



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: CF34-10E5A1
UNIQUE ID NUMBER: 10GE130
COMBUSTOR: 2253M21
ENGINE TYPE: TF

BYPASS RATIO: 5.1
PRESSURE RATIO (π_{00}): 27.3
RATED THRUST (F_{00}) (kN): 83.7

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F ₀₀ (g/kN) or SN	12.7	92.0	46.1	20.6
AS % OF ORIGINAL LIMIT	64.8	78.0	48.7	82.9
AS % OF CAEP/2 LIMIT (NO _x)			60.9	
AS % OF CAEP/4 LIMIT (NO _x)			72.3	
AS % OF CAEP/6 LIMIT (NO _x)			81.0	
AS % OF CAEP/8 LIMIT (NO _x)			95.1	

DATA STATUS

- PRE-REGULATION
x CERTIFICATION
- REVISED (SEE REMARKS)

TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES
x DEDICATED ENGINES TO PRODUCTION STANDARD
- OTHER (SEE REMARKS)

EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE
(ANNEX 16 VOLUME II)

CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)
x OUT OF PRODUCTION (DATE: -)
- OUT OF SERVICE (DATE: -)

MEASURED DATA

MODE	POWER SETTING (%F ₀₀)	TIME (minutes)	FUEL FLOW (kg/s)	HC	CO	NO _x	SMOKE NUMBER
TAKE-OFF	100	0.7	0.866	0.05	0.84	20.83	16.0
CLIMB OUT	85	2.2	0.714	0.07	0.42	16.93	7.7
APPROACH	30	4.0	0.237	0.12	3.15	8.43	0.1
IDLE	7	26.0	0.087	4.99	44.53	3.67	0.3
LTO TOTAL FUEL (kg) or EMISSIONS (g)			323	690	6273	3328	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX)				8.2	74.9	39.8	16.0
SIGMA (D _p /F ₀₀ in g/kN, or SN)				0.5	1.8	0.4	0.1
RANGE (D _p /F ₀₀ in g/kN, or SN)				7.7-8.6	73.7-77	39.3-40.1	15.9-16.2

ACCESSORY LOADS

POWER EXTRACTION 0 (kW)
STAGE BLEED 0 (% CORE FLOW)

AT All POWER SETTINGS
AT All POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.2-97.9
TEMPERATURE (K)	296-300
ABS HUMIDITY (kg/kg)	0.0099-0.0127

FUEL

SPEC	Jet A-1
H/C	1.92
AROM (%)	16.3-17.4

MANUFACTURER: General Electric Company
TEST ORGANIZATION: Peebles Test Operation
TEST LOCATION: Site 4D
TEST DATES: 05/09/2006-10/09/2006

NO_x REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

REMARKS

1. GE Report R2006AE716
2. Block 2 Engines
3. Engine 994-251/1
4. Engines with 2253M21 combustor produced beginning August 2007
5. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
6. NO_x levels in accordance with Part III, Chapter 2, 2.3.2 e)

Compliance with Fuel Venting requirements:

x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)