sup> November 2014.
- The first A350-900 was delivered to Qatar Airways on 22<sup>nd</sup> December 2014.
- The A350-900 commercial service started with Qatar Airways on 15<sup>th</sup> January 2015 operating the carrier's daily Doha to Frankfurt route.

### A350-1000: A new member of the A350 XWB family

- The A350-1000 is the latest and largest member of the A350 XWB family and it features:
  - High level of commonality with the A350-900: same true long range capability, same comfort, 95% common systems part numbers and Same Type Rating.
  - Greater capacity: longer fuselage enabling +40 seats in a typical 3 class configuration answering market needs with 40% more Premium area.
  - Continuous incremental innovations: extended use of carbon fibre (54%) and latest-standard all-weather ROPS (Runway Overrun Prevention System) and BTV (Brake-To-Vacate) functions where Airbus already pioneered.
- The A350-1000 is powered by the Trent XWB-97, the most efficient large aero engine flying today.

### A350-1000: Flight Test Campaign and Type Certification

- The A350-1000 Flight Test programme started on 24 November 2016 with its first flight and was performed with three flight test aircraft accumulating 1,600 flight test hours.
- The A350-1000 received Type Certification from EASA and FAA on time, on 21 November 2017. The milestone was achieved less than one year after its first flight, demonstrating the aircraft excellent design & maturity.
- Qatar Airways is the launch operator of the A350-1000, which entered service in February 2018.