

Page intentionally left blank

I. General

1. Type/Models:

| | |
|----------------|---|
| CFM56-7B "SAC" | CFM56-7B20, CFM56-7B22, CFM56-7B22/B1, CFM56-7B24, CFM56-7B24/B1, CFM56-7B26, CFM56-7B26/B1, CFM56-7B26/B2, CFM56-7B27, CFM56-7B27/B1, CFM56-7B27/B3, CFM56-7B27A |
| CFM56-7B "DAC" | CFM56-7B20/2, CFM56-7B22/2, CFM56-7B24/2, CFM56-7B26/2, CFM56-7B27/2 |
| CFM56-7B "TI" | CFM56-7B20/3, CFM56-7B22/3, CFM56-7B22/3B1, CFM56-7B24/3, CFM56-7B24/3B1, CFM56-7B26/3, CFM56-7B26/3F, CFM56-7B26/3B1, CFM56-7B26/3B2, CFM56-7B26/3B2F, CFM56-7B27/3, CFM56-7B27/3F, CFM56-7B27/3B1, CFM56-7B27/3B1F, CFM56-7B27/3B3, CFM56-7B27A/3 |
| CFM56-7B "E" | CFM56-7B20E, CFM56-7B22E, CFM56-7B22E/B1, CFM56-7B24E, CFM56-7B24E/B1, CFM56-7B26E, CFM56-7B26E/F, CFM56-7B26E/B1, CFM56-7B26E/B2, CFM56-7B26E/B2F, CFM56-7B27E, CFM56-7B27E/F, CFM56-7B27E/B1, CFM56-7B27E/B1F, CFM56-7B27E/B3, CFM56-7B27AE |

(See notes 9 and 11)

2. Type Certificate Holder:

CFM International S.A.
2, boulevard du Général Martial Valin
F-75724 Paris Cedex 15
France

Design Organisation Approval No.: EASA.21J.086

3. Manufacturers:

| | |
|---|---|
| SNECMA 10 allée du Brévent CE 1420 - Courcouronnes F91019 Evry Cedex France | GE Aviation One Neumann Way Cincinnati - Ohio 45215 United States of America |
|---|---|

4. EASA Certification Application Date:

| CFM56-7B "SAC" | |
|--|-------------------|
| CFM56-7B18, CFM56-7B20, CFM56-7B22, CFM56-7B24, CFM56-7B26 | 16 March 1994 |
| CFM56-7B27 | 28 November 1995 |
| CFM56-7B26/B1, CFM56-7B27/B1 | 04 March 1998 |
| CFM56-7B27/B3 | 30 July 1998 |
| CFM56-7B22/B1, CFM56-7B24/B1 | 11 June 1997 |
| CFM56-7B27A | 08 September 1999 |
| CFM56-7B22/B2, CFM56-7B26/B2 | 20 August 2001 |
| CFM56-7B "DAC" | |
| CFM56-7B20/2, 7B22/2, 7B24/2, 7B26/2 | 06 September 1995 |
| CFM56-7B27/2 | 28 November 1995 |

| CFM56-7B "TI" | |
|--|-----------------|
| CFM56-7B18/3, CFM56-7B20/3, CFM56-7B22/3, CFM56-7B22/3B1, CFM56-7B22/3B2, CFM56-7B24/3, CFM56-7B24/3B1, CFM56-7B26/3, CFM56-7B26/3B1, CFM56-7B26/3B2, CFM56-7B27/3, CFM56-7B27/3B1, CFM56-7B27/3B3, CFM56-7B27/3F, CFM56-7B27/3B1F | 23 April 2004 |
| CFM56-7B26/3F, CFM56-7B26/3B2F | 12 April 2006 |
| CFM56-7B27A/3 | 02 January 2008 |

| CFM56-7B "E" | |
|---|----------------|
| CFM56-7B20E, CFM56-7B22E, CFM56-7B22E/B1, CFM56-7B24E, CFM56-7B24E/B1, CFM56-7B26E, CFM56-7B26E/F, CFM56-7B26E/B1, CFM56-7B26E/B2, CFM56-7B26E/B2F, CFM56-7B27E, CFM56-7B27E/F, CFM56-7B27E/B1, CFM56-7B27E/B1F, CFM56-7B27E/B3, CFM56-7B27AE | 28 August 2008 |

5. Certification Reference Date: 16 March 1994

6. EASA Certification Date:

| CFM56-7B "SAC" | |
|--|------------------|
| CFM56-7B20, CFM56-7B22, CFM56-7B24, CFM56-7B26, CFM56-7B27 | 17 December 1996 |
| CFM56-7B26/B1, CFM56-7B27/B1, CFM56-7B27/B3 | 30 October 1998 |
| CFM56-7B22/B1, CFM56-7B24/B1 | 09 May 2000 |
| CFM56-7B27A | 27 April 2001 |
| CFM56-7B26/B2 | 25 April 2003 |

| CFM56-7B "DAC" | |
|--|------------------|
| CFM56-7B20/2, CFM56-7B22/2, CFM56-7B24/2, CFM56-7B26/2, CFM56-7B27/2 | 14 November 1997 |

| CFM56-7B "TI" | |
|--|-----------------|
| CFM56-7B20/3, CFM56-7B22/3, CFM56-7B22/3B1, CFM56-7B24/3, CFM56-7B24/3B1, CFM56-7B26/3, CFM56-7B26/3F, CFM56-7B26/3B1, CFM56-7B26/3B2, CFM56-7B26/3B2F, CFM56-7B27/3, CFM56-7B27/3B1, CFM56-7B27/3B3, CFM56-7B27/3F, CFM56-7B27/3B1F | 14 June 2006 |
| CFM56-7B27A/3 | 17 October 2008 |

| CFM56-7B "E" | |
|---|--------------|
| CFM56-7B20E, CFM56-7B22E, CFM56-7B22E/B1, CFM56-7B24E, CFM56-7B24E/B1, CFM56-7B26E, CFM56-7B26E/F, CFM56-7B26E/B1, CFM56-7B26E/B2, CFM56-7B26E/B2F, CFM56-7B27E, CFM56-7B27E/F, CFM56-7B27E/B1, CFM56-7B27E/B1F, CFM56-7B27E/B3, CFM56-7B27AE | 30 July 2010 |

(See note 11)

II. Certification Basis

1. EASA Certification Basis:

1.1 Airworthiness Standards:

| CFM56-7B "SAC" | |
|---|---|
| CFM56-7B18, CFM56-7B20, CFM56-7B22, CFM56-7B24, CFM56-7B26, CFM56-7B27 CFM56-7B26/B1, CFM56-7B27/B1, CFM56-7B27/B3 CFM56-7B22/B1, CFM56-7B24/B1 CFM56-7B27A | JAR-E Change 8 (04 May 1990) as amended by Orange Paper E/91/1 (27 May 1991) and Orange Paper E/93/1 (10 May 1993) |
| CFM56-7B22/B2, CFM56-7B26/B2 | JAR-E Change 8 (04 May 1990) as amended by Orange Paper E/91/1 (27 May 1991) and Orange Paper E/93/1 (10 May 1993) JAR-E 790 "Ingestion of Rain and Hail" JAR-E 800 "Bird Strike and Ingestion" (Amendment 11 dated 01 November 2001) |
| CFM56-7B "DAC" | |
| CFM56-7B20/2, CFM56-7B22/2, CFM56-7B24/2, CFM56-7B26/2, CFM56-CFM56-7B27/2 | JAR-E Change 8 (04 May 1990) as amended by Orange Paper E/91/1 (27 May 1991) and Orange Paper E/93/1 (10 May 1993) |
| CFM56-7B "TI" | |
| CFM56-7B18/3, CFM56-7B20/3, CFM56-7B22/3, CFM56-7B22/3B1, CFM56-7B22/3B2, CFM56-7B24/3, CFM56-7B24/3B1, CFM56-7B26/3, CFM56-7B26/3F, CFM56-7B26/3B1, CFM56-7B26/3B2, CFM56- 7B26/3B2F, CFM56-7B27/3, CFM56-7B27/3F, CFM56- 7B27/3B1, CFM56-7B27/3B1F, CFM56-7B27/3B3, CFM56-7B27A/3 | JAR-E Change 8 (04 May 1990) as amended by Orange Paper E/91/1 (27 May 1991) and Orange Paper E/93/1 (10 May 1993) JAR-E 515 "Critical Parts Integrity" (Amendment 11 dated 01 November 2001) CS-E 650 "Vibration Surveys" CS-E 745 "Engine Acceleration" CS-E 790 "Ingestion of Rain and Hail" CS-E 800 "Bird Strike and Ingestion" CS-E 840 "Rotor Integrity" CS-E 850 "Compressor/Fan and Turbine Shafts" (CS-E dated 24 October 2003) |
| CFM56-7B "E" | |
| CFM56-7B20E, CFM56-7B22E, CFM56-7B22E/B1, CFM56-7B24E, CFM56-7B24E/B1, CFM56-7B26E, CFM56-7B26E/F, CFM56-7B26E/B1, CFM56-7B26E/B2, CFM56-7B26E/B2F, CFM56-7B27E, CFM56-7B27E/F, CFM56-7B27E/B1, CFM56-7B27E/B1F, CFM56- 7B27E/B3, CFM56-7B27AE | JAR-E Change 8 (04 May 1990) as amended by Orange Paper E/91/1 (27 May 1991) and Orange Paper E/93/1 (10 May 1993) JAR-E 515 "Critical Parts Integrity" (Amendment 11 dated 01 November 2001) CS-E 650 "Vibration Surveys" CS-E 745 "Engine Acceleration" CS-E 790 "Ingestion of Rain and Hail" CS-E 800 "Bird Strike and Ingestion" CS-E 840 "Rotor Integrity" CS-E 850 "Compressor/Fan and Turbine Shafts" CS-E 890 "Thrust Reverser Tests" CS-E 1030 "Time Limited Dispatch" (CS-E dated 24 October 2003) |

1.2 Special Conditions:

| CFM56-7B "SAC" | |
|--|---|
| CFM56-7B18, CFM56-7B20, CFM56-7B22, CFM56-7B24, CFM56-7B26, CFM56-7B27 CFM56-7B26/B1, CFM56-7B27/B1, CFM56-7B27/B3 CFM56-7B22/B1, CFM56-7B24/B1 CFM56-7B27A | C.S. N° 1 – Bird strikes: Large bird strike / Medium and small bird strikes C.S. N° 2 – Inclement weather: AIA "Advisory Circular" proposal PC 338-1 dated June 1990 (DGAC letter dated 14 November 1994) |
| CFM56-7B22/B2, CFM56-7B26/B2 | None |

| | |
|---|--|
| CFM56-7B "DAC" | |
| CFM56-7B20/2, CFM56-7B22/2, CFM56-7B24/2, CFM56-7B26/2, CFM56-CFM56-7B27/2 | C.S. N° 1 – Bird strikes: Large bird strike / Medium and small bird strikes C.S. N° 2 – Inclement weather: AIA "Advisory proposal" PC 338-1 dated June 1990 (DGAC letter dated 14 November 1994) |

| | |
|---|------|
| CFM56-7B "TI" | |
| CFM56-7B18/3, CFM56-7B20/3, CFM56-7B22/3, CFM56-7B22/3B1, CFM56-7B22/3B2, CFM56-7B24/3, CFM56-7B24/3B1, CFM56-7B26/3, CFM56-7B26/3F, CFM56-7B26/3B1, CFM56-7B26/3B2, CFM56- 7B26/3B2F, CFM56-7B27/3, CFM56-7B27/3F, CFM56- 7B27/3B1, CFM56-7B27/3B1F, CFM56-7B27/3B3, CFM56-7B27A/3 | None |

| | |
|---|------|
| CFM56-7B "E" | |
| CFM56-7B20E, CFM56-7B22E, CFM56-7B22E/B1, CFM56-7B24E, CFM56-7B24E/B1, CFM56-7B26E, CFM56-7B26E/F, CFM56-7B26E/B1, CFM56-7B26E/B2, CFM56-7B26E/B2F, CFM56-7B27E, CFM56-7B27E/F, CFM56-7B27E/B1, CFM56-7B27E/B1F, CFM56- 7B27E/B3, CFM56-7B27AE | None |

1.3 Equivalent safety findings:

| | |
|--|--|
| CFM56-7B "SAC" | |
| CFM56-7B18, CFM56-7B20, CFM56-7B22, CFM56- 7B24, CFM56-7B26, CFM56-7B27 CFM56-7B26/B1, CFM56-7B27/B1, CFM56-7B27/B3 CFM56-7B22/B1, CFM56-7B24/B1 CFM56-7B27A | JAR-E Change 8 (04 May 1990) JAR-E 840(a)(2): Compressor and Turbine Rotor Integrity Tests JAR-E Change 8 (04 May 1990) JAR-E 890(b): Thrust Reverser Tests |
| CFM56-7B22/B2, CFM56-7B26/B2 | JAR-E Change 8 (04 May 1990) JAR-E 840(a)(2): Compressor and Turbine Rotor Integrity Tests JAR-E Change 8 (04 May 1990) JAR-E 890(b): Thrust Reverser Tests |

| | |
|---|--|
| CFM56-7B "DAC" | |
| CFM56-7B20/2, CFM56-7B22/2, CFM56-7B24/2, CFM56-7B26/2, CFM56-CFM56-7B27/2 | JAR-E Change 8 (04 May 1990) JAR-E 840(a)(2): Compressor and Turbine Rotor Integrity Tests JAR-E Change 8 (04 May 1990) JAR-E 890(b): Thrust Reverser Tests |

| | |
|---|---|
| CFM56-7B "TI" | |
| CFM56-7B18/3, CFM56-7B20/3, CFM56-7B22/3, CFM56-7B22/3B1, CFM56-7B22/3B2, CFM56-7B24/3, CFM56-7B24/3B1, CFM56-7B26/3, CFM56-7B26/3F, CFM56-7B26/3B1, CFM56-7B26/3B2, CFM56- 7B26/3B2F, CFM56-7B27/3, CFM56-7B27/3F, CFM56- 7B27/3B1, CFM56-7B27/3B1F, CFM56-7B27/3B3, CFM56-7B27A/3 | JAR-E Change 8 (04 May 1990) JAR-E 890(b): Thrust Reverser Tests |

| | |
|---|------|
| CFM56-7B "E" | |
| CFM56-7B20E, CFM56-7B22E, CFM56-7B22E/B1, CFM56-7B24E, CFM56-7B24E/B1, CFM56-7B26E, CFM56-7B26E/F, CFM56-7B26E/B1, CFM56-7B26E/B2, CFM56-7B26E/B2F, CFM56-7B27E, CFM56-7B27E/F, CFM56-7B27E/B1, CFM56-7B27E/B1F, CFM56- 7B27E/B3, CFM56-7B27AE | None |

1.4 Deviations:

| CFM56-7B "SAC" | |
|--|--|
| CFM56-7B18, CFM56-7B20, CFM56-7B22, CFM56-7B24, CFM56-7B26, CFM56-7B27 CFM56-7B26/B1, CFM56-7B27/B1, CFM56-7B27/B3 CFM56-7B22/B1, CFM56-7B24/B1 CFM56-7B27A | JAR-E Change 8 (04 May 1990) JAR-E 890(a): Thrust Reverser Tests |
| CFM56-7B22/B2, CFM56-7B26/B2 | JAR-E Change 8 (04 May 1990) JAR-E 890(a): Thrust Reverser Tests |

| CFM56-7B "DAC" | |
|---|--|
| CFM56-7B20/2, CFM56-7B22/2, CFM56-7B24/2, CFM56-7B26/2, CFM56-CFM56-7B27/2 | JAR-E Change 8 (04 May 1990) JAR-E 890(a): Thrust Reverser Tests |

| CFM56-7B "TI" | |
|--|--|
| CFM56-7B18/3, CFM56-7B20/3, CFM56-7B22/3, CFM56-7B22/3B1, CFM56-7B22/3B2, CFM56-7B24/3, CFM56-7B24/3B1, CFM56-7B26/3, CFM56-7B26/3F, CFM56-7B26/3B1, CFM56-7B26/3B2, CFM56-7B26/3B2F, CFM56-7B27/3, CFM56-7B27/3F, CFM56-7B27/3B1, CFM56-7B27/3B1F, CFM56-7B27/3B3, CFM56-7B27A/3 | JAR-E Change 8 (04 May 1990) JAR-E 890(a): Thrust Reverser Tests |

| CFM56-7B "E" | |
|---|------|
| CFM56-7B20E, CFM56-7B22E, CFM56-7B22E/B1, CFM56-7B24E, CFM56-7B24E/B1, CFM56-7B26E, CFM56-7B26E/F, CFM56-7B26E/B1, CFM56-7B26E/B2, CFM56-7B26E/B2F, CFM56-7B27E, CFM56-7B27E/F, CFM56-7B27E/B1, CFM56-7B27E/B1F, CFM56-7B27E/B3, CFM56-7B27AE | None |

1.5 EASA environmental protection requirements:

| CFM56-7B "SAC" | |
|--|---|
| CFM56-7B18, CFM56-7B20, CFM56-7B22, CFM56-7B22/B1, CFM56-7B22/B2, CFM56-7B24, CFM56-7B24/B1, CFM56-7B26, CFM56-7B26/B1, CFM56-7B26/B2, CFM56-7B27, CFM56-7B27/B1, CFM56-7B27/B3, CFM56-7B27A | ICAO Annex 16 Volume II, second edition, including Amendment 2, effective 11 November 1993, as applicable to turbofan engines |

| CFM56-7B "DAC" | |
|---|---|
| CFM56-7B20/2, CFM56-7B22/2, CFM56-7B24/2, CFM56-7B26/2, CFM56-CFM56-7B27/2 | ICAO Annex 16 Volume II, second edition, including Amendment 2, effective 11 November 1993, as applicable to turbofan engines |

| CFM56-7B "TI" | |
|--|---|
| CFM56-7B18/3, CFM56-7B20/3, CFM56-7B22/3, CFM56-7B22/3B1, CFM56-7B22/3B2, CFM56-7B24/3, CFM56-7B24/3B1, CFM56-7B26/3, CFM56-7B26/3F, CFM56-7B26/3B1, CFM56-7B26/3B2, CFM56-7B26/3B2F, CFM56-7B27/3, CFM56-7B27/3F, CFM56-7B27/3B1, CFM56-7B27/3B1F, CFM56-7B27/3B3 | ICAO Annex 16 Volume II, second edition, including Amendment 4, effective 04 November 1999, as applicable to turbofan engines |
| CFM56-7B27A/3 | ICAO Annex 16 Volume II, second edition, including Amendment 5, effective 24 November 2005, as applicable to turbofan engines |

| CFM56-7B "E" | |
|---|---|
| CFM56-7B20E, CFM56-7B22E, CFM56-7B22E/B1, CFM56-7B24E, CFM56-7B24E/B1, CFM56-7B26E, CFM56-7B26E/F, CFM56-7B26E/B1, CFM56-7B26E/B2, CFM56-7B26E/B2F, CFM56-7B27E, CFM56-7B27E/F, CFM56-7B27E/B1, CFM56-7B27E/B1F, CFM56-7B27E/B3, CFM56-7B27AE | ICAO Annex 16 Volume II, second edition, including Amendment 5, effective 24 November 2005, as applicable to turbofan engines |

III. Technical Characteristics

1. Type Design Definition:

Engine type is identified by an engine part list reference and an engine identification plug reference:

| CFM56-7B "SAC" | Engine part list reference |
|---|--|
| CFM56-7B20, CFM56-7B22, CFM56-7B22/B1, CFM56-7B24, CFM56-7B24/B1, CFM56-7B26, CFM56-7B26/B1, CFM56-7B26/B2, CFM56-7B27, CFM56-7B27/B1, CFM56-7B27/B3 | 9324M60G01 9324M60G02 9324M60G03 9324M60G04 9324M60G05 9324M60G06 9324M60G07 9324M60G08 9324M60G09 |
| CFM56-7B27A | 9325M60G01 9325M60G02 |
| CFM56-7B "DAC" | Engine part list reference |
| CFM56-7B20/2, CFM56-7B22/2, CFM56-7B24/2, CFM56-7B26/2, CFM56-7B27/2 | 1887M40G01 1887M40G04 1887M40G05 1887M40G06 1887M40G07 |
| CFM56-7B "TI" | Engine part list reference |
| CFM56-7B20/3, CFM56-7B22/3, CFM56-7B22/3B1, CFM56-7B24/3, CFM56-7B24/3B1, CFM56-7B26/3, CFM56-7B26/3B1, CFM56-7B26/3B2, CFM56-7B27/3, CFM56-7B27/3B1, CFM56-7B27/3B3 | 9324M60G10 |
| CFM56-7B26/3F, CFM56-7B26/3B2F, CFM56-7B27/3F, CFM56-7B27/3B1F | 9324M60G11 |
| CFM56-7B27A/3 | 9324M10G01 9324M10G02 |
| CFM56-7B "E" | Engine part list reference |
| CFM56-7B20E, CFM56-7B22E, CFM56-7B22E/B1, CFM56-7B24E, CFM56-7B24E/B1, CFM56-7B26E, CFM56-7B26E/F, CFM56-7B26E/B1, CFM56-7B26E/B2, CFM56-7B26E/B2F, CFM56-7B27E, CFM56-7B27E/F, CFM56-7B27E/B1, CFM56-7B27E/B1F, CFM56-7B27E/B3 | 9324M60G12 |
| CFM56-7B27AE | 9324M10G04 |

| CFM56-7B "SAC" | Engine identification plug reference | | | | |
|-------------------|--------------------------------------|--------------------------|--------------------------|-----------------------------|------------------|
| | with BSV with Pmux | with BSV without Pmux | without BSV with Pmux | without BSV without Pmux | hybrid connector |
| CFM56-7B20 | 340-131-712-0 | 340-131-717-0 | 340-198-850-0 | 340-198-950-0 | 340-203-201-0 |
| CFM56-7B22 | 340-131-721-0 | 340-131-726-0 | 340-199-250-0 | 340-199-350-0 | 340-203-301-0 |
| CFM56-7B22/B1 | 340-142-001-0 | 340-142-101-0 | 340-199-450-0 | 340-199-550-0 | 340-203-311-0 |
| CFM56-7B24 | 340-131-732-0 | 340-131-737-0 | 340-200-050-0 | 340-200-150-0 | 340-203-401-0 |
| CFM56-7B24/B1 | 340-142-201-0 | 340-142-301-0 | 340-200-250-0 | 340-200-350-0 | 340-203-411-0 |
| CFM56-7B26 | 340-131-742-0 | 340-131-747-0 | 340-200-850-0 | 340-200-950-0 | 340-203-501-0 |
| CFM56-7B26/B1 | 340-143-201-0 | 340-143-301-0 | 340-201-050-0 | 340-201-150-0 | 340-203-511-0 |
| CFM56-7B26/B2 | N/A | N/A | N/A | N/A | 340-203-521-0 |
| CFM56-7B27 | 340-131-752-0 | 340-131-757-0 | 340-201-450-0 | 340-201-550-0 | 340-203-601-0 |
| CFM56-7B27/B1 | 340-142-801-0 | 340-142-901-0 | 340-201-650-0 | 340-201-750-0 | 340-203-611-0 |
| CFM56-7B27/B3 | 340-143-441-0 | 340-143-451-0 | 340-202-050-0 | 340-202-150-0 | 340-203-631-0 |
| CFM56-7B27A | N/A | N/A | N/A | N/A | 340-203-701-0 |

N/A = Not Applicable
BSV = Burner Staging Valve
Pmux = Performance Monitoring option

| CFM56-7B "DAC" | Engine identification plug reference | | |
|-------------------|--------------------------------------|---------------|------------------|
| | with Pmux | without Pmux | hybrid connector |
| CFM56-7B20/2 | 340-138-710-0 | 340-138-715-0 | 340-203-201-0 |
| CFM56-7B22/2 | 340-138-720-0 | 340-138-725-0 | 340-203-301-0 |
| CFM56-7B24/2 | 340-138-730-0 | 340-138-735-0 | 340-203-401-0 |
| CFM56-7B26/2 | 340-138-740-0 | 340-138-745-0 | 340-203-501-0 |
| CFM56-7B27/2 | 340-138-750-0 | 340-138-755-0 | 340-203-601-0 |

| CFM56-7B "T1" | Engine identification plug reference |
|------------------|--------------------------------------|
| | hybrid connector |
| CFM56-7B20/3 | 340-203-201-0 |
| CFM56-7B22/3 | 340-203-301-0 |
| CFM56-7B22/3B1 | 340-203-311-0 |
| CFM56-7B24/3 | 340-203-401-0 |
| CFM56-7B24/3B1 | 340-203-411-0 |
| CFM56-7B26/3 | 340-203-501-0 |
| CFM56-7B26/3F | 340-205-101-0 |
| CFM56-7B26/3B1 | 340-203-511-0 |
| CFM56-7B26/3B2 | 340-203-521-0 |
| CFM56-7B26/3B2F | 340-205-021-0 |
| CFM56-7B27/3 | 340-203-601-0 |
| CFM56-7B27/3B1 | 340-203-611-0 |
| CFM56-7B27/3B3 | 340-203-631-0 |
| CFM56-7B27/3F | 340-205-101-0 |
| CFM56-7B27/3B1F | 340-205-111-0 |
| CFM56-7B27A/3 | 340-203-701-0 |

| CFM56-7B "E" | Engine identification plug reference |
|-----------------|--------------------------------------|
| | hybrid connector |
| CFM56-7B20E | 340-203-201-0 |
| CFM56-7B22E | 340-203-301-0 |
| CFM56-7B22E/B1 | 340-203-311-0 |
| CFM56-7B24E | 340-203-401-0 |
| CFM56-7B24E/B1 | 340-203-411-0 |
| CFM56-7B26E | 340-203-501-0 |
| CFM56-7B26E/F | 340-205-101-0 |
| CFM56-7B26E/B1 | 340-203-511-0 |
| CFM56-7B26E/B2 | 340-203-521-0 |
| CFM56-7B26E/B2F | 340-205-021-0 |
| CFM56-7B27E | 340-203-601-0 |
| CFM56-7B27E/F | 340-205-101-0 |
| CFM56-7B27E/B1 | 340-203-611-0 |
| CFM56-7B27E/B1F | 340-205-111-0 |
| CFM56-7B27E/B3 | 340-203-631-0 |
| CFM56-7B27AE | 340-203-701-0 |

2. Description:

Dual rotor, axial flow, high bypass ratio turbofan engine:

- single stage fan, 3-stage low pressure compressor (LPC), 9-stage high pressure compressor (HPC)
- annular combustion chamber
- single stage high pressure turbine (HPT), 4-stage low pressure turbine (LPT)
- dual channel full authority digital engine control (FADEC)

The "SAC" engines have a Single Annular Combustor.

The "DAC" engines have a Dual Annular Combustor.

The "TI" Tech Insertion engines have a modified HPC, a modified Single Annular Combustor, and a modified HPT.

The "E" Enhanced engines have a modified HPT and LPT.

The Exhaust Gas Temperature (EGT) limitation of the "/F" models is increased by 20°C.

3. Equipment:

The engine starter is part of the engine type design. Refer to the engine part list for details.

4. Dimensions:

| Overall Length | Width | Height |
|----------------|---------|---------|
| 2508 mm | 2118 mm | 1829 mm |

5. Weight:

| CFM56-7B "SAC" | |
|---|---------|
| CFM56-7B18, CFM56-7B20, CFM56-7B22, CFM56-7B22/B1, CFM56-7B22/B2, CFM56-7B24, CFM56-7B24/B1, CFM56-7B26, CFM56-7B26/B1, CFM56-7B26/B2, CFM56-7B27, CFM56-7B27/B1, CFM56-7B27/B3 | 2386 kg |
| CFM56-7B27A | 2396 kg |
| CFM56-7B "DAC" | |
| CFM56-7B20/2, CFM56-7B22/2, CFM56-7B24/2, CFM56-7B26/2, CFM56-7B27/2 | 2431 kg |

| CFM56-7B "TI" | |
|--|---------|
| CFM56-7B18/3, CFM56-7B20/3, CFM56-7B22/3, CFM56-7B22/3B1, CFM56-7B22/3B2, CFM56-7B24/3, CFM56-7B24/3B1, CFM56-7B26/3, CFM56-7B26/3F, CFM56-7B26/3B1, CFM56-7B26/3B2, CFM56-7B26/3B2F, CFM56-7B27/3, CFM56-7B27/3F, CFM56-7B27/3B1, CFM56-7B27/3B1F, CFM56-7B27/3B3 | 2386 kg |
| CFM56-7B27A/3 | 2396 kg |
| CFM56-7B "E" | |
| CFM56-7B20E, CFM56-7B22E, CFM56-7B22E/B1, CFM56-7B24E, CFM56-7B24E/B1, CFM56-7B26E, CFM56-7B26E/F, CFM56-7B26E/B1, CFM56-7B26E/B2, CFM56-7B26E/B2F, CFM56-7B27E, CFM56-7B27E/F, CFM56-7B27E/B1, CFM56-7B27E/B1F, CFM56-7B27E/B3 | 2395 kg |
| CFM56-7B27AE | 2405 kg |

6. Ratings:

| CFM56-7B "SAC" - Take-Off Thrust | | | | |
|----------------------------------|-----------------------------|-----------------------------|--|---|
| CFM56-7B20 | CFM56-7B22 CFM56-7B22/B1 | CFM56-7B24 CFM56-7B24/B1 | CFM56-7B26 CFM56-7B26/B1 CFM56-7B26/B2 | CFM56-7B27 CFM56-7B27/B1 CFM56-7B27/B3 CFM56-7B27A |
| 9163 daN | 10097 daN | 10765 daN | 11699 daN | 12143 daN |

| CFM56-7B "SAC" - Maximum Continuous Thrust | | | | |
|--|-----------------------------|--|-----------------------------|---|
| CFM56-7B20 | CFM56-7B22 CFM56-7B22/B1 | CFM56-7B24 CFM56-7B24/B1 CFM56-7B26/B2 | CFM56-7B26 CFM56-7B26/B1 | CFM56-7B27 CFM56-7B27/B1 CFM56-7B27/B3 CFM56-7B27A |
| 8630 daN | 9920 daN | 10142 daN | 11521 daN | 11521 daN |

| CFM56-7B "DAC" - Take-Off Thrust | | | | |
|----------------------------------|--------------|--------------|--------------|--------------|
| CFM56-7B20/2 | CFM56-7B22/2 | CFM56-7B24/2 | CFM56-7B26/2 | CFM56-7B27/2 |
| 9163 daN | 10097 daN | 10765 daN | 11699 daN | 12143 daN |

| CFM56-7B "DAC" - Maximum Continuous Thrust | | | | |
|--|--------------|--------------|--------------|--------------|
| CFM56-7B20/2 | CFM56-7B22/2 | CFM56-7B24/2 | CFM56-7B26/2 | CFM56-7B27/2 |
| 8630 daN | 9920 daN | 10142 daN | 11521 daN | 11521 daN |

| CFM56-7B "TI" - Take-Off Thrust | | | | |
|---------------------------------|--------------------------------|--------------------------------|--|---|
| CFM56-7B20/3 | CFM56-7B22/3 CFM56-7B22/3B1 | CFM56-7B24/3 CFM56-7B24/3B1 | CFM56-7B26/3 CFM56-7B26/3F CFM56-7B26/3B1 CFM56-7B26/3B2 CFM56-7B26/3B2F | CFM56-7B27/3 CFM56-7B27/3F CFM56-7B27/3B1 CFM56-7B27/3B1F CFM56-7B27/3B3 CFM56-7B27A/3 |
| 9163 daN | 10097 daN | 10765 daN | 11699 daN | 12143 daN |

| CFM56-7B "TI" - Maximum Continuous Thrust | | | | |
|---|--------------------------------|---|---|---|
| CFM56-7B20/3 | CFM56-7B22/3 CFM56-7B22/3B1 | CFM56-7B24/3 CFM56-7B24/3B1 CFM56-7B26/3B2 CFM56-7B26/3B2F | CFM56-7B26/3 CFM56-7B26/3F CFM56-7B26/3B1 | CFM56-7B27/3 CFM56-7B27/3F CFM56-7B27/3B1 CFM56-7B27/3B1F CFM56-7B27/3B3 CFM56-7B27A/3 |
| 8630 daN | 9920 daN | 10142 daN | 11521 daN | 11521 daN |

| CFM56-7B "E" - Take-Off Thrust | | | | |
|--------------------------------|-------------------------------|-------------------------------|---|---|
| CFM56-7B20E | CFM56-7B22E CFM56-7B22E/B1 | CFM56-7B24E CFM56-7B24E/B1 | CFM56-7B26E CFM56-7B26E/F CFM56-7B26E/B1 CFM56-7B26E/B2 CFM56-7B26E/B2F | CFM56-7B27E CFM56-7B27E/F CFM56-7B27E/B1 CFM56-7B27E/B1F CFM56-7B27E/B3 CFM56-7B27AE |
| 9163 daN | 10097 daN | 10765 daN | 11699 daN | 12143 daN |

| CFM56-7B "E" - Maximum Continuous Thrust | | | | |
|--|-------------------------------|--|--|---|
| CFM56-7B20E | CFM56-7B22E CFM56-7B22E/B1 | CFM56-7B24E CFM56-7B24E/B1 CFM56-7B26E/B2 CFM56-7B26E/B2F | CFM56-7B26E CFM56-7B26E/F CFM56-7B26E/B1 | CFM56-7B27E CFM56-7B27E/F CFM56-7B27E/B1 CFM56-7B27E/B1F CFM56-7B27E/B3 CFM56-7B27AE |
| 8630 daN | 9920 daN | 10142 daN | 11521 daN | 11521 daN |

(See notes 1, 2, and 11)

7. Control System:

The software is part of the engine Type Design – At initial certification:

- Version 7.B.C P/N 1853M78P01 (FADEC 2) – for "SAC" engines
- Version 7.B.F P/N 1853M78P04 (FADEC 2) – for "DAC" engines
- Version 7.B.R2 P/N 1853M78P26 (FADEC 2) or 2044M25P06 (FADEC 3) – for "TI" engines
- Version 7.B.T P/N 2044M25P10 (FADEC 3) – for -7B27A/3 engines
- Version 7.B.V1 P/N 1853M78P32 (FADEC 2) or 2044M25P13 (FADEC 3) – for "E" engines

8. Fluids

8.1 Fuel and Additives:

Refer to the applicable engine "Installation Manual" document.

8.2 Oil:

Refer to the latest revision of CFM Service Bulletin CFM56-7B S/B 79-001

9. Aircraft Accessory Drives:

| All CFM56-7B "SAC", with the exclusion of the CFM56-7B27A All CFM56-7B "DAC" All CFM56-7B "TI", with the exclusion of the CFM56-7B27A/3 All CFM56-7B "E", with the exclusion of the CFM56-7B27AE | | | | | |
|---|----------|-----------------------|----------------------|---------------------|------------------------|
| Drive | Rotation | Gear ratio / HP rotor | Max. Power or Torque | Shear Torque (daNm) | Overhung Moment (daNm) |
| Aircraft Electrical Generation | CW | 0.565 | 135 kW | 101.7 | 10.7 |
| Aircraft Hydraulic Generation | CW | 0.256 | 17.5 daNm | 49.7 | 1.9 |

| CFM56-7B27A, CFM56-7B27A/3, CFM56-7B27AE | | | | | |
|--|----------|-----------------------|----------------------|---------------------|------------------------|
| Drive | Rotation | Gear ratio / HP rotor | Max. Power or Torque | Shear Torque (daNm) | Overhung Moment (daNm) |
| Aircraft Electrical Generation | CW | 0.565 | 239.4 kW | 197.7 | 17.4 |
| Aircraft Hydraulic Generation | CW | 0.256 | 17.5 daNm | 49.7 | 1.9 |

CW = Clock-Wise
(See note 8)

10. Maximum Permissible Air Bleed Extraction:

| Bleed location | LP rotor speed | Airflow limit |
|---|--|--|
| Bypass duct | All speeds above 20 % N1K | 2 % of secondary airflow |
| HPC 5 th stage only | All speeds above 20 % N1K | 10 % of primary airflow |
| HPC 9 th stage only | From 20% to 61 % of N1K From 61 % to 82.5 % of N1K Above 82.5 % of N1K | 12 % of primary airflow Linear variation between 12% and 7% of primary airflow 7% of primary airflow |
| HPC 5 th and 9 th stages combined | From 20% to 61 % of N1K From 61 % to 82.5 % of N1K Above 82.5 % of N1K | 13 % of primary airflow Linear variation between 13% and 10% of primary airflow 10% of primary airflow |

(See note 8)

IV. Operational Limits:

1. Temperature Limits:

1.1 Exhaust Gas Temperature (°C):

The exhaust gas temperature is measured at station T49.5 (stage 2 LPT nozzle).

| | Maximum Exhaust Gas Temperature (Displayed) |
|--------------------|---|
| Take-Off | 950 |
| Maximum Continuous | 925 |
| Starting | 725 |

The displayed temperature is obtained from the measured temperature, which is modified by the engine electronic control unit according to "shunt" functions and a "trim" function:

- A "shunt" function adds +30°C for "SAC", "TI" non "/F" and "E" non "/F" engines, +20°C for "DAC" engines and +10°C for "TI" "/F" and "E" "/F" engines to the measured temperature. This function is active above 8500 rpm N2 for all models and is applied linearly between 8300 and 8500 rpm for both "TI" and "E" engines.
- For "E" engines only, a "profile shunt" is applied linearly between 8300 and 8500 rpm N2 from 0 to -10°C. Between 8500 and 9500 rpm N2, the "profile shunt" remains at -10°C. The "profile shunt" is applied linearly from -10 to -20°C between 9500 and 10400 rpm N2. At all speeds above 10400 rpm N2, the "profile shunt" remains at -20°C.
- The "trim" function adds a variable value according to the engine model. This function is active for a Mach number between 0 and 0.4 and above 11200 rpm N2.

| CFM56-7B "SAC" | CFM56-7B "TI" | CFM56-7B "E" | CFM56-7B "DAC" | "trim" function value |
|---|--|--|-------------------------------|-----------------------|
| CFM56-7B20 | CFM56-7B20/3 | CFM56-7B20E | CFM56-7B20/2 | 36 |
| CFM56-7B22 | CFM56-7B22/3 | CFM56-7B22E | CFM56-7B22/2 | 34 |
| CFM56-77B22/B1 | CFM56-77B22/3B1, | CFM56-7B22E/B1 | - | 13 |
| CFM56-7B24 | CFM56-7B24/3 | CFM56-7B24E, CFM56-7B27AE | CFM56-7B24/2 | 12 |
| CFM56-7B24/B1, - 7B26, -7B26/B1, - 7B26/B2, -7B27, - 7B27/B1, -7B27/B3, - 7B27A | CFM56-7B24/3B1, - 7B26/3, -7B26/3B1, - 7B26/3B2, -7B27/3, - 7B27/3B1, - 7B27/3B3, -7B27A/3 | CFM56-7B24E/B1, - 7B26E, -7B26E/B1, - 7B26E/B2, -7B27E, - 7B27E/B1, - 7B27E/B3 | CFM56-7B26/2, CFM56-7B27/2 | 0 |
| - | CFM56-7B26/3F, - 7B26/3B2F, - 7B27/3F, -7B27/3B1F | CFM56-7B26EF, - 7B26E/B2F, - 7B27E/F, - 7B27E/B1F | - | 0 |

(See note 4)

1.2 Oil Temperature (°C):

At the pressure pump outlet:

| | |
|---------------------------------|---|
| Minimum for starting | - 54 (type I oils, with the exception of engines equipped with starters P/N 1851M36P03 and P/N 1851M36P04) - 40 (type II oils) |
| Maximum Continuous | + 150 at idle, + 140 above idle |
| Maximum Transitory (45 minutes) | + 160 at idle, + 155 above idle |

1.3 Fuel Inlet Temperature (°C):

At engine fuel pump inlet:

| | |
|---|--|
| Minimum | - 43 |
| Maximum except CFM56-7B27A, -7B27A/3, and -7B27AE | + 49 (JET B or equivalent) + 54 (JET A or equivalent) |
| Maximum CFM56-7B27A | + 54 (JET A or equivalent only) |
| Maximum CFM56-7B27A/3 and -7B27AE | + 57.2 (JET A or equivalent only) |

1.4 Engine Equipment Temperatures:

Refer to the applicable engine "Installation Manual" document.

2. Rotational Speed Limits:

Maximum rotational speeds:

| | | |
|--------------------------|-------|---------|
| Low pressure rotor (N1) | 5382 | (104 %) |
| High pressure rotor (N2) | 15183 | (105 %) |

Minimum rotational speed in icing condition:

| | | | |
|--------------------------|-------|----------|---|
| High pressure rotor (N2) | 10022 | (69,3 %) | Ambient temperature below -4°C |
| | 8500 | (58,8 %) | Ambient temperature above +15°C |
| | | | Linear variation between -4°C and +15°C |

3. Pressure Limits:

3.1 Fuel Pressure Limits:

When the engine is running, the fuel pressure at engine pump inlet must be kept 34.4 kPa above the true vapour pressure of the fuel with a vapour/liquid ratio lower than 0.45 under normal operating conditions.

3.2 Oil Pressure Limits:

Minimum: 90 kPa (differential pressure)

When the engine is running, the oil pressure varies with the rotating speed of the HP rotor (Refer to the applicable engine "Installation Manual" document).

Engine running with an oil pressure lower than 90 kPa is limited to 10 seconds maximum.

4. Installation Assumptions:

The installation assumptions including limitations on customer bleed and power extraction are quoted in the applicable engine "Installation Manual" document.

5. Time Limited Dispatch:

The engine has been approved for Time Limited Dispatch. The maximum rectification period for each dispatchable state is specified in the chapter 5, "Airworthiness Limitations" section of the applicable "Engine Shop Manual".

V. Operating and Service Instructions

| | CFM56-7B (all models) |
|-------------------------------------|----------------------------|
| Turbofan Engine Installation Manual | CFM 7B01 |
| Specific Operating Instructions | CFM TP.01.14 |
| Engine Shop Manual | CFM TP.SM.10 |
| Maintenance Manual | Boeing Manual D633A101-CFM |
| Fault Isolation Manual | Boeing Manual D633A103-CFM |

VI. Notes

1. The take-off thrust, with the associated limits, shall not be used continuously more than 5 minutes. The duration may be extended to 10 minutes in case of engine failure in multi-engine aircraft. If the duration exceeds 5 minutes, this shall be recorded in the engine log book.

2. Engine ratings are based on calibrated test stand performance, and performance calculations are based on accepted parameter correction methods documented in the "Production Test Requirements" document. These calculations assume the following conditions:

- Sea level corner point conditions as defined in the "Production Test Requirements";
- No aircraft accessory loads or air extraction;
- No anti-icing; no inlet distortion; no inlet screen losses; and 100% ram recovery;
- Production engine inlet and production exhaust system.

3. The life limits of certain engine parts and other engine Airworthiness Limitations are specified in the chapter 5, "Airworthiness Limitations" section of the applicable "Engine Shop Manual".

4. All models are certified for a transitory exhaust gas temperature (EGT) exceedance at take-off of 10°C (960°C displayed EGT), during 20 seconds maximum. Refer to the applicable "Specific Operating Instructions" document.

5. The type certificate holder, CFM International S.A., is a company jointly owned by SNECMA (France) and GE Aviation (USA). CFM International S.A. is responsible for the certification program, the sale and the customer support activities of the CFM56 engines. With respect to the benefits of type certification for production of series engines, SNECMA and GE Aviation function as licensees of CFM International S.A.

6. The engine assembly line is identified by a 3 digit prefix in the engine serial number: even number for GE Aviation and odd number for SNECMA. Refer to the latest revision of CFM56-7B Service Bulletin 72-0747 "CFM56-7B Engine Serialization - Manufacturing Sequence" for a list of the applicable serial numbers.

7. This engine is approved for use with Boeing thrust reverser system P/N 315A2295.

8. For the CFM56-7B27A, CFM56-7B27A/3, and CFM56-7B27AE models only, mutual limitations exist between the available engine bleed air and the mechanical load generated by the aircraft electrical generation. Refer to the applicable engine "Installation Manual" document.

9. The CFM56-7B27A, CFM56-7B27A/3, and CFM56-7B27AE models are designed for military applications only. The engine serial numbers of these models include the prefix 654, 655, 362, or 363 depending on the engine final assembly location. EASA certified engines used in military service are not necessarily operated or maintained in accordance with the EASA regulations. Commercial service use of the CFM56-7B27A, CFM56-7B27A/3, and CFM56-7B27AE models, and the installation of used CFM56-7B27A, CFM56-7B27A/3, and CFM56-7B27AE parts in another CFM56-7B model, are subject to prior approval of the Agency.

10. EASA Type Certificate and Type Certificate Data Sheet N°E.004 replace DGAC-France Type Certificates and Type Certificate Data Sheets N°M21 and N°M-IM45.

11. Following CFM International's request, the following engine models are withdrawn from the EASA E.004 Type Certificate. None of these engine models were ever produced:

| CFM56-7B "SAC" | Certification date | Withdrawal date |
|------------------------------|--------------------|-----------------|
| CFM56-7B18 | 17 December 1996 | 17 October 2008 |
| CFM56-7B22/B2 | 25 April 2003 | 17 October 2008 |
| CFM56-7B "TI" | Certification date | Withdrawal date |
| CFM56-7B18/3, CFM56-7B22/3B2 | 14 June 2006 | 17 October 2008 |
