



ICAO ENGINE EXHAUST EMISSIONS DATA BANK

SUBSONIC ENGINES

ENGINE IDENTIFICATION: CFM56-5B1/2P
UNIQUE ID NUMBER: 3CM020
ENGINE TYPE: TF

BYPASS RATIO: 5.7
PRESSURE RATIO (π_{oo}): 30.5
RATED OUTPUT (F_{oo}) (kN): 133.5

REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
D_p/F_{oo} (g/kN) or SN	8.8	80.3	41.7	2.5
AS % OF ORIGINAL LIMIT	44.9 %	68.1 %	41.3 %	11.4 %
AS % OF CAEP/2 LIMIT (NOx)			51.6 %	
AS % OF CAEP/4 LIMIT (NOx)			61.3 %	
AS % OF CAEP/6 LIMIT (NOx)			69.5 %	
AS % OF CAEP/8 LIMIT (NOx)			81.6 %	

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	1.320	0.1	0.8	23.3	0.5
CLIMB OUT	85	2.2	1.070	0.1	1.9	16.4	0.3
APPROACH	30	4.0	0.370	3.7	23.1	7.3	0.5
IDLE	7	26.0	0.120	2.9	36.5	4.1	2.1
LTO TOTAL FUEL (kg) or EMISSIONS (g)			473	891	9197	5024	-
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)				6.8	70.5	37.9	2.1
SIGMA (D_p/F_{oo} in g/kN, or SN)				-	-	-	-
RANGE (D_p/F_{oo} in g/kN, or SN)				6.2-7.4	66.2-74.7	37.5-38.3	2.0-2.3

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)