U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION TYPE CERTIFICATE DATA SHEET E00049EN	TCDS NUMBER E00049EN REVISION 18 DATE: February 14, 2014 GENERAL ELECTRIC COMPANY MODELS: GE90-76B GE90-90B GE90-113B GE90-77B GE90-94B GE90-115B GE90-85B GE90-110B1

Engines of models described herein conforming with this data sheet (which is part of Type Certificate Number E00049EN) 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: General Electric Company
GE Aviation
1 Neumann Way
Cincinnati, OH 45215-6310

I. MODELS	GE90-76B	GE90-77B	GE90-85B	GE90-90B
TYPE	Dual rotor, axial flow, high bypass ratio turbofan. The 10-stage high pressure compressor is driven by a 2-stage high pressure turbine. The single stage fan and 3-stage low pressure compressor are driven by a 6-stage low pressure turbine.			
RATINGS (See NOTE 5)				
Maximum continuous at sea level, static thrust, lb	75,430	75,430	81,230	90,580
Takeoff (5 min. see NOTE 16) at sea level, static thrust, lb	81,070	81,700	88,870	94,000
Flat rating ambient temperature				
Takeoff	91°F/32.8°C	- -	86°F/30°C	- -
Maximum continuous	77°F/25°C	- -	- -	- -
COMPONENTS (GE P/Ns)				
Hydromechanical Control Unit	1693M75	- -	- -	- -
	1851M65	- -	- -	- -
Full Authority Digital Engine Control (FADEC) Hardware (H/W) & Software (S/W)	1838M16	- - -	- - -	- - -
HW (See NOTE 21)	1959M87	- -	- -	- -
	1838M16	- -	- -	- -
SW (See NOTE 21)	1853M99	- -	- -	- -

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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.)	GE90-76B	GE90-77B	GE90-85B	GE90-90B
Configuration Type Box (See NOTE 10)	320-837-701-0	- - -	- - -	- - -
	320-839-501-0	- -	- -	- -
	320-892-101-0	- - -	- - -	- - -
	320-892-201-0	- -	- -	- -
	320-846-701-0	- -	- -	- -
	320-892-601-0	- -	- -	- -
	320-915-201-0	- -	- -	- -
	320-921-501-0	- -	- -	- -
FADEC Rating Plug	320-833-701-0	320-833-901-0	320-833-801-0 320-834-201-0	320-834-001-0
Main Fuel Pump	1689M10	- -	- -	- -
IGNITION SYSTEM				
Two ignition units GE P/N	9238M66	- -	- -	- -
Two ignitor plugs GE P/N	1754M84	- -	- -	- -
PRINCIPAL DIMENSIONS (in)				
Length (Fan spinner to nozzle centerbody)	286.9	- -	- -	- -
Width (maximum envelope)	152.4	- -	- -	- -
Height (maximum envelope)	155.6	- -	- -	- -
WEIGHT (DRY)				
Includes basic engine, basic engine accessories, and optional equipment as listed in the manufacturer's engine specifications.	17,400	- -	- -	- -
CENTER OF GRAVITY LOCATIONS (in) (Engine only)				
Station (axial)	227.5±1.5	- -	- -	- -
Waterline	99.9±0.5	- -	- -	- -
Buttline	100.4±0.5	- -	- -	- -

II. MODELS	GE90-94B			
TYPE	Dual rotor, axial flow, high bypass ratio turbofan. The 10-stage high pressure compressor is driven by a 2-stage high pressure turbine. The single stage fan and 3-stage low pressure compressor are driven by a 6-stage low pressure turbine.			
RATINGS (See NOTE 5)				
Maximum continuous at sea level, static thrust, lb	90,580			
Takeoff (5 min. see NOTE 16) at sea level, static thrust, lb	97,300			
Flat rating ambient temperature				
Takeoff	86°F/30°C			
Maximum continuous	77°F/25°C			
COMPONENTS (GE P/Ns)				
Hydro-mechanical Control Unit	1851M65			
Full Authority Digital Engine Control (FADEC) Hardware (H/W) & Software (S/W)	1959M87			
Hardware (H/W) (See NOTE 21)	1838M16			
Software (S/W) (See NOTE 21)	1853M99			
Configuration Type Box (See NOTE 10)	320-921-501-0			
FADEC Rating Plug	320-834-301-0			
Main Fuel Pump	1689M10			
IGNITION SYSTEM				
Two ignition units GE P/N	9238M66			
Two ignitor plugs GE P/N	1754M84			
PRINCIPAL DIMENSIONS (in)				
Length (Fan spinner to nozzle centerbody)	286.9			
Width (maximum envelope)	152.4			
Height (maximum envelope)	155.6			
WEIGHT (DRY)				
Includes basic engine, basic engine accessories, and optional equipment as listed in the manufacturer's engine specifications.	17,400			
CENTER OF GRAVITY LOCATIONS (in) (Engine only)				
Station (axial)	227.5±1.5			
Waterline	99.9±0.5			
Buttline	100.4±0.5			

III MODELS	GE90-110B1	GE90-113B	GE90-115B
TYPE			

RATINGS (See NOTE 5)			
Maximum continuous at sea level, static thrust, lb	110,000	110,000	110,000
Takeoff (5 min. see NOTE 16) at sea level, static thrust, lb	110,760	113,530	115,540
Flat rating ambient temperature			
Takeoff	92°F/33°C	86°F/30°C	86°F/30°C
Maximum continuous	77°F/25°C	77°F/25°C	77°F/25°C
COMPONENTS (GE P/Ns)			
Hydro-mechanical Control Unit	1962M80	- -	- -
Full Authority Digital Engine Control (FADEC)			
Hardware (H/W) (See NOTE 21)	1962M67	- -	- -
Software (S/W) (See NOTE 21	2041M27	- -	- -
Configuration Type Box	390-850-001-0	- -	- -
	390-851-001-0	- -	- -
FADEC Rating Plug G01	390-801-011-0	390-802-001-0	390-800-001-0
G02	390-803-001-0	390-804-001-0	390-805-001-0
G03	390-803-011-0	- -	390-805-011-0
G04	390-803-021-0	- -	390-805-021-0
Main Fuel Pump	2042M69	- -	- -
IGNITION SYSTEM			
Two ignition units GE P/N	9238M66	- -	- -
Two ignitor plugs GE P/N	1754M84	- -	- -

PRINCIPAL DIMENSION (in)			
Length (Fan spinner to nozzle centerbody)	286.67	- -	- -
Width (maximum envelope)	148.38	- -	- -
Height (maximum envelope)	154.56	- -	- -
WEIGHT (DRY) Includes basic engine, basic engine accessories, and optional equipment as listed in the manufacturer's engine specifications.	19316	- -	- -
CENTER OF GRAVITY LOCATIONS (in) (Engine only)			
Station (axial)	219.2±1.5	- -	- -
Waterline	100.14±0.5	- -	- -
Buttline	100.28±0.5	- -	- -

IV. MODELS	ALL

FUEL	See NOTE 7 for approved fuels.
OIL	Type 2 oils conforming to GE90 Specification D50TF1 or the latest revisions are authorized. For approved brand of oils refer to GE90 Service Bulletin 79-001.

CERTIFICATION BASIS (-76B/-77B/-85B/-90B)

14 Code of Federal Regulations (CFR), Part 33, effective February 1, 1965, Amendments 33-1 through 33-15, inclusive; Part 34, effective September 10, 1990, including Amendments 34-1 through 34-4; and Special Condition Number SC-33-ANE-08-NE; and Part 33.71(C) (4), amendment 33-27, effective November 24, 2008.

CERTIFICATION BASIS (-94B)

14 Code of Federal Regulations (CFR), Part 33, effective February 1, 1965, including Amendments 33-1 through 33-15, and Amendment 19; Part 34, effective September 10, 1990, including Amendments 34-1 through 34-4; Special Condition SC-33-ANE-08-NE, and Equivalent Level of Safety Finding for §33.68(b) Number 8040-ELOS-00-NE-01; and Part 33.71(C) (4), amendment 33-27, effective November 24, 2008.

CERTIFICATION BASIS (-110B1, -113B, -115B)

14 Code of Federal Regulations (CFR), Part 33, effective February 1, 1965, including Amendments 33-1 through 33-20; Part 34, effective September 10, 1990, including Amendments 34-1 through 34-4; Special Condition SC-33-ANE-08-NE, and Exemption to §33.73(b), No. 7953 dated January 15, 2003; and Part 33.71(C) (4), amendment 33-27, effective November 24, 2008.

TYPE CERTIFICATE E00049EN

MODELS	APPLICATION DATE	ISSUED/AMENDED
GE90-76B	DEC 16, 1991	FEB 2, 1995
GE90-85B	DEC 16, 1991	FEB 2, 1995
GE90-90B	AUG 10, 1994	JUL 2, 1996
GE90-77B	NOV 20, 1995	JUL 2, 1996
GE90-94B	MAR 5, 1999	JUN 9, 2000
GE90-113B	JUN 27, 2000	JUL 30, 2003
GE90-115B	JUN 27, 2000	JUL 30, 2003
GE90-110B1	JAN 9, 2002	JUL 30, 2003
GE90-75B	DEC 16, 1991	FEB 2, 1995 (Deleted JUL 24, 1995)
GE90-92B	AUG 10, 1994	JUL 2, 1996 (Deleted June 26, 2000)

The following models comply with 14 CFR part 34, amendment 5, effective December 31, 2012. See note 25, for detailed summary of the certification basis for fuel venting and exhaust emissions: GE90-76B, GE90-77B, GE90-85B, GE90-90B, GE90-94B, GE90-110B1, GE90-113B, GE90-115B.

PRODUCTION BASIS

GE90-76B/-77B/-85B/-90B/-94B/-110B1/-113B/-115B Production Certificate No. 108

NOTES

NOTE 1. **MAXIMUM PERMISSIBLE ENGINE ROTOR SPEEDS**

	GE90-76B	GE90-77B/-85B/-90B/-94B	GE90-110B1/-113B/-115B
Low pressure rotor (N1)	2,465 RPM (109.0 percent)*	2,465 RPM (109.0 percent)*	2602 RPM (110.5 percent)***
High pressure rotor (N2)	10,705 RPM (114.7 percent)**	10,918 RPM (117 percent)**	11292 RPM (121 percent)**

* 100 percent N1 is 2261.5 RPM
** 100 percent N2 is 9332.0 RPM
*** 100 percent N1 is 2355.0 RPM

NOTE 2. **MAXIMUM PERMISSIBLE TEMPERATURES**

Indicated turbine exhaust gas temperature (T49)	**GE90-76B** (see NOTE 10)	**GE90-77B/-85B/ -90B/-94B**
Takeoff (5 minute see NOTE 16)	1787°F (975°C)*	1885°F (1030°C)
Maximum Continuous	1697°F (925°C)	1859°F (1015°C)
Ground starts (manual or auto)	1382°F (750°C)	1382°F (750°C)**
Inflight starts (manual or auto)	1517°F (825°C)	- -
* 60 seconds maximum transient	1796°F (980°C)	- - -
* 40 seconds start EGT exceedance limit for –94B only		1517°F (825°C)
Oil temperature limits		
Continuous	255°F (124°C)	- -
Transient	275°F (135°C)	- -

Indicated turbine exhaust gas temperature (T49)	**GE90-110B1/ -113B/ -115B**
Takeoff (5 minute see NOTE 16)	1994°F (1090°C)***
Maximum Continuous	1922°F (1050°C)
Ground starts (manual or auto)	1382°F (750°C)
Inflight starts (manual or auto)	1517°F (825°C)
***30 seconds maximum transient	2003°F (1095°C)
Oil temperature limits	
Continuous	270°F (132°C)
Transient	290°F (143°C)

NOTE 3. **FUEL AND OIL PRESSURE LIMITS**

FUEL PRESSURE LIMITS AT THE ENGINE PUMP INLET

Maximum allowable fuel pressure is 70 psig. Minimum allowable fuel pressure under normal operating conditions (fully operational aircraft fuel system) is 5.0 psia. At altitudes of 38,000 feet and below, transitory excursions of 15 seconds or less to a minimum fuel pressure of 3.5 psia are allowable provided the average fuel pressure remains above 4.5 psia.

OIL PRESSURE LIMITS

LOW PRESSURE

The limit is 10.0 psid (69 kPa diff.). (See NOTE 14)

NOTE 4. **ACCESSORY DRIVE PROVISIONS**

GE90-76B/-77B/-85B/-90B/-94B

DRIVE PAD	Rotation Facing Gearbox Pad	Gear Ratio To Core Speed	Horsepower Continuous Pad Rating HP (KW)	Shear Torque in-lb (N-m)	Maximum Overhung Moment in-lb (N-m)
IDG (120 KVA)	CCW (*)	0.7947	243 (181.3)	10000 - 10500 (1130 - 1187)	2000 (226.0)
Hydraulic Pump	CCW	0.3783	85 (63.5)	4250 - 4850 (480 - 548)	230 (26.0)
VSCF/PMG Generator (20/30 KVA)	CCW	2.4126	58 (43.3)	3500, 4500** (395, 508)**	400 (45.2)
IDG Overload Limits	304 HP (226.8 KVA) for 5 minutes per 1000 hours of operation 406 HP (302.9 KVA) for 5 seconds per 1000 hours of operation 500 HP (373.0 KVA) electrical fault				
VSCF/PMG Overload limits	87 HP (64.9 KVA) for 5 minutes per 1000 hours of operation 116 HP (86.5 KVA) for 5 seconds per 1000 hours of operation 128 HP (95.5 KVA) electrical fault				
	100 percent core speed is 9,332 RPM (*) Counter Clockwise (**) Shear torque capability is a function of operator requirements. Consult GE Aircraft Engines for installed capability.				

NOTE 4. Cont.

GE90-110B1/-113B/-115B

DRIVE PAD	Rotation Facing Gearbox Pad	Gear Ratio To Core Speed	Horsepower Continuous Pad Rating HP (KW)	Shear Torque in-lb (N-m)	Maximum Overhung Moment in-lb (N-m)
IDG (120 KVA)	CCW (*)	0.7947	243 (181.3)	10500 max (1187 max)	2000 (226.0)
Hydraulic Pump	CCW	0.3783	85 (63.5)	4250 - 4850 (480 - 548)	230 (26.0)
VSCF/PMG Generator (20/30 KVA)	CCW	2.4126	58 (43.3)	1250 max (141.2 max)	400 (45.2)
IDG Overload Limits	304 HP (226.8 KVA) for 5 minutes per 1000 hours of operation 406 HP (302.9 KVA) for 5 seconds per 1000 hours of operation 500 HP (373.0 KVA) electrical fault				
VSCF/PMG Overload limits	87 HP (64.9 KVA) for 5 minutes per 1000 hours of operation 116 HP (86.5 KVA) for 5 seconds per 1000 hours of operation 128 HP (95.5 KVA) electrical fault				
	100 percent core speed is 9,332 RPM (*) Counter Clockwise				

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

1. Sea level static, standard pressure (14.696 psia), 59°F
2. No customer bleed or customer horsepower extraction
3. Ideal inlet, 100% ram recovery
4. Production aircraft flight cowling
5. Production instrumentation
6. Fuel lower heating value of 18400 BTU#

NOTE 6. **MAXIMUM PERMISSIBLE AIR BLEED EXTRACTION**

Allowable Bleed Limits (Percent)

GE90-76B/-77B/-85B/-90B/-94B	Stage 4	Stage 7	Stage 10	Maximum Allowable
Below 23 Percent N1K	7.8	1.8	13.6	15.4
23 to 31 Percent N1K	7.6	1.6	12.8	14.4
31 to 57.4 Percent N1K	7.4	1.3	12.6	13.9
57.4 to 80 Percent N1K	7.2	1.3	12.6	13.9
80 to 96.8 Percent N1K	7.0	1.3	6.5	8.3
Above 96.8 Percent N1K	6.5	1.3	6.5	7.8
GE90-110B1/-113B/-115B	Stage 4	Stage 7	Stage 9	Maximum Allowable

NOTE 6 Cont.

Below 27 Percent N1K	7.6	1.5	11.2	12.7
At 51 Percent N1K	7.6	1.5	11.5	13.0
At 80 Percent N1K	7.6	1.5	12.0	13.5
At 88 Percent N1K	7.6	1.5	11.0	12.5
At 93 Percent N1K today	7.6	1.5	8.0	9.1
Above 93 Percent N1K	7.6	1.5	7.3	9.1

NOTE 7. **Fuel**

Approved fuels must conform to GE Specification D50TF2. Certain fuels such as those produced to PRC Specification RP3 meet the requirements of D50TF2 by means of the Specification. The engine will operate with a mixture of fuels or additives conforming to GE Specification D50TF2.

NOTE 8. Life limits established for critical rotating components for:
GE90-76B/-77B/-85B/-90B/094B are published in Chapter 5 of the GE90 Engine Manual, GEK 100700
GE90-110B1/-113B/-115B are published in Chapter 5 of the GE90-100 Engine Manual, GEK 109993

NOTE 9. Power setting, power checks, and control of engine thrust output in all operations are based on Fan Speed (N1). Speed sensors are included in the engine assembly for this purpose.

NOTE 10. GE90-76B engines with configuration type box number 320-839-501-0 must incorporate the HP/LP turbine hardware and associated changes per General Electric GE90 Service Bulletin 72-169. The FADEC incorporates a 30°C shunt. The corresponding indicated EGT limits are 975°C (take-off), 980°C (take-off with 60 second max. transient), and 965°C (max. continuous).

NOTE 11. For ground operation in icing conditions the following procedures must be observed:

GE90-76B/-77B/-85B/-90B/-94B

During ground operations (including taxi-in and taxi-out) in icing conditions, the pilot must perform one of the following shed procedures:

(a) Run up the engines momentarily to a minimum of 50 percent N1 at intervals not to exceed 15 minutes, or

(b) For operation at ambient conditions of -6 degrees C (23 degrees F) and above, and at airport altitudes up to 3048 meters (10,000 ft), perform the following at intervals not to exceed 60 minutes:

1) Increase throttle to a minimum of 55 percent N1
2) Dwell at the specified N1 for 20 seconds minimum
3) Decelerate to idle or proceed with normal takeoff procedure.

See GE90 Operating Instructions Manual GEK 100703.

GE90-110B1/-113B/-115B

During ground operations (including taxi-in and taxi-out) in icing conditions, the engine must be run up momentarily to a minimum of 50 percent N1 at intervals not to exceed 60 minutes. See GE90-100 Operating Instructions Manual GEK109994. Note: For possible variations in engine acceleration times in icing conditions see the GE90-100 Installation Manual GEK 109995.

NOTE 12. All GE90 engines with configuration type box part numbers 320-892-101-0 or 320-892-201-0 must incorporate the PT25 extended wedge ice shield per GE90 Service Bulletin 77-008 and must incorporate FADEC software P/N 1853M99P06 (version 9.1.9.7 or later) per GE90 Service Bulletin 73-040.

All GE90 engines with configuration type box part numbers 320-837-701-0, 320-839-501-0, 320-892-101-0, 320-892-201-0, 320-846-701-0, 320-892-601-0 and 320-915-201-0, have a minimum permissible N2 of 6066 RPM for in-flight operation during icing conditions.

All GE90 engines with configuration type box part numbers 320-921-501-0 have a minimum permissible N2 of 6310 RPM for in-flight operation during icing conditions.

All GE90 engines with configuration type box part numbers 390-850-001-0 and 390-851-001-0 have a minimum permissible N1 of 730 RPM for in-flight operation during icing conditions.

NOTE 13. Demonstration of compliance to §33.68, Induction System Icing is installation specific to the B777-200LR/300ER and B777 Freighter airplanes for the GE90-110B1/-113B/-115B model engines. Installation of these model engines on different airplane models or types will require a separate evaluation and finding of compliance to §33.68.

NOTE 14. During "negative-G" operation only, it is permissible to operate below minimum oil pressure of 10 psid (69.0 kPa diff) for a maximum of 15 seconds.
See GE90 Operating Instructions Manual, GEK 100703 for GE90-76B/-77B/-85B/-90B/-94B
See GE90-100 Operating Instructions Manual GEK 109994 for GE90-110B1/-113B/-115B.

NOTE 15. **THESE MODELS INCORPORATE THE FOLLOWING GENERAL CHARACTERISTICS**

ENGINE MODEL	CHARACTERISTICS
GE90-76B	Basic Model
GE90-77B	Same as GE90-76B except improved HPT/LPT flowpath and higher thrust ratings. Corresponding Rating Plug changes.
GE90-85B	Same as GE90-76B except higher thrust ratings. Corresponding Rating Plug changes.
GE90-90B	Same as GE90-77B except higher thrust ratings. Corresponding Rating Plug changes.
GE90-94B	Same as GE90-90B except 3D aero HPC and higher thrust ratings. Corresponding rating plug changes.
GE90-110B1	Differs primarily from basic model in FAN, LPC, HPC, HPT and LPT hardware, higher takeoff thrust rating with increased speed, and temperature limitations. Corresponding rating plug changes. See Note 22.
GE90-113B	Same as GE90-110B1 except higher thrust ratings. Corresponding Rating Plug changes.
GE90-115B	Same as GE90-113B except higher thrust ratings. Corresponding Rating Plug changes.

NOTE 16. The normal 5 minute takeoff time limit may be extended to 10 minutes for engine out contingency.

NOTE 17. TIME LIMITED DISPATCH CRITERIA

Criteria pertaining to the dispatch and maintenance requirements for the engine control systems are specified in: For the GE90-76B/-77B/-85B/-90B/-94B see General Electric Document GEK 103084 and the Airworthiness Limitations Section of the GE90 Engine Manual GEK 100700, which defines the various configurations and maximum operating intervals.

For the GE90-110B1/-113B/-115B the requirements are defined in the Airworthiness Limitations section of the GE90-100 Engine Manual GEK 109993

NOTE 18. For approval of repairs of fan blade composite material in the root section of the fan blade up to the inner annulus flow path line see the Airworthiness Limitations Section of GE90 Engine Manual GEK 100700 for the GE90-76B/-77B/-85B/-90B/-94B and GE90-100 Engine Manual GEK 109993 for the GE90-110B1/-113B/-115B.

NOTE 19. Note deleted

NOTE 20. “Reserved”

NOTE 21. The FADEC unit P/N originally defined both hardware and software. The hardware and software are now defined by separate P/Ns. The engine should be equipped with a FADEC defined either by the combined P/N or by the hardware and the software P/Ns.

NOTE 22. An exemption to §21.19(a) was granted and issued in Washington, DC, on August 26, 2002, for the GE90-110B1/-113B/-115B engine models. This exemption allowed GEAE to amend Type Certificate No. E00049EN to add these models rather than apply for a new type certificate for those engines, subject to the following conditions and limitations:

1. GEAE must comply with §21.17 as if it was a new type certificate.
2. GEAE must conduct a large flocking bird test as part of compliance with §33.76, Bird Ingestion.
3. GEAE must include an engine test to demonstrate compliance to §33.90 Initial Maintenance Inspection.
4. An applicant installing the GE90-110B1/-113B/-115B engine models into an aircraft must comply with all of the applicable airworthiness standards for a new type certificated engine, including applicable aircraft special conditions.

NOTE 23. Demonstration of compliance to §33.73(b) Power or Thrust Response is installation specific to the B777-200LR/300ER and B777 Freighter airplanes for the GE90-110B1/-113B/-115B model engines. Installation of these model engines on different airplane models or types will require a separate evaluation and finding of compliance to §33.73(b).

NOTE 24. The engine oil tank filler cap of GE90-76B/-77B/-85B/-90B/-94B and GE90-110B1/-113B/-115B engine model meet the requirement of 14 CFR Part 33.71 (C)(4)

NOTE 25. 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: GE90-76B, GE90-77B, GE90-85B, GE90-90B, GE90-94B, GE90-110B1, GE90-113B, GE90-115B.

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)(1).

Carbon Monoxide (CO) Emission Standards: 14 CFR § 34.21(d)(1)(ii); in addition, 40 CFR § 87.23(c)(l).

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

Oxides of Nitrogen (NOx) Emission Standards: 14 CFR § 34.23(a)(2); in addition, 40 CFR § 87.23(c)(2).

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 III, Chapter 2, Section 2.2.2 for SN, Section 2.3.2 for CO and HC, Section 2.3.2.d.3 for NOx (also known as CAEP/6), and Part II Chapter 2 for fuel venting have also been demonstrated.

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