TYPE-CERTIFICATE DATA SHEET

No. IM.E.093

for
PW1100G-JM Series Engines

Type Certificate Holder
International Aero Engines (IAE), LLC

400 Main Street
East Hartford, CT 06118
United States of America

For Models:

PW1133GR-JM
PW1133GAR-JM
PW1133G1R-JM
PW1133G1-JM
PW1133G-JM
PW1133GA-JM
PW1130G-JM
PW1129G-JM
PW1127G1B-JM
PW1127G1A-JM
PW1127G1-JM
PW1127G-JM
PW1127GA-JM
PW1124G-JM
PW1124G1-JM
PW1122G-JM

PW1134GA/2-JM
PW1134G1/2-JM
PW1133GR/2-JM
PW1133GH/2-JM
PW1133GAR/2-JM
PW1133GA/2-JM
PW1133G1R/2-JM
PW1133G1/2-JM
PW1133G/2-JM
PW1130G/2-JM
PW1129G/2-JM
PW1127GH/2-JM
PW1127GA/2-JM
PW1127G1B/2-JM
PW1127G1A/2-JM
PW1127G1/2-JM
PW1127G/2-JM
PW1124G1/2-JM
PW1124G/2-JM

PW1431G-JM
PW1431GA-JM
PW1431GH-JM
PW1428G-JM
PW1428GA-JM
PW1428GH-JM

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I. General

1. Type/ Model

Type	Models
PW1100G-JM	PW1133GR-JM, PW1133GAR-JM, PW1133G1R-JM, PW1133G1-JM, PW1133G-JM, PW1133GA-JM, PW1130G-JM, PW1129G-JM, PW1127G1B-JM, PW1127G1A-JM, PW1127G-JM, PW1127GA-JM, PW1127G1-JM, PW1124G-JM, PW1124G1-JM, PW1122G-JM (Note: These models are referred to as PW1100G-JM models in some instances within the TCDS)
	PW1134GA/2-JM, PW1134G1/2-JM, PW1133GR/2-JM, PW1133GH/2-JM, PW1133GAR/2-JM, PW1133GA/2-JM, PW1133G1R/2-JM, PW1133G1/2-JM, PW1133G/2-JM, PW1130G/2-JM, PW1129G/2-JM, PW1127GH/2-JM, PW1127GA/2-JM, PW1127G1B/2-JM, PW1127G1A/2-JM, PW1127G1/2-JM, PW1127G/2-JM, PW1124G1/2-JM, PW1124G/2-JM (Note: These models are referred to as PW1100G/2-JM models in some instances within the TCDS)
	PW1431G-JM, PW1431GA-JM, PW1431GH-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM (Note: These models are referred to as PW1400G-JM models in some instances within the TCDS)

2. Type Certificate Holder

International Aero Engines, LLC
400 Main Street
East Hartford, CT 06118
United States of America

3. Manufacturer

International Aero Engines AG
400 Main Street
East Hartford, CT 06118
United States of America

4. EASA Date of Application

Models	EASA Date of Application
PW1133G-JM, PW1130G-JM, PW1127G-JM, PW1127G1-JM, PW1124G-JM, PW1124G1-JM, PW1122G-JM	17 January 2013
PW1133GA-JM, PW1127GA-JM	21 September 2015
PW1431G-JM	09 December 2016
PW1129G-JM, PW1431GA-JM, PW1431GH-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM	26 June 2018
PW1127G1A-JM, PW1127G1B-JM	09 March 2023
PW1133GR-JM, PW1133GAR-JM, PW1133G1R-JM, PW1133G1-JM	28 August 2024
PW1134GA/2-JM, PW1134G1/2-JM, PW1133GR/2-JM, PW1133GH/2-JM, PW1133GAR/2-JM, PW1133GA/2-JM, PW1133G1R/2-JM, PW1133G1/2-JM, PW1133G/2-JM, PW1130G/2-JM, PW1129G/2-JM, PW1127GH/2-JM, PW1127GA/2-JM, PW1127G1B/2-JM, PW1127G1A/2-JM, PW1127G1/2-JM, PW1127G/2-JM, PW1124G1/2-JM, PW1124G/2-JM	27 March 2023

5. EASA Type Certification Date

Models	EASA Certification Date
PW1133G-JM, PW1130G-JM, PW1127G-JM, PW1127G1-JM, PW1124G-JM, PW1124G1-JM, PW1122G-JM	30 October 2015
PW1133GA-JM, PW1127GA-JM	30 October 2015
PW1431G-JM	10 August 2017
PW1129G-JM, PW1431GA-JM, PW1431GH-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM	14 September 2018
PW1127G1A-JM, PW1127G1B-JM	07 February 2025
PW1133GR-JM, PW1133GAR-JM, PW1133G1R-JM, PW1133G1-JM	07 February 2025
PW1134GA/2-JM, PW1134G1/2-JM, PW1133GR/2-JM, PW1133GH/2-JM, PW1133GAR/2-JM, PW1133GA/2-JM, PW1133G1R/2-JM, PW1133G1/2-JM, PW1133G/2-JM, PW1130G/2-JM, PW1129G/2-JM, PW1127GH/2-JM, PW1127GA/2-JM, PW1127G1B/2-JM, PW1127G1A/2-JM, PW1127G1/2-JM, PW1127G/2-JM, PW1124G1/2-JM, PW1124G/2-JM	07 October 2025

II. Certification Basis

1. State of Design Authority Certification Basis

Refer to FAA TCDS E00087EN Revision 11 and later approved issue.

2. Reference Date for determining the EASA Certification Basis

Models	**Reference Date** (FAA Certification Application Date)
PW1133G-JM, PW1130G-JM, PW1127G-JM, PW1127G1-JM, PW1124G-JM, PW1124G1-JM, PW1122G-JM	15 December 2011
PW1133GA-JM, PW1127GA-JM	12 June 2015
PW1431G-JM	20 January 2015
PW1129G-JM,	11 April 2017
PW1431GA-JM, PW1431GH-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM	3 October 2017
PW1127G1A-JM, PW1127G1B-JM	22 June 2021
PW1133GR-JM, PW1133GAR-JM, PW1133G1R-JM, PW1133G1-JM	11 December 2023
PW1134GA/2-JM, PW1134G1/2-JM, PW1133GR/2-JM, PW1133GH/2-JM, PW1133GAR/2-JM, PW1133GA/2-JM, PW1133G1R/2-JM, PW1133G1/2-JM, PW1133G/2-JM, PW1130G/2-JM, PW1129G/2-JM, PW1127GH/2-JM, PW1127GA/2-JM, PW1127G1B/2-JM, PW1127G1A/2-JM, PW1127G1/2-JM, PW1127G/2-JM, PW1124G1/2-JM, PW1124G/2-JM	3 April 2019

3. EASA Certification Basis

3.1. Airworthiness Standards

Models	**EASA Airworthiness Standards**
PW1133G-JM, PW1130G-JM, PW1127G-JM, PW1124G-JM, PW1124G1-JM, PW1122G-JM	CS-E Amendment 3, dated 23 December 2010 (Decision No. 2010/015/R of the Executive Director of the European Aviation Safety Agency)
PW1133GA-JM, PW1127GA-JM	
PW1431G-JM	
PW1129G-JM	

PW1431GA-JM, PW1431GH-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM	
PW1127G1-JM, PW1127G1A-JM, PW1127G1B-JM	CS-E Amendment 3, dated 23 December 2010 (Decision No. 2010/015/R of the Executive Director of the European Aviation Safety Agency)
PW1133GR-JM, PW1133GAR-JM, PW1133G1R-JM, PW1133G1-JM	CS-E Amendment 3, dated 23 December 2010 (Decision No. 2010/015/R of the Executive Director of the European Aviation Safety Agency)
PW1134GA/2-JM, PW1134G1/2-JM, PW1133GR/2-JM, PW1133GH/2-JM, PW1133GAR/2-JM, PW1133GA/2-JM, PW1133G1R/2-JM, PW1133G1/2-JM, PW1133G/2-JM, PW1130G/2-JM, PW1129G/2-JM, PW1127GH/2-JM, PW1127GA/2-JM, PW1127G1B/2-JM, PW1127G1A/2-JM, PW1127G1/2-JM, PW1127G/2-JM, PW1124G1/2-JM, PW1124G/2-JM	CS-E Amendment 3, dated 23 December 2010 (Decision No. 2010/015/R of the Executive Director of the European Aviation Safety Agency) CS-E 780 Icing Conditions from CS-E Amendment 4, dated 13 March 2015

3.2. Special Conditions (SC)

Models	**Special Conditions**
PW1133G-JM, PW1130G-JM, PW1127G-JM, PW1124G-JM, PW1124G1-JM, PW1122G-JM	M-TS-0000398 Bird Strike and Ingestion - Bird orientation, ref. CS-E 800(c) and (d), only to any PW1100G-JM engine model that incorporates the fan blade configuration approved by EASA major change ref. 10087514.
PW1133GA-JM, PW1127GA-JM	
PW1431G-JM	
PW1129G-JM	
PW1431GA-JM, PW1431GH-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM	
PW1127G1-JM, PW1127G1A-JM, PW1127G1B-JM	M-TS-0000398 Bird Strike and Ingestion - Bird orientation, ref. CS-E 800(c) and (d)
PW1133GR-JM, PW1133GAR-JM, PW1133G1R-JM, PW1133G1-JM	M-TS-0000398 Bird Strike and Ingestion - Bird orientation, ref. CS-E 800(c) and (d)
PW1134GA/2-JM, PW1134G1/2-JM, PW1133GR/2-JM, PW1133GH/2-JM, PW1133GAR/2-JM, PW1133GA/2-JM, PW1133G1R/2-JM, PW1133G1/2-JM, PW1133G/2-JM, PW1130G/2-JM, PW1129G/2-JM, PW1127GH/2-JM, PW1127GA/2-JM, PW1127G1B/2-JM, PW1127G1A/2-JM, PW1127G1/2-JM, PW1127G/2-JM, PW1124G1/2-JM, PW1124G/2-JM	M-TS-0000398 Bird Strike and Ingestion - Bird orientation, ref. CS-E 800(c) and (d)

3.3. Equivalent Safety Findings

Models	Equivalent Safety Findings
PW1133G-JM, PW1130G-JM, PW1127G-JM, PW1124G-JM, PW1124G1-JM, PW1122G-JM	CS-E 790(a)(1) Ingestion of Rain and Hail – Large hailstone ingestion CS-E 800(d) Bird Strike and Ingestion – Medium and small birds ingestion tests
PW1133GA-JM, PW1127GA-JM	
PW1431G-JM	
PW1129G-JM	
PW1431GA-JM, PW1431GH-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM	
PW1127G1-JM, PW1127G1A-JM, PW1127G1B-JM	CS-E 790(a)(1) Ingestion of Rain and Hail – Large hailstone ingestion CS-E 800(d) Bird Strike and Ingestion – Medium and small birds ingestion tests
PW1133GR-JM, PW1133GAR-JM, PW1133G1R-JM, PW1133G1-JM	CS-E 790(a)(1) Ingestion of Rain and Hail – Large hailstone ingestion CS-E 800(d) Bird Strike and Ingestion – Medium and small birds ingestion tests
PW1134GA/2-JM, PW1134G1/2-JM, PW1133GR/2-JM, PW1133GH/2-JM, PW1133GAR/2-JM, PW1133GA/2-JM, PW1133G1R/2-JM, PW1133G1/2-JM, PW1133G/2-JM, PW1130G/2-JM, PW1129G/2-JM, PW1127GH/2-JM, PW1127GA/2-JM, PW1127G1B/2-JM, PW1127G1A/2-JM, PW1127G1/2-JM, PW1127G/2-JM, PW1124G1/2-JM, PW1124G/2-JM	CS-E 790(a)(1) Ingestion of Rain and Hail – Large hailstone ingestion

3.4. Deviations

Models	Deviations
PW1133G-JM, PW1130G-JM, PW1127G-JM, PW1124G-JM, PW1124G1-JM, PW1122G-JM	None
PW1133GA-JM, PW1127GA-JM	
PW1431G-JM	
PW1129G-JM	
PW1431GA-JM, PW1431GH-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM	
PW1127G1-JM, PW1127G1A-JM, PW1127G1B-JM	M-TS-0000414 Bird Strike and Ingestion - Bird orientation, ref. CS-E 800(a), except for those engine models that incorporate the fan blade configuration approved by EASA major change ref. 10087514.

PW1133GR-JM, PW1133GAR-JM, PW1133G1R-JM, PW1133G1-JM	M-TS-0000414 Bird Strike and Ingestion - Bird orientation, ref. CS-E 800(a), except for those engine models that incorporate the fan blade configuration approved by EASA major change ref. 10087514.
PW1134GA/2-JM, PW1134G1/2-JM, PW1133GR/2-JM, PW1133GH/2-JM, PW1133GAR/2-JM, PW1133GA/2-JM, PW1133G1R/2-JM, PW1133G1/2-JM, PW1133G/2-JM, PW1130G/2-JM, PW1129G/2-JM, PW1127GH/2-JM, PW1127GA/2-JM, PW1127G1B/2-JM, PW1127G1A/2-JM, PW1127G1/2-JM, PW1127G/2-JM, PW1124G1/2-JM, PW1124G/2-JM	None

3.5. Environmental Protection

Models	Environmental Protection
PW1133G-JM, PW1130G-JM, PW1127G-JM, PW1124G-JM, PW1124G1-JM, PW1122G-JM	ICAO Annex 16 Volume II, Amendment 10, implemented in Art. 9 of Regulation (EU) 2018/1139 as amended by Regulation (EU) 2021/1087: • NOx standard in accordance with ICAO Annex 16 Volume II, Part III, Chapter 2, § 2.3.2 e) (CAEP/8); • Maximum nvPM mass concentration levels in accordance with Part III, Chapter 4, § 4.2.2.1 (CAEP/10); • nvPM mass and number emissions in compliance with Part III, Chapter 4, § 4.2.2.2 a) 1) and § 4.2.2.2 b) 1) (CAEP/11 In-Production standard). Note: See ICAO Annex 16 Volume II for the full list of regulated emissions. The aforementioned details for NOx and nvPM further specify the regulatory levels to which compliance was demonstrated.
PW1133GA-JM, PW1127GA-JM	
PW1431G-JM	
PW1129G-JM,	
PW1431GA-JM, PW1431GH-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM	
PW1127G1-JM, PW1127G1A-JM, PW1127G1B-JM	
PW1133GR-JM, PW1133GAR-JM, PW1133G1R-JM, PW1133G1-JM	
PW1134GA/2-JM, PW1134G1/2-JM, PW1133GR/2-JM, PW1133GH/2-JM, PW1133GAR/2-JM, PW1133GA/2-JM, PW1133G1R/2-JM, PW1133G1/2-JM, PW1133G/2-JM, PW1130G/2-JM, PW1129G/2-JM, PW1127GH/2-JM, PW1127GA/2-JM, PW1127G1B/2-JM, PW1127G1A/2-JM, PW1127G1/2-JM, PW1127G/2-JM, PW1124G1/2-JM, PW1124G/2-JM	

III. Technical Characteristics

1. Type Design Definition

PW1100G-JM:	Installation Drawing 5320001
PW1100G/2-JM:	Installation Drawing 5360001
PW1400G-JM:	Installation Drawing 5330001

2. Description

High bypass ratio, axial-airflow, dual-spool, turbofan engine controlled by a Full Authority Digital Engine Control (FADEC). The low pressure spool consists of a three-stage low pressure turbine that drives a three-stage low pressure compressor, and a single stage high bypass ratio fan drive gear speed reduction system. The high pressure compressor has eight axial stages driven by a two-stage cooled high pressure turbine.

3. Equipment

See III. 1. Type Design Definition

4. Dimensions

Overall Length (flange to flange):	3.284 m (129.285 inches) +/- 0.001 m (0.051 inches)
Overall Length (fan spinner face to aft flange):	3.412 m (134.350 inches)
Nominal diameter (fan case):	2.224 m (87.566 inches)
Maximum radial projection (at drain mast):	1.274 m (50.150 inches)

5. Dry Weight

2857.6 kg (6300 lbs)

The PW1100G-JM and PW1100G/2-JM engine weight is defined as the dry weight of the basic engine with IAE, LLC supplied engine build-up component (EBU1). EBU1 components include: Low Oil Pressure Switch, Core Nacelle Temperature Sensor, Gearbox Breather Tube, Engine Air Turbine Starter, starter attachment hardware and seals to gearbox, duct from Starter to Starter Air Valve, Starter Air Valve, electrical harnesses, Mass Fuel Flow Meter, environmental control system Intermediate Pressure Check Valve.

The PW1400G-JM engine weight is defined as the dry weight of the basic engine with standard equipment only.

6. Ratings

The engine ratings are based on calibrated test stand performance under the following conditions:
Sea level static, standard pressure 1.01 bar (14.696 psia), up to the flat rating ambient temperature.

- No customer bleed or customer horsepower extraction.
- Ideal inlet, 100% ram recovery.
- Production aircraft flight cowling, corrected to ideal conditions.
- Production instrumentation.
- Fuel lower heating value 42798 kJ/kg (18400 BTU/lb).

- The normal 5-minute Take-off rating may be extended to 10 minutes for engine out contingency.

Model	*Sea Level Static Thrust*			
	Take-off (5 min.)	*Flat Rating Ambient Temperature*	*Maximum Continuous*	*Flat Rating Ambient Temperature*
PW1134GA/2-JM	147.28 kN (33110 lbf)	30°C/86°F	103.42 kN (23250 lbf)	25°C/77°F
PW1134G1/2-JM	147.28 kN (33110 lbf)	30°C/86°F	103.42 kN (23250 lbf)	25°C/77°F
PW1133GR-JM	147.28 kN (33110 lbf)	30°C/86°F	103.42 kN (23250 lbf)	25°C/77°F
PW1133GR/2-JM	147.28 kN (33110 lbf)	30°C/86°F	103.42 kN (23250 lbf)	25°C/77°F
PW1133GH/2-JM	147.28 kN (33110 lbf)	30°C/86°F	103.42 kN (23250 lbf)	25°C/77°F
PW1133GAR-JM	147.28 kN (33110 lbf)	30°C/86°F	103.42 kN (23250 lbf)	25°C/77°F
PW1133GAR/2-JM	147.28 kN (33110 lbf)	30°C/86°F	103.42 kN (23250 lbf)	25°C/77°F
PW1133G1R-JM	147.28 kN (33110 lbf)	30°C/86°F	103.42 kN (23250 lbf)	25°C/77°F
PW1133G1R/2-JM	147.28 kN (33110 lbf)	30°C/86°F	103.42 kN (23250 lbf)	25°C/77°F
PW1133G1-JM	147.28 kN (33110 lbf)	30°C/86°F	145.81 kN (32780 lbf)	25°C/77°F
PW1133G1/2-JM	147.28 kN (33110 lbf)	30°C/86°F	145.81 kN (32780 lbf)	25°C/77°F
PW1133G-JM	147.28 kN (33110 lbf)	30°C/86°F	145.81 kN (32780 lbf)	25°C/77°F
PW1133G/2-JM	147.28 kN (33110 lbf)	30°C/86°F	145.81 kN (32780 lbf)	25°C/77°F
PW1133GA-JM	147.28 kN (33110 lbf)	30°C/86°F	145.81 kN (32780 lbf)	25°C/77°F
PW1133GA/2-JM	147.28 kN (33110 lbf)	30°C/86°F	145.81 kN (32780 lbf)	25°C/77°F
PW1130G-JM	147.28 kN (33110 lbf)	30°C/86°F	135.27 kN (30410 lbf)	25°C/77°F
PW1130G/2-JM	147.28 kN (33110 lbf)	30°C/86°F	135.27 kN (30410 lbf)	25°C/77°F
PW1129G-JM	130.09 kN (29245 lbf)	44°C/111°F	117.19 kN (26345 lbf)	25°C/77°F
PW1129G/2-JM	130.09 kN (29245 lbf)	44°C/111°F	117.19 kN (26345 lbf)	25°C/77°F
PW1127GH/2-JM	120.44 kN (27075 lbf)	47°C/117°F	107.07 kN (24070 lbf)	30°C/86°F
PW1127G-JM	120.44 kN (27075 lbf)	47°C/117°F	117.19 kN (26345 lbf)	25°C/77°F
PW1127G/2-JM	120.44 kN (27075 lbf)	47°C/117°F	117.19 kN (26345 lbf)	25°C/77°F
PW1127GA-JM	120.44 kN (27075 lbf)	47°C/117°F	117.19 kN (26345 lbf)	30°C/86°F
PW1127GA/2-JM	120.44 kN (27075 lbf)	47°C/117°F	117.19 kN (26345 lbf)	25°C/77°F
PW1127G1B-JM	120.44 kN (27075 lbf)	47°C/117°F	107.07 kN (24070 lbf)	30°C/86°F
PW1127G1B/2-JM	120.44 kN (27075 lbf)	47°C/117°F	107.07 kN (24070 lbf)	30°C/86°F
PW1127G1A-JM	120.44 kN (27075 lbf)	47°C/117°F	107.07 kN (24070 lbf)	30°C/86°F
PW1127G1A/2-JM	120.44 kN (27075 lbf	47°C/117°F	107.07 kN (24070 lbf)	30°C/86°F
PW1127G1-JM	120.44 kN (27075 lbf)	47°C/117°F	107.07 kN (24070 lbf)	30°C/86°F
PW1127G1/2-JM	120.44 kN (27075 lbf)	47°C/117°F	107.07 kN (24070 lbf)	30°C/86°F
PW1124G-JM	107.82 kN (24240 lbf)	51°C/123°F	106.91 kN (24035 lbf)	25°C/77°F
PW1124G/2-JM	107.82 kN (24240 lbf)	51°C/123°F	106.91 kN (24035 lbf)	25°C/77°F
PW1124G1-JM	107.82 kN (24240 lbf)	51°C/123°F	106.91 kN (24035 lbf)	25°C/77°F
PW1124G1/2-JM	107.82 kN (24240 lbf)	51°C/123°F	106.91 kN (24035 lbf)	25°C/77°F
PW1122G-JM	107.82 kN (24240 lbf)	51°C/123°F	106.91 kN (24035 lbf)	25°C/77°F
PW1431G-JM	140.44 kN (31572 lbf)	30°C/86°F	138.19 kN (31068 lbf)	25°C/77°F
PW1431GA-JM	140.44 kN (31572 lbf)	30°C/86°F	138.20 kN (31068 lbf)	25°C/77°F
PW1431GH-JM	140.44 kN (31572 lbf)	30°C/86°F	138.20 kN (31068 lbf)	25°C/77°F
PW1428G-JM	132.39 kN (29761 lbf)	30°C/86°F	126.55 kN (28450 lbf)	30°C/86°F
PW1428GA-JM	132.39 kN (29761 lbf)	30°C/86°F	126.55 kN (28450 lbf)	30°C/86°F
PW1428GH-JM	132.39 kN (29761 lbf)	30°C/86°F	126.55 kN (28450 lbf)	30°C/86°F

7. Control System

Service Bulletin PW30K-A-73-00-0066-00A-930A-D provides a listing of Data Storage Unit (Ratings Plug) Part Numbers.

8. Fluids (Fuel, Oil, Coolant, Additives)

Fuel: Service Bulletin PW1000G-D-73-00-0002-00A-930A-D defines the fuel requirements and provides a listing of approved fuels and fuel additives for use in the PW1100G-JM and PW1100G/2-JM series engines.

Service Bulletin PW1000G-C-73-00-0001-00B-930A-D defines the fuel requirements and provides a listing of approved fuels and fuel additives for use in the PW1400G-JM series engines.

Oil: Service Bulletin PW1000G-D-79-00-0002-00A-930A-D provides a listing of approved turbine oils for use in the PW1100G-JM and PW1100G/2-JM series engines.

Service Bulletin PW1000G-C-73-00-0001-00B-930A-D defines the oil requirements and provides a listing of approved fuels and fuel additives for use in the PW1400G-JM series engines.

9. Aircraft Accessory Drives

<u>All PW1100G-JM and PW1100G/2-JM models:</u>

Drive	*Rotation*	*Speed Ratio to N2*	*Torque Nm (lb.-in.)*			*Overhung Moment Nm(lb.-in.)*
			Continuous	*Overload*	*Static*	
Hydraulic Pump	CCW*	0.1768.1	146.9 (1300)	203.3 (1800)	480.1 (4250)	45.1 (400)
Integrated Drive Generator (IDG)	CCW*	0.3932:1	224.8** (1990)	505.6** (4475)	1062 (9400)	101.6 (900)
Air Turbine Starter	CCW*	0.407:1	-	1208 (10692)	1026.3 (9084)	31.6 (280)
*: Counterclockwise (facing the drive pad) **: maximum allowable continuous torque values are at any engine speed unlee otherwise specified provided no destructive forces resulting from accessory torsional vibration are present.						

<u>All PW1400G-JM models:</u>

Drive	*Rotation*	*Speed Ratio to N2*	*Torque Nm (lb.-in.)*			*Overhung Moment Nm(lb.-in.)*
			Continuous	*Overload*	*Static*	
	CCW*	0.1763.1	146.9 (1300)	203.3 (1800)	480.1 (4250)	45.1 (400)

Hydraulic Pump						
Variable Frequency Drive Generator (VFG)	CCW*	0.9611:1	112.9 (1000)**	146.9** (1300)	864.8 (7655)	144.0 (1275)
Air Turbine Starter	CCW*	0.407:1	-	1208 (10692)	1026.3 (9084)	31.6 (280)
*: Counterclockwise (facing the drive pad) **: maximum allowable continuous torque values are at any engine speed unless otherwise specified provided no destructive forces resulting from accessory torsional vibration are present.						

10. Maximum Permissible Air Bleed Extraction

PW1100G-JM M & PW1100G/2-JM Maximum Permissible Bleed Extraction limits are specified in PW1100G-JM & PW1100G/2-JM Installation and Operating Manual PWA-9851

PW1400G-JM Maximum Permissible Bleed Extraction limits are specified in PW1400G-JM Installation and Operating Manual PWA-9914

IV. Operating Limitations

1. Temperature Limits

Maximum permissible Indicated Turbine Temperatures (ITT), °C(°F):

For engine models: PW1133G-JM, PW1133GA-JM, PW1130G-JM, PW1129G-JM, PW1127G-JM, PW1127GA-JM, PW1127G1-JM, PW1124G-JM, PW1124G1-JM, PW1122G-JM, PW1127G1A-JM, PW1127G1B-JM, PW1133G1-JM, PW1133G1R-JM, PW1133GAR-JM, PW1133GR-JM, PW1428G-JM, PW1431G-JM, PW1428GA-JM, PW1428GH-JM, PW1431GA-JM, PW1431GH-JM

*Take-Off (5 minutes)**	*Maximum Continuous*	*At start-up*
1083°C (1982°F)	1043°C (1909°F)	1083°C (1982°F)
*: The normal 5 minute takeoff rating may be extended to 10 minutes for engine out contingency.		

For engine models: PW1134GA/2-JM, PW1134G1/2-JM, PW1133GR/2-JM, PW1133GH/2-JM, PW1133GAR/2-JM, PW1133GA/2-JM, PW1133G1R/2-JM, PW1133G1/2-JM, PW1133G/2-JM, PW1130G/2-JM, PW1129G/2-JM, PW1127GH/2-JM, PW1127GA/2-JM, PW1127G1B/2-JM, PW1127G1A/2-JM, PW1127G1/2-JM, PW1127G/2-JM, PW1124G1/2-JM and PW1124G/2-JM.

*Take-Off (5 minutes)**	*Maximum Continuous*	*At start-up*
1093°C (1999°F)	1051°C (1923°F)	1093°C (1999°F)
*: The normal 5 minute takeoff rating may be extended to 10 minutes for engine out contingency.		

Fuel Temperatures:

Refer to Installation and Operating manual, referenced in paragraph V.

Oil Temperatures:

For continuous operation, engine main oil temperature maximum limit varies with engine power level. The limit decreases from 152°C (305°F) at idle power to 146°C (295°F) at cruise power and to 141°C (285°F) at high power. See Installation and Operating Manual for details, referenced in paragraph V.

Minimum oil temperature at idle, before takeoff power operation: 51.7°C (125°F) for the PW1100G-JM and PW1100G/2-JM series engines.

Minimum oil temperature at idle, before takeoff power operation: 37.7°C (100°F) for the PW1400G-JM series engines.

2. Speed Limits

	Low Pressure Rotor (N1) rpm			*High Pressure Rotor (N2) rpm*		
	Maximum permissible	*Minimum at Ground Idle*	*Minimum at Flight Idle*	*Maximum permissible*	*Minimum at Ground Idle*	*Minimum at Flight Idle*
PW1100G-JM, PW1400G-JM	10047	1750	1801	22300	12400	12400
PW1100G/2-JM	10047	1750	1801	22300	12823	12823
Notes: -Power setting, power checks, and control of engine thrust output in all operations are based on Low Rotor Speed (N1). The Fan Speed (NFAN) is directly proportional to N1 by a gear ratio of 1:3.0625. -The minimum N1 certified for in-flight operation in icing conditions is 1801 rpm. The Electronic Engine Control will prevent rotor speeds below this value while in flight.						

3. Torque Limits

N/A

4. Pressure Limits

4.1 Fuel Pressure

Fuel pressure at the engine fuel pump inlet during operation shall be maintained at not less than 34.47 kPa (5 psi) above the vapour true pressure of the fuel but not greater than 413.7 kPa (60 psi) above the absolute ambient pressure with a vapour/liquid ratio of zero. The maximum allowable pressure at the fuel pump inlet after shutdown is 1041.1 kPa (151 psig).

4.2 Oil Pressure

Oil Inlet Pressure Limits:

Minimum: 434.3 kPa (63 psig) at idle. Variable by N2 Speed of idle. See Installation and Operating Manual for details, referenced in paragraph V.

Maximum: 1861.5 kPa (270 psig).

Oil pressure is measured relative to main lube pressure. Temporary interruption associated with negative "g" operation is limited to 10 seconds maximum. Normal oil pressure will be restored rapidly once the negative "g" effect has been eliminated.

5. Time Limited Dispatch (TLD)

The PW1100G-JM engine models are approved for TLD in accordance with CS-E 1030. FADEC system faults fall into 4 categories as follows: A) No Dispatch, B) Short Term Dispatch, C) Long Term Dispatch or D) Fix at a Operators Discretion. Details on the short and long term dispatch intervals are provided in the Airworthiness Limitations Manual PN 5316993.

The PW1100G/2-JM engine models are not approved for TLD.

The PW1400G-JM engine models are not approved for TLD.

6. ETOPS

When compliant with Pratt & Whitney Service Bulletin PW1000G-C-72-00-0056-00A-930A-D latest approved revision, all PW1100G-JM and PW1100G/2-JM models are approved for ETOPS capability in accordance with CS-E 1040 Amendment 3 for a Maximum Approved Diversion Time of 180 minutes at MCT thrust plus 15 minutes at hold power. ETOPS does not require any special engine limitation, marking placard or configuration other than as instructed by Pratt & Whitney Service Bulletin PW1000G-C-72-00-0056-00A-930A-D latest approved revision. This approval does not constitute an approval to conduct ETOPS operations.

The PW1400G-JM engine models are not eligible for Extended Operations (ETOPS).

V. Operating and Service Instructions

Engine Maintenance Manual:	PN 5316994 for all PW1100G-JM & PW1100G/2-JM models PN 5321242 for all PW1400G-JM models
Engine Manual:	PN 5316992 for all PW1100G-JM & PW1100G/2-JM models PN 5321240 for all PW1400G-JM models
Airworthiness Limitations Manual:	PN 5316993 for all PW1100G-JM & PW1100G/2-JM models PN 5321241 for all PW1400G-JM models
Clean, Inspect and Repair Manual:	PN 5315653 for all PW1100G-JM & PW1100G/2-JM models PN 5321246 for all PW1400G-JM models
Installation and Operating Manual:	PWA-9851 for all PW1100G-JM & PW1100G/2-JM models PWA-9914 for all PW1400G-JM models

VI. Notes

Note 1: For all PW1100G-JM models, engine mount system provisions are specified in Installation Drawing 5320001 and Mount and Maneuver Load Drawing, 5360003.
For all PW1100G/2-JM models, engine mount system provisions are specified in Installation Drawing 5360001 and Mount and Maneuver Load Drawing, 5360003.
For all PW1400G-JM models, engine mount system provisions are specified in Installation Drawing 5330001 and Mount and Maneuver Load Drawing, 5330003.

Note 2: Engine design and operating limitations are defined in the Installation and Operating Manual, as referenced in paragraph V.

Note 3: Electromagnetic compatibility (EMC) protection requirements and electromagnetic interference (EMI) emitted by the electronic engine control system, including cables, are specified in the Installation and Operating Manual, as referenced in paragraph V.

Note 4: Requirements and limitations for ground operation in icing conditions are specified in the Installation and Operating Manual, as referenced in paragraph V.

Note 5: For all PW1100G-JM and PW1100G/2-JM models, the EASA approved Airworthiness Limitations Section of the Instructions for Continued Airworthiness is published in the PW1100G-JM Airworthiness Limitation Manual PN 5316993, for all PW1400G-JM models in PW1400G-JM Airworthiness Limitation Manual PN 5321241.

Note 6: For all PW1100G-JM and PW1100G/2-JM models, the UT Aerospace System- Aerostructures Thrust Reverser Unit as specified in the Installation and Operating Manual, PWA-9851, is acceptable for use with the engine. The thrust reverser is not part of the engine type design and is certified as part of the aircraft.
For the PW1400G-JM engine models, the Shorts Brother's Thrust Reverser Unit as specified in the Installation and Operating Manual, PWA-9914, is acceptable for use with the engine. The thrust reverser is not part of the engine type design and is certified as part of the aircraft**.**

SECTION: ADMINISTRATIVE

I. Acronyms and Abbreviations

ETCDS Engine Type Certificate Data Sheet
CAEP Committee on Aviation Environmental Protection
CS-E Certification Specifications Engines
ECS Environmental Control System
ETOPS Extended Range Operation with Two-Engine Aeroplanes
FAA Federal Aviation Administration
FADEC Full Authority Digital Engine Control
ICAO International Civil Aviation Organisation
MCT Maximum Continuous
PN Part Number

II. Type Certificate Holder Record

Not applicable

III. Change Record

Issue	Date	Changes	TC issue
Issue 01	30 October 2015	Initial Issue	30 October 2015
Issue 02	20 November 2015	• Include approval statement for Time Limited Dispatch (TLD). • Revise minimum oil temperature limit. • Include reference to the Installation and Operating Manual with respect to the Thrust Reverser the engine is approved to operate with. • Revise FADEC hardware PN.	As for Issue 1 above
Issue 03	13 June 2017	• Include approval statement for ETOPS. • Remove FADEC Hardware and Software PN and add data Storage Unit PN.	As for Issue 1 above
Issue 04	10 August 2017	• Include the PW1431G-JM engine model. • Editorial changes.	10 August 2017
Issue 05	14 September 2018	• Models PW1129G-JM, PW1431GA-JM, PW1431GH-JM, PW1428G-JM, PW1428GA-JM, PW1428GH-JM added	14 September 2018
Issue 06	27 May 2019	• Reflect introduction of FAA ELOS No TC3289EN-E-P-9	As for Issue 05
Issue 07	09 December 2019	• Update of the Environmental Protection requirements (nvPM) (Major Change Approval 10071945)	
Issue 08	13 October 2022	• Update of the Environmental Protection requirements (nvPM) (Major Change Approval 10080270)	

Issue 09	14 February 2025	• New models PW1127G1A-JM, PW1127G1B-JM, and new MCT rating for model PW1127G1-JM (EASA Major Change certificate ref. 10086386). • New models PW1133GR-JM, PW1133GAR-JM, PW1133G1R-JM, PW1133G1-JM (EASA Major Change certificate ref. 10086385). • General update, editorial corrections to align with FAA TCDS E00087EN Rev. 10	07 February 2025
Issue 10	18 June 2025	• Substitution of DSU PN details with dedicated SB (EASA Major Change certificate ref. 10087342)	As for Issue 09
Issue 11	12 September 2025	• A new fan blade design is approved (EASA Major Change certificate ref. 10087514). • Application of the existing Special Condition (SC) M-TS-0000398 to those engine models that incorporate the new fan blade. • Removal of the existing Deviation (DEV) M-TS-0000414 to the engine models PW1127G1-JM, PW1127G1A-JM, PW1127G1B-JM, PW1133GR-JM, PW1133GAR-JM, PW1133G1R-JM, PW1133G1-JM that incorporate the new fan blade. • Editorial corrections to SC and DEV references. • Deletion of reference to CS-34 in the Certification Basis for Environmental Protection.	As for Issue 10
Issue 12	14 October 2025	• EASA has issued the Major Change certificate ref. 10088269. This change has led to the introduction of the following models designations in the TCDS: PW1134GA/2-JM, PW1134G1/2-JM, PW1133GR/2-JM, PW1133GH/2-JM, PW1133GAR/2-JM, PW1133GA/2-JM, PW1133G1R/2-JM, PW1133G1/2-JM, PW1133G/2-JM, PW1130G/2-JM, PW1129G/2-JM, PW1127GH/2-JM, PW1127GA/2-JM, PW1127G1B/2-JM, PW1127G1A/2-JM, PW1127G1/2-JM, PW1127G/2-JM, PW1124G1/2-JM and PW1124G/2-JM. • Improved format for clarity.	07 October 2025

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