

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
TYPE CERTIFICATE DATA SHEET E00055EN

DATE: July 27, 2011

CFM INTERNATIONAL, S.A.

MODELS:

- | | | |
|-----------------|----------------|-----------------|
| CFM56-7B20 | CFM56-7B20/2 | CFM56-7B20/3 |
| CFM56-7B20E | CFM56-7B22 | CFM56-7B22/2 |
| CFM56-7B22/B1 | CFM56-7B22/3 | CFM56-7B22/3B1 |
| CFM56-7B22E | CFM56-7B22E/B1 | CFM56-7B24 |
| CFM56-7B24/2 | CFM56-7B24/B1 | CFM56-7B24/3 |
| CFM56-7B24/3B1 | CFM56-7B24E | CFM56-7B24E/B1 |
| CFM56-7B26/3 | CFM56-7B26 | CFM56-7B26/2 |
| CFM56-7B26/B1 | CFM56-7B26/3B1 | CFM56-7B26/3B2F |
| CFM56-7B26/3F | CFM56-7B26/B2 | CFM56-7B26E |
| CFM56-7B26E/B1 | CFM56-7B26E/B2 | CFM56-7B26E/B2F |
| CFM56-7B26E/F | CFM56-7B27 | CFM56-7B27A |
| CFM56-7B27AE | CFM56-7B27/3 | CFM56-7B27/3F |
| CFM56-7B26/3B2 | CFM56-7B27/B1 | CFM56-7B27/B3 |
| CFM56-7B27/2 | CFM56-7B27/3B1 | CFM56-7B27/3B3 |
| CFM56-7B27A/3 | CFM56-7B27E/B1 | CFM56-7B27/3B1F |
| CFM56-7B27E/B3 | CFM56-7B27E | CFM56-7B27E/F |
| CFM56-7B27E/B1F | | |

Engines of models described herein conforming with this data sheet (which is part of Type Certificate Number E00055EN) 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: CFM International, S.A.
2 Boulevard du General Martial Valin
75015 Paris, France

I. MODELS	CFM56-7B20	CFM56-7B22	CFM56-7B24	
TYPE	High bypass turbofan; coaxial front fan/booster driven by multi-stage low pressure turbine, multi-stage compressor with one-stage high pressure turbine CFM56-7B series: single annular combustor CFM56-7B/2 series: double annular combustor CFM56-7B/3 series: improved emissions single annular combustor CFM56-7B/3F series: improved emissions single annular combustor and increased EGT CFM56-7BE and 7BE/F series: improved HPC diffuser, HPT and LPT performance			
RATINGS (See NOTE 4)				
Takeoff (5 min. see NOTE 13), sea level, static thrust, lb.	20,600/ 9,163 daN	22,700/ 10,097 daN	24,200/ 10,765 daN	
Maximum continuous, sea level static thrust, lb.	19,400/ 8,630 daN	22,300/ 9,920 daN	22,800/ 10,142 daN	
Flat rating	AMBIENT TEMPERATURE			
Takeoff	86°F / 30°C	--	--	
Maximum continuous	77°F / 25°C	--	--	

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PAGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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LEGEND: "-" INDICATES "SAME AS PRECEDING MODEL"

"-" NOT APPLICABLE

NOTE: SIGNIFICANT CHANGES ARE BLACK-LINED IN THE LEFT MARGIN.

I. MODELS (CONT.)	CFM56-7B20	CFM56-7B22	CFM56-7B24	
FUEL SYSTEM	See NOTE 7 for approved fuels.			
Fuel pump / SNECMA part number (P/N) (Combined boost and single element gear-type pump)	340-402-104 340-402-105	-- --	-- --	
Hydromechanical unit / GE P/N	1853M56	--	--	
Electronic control unit / GE P/N - Hardware	1851M50 1853M33 2042M67 2044M16	-- -- -- --	-- -- -- --	
- Software	1853M78 2044M25	-- --	-- --	
Identification plugs / SNECMA P/N	340-131-712 340-131-717 340-203-201 340-198-850 340-198-950	340-131-721 340-131-726 340-203-301 340-199-250 340-199-350	340-131-732 340-131-737 340-203-401 340-200-050 340-200-150	
OIL	Synthetic type conforming to GE Specification D50TF1, Type I and Type II. CFM Service Bulletin CFM56-7B 79-001 list approved brand oils.			
IGNITION SYSTEM	GE P/N			
Two ignition units Unison Simmonds	9238M66 1538M69	-- --	-- --	
Two igniter plugs Unison Champion	1374M12 1374M13	-- --	-- --	
PRINCIPAL DIMENSIONS	INCHES / MILLIMETERS			
Length (fan case forward flange to LPT frame aft flange)	98.7/2507.5	--	--	
Width (maximum envelope)	83.4/2118.0	--	--	
Height (fan case forward flange outer diameter)	72.0/1829.0	--	--	
WEIGHT (dry)	Includes basic engine accessories and optional equipment as listed in manufacturer's engine specification, including engine mounted portions of the condition monitoring instrumentation.			
Pounds	5260.0	--	--	
Kilograms	2385.9	--	--	
CENTER OF GRAVITY LOCATIONS	STATION, ENGINE ONLY (REFER TO INSTALLATION DRAWING)			
Inches	207.4± 1.0	--	--	
Millimeters	5269± 25	--	--	

II. MODELS	CFM56-7B26	CFM56-7B27	CFM56-7B27A	CFM56-7B20/2	CFM56-7B22/2
TYPE	High bypass turbofan; coaxial front fan/booster driven by multi-stage low pressure turbine, multi-stage compressor with one-stage high pressure turbine CFM56-7B series: single annular combustor CFM56-7B/2 series: double annular combustor CFM56-7B/3 series: improved emissions single annular combustor CFM56-7B/3F series: improved emissions single annular combustor and increased EGT CFM56-7BE and 7BE/F series: improved HPC diffuser, HPT and LPT performance				
RATINGS (See NOTE 4)					
Takeoff (5 min. see NOTE 13), sea level, static thrust, lb.	26,300/ 11,699 daN	27,300/ 12,143 daN	-- --	20,600/ 9,163 daN	22,700/ 10,097 daN
Maximum continuous, sea level static thrust, lb.	25,900/ 11,521 daN	25,900/ 11,521 daN	-- --	19,400/ 8,630 daN	22,300/ 9,920 daN
Flat rating	AMBIENT TEMPERATURE				
Takeoff	86°F / 30°C	--	--	--	--
Maximum continuous	77°F / 25°C	--	--	--	--
FUEL SYSTEM	See NOTE 7 for approved fuels.				
Fuel pump / SNECMA P/N (Combined boost and single element gear-type pump)	340-402-104 340-402-105	-- --	-- --	-- --	-- --
Hydromechanical unit / GE P/N	1853M56	--	--	--	--
Electronic control unit / GE P/N					
- Hardware	1851M50 1853M33 2042M67 2044M16	-- -- -- --	--- -- -- --	1851M50 -- -- --	-- -- -- --
- Software	1853M78 2044M25	-- --	-- --	-- --	-- --
Identification plugs / SNECMA P/N	340-131-742 340-131-747 340-203-501 340-200-850 340-200-950	340-131-752 340-131-757 340-203-601 340-201-450 340-201-550	340-203-701 --- --- --- ---	340-138-710 340-138-715 340-203-201 --- ---	340-138-720 340-138-725 340-203-301 --- ---
OIL	Synthetic type conforming to GE Specification D50TF1, Type I and Type II. CFM Service Bulletin CFM56-7B 79-001 list approved brand oils.				
IGNITION SYSTEM	GE P/N				
Two ignition units					
Unison	9238M66	--	--	--	--
Simmonds	1538M69	--	--	--	--
Two igniter plugs					
Unison	1374M12	--	--	--	--
Champion	1374M13	--	--	--	--
PRINCIPAL DIMENSIONS	INCHES / MILLIMETERS				
Length (fan case forward flange to LPT frame aft flange)	98.7/2507.5	--	--	--	--
Width (maximum envelope)	83.4/2118.0	--	--	--	--
Height (fan case forward flange outer diameter)	72.0/1829.0	--	--	--	--

II. MODELS (CONT.)	CFM56-7B26	CFM56-7B27	CFM56-7B27A	CFM56-7B20/2	CFM56-7B22/2
WEIGHT (dry)	Includes basic engine accessories and optional equipment as listed in manufacturer's engine specification, including engine mounted portions of the condition monitoring instrumentation.				
Pounds	5260	--	5282	5360	--
Kilograms	2385.9	--	2395.9	2431.3	--
CENTER OF GRAVITY LOCATIONS	STATION, ENGINE ONLY (REFER TO INSTALLATION DRAWING)				
Inches	207.4 ± 1.0	--	--	--	--
Millimeters	5269 ± 25	--	--	--	--

III. MODELS	CFM56-7B24/2	CFM56-7B26/2	CFM56-7B27/2	CFM56-7B26/B1
TYPE	High bypass turbofan; coaxial front fan/booster driven by multi-stage low pressure turbine, multi-stage compressor with one-stage high pressure turbine CFM56-7B series: single annular combustor CFM56-7B/2 series: double annular combustor CFM56-7B/3 series: improved emissions single annular combustor CFM56-7B/3F series: improved emissions single annular combustor and increased EGT CFM56-7BE and 7BE/F series: improved HPC diffuser, HPT and LPT performance			
RATINGS (See NOTE 4)				
Takeoff (5 min. see NOTE 13), sea level, static thrust, lb.	24,200/ 10,765 daN	26,300/ 11,699 daN	27,300/ 12,143 daN	26,300/ 11,699 daN
Maximum continuous, sea level static thrust, lb.	22,800/ 10,142 daN	25,900/ 11,521 daN	25,900/ 11,521 daN	25,900/ 11,521 daN
Flat rating	AMBIENT TEMPERATURE			
Takeoff	86°F / 30°C	--	--	--
Maximum continuous	77°F / 25°C	--	--	--
FUEL SYSTEM	See NOTE 7 for approved fuels			
Fuel pump / SNECMA P/N (Combined boost and single element gear-type pump)	340-402-104 340-402-105	-- --	-- --	-- --
Hydromechanical unit / GE P/N	1853M56	--	--	--
Electronic control unit / GE P/N - Hardware	1851M50 1853M33 2042M67 2044M16	-- -- -- --	-- -- -- --	-- -- -- --
- Software	1853M78 2044M25	-- --	-- --	-- --
Identification plugs / SNECMA P/N	340-138-730 340-138-735 340-203-401	340-138-740 340-138-745 340-203-501	340-138-750 340-138-755 340-203-601	340-203-511 340-143-201 340-143-301 340-201-050 340-201-150

III. MODELS (CONT.)	CFM56-7B24/2	CFM56-7B26/2	CFM56-7B27/2	CFM56-7B26/B1
OIL	Synthetic type conforming to GE Specification D50TF1, Type I and Type II. CFM Service Bulletin CFM56-7B 79-001 list approved brand oils.			
IGNITION SYSTEM	GE P/N			
Two ignition units				
Unison	9238M66	--	--	--
Simmonds	1538M69	--	--	--
Two igniter plugs				
Unison	1374M12	--	--	--
Champion	1374M13	--	--	--
PRINCIPAL DIMENSIONS	INCHES / MILLIMETERS			
Length (fan case forward flange to LPT frame aft flange)	98.7/2507.5	--	--	--
Width (maximum envelope)	83.4/2118.0	--	--	--
Height (fan case forward flange outer diameter)	72.0/1829.0	--	--	--
WEIGHT (dry)	Includes basic engine accessories and optional equipment as listed in manufacturer's engine specification, including engine mounted portions of the condition monitoring instrumentation.			
Pounds	5360	--	--	5260
Kilograms	2431.3	--	--	2385.9
CENTER OF GRAVITY LOCATIONS	STATION, ENGINE ONLY (REFER TO INSTALLATION DRAWING)			
Inches	207.4 ± 1.0	--	--	--
Millimeters	5269 ± 25	--	--	--

IV. MODELS	CFM56-7B27/B1	CFM56-7B27/B3	CFM56-7B22/B1	CFM56-7B24/B1
TYPE	High bypass turbofan; coaxial front fan/booster driven by multi-stage low pressure turbine, multi-stage compressor with one-stage high pressure turbine CFM56-7B series: single annular combustor CFM56-7B/2 series: double annular combustor CFM56-7B/3 series: improved emissions single annular combustor CFM56-7B/3F series: improved emissions single annular combustor and increased EGT CFM56-7BE and 7BE/F series: improved HPC diffuser, HPT and LPT performance			
RATINGS (See NOTE 4)				
Takeoff (5 min. see NOTE 13), sea level, static thrust, lb.	27,300/ 12,143 daN	--	22,700/ 10,097 daN	24,200/ 10,765 daN
Maximum continuous, sea level static thrust, lb.	25,900/ 11,521 daN	--	22,300/ 9,920 daN	22,800/ 10,142 daN
Flat rating	AMBIENT TEMPERATURE			
Takeoff	86°F / 30°C	--	96.8°F / 36°C	105.8°F / 41°C
Maximum continuous	77°F / 25°C	--	--	--
FUEL SYSTEM	See NOTE 7 for approved fuels.			
Fuel pump / SNECMA P/N (Combined boost and single element gear-type pump)	340-402-104 340-402-105	-- --	-- --	-- --
Hydromechanical unit / GE P/N	1853M56	--	--	--

IV. MODELS (CONT.)	CFM56-7B27/B1	CFM56-7B27/B3	CFM56-7B22/B1	CFM56-7B24/B1
Electronic control unit / GE P/N - Hardware	1851M50 1853M33 2042M67 2044M16	-- -- -- --	-- -- -- --	-- -- -- --
- Software	1853M78 2044M25	-- --	-- --	-- --
Identification plugs / SNECMA P/N	340-142-801 340-142-901 340-203-611 340-201-650 340-201-750	340-143-441 340-143-451 340-203-631 340-202-050 340-202-150	340-142-001 340-142-101 340-203-311 340-199-450 340-199-550	340-142-201 340-142-301 340-203-411 340-200-250 340-200-350
OIL	Synthetic type conforming to GE Specification D50TF1, Type I and Type II. CFM Service Bulletin CFM56-7B 79-001 list approved brand oils.			
IGNITION SYSTEM	GE P/N			
Two ignition units				
Unison	9238M66	--	--	--
Simmonds	1538M69	--	--	--
Two igniter plugs				
Unison	1374M12	--	--	--
Champion	1374M13	--	--	--
PRINCIPAL DIMENSIONS	INCHES / MILLIMETERS			
Length (fan case forward flange to LPT frame aft flange)	98.7/2507.5	--	--	--
Width (maximum envelope)	83.4/2118.0	--	--	--
Height (fan case forward flange outer diameter)	72.0/1829.0	--	--	--
WEIGHT (dry)	Includes basic engine accessories and optional equipment as listed in manufacturer's engine specification, including engine mounted portions of the condition monitoring instrumentation.			
Pounds	5260	--	--	--
Kilograms	2385.9	--	--	--
CENTER OF GRAVITY LOCATIONS	STATION, ENGINE ONLY (REFER TO INSTALLATION DRAWING)			
Inches	207.4 ± 1.0	--	--	--
Millimeters	5269 ± 25	--	--	--

V. MODELS	CFM56-7B26/B2	CFM56-7B26/3B2		
TYPE	High bypass turbofan; coaxial front fan/booster driven by multi-stage low pressure turbine, multi-stage compressor with one-stage high pressure turbine CFM56-7B series: single annular combustor CFM56-7B/2 series: double annular combustor CFM56-7B/3 series: improved emissions single annular combustor CFM56-7B/3F series: improved emissions single annular combustor and increased EGT CFM56-7BE and 7BE/F series: improved HPC diffuser, HPT and LPT performance			
RATINGS (See NOTE 4)				
Takeoff (5 min. See NOTE 13), sea level, static thrust, lb.	26,300/ 11,699 daN	26,300/ 11,699 daN		
Maximum continuous, sea level static thrust, lb.	22,800/ 10,142 daN	22,800/ 10,142 daN		
Flat rating	AMBIENT TEMPERATURE			
Takeoff	95°F / 35°C	--		
Maximum continuous	77°F / 25°C	--		
FUEL SYSTEM	See NOTE 7 for approved fuels.			
Fuel pump / SNECMA P/N (Combined boost and single element gear-type pump)	340-402-104 340-402-105	340-402-105		
Hydromechanical unit / GE P/N	1853M56	--		
Electronic control unit / GE P/N - Hardware	1851M50 1853M33 2042M67 2044M16	-- -- -- --		
- Software	1853M78 2044M25	-- --		
Identification plugs / SNECMA P/N	340-203-521	340-203-521		
OIL	Synthetic type conforming to GE Specification D50TFI, Type I and Type II. CFM Service Bulletin CFM56-7B 79-001 list approved brand oils.			
IGNITION SYSTEM	GE P/N			
Two ignition units				
Unison	9238M66	--		
Simmonds	1538M69	--		
Two igniter plugs				
Unison	1374M12	--		
Champion	1374M13	--		
PRINCIPLE DIMENSIONS	INCHES / MILLIMETERS			
Length (fan case forward flange to LPT frame aft flange)	98.7 / 2507.5	--		
Width (maximum envelope)	83.4 / 2118.0	--		
Height (fan case forward flange outer diameter)	72.0 / 1829.0	--		

V. MODELS (CONT.)	CFM56-7B26/B2	CFM56-7B26/3B2		
WEIGHT (dry)	Includes basic engine accessories and optional equipment as listed in manufacturer's engine specification, including engine mounted portions of the condition monitoring instrumentation.			
Pounds	5260	--		
Kilograms	2385.9	--		
CENTER OF GRAVITY LOCATIONS	STATION, ENGINE ONLY (REFER TO INSTALLATION DRAWING)			
Inches	207.4 ± 1.0	--		
Millimeters	5269 ± 25	--		

VI. MODELS	CFM56-7B20/3	CFM56-7B22/3	CFM56-7B24/3	
TYPE	High bypass turbofan; coaxial front fan/booster driven by multi-stage low pressure turbine, multi-stage compressor with one-stage high pressure turbine CFM56-7B series: single annular combustor CFM56-7B/2 series: double annular combustor CFM56-7B/3 series: improved emissions single annular combustor CFM56-7B/3F series: improved emissions single annular combustor and increased EGT CFM56-7BE and 7BE/F series: improved HPC diffuser, HPT and LPT performance			
RATINGS (See NOTE 4)				
Takeoff (5 min. see NOTE 13), sea level, static thrust, lb.	20,600/ 9,163 daN	22,700/ 10,097 daN	24,200/ 10,765 daN	
Maximum continuous, sea level static thrust, lb.	19,400/ 8,630 daN	22,300/ 9,920 daN	22,800/ 10,142 daN	
Flat rating	AMBIENT TEMPERATURE			
Takeoff	86°F / 30°C	--	--	
Maximum continuous	77°F / 25°C	--	--	
FUEL SYSTEM	See NOTE 7 for approved fuels.			
Fuel pump / SNECMA P/N (Combined boost and single element gear-type pump)	340-402-105	--	--	
	1853M56			
Hydromechanical unit / GE P/N		--	--	
Electronic control unit / GE P/N - Hardware	1851M50	--	--	
	1853M33	--	--	
	2042M67	--	--	
	2044M16	--	--	
- Software	1853M78	--	--	
	2044M25	--	--	
Identification plugs / SNECMA P/N	340-203-201	340-203-301	340-203-401	

VI. MODELS (CONT.)	CFM56-7B20/3	CFM56-7B22/3	CFM56-7B24/3	
OIL	Synthetic type conforming to GE Specification D50TF1, Type I and Type II. CFM Service Bulletin CFM56-7B 79-001 list approved brand oils.			
IGNITION SYSTEM	GE P/N			
Two ignition units				
Unison	9238M66	--	--	
Simmonds	1538M69	--	--	
Two igniter plugs				
Unison	1374M12	--	--	
Champion	1374M13	--	--	
PRINCIPAL DIMENSIONS	INCHES / MILLIMETERS			
Length (fan case forward flange to LPT frame aft flange)	98.7/2507.5	--	--	
Width (maximum envelope)	83.4/2118.0	--	--	
Height (fan case forward flange outer diameter)	72.0/1829.0	--	--	
WEIGHT (dry)	Includes basic engine accessories and optional equipment as listed in manufacturer's engine specification, including engine mounted portions of the condition monitoring instrumentation.			
Pounds	5260.0	--	--	
Kilograms	2385.9	--	--	
CENTER OF GRAVITY LOCATIONS	STATION, ENGINE ONLY (REFER TO INSTALLATION DRAWING)			
Inches	207.4± 1.0	--	--	
Millimeters	5269± 25	--	--	

VII. MODELS	CFM56-7B26/3	CFM56-7B27/3	CFM56-7B26/3B1	CFM56-7B27A/3
TYPE	High bypass turbofan; coaxial front fan/booster driven by multi-stage low pressure turbine, multi-stage compressor with one-stage high pressure turbine CFM56-7B series: single annular combustor CFM56-7B/2 series: double annular combustor CFM56-7B/3 series: improved emissions single annular combustor CFM56-7B/3F series: improved emissions single annular combustor and increased EGT CFM56-7BE and 7BE/F series: improved HPC diffuser, HPT and LPT performance			
RATINGS (See NOTE 4)				
Takeoff (5 min. see NOTE 13), sea level, static thrust, lb.	26,300/ 11,699 daN	27,300/ 12,143 daN	26,300/ 11,699 daN	27,300/ 12,143 daN
Maximum continuous, sea level static thrust, lb.	25,900/ 11,521 daN	25,900/ 11,521 daN	25,900/ 11,521 daN	25,900/ 11,521 daN
Flat rating	AMBIENT TEMPERATURE			
Takeoff	86°F / 30°C	--	--	--
Maximum continuous	77°F / 25°C	--	--	--

VII. MODELS (CONT.)	CFM56-7B26/3	CFM56-7B27/3	CFM56-7B26/3B1	CFM56-7B27A/3
FUEL SYSTEM	See NOTE 7 for approved fuels.			
Fuel pump / SNECMA P/N (Combined boost and single element gear-type pump)	340-402-105	--	--	--
Hydromechanical unit / GE P/N	1853M56	--	--	--
Electronic control unit / GE P/N				
- Hardware	1851M50	--	--	--
	1853M33	--	--	--
	2042M67	--	--	--
	2044M16	--	--	--
- Software	1853M78	--	--	--
	2044M25	--	--	--
Identification plugs / SNECMA P/N	340-203-501	340-203-601	340-203-511	340-203-701
OIL	Synthetic type conforming to GE Specification D50TF1, Type I and Type II. CFM Service Bulletin CFM56-7B 79-001 list approved brand oils.			
IGNITION SYSTEM	GE P/N			
Two ignition units				
Unison	9238M66	--	--	--
Simmonds	1538M69	--	--	--
Two igniter plugs				
Unison	1374M12	--	--	--
Champion	1374M13	--	--	--
PRINCIPAL DIMENSIONS	INCHES / MILLIMETERS			
Length (fan case forward flange to LPT frame aft flange)	98.7/2507.5	--	--	--
Width (maximum envelope)	83.4/2118.0	--	--	--
Height (fan case forward flange outer diameter)	72.0/1829.0	--	--	--
WEIGHT (dry)	Includes basic engine accessories and optional equipment as listed in manufacturer's engine specification, including engine mounted portions of the condition monitoring instrumentation.			
Pounds	5260	--	--	5282
Kilograms	2385.9	--	--	2395.9
CENTER OF GRAVITY LOCATIONS	STATION, ENGINE ONLY (REFER TO INSTALLATION DRAWING)			
Inches	207.4 ± 1.0	--	--	--
Millimeters	5269 ± 25	--	--	--

VIII. MODELS	CFM56-7B27/3F	CFM56-7B27/3B1F	CFM56-7B26/3F	CFM56-7B26/3B2F
TYPE	High bypass turbofan; coaxial front fan/booster driven by multi-stage low pressure turbine, multi-stage compressor with one-stage high pressure turbine CFM56-7B series: single annular combustor CFM56-7B/2 series: double annular combustor CFM56-7B/3 series: improved emissions single annular combustor CFM56-7B/3F series: improved emissions single annular combustor and increased EGT CFM56-7BE and 7BE/F series: improved HPC diffuser, HPT and LPT performance			
RATINGS (See NOTE 4)				
Takeoff (5 min. see NOTE 13), sea level, static thrust, lb.	27,300/ 12,143 daN	-- --	26,300/ 11,699 daN	-- --
Maximum continuous, sea level static thrust, lb.	25,900/ 11,521 daN	-- --	25,900/ 11,521 daN	22,800/ 10,142 daN
Flat rating	AMBIENT TEMPERATURE			
Takeoff	86°F / 30°C	--	--	--
Maximum continuous	77°F / 25°C	--	--	--
FUEL SYSTEM	See NOTE 7 for approved fuels.			
Fuel pump / SNECMA P/N (Combined boost and single element gear-type pump)	340-402-105	--	--	--
Hydromechanical unit / GE P/N	1853M56	--	--	--
Electronic control unit / GE P/N - Hardware	1851M50 1853M33 2042M67 2044M16	-- -- -- --	-- -- -- --	-- -- -- --
- Software	1853M78 2044M25	-- --	-- --	-- --
Identification plugs / SNECMA P/N	340-205-001	340-205-111	340-205-101	340-205-021
OIL	Synthetic type conforming to GE Specification D50TF1, Type I and Type II. CFM Service Bulletin CFM56-7B 79-001 list approved brand oils.			
IGNITION SYSTEM	GE P/N			
Two ignition units				
Unison	9238M66	--	--	--
Simmonds	1538M69	--	--	--
Two igniter plugs				
Unison	1374M12	--	--	--
Champion	1374M13	--	--	--
PRINCIPAL DIMENSIONS	INCHES / MILLIMETERS			
Length (fan case forward flange to LPT frame aft flange)	98.7/2507.5	--	--	--
Width (maximum envelope)	83.4/2118.0	--	--	--
Height (fan case forward flange outer diameter)	72.0/1829.0	--	--	--

VIII. MODELS (CONT.)	CFM56-7B27/3F	CFM56-7B27/3B1F	CFM56-7B26/3F	CFM56-7B26/3B1F
WEIGHT (dry)	Includes basic engine accessories and optional equipment as listed in manufacturer's engine specification, including engine mounted portions of the condition monitoring instrumentation.			
Pounds	5260	--	--	--
Kilograms	2385.9	--	--	--
CENTER OF GRAVITY LOCATIONS	STATION, ENGINE ONLY (REFER TO INSTALLATION DRAWING)			
Inches	207.4 ± 1.0	--	--	--
Millimeters	5269 ± 25	--	--	--

IX. MODELS	CFM56-7B27/3B1	CFM56-7B27/3B3	CFM56-7B22/3B1	CFM56-7B24/3B1
TYPE	High bypass turbofan; coaxial front fan/booster driven by multi-stage low pressure turbine, multi-stage compressor with one-stage high pressure turbine CFM56-7B series: single annular combustor CFM56-7B/2 series: double annular combustor CFM56-7B/3 series: improved emissions single annular combustor CFM56-7B/3F series: improved emissions single annular combustor and increased EGT CFM56-7BE and 7BE/F series: improved HPC diffuser, HPT and LPT performance			
RATINGS (See NOTE 4)				
Takeoff (5 min. see NOTE 13), sea level, static thrust, lb.	27,300/ 12,143 daN	--	22,700/ 10,097 daN	24,200/ 10,765 daN
Maximum continuous, sea level static thrust, lb.	25,900/ 11,521 daN	--	22,300/ 9,920 daN	22,800/ 10,142 daN
Flat rating	AMBIENT TEMPERATURE			
Takeoff	86°F / 30°C	--	96.8°F / 36°C	105.8°F / 41°C
Maximum continuous	77°F / 25°C	--	--	--
FUEL SYSTEM	See NOTE 7 for approved fuels.			
Fuel pump / SNECMA P/N (Combined boost and single element gear-type pump)	340-402-105	--	--	--
Hydromechanical unit / GE P/N	1853M56	--	--	--
Electronic control unit / GE P/N - Hardware	1851M50 1853M33 2042M67 2044M16	-- -- -- --	-- -- -- --	-- -- -- --
- Software	1853M78 2044M25	-- --	-- --	-- --
Identification plugs / SNECMA P/N	340-203-611	340-203-631	340-203-311	340-203-411
OIL	Synthetic type conforming to GE Specification D50TF1, Type I and Type II. CFM Service Bulletin CFM56-7B 79-001 list approved brand oils.			
IGNITION SYSTEM	GE P/N			
Two ignition units				
Unison	9238M66	--	--	--
Simmonds	1538M69	--	--	--
Two igniter plugs				
Unison	1374M12	--	--	--
Champion	1374M13	--	--	--

IX. MODELS (CONT.)	CFM56-7B27/3B1	CFM56-7B27/3B3	CFM56-7B22/3B1	CFM56-7B24/3B1
PRINCIPAL DIMENSIONS	INCHES / MILLIMETERS			
Length (fan case forward flange to LPT frame aft flange)	98.7/2507.5	--	--	--
Width (maximum envelope)	83.4/2118.0	--	--	--
Height (fan case forward flange outer diameter)	72.0/1829.0	--	--	--
WEIGHT (dry)	Includes basic engine accessories and optional equipment as listed in manufacturer's engine specification, including engine mounted portions of the condition monitoring instrumentation.			
Pounds	5260	--	--	--
Kilograms	2385.9	--	--	--
CENTER OF GRAVITY LOCATIONS	STATION, ENGINE ONLY (REFER TO INSTALLATION DRAWING)			
Inches	207.4 ± 1.0	--	--	--
Millimeters	5269 ± 25	--	--	--
X. MODELS	CFM56-7B20E	CFM56-7B22E	CFM56-7B24E	CFM56-7B24E/B1
TYPE	High bypass turbofan; coaxial front fan/booster driven by multi-stage low pressure turbine, multi-stage compressor with one-stage high pressure turbine CFM56-7B series: single annular combustor CFM56-7B/2 series: double annular combustor CFM56-7B/3 series: improved emissions single annular combustor CFM56-7B/3F series: improved emissions single annular combustor and increased EGT CFM56-7BE series: improved HPC diffuser, HPT and LPT performance			
RATINGS (See NOTE 4)				
Takeoff (5 min. see NOTE 13), sea level, static thrust, lb.	20,600/ 9,163 daN	22,700/ 10,097 daN	24,200/ 10,765 daN	24,200/ 10,765 daN
Maximum continuous, sea level static thrust, lb.	19,400/ 8,630 daN	22,300/ 9,920 daN	22,800/ 10,142 daN	22,800/ 10,142 daN
Flat rating	AMBIENT TEMPERATURE			
Takeoff	86 °F / 30°C	--	--	105.8 °F / 41°C
Maximum continuous	77 °F / 25°C	--	--	--
FUEL SYSTEM	See NOTE 7 for approved fuels.			
Fuel pump / SNECMA part number (P/N) (Combined boost and single element gear-type pump)	340-402-105	-- --	-- --	--
Hydromechanical unit / GE P/N	1853M56	--	--	--
Electronic control unit / GE P/N - Hardware	1851M50 1853M33 2042M67 2044M16	-- -- -- --	-- -- -- --	-- -- -- --
- Software	1853M78 2044M25	-- --	-- --	-- --
Identification plugs / SNECMA P/N	340-203-201	340-203-301	340-203-401	340-203-411
X. MODELS(CONT)	CFM56-7B20E	CFM56-7B22E	CFM56-7B24E	CFM56-7B24E/B1

OIL	Synthetic type conforming to GE Specification D50TF1, Type I and Type II. CFM Service Bulletin CFM56-7B 79-001 list approved brand oils.			
IGNITION SYSTEM	GE P/N			
Two ignition units				
Unison	9238M66	--	--	--
Simmonds	1538M69	--	--	--
Two igniter plugs				
Unison	1374M12	--	--	--
Champion	1374M13	--	--	--
PRINCIPAL DIMENSIONS	INCHES / MILLIMETERS			
Length (fan case forward flange to LPT frame aft flange)	98.7/2507.5	--	--	--
Width (maximum envelope)	83.4/2118.0	--	--	--
Height (fan case forward flange outer diameter)	72.0/1829.0	--	--	--
WEIGHT (dry)	Includes basic engine accessories and optional equipment as listed in manufacturer's engine specification, including engine mounted portions of the condition monitoring instrumentation.			
Pounds	5280	--	--	--
Kilograms	2395	--	--	--
CENTER OF GRAVITY LOCATIONS	STATION, ENGINE ONLY (REFER TO INSTALLATION DRAWING)			
Inches	207.4± 1.0	--	--	--
Millimeters	5269± 25	--	--	--

XI. MODELS	CFM56-7B26E	CFM56-7B27E	CFM56-7B26E/B1	CFM56-7B27AE
TYPE	High bypass turbofan; coaxial front fan/booster driven by multi-stage low pressure turbine, multi-stage compressor with one-stage high pressure turbine CFM56-7B series: single annular combustor CFM56-7B/2 series: double annular combustor CFM56-7B/3 series: improved emissions single annular combustor CFM56-7B/3F series: improved emissions single annular combustor and increased EGT CFM56-7BE series: improved HPC diffuser, HPT and LPT performance			
RATINGS (See NOTE 4)				
Takeoff (5 min. see NOTE 13), sea level, static thrust, lb.	26,300/ 11,699 daN	27,300/ 12,143 daN	26,300/ 11,699 daN	27,300/ 12,143 daN
Maximum continuous, sea level static thrust, lb.	25,900/ 11,521 daN	25,900/ 11,521 daN	25,900/ 11,521 daN	25,900/ 11,521 daN
Flat rating	AMBIENT TEMPERATURE			
Takeoff	86°F / 30°C	--	--	--
Maximum continuous	77°F / 25°C	--	--	--

XI. MODELS (CONT.)	CFM56-7B26E	CFM56-7B27E	CFM56-7B26E/B1	CFM56-7B27AE
FUEL SYSTEM	See NOTE 7 for approved fuels.			
Fuel pump / SNECMA P/N (Combined boost and single element gear-type pump)	340-402-105	--	--	--
Hydromechanical unit / GE P/N	1853M56	--	--	--
Electronic control unit / GE P/N				
- Hardware	1851M50	--	--	--
	1853M33	--	--	--
	2042M67	--	--	--
	2044M16	--	--	--
- Software	1853M78	--	--	--
	2044M25	--	--	--
Identification plugs / SNECMA P/N	340-203-501	340-203-601	340-203-511	340-203-701
OIL	Synthetic type conforming to GE Specification D50TF1, Type I and Type II. CFM Service Bulletin CFM56-7B 79-001 list approved brand oils.			
IGNITION SYSTEM	GE P/N			
Two ignition units				
Unison	9238M66	--	--	--
Simmonds	1538M69	--	--	--
Two igniter plugs				
Unison	1374M12	--	--	--
Champion	1374M13	--	--	--
PRINCIPAL DIMENSIONS	INCHES / MILLIMETERS			
Length (fan case forward flange to LPT frame aft flange)	98.7/2507.5	--	--	--
Width (maximum envelope)	83.4/2118.0	--	--	--
Height (fan case forward flange outer diameter)	72.0/1829.0	--	--	--
WEIGHT (dry)	Includes basic engine accessories and optional equipment as listed in manufacturer's engine specification, including engine mounted portions of the condition monitoring instrumentation.			
Pounds	5280	--	--	5302
Kilograms	2395	--	--	2405
CENTER OF GRAVITY LOCATIONS	STATION, ENGINE ONLY (REFER TO INSTALLATION DRAWING)			
Inches	207.4 ± 1.0	--	--	--
Millimeters	5269 ± 25	--	--	--

XII. MODELS	CFM56-7B27E/F	CFM56-7B27E/B1F	CFM56-7B26E/F	CFM56-7B26E/B2F
TYPE	High bypass turbofan; coaxial front fan/booster driven by multi-stage low pressure turbine, multi-stage compressor with one-stage high pressure turbine CFM56-7B series: single annular combustor CFM56-7B/2 series: double annular combustor CFM56-7B/3 series: improved emissions single annular combustor CFM56-7B/3F series: improved emissions single annular combustor and increased EGT CFM56-7BE series: improved HPC diffuser, HPT and LPT performance			
RATINGS (See NOTE 4)				
Takeoff (5 min. see NOTE 13), sea level, static thrust, lb.	27,300/ 12,143 daN	-- --	26,300/ 11,699 daN	-- --
Maximum continuous, sea level static thrust, lb.	25,900/ 11,521 daN	-- --	25,900/ 11,521 daN	22,800/ 10,142 daN
Flat rating	AMBIENT TEMPERATURE			
Takeoff	86°F / 30°C	--	--	95.°F / 35°C
Maximum continuous	77°F / 25°C	--	--	--
FUEL SYSTEM	See NOTE 7 for approved fuels.			
Fuel pump / SNECMA P/N (Combined boost and single element gear-type pump)	340-402-105	--	--	--
Hydromechanical unit / GE P/N	1853M56	--	--	--
Electronic control unit / GE P/N - Hardware	1851M50 1853M33 2042M67 2044M16	-- -- -- --	-- -- -- --	-- -- -- --
- Software	1853M78 2044M25	-- --	-- --	-- --
Identification plugs / SNECMA P/N	340-205-001	340-205-111	340-205-101	340-205-021
OIL	Synthetic type conforming to GE Specification D50TF1, Type I and Type II. CFM Service Bulletin CFM56-7B 79-001 list approved brand oils.			
IGNITION SYSTEM	GE P/N			
Two ignition units				
Unison	9238M66	--	--	--
Simmonds	1538M69	--	--	--
Two igniter plugs				
Unison	1374M12	--	--	--
Champion	1374M13	--	--	--
PRINCIPAL DIMENSIONS	INCHES / MILLIMETERS			
Length (fan case forward flange to LPT frame aft flange)	98.7/2507.5	--	--	--
Width (maximum envelope)	83.4/2118.0	--	--	--
Height (fan case forward flange outer diameter)	72.0/1829.0	--	--	--

XII. MODELS (CONT.)	CFM56-7B27E/F	CFM56-7B27E/B1F	CFM56-7B26E/F	CFM56-7B26E/B2F
WEIGHT (dry)	Includes basic engine accessories and optional equipment as listed in manufacturer's engine specification, including engine mounted portions of the condition monitoring instrumentation.			
Pounds	5280	--	--	--
Kilograms	2395	--	--	--
CENTER OF GRAVITY LOCATIONS	STATION, ENGINE ONLY (REFER TO INSTALLATION DRAWING)			
Inches	207.4 ± 1.0	--	--	--
Millimeters	5269 ± 25	--	--	--

XIII. MODELS	CFM56-7B27E/B1	CFM56-7B27E/B3	CFM56-7B22E/B1	CFM56-7B26E/B2
TYPE	High bypass turbofan; coaxial front fan/booster driven by multi-stage low pressure turbine, multi-stage compressor with one-stage high pressure turbine CFM56-7B series: single annular combustor CFM56-7B/2 series: double annular combustor CFM56-7B/3 series: improved emissions single annular combustor CFM56-7B/3F series: improved emissions single annular combustor and increased EGT CFM56-7BE series: improved HPC diffuser, HPT and LPT performance			
RATINGS (See NOTE 4)				
Takeoff (5 min. see NOTE 13), sea level, static thrust, lb.	27,300/ 12,143 daN	--	22,700/ 10,097 daN	26,300/ 10,699 daN
Maximum continuous, sea level static thrust, lb.	25,900/ 11,521 daN	--	22,300/ 9,920 daN	22,800/ 10,142 daN
Flat rating	AMBIENT TEMPERATURE			
Takeoff	86°F / 30°C	--	96.8°F / 36°C	95.°F / 35°C
Maximum continuous	77°F / 25°C	--	--	--
FUEL SYSTEM	See NOTE 7 for approved fuels.			
Fuel pump / SNECMA P/N (Combined boost and single element gear-type pump)	340-402-105	--	--	--
Hydromechanical unit / GE P/N	1853M56	--	--	--
Electronic control unit / GE P/N - Hardware	1851M50 1853M33 2042M67 2044M16	-- -- -- --	-- -- -- --	-- -- -- --
- Software	1853M78 2044M25	-- --	-- --	-- --
Identification plugs / SNECMA P/N	340-203-611	340-203-631	340-203-311	340-203-521

XIII. MODELS (CONT)	CFM56-7B27E/B1	CFM56-7B27E/B3	CFM56-7B22E/B1	CFM56-7B26E/B2
OIL	Synthetic type conforming to GE Specification D50TF1, Type I and Type II. CFM Service Bulletin CFM56-7B 79-001 list approved brand oils.			
IGNITION SYSTEM	GE P/N			
Two ignition units				
Unison	9238M66	--	--	--
Simmonds	1538M69	--	--	--
Two igniter plugs				
Unison	1374M12	--	--	--
Champion	1374M13	--	--	--
PRINCIPAL DIMENSIONS	INCHES / MILLIMETERS			
Length (fan case forward flange to LPT frame aft flange)	98.7/2507.5	--	--	--
Width (maximum envelope)	83.4/2118.0	--	--	--
Height (fan case forward flange outer diameter)	72.0/1829.0	--	--	--
WEIGHT (dry)	Includes basic engine accessories and optional equipment as listed in manufacturer's engine specification, including engine mounted portions of the condition monitoring instrumentation.			
Pounds	5280	--	--	--
Kilograms	2395	--	--	--
CENTER OF GRAVITY LOCATIONS	STATION, ENGINE ONLY (REFER TO INSTALLATION DRAWING)			
Inches	207.4 ± 1.0	--	--	--
Millimeters	5269 ± 25	--	--	--

CERTIFICATION BASIS

1. 14 CFR Part 33 effective February 1, 1965, with Amendments 33-1 through 33-15 thereto.
2. See NOTE 22 for emissions certification basis.

MODEL	APPLICATION DATE	TYPE CERTIFICATE ISSUED/AMENDED	TYPE CERTIFICATE WITHDRAWN
CFM56-7B18	NOV 28, 1995	DEC 17, 1996	OCT 17, 2008 (*)
CFM56-7B20	NOV 28, 1995	DEC 17, 1996	
CFM56-7B22	NOV 28, 1995	DEC 17, 1996	
CFM56-7B24	NOV 28, 1995	DEC 17, 1996	
CFM56-7B26	NOV 28, 1995	DEC 17, 1996	
CFM56-7B27	NOV 28, 1995	DEC 17, 1996	
CFM56-7B20/2	NOV 28, 1995	NOV 14, 1997	
CFM56-7B22/2	NOV 28, 1995	NOV 14, 1997	
CFM56-7B24/2	NOV 28, 1995	NOV 14, 1997	
CFM56-7B26/2	NOV 28, 1995	NOV 14, 1997	
CFM56-7B27/2	NOV 28, 1995	NOV 14, 1997	
CFM56-7B26/B1	MAR 4, 1998	OCT 30, 1998	
CFM56-7B27/B1	MAR 4, 1998	OCT 30, 1998	
CFM56-7B27/B3	JUL 30, 1998	OCT 30, 1998	
CFM56-7B22/B1	JUN 11, 1997	MAY 9, 2000	
CFM56-7B24/B1	JUN 11, 1997	MAY 9, 2000	
CFM56-7B27A	SEPT 8, 1999	APR 27, 2001	
CFM56-7B22/B2	AUG 20, 2001	APR 25, 2003	OCT 17, 2008(*)
CFM56-7B26/B2	AUG 20, 2001	APR 25, 2003	
CFM56-7B18/3	APR 23, 2004	JUN 14, 2006	OCT 17, 2008(*)
CFM56-7B20/3	APR 23, 2004	JUN 14, 2006	
CFM56-7B22/3	APR 23, 2004	JUN 14, 2006	
CFM56-7B22/3B1	APR 23, 2004	JUN 14, 2006	
CFM56-7B22/3B2	APR 23, 2004	JUN 14, 2006	OCT 17, 2008(*)

CFM56-7B24/3	APR 23, 2004	JUN 14, 2006
CFM56-7B24/3B1	APR 23, 2004	JUN 14, 2006
CFM56-7B26/3	APR 23, 2004	JUN 14, 2006
CFM56-7B26/3B1	APR 23, 2004	JUN 14, 2006
CFM56-7B26/3B2	APR 23, 2004	JUN 14, 2006
CFM56-7B26/3F	DEC 15, 2005	JUN 14, 2006
CFM56-7B26/3B2F	DEC 15, 2005	JUN 14, 2006
CFM56-7B27/3	APR 23, 2004	JUN 14, 2006
CFM56-7B27/3B1	APR 23, 2004	JUN 14, 2006
CFM56-7B27/3B3	APR 23, 2004	JUN 14, 2006
CFM56-7B27/3F	APR 23, 2004	JUN 14, 2006
CFM56-7B27/3B1F	APR 23, 2004	JUN 14, 2006
CFM56-7B27A/3	APR 23, 2004	OCT 17, 2008
CFM56-7B20E	AUG 28, 2008	JUL 30, 2010
CFM56-7B22E	AUG 28, 2008	JUL 30, 2010
CFM56-7B22E/B1	AUG 28, 2008	JUL 30, 2010
CFM56-7B24E	AUG 28, 2008	JUL 30, 2010
CFM56-7B24E/B1	AUG 28, 2008	JUL 30, 2010
CFM56-7B26E	AUG 28, 2008	JUL 30, 2010
CFM56-7B26E/B1	AUG 28, 2008	JUL 30, 2010
CFM56-7B26E/B2	AUG 28, 2008	JUL 30, 2010
CFM56-7B26E/F	AUG 28, 2008	JUL 30, 2010
CFM56-7B26E/B2F	AUG 28, 2008	JUL 30, 2010
CFM56-7B27E	AUG 28, 2008	JUL 30, 2010
CFM56-7B27E/B1	AUG 28, 2008	JUL 30, 2010
CFM56-7B27E/B3	AUG 28, 2008	JUL 30, 2010
CFM56-7B27E/F	AUG 28, 2008	JUL 30, 2010
CFM56-7B27E/B1F	AUG 28, 2008	JUL 30, 2010
CFM56-7B27AE	AUG 28, 2008	JUL 30, 2010

(*) Effective October 17, 2008 the models designation CFM56-7B18, CFM56-7B22/B2, CFM56-7B18/3, CFM56-7B22/3B2 were withdrawn at the request of the manufacturer. None of these models were released to revenue service.

PRODUCTION BASIS

Production Certificate No. 108 for engines produced in the United States by General Electric under license from CFM International, S.A. (See NOTE 10).

IMPORT REQUIREMENTS

See NOTE 10

NOTES**NOTE 1.**

TURBINE EXHAUST GAS
(T495) (See NOTE 14)

Takeoff (5 min.)

Maximum continuous

Starting

Time temperature envelope

Refer to model's S.O.I.

FUEL PUMP INLET

OIL SUPPLY (See NOTE 18)

Continuous operation

Transient (45 minutes)

MAXIMUM PERMISSIBLE TEMPERATURES (ALL MODELS)	
As measured by a harness of eight thermocouples located at the second stage low pressure turbine vane:	
	950°C
	925°C
	725°C
CFMI-TP.01.14	
REFER TO THE APPROPRIATE INSTALLATION MANUAL.	
	140°C/284°F
	155°C/311°F

NOTE 2.

Fuel limits

Oil limits

FUEL AND OIL PRESSURE LIMITS	
Fuel system pressure limits required to meet all engine operating conditions extend from a minimum fuel pressure of not less than 5 psia (0.35 bar absolute) above the true fuel vapor pressure to a maximum fuel pressure of 148 psia (10.2 bar absolute) with a fuel vapor/liquid ratio < 0.45 at all conditions. For specific installation limits, see Installation Manual, CFM7B01, Part A, Section 5, Figures A2 and A3.	
The minimum pressure limit is 13 psid (90 kPa differential). The maximum pressure limit during cold starts is 305 psid (2102 kPa differential), limited by a pressure-relief valve. See NOTE 12.	

NOTE 3.

ELECTRICAL

Rotation (1)
 Speed ratio to core (2)
 Pad Rating (kW)
 Shear Torque (in-lb)
 Maximum overhung moment (in-lb)

HYDRAULIC PUMP

Rotation (1)
 Speed ratio to core (2)
 Pad Rating (in-lb)
 Shear Torque (in-lb)
 Maximum overhung moment (in-lb)

NOTE 3. (CONT.)

ACCESSORY DRIVE PROVISIONS		
	<u>ALL MODELS</u> EXCEPT -7B27A, -7B27A/3 & -7B27AE	-7B27A,-7B27A/3 & -7B27AE *(3)
	CW	CW
	0.565	.565
	135	239.4*(3)
	9,000	17,500
	950	1,540
	CW	CW
	0.256	0.256
	1,550	1,550
	4,400	4,400
	166	166
(1)	CW = CLOCKWISE FACING PAD / CCW = COUNTERCLOCKWISE FACING PAD	
(2)	100% CORE ENGINE SPEED = 14,460 RPM	
*(3)	FOR 7B27A, 7B27A/3 & 7B27AE, UNDER CERTAIN BLEED CONDITIONS, MAXMUM PAD RATING IS NOT AVAILABLE. REFER TO INSTALLATION MANUAL CFM-7B01 FOR MAX PERMISSIBLE EXTRACTION LOADS UNDER THESE CONDITIONS.	

NOTE 4.

<p>Engine ratings are based on calibrated stand performance (sea level static) under the following conditions:</p> <p>Takeoff thrust is nominally independent of ambient temperature (flat rated) up to ambient temperature of:</p> <ul style="list-style-type: none"> • Std + 15° C (30° C, 86° F) for all models except as noted below • Std + 21° C (36° C, 96.8° F) for 7B22/B1, 7B22/3B1 and 7B22/B1 • Std + 26° C (41° C, 105.8° F) for 7B24/B1, 7B24/3B1 and 7B24E/B1 • Std + 20° C (35° C, 95° F) for 7B26/B2, 7B26/3B2, 7B26/3B2F, 7B26E/B2 and 7B26E/B2F <p>Maximum continuous is nominally independent of ambient temperature (flat rated) up to ambient temperature of Std. + 10° C (25° C, 77° F) for all models.</p> <p>Zero customer bleed and horsepower extraction.</p> <p>100% inlet recovery.</p> <p>Based on the production flight exhaust system.</p>
--

NOTE 5.

MAXIMUM PERMISSIBLE ENGINE ROTOR SPEEDS (ALL MODELS)		
RPM	%	
Low pressure rotor (N1)	5,382	104
High pressure rotor (N2)	15,183	105
100% N1 = 5,175 RPM, 100% N2= 14,460 RPM		

NOTE 6.**LOCATION**

Fan Discharge

HPC Stage 5 only

Compressor discharge only

HPC Stage 5 and compressor
discharge combined**MAXIMUM PERMISSIBLE AIR BLEED EXTRACTION (ALL MODELS)***

FAN CORRECTED SPEED	FLOW LIMIT
All speeds above minimum idle	2% fan airflow
All speeds above minimum idle	10% core airflow
Minimum idle to 61% N1K	12% core airflow
61% to 82.5% N1K	Linear variation from 12% to 7% core airflow
Above 82.5% N1K	7% core airflow
Minimum idle to 61% N1K	13% core airflow
61% to 82.5% N1K	Linear variation from 13% to 10% core airflow
Above 82.5% N1K	10% core airflow

* FOR THE 7B27A, 7B27A/3 & 7B27AE ENGINES, UNDER CERTAIN GEARBOX LOAD CONDITIONS, THIS BLEED SCHEDULE WILL NOT BE AVAILABLE. FOR PERMITTED BLEED SCHEDULES UNDER THESE CONDITIONS, REFER TO CFM56-7B INSTALLATION MANUAL CFM7B01.

NOTE 7.

Approved fuel conforming to GE Specification D50TF2. MIL-T-5624, Grades JP-4 or JP-5, ASTM D 1655, Jet A, A1 and B are consistent with this GE Specification. Primary fuel is Jet A, with other fuels listed being acceptable alternates. No fuel control adjustment is required when changing from primary to alternate fuels. Use of aviation gasoline is not authorized. Consult Specific Operating Instructions, CFMI-TP.01.14, Section 3, for additive usage.

NOTE 8.

Life limits established for critical rotating components are published in Chapter 5 of the CFM56-7B Engine Shop Manual, CFM-TP.SM.10.

NOTE 9.

Power setting, power checks and control of engine thrust output in all operations is to be based on CFM engine charts referring to fan speed. Fan speed sensors are included in the engine assembly for this purpose.

NOTE 10.

The type certificate holder, CFM International, S.A., is a company established and jointly owned by Societe Nationale l'Etude et de Construction de Moteurs d'Aviation (SNECMA) of France and the General Electric Company for the certification, sale, and support of CFM56 series engines. With respect to the benefits of type certification for production, General Electric and SNECMA function as licensees of CFM International, S.A.

This type certificate applies only to engines produced in the United States under Type Certificate No. E00055EN. Engines of the same model designation produced in France under Type Certificate No. E00056EN are identical to and fully interchangeable with engines produced under this type certificate. Similarly, modules, assemblies, or parts produced in France are eligible for use in engines produced under this type certificate provided an airworthiness approval tag, (EASA Form 1 – Authorized Release Certificate or JAA Form 1), issued by SNECMA under authority of the European Aviation Safety Agency (EASA) Production Certificate No. FR.21G.0007 attached to each item or invoice covering a shipment of similar items (Ref. 14 CFR § 21.502).

These engines, when produced by General Electric, are identified by an even numbered serial number prefix (. (Reference CFM56-7B Service Bulletin 72-0747 for a list of approved prefixes).

All engines identified by an odd numbered prefix () will be produced by SNECMA. (Reference CFM56-7B Service Bulletin 72-0747 for a list of approved prefixes)

NOTE 11. The minimum permissible idle in flight corresponds to N2=64.7% (9,350 rpm) below 25°F. Between 25°F (-3.8°C) and 40°F (4.4°C), the idle speed varies from 64.7% (9,350 rpm) to 58.8% (8,500 rpm). Above 40°F (4.4°C), the minimum permissible idle speed is 58.8% (8,500 rpm). Other EEC schedule limitations, such as minimum fuel flow and minimum PS3 (including Mach No. bias for 7B27A,7B27A/3 & -7B27AE), may result in minimum N2 speed limitations in flight that are higher than the N2 limits listed above. All limits are non-adjustable and are preset into the EEC schedules.

NOTE 12. During negative-g operation only, it is permissible to operate below minimum oil pressure (13 psid) for a maximum of 10 seconds. See Specific Operating Instructions, CFMI-TP.01.14, Section 6.

NOTE 13. The normal 5 minute takeoff rating may be extended to 10 minutes for engine out contingency.

NOTE 14 (a). The indicated maximum permissible takeoff exhaust gas temperature (EGT) is 950°C. These indicated takeoff EGT redlines are accomplished via an EGT shunt and an EGT trim in the ECU software as noted below.

The effect on EGT (units °C) with respect to the indicated takeoff EGT redline value of 950°C for each of the models is summarized below:

Model	Actual Measured Takeoff Redline Value Authorized	Indicated Takeoff EGT level with 30°C Shunt Only*	Maximum EGT Trim Level**	Indicated Takeoff EGT Redline
7B20, 7B20/3	884	914	36	950
7B22, 7B22/3	886	916	34	950
7B22/B1, 7B22/3B1	907	937	13	950
7B24, 7B24/3	908	938	12	950
7B24/B1, 7B24/3B1	920	950	0	950
7B26, 7B26/B1, 7B26/B2, 7B26/2, 7B26/3B1, 7B26/3B2, 7B26/3	920	950	0	950
7B27, 7B27A, 7B27/B1, 7B27/B3, 7B27/3, 7B27/3B1, 7B27/3B3, 7B27A/3	920	950	0	950
7B20/2	894	914	36	950
7B22/2	896	916	34	950
7B24/2	918	938	12	950
7B26/2	930	950	0	950
7B27/2	930	950	0	950
7B26/3F, 7B26/3B2F, 7B27/3F, 7B27/3B1F	940	950	0	950

Model	Actual Measured Takeoff Redline Value Authorized	Indicated Takeoff EGT level with 30°C and 20°C Shunts*	Maximum EGT Trim Level**	Indicated Takeoff EGT Redline
7B20E	904	914	36	950
7B22E	906	916	34	950
7B22E/B1	927	937	13	950
7B24E	928	938	12	950
7B24E/B1	940	950	0	950
7B26E/B1, 7B26E/B2, 7B26E	940	950	0	950
7B27E, 7B27E/B1, 7B27E/B3,	940	950	0	950
7B27AE	928	938	12	950
7B26E/F, 7B26E/B2F, 7B27E/F, 7B27E/B1F	960	950	0	950

* EGT shunt adds 30°C to actual measured engine EGT on CFM56-7B, 7B/3 and 7BE series engines, 10°C to actual measured engine EGT on CFM56-7B/3F and -7BE/F series engines, and 20°C to the actual measured engine EGT on CFM56-7B/2 series engines to provide an indicated EGT level. This EGT shunt is triggered above 8,500 RPM core speed for all CFM56 series engines. For E series only, there is a 20°C profile EGT shunt (cooler) in addition to the present +30°C or +10°C (E/F series) shunt. This profile shunt (-20°C) will be active above 10400 rpm Physical Core speed (N2) and -10°C Shunt at ground idle conditions. This profile shunt will be active for all flight conditions.

** The EGT trim function adds the values noted above to the indicated EGT levels. This EGT trim is only triggered at mach numbers from 0 to 0.40 and when the core speed is greater than 11,200 RPM. This function is only applicable for the engine models indicated.

- NOTE 14 (b).** The indicated maximum permissible maximum continuous EGT is 925°C. The same trims and shunts described in Note 14(a) for takeoff EGT are applicable to maximum continuous EGT.
- NOTE 14 (c).** All CFM56-7B engines are certified with an indicated maximum permissible takeoff EGT transient allowance of 960°C for 20 seconds. This equates to a 10°C increase above the maximum permissible indicated value of 950°C.
- NOTE 15.** The CFM56-7B27A, CFM56-7B27A/3 and CFM56-7B27AE variants are designed for military application only. The engine serial number of these variants includes 654, 655, 362 or 363 depending on final assembly location. FAA certified engines used in military service are not necessarily operated or maintained in accordance with FAA regulations. Commercial service uses of the CFM56-7B27A, CFM56-7B27A/3 or CFM56-7B27AE variants, and the installation of used CFM56-7B27A, CFM56-7B27A/3 and CFM56-7B27AE parts in another CFM56-7B variant, are subject to prior approval of the FAA (Engine Certification Office, ANE-140).
- NOTE 16.** Note deleted.
- NOTE 17.** Criteria pertaining to the dispatch and maintenance requirements for the engine control systems are specified in the airworthiness limitation section of the CFM56-7B Engine Shop Manual (CFM-TP.SM.10), which defines the various configurations and maximum operating intervals.
- NOTE 18.** The actual maximum permissible oil temperature for starting and idle conditions is 10°C higher for continuous operation and 5°C higher for transient operation than the corresponding indicated oil temperatures.
- An indicated oil temperature for continuous operation of 140°C (284°F) corresponds to an actual oil temperature of 150°C (302°F).
- An indicated oil temperature for transient operation of 155°C (311°F) corresponds to an actual oil temperature of 160°C (320°F).
- NOTE 19.** CFM56-7B series includes: CFM56-7B20, -7B22, -7B22/B1, -7B24, -7B24/B1, -7B26, -7B26/B2, -7B27, -7B27A, -7B26/B1, -7B27/B1 and -7B27/B3
 CFM56-7B/2 series includes: CFM56-7B20/2, -7B22/2, -7B24/2, -7B26/2, and -7B27/2
 CFM56-7B/3 series includes: CFM56-7B20/3, -7B22/3, -7B22/3B1, -7B22/3B2, -7B24/3, -7B24/3B1, -7B26/3, -7B26/3B1, -7B26/3B2, -7B27/3, -7B27/3B1, -7B27/3B3, and -7B27A/3
 CFM56-7B/3F series includes: CFM56-7B26/3F, -7B26/3B2F, -7B27/3F, and -7B27/3B1F.
 CFM56-7BE series includes: CFM56-7B20E, -7B22E, -7B22E/B1, -7B22E/B2, -7B24E, -7B24E/B1, -7B26E, -7B26E/B1, -7B26E/B2, -7B27E, -7B27E/B1, and -7B27E/B3
 CFM56-7BE/F series includes: CFM56-7B26E/F, -7B26E/B2F, -7B27E/F, and -7B27E/B1F.

NOTE 20.

The models shown on this TCDS have the following general characteristics:

MODEL	CHARACTERISTICS
CFM56-7B18	Base model. (No longer available)
CFM56-7B20	Same as CFM56-7B18 except for increased thrust ratings.
CFM56-7B22	Same as CFM56-7B18 except for increased thrust ratings.
CFM56-7B24	Same as CFM56-7B18 except for increased thrust ratings.
CFM56-7B26	Same as CFM56-7B18 except for increased thrust ratings.
CFM56-7B27	Same as CFM56-7B18 except for increased thrust ratings.
CFM56-7B20/2	Same as CFM56-7B20 except CFM56-7B20/2 has a double annular combustor.
CFM56-7B22/2	Same as CFM56-7B22 except CFM56-7B22/2 has a double annular combustor.
CFM56-7B24/2	Same as CFM56-7B24 except CFM56-7B24/2 has a double annular combustor.
CFM56-7B26/2	Same as CFM56-7B26 except CFM56-7B26/2 has a double annular combustor.
CFM56-7B27/2	Same as CFM56-7B27 except CFM56-7B27/2 has a double annular combustor.
CFM56-7B27/B1	Same as CFM56-7B27 except CFM56-7B27/B1 has optimized power management at takeoff.
CFM56-7B26/B1	Same as CFM56-7B26 except CFM56-7B26/B1 is intended for a business jet application (different mission).
CFM56-7B27/B3	Same as CFM56-7B27 except CFM56-7B27/B3 is intended for a business jet application (different mission).
CFM56-7B22/B1	Same as CFM56-7B22 except CFM56-7B22/B1 has an extended flat rated temperature for takeoff.
CFM56-7B24/B1	Same as CFM56-7B24 except CFM56-7B24/B1 has an extended flat rated temperature for takeoff.
CFM56-7B27A	Same as CFM56-7B27, except CFM56-7B27A has increased capability for gearbox power extraction.
CFM56-7B26/B2	Same as CFM56-7B26, except CFM56-7B26/B2 has an extended high altitude and temperature rating above corner point takeoff.

NOTE 20. (CONT.)

CFM56-7B20/3	Same as CFM56-7B20 except for low emissions combustor and redesigned compressor and HPT rotor.
CFM56-7B22/3	Same as CFM56-7B20 except for increased thrust, low emissions combustor and redesigned compressor and HPT rotor.
CFM56-7B24/3	Same as CFM56-7B20 except for increased thrust, low emissions combustor and redesigned compressor and HPT rotor.
CFM56-7B26/3	Same as CFM56-7B20 except for increased thrust, low emissions combustor and redesigned compressor and HPT rotor.
CFM56-7B27/3	Same as CFM56-7B20 except for increased thrust, low emissions combustor and redesigned compressor and HPT rotor.
CFM56-7B22/3B1	Same as CFM56-7B22/B1 except for low emissions combustor and redesigned compressor and HPT rotor.
CFM56-7B24/3B1	Same as CFM56-7B24/B1 except for low emissions combustor and redesigned compressor and HPT rotor.
CFM56-7B26/3B1	Same as CFM56-7B26/B1 except for low emissions combustor and redesigned compressor and HPT rotor.
CFM56-7B26/3B2	Same as CFM56-7B26/B2 except for low emissions combustor and redesigned compressor and HPT rotor.
CFM56-7B27/3B1	Same as CFM56-7B27/B1 except for low emissions combustor and redesigned compressor and HPT rotor.
CFM56-7B27/3B3	Same as CFM56-7B27/B3 except for low emissions combustor and redesigned compressor and HPT rotor.
CFM56-7B26/3F	Same as CFM56-7B26/3 except for increased EGT limits.
CFM56-7B26/3B2F	Same as CFM56-7B26/3B2 except for increased EGT limits.
CFM56-7B27/3F	Same as CFM56-7B27/3 except for increased EGT limits.
CFM56-7B27/3B1F	Same as CFM56-7B27/3B3 except for increased EGT limits.
CFM56-7B27A/3	Same as CFM56-7B27A except for low emissions combustor and redesigned compressor and HPT rotor.
CFM56-7BE series	The E models incorporate, with respect to /3 models, improved HPC diffuser, new HPT, new LPT and new exhaust diffuser (Boeing Part).
CFM56-7BE/F series	The E/F models incorporate, with respect to /3F models, improved HPC diffuser, new HPT, new LPT and new exhaust diffuser (Boeing Part).

NOTE 21.

Installation Manuals, Specific Operating Instructions, Service Bulletins, Overhaul and Maintenance Manuals, Repair Manuals, Vendor Manuals, and Design Changes which contain a statement that the document is EASA approved or approved under authority of DOA No. EASA.21J.086 or for approvals made before September 28, 2003 by DGAC are accepted by the FAA and considered FAA approved. Repair data and related instructions are considered FAA approved or accepted as applicable. These approvals pertain to the type design only.

NOTE 22.

All engine models are in compliance with the emissions requirements in 14 CFR Part 34, effective September 10, 1990, as amended by 34-1 through 34-4.

NOTE 23

DELETED.

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