



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5B9/3
UNIQUE ID NUMBER: 8CM060
ENGINE TYPE: TF

BYPASS RATIO: 5.9
PRESSURE RATIO (π_{oo}): 24.2
RATED OUTPUT (F_{oo}) (kN): 103.6

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	5.1	63.1	34.5	12.3
AS % OF ORIGINAL LIMIT	26.0 %	53.5 %	39.0 %	52.5 %
AS % OF CAEP/2 LIMIT (NOx)			48.8 %	
AS % OF CAEP/4 LIMIT (NOx)			59.8 %	
AS % OF CAEP/6 LIMIT (NOx)			67.9 %	
AS % OF CAEP/8 LIMIT (NOx)			82.2 %	

DATA STATUS

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

TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES
- 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_{oo})	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	0.956	0.02	0.16	17.54	11.2
CLIMB OUT	85	2.2	0.793	0.03	0.17	14.76	8.4
APPROACH	30	4.0	0.278	0.07	4.42	8.26	2.1
IDLE	7	26.0	0.095	3.01	38.8	3.92	2.1
LTO TOTAL FUEL (kg) or EMISSIONS (g)			359	452	6047	3377	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				7	7	7	7
AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX)				4.36	58.34	32.58	11.2
SIGMA (D_p/F_{oo} in g/kN, or SN)				0.49	2.8	1.1	2.5
RANGE (D_p/F_{oo} in g/kN, or SN)				3.81 to 4.7	55.2 to 60.2	31.6 to 33.8	8.3 to 12.9

ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT All POWER SETTINGS
STAGE BLEED 0 % CORE FLOW AT All POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.6 to 98.5
TEMPERATURE (K)	277 to 293
ABS HUMIDITY (kg/kg)	0.00150 to 0.00628

FUEL

SPEC	Jet A
H/C	1.92 - 1.93
AROM (%)	16.2 - 17.5

MANUFACTURER: CFM International
TEST ORGANIZATION: GE Aviation
TEST LOCATION: PTO, Ohio, USA
TEST DATES: FROM 29 Sep 05 TO 23 Mar 06

REMARKS

1. Ref. GE REPORT CR-2097/3 Rev1
2. Engine S/N 874-026/01, 778-024/01B, and 892-769/01
3. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
4. NOx levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

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

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