



ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5B9/2P
UNIQUE ID NUMBER: 7CM050
COMBUSTOR: DAC
ENGINE TYPE: TF

BYPASS RATIO: 5.9
PRESSURE RATIO (π_{00}): 24.4
RATED THRUST (F_{00}) (kN): 102.2

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO _x	SMOKE NUMBER
D _p /F ₀₀ (g/kN) or SN	9.9	107.5	29.5	7.8
AS % OF ORIGINAL LIMIT	50.5	91.1	33.2	33.1
AS % OF CAEP/2 LIMIT (NO _x)			41.5	
AS % OF CAEP/4 LIMIT (NO _x)			51.0	
AS % OF CAEP/6 LIMIT (NO _x)			57.8	
AS % OF CAEP/8 LIMIT (NO _x)			69.9	

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)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO _x	
TAKE-OFF	100	0.7	0.961	0.20	2.90	13.90	0.3
CLIMB OUT	85	2.2	0.799	0.30	8.10	10.70	0.3
APPROACH	30	4.0	0.296	0.40	21.00	7.60	6.6
IDLE	7	26.0	0.105	4.40	44.10	3.20	1.7
LTO TOTAL FUEL (kg) or EMISSIONS (g)			381	789	9687	2754	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				4	4	4	4
AVERAGE D _p /F ₀₀ (g/kN) or AVERAGE SN (MAX)				7.6	94.3	26.9	6.6
SIGMA (D _p /F ₀₀ in g/kN, or SN)							
RANGE (D _p /F ₀₀ in g/kN, or SN)				7.4-7.8	92.9-95.8	26.5-27.2	

ACCESSORY LOADS

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

AT - POWER SETTINGS
AT - POWER SETTINGS

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.5-99.7
TEMPERATURE (K)	284.6-292.4
ABS HUMIDITY (kg/kg)	0.0081-0.0115

FUEL

SPEC	Jet A
H/C	1.93
AROM (%)	17.33

MANUFACTURER: CFM International
TEST ORGANIZATION: CFM56 Evaluation Engineering
TEST LOCATION: GEAE PTO and Techspace Aero, Liege, Belgium
TEST DATES: 01/08/1996-30/09/1996

REMARKS

1. FAA Certification Report CR-700 S3, October 2001
2. DAC-II combustor P/N 196M99G04

Compliance with Fuel Venting requirements:

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