	TCDS NUMBER E00063EN REVISION: 7
U.S. DEPARTMENT OF TRANSPORTATION	DATE: August 8, 2014 GENERAL ELECTRIC COMPANY
FEDERAL AVIATION ADMINISTRATION	MODELS: CF34-8C1; CF34-8C5; CF34-8C5A1; CF34-8C5B1; CF34-8C5A2; CF34-8C5A3;
TYPE CERTIFICATE DATA SHEET	CF34-8E2; CF34-8E2A1; CF34-8E5; CF34-8E5A1; CF34-8E5A2; CF34-8E6; CF34-8E6A1

Engines of models described herein conforming with this data sheet 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 manufacturers manuals and other FAA approved instructions.

TYPE CERTIFICATE (TC) HOLDER: General Electric Company
GE Aviation
1000 Western Avenue
Lynn, Massachusetts 01910

I. MODELS	**CF34-8C1**	**CF34-8C5**	**CF34-8C5A1**	**CF34-8C5B1**	**CF34-8C5A2**	**CF34-8C5A3**
TYPE	Dual rotor, axial flow, high bypass ratio turbofan; single stage fan, ten stage axial compressor, annular combustion chamber, two stage high pressure turbine, four stage low pressure turbine, a thrust reverser (CF34 –8E models only), aft core cowl (CF34 –8E models only), exhaust nozzle, exhaust centerbody, starter, and a Full Authority Digital Engine Control (FADEC).					
RATINGS (See NOTE 5) Sea level static thrust, lb						
Maximum takeoff (5 min.) (See NOTES 13,15 and 18)	13790	14510	- -	13790	14510	- -
Normal takeoff (5 min.) (See NOTES 13 and 15)	12670	13360	13630	12670	14050	14510
Maximum continuous (See NOTE 13)	13277	13680	- -	13280	13680	- -

CONTROL SYSTEM COMPONENT						
Fuel Control, Woodward Governor	4120T01	- -	- -	- -	- -	- -
Full Authority Digital Engine Control (FADEC), Lockheed/Martin	4120T00	- -	- -	- -	- -	- -
Ignition System						
2 Ignition Exciters, Unison	9238M66	- -	- -	- -	- -	- -
2 Ignition Plugs, Federal Mogul / Champion	4096T33	- -	- -	- -	- -	- -
Fuel Pump, Argotech	4120T04	- -	- -	- -	- -	- -

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LEGEND: "- -" INDICATES "SAME AS PRECEDING MODEL"
"---" NOT APPLICABLE
NOTE: SIGNIFICANT CHANGES ARE BLACK-LINED IN THE LEFT MARGIN.

I. MODELS (continued)	CF34-8C1	CF34-8C5	CF34-8C5A1	CF34-8C5B1	CF34-8C5A2	CF34-8C5A3
FUEL	Fuel conforming to GE Jet Fuel Specification No. D50TF2, current revision, is applicable for all models. See GEK 105094 (CF34-8C1/8C5 models), GEK 112034 (CF34-8E models), Operating Instructions, for specific fuels approved per the subject specifications.					
OIL	Oil conforming to GE Specification No. D50TF1, current revision, is applicable for all models. See GEK 105094 (CF34-8C1/8C5 models), GEK 112034 (CF34-8E models), Operating Instructions, for specific oils approved per the subject specifications.					
PRINCIPAL DIMENSIONS AND MEASUREMENTS	(Demountable Assembly less fluids to fill; see Installation Manual GEK 105093)	- -	- -	- -	- -	- -
Length, inches	152.28	151.57	- -	- -	- -	- -
Maximum diameter, inches	60.66	60.66	- -	- -	- -	- -
Weight, pounds (includes residual fuel and oil)	2704	2780	- -	- -	- -	- -
Center of Gravity Location, inches						
Engine Station	173.2	173.9	- -	- -	- -	- -
Butt Line	99.6	99.78	- -	- -	- -	- -
Water Line	99.1	99.35	- -	- -	- -	- -

II. MODELS	CF34-8E2
TYPE	Dual rotor, axial flow, high bypass ratio turbofan; single stage fan, ten stage axial compressor, annular combustion chamber, two stage high pressure turbine, four stage low pressure turbine, a thrust reverser (CF34 –8E models only), aft core cowl (CF34 –8E models only), exhaust nozzle, exhaust centerbody, starter, and a Full Authority Digital Engine Control (FADEC).
RATINGS (See NOTE 5) Sea level static thrust, lb	
Maximum takeoff (5 min.) (See NOTES 13,15 and 18)	13300
Normal takeoff (5 min.) (See NOTES 13 and 15)	12410
Maximum continuous (See NOTE 13)	12540
CONTROL SYSTEM COMPONENT	
Fuel Control, Woodward Governor	4120T01
Full Authority Digital Engine Control (FADEC), Lockheed/Martin	4120T00
Ignition System	
2 Ignition Exciters, Unison	9238M66
2 Ignition Plugs, Federal Mogul / Champion	4096T33
Fuel Pump, Argotech	4120T04

II. MODELS (continued)					**CF34-8E2**
FUEL	Fuel conforming to GE Jet Fuel Specification No. D50TF2, current revision, is applicable for all models. See GEK 105094 (CF34-8C1/8C5 models), GEK 112034 (CF34-8E models), Operating Instructions, for specific fuels approved per the subject specifications.				
OIL	Oil conforming to GE Specification No. D50TF1, current revision, is applicable for all models. See GEK 105094 (CF34-8C1/8C5 models), GEK 112034 (CF34-8E models), Operating Instructions, for specific oils approved per the subject specifications.				
PRINCIPAL DIMENSIONS AND MEASUREMENTS					(14 CR Part 33 Propulsion System; see Installation Manual GEK 112033)
Length, inches					121.18
Maximum diameter, inches					62.65
Weight, pounds (includes residual fuel and oil)					3147.6
Center of Gravity Location, inches					
Engine Station					175.01
Butt Line					99.43
Water Line					100.07

III. MODELS	**CF34-8E2A1**	**CF34-8E5**	**CF34-8E5A1**	**CF34-8E5A2**	**CF34-8E6**	**CF34-8E6A1**
TYPE	Dual rotor, axial flow, high bypass ratio turbofan single stage fan, ten stage axial compressor, annular combustion chamber, two stage high pressure turbine, four stage low pressure turbine, a thrust reverser (CF34-–8E models only), aft core cowl (CF34 –8E models only), exhaust nozzle, exhaust centerbody, starter, and a Full Authority Digital Engine Control (FADEC).					
RATINGS (See NOTE 5) Sea level static thrust, lb						
Maximum takeoff (5 min.) (See NOTES 13,15 and 18)	13300	14510	- -	- -	14050	- -
Normal takeoff (5 min.) (See NOTES 13 and 15)	13300	13420	14050	14510	13420	14050
Maximum continuous (See NOTE 13)	12540	13520	- -	- -	- -	- -

III. MODELS (cont)	CF34-8E2A1	CF34-8E5	CF34-8E5A1	CF34-8E5A2	CF34-8E6	CF34-8E6A1
CONTROL SYSTEM COMPONENTS						
Fuel Control, Woodward Governor	4120T01	- - -	- -	- -	- -	- -
Full Authority Digital Engine Control (FADEC), Lockheed/Martin	4120T00	- -	- -	- -	- -	- -
Ignition System						
2 Ignition Exciters, Unison	9238M66	- -	- -	- -	- -	- -
2 Ignition Plugs, Federal Mogul / Champion	4096T33	- -	- -	- -	- -	- -
Fuel Pump, Argotech	4120T04	- -	- -	- -	- -	- -
FUEL	Fuel conforming to GE Jet Fuel Specification No. D50TF2, current revision, is applicable for all models. See GEK 112034 (CF34-8E models), Operating Instructions, for specific fuels approved per the subject specifications					
OIL	Oil conforming to GE Specification No. D50TF1, current revision, is applicable for all models. See GEK 112034 (CF34-8E models), Operating Instructions, for specific oils approved per the subject specifications.					
PRINCIPAL DIMENSIONS AND MEASUREMENTS	(14 CFR Part 33 Propulsion System; see Installation Manual GEK 112033)	- -	- -	- -	- -	- -
Length, inches	121.18	- -	- -	- -	- -	- -
Maximum diameter, inches	62.65	- -	- -	- -	- -	- -
Weight, pounds (includes residual fuel and oil)	3147.6	- -	- -	- -	- -	- -
Center of Gravity Location, inches						
Engine Station	175.01	- -	- -	- -	- -	- -
Butt Line	99.43	- -	- -	- -	- -	- -
Water Line	100.07	- -	- -	- -	- -	- -

CERTIFICATION BASIS

. 1) CF34-8C1 14 CFR Part 33, effective February 1, 1965, as amended by amendments 33-1 through 33-19, and Equivalent Level of Safety 8040-ELOS-97-NE-01.
2) CF34-8C5 (All Models) and CF34-8E (All Models) - 14 CFR Part 33, effective February 1, 1965, including Amendments 33-1 through 33-20
3) All Engine models- 14 CFR Part 34, Amendment 5 effective December 31, 2012. ICAO Emissions Standards, Annex 16, Volume 2, Second Edition 1993, Part 3, Chapter 2 is also part of this basis.

MODEL	APPLICATION DATE	TYPE CERTIFICATE ISSUED/AMENDED	TYPE CERTIFICATE WITHDRAWN
CF34-8C1	May 1, 1997	November 30, 1999	
CF34-8C5	May 31, 2000	April 12, 2002	
CF34-8C5A1	May 31, 2000	April 12, 2002	
CF34-8C5B1	May 31, 2000	April 12, 2002	
CF34-8C5A2	May 31, 2000	April 12, 2002	
CF34-8C5A3	May 31, 2000	April 12, 2002	
CF34-8D1	May 31, 2000	April 12, 2002	Sep 10, 2010
CF34-8D3	May 31, 2000	April 12, 2002	Sep 10, 2010
CF34-8D5	May 31, 2000	April 12, 2002	Sep 10, 2010
CF34-8D6	May 31, 2000	April 12, 2002	Sep 10, 2010
CF34-8E2	May 31, 2000	April 12, 2002	
CF34-8E2A1	May 31, 2000	April 12, 2002	
CF34-8E5	May 31, 2000	April 12, 2002	
CF34-8E5A1	May 31, 2000	April 12, 2002	
CF34-8E5A2	May 31, 2000	April 12, 2002	
CF34-8E6	May 31, 2000	April 12, 2002	
CF34-8E6A1	May 31, 2000	April 12, 2002	

The following models comply with 14 CFR part 34, amendment 5, effective December 31, 2012. See note 26, for detailed summary of the certification basis for fuel venting and exhaust emissions: CF34-8C1, CF34-8C5, CF34-8C5A1, CF34-8C5B1, CF34-8C5A2, CF34-8C5A3, CF34-8E2, CF34-8E2A1, CF34-8E5, CF34-8E5A1, CF34-8E5A2, CF34-8E6, CF34-8E6A1.

NOTES

Notes 1 through 27 applicable to models as specified

NOTE 1. Maximum permissible engine operating speeds for the engine rotors are as follows:

	CF34-8C1	**CF34-8C5 (all models)**	**CF34-8E (all models)**
Low pressure rotor (N1), rpm			
Maximum takeoff	7360	7360	7360
Normal takeoff	7247	7360	7360
Maximum continuous	7360	7360	7360
High pressure rotor (N2), rpm			
Maximum takeoff	17710	17710	17710
Normal takeoff	17515	17710	17710
Maximum continuous	17437	17470	17470

Refer to GE Engine Manual GEK 105091 (CF34-8C1/8C5 models), GEK 112031 (CF34-8E models) and other manual or inspection requirements when limits are exceeded.
100 percent N1 rotor speed is 7,400 rpm, 100 percent N2 rotor speed is 17,820 rpm.

NOTE 2. Maximum permissible temperatures are as follows:
Interturbine temperature (T45)*, °F(°C)

	CF34-8C1	CF34-8C5	CF34-8C5A1	CF34-8C5B1	CF34-8C5A2
Maximum takeoff (5 min) See Note 18	1760 (960)**	1814 (990)	- -	- -	- -
Maximum takeoff (2 min. out of a total of 5 minutes) ***	1794 (979)**	1843 (1006)	- -	- -	- -
Normal takeoff (5 min)	1689 (920)**	1736 (947)	1754 (957)	1738 (948)	1783 (973)
Normal takeoff (2 min. out of a total of 5 minutes)***	1723 (939)**	1765 (963)	1783 (973)	1767 (964)	1812 (989)
Maximum continuous	1701 (927)**	1760 (960)	- -	- -	- -

	CF34-8C5A3
Maximum takeoff (5 min) See Note 18	1814 (990)
Maximum takeoff (2 min. .out of a total of 5 minutes)***	1843 (1006)
Normal takeoff (5 min)	1814 (990)
Normal takeoff (2 min. . out of a total of 5 minutes)***	1843 (1006)
Maximum continuous	1760 (960)

NOTE 2. (continued) Maximum permissible temperatures are as follows:
Interturbine temperature (T45)*, °F(°C)

	CF34-8E2	CF34-8E2A1	CF34-8E5	CF34-8E5A1	CF34-8E5A2
Maximum takeoff (5 min) See Note 18	1814 (990)	- -	- -	- -	- -
Maximum takeoff (2 min. out of a total of 5 minutes)***	1843 (1006)	- -	- -	- -	- -
Normal takeoff (5 min)	1755 (957)	1814 (990)	1740(949)	1783 (973)	1814 (990)
Normal takeoff (2 min. out of a total of 5 minutes)***	1784 (973)	1843 (1006)	1769 (965)	1812 (989)	1843 (1006)
Maximum continuous	1760 (960)	- -	- -	- -	- -

	CF34-8E6	CF34-8E6A1
Maximum takeoff (5 min) See Note 18	1814 (990)	- -
Maximum takeoff (2 min. out of a total of 5 minutes)***	1843 (1006)	- -
Normal takeoff (5 min)	1771 (966)	1814 (990)
Normal takeoff (2 min. out of a total of 5 minutes)***	1800 (982)	1843 (1006)
Maximum continuous	1760 (960)	- -

*The interturbine temperature is measured by either 5 probes (5 thermocouples) or 10 probes (20 thermocouples) mounted in the low pressure turbine casing.

** For the CF34-8C1 engine model, maximum takeoff, normal takeoff and maximum continuous T45 limits may be exceeded transiently as a result of OBV activation provided T45 does not exceed 1869°F (1021°C) for 30 seconds, and does not exceed a temperature limit that ramps from 1869°F (1021°C) to 1794°F (979°C) over the next 30 seconds, as defined in GE Operating Instructions GEK 105094. The total number of transient occurrences as a result of OBV activation above a T45 of 1794°F (979°C) is limited to a maximum of 10 occurrences as defined in GE Engine Manual GEK 105091.

*** The 2-minute interturbine temperature (T4.5) limits (2 minutes out of 5 minutes takeoff time) are intended to cover engine T4.5 overshoot characteristics which occur during engine stabilization at constant Takeoff thrust.

For the CF34-8C1 engine model, additional transient temperature and time limits for starting are defined in GE Operating Instructions GEK 105094.

Refer to GE Engine Manual GEK 105091 (CF34-8C1/8C5 models), GEK 112031 (CF34-8E models) for inspection requirements when limits are exceeded.

Oil tank temperatures****, °F (°C)

ALL MODELS	
Continuous operation	311 (155)
Transient operation	325 (163)

****Transient operation above 311° F (155º C) is limited to 15 minutes.

Fuel inlet temperature (at engine fuel filter inlet), °F (°C)

ALL MODELS	
Continuous operation	
Jet A, Jet A1, Jet B	250 (121)
JP8	250 (121)
JP5	250 (121)
JP4, JP4/JP5 mixture	250 (121)
Ground Operation	250 (121)

NOTE 3. FUEL AND OIL PRESSURE LIMITS

Fuel: At engine pump inlet: minimum pressure of 5 PSID above the true vapor pressure of the fuel with a vapor/liquid ratio of zero with aircraft boost operative. Operating range 5 PSIG to 50 PSIG. At engine motive flow discharge: minimum pressure of 150 PSIG at idle or above. Operating range is 150 PSIG to 800 PSIG. See GE Installation Manual GEK 105093 (CF34-8C1/8C5 models) and GEK 112033 (CF34-8E models) for additional limits.

Oil: At idle on the ground the oil pressure limit is 25 PSID minimum . At takeoff, 45 PSID minimum.. Normal operating range, 25 PSID to 95 PSID. See GE Installation Manual GEK 105093 (CF34-8C1/8C5 models) and GEK 112033 (CF34-8E models) for additional limits.

NOTE 4. ACCESSORY DRIVE PROVISIONS (ALL MODELS)

Accessory	Location on AGB Axis	Speed (rpm)	HP (Rated)	Direction Of Rotation facing AGB	Torque (lb-in) Static / Cont / Overload	Max. Acc. Wt. (lb)	Overhung Moment (lb-in)	Shear Torque (lb-in)
Lube/Scav Oil Pump	Axis-C Fwd	7898	6	CCW	300 /48/ NA (1)	10.3	33	750-850
IDG	Axis-C Aft	7898	74.8 (2)	CW	675 (1) /597/ 1129 (5 min)(4) 1605 (5 sec)(4)	81.2 (6)	720 Maximum	3144-3648
Air Turbine Starter	Axis-D Aft	12234	N/A	CW	2112, 4200 (3) / NA / NA	27.7	113	6300-7500
Hydraulic Pump CF34-8E only	Axis-G Fwd	4825	30	CW	573 (1) (5) / 392 / 670	13.9 Dry	38.4	2004 max
Hydraulic Pump CF34-8C only	Axis-G Fwd	4825	30	CW	573 (1) (5) / 392 / 670	14.7 Dry	43.5	2004 max
Alternator	Axis-E Aft	8103	4	CCW	NA / NA / NA	3.0	2.6	N/A
Fuel Pump	Axis-F Aft	8319	40	CW	180 (1) /303/NA	23	113	1255-1380

CW - Clockwise CCW - Counter Clockwise

Accessory Speeds are based on Core Speed: 17000 rpm

(1) -40° F SLS
(2) HP is constant over the operating range with slight variations due to changes in efficiency. HP extraction is 74.8 HP at 7898 rpm (pad speed) and 73.5 HP at 4618 rpm (pad speed). The 5 minute overload rating is 82.7 HP and the 5 second overload rating is 117.6 HP.
(3) 2112 in-lbs at 59° F SLS, 4200 in-lbs at –40° F SLS
(4) Overload at 4618 rpm (pad speed)
(5) 573 in-lbs at 626 rpm (pad speed)
(6) Includes oil and V band coupling

NOTE 5. Engine ratings are based on calibrated test stand performance under the following conditions:

1. Static sea level standard conditions of 59° F and 29.92 inches Hg.
2. No aircraft accessory loads or air extraction.
3. No anti-icing; no inlet distortion; no inlet screen losses; and 100% ram recovery.
4. Inlet bellmouth and cowl system as described in GE Installation Manual GEK 105093 (CF34-8C1/8C5 models) and GEK 112033 (CF34-8E models).
5. Specified fuel having an average lower heating value of 18,500 BTU/lb (CF34-8C1/-8C5 models); 18,550 BTU/lb (CF34 –8E models); specified lube oil.

NOTE 6. Air Bleed Extraction - maximum customer air bleed extraction is as follows: Customer bleed air is available from either stages 6 or 10 (compressor discharge) of the compressor at all operating conditions at or above idle. (No compressor bleed

is permitted below idle.). Customer bleed is scheduled to switch from stage 10 bleed at low power operation to stage 6 bleed at high power operation as described in GE Installation Manual GEK 105093 (CF34-8C1/8C5 models),and GEK 112033 (CF34-8E models).

Location	Maximum Demonstrated Bleed Air (% of Total Compressor Airflow)		
	CF34-8C1	CF34-8C5 (all models)	CF34-8E (all models)
Compressor Stage 6	8	8	8
Compressor Stage 10 (Compressor Discharge)	12.75	12.75	12.0
Maximum Allowable Bleed	---	12.75	12.0

NOTE 7. A minimum core speed (N2) must be maintained to ensure engine operation in icing conditions. The FADEC Power Management controls ground and flight idle core speeds above the minimum speed demonstrated for 14 CFR 33.68, Induction System Icing. At low ambient temperatures, the minimum permissible ground and flight idle speeds correspond to N2=58.47% (9,940 rpm) which is a non-adjustable limit, preset in the FADEC Power Management schedules. As ambient temperatures increase, the minimum permissible core speed increases as scheduled by the FADEC Power Management based upon N2 or PS3 control schedules.

NOTE 8. The maximum permissible inlet distortion for these engines is specified in GE Installation Manual GEK 105093 (CF34-8C1/8C5 models)and GEK 112033 (CF34-8E models).

NOTE 9.

For the CF34-8E model series, the engine manufacturer supplies the Nacelle System. The following Aft Core Cowl and Thrust Reverser systems, which are a part of this Nacelle system, have been certified for the listed engine models under this type certificate in accordance with Federal Aviation Regulation (FAR), Part 33. The FAR 33 engine type design definition is provided by:

ENGINE MODEL LIST	AFT CORE COWL PARTS LIST	THRUST REVERSER PARTS LIST
CF34-8E2	15F0001	15G0001
CF34-8E2A1	15F0001	15G0001
CF34-8E5	15F0001	15G0001
CF34-8E5A1	15F0001	15G0001
CF34-8E5A2	15F0001	15G0001
CF34-8E6	15F0001	15G0001
CF34-8E6A1	15F0001	15G0001

NOTE 10. Life limits, established for critical components, are published in FAA approved GE Engine Manual GEK 105091 (CF34-8C1/8C5 models) and GEK 112031 (CF34-8E models).

NOTE 11. Recommended maintenance inspection intervals are published in GE Engine Manual GEK 105091 (CF34-8C1/8C5 models) and GEK 112031 (CF34-8E models).

NOTE 12. The operating temperature limit for specific components and accessories specified in GE Installation Manual GEK 105093 (CF34-8C1/8C5 models)and GEK 112033 (CF34-8E models) must be observed when installing the engine.

NOTE 13. For CF34-8C1, CF34-8C5 (all models) and CF34-8E (all models), static thrusts at sea level are rated at 86ºF ambient temperature and below for normal takeoff and maximum takeoff. Maximum Continuous thrust is rated at 77ºF and below at cruise altitudes. The computer performance decks for calculating engine performance are as follows:

Engine Model	Computer Deck No.
CF34-8C1	L0073A
CF34-8C5	G0175C
CF34-8C5A1	G0175C
CF34-8C5B1	L0073A
CF34-8C5A2	G0175C
CF34-8C5A3	G0175C
CF34-8E2	G0175D
CF34-8E2A1	G0175D
CF34-8E5	G0175D
CF34-8E5A1	G0175D
CF34-8E5A2	G0175D
CF34-8E6	G0175D
CF34-8E6A1	G0175D

NOTE 14. CF34-8C1, CF34-8C5 (all models) and CF34-8E (all models), engines comply with the applicable fuel venting and exhaust emission requirements of Part 34, Amendment 3, effective February 3, 1999.

NOTE 15. The time limit at the normal takeoff rating is five minutes and shall include any time accumulated above the normal takeoff rating.

NOTE 16. TIME LIMITED DISPATCH CRITERIA

Criteria pertaining to the dispatch and maintenance requirements for the engine control systems are specified in the airworthiness section of the Engine Manuals, GEK 105091 (CF34-8C1/8C5 models) and GEK 112041 (CF34-8E models), which define the various configurations and maximum operating intervals.

NOTE 17. Overhaul of the CF34-8C1, CF34-8C5 (all models) and CF34-8E (all models), components is only authorized via approved component manuals.

NOTE 18. The 5 minute maximum takeoff time limit may be extended to 10 minutes for one engine inoperative operation in multi-engine aircraft.

NOTE 19. Refer to Operating Instructions GEK 105094 (CF34-8C1/8C5 models) and GEK 112034 (CF34-8E models) for engine warm-up procedure.

NOTE 20. Refer to Operating Instructions GEK 105094 (CF34-8C1/8C5 models) and GEK 112034 (CF34-8E models) for thrust reverser operation.

NOTE 21. The CF34-8C1, CF34-8C5 (all models), and CF34-8E (all models), engine normal takeoff interturbine temperature (T45) limit has been established to assure that a fully degraded engine at the normal takeoff rating will achieve the maximum takeoff rated thrust without exceeding the maximum takeoff T45 limit.

NOTE 22. The above models incorporate the following characteristics:

Model	Characteristics
CF34-8C1	Basic Model
CF34-8C5	Derivative of CF34-8C1; side mounted; increased T45 and thrust rating
CF34-8C5A1	Derivative of CF34-8C1; side mounted; increased T45 and thrust rating
CF34-8C5B1	Derivative of CF34-8C1; side mounted; increased T45
CF34-8C5A2	Derivative of CF34-8C1; side mounted; increased T45 and thrust rating
CF34-8C5A3	Derivative of CF34-8C1; side mounted; increased T45 and thrust rating
CF34-8E2	Derivative of CF34-8C1; top mounted; increased T45; includes thrust reverser and aft core

	cowl
CF34-8E2A1	Derivative of CF34-8C1; top mounted; increased T45; includes thrust reverser and aft core cowl
CF34-8E5	Derivative of CF34-8C1; top mounted; increased T45 and thrust rating; includes thrust reverser and aft core cowl
CF34-8E5A1	Derivative of CF34-8C1; top mounted; increased T45 and thrust rating; includes thrust reverser and aft core cowl
CF34-8E5A2	Derivative of CF34-8C1; top mounted; increased T45 and thrust rating ; includes thrust reverser and aft core cowl
CF34-8E6	Derivative of CF34-8C1; top mounted; increased T45 and thrust rating; includes thrust reverser and aft core cowl
CF34-8E6A1	Derivative of CF34-8C1; top mounted; increased T45 and thrust rating; includes thrust reverser and aft core cowl

NOTE 23. The engine is equipped with an Automatic Power Reserve (APR) function for takeoff operation with one engine inoperative. During normal takeoff (NTO), when the automatic power reserve function is activated, the engine control of the inoperative engine sends an input signal to the engine control of the operating engine. Upon receiving this signal, the engine thrust of the operating engine automatically increases from normal takeoff or lower thrust to the corresponding, pre-determined maximum takeoff (MTO) thrust. If one engine is inoperable full MTO thrust is available to the pilot at any time by throttle selection.
The engine control system also incorporates schedules that assure a fully degraded engine, during operation, at the NTO or lower thrust, will achieve the specified MTO thrust without exceeding the engine operating limits when the automatic power reserve function is activated.

NOTE 24. A suffix may be added to CF34-8 basic engine model numbers on the engine nameplate to identify minor variations in the engine configuration, installation components, or differences specific to aircraft requirements, for example, CF34-8C5/M.
Service Bulletin (SB) 72-0235 describes the conversion of the base model to a minor model (with /M designation) and Service Bulletin (SB) 72-0244 describes the conversion from the minor model back to the base model. Only those designations and purposes listed below may be used. The SB number must be appended to the engine nameplate.
Life limits for the /M minor model designation, established for critical components, are published in FAA approved GE Engine Manual GEK 105091 (CF34-8C1/8C5 models).

Allowable suffix designations:

Designation:	Purpose:
CF34-8C5/M	Indicates the capability for frequent or repetitive use of the max takeoff (MTO) rating with associated airworthiness limitations section life limits.
CF34-8C5A1/M	Indicates the capability for frequent or repetitive use of the max takeoff (MTO) rating with associated airworthiness limitations section life limits.
CF34-8C5A2/M	Indicates the capability for frequent or repetitive use of the max takeoff (MTO) rating with associated airworthiness limitations section life limits.

NOTE 25. A suffix may be added to CF34-8 basic engine model numbers on the engine nameplate to identify minor variations in the engine configuration, installation components, or differences specific to aircraft requirements, for example, CF34-8C5/B.
Service Bulletin (SB) 72-A0237 describes the conversion of the base model to a minor model (with /B designation) and Service Bulletin (SB) 72-A0243 describes the conversion from the minor model back to the base model. Only those designations and purposes listed below may be used. The SB number must be appended to the engine nameplate.
Life limits for the /B minor model designation, established for critical components, are published in FAA approved GE Engine Manual GEK 105091 (CF34-8C1/8C5 models).

Allowable suffix designations:

Designation:	Purpose:
CF34-8C5/B	Indicates use of the engine in an Alternate Mission application, with associated Airworthiness limitations section life limits
CF34-8C5B1/B	Indicates use of the engine in an Alternate Mission application, with associated Airworthiness limitations section life limits

CF34-8C5A1/B	Indicates use of the engine in an Alternate Mission application, with associated Airworthiness limitations section life limits
CF34-8C5A2/B	Indicates use of the engine in an Alternate Mission application, with associated Airworthiness limitations section life limits

NOTE 26. The following emissions standards promulgated in 14 CFR Part 34, Amendment 5, effective December 31, 2012, and 40 CFR Part 87, effective July 18, 2012, have been complied with for: CF34-8C1, CF34-8C5, CF34-8C5A1, CF34-8C5B1, CF34-8C5A2, CF34-8C5A3, CF34-8E2, CF34-8E2A1, CF34-8E5, CF34-8E5A1, CF34-8E5A2, CF34-8E6, CF34-8E6A1.

Fuel Venting Emission Standards: 14 CFR §§ 34.10 (a) and 34.11; in addition, 40 CFR §§ 87.10(a) and 87.11.

Smoke Number (SN) Emission Standards: 14 CFR §34.21(e)(2); in addition, 40 CFR § 87.23(c)(l).

Carbon Monoxide (CO) Emission Standards: 14 CFR § 34.21(d)(l)(ii); in addition, 40 CFR § 87.23(c)(l).

Hydrocarbons (HC) Emission Standards: 14 CFR § 34.21(d)(1)(i); in addition, 40 CFR § 87.23(c)(l).

Oxides of Nitrogen (NOx) Emission Standards: 14 CFR § 34.23(b)(l); in addition, 40 CFR § 87.23(c)(3).

In addition to the FAA's finding of compliance based on the certification requirements defined in this TCDS, the engine manufacturer has declared that the ICAO emissions standards identified in Annex 16, Volume II, Third Edition, Part Ill, Chapter 2, Section 2.2.2 for SN, Section 2.3.2 for CO and HC, Section 2.3.2.e.3 for NOx (also known as CAEP/8), and Part II Chapter 2 for fuel venting have also been demonstrated.

NOTE 27. The CF34-8D1, -8D3, -8D5 and -8D6 were deleted from the Type Certificate on September 10, 2010, at the request of the Type Certificate holder.

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