



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5A3
UNIQUE ID NUMBER: 1CM009
COMBUSTOR:
ENGINE TYPE: TF

BYPASS RATIO: 6.0
PRESSURE RATIO (π_{00}): 27.9
RATED THRUST (F_{00}) (kN): 117.9

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F ₀₀ (g/kN) or SN	3.5	30.8	50.3	21.6
AS % OF ORIGINAL LIMIT	18.1	26.1	52.5	95.6
AS % OF CAEP/2 LIMIT (NO _x)			65.6	
AS % OF CAEP/4 LIMIT (NO _x)			79.0	
AS % OF CAEP/6 LIMIT (NO _x)			89.8	
AS % OF CAEP/8 LIMIT (NO _x)			106.7	

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)
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	1.131	0.20	0.90	26.40	16.8
CLIMB OUT	85	2.2	0.925	0.20	0.90	21.10	14.6
APPROACH	30	4.0	0.307	0.30	2.40	8.30	4.8
IDLE	7	26.0	0.104	1.30	16.20	4.10	2.7
LTO TOTAL FUEL (kg) or EMISSIONS (g)			406	268	2968	5110	-
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)				2.3	25.1	43.4	16.8
SIGMA (D _p /F ₀₀ in g/kN, or SN)				0.5	0.6	0.7	2.0
RANGE (D _p /F ₀₀ in g/kN, or SN)				1.8-2.8	24.2-25.5	42.7-44.2	14.6-18.8

ACCESSORY LOADS

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

AT - POWER SETTINGS
AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	94.7-95.6
TEMPERATURE (K)	280-291
ABS HUMIDITY (kg/kg)	0.0026-0.0034

FUEL

SPEC	Jet A
H/C	1.95
AROM (%)	18

MANUFACTURER: CFM International
TEST ORGANIZATION: CFM56 Evaluation Engineering
TEST LOCATION: Peebles Site IIIC
TEST DATES: 19/11/1986-20/11/1986

REMARKS

1. Ref GE Reports R89AEB316 and R87AEB386.
2. Engine S/N 730002/2.

Compliance with Fuel Venting requirements:

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