



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: CF34-10E5A1 BYPASS RATIO: 5.09
UNIQUE ID NUMBER: 10GE130 PRESSURE RATIO (π_{00}): 27.3
ENGINE TYPE: TF RATED OUTPUT (F_{00}) (kN): 83.7

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	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 (NOx)			60.9 %	
AS % OF CAEP/4 LIMIT (NOx)			72.3 %	
AS % OF CAEP/6 LIMIT (NOx)			81.0 %	
AS % OF CAEP/8 LIMIT (NOx)			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)
- OUT OF PRODUCTION
- OUT OF SERVICE

MEASURED DATA

MODE	POWER SETTING (% F_{00})	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	0.866	0.046	0.84	20.83	16.01
CLIMB OUT	85	2.2	0.714	0.068	0.42	16.93	7.7
APPROACH	30	4.0	0.237	0.12	3.15	8.43	0.12
IDLE	7	26.0	0.087	4.991	44.53	3.67	0.34
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)				8.24	74.9	39.8	16
SIGMA (D_p/F_{00} in g/kN, or SN)				0.51	1.8	0.44	0.14
RANGE (D_p/F_{00} in g/kN, or SN)				7.7-8.6	73.7-77.0	39.3-40.1	15.9-16.2

ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT All POWER SETTINGS
STAGE BLEED 0 % CORE FLOW 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 A1
H/C	1.92
AROM (%)	16.3-17.4

MANUFACTURER: GE Transportation
TEST ORGANIZATION: Peebles Test Operation
TEST LOCATION: Site 4D
TEST DATES: FROM 05 Sep 06 TO 10 Sep 06

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. NOx levels in accordance with Part III, Chapter 2, 2.3.2 e)

If REVISED, this data supersedes databank UID
Compliance with fuel venting requirements:

x ('x' if complies, PR if pre-regulation)