



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5B4/2P
UNIQUE ID NUMBER: 3CM021
ENGINE TYPE: TF

BYPASS RATIO: 5.9
PRESSURE RATIO (π_{oo}): 27.7
RATED OUTPUT (F_{oo}) (kN): 120.1

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	12.0	96.5	34.9	2.3
AS % OF ORIGINAL LIMIT	61.2 %	81.8 %	36.6 %	10.2 %
AS % OF CAEP/2 LIMIT (NOx)			45.7 %	
AS % OF CAEP/4 LIMIT (NOx)			55.1 %	
AS % OF CAEP/6 LIMIT (NOx)			62.6 %	
AS % OF CAEP/8 LIMIT (NOx)			74.4 %	

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

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	1.140	0.1	1.4	18.4	0.3
CLIMB OUT	85	2.2	0.950	0.2	3.6	13.6	0.3
APPROACH	30	4.0	0.340	5.3	29.1	6.5	0.5
IDLE	7	26.0	0.120	3.6	40.1	3.9	2
LTO TOTAL FUEL (kg) or EMISSIONS (g)			442	1136	10400	3847	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				4	4	4	4
AVERAGE D_p/F_{oo} (g/kN) or AVERAGE SN (MAX)				9.2	84.7	31.7	2
SIGMA (D_p/F_{oo} in g/kN, or SN)				-	-	-	-
RANGE (D_p/F_{oo} in g/kN, or SN)				8.2-10.1	79.0-90.4	31.1-32.4	1.8-2.2

ACCESSORY LOADS

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

ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	98.5-99.74
TEMPERATURE (K)	284.6-292.4
ABS HUMIDITY (kg/kg)	.0081-.0115

FUEL

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

MANUFACTURER: CFM International
TEST ORGANIZATION: GEAE Peebles Testing Facility + Techspace Aero (CFMI)
TEST LOCATION: Peebles Ohio, USE + Liers, Belgium
TEST DATES: FROM Aug 96 TO Sep 96

REMARKS

DAC-II Combustor P/N 1968M99G04

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

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