



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5B9/3
UNIQUE ID NUMBER: 01P08CM110
COMBUSTOR: Tech Insertion
ENGINE TYPE: TF

BYPASS RATIO: 5.9
PRESSURE RATIO (π_{00}): 24.2
RATED THRUST (F_{00}) (kN): 103.6

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F ₀₀ (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 (NO _x)			48.8	
AS % OF CAEP/4 LIMIT (NO _x)			59.8	
AS % OF CAEP/6 LIMIT (NO _x)			67.9	
AS % OF CAEP/8 LIMIT (NO _x)			82.2	

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

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 (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	0.956	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	38.80	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 ₀₀ (g/kN) or AVERAGE SN (MAX)				4.4	58.3	32.6	11.2
SIGMA (D _p /F ₀₀ in g/kN, or SN)				0.5	2.8	1.1	2.5
RANGE (D _p /F ₀₀ in g/kN, or SN)				3.81-4.74	55.2-60.2	31.6-33.8	8.3-12.9

ACCESSORY LOADS

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

AT All POWER SETTINGS
AT All POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.6-98.5
TEMPERATURE (K)	277-293
ABS HUMIDITY (kg/kg)	0.0015-0.00628

FUEL

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

MANUFACTURER: CFM International
TEST ORGANIZATION: General Electric Company
TEST LOCATION: PTO, Ohio
TEST DATES: 29/09/2005-23/03/2006

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. 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. NO_x levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)

Compliance with Fuel Venting requirements: x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)